
TREND GROWTH - PROSPECTS AND IMPLICATIONS FOR POLICY

Executive summary

The Government's central economic objective is to achieve high and stable levels of growth and employment. Even small changes in the rate of growth can have large effects if sustained over a number of years. For this reason, the Government aims to raise the long-term non-inflationary growth performance of the economy (ie the economy's trend growth rate). It aims to do this by increasing employment opportunity and by raising productivity through promoting economic stability and through its wider economic policy agenda.

It follows that the Government is interested in calculating the economy's trend growth rate for two important reasons:

- C to monitor the effectiveness of its policies in raising the level of trend output and the trend growth rate; and
- C to assist in the conduct of fiscal policy by:
 - C ensuring that, once the short-term impact of the economic cycle is taken into account, the public finances are placed on a sound and sustainable long-term footing; and
 - C providing an estimate of the amount of spare capacity in the economy so that fiscal policy can play a role in supporting monetary policy through the economic cycle.

Trend growth is also important to other decision makers. Interest rate decisions made by the Monetary Policy Committee need to be based on the best possible view of the economy's sustainable productive capacity. This will ensure that monetary policy is neither too tight nor too loose, consistent with the symmetric specification of the Government's inflation target. In effect, it allows policy-makers to aim for the highest level of growth and employment consistent with keeping RPIX inflation at 2½ per cent. Business people also need to take into account growth in the economy when making their long-term investment decisions.

The Government inherited public finances which were in substantial structural deficit. In keeping with its prudent approach to fiscal policy, the Government took the decision to adopt, for the purposes of projecting the public finances, a deliberately cautious assumption for annual trend growth. This assumption of 2¼ per cent was audited and endorsed as prudent by the National Audit Office. There is no reason to change this judgement. Therefore, the projections of the public finances in the forthcoming Pre-Budget Report, Budget and 2000 Spending Review, will continue to be based, as in the past two years, on an assumed annual trend growth rate of 2¼ per cent.

At the time the Government entered office the economic outlook was also highly

uncertain due to significant emerging macroeconomic imbalances which needed to be tackled. Against this background, the Government judged that it was sensible to present its forecasts for economic growth in the form of opportunity ranges. This illustrated the potential for supply-side improvements to deliver stronger growth above the prudent 2¼ per cent per year assumption used for the fiscal projections.

Two and a half years on, the Government now believes that - on the basis of a careful and balanced assessment of past and future trends - it is possible to give a firmer indication of the outlook for trend growth. This assessment does not fall into the trap of assuming productivity improvements as a result of new policies before clear evidence emerges.

The Government believes that a neutral estimate of the UK's annual trend growth rate over the coming period is 2½ per cent. Following significant reforms to the macroeconomic framework and a number of important structural measures, the UK economy has shown clear signs of improved stability and a decline in the sustainable rate of unemployment. This evidence suggests strongly that the contribution of growth in the employment rate to overall trend growth will be greater than during the 1990s.

There is also good reason to believe that productivity growth - promoted by the Government's policies - may also turn out somewhat higher than in the last economic cycle. But it is too early to conclude that the economy's underlying productivity performance has improved. Therefore the underlying rate of productivity growth over the period ahead is assumed to be identical to that experienced during the 1990s.

To summarise, over the period ahead:

- employment growth is expected to contribute ½ per cent per annum to trend growth, due both to growth in the working age population and an increase in the employment rate; and
- productivity growth is expected to contribute 2 per cent per annum to trend growth. This reflects an underlying trend labour productivity rate of 2.1 per cent, moderated slightly by the impact of changes in the employment rate.

This assessment therefore assumes some further increase in the employment rate, but does not rely on any improvement in underlying productivity performance. In this sense the Government's neutral estimate of trend growth is subject to upside risk. The Government is determined to take a prudent approach by erring on the side of caution when uncertainties exist. Thus the potential exists for even stronger non-inflationary growth. Given the evidence, the economic forecast in the forthcoming Pre-Budget Report and Budget will assume a annual trend growth rate of 2½ per cent. In keeping with the Government's past approach, the projections will also illustrate the implications of sustaining a slightly higher rate of growth. Such a scenario is well within grasp if the most is made of opportunities available.

The UK's recent history - particularly in the late 1980s and early 1990s - points

to two key lessons for setting fiscal policy:

- C projections of the public finances are inherently uncertain, and would still be so even if the economic cycle could be estimated accurately. So policymakers need to take into the account the possibility of errors when setting fiscal policy; and
- C for a number of reasons, it is usually more difficult to tighten fiscal policy in the face of worsening trends in the public finances than it is to ease fiscal policy if events turn out somewhat better than expected. This implies that policymakers should base their fiscal projections on prudent assumptions, thus allowing a margin to deal with this asymmetry.

Heeding these lessons, the Government will continue to plan the public finances on a prudent basis. Therefore, the projections of the public finances in the forthcoming Pre-Budget Report, Budget and 2000 Spending Review, will continue to be based, as in the past two years, on an assumed annual trend growth rate of 2¼ per cent.

The Government will continue to monitor closely the UK's trend growth performance. Its policies to increase employment opportunities and raise productivity should continue to improve the underlying rate of growth over time. However, until such time as an improvement in trend growth can be confirmed with a high degree of certainty, the public finance projections will continue to be based on a trend growth assumption of 2¼ per cent per year. This approach will ensure that fiscal policy settings remain sustainable even if growth turns out to be lower than expected, thus providing a buffer against unexpected adverse developments, and avoiding the need for costly reversals in policy.

1. Introduction

The Government's central economic objective is to achieve high and stable levels of growth and employment. Even small changes in the rate of growth can have large effects if sustained over a number of years. For this reason, the Government aims to raise the long-term non-inflationary growth performance of the economy (ie the economy's trend growth rate). It aims to do this by increasing employment opportunity and by raising productivity through promoting economic stability and through its wider economic policy agenda.

It follows that the Government is interested in calculating and monitoring trend growth for two important reasons:

- C to monitor the effectiveness of its policies in raising the level of trend output and the trend growth rate; and
- C to assist in the conduct of fiscal policy by:
 - C ensuring that the public finances are placed on a sound and sustainable long-term footing by taking account of the temporary impact of the economic cycle; and
 - C providing an estimate of the amount of spare capacity in the economy so that fiscal policy can play a role in supporting monetary policy through the economic cycle.

