

# Can tax increases solve the United Kingdom's public finance crisis?

A report for The TaxPayers' Alliance

July 2009

This report is published by the TaxPayers' Alliance as part of its continuing research into the impact of UK taxation. It follows on from a 2007 report which assessed the dynamic impacts of tax cuts on the economy.

This report has been produced by **cebr**, an independent economics and business research consultancy established in 1993 providing forecasts and advice to City institutions, government departments, local authorities and numerous blue chip companies throughout Europe. The contributors to this report are Douglas McWilliams, Richard Snook and Arek Ohanissian.

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# 1. INTRODUCTION AND SUMMARY

## 1.1. Objectives of the report

cebr was asked by the TaxPayers' alliance to analyse the outlook for United Kingdom public finances. The two objectives of this report are:

1. To estimate the scale of the public sector deficit under a number of different scenarios for economic growth
2. To analyse the different actions that can be taken to reduce the public sector deficit

Our approach to the first objective is to present three forecast scenarios for public sector borrowing and debt. The first of these is based on the Treasury forecasts contained in the April 2009 Budget (the optimistic scenario). The second and third scenarios retain the spending forecasts used in the Budget but test the implications of different forecasts for growth in economic output and tax revenues. The central scenario uses cebr's growth forecasts, last updated in July 2009. The pessimistic scenario tests the implications for public finances should the UK economy offer little recovery over the next five years.

Our approach to the second objective is to assess the fiscal consolidation options available to the government. We first calculate the extent to which spending cuts can be used to reduce the budget deficit, and then re-visit the supply side model of the United Kingdom economy developed by cebr in 2007<sup>1</sup> to test the affect of tax increases on economic growth and tax revenues.

## 1.2. Key findings

The key findings in this report are:

- **Under the government spending and revenue assumptions in the 2009 Budget, public borrowing will reach unprecedented levels. However the medium term deficit has not yet been addressed. Under our central scenario, net borrowing will remain above £140 billion up to 2017/18. Under the Treasury's forecasts - labelled as 'the optimistic scenario' - the budget deficit is projected to fall to £97 billion in 2013/14 and £30 billion in 2017/18 from a peak of £176 billion in 2009/10. The central scenario uses cebr's growth forecasts, which are widely believed to be more credible by most serious economic commentators, and retains the Treasury's spending plans. This analysis shows the budget deficit will remain over £160 billion in 2013/14 and**

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<sup>1</sup> CEBR 2007, 'The dynamic impact of the 2007 Budget and a comparison with the impact of gradually introducing an Irish level of corporation tax', available on-line: [http://tpa.typepad.com/research/files/dynamic\\_model\\_of\\_uk\\_economy\\_budget\\_2007\\_irish\\_ct\\_rate\\_simulation\\_results.pdf](http://tpa.typepad.com/research/files/dynamic_model_of_uk_economy_budget_2007_irish_ct_rate_simulation_results.pdf)

£140 billion in 2017/18. Under the pessimistic growth scenario, the figure is £180 billion in 2017/18.

- **Unemployment will continue to rise, and may remain structurally higher for a ten year period.** The 2009 Budget does not contain forecasts for unemployment, but calculations based on its economic growth projections imply unemployment will rise to 2.8 million by 2011. cebr's central forecast is that unemployment will rise to 3.2 million in 2011.<sup>2</sup> Under the pessimistic scenario, unemployment will reach 3.8 million in 2011.
- **The temporary fiscal operating rule that debt should be declining as a share of GDP by 2017/18 will not be met under the central and pessimistic growth scenarios with current public spending plans.** Under the Treasury's projections this rule will be met despite debt reaching £1,540 billion by 2017/18. However, under cebr's central growth scenario debt will reach £2,100 billion in 2017/18. Under the pessimistic growth scenario debt will reach £2,340 billion by 2017/18. Crucially, under both of these scenarios debt as a share of GDP will continue to rise, therefore breaking the fiscal rule.
- **To meet this fiscal rule under our central growth scenario, public sector spending will have to be cut by £123 billion in real terms or £45 billion in nominal terms.** To meet the fiscal rule, public sector spending would need to fall by 1.0 per cent in nominal terms or 3.0 per cent in real terms each year from 2010/11 to 2017/18. This equates to a £45 billion reduction in spending in nominal terms between 2010/11 and 2017/18 or a £123 billion cut in real terms. To put this in context, in the 2009 Budget, the government planned nominal spending increases over this period of between 2.5 and 3.5 per cent a year.
- **The 50 per cent income tax rate on income over £150,000 will reduce both economic growth by 0.4 per cent and increase public borrowing by £1.8 billion by 2020/21.** Raising taxes on a highly mobile sector of the labour force leads to a reduction in labour supply which will make this tax change both economically and fiscally negative.
- **A broad based increase in tax through raising income and corporation tax would initially boost public finances, however the supply side effect would ensure this move is revenue negative after seven years.** Simulating an increase in the basic rate of income tax to 25 per cent and the upper rate to 50 per cent, combined with increasing the rate of corporation tax to 41 per cent would initially raise around £15 billion a year for the Exchequer. However, negative supply side impacts of this increase would mean that by 2020/21 it would lead to a 6.1 per cent reduction in GDP and a £33 billion increase in the deficit.

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<sup>2</sup> Unemployment projections are based on the International Labour Organisation measure

## **2. THE ECONOMIC CONTEXT**

### **2.1. Introduction**

We begin this chapter by briefly summarising recent economic events in the United Kingdom; we also highlight our current view on the outlook for growth and the key uncertainties for the economy. The final section of this chapter presents the latest data concerning the public finances.

### **2.2. The financial crisis and recession**

The United Kingdom economy has entered its first recession since 1990. A marginal contraction in economic output in the second quarter of 2008 has been followed by three quarters of sharp contraction, the largest of which so far was the 2.4 per cent fall in output in the first quarter of 2009.

The primary trigger of this recession was the credit crunch, which led to a loss of confidence in the banking system and collapse of interbank lending markets due to high levels of bank exposure to 'toxic assets' - assets such as residential mortgage backed securities that were incorrectly assessed in terms of risk and therefore substantially over-valued. The fallout from the banking crisis has been a global collapse in credit growth and investment and a sharp inventory cycle - as firms seek to improve cash positions and adjust production to lower levels of demand. Consumers have also increased saving and reduced spending in response to the reduction in credit availability, falling asset prices and greater uncertainty.

Policy-makers have responded to the crisis in two ways. First there have been measures to restore stability in the banking sector through tax-payer backed insurance schemes to encourage interbank lending and place an upper limit on 'toxic asset' losses for banks. Governments have also injected equity into banks to provide them with enough capital to weather asset write downs. The second aspect of the policy response has been a loosening of monetary and fiscal policy to combat the economic recession. Globally, interest rates have been slashed. They are now close to zero in most advanced economies and therefore cannot go any lower. Even this unprecedented monetary action was not deemed sufficient. The Bank of England, Federal Reserve and European Central Bank have all engaged in quantitative easing to some degree through the temporary or permanent exchange of financial sector assets for newly created central bank reserves. This measure, as its name suggests, attempts to directly increase the quantity of money in the economy. This is in contrast to cutting interest rates which aims to indirectly increase the quantity of money through lowering its price.

Fiscal policy is also being used to stimulate recovery following Keynesian economic principles. Public sector deficits have exploded as the recession has led to a collapse in tax revenues and increased social expenditure. In addition, many governments have engaged in discretionary fiscal stimulus packages which have increased deficits further.

Looking at the United Kingdom in more detail, our view is that the economic picture is clearing and the pace of the recession is slowing. The key concern amongst ourselves and other forecasters at the beginning of 2009 was whether the United Kingdom would suffer concerted de-leveraging in the consumer and corporate sectors. This may have dragged the economy into a depression, and whilst it is not yet possible to write off this scenario, we believe the probability of it has diminished. The primary reason for this view is the greater stability in financial markets and recent upward movements in leading indicators of economic growth.

Despite recent improvements the economic picture does not look good for the United Kingdom economy. We forecast that output will decline by around 4.0 per cent in 2009, the largest single year fall since the Second World War. In addition to the sharp recession and associated rise in unemployment, the legacy of the crisis will be a far higher level of government debt which raises uncertainty over government borrowing costs and the availability of lending for companies and consumers. There are further unanswered questions over what sectors will drive prosperity in the United Kingdom going forward, in the twenty years leading up to the credit crunch, finance and business services were a major driver of growth. This may not be able to continue.