Trend growth is also important to other decision makers. Interest rate decisions made by the Monetary Policy Committee need to be based on the best possible view of the economy's sustainable productive capacity. This will ensure that monetary policy is neither too tight nor too loose, consistent with the symmetric specification of the Government's inflation target. In effect, it allows policy-makers to aim for the highest level of growth and employment consistent with keeping RPIX inflation at 2½ per cent. Business people also need to take into account growth in the economy when making their long-term investment decisions.

Section 2 begins by explaining briefly the factors that determine trend growth. It looks at the UK's recent historical experience and undertakes an analysis of prospects for trend growth over the period ahead. The analysis suggests that based on a careful and balanced assessment of the evidence, the UK's annual trend growth rate over the period ahead has increased to 2½ per cent as compared with an average of 2¼ per cent over the 1990s. This increase will be reflected in the economic forecasts contained in the forthcoming 1999 Pre-Budget Report (PBR) and in the Budget. As in the past, the projections will also illustrate the potential for supply-side improvements to deliver stronger growth.

Estimates of trend growth are, however, subject to uncertainty. Section 3 explains the consequences of failing to take uncertainty into account when setting macroeconomic policy. The experience of the late 1980s and early 1990s is pertinent. Having taken account of the lessons from mistakes made by previous governments, Section 4 explains why the projections of the public finances in the

forthcoming 1999 PBR, Budget and 2000 Spending Review will continue to be based a prudent annual trend growth assumption of 2¼ per cent. A brief conclusion follows.

2. Trend growth: determinants, history and prospects

Many factors influence the rate of economic growth. Some factors, such as changes in consumer and business confidence, aggregate demand conditions in the UK's trading partners, and the stance of monetary and fiscal policy, tend to have a mainly temporary effect on growth. Other factors, such as the rates of population and productivity growth, have more enduring effects, and help to determine the economy's average growth rate over long periods of time. This section focuses on the economy's trend rate of growth.

2.1 Trend growth and its determinants

The rate of growth that the economy can sustain over the medium term without generating upward or downward pressures on inflation is commonly referred to as the economy's trend (or potential) growth rate. Over the short term, the actual level of output tends to cycle around the trend level of output implied by the economy's trend growth path.

The factors that influence trend economic growth can be grouped under two headings: those that determine growth in trend employment and the those that determine trend growth in output per employee ie, trend labour productivity.

Although the Government's policies do not seek to influence directly the population of working age, its policies do affect the proportion of this age group that seek employment (ie enter the active labour market) and the proportion of active labour market participants who are successful in obtaining employment. This explains why the Government has introduced several significant reforms to make work pay and to move people from welfare to work. These reforms will help to raise employment and thus the trend *level* of output. However, their effect will be felt over a number of years, thus also raising the trend *growth* of output over the period ahead.

Ultimately, however, higher growth in *per capita* incomes can only be sustained by raising the trend rate of productivity growth. This is why the Government has focused on tackling the gap in productivity between Britain and many other successful industrial countries. Raising Britain's productivity performance will be a key theme of the 1999 PBR.

Labour productivity growth depends on inputs of physical and human capital and how efficiently they are used. The factors which feed into these inputs include the quality of education and training, the degree of innovation and competition, the level of resources devoted to research and development, and how readily best international practice can be adopted and diffused through the economy. The stability of the macroeconomic environment also affects peoples' willingness to take risks and undertake entrepreneurial activity. Box 1 in Section 2.3 highlights the policies already announced by the Government to raise productivity.

There are likely to be interrelationships between the different factors influencing trend growth. Strengthening one factor may also act to strengthen others. For example, increasing human capital may allow ideas to be diffused more rapidly, so that physical capital is used more productively. Well-designed economic polices can also boost the prospects for trend growth, while poorly-designed

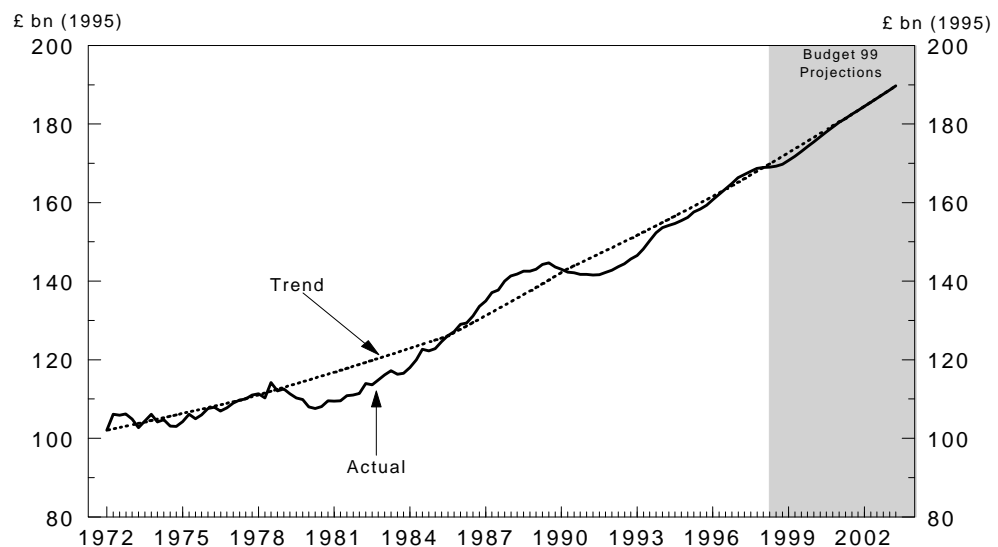
policies can harm them.

2.2 Britain's historical trend growth performance

Neither the level nor the growth of trend output is directly observable. A variety of methods can be used to estimate trend output over the past, including statistical techniques, economic models of productive potential, or econometric models of the economy. The approach used currently in the Treasury is to estimate the trend rate of growth between comparable points in the cycle. While the Treasury believes its approach is the most appropriate for the analysis of the public finances, it regularly monitors and keeps abreast of the other techniques. A summary of the different approaches employed is summarised in Annex 1.

Cyclical peaks are easy to identify, and hence are commonly used for estimating trend growth. However, peak-to-peak comparisons can yield misleading results if cycles are of different intensity. The Treasury's approach, therefore, is to use survey data to identify points when the economy is believed to have been on trend. In contrast to statistical techniques, this approach brings to bear a wide variety of economic information. It also allows for changes in the trend growth rate over time, though changes are restricted to occur at on-trend points. The trend level of output corresponds to the position of the economy at each point in time when it is on its sustainable trend growth path. Chart 1 below shows the Treasury's estimate of trend output together with the actual level of output.

Chart 1: Non-oil GDP - actual and trend (quarterly)



The Treasury's trend output series is derived by obtaining estimates of trend output for the non-oil component of GDP using the approach discussed in Annex 1. The oil component of GDP is added to the estimate of trend non-oil GDP to give an estimate of total trend output. Table 1 shows historical growth in trend output (both including and excluding oil) between points when the economy is thought to have been on its trend growth path. The first two periods considered represent full economic cycles. The last two periods represent each half of the cycle which ended in the first half of 1997.

Table 1: Historical growth in trend output

Date of on-trend point	Non-oil GDP per cent per annum	Total GDP per cent per annum
1972Q4 to 1978Q1 ¹	1½	1½
1978Q1 to 1986Q2 ¹	1¾	2
1986Q2 to 1990Q4/1991Q1 ²	2¾	2½
1990Q4/1991Q1 to 1997Q1/1997Q2 ²	2¼	2¼

¹ Full cycle
² Half cycle

Over the past 30 years or so growth in trend output (including oil) is estimated to have ranged between 1½ per cent (during the period 1972Q4 to 1978Q1) to 2½ per cent (during the period from 1986Q2 to 1990Q4/1991Q1).

Due to short-term cyclical variations in economic activity, the economy may at any given point in time be operating either above or below its long-term trend. But Chart 1 shows that in sharp contrast to the experience of the past 20 years, the Government's new approach to monetary and fiscal policy is helping to deliver a period of economic stability. The Budget 99 projections showed the economy remaining close to the estimated trend growth path over coming years.

2.3 Future prospects for trend growth

Trend economic growth varies over time and predicting its future path is not straight-forward. The presence of significant macroeconomic imbalances when the Government took office made the economic outlook even more uncertain, complicating the task further still.

Two and a half years on, the Government now believes that - on the basis of a careful assessment of past and future trends - it is possible to give a firmer indication of the outlook for trend growth. This assessment does not fall into the trap of assuming productivity improvements as a result of new policies before clear evidence emerges. A full description of the analysis is set out below.

2.3.1 The outlook for employment

The outlook for employment over the next few years is dependent upon many factors. Some of these factors reflect demographic trends, such as population growth and changes to the population structure. Other factors are influenced deliberately by Government policy.

The projections for future employment growth are based on projections of:

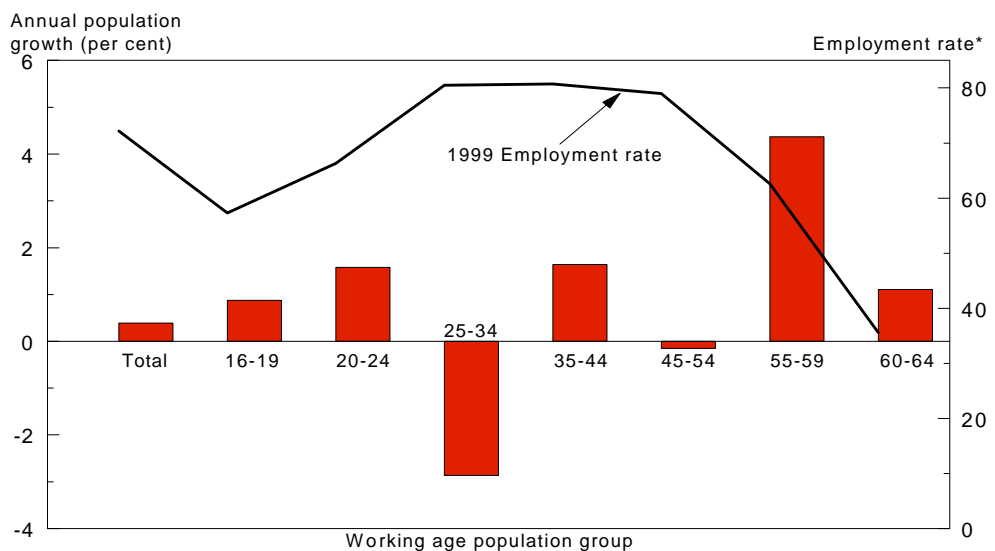
- C the increase in the population of working age; and
- C the future proportion of the working age population in employment, often known as the employment rate.

Population of working age

The Government Actuary's Department project that the working age population (defined as men aged 16-64 and women aged 16-59) will grow by an average 0.4 per cent per annum until 2005. This rate is somewhat faster than the average during the 1990s but slightly lower than in the 1980s. These variations reflect differences in past birth rates: the baby boom of the early 1960s contributed to the rapid increase in working age population in the 1980s, and the low number of births in the late 1970s has resulted in slower growth over the past ten years.

As highlighted in Chart 2, average growth in the population of working age masks significant changes in the population structure. As discussed below, the composition of the working age population can also affect employment levels as employment rates among the age groups are not the same.

Chart 2: Population growth until 2005 and the current employment rate



*Employment as a proportion of working age population group
Source: Labour market trends, June 1998

Employment rate

Chart 2 shows employment rates are the highest for persons aged 25-54. Most other age categories typically have much lower employment rates. In the case of younger age categories, the lower employment rate reflect the greater numbers undertaking further and higher education and training before seeking employment. Lower employment rates for those aged 55 or older reflect early retirement. In part this reflects a choice by some people to retire early on an occupational pension. But others may have been forced into earlier retirement due to the damaging effects of past instability, where the downturns of the 1980s and early 1990s resulted in their becoming unemployed, losing vital skills, and being unable to rejoin the work force later when economic conditions improved.

The chart also shows that the employment rates of growing segments of the working age population, such as the 55-59 age group, are lower than those which are projected to fall, such as the 25-34 age group. Such developments, in isolation, would suggest that employment may grow less rapidly than the working age population in the period ahead. However, demographic effects on the employment rate are small relative to the effects of the economic cycle. Looking forward, trends in labour market activity, coupled with steady growth would support a higher employment rate over the medium term.

Policies to increase stability are likely to raise the employment rate by avoiding the damaging effects of instability on the labour market. These are backed by the Government's employment policies which include tax and benefit reforms to make work pay and tackle the unemployment and poverty traps. Initiatives targeted at reducing unemployment, such as the New Deal, will ensure the unemployed and economically inactive are more likely to find work by reconnecting them to the labour market, and helping them to compete effectively for the jobs that a dynamic labour market creates.

While the macroeconomic framework and the employment programmes implemented by the Government are relatively new, early indications suggest that they are delivering results. There are now more people in work than ever before, with roughly 700,000 jobs created in the last 2 years.¹ Already, over 180,000 people have found work through the New Deal.