### **2.3. The effect on public finances to date**

We will present our forecast scenarios for the United Kingdom's public finances in the next chapter; however, it is worthwhile to look at the latest hard data on the impact of the credit crunch so far.

The latest Office for National Statistics figures on public sector net borrowing<sup>3</sup> show a continued sharp increase in borrowing. Net borrowing in June 2009 stood at £13.0 billion, a 73.3 per cent rise from the £7.5 billion borrowed in June 2008. On a cumulative basis, borrowing in the financial year to June is £41.2 billion in 2009/10 compared to £21.6 billion in 2008/9.

The drivers of the sharp increase in public sector borrowing are the increase in government expenditure and a fall in tax revenues. On a cumulative basis in the financial year to June, government spending has risen to £143.2 billion in 2009/10 from £135.7 billion in 2008/9. Meanwhile government revenues over the April to June period have fallen to £105.6 billion in 2009/10 from £116.6 billion in 2008/9.

Looking at the impact of the recession on revenue from selected individual taxes provides interesting although not wholly surprising results. The latest data from Her Majesty's Revenue and Customs is presented in Table 1.

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<sup>3</sup> Available from the ONS website: <http://www.statistics.gov.uk/pdfdir/psf0709.pdf>

**Table 1. Tax receipts by category, £ millions, nominal prices**

Time period	Income tax and capital gains tax <sup>4</sup>	National Insurance contributions <sup>5</sup>	Corporation tax	Value added tax	Stamp Duties	Fuel duties
2007 Q4	31,137	22,764	12,957	21,326	3,612	6,470
2008 Q1	54,550	27,549	12,946	19,849	2,787	6,121
2008 Q2	34,094	23,419	8,431	20,088	2,574	6,343
2008 Q3	39,300	24,472	12,664	21,236	2,240	6,069
2008 Q4	29,109	22,506	12,212	19,537	1,893	6,255
2009 Q1	52,207	26,047	9,458	17,582	1,288	5,945
2009 Q2	30,446	23,093	6,338	16,104	1,608	6,542
Annual change to 2009 Q2	-11.0%	-1.8%	-24.8%	-19.8%	-37.5%	3.1%

Source: Her Majesty's Revenue and Customs

The most significant impact to tax revenues has been seen from stamp duties, where the fall in house prices and transactions combined with temporary tax reliefs have caused revenues to fall by more than one third between the second quarter of 2008 and the second quarter of 2009. Revenue from corporation taxes also fell by one quarter over the same period, as company profits collapsed as a result of the recession.

Income tax and National Insurance contributions, two of the largest components of tax revenues, were 11.0 per cent and 1.8 per cent lower in the second quarter of 2009 than a year ago. This reflects the declining level of employment, and the disproportionate impact of the credit crunch on the income of high earners who pay the greatest rates of marginal taxation on their income.

Overall the Treasury's figures, published in the 2009 Budget project that total public sector current receipts declined by 2.0 per cent in financial year 2008/9 from 2007/8. They are expected to decline by a further 7.9 per cent in 2009/10.

<sup>4</sup> Income tax receipt figures are net of personal tax credits

<sup>5</sup> Net of personal pension rebates paid directly from the National Insurance Fund

## **3. SCENARIOS FOR PUBLIC FINANCES**

### **3.1. Introduction**

In this chapter we present three forecast scenarios for public sector finances. All of these scenarios are based on the Treasury's spending plans laid out in the Budget; however the rate of growth in GDP and tax revenues is varied. The first two sections describe the basis of these scenarios, their plausibility and key uncertainties.

The third section of the chapter contains the results of detailed tax and expenditure forecasts up to 2013/14; testing the impact of different paths of economic growth on public borrowing.

### **3.2. The scenarios**

The last two years have been a period of remarkable volatility and uncertainty in the United Kingdom economy. Uncertainty remains high, so in order to stress test the future of public finances, we use a scenario based approach to test the impact of different levels of economic growth on public finances. The three scenarios are

- 1) **Optimistic scenario** - 'the Darling bounce'. This uses the projections for spending, tax revenues and GDP growth presented by Her Majesty's Treasury in the Red Book, April 2009. In our view (and the view of many independent forecasters) the projections on the strength of the recovery are optimistic.
- 2) **Central scenario** - 'Cebr's growth forecasts'. These projections are based on cebr's forecasts for economic growth and tax revenues from UKMOD, our structural model of the United Kingdom economy. The model was last updated in July 2009. In terms of public spending, this scenario assumes that the discretionary spending plans contained in the Red Book are followed; the only deviations from Treasury spending plans come from automatic fiscal stabilisers such as unemployment benefits which take spending slightly above the Treasury's figures.
- 3) **Pessimistic scenario** - 'the double dip'. This scenario tests the implications of weaker growth forecasts on the public finances. For example, where continued weakness in consumer spending plunges the economy back into recession in 2010 and growth remains elusive up to 2014 due to widespread de-leveraging and higher private sector saving. As in scenario 2, discretionary spending plans contained in the Red Book are followed; with the only deviations from Treasury spending plans coming from automatic fiscal stabilisers

Our response to the Budget of 22 April 2009 was that the economic growth forecasts for 2010/11 onwards were too strong. This view was shared by many

other economic commentators and forecasters.<sup>6</sup> The overarching purpose of these three scenarios is therefore to stress test the implications for public finances if strong economic growth is unable to move the deficit towards a sustainable level in the medium term.

### 3.3. Economic Assumptions

One of the key differences we test in these scenarios is the impact on public finances of different forecasts for economic growth. The key economic growth figures we use are presented in Table 2.

**Table 2. United Kingdom economic growth forecasts, annual percentage change, chained volume measure**

Time Period	1 Optimistic scenario  Treasury growth assumptions published in the Red Book	2 Central scenario  cebr central economic growth forecasts	3 Pessimistic scenario  cebr lower range growth forecasts
2007/8	3.0%	3.0%	3.0%
2008/9	-1.0%	-1.0%	-1.0%
2009/10	-2.75%	-2.75%	-2.75%
2010/11	1.75%	0.6%	-0.9%
2011/12	3.25%	1.1%	0.0%
2012/13	3.25%	1.2%	-0.2%
2013/14	3.25%	1.5%	0.4%
<b>Medium term trend</b>	<b>2.75%</b>	<b>2.0%</b>	<b>1.5%</b>

Sources: HM Treasury Budget 2009 and cebr forecasts

There are two major dividing lines between the forecasts. The first is the assessment of the impact the credit crunch has had on trend growth in the United Kingdom (trend growth can be defined as the *smooth path of long run economic output* or the *average rate of growth in the economy over the long term*). The second dividing line is over the speed with which the United Kingdom economy returns to, or exceeds trend growth. In the next section we will briefly discuss trend growth before turning to the speed of the recovery.

#### Trend economic growth

<sup>6</sup> See figure 1.

The Budget contains a detailed discussion of the impact of the credit crunch on trend economic growth.<sup>7</sup> The key assumption is that the credit crunch results in a temporary and one-off downward adjustment in the trend level of economic output of 5.0 per cent between mid-2007 and mid-2010. The cause of this temporary effect is the inability of the financial sector to allocate capital to its most productive use, a higher cost of capital resulting from capital scarcity and greater risk premia, and a productivity impact from the contraction of the financial services sector which exhibits above average productivity. Further factors mentioned include the impact on migration of working age people from a weaker labour market and the depreciation of sterling.

The Treasury considers that this impact will be temporary and there will be no significant lasting impact on trend economic growth beyond 2010. It expects the rate of trend growth beyond 2010 to be 2.75 per cent. This is in-line with the trend growth rates seen over the 2001Q3-2006H2 cycle (as defined by the Treasury<sup>8</sup>), calculated to be 2.68 per cent.