The economy is judged to have moved above its trend level during 1997 suggesting a NAIRU² of around 7 per cent on the International Labour Organisation definition. Despite a further 1 percentage point fall in the unemployment rate since then, earnings growth has eased since spring 1998. For example, it was roughly double its current rate and increasing in 1989 when the employment rate was last around 75 per cent. The recent trend in earnings and settlements provides evidence that the NAIRU may have declined broadly in

1

LFS measure of employment.

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The NAIRU or non-accelerating inflation rate of unemployment is the rate of unemployment at which there is no tendency for inflation to increase or decrease. The NAIRU can be thought of the labour market counterpart of trend output.

line with actual unemployment over the past two years.

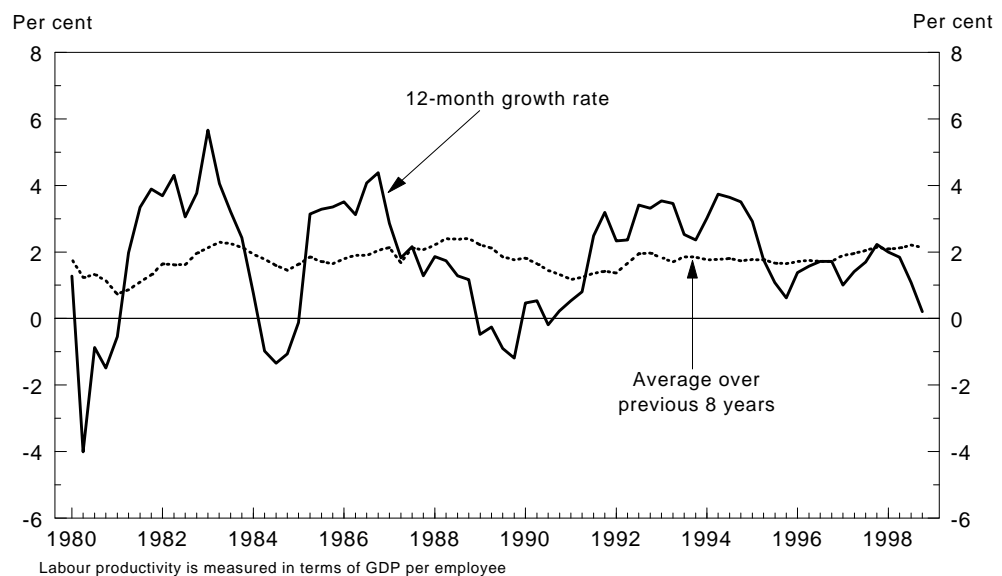
Conclusion

Making modest allowance for the positive impact from labour market policies, the employment rate is projected to rise by 0.1 per cent per annum, on average, over the next few years. When combined with the 0.4 per cent per annum increase in the working age population, employment is projected to increase by an average 0.5 per cent per annum until 2005. Recent trends, and the likely effect of the Government's employment policies suggest that this projection may possibly be too pessimistic. However, the Government is determined to take a prudent approach by erring on the side of caution where uncertainties exist.

2.3.2 Outlook for labour productivity

Chart 3 shows labour productivity growth rates during the period 1980 to 1998.

Chart 3: Annual and smoothed labour productivity rates



Over the past 20 years, average labour productivity growth (defined in terms of GDP per employee) has been slightly below 2 per cent per annum. There have been periods where labour productivity growth rates have been higher, and periods when it has been lower. Much of the variation can be explained by cyclical effects.

A number of factors are likely to have a bearing on the outlook for average labour productivity. Factors that could lead to faster labour productivity growth include:

- C greater macroeconomic stability making it easier for people, businesses and government to plan ahead with more clarity. Business investment has increased from 10 per cent of GDP to 14 per cent of GDP over the past 5 years;
- C the trend to a more educated workforce;
- C greater diffusion of technology stemming from recent investment; and
- C the possibility that the Government's microeconomic policies (see Box 1) may deliver results sooner than expected.

On the other hand, factors that could lead to slower productivity growth include:

- C the projected increase in the employment rate. Labour productivity growth tends to be depressed by increases in the employment rate as the newly employed typically have lower productivity than those already employed. Total output rises because the newly employed would otherwise have been unproductive; however, average labour productivity may be depressed by more than assumed; and
- C the possibility of diminished scope for productivity "catch-up" as the productivity gap with leading countries narrows. While this may act to depress future labour productivity growth, it is unclear to what extent. While the UK's productivity gap with other developed economies is diminishing, it still remains large. OECD estimates for labour productivity in 1998 indicate that the UK was 35 per cent behind the US and 13 per cent behind Germany and 24 per cent behind France in terms of GDP per employee. The recent improvement in productivity growth in the United States may also indicate that fears of a catch-up-induced slowdown for UK productivity may be overly pessimistic.

Conclusion

While a good case can be made for higher labour productivity growth in the years to come, lessons from recent economic history suggest that a more cautious assumption would be prudent. It is too early to assume any break from past trends. Therefore the underlying rate of productivity growth over the period ahead is assumed to be identical to that experienced during the 1990s. In this sense the Government's neutral estimate of trend growth is subject to upside risk. The Government is determined to take a prudent approach by erring on the side of caution when uncertainties exist.

Given current uncertainties, the Treasury has adopted a prudent approach by assuming a neutral projection of 2 per cent average annual labour productivity growth until 2005. This is the same underlying rate of labour productivity as in the 1990s.

Box 1: Microeconomic policies to improve labour productivity

The Government is introducing a number of initiatives to raise productivity. In addition to promoting macroeconomic stability, the Government is encouraging:

- C *higher levels of productive investment* by:
 - C reducing corporate tax rates to the lowest level they have ever been and lower than in other major industrialised countries;
 - C introducing lower taxes for small enterprises;
 - C extending capital allowances for small and medium sized firms until July 2001; and
 - C raising the quality and quantity of public investment.
- C *better skills and education* by:
 - C investing an extra £19 billion for improving education and raising skills over the next 3 years;
 - C setting up Individual Learning Accounts by 2000 to improve skills training in the existing workforce;
 - C promoting lifelong learning with the establishment of the University for Industry;
 - C establishing the Sure Start scheme and expanding nursery education; and
 - C providing training opportunities for those with low skills through the New Deal.
- C *greater competition, innovation and enterprise* by:
 - C introducing a tax credit in 2000 to encourage small and medium sized business investment in R&D;
 - C making additional investment in science to promote high quality research and innovation;
 - C legislating to improve the intensity of competition in the UK through the new Competition Act;
 - C proving extra funding for the Office of Fair Trading to enable it to promote fairer competition;
 - C introducing a new venture capital challenge to finance early stage high technology businesses;
 - C setting up a new employee share ownership scheme so employees take a stake in the success of their companies;
 - C establishing a new small business service to reduce the regulatory burden on small businesses; and
 - C setting challenging performance targets to promote increased public sector efficiency.