The cebr forecasts are broadly in agreement over the scale of the temporary hit to trend growth, however over the medium term our view differs. We expect trend growth beyond 2010 to be 2.0 per cent and therefore lower than the 2.68 per cent trend growth calculated for the United Kingdom economy in the 2001Q3-2006H2 economic cycle. There are four main reasons why we consider that the credit crunch will have a medium term impact on trend economic growth:

- **Weaker employment opportunities and sterling reduces immigration of working age people** - fewer job opportunities and a weaker sterling makes the UK less attractive for foreign workers
- **The impact on the efficiency of capital allocation will be persistent** - this will be driven by greater regulatory control on general lending and higher risk premiums on higher risk lending
- **Transition to a higher saving and lower credit economy** - while this may have some long term benefits, such as greater domestic capital availability, it will reduce consumer spending growth over the medium term during the transition to a higher saving economy. In addition, lower corporate leverage will reduce profits; and
- **Tax and crowding out** - moving to a higher public debt profile relative to the previous cycle will have two major implications. First a greater share of government spending will be needed to service government debt. Second, the scale of government borrowing may drive up the cost and/or reduce the availability of lending to the private sector

Due to the factors listed above, a 2.0 per cent trend growth assumption is used in the central scenario, whilst the pessimistic scenario assumes trend economic growth of 1.5 per cent. The trend growth figures are used for our forecasts in the 2014/15 to 2017/18 period.

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<sup>7</sup> HM Treasury Budget 2009, HMSO, pp194-198

<sup>8</sup> HM Treasury Budget 2009, HMSO, p197

## The shape of the recovery

The second dividing line between these sets of economic forecasts is the speed of return to trend growth levels. Essentially the Treasury sees growth exceeding trend rates from 2011/12 to 2013/14, whilst cebr's central and pessimistic forecasts see growth below trend during this period. The fundamental difference between these sets of forecasts is whether or not the United Kingdom is in a normal recession or not.

Historically, a recession is followed by a period of above trend growth, as the economy returns to its original growth path following the period of weak growth. Looking at the past two recessions in the United Kingdom, the 1980-81 recession was followed by average growth of 3.2 per cent from 1983 to 1985. Following the 1990-91 recession, growth also averaged 3.2 per cent from 1993 to 1995. The Treasury assumes that the United Kingdom will achieve above trend growth of 3.25 to 3.75 per cent<sup>9</sup> from 2011/12 to 2013/14. In the context of the pace of recent recoveries this figure appears high but not inconceivable.

cebr's central forecast is that economic growth over the 2011/12 to 2013/14 period will be below trend levels, averaging 1.2 per cent per year. Fundamental to this forecast is the view that the current recession will have a long lasting effect on the economy due to its global nature and the fact that the recession was caused by a crisis in the financial sector. A recent paper by economists Carmen Reinhart and Kenneth Rogoff examines the empirical evidence on this issue.<sup>10</sup> The assessment of economic performance following systemic financial crises<sup>11</sup> concludes that financial crises tend to be protracted, whose aftermath share three characteristics:

- **Deep and prolonged asset market collapses** with real declines of 35 per cent in housing stretched over six years, and 55 per cent in equity markets over a three and a half year downturn
- **Substantial rise in unemployment and economic contraction**, with the unemployment rate rising by 7 per cent on average over a four year period, whilst economic output falls by 9 per cent from peak to trough over a two year period
- **Explosion in the value of government debt** rising by an average of 86 per cent from trough to peak

In addition, the authors warn that the global span of the current recession means that a traditional mechanism for recovery, through currency devaluation and strong growth in net exports, may be less effective due to the absence of strong demand growth in the rest of the world.

In the context of other independent forecasts, shown in Figure 1, the Treasury projection is the most bullish. cebr's central forecast is slightly lower than that

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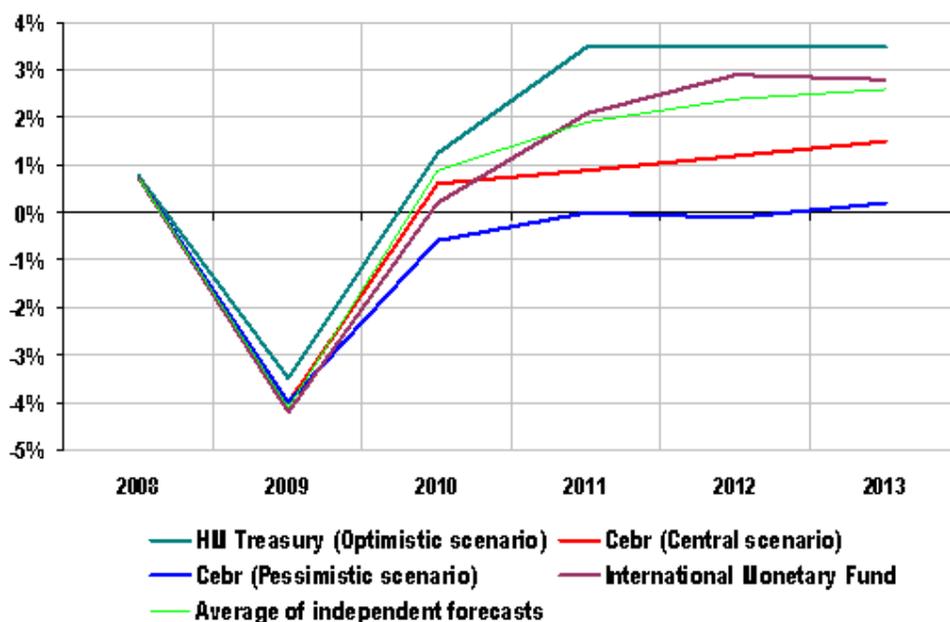
<sup>9</sup> In the public finance calculations the lower bound of this range is always used, as such, the lower bound figures are presented in table 2.

<sup>10</sup> Reinhart, C. M. Rogoff, K.S. 'The Aftermath of Financial Crises' paper presented at the American Economic Association Conference, January 2009

<sup>11</sup> In total eighteen post-war financial crises for the developed world are assessed and two in the developing world

of the International Monetary Fund, and the average of independent forecasts, published by the Treasury (in which the cebr forecasts are included).

**Figure 1. Comparison of United Kingdom economic growth forecasts, annual percentage change, chained volume measures**



Sources: Her Majesty's Treasury, Cebr analysis, International Monetary Fund, Bank of England

Note: all data corresponds to calendar rather than financial years, therefore the HM Treasury and cebr forecasts differ from those presented in table 2.

All forecasts are the latest available as of July 2009

The independent forecasts are based on the average values provided by banks and forecasting houses, these are published on a monthly basis by The Treasury. The 2009 and 2010 independent forecasts were published in July, the latest 2011-2013 forecasts were published in May.

## Unemployment

The other key economic forecast underpinning the scenarios is for unemployment. These figures are presented in Table 3. For the optimistic scenario, specific forecasts for unemployment are not published in the Budget; we therefore have calculated the implied unemployment forecasts using the Treasury's GDP figures.

**Table 3. United Kingdom unemployment forecasts, International Labour Organisation measure**

Time Period	1 Optimistic scenario HM Treasury (implied), ILO measure	2 Central scenario cebr, ILO measure	3 Pessimistic scenario cebr, ILO measure
2007	5.4% 1.7 million	5.4% 1.7 million	5.4% 1.7 million
2008	5.7% 1.8 million	5.7% 1.8 million	5.7% 1.8 million
2009	8.3% 2.6 million	8.8% 2.8 million	8.8% 2.8 million
2010	9.7% 3.0 million	10.0% 3.1 million	11.5% 3.6 million
2011	9.3% 2.8 million	10.3% 3.2 million	11.9% 3.8 million

Sources: HM Treasury Budget 2009 and cebr forecasts

### Gilt markets

Having discussed the rationale behind the scenarios, we now turn to the key uncertainties and assumptions that underpin the figures. These are, gilt markets and yields (i.e. the amount of interest the government spends servicing debt) and the measurement of financial sector interventions.

Interest rates and gilt yields have been on a general downward trend over the last thirty years, a boon to the public finances as the interest paid per unit of government debt has fallen. The average interest rate paid on the total stock of government debt fell from 10 per cent in the early 1980s to around 7 per cent in the 1990s.<sup>12</sup> This has occurred as high interest yielding gilts have matured, to be replaced by new gilts with a lower yield. Currently the average interest paid on the total stock of government debt is 4.3 per cent.

The forecasts in the 2009 Budget assume that the average interest rate paid on the stock of government debt will remain at 4.3 per cent over the forecast period; this figure is therefore used in scenario 1.

There are two countervailing forces acting on gilt yields in scenarios 2 and 3 when compared to scenario 1; first the lower economic growth profile would imply base rates do not rise as quickly and quantitative easing will be larger in scale and unwound at a later date. Second, the higher government deficit and debt would encourage lenders to charge a higher risk premium in order to buy gilts. In Scenarios 2 and 3, we retain the assumption of a 4.3 per cent interest

<sup>12</sup> Institute for Fiscal Studies 2009, Briefing Note BN83

rate on the total stock of government debt, implicitly assuming that these factors cancel out.