2.3.3 Overall conclusion

To summarise, based on a careful and balanced assessment of the evidence, over the period ahead:

- C employment growth is projected to contribute $\frac{1}{2}$ per cent per annum to trend growth, due to both growth in the working age population and an increase in the employment rate; and
- C productivity growth is projected to contribute 2 per cent per annum to trend growth. This reflects an underlying trend labour productivity rate of 2.1 per cent, moderated slightly by the impact of changes in the employment rate.

The Government believes, therefore, that a neutral estimate of the UK's annual trend growth rate over the coming period is $2\frac{1}{2}$ per cent. Table 2 decomposes trend growth over the 1990s and sets out the prospects for the coming years.

Table 2: Contributions to annual trend growth

	per cent				Estimated trend growth
	Labour productivity ¹		Change in employment rate ²	Population of working age	
	Underlying	Actual			
1990s ³	2.1	2.3	-0.3	0.3	$2\frac{1}{4}$
Projection ⁴	2.1	2	0.1	0.4	$2\frac{1}{2}$

¹ Output per workforce job

² Ratio of workforce jobs to household population

³ Between 1990Q4-1998Q4

⁴ Assumptions underlying the mid-point of the GDP growth ranges from 2000Q1

A number of uncertainties exist which mean that growth could turn out to be slightly different. This is why the Treasury has constructed forecast ranges around the neutral projection. If the Government's employment and productivity policies are successful in raising the trend rate of growth to a greater extent, or more rapidly, than the neutral projection assumes, annual trend growth could be $2\frac{3}{4}$ per cent. Conversely, annual trend growth could remain at $2\frac{1}{4}$ per cent over the next few years.

The extent of uncertainty is compounded by developments in the US economy. Some commentators are now talking about a "new economy" paradigm of higher economic growth coupled with low inflation, perhaps reflecting the impact of improvements in technology and in the general macroeconomic environment. If such a new paradigm is emerging that would add to the scope for higher productivity growth in the UK too. The UK is well placed to exploit these new opportunities (see Box 2). This would be in addition to the possibilities from closing the productivity gap with the US and other developed countries. But, again, it would be imprudent to conclude that such an increase in productivity is already

being achieved. Instead, the Government will continue - month by month - to monitor the economy's performance closely.

Box 2: "New economy" - evidence of technological change in the UK

- C In real terms, UK investment in IT equipment increased at an average annual rate of 21.4% between 1992 and 1997, whilst non-residential investment grew by an average of just 3.1%. In 1997 investment in IT equipment accounted for 10.0% of non-residential investment compared to just 3.8% in 1991.
- C UK inward and outward foreign direct investment as a share of GDP is on a strongly-rising trend and climbed to 59.6% in 1998 compared to 26.1% in 1980 and 42.2% in 1990.
- C 93% of UK companies have at least one computer and 62% have internet access. Comparable figures for the US are 91% and 68% respectively.
- C 75% of secondary schools in the UK have Internet access, a figure which is only exceeded in the G7 by Canada.
- C In UK secondary schools there is an average of one computer for every eight pupils. In the G7 this is only bettered by Canada with one computer for every seven pupils.

3. Trend growth and fiscal policy

Measures of trend output and trend growth play an important role in the conduct of macroeconomic policy.

The Bank of England's Monetary Policy Committee needs an assessment of the economy's productive capacity when deciding what level of interest rates is necessary to meet the Government's inflation target.

A similar assessment is required in the fiscal policy context. Accurate estimates of the trend output and trend growth are necessary to:

- C ensure that the public finances are placed on a sound and sustainable long-term footing by taking account of the temporary impact of the economic cycle; and
- C provide an estimate of the amount of spare capacity in the economy so that fiscal policy can play a role in supporting monetary policy through the economic cycle.

In the past there was a failure to take adequate account of the impact of the economic cycle when setting fiscal policy. This section explains the consequences of such failure and why the Government is determined to avoid a repeat of past mistakes.

3.1 Macroeconomic policy and the economic cycle

Measures of trend output and trend growth play a key role in the setting of macroeconomic policy, both in the medium term and in the short term.

From a medium-term perspective, these measures can be used to make an assessment of the underlying or structural position of the public finances ie, the position of the public finances if the economy was on its trend growth path. This abstracts from cyclical influences. Short-term cyclical factors can mask the sustainability of the public finances. Due to the workings of the automatic stabilisers³ the public finances will appear superficially more healthy when the economy is operating above trend and weaker when the economy is below trend. This is why, in July 1997, the Treasury began publishing cyclically-adjusted estimates of the key fiscal indicators.

Measures of trend output and trend growth also play a key role in shorter-term macroeconomic management. In assessing the outlook for inflation, policymakers often compare the current and forecast level of output with an estimate of the trend path of output (either explicitly or implicitly). If actual output is greater than trend output, a positive output gap is said to exist. In these circumstances, competition for increasingly scarce resources is likely to place upward pressure

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Defined as features of the spending and taxation system which automatically reduce public borrowing when the economy is in the above trend phase of the cycle and increase it when the economy is operating below trend.

on inflation. If actual output is less than trend output, there is a negative output gap. The greater availability of unutilised resources helps to put downward pressure on inflation. When the actual level of output is close to trend, domestically generated pressures on inflation should be broadly stable. It follows that the economy can grow at rates in excess of the trend growth rate without leading to a rise in inflation, but only for so long as the *level* of output remains below the economy's trend growth path.

The Bank of England, and the Monetary Policy Committee in particular, have been given the responsibility for meeting the Government's inflation target. It is important that interest rate decisions made by the Monetary Policy Committee are based on the best view of the economy's sustainable productive capacity. As discussed in *The New Monetary Policy Framework*, published by the Treasury on 19 October 1999, the Government's inflation target is symmetric, so that deviations below target are treated just as seriously as deviations above target. This is so that monetary policy is neither unnecessarily tight - leading to unnecessary output and job loss - nor unnecessarily loose, which would lead to higher inflation and again threaten output and jobs.

Fiscal policy also has a role to play, however, in supporting monetary policy through the economic cycle. Indeed the key objectives of the Government's fiscal policy are:

- C over the medium term ensuring sound public finances and that spending and taxation impact fairly both within and across generations. In practice this requires that:
 - C the Government meets its key tax and spending priorities while avoiding an unsustainable and damaging rise in the burden of public debt; and
 - C as far as possible, those generations who benefit from public spending also meet the costs of the services they consume.
- C over the short term supporting monetary policy, where possible, by:
 - C allowing the automatic stabilisers to play their role in smoothing the path of the economy in the face of variations in demand; and
 - C where prudent and sensible, providing further support to monetary policy through changes in the fiscal stance.

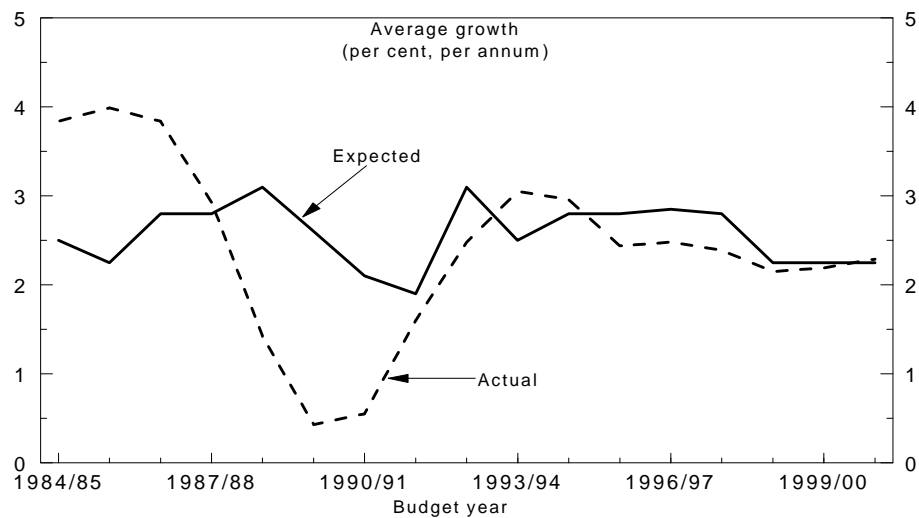
Accordingly, an accurate measure of the output gap (ie the cyclical position of the economy relative to trend) is indispensable in setting the desired fiscal policy stance.

3.2 Lessons from the last economic cycle

The consequences of failing adequately to take account of the impact of the economic cycle when setting policy can be seen readily by reviewing the UK's experience in the late 1980s and early 1990s.⁴

Chart 4 shows that past assumptions about medium-term growth - on which monetary and fiscal policy decisions were based - were significantly different from the outturns for growth. The solid line shows the published average growth rate assumed for the period covered by the Budget projections (typically 5 years). Against this is shown the actual average growth rate that occurred over the same period. As can be seen, there was a pronounced tendency to overestimate the level of growth that was sustainable.

Chart 4: Trend (5 year) growth assumptions underpinning public finance projections and outturns



In the early 1980s, growth turned out to be higher than assumed as the economy rebounded from recession and inflation fell. Growth continued to exceed expectations and the assumed trend or average growth rate published in the FSBR was raised progressively, from 2¼ per cent in 1984 to 3 per cent by the March 1988 Budget. Fiscal and monetary policies were thus loosened, based on the conclusion that the higher rate of growth could be sustained.

With the benefit of hindsight, however, it is clear that this policy action was inappropriate - the economy had in fact moved significantly above trend and was on an unsustainable path. The loosening of macroeconomic policy exacerbated this imbalance. The output gap continued to widen, and peaked at nearly

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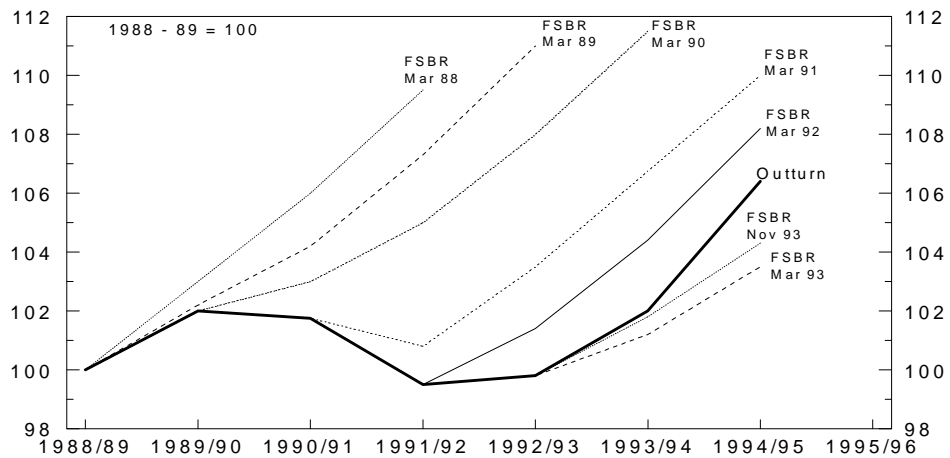
For more detail, see "Fiscal Policy: Lessons from the Last Economic Cycle", HM Treasury November 1997.

5 per cent above trend in 1988-89.

A sharp tightening in monetary policy was required to combat the associated strong rise in inflationary pressures. However, when the necessary tightening in monetary policy did occur, it was too severe and lasted too long. Interest rates were progressively raised from 7½ per cent in June 1988 to 15 per cent by October 1989, where they remained for a year. The output gap turned negative at the beginning of 1991. But, at that time, interest rates were still at 14 per cent.⁵

As Chart 5 shows, the consequences of this policy error were not realised until it was too late, and the economy slid into recession.