### Treatment of financial sector interventions and the Public Finance Initiative

There are two elements to the impact of the financial market interventions on government debt. The first is the additional borrowing already required to finance actions such as the bank equity injections. These are included in the net debt figures by the Office for National Statistics and the Treasury. We therefore include them in all three scenarios when presenting projections for the stock of net debt. The second element is the as yet unrealised losses that may occur when the government unwinds its interventions. The Budget 2009 Red Book contains a preliminary assessment of this future cost (which will largely accrue due to losses on bank equity injections and the cost of the Asset Protection Scheme. This estimate is provided as a range of £20 to £50 billion.<sup>13</sup> Given the high level of uncertainty about the extent of these losses and the timing of when they are realised we have excluded these figures from the public sector net borrowing forecasts.

In addition, the net debt figures in the Budget include Public Sector Finance Initiative projects which have been classified by the Office for National Statistics as 'on balance sheet'. This adds around £15 billion to the figure for the stock of net debt which is included in our projections for all scenarios. However, the government is also committed to substantial future payments under operating leases that are not included on their balance sheet; these payments are included in the Treasury and cebr total managed expenditure projections but are not counted as net debt. Greater detail on the treatment of PFI liabilities can be found in Office for National Statistics briefing notes.<sup>14</sup>

## 3.4. Results from public finance scenarios

Before providing the key results from our public finance scenarios, Table 4 provides a summary of the make up of the three scenarios.

**Table 4. Summary of Scenario parameters**

	Scenario 1 - optimistic	Scenario 2 – central	Scenario 3 – pessimistic
Economic growth and tax revenue	HM Treasury	cebr – central case	cebr – weaker growth
Government spending	HM Treasury	HM Treasury discretionary spending plans, automatic stabilizers vary with cycle	HM Treasury discretionary spending plans, automatic stabilizers vary with cycle
Average yield on total stock of debt	4.3%	4.3%	4.3%
Cost of financial sector interventions	Existing costs included in net debt figures, unrealised costs excluded from future borrowing figures.	Existing costs included in net debt figures, unrealised costs excluded from future borrowing figures.	Existing costs included in net debt figures, unrealised costs excluded from future borrowing figures.

We will initially present the results for the three scenarios out to 2013/14, which is the extent of the detailed forecasts contained in the Budget.

### Public borrowing

<sup>13</sup> HM Treasury Budget 2009, HMSO, p26

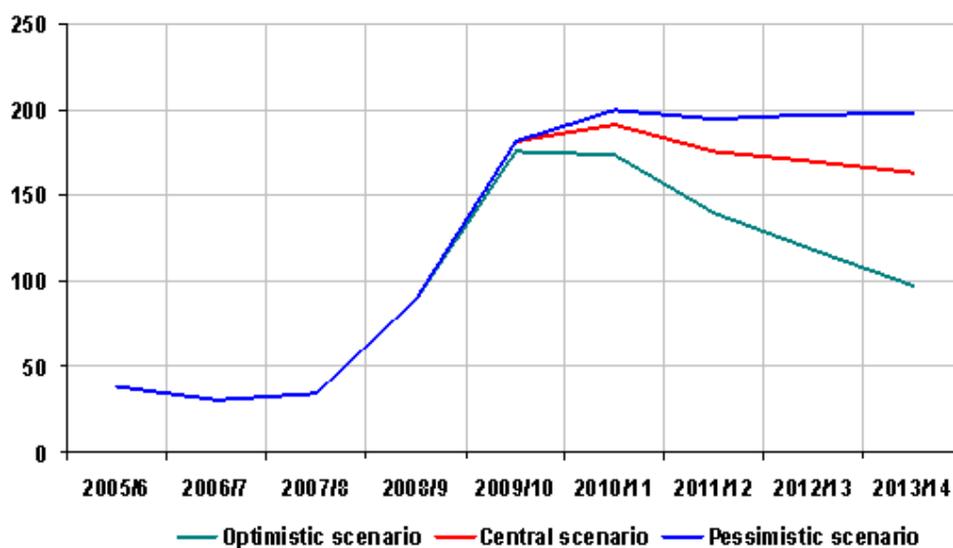
<sup>14</sup> [http://www.statistics.gov.uk/elmr/05\\_08/downloads/ELMR\\_May08\\_Kellaway.pdf](http://www.statistics.gov.uk/elmr/05_08/downloads/ELMR_May08_Kellaway.pdf)

Figure 2 presents the forecasts for public sector net borrowing for the three scenarios which test the impact of different economic growth whilst assuming that government discretionary spending plans are unchanged. Under the optimistic scenario - based on Treasury projections - government borrowing peaks at £175 billion in 2009/10. It then falls marginally to £173 billion in 2010/11, before falling steadily to £97 billion by 2013/14.

Under the central and pessimistic growth scenarios, public borrowing is projected to be slightly higher in 2009/10 and 2010/11 than expected by the Treasury. The difference amounts to additional borrowing of £6 billion in 2009/10 and £16 billion in 2010/11 for the central case, and £6 billion in 2009/10 and £21 billion in 2010/11 for the pessimistic case.

The key differences however emerge beyond 2010/11 on account of the wide divergence in the forecasted strength of the recovery. The Treasury forecasts presented as the optimistic scenario show public sector net borrowing decline sharply, reaching £97 billion by 2013/4. However, under the central case and pessimistic case, the strength of the recovery is not sufficient to bring borrowing down under due to the continue growth in nominal public spending set out in the Budget. Public sector borrowing in the central scenario therefore remains stubbornly high, falling to £163 billion by 2013/14; this is £66 billion higher than in the optimistic scenario. In the pessimistic scenario, borrowing peaks at £200 billion in 2010/11 and barely declines over the forecast period, reaching £198 billion in 2013/14.

**Figure 2. Public sector net borrowing, £ billion, nominal terms**

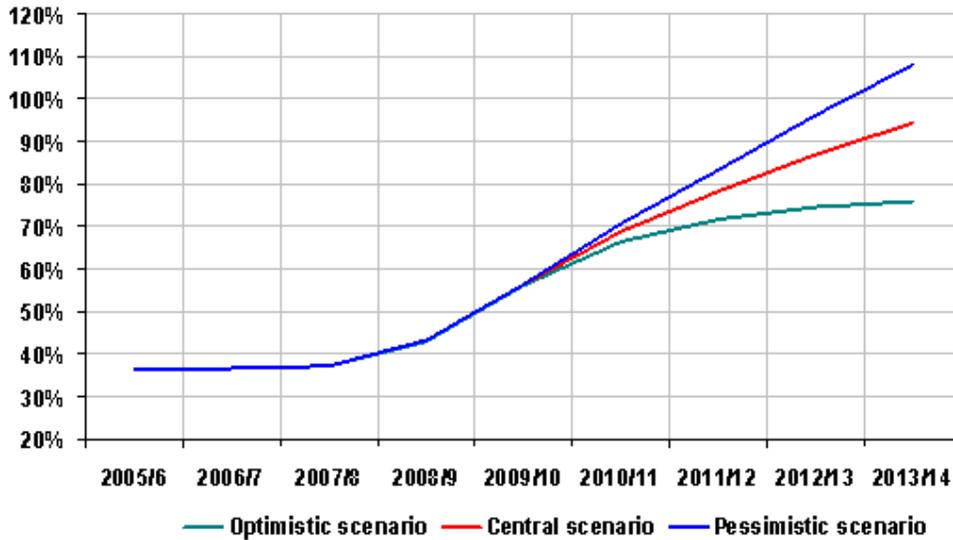


Sources: Her Majesty’s Treasury, cebr analysis

The cumulative additional debt burden incurred over the 2008/9 to 2013/14 period is £794 billion in the optimistic scenario, £970bn in the central scenario and £1,060 billion in the pessimistic scenario. These figures amount to £12,500, £15,250 or £16,700 per person respectively.

## Debt as a share of gross domestic product

Figure 3. Stock of United Kingdom government debt as a proportion of GDP



Sources: Her Majesty's Treasury, cebr analysis

The implications of the government borrowing forecasts for the stock of government debt are shown in Figure 3. Under the Treasury's fiscal projections, labeled as the optimistic forecast, government debt is expected to rise to £1,320 billion or 76 per cent of United Kingdom GDP by 2013/14. In 2006/7, prior to the credit crunch, the stock of debt stood at £490 billion or 37 per cent of GDP.