Chart 5: Successive projections of real GDP



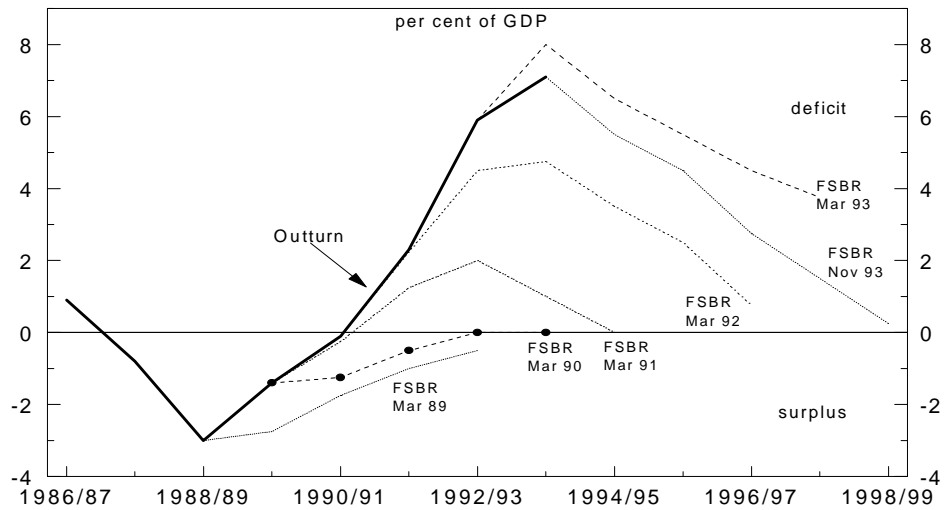
The errors in forecasting the economy were directly translated into errors in forecasting the health of the public finances. Chart 6 shows the Budget projections and actual outturns for the preferred fiscal indicator of the time - the PSBR (now known as the public sector net cash requirement). As can be seen, the then Government underestimated the deterioration that would take place as the economy returned to trend. This happened because the structural position of the public finances was much poorer than believed.

The deterioration in the fiscal position over this period contributed to higher net Government debt, which rose from 31 per cent of GDP in 1988-89 to 44 per cent of GDP in 1996-97.

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For more detail see "Delivering Economic Stability. Lessons from Macroeconomic Policy Experience", HM Treasury, November 1998.

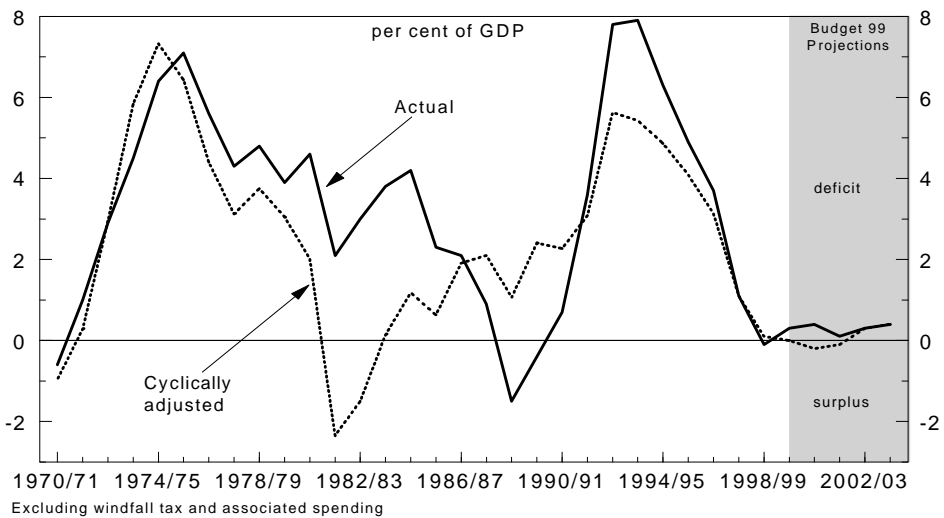
Chart 6: Published public sector net cash requirement projections and outturn



Had a more cautious approach to trend growth been adopted in the above trend phase of the cycle, fiscal and monetary policies might not have been relaxed. Consequently, the boom would have been less intense, permitting a less painful adjustment as the economy returned to trend.

As noted earlier, the Government is determined not to repeat these mistakes of the past. Of course, it is not possible to remove all sources of uncertainty. But by taking a prudent approach, including using cautious assumptions and publishing cyclically-adjusted estimates of the key fiscal indicators, the risk of mistakes can be minimised. Chart 7 shows public sector net borrowing, both in actual and cyclically-adjusted terms.

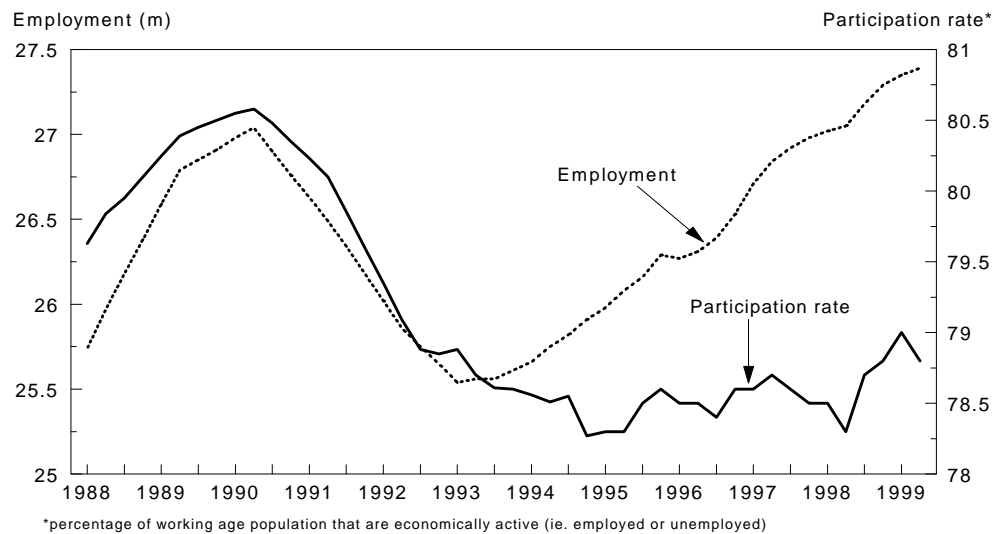
Chart 7: Public sector net borrowing



3.3 Long-term consequences of these mistakes

The harmful effects of past policy mistakes can last for a long time. One consequence of the instability of the late 1980s and early 1990s was a decline in employment and loss of skills and experience as a large segment of the working age population left the labour force. As Chart 8 shows, total employment and the labour force participation rate dropped sharply in the early 1990s recession and were still lower in 1997 than in the 1990 peak.

Chart 8: Employment and labour market participation rate



This is only one of the results of past instability. It also harmed the prospects for higher trend productivity by deterring productive investment. This is supported by recent UK evidence, including:

- C Price⁶, who in a study of UK manufacturing investment found that instability had a large adverse effect. If the variability of GDP could have been eliminated, UK manufacturing investment would be 60 per cent higher in the longer term; and
- C Driver and Moreton⁷, who in a study of aggregate UK investment, concluded that a doubling in the variability of GDP would lower investment by up to 8 per cent within a few years, while a doubling of the variability of inflation would lower investment by 5 per cent over a similar period.