Under the central scenario the rise in government debt is even more precipitous. The stock of government debt is projected to rise to £1,500 billion or 94 per cent of GDP by 2013/14. In the pessimistic scenario, these figures are £1,590 billion and 108 per cent of GDP. Importantly, under both of these growth scenarios, debt is still rising as a share of GDP by the end of the period. The full listing of key results is presented in Table 5.

Table 5. Detailed results from public finance scenarios

Time period	Nominal GDP, £ billion			Public sector net borrowing, £ billion			Public sector debt, £ billion			Public debt as a share of GDP (%)		
	1	2	3	1	2	3	1	2	3	1	2	3
scenario												
2008/9	1439	1432	1432	90	90	90	617	617	617	43	43	43
2009/10	1412	1415	1415	175	182	182	793	799	799	56	56	56
2010/11	1460	1441	1414	173	190	200	966	988	998	66	69	71
2011/12	1548	1489	1434	140	176	194	1106	1164	1192	72	78	83
2012/13	1644	1535	1448	118	170	197	1224	1334	1390	75	87	96
2013/14	1745	1587	1470	97	163	198	1321	1497	1587	76	94	108

This chapter has shown that United Kingdom public sector debt as a share of GDP will at least double as a result of the credit crunch; it may triple. There

are a number of long term implications from this. First, we will have to devote more of our taxes to servicing government debt. Debt servicing cost the government £27 billion in 2008/9, this is set to rise to £57 billion in 2013/14 under the optimistic scenario, or £68 billion under the pessimistic scenario. These estimates may be conservative - they assume that buyers of UK government debt do not demand a higher risk premium as a result of the deterioration in public finances.

The second major implication of the splurge in borrowing is that the money will need to be paid back, or at the very least the deficit will need to be brought below the rate of economic growth to ensure that debt is declining as a share of GDP. This will mean major tax increases and/or public spending cuts in the future, especially if the strength of the recovery falls short of the Treasury's expectations. This is the question we address in chapter four.

## **4.MEETING THE FISCAL RULES**

### **4.1.Introduction**

In this chapter we extend the three public finance scenarios out to 2017/18 in order to test adherence to the Treasury's temporary fiscal operating criteria. The Treasury's forecasts beyond 2013/14 are described as illustrative<sup>15</sup> in that they are based on long term trend growth rates rather than detailed modeling.

In the November 2008 Pre-Budget report, the government introduced a new temporary fiscal operating rule. This was introduced in response to the changed macro-economic environment. It was felt that the previous fiscal rules introduced in 1998 had become impossible and undesirable to adhere to.

The temporary fiscal operating rule is as follows:

'To set policies that improve the cyclically adjusted current budget each year, once the economy emerges from the downturn, so it reaches balance and debt is falling as a proportion of GDP once the global shocks have worked their way through the economy as a whole'

The 2009 Budget suggests that the time frame required for the global shocks to have worked their way through the economy as a whole is 2017/18.

To test adherence to the new fiscal rule we focus on the criteria that government debt must be falling as a share of GDP by 2017/18. We use this aspect of the rule rather than the declining cyclically adjusted current budget because it provides a discrete target and it is not open to *ex poste* revision, through changing the dating of the economic cycle.

### **4.2.Debt as a share of GDP up to 2017/18**

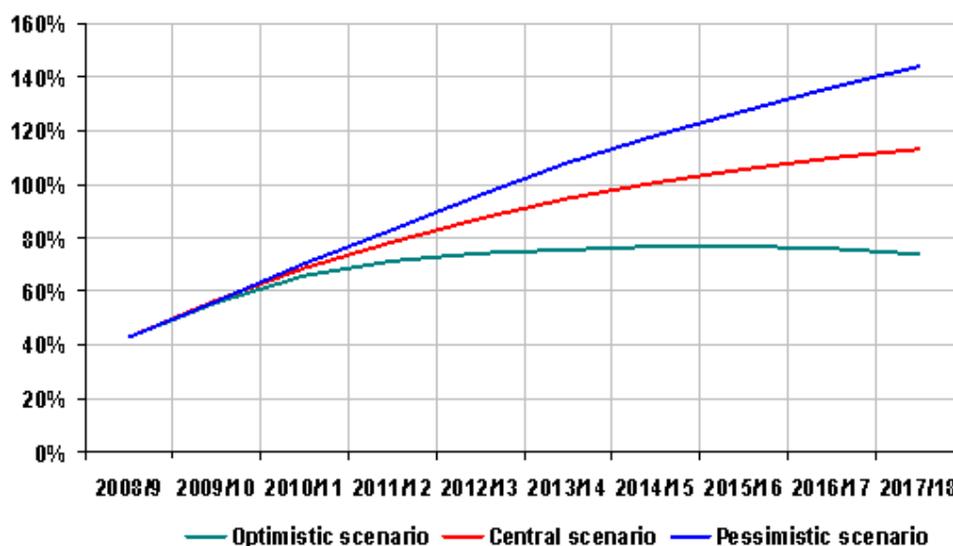
The medium term forecasts for government debt as a share of GDP are presented in Figure 4. It is clear that under the optimistic scenario, the Treasury's projections, the fiscal condition is met. Debt as a share of GDP peaks at 77 per cent in 2013/14, by 2017/18 it has fallen to 74 per cent and is on a declining path.

This is not the case in the central or pessimistic scenarios; government debt as a share of GDP is forecast to continue rising up to 2017/18, albeit at a declining pace. The stock of debt under the central scenario rises to 94 per cent of GDP in 2013/14 and 113 per cent in 2017/18. In the pessimistic scenario, debt reaches 108 per cent of GDP in 2013/14 and 144 per cent of GDP in 2017/18. This fiscal rule would be broken under current government spending plans and our central or pessimistic growth forecasts.

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<sup>15</sup> The Treasury describes its Budget forecasts beyond 2013/14 as illustrative because they are based on trend economic growth assumptions and long term spending plans

Figure 4. Stock of United Kingdom government debt as a proportion of GDP



Sources: Her Majesty's Treasury, cebr analysis

### 4.3. Fiscal consolidation scenario

The key implication is that should economic and tax revenue growth fall short of the Treasury's forecasts further fiscal tightening will be required in order to meet the fiscal target. Fiscal consolidation can occur through tax increases, government spending cuts, or a combination of the two.

In the fiscal consolidation scenario we test how much government spending would have to fall in order to meet the fiscal rule. This scenario is an adjusted version of the central scenario. The adjustment is made to discretionary government spending, in the central scenario it was assumed to follow the plans set by the Treasury in the 2009 Budget. In the fiscal consolidation scenario discretionary government spending is reduced such that the temporary fiscal rule can be met.

The fiscal consolidation scenario assumes that new government spending plans are produced in the 2010 budget and implemented from 2010/11 onwards. However, the story isn't as simple as reigning in government spending. Even if this is achieved the policy will have wider economic implications. The initial impact will be to reduce employment and economic output as money that would have been spent by the government on wages or purchasing goods and services will be used to pay off creditors (or the equivalent action of reducing the level borrowing compared to what otherwise would have been the case).

It is not the case however that reducing government expenditure by £1 will reduce GDP by £1. Some of the funds that the private sector would have spent buying government debt can instead be spent on consumption and investment.

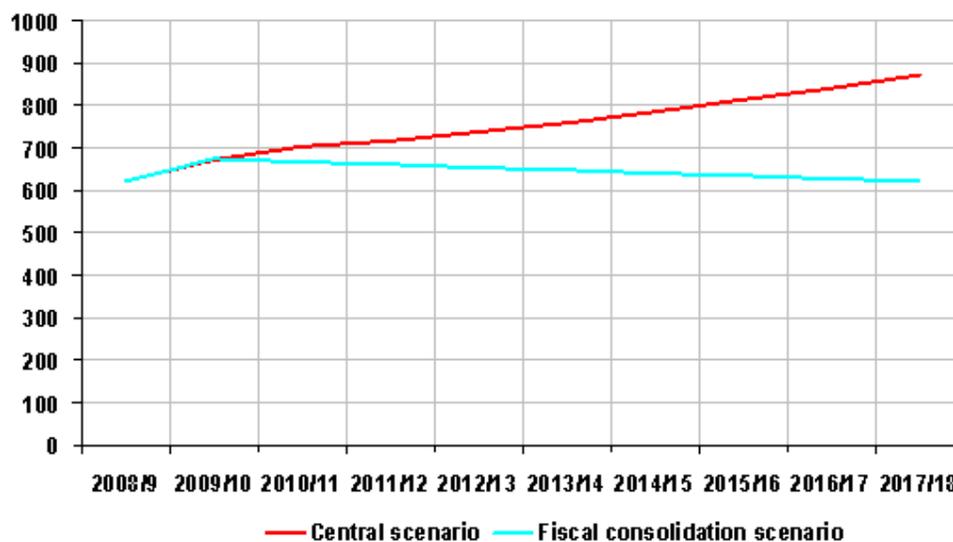
This effect is known as ‘crowding in’ and is simulated in the fiscal consolidation scenario.

There would also be positive aspects to pursuing a fiscal consolidation policy through cutting government spending. The key advantage is that the level of government deficit and debt would be lower than in the counterfactual (which in this case is the central scenario presented in chapter 3). This means that future government interest payments are lower and fewer spending cuts or tax increases are required in the future.

The required level of fiscal consolidation to meet the temporary fiscal rule is presented in Figure 5. In the central scenario, which follows Treasury discretionary spending plans, total managed expenditure will continue to grow in nominal terms over the forecast period by between 2.5 and 3.5 per cent each year.

Under the fiscal consolidation scenario, it would be necessary to reduce public expenditure in nominal terms by 1.0 per cent each year from 2010/11 onwards. In real terms this represents a cut in public sector total managed expenditure of 3.0 per cent per year on average. To put these figures into context, average annual growth in total managed expenditure from 2003/4 to 2008/9 was 6.7 per cent in nominal terms.

**Figure 5. Government total managed expenditure projections, £ billion, nominal terms**



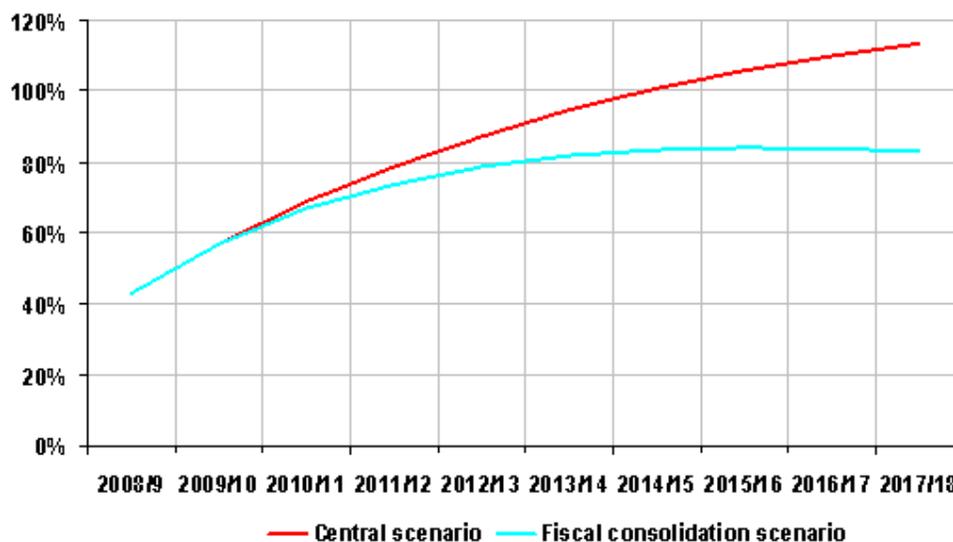
Sources: Her Majesty’s Treasury, cebr analysis

By 2017/18 the effects of compounding means that 1.0 per cent annual nominal spending reductions in the fiscal consolidation scenario has reduced government spending to £52 billion below 2008/9 levels. Compared to the current Treasury spending plans shown in the central scenario, spending is £249 billion lower in nominal terms by 2017/18. This is just the figure for a single year, yet this spending reduction far exceeds the current level of health, education and defense spending combined, which total £177 billion. The scale

of public spending cuts required to meet the fiscal rule is huge; it will be even larger if economic growth follows the pessimistic rather than the central scenario.

The path of government debt as a share of GDP for the fiscal consolidation scenario is shown in Figure 6. The central scenario is shown for comparison. This is the counterfactual of the fiscal consolidation scenario, where the government continues to grow expenditure as currently planned.

**Figure 6. Stock of United Kingdom government debt as a proportion of GDP**



Sources: Her Majesty's Treasury, cebr analysis

The fiscal consolidation scenario would lead to debt peaking at 82 per cent of GDP in 2015/16. The level of debt then begins to decline, reaching 81 per cent in 2017/18. Under the central scenario, as we have seen, debt continues to rise as a share of GDP up to 2017/18, therefore not meeting the fiscal rules.

The total stock of debt that this represents is equivalent to £32,000 per person by 2017/18 in the Central scenario. For the fiscal consolidation scenario, efforts to reduce the government debt mean that debt per person is £20,600 by 2017/18.

The key results from this chapter are that if economic growth falls short of the Treasury's projections, debt will exceed expectations by £177 billion by 2013/14 under the central scenario or £266 billion under the pessimistic scenario. In these circumstances it will be impossible to meet the temporary fiscal operating rules without major fiscal consolidation.

If the government reduces the level of government spending to meet the rule, it would be necessary to cut government spending by 1 per cent in nominal terms or 3 per cent in real terms each year from 2010/11 to 2017/18. This would leave nominal spending in 2017/18 £45 billion lower than it was in 2010/11 in nominal terms or £123 billion lower in real terms. To put this into

context the 2009 Budget contained planned increases in nominal government spending of between 2.5 per cent and 3.5 per cent a year over this period.

## **5.TAX POLICY**

### **5.1.Introduction**

The aim of this report so far has been to demonstrate the implications for public finances should the strength of the recovery fall short of the rapid bounce predicted in the 2009 Budget. Under the realistic growth projections that make up cebr's central forecast, the government is unable to meet the temporary fiscal operating rules that it set in the 2008 Pre-Budget report.

Under the central scenario, government spending would need to fall by £45 billion in order to stay within the fiscal rule that public debt should be declining as a share of GDP by 2017/18. Under the pessimistic scenario, the required spending cut would be even larger.

The reason we use cuts in government spending to simulate the fiscal consolidation, rather than tax increases is because of the negative supply effects of rising taxes.

To analyse the supply side impact in more detail we revisit the supply-side model of the economy developed by cebr in 2007. In this previous research for the TaxPayers' Alliance we simulated the dynamic effects to the economy if the United Kingdom were to adopt the levels of taxation that existed in the Republic of Ireland. The next section of this chapter briefly describes the previous work; we then move onto analysing the dynamic impact of increasing taxes.

### **5.2.Findings from cebr's supply side research in 2007**

The 2007 research on taxation and the supply side of the economy had two key elements. First, it contained a review of key literature on the wider impacts of taxation. Second, it tested the medium term economic effects of a substantial reduction in tax. The simulation was based on a reduction in the headline rate of corporation tax from 28 per cent to 15 per cent, a reduction in the higher rate of income tax from 40 per cent to 25 per cent and a reduction in the basic rate of income tax from 25 per cent to 20 per cent. The research reached the following key conclusions:

- Academic literature indicated that because of three factors - high skilled people becoming more internationally mobile, greater concentration of earnings in the higher income areas of the economy and increased international mobility of international capital - the UK like all other major economies had become more susceptible to negative supply side impacts from high taxation in recent years;
- The simulated impact showed that even a large and sudden tax cut is likely to boost the UK economy sufficiently to pay for itself after 10 years;

- The cut in income tax by about a third led to a boost to GDP of about 8% after 14 years, a boost to investment of 48% and an increase in the UK's international competitiveness, resulting in a boost to exports of 14%;
- The simulation showed that the tax cuts would lead to the generation of over 2 million additional jobs after 14 years.

### **5.3.Results from the 2009 simulation**

Given that the public finance outlook has drastically changed since 2007, and there are now calls for tax increases in order to reduce the public sector deficit; we have re-run the supply side simulations. We assess the impact of two different tax rises:

1. **Implementing the 50 per cent income tax on earnings above £150,000**  
- The impact of the announced rise of the top rate of income tax on annual income above £150,000 from 40 per cent to 50 per cent. This is set to come into force for the 2010/11 financial year.
2. **Broad based increases in income tax and corporation tax** - In addition to the 50 per cent tax on earnings over £150,000, the government increases the basic rate of income tax to 25 per cent, the higher rate of income tax from 40 to 50 per cent and the rate of corporation tax to 31 per cent.

For each of these options we simulate the impact on the economic growth and public finances relative to the base case where the *status-quo* is maintained. Table 6 presents the net effect of the increase in the top rate of income tax on the economy.

## The 50 per cent top rate of income tax

**Table 6. Cumulative impact of 50 per cent rate on earnings above £150,000, percentage change from base case**

Time Period	Disposable income	Consumer expenditure	GDP at market prices	Unemployment rate (ILO measure)	Inflation (CPI)
2010/11	-0.1	0.0	0.0	0.0	0.0
2011/12	-0.1	0.0	0.0	0.0	0.0
2012/13	-0.1	-0.1	0.0	0.1	0.0
2013/14	-0.2	-0.1	0.0	0.2	-0.1
2014/15	-0.3	-0.2	-0.1	0.4	-0.1
2015/16	-0.5	-0.2	-0.1	0.5	-0.1
2016/17	-0.5	-0.4	-0.1	0.6	-0.2
2017/18	-0.4	-0.5	-0.1	0.7	-0.2
2018/19	-0.5	-0.6	-0.1	0.7	-0.3
2019/20	-0.7	-0.7	-0.3	0.8	-0.3
2020/21	-0.8	-0.9	-0.4	0.8	-0.3

Source: cebr analysis

The results from our supply side model suggest that raising the top rate of income tax on income over £150,000 to 50 per cent will have a small negative impact on the economy. Decreased disposable income from the tax increase will lead consumer expenditure to be 0.7 per cent lower in 2020/21 than would otherwise have been the case. As a result the tax rise would decrease GDP by 0.4 per cent by 2020/21. The corollary to the fall in GDP is a rise in unemployment. On a cumulative basis the impact of the modest tax rise is an increase in the base unemployment rate by 0.8 per cent by 2020/21.

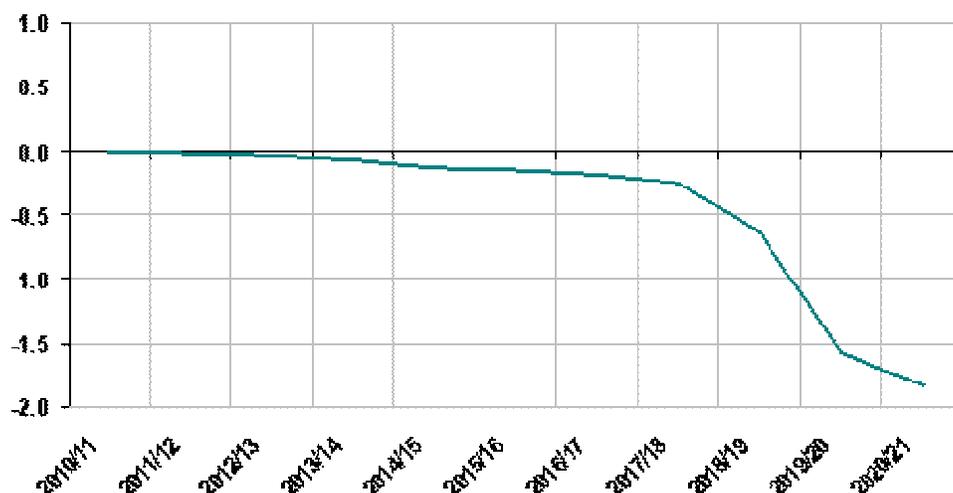
Generally tax increases result in a short term benefit to tax revenues and a decrease in the government deficit. However, recent estimates suggest that the disincentive effect of increasing the top rate income tax may lead to a reduction in government revenue due to the highly elastic labour supply of this group. Our own estimates, shown in Figure 7, are supported by those produced by the Institute for Fiscal Studies<sup>16</sup>. Specifically, our calculations show that if this tax increase is imposed, there would be a loss in UK jobs, loss in GDP in the City of London and a loss in tax revenues for the government.

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<sup>16</sup> The Institute for Fiscal Studies suggests that the original tax rise to 50 per cent may have a negative effect on government tax revenues in which case it could be removed with no cost to the Exchequer

[http://www.ifs.org.uk/pr/taxing\\_rich.pdf](http://www.ifs.org.uk/pr/taxing_rich.pdf)

**Figure 7. Impact on public sector fiscal position of 50 per cent rate on earnings above £150,000, relative to base case, £ billions**



Source: cebr analysis

Modeling the revenue effect of the tax increase shows that initially the tax rise would have little effect on the Exchequer as the higher rate of tax is countered by a reduction in the supply of labour. The net result after considering the resulting reduction in employment, GDP and consumer spending is indeed marginally negative. However, these losses would increase in magnitude with time. And the reductions in economic growth, employment, wages and consumer spending would then begin to have a big effect on public finances. By 2019/20, the tax hike will weaken the public sector fiscal position by over £1.5 billion. Table 7 presents the break-down of the fiscal results.

**Table 7. Breakdown of impact of 50 per cent rate on earnings above £150,000 on public sector revenue and expenditure, relative to base case, £ billions**

Time Period	Income tax	Indirect taxes (e.g. VAT)	Govt expenditure	Net Public sector fiscal impact
2010/11	0.02	-0.01	0.01	0.00
2011/12	0.00	-0.03	0.02	-0.01
2012/13	-0.47	-0.12	0.56	-0.03
2013/14	-0.68	-0.22	0.83	-0.07
2014/15	-0.80	-0.28	0.96	-0.12
2015/16	-0.90	-0.34	1.09	-0.15
2016/17	-1.03	-0.58	1.43	-0.18
2017/18	-0.93	-0.93	1.62	-0.25
2018/19	-1.02	-1.32	1.71	-0.64
2019/20	-1.50	-1.88	1.80	-1.58
2020/21	-1.60	-2.76	2.53	-1.83

Source: cebr analysis

Any potential marginal rise in income tax receipts in the first year due to the tax hike would be offset by the loss in VAT revenues from a fall in consumer

spending. These would be partially offset by positive impacts on government expenditure which come about from higher unemployment and weaker wage growth reducing payroll expenses for government employees and the cost of public sector procurement. In the medium term the effects of falling GDP, employment and wages will build up causing income tax receipts to fall from the second year onwards. The decrease in tax receipts grows quite significantly through time. The overall result of this tax is weaker economic performance combined with higher public sector net borrowing.

### Broad based rise in income and corporation tax

Our other simulation tests the affect of raising the basic rate of income tax to 25 per cent, the higher rate of income tax from 40 to 50 per cent and the rate of corporation tax to 41 per cent. These tax increases are assumed to be enacted in the 2010 Budget. The effect on the economy of such a tax rise relative to the base case is shown in Table 8.

**Table 8. Cumulative impact of broad based tax increase, percentage change from base case**

Time Period	Consumer expenditure	Fixed investment	Exports of goods and services	Imports of goods and services	GDP at market prices	Unemployment rate (ILO measure)	Inflation (CPI)
2010/11	-0.3	-0.2	0.0	-0.2	-0.2	0.3	0.0
2011/12	-0.4	-0.6	-0.1	-0.3	-0.3	0.6	-0.1
2012/13	-0.4	-0.7	-0.3	-0.4	-0.3	1.5	-0.6
2013/14	-0.3	-0.7	-0.9	-0.8	-0.3	2.3	-1.5
2014/15	-0.4	-9.2	-1.3	-2.7	-1.6	3.0	-1.9
2015/16	-1.0	-13.9	-1.5	-5.6	-2.2	4.0	-2.1
2016/17	-2.6	-13.8	-1.5	-8.3	-2.1	4.8	-2.3
2017/18	-3.9	-12.7	-1.0	-10.9	-1.3	5.2	-2.4
2018/19	-5.5	-15.2	-2.7	-13.2	-2.2	5.5	-2.4
2019/20	-7.9	-20.6	-4.8	-15.3	-4.2	5.6	-2.5
2020/21	-10.0	-24.4	-6.9	-15.7	-6.1	5.7	-2.5

Source: cebr analysis

We find that consumer expenditure by 2020/21 would be 10 per cent lower than would have occurred in the absence of the tax hike, due to falling disposable incomes, wages and employment. The corporation tax rise would have a major impact on investment, as the UK would be worse placed to attract footloose international companies and corporate headquarters. In addition, existing UK firms would retain a lower share of their profits, decreasing the incentives for them to invest in capacity.

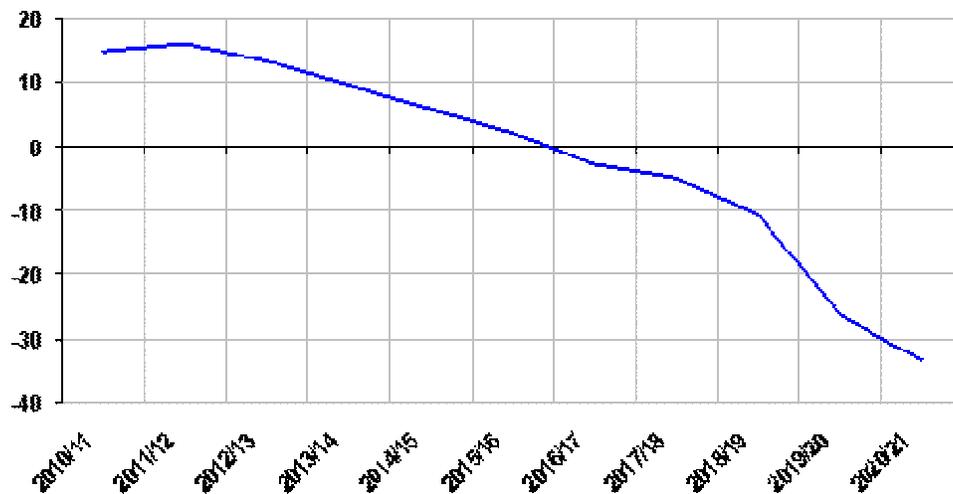
Lower corporate activity would depress exports, and lower consumer spending and investment would dampen imports, which we project to fall by 6.9 per cent and 15.7 per cent respectively on a cumulative basis. In the labour market, weaker economic growth would increase unemployment in the UK. We would expect this to build in two stages, initially the increase in taxation would force firms to hire fewer employees at a given payroll cost and contract output. After a 2-3 year lag there would be a further suppression to employment as capacity starts to come off-line from the fall in business investment. The impact on unemployment would therefore build over the ten

year simulation, reaching 5.7 per cent on a cumulative basis by 2020/21. Clearly with less labour market and economic activity there would be less inflationary pressure. The biggest decreases in inflation would occur between 2012 and 2015 coinciding with the sharpest rise in unemployment. On a cumulative basis over the ten year simulation there would be a 2.5 per cent decrease to inflation.

The overall impact of all these factors on GDP would be a cumulative decrease of 6.1 per cent by 2020/21.

The corollary to the negative impact on the economy of higher taxes is the benefit to the exchequer, at least in the short term. Figure 8 shows the public sector finance implications of this policy.

**Figure 8. Impact on public sector fiscal position of broad based tax increase, relative to base case, £ billions**



Source: cebr analysis

The major rise in income and corporation tax would lead to a decrease in public sector net borrowing of around £15 billion per year for the first three years. Beyond this, beneficial Exchequer impact would decrease as the dynamic impacts of the higher taxes on the supply side lower GDP and tax revenues. By 2020/21 fiscal year, the public finances are projected to be £33 billion worse off than in the base case - where there is no tax increase. Table 9 presents a breakdown of the tax and spending implications of this tax increase.

**Table 9. Breakdown of impact of broad based tax increase on public sector revenue and expenditure, relative to base case, £ billions**

Time Period	Income tax	Corporate tax receipts	Indirect taxes (e.g. VAT)	Govt expenditure	Net public sector fiscal impact
2010/11	8.53	6.72	-0.13	-0.11	15.01
2011/12	9.06	7.34	-0.42	0.26	16.23
2012/13	2.73	4.07	-1.83	8.36	13.33
2013/14	-2.12	2.60	-3.33	12.39	9.54
2014/15	-5.87	1.58	-4.23	14.41	5.89
2015/16	-9.62	0.56	-5.12	16.42	2.23
2016/17	-15.41	-0.30	-8.66	21.43	-2.95
2017/18	-14.00	-1.16	-14.02	24.31	-4.87
2018/19	-15.31	-1.12	-19.85	25.62	-10.66
2019/20	-22.43	-2.64	-28.14	26.93	-26.28
2020/21	-23.93	-5.97	-41.47	37.99	-33.37

Source: cebr analysis

The initial effect is a sharp rise in income and corporation tax receipts. Lower employment and wages drives the income tax position to become negative by 2012/13. Corporation tax follows the same pattern although its impact on public borrowing does not become negative until 2016/17, due to the lag with which lower levels of investment feed into lower profits. As in the case of the modest tax rise there is an immediate setback to the exchequer from VAT receipts as disposable incomes have fallen; this effect builds over time but by 2020/21 VAT receipts are £41.5 billion lower than would have been the case without tax cuts.

This simulation also reveals a major positive to the Exchequer from reduced government payroll costs and the cost of procuring goods and services. This item, labeled Govt Expenditure, leads to a £38 billion reduction in costs by 2020/21 due to lower wage growth and inflation that the tax hike brings about. This decrease in cost is subtracted from the decrease in tax revenues. Despite this offsetting effect, the simulation suggests a £33 billion increase in net borrowing for 2020/21 relative to the base case.

In our 2007 research, the dynamic supply side model demonstrated the benefits of the UK moving to a lower tax economy. The reverse of this is shown in the above simulations. Given that taxation levels are already high, attempts to cut the government deficit through tax increases on income tax or corporation tax would have negative medium term consequences on the economy and fiscal position due to the supply side impact.

Increasing indirect taxes like Value Added Tax may have less impact on the supply side and therefore could increase revenue over the short and medium term. Our simulations however do highlight the pitfalls of using tax increases to reduce the fiscal deficit.

## 6. CONCLUSIONS

This report offers three main conclusions. First, if the economic recovery is not as rapid as the Treasury expects, the United Kingdom faces a black hole in the public finances.

Specifically, the Treasury projects 3.25 per cent GDP growth per annum from 2011/12 to 2013/14; if economic growth over this period actually falls in the 1.0 to 1.5 per cent range (central scenario) then government debt will be £177 billion higher than the Treasury projects by 2013/14. If economic growth in this period falls in the -0.5 per cent to 0.5 per cent range (pessimistic scenario) then debt will exceed the Treasury's projections by £266 billion by 2013/14. This is because under the central scenario and pessimistic scenarios the level of growth in the economy and tax revenues is insufficient to bring public sector borrowing down.

The second key conclusion concerns the implication of weaker growth for the temporary fiscal operating rule. The Treasury's target is to have government debt declining as a share of GDP by 2017/18, when the financial crisis is expected to have fully worked its way through the economy. Under the Treasury's growth assumptions for GDP and tax revenues, the optimistic scenario, this rule will be met. However, under the central and pessimistic growth scenarios government debt as a share of GDP would reach 113 per cent and 144 per cent respectively by 2017/18, and still be on an upward trajectory.

We alter the central scenario to assess how much government spending would need to fall by in order to meet the fiscal rule. The finding is that government spending in 2017/18 would need to be £45 billion lower than in 2010/11 in nominal terms, or £123 billion lower in real terms. To get to this point would require cutting government spending each year from 2010/11 to 2017/18 by 1.0 per cent in nominal terms or 3.0 per cent in real terms. The current government plans to increase spending by between 2.5 per cent and 3.5 per cent a year in nominal terms over this period.

The third conclusion surrounds what this means for taxation. Adjusting our supply side model to measure the dynamic effects of tax increases rather than cuts yields interesting results. Targeting tax increases on highly mobile segments of the population, as done with the 50 pence tax rate for earnings over £150,000 is likely to be revenue neutral in the short term and revenue negative in the medium term. This results stems from the finding that the disincentive affects for this group to engage in taxable activity in the UK exceeds or is equal to the additional revenue raised from the activity that remains.

We also test a broader based tax increase with increases in Value Added Tax, the main rate of Income Tax and Corporation Tax. This is found to offer a short term benefit to the exchequer but would give way to a long term negative for public finances due to the dynamic effects on GDP and employment. Underpinning this result is the high mobility of sections of the UK labour force and corporate sector, along with the already high tax burden in the United Kingdom. As a result further increases in the tax burden will have negative

consequences for corporate location, labour migration and incentives to work, invest and innovate.

In summary, the 2009 Budget didn't implement any serious fiscal consolidation, instead relying on a rapid recovery to bring the government deficit down. If the recovery falls short of expectations, the axe will likely need to fall on public sector spending. Our results suggest that there will be major supply side implications to increasing income or corporation tax that will limit the extent to which they can be used to bring the deficit under control.



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