These two studies reflect the broad consensus of the available evidence. Thus economic instability may help to explain in part why UK investment in the past has lagged other countries. This is one of the key reasons why the Government

6

Aggregate uncertainty, investment and asymmetric adjustment in the UK manufacturing sector, "Applied Economics", 28(11), November 1996.

7

"Investment, expectations and uncertainty", Mass., Blackwell, 1992

moved quickly to reform the framework for monetary and fiscal policy so as to create credible rules and institutions capable of delivering greater economic stability (see Box 3).

Box 3: Promoting economic stability - the macroeconomic policy framework:

The Government has undertaken a comprehensive reform of the macroeconomic policy framework to deliver the economic stability needed to attain high and sustainable levels of growth and employment.

The framework for monetary policy is now characterised, amongst other features, by:

- C an unambiguous symmetric target for inflation - outcomes below target are treated just as seriously as outcomes above target. The success in meeting the target can be easily judged, thus boosting the credibility of the new arrangements;
- C a clear separation of roles and responsibilities - the Government's role is to create and oversee the framework while the Bank of England's role is to set interest rates to meet the Government's inflation target; and
- C interest rate decisions made by a committee of independent experts - the MPC, skilled in judging often complex economic and financial information and unencumbered by short-term political pressures, are able to make forward-looking decisions in the best long-term interests of the UK economy.

The framework for fiscal policy has undergone similar reforms. The fiscal framework is based around:

- C the Code for Fiscal Stability, which sets out the broad framework based on the five key principles of transparency, stability, responsibility, fairness and efficiency. The Code sets out how these principles are to be applied in practice. For example, it requires the Government to: produce certain reports and information; submit the key public finance assumptions to the National Audit Office; and produce estimates of the cyclically-adjusted fiscal position.
- C two strict rules to deliver sound public finances:
 - C *the golden rule* - on average over the economic cycle the Government will borrow only to invest and not to fund current spending; and
 - C *the sustainable investment rule* - net public debt as a proportion of GDP will be held over the economic cycle at a stable and prudent level.

Importantly, both the monetary and fiscal frameworks are characterised by a high levels of openness, transparency and accountability. This approach helps to ensure that the monetary and fiscal policy work together in a coordinated way to promote economic stability.

4. Macroeconomic policy in an uncertain environment

As set out in Section 2, as a result of the policy reforms initiated since it came into office, on the basis of a careful and balanced assessment the Government believes that an annual trend rate of economic growth of 2½ per cent is achievable over the period ahead. The economic projections in the forthcoming 1999 PBR and in the Budget will be based on this. However, experience has shown unambiguously the value of prudence in projecting the public finances. So the Government will continue to base the projections for the public finances on a trend growth rate of 2¼ per cent, in the forthcoming 1999 PBR, Budget, and 2000 Spending Review.

Previous sections have described the difficulties in estimating how trend growth will develop over time. Correspondingly, there is inevitably some uncertainty in evaluating the economy's cyclical position. As far as projecting the public finances are concerned, such errors could be compounded by additional uncertainties that are largely unrelated to the cyclical position and trend growth rate. A good example would be variations in the main effective tax rates such as VAT or corporation tax, which produce changes in revenues for the same level of economic activity.

The evidence suggests that past errors in forecasting the public finances are accounted for by both by errors in estimating the cyclical position of the economy and by errors in projecting the spending and taxation that are unrelated to the state of the economy. The average absolute error margin for one-year ahead projections of public sector net borrowing has been over 1 per cent of GDP. As Table 3 shows, the error is still larger for projections further ahead. While greater economic stability as a result of the Government's new framework is expected to lead to smaller errors in future, it cannot remove all possible sources of error.

Table 3: Average errors in Budget forecasts of public sector net borrowing (1985-86 - 1997-98)

	per cent of GDP
One year ahead	1.2 (1.0)
Two years ahead	2.0 (1.4)
Three years ahead	3.0 (2.0)
Four years ahead	4.1 (2.4)

Note: Figures in brackets reflect the errors that remain after subtracting an estimate of the proportion of error due to projecting GDP incorrectly.

So far as the operation of fiscal policy is concerned, the inherent uncertainty of projecting the public finances leads to an underlying asymmetry. International experience shows that governments and economies find it painful and difficult when fiscal policy has to be tightened in the face of adverse developments.

For example, once spending programmes have been put in place, reversing such policies may be costly due to, for example, sunk costs. Also, while changes in monetary policy settings can be achieved quickly, changes in fiscal policy settings can take longer to achieve. This reflects both institutional factors, and the complex inter-relationships between the various fiscal settings which must be taken account of in designing any policy change (eg between taxes and social security).

Given these factors, governments that run fiscal policies without a margin of caution to allow for uncertainty are likely to find an additional risk premium built into the long-term interest rates demanded by purchasers of their debt - a cost which is transmitted throughout the economy. The risk that investors perceive in such circumstances is the direct consequence of failure to build in proper prudence to deal with the problems discussed above.

In summary, past experience points to two key lessons:

- C projections of the public finances are inherently uncertain, and would still be so even if the economic cycle could be estimated accurately. So policymakers need to take into the account the possibility of errors when setting fiscal policy; and
- C for a number of reasons, it is usually more difficult to tighten fiscal policy in the face of worsening trends in the public finances than to react if events turn out somewhat better than expected. This argues that policymakers should base their fiscal projection on prudent assumptions, thus allowing a margin to deal with this asymmetry.

The Government has taken these lessons on board in designing the new fiscal framework. Caution is built into the public finance projections in three important ways:

- C the projections for spending on Department Expenditure Limits and Annually Managed Expenditure include a small margin to allow for genuinely unforeseeable expenditure;
- C the projections allow for a small positive surplus on current balance over the economic cycle. The sensitivity of the projections to a more cautious estimate of the level of trend output is also tested; and
- C the key assumptions underpinning the fiscal projections, including that for trend economic growth, are themselves deliberately prudent ones, and are audited by National Audit Office.

It is prudent to continue to use an assumption of 2¼ per cent per year for the purposes of projecting the public finances. While this is now lower than a neutral estimate for future trend growth, it ensures that fiscal policy settings remain sustainable if growth turns out to be lower than thought and by doing so, provides a buffer against unexpected adverse developments.

5. Conclusion

The Government's central economic objective is high and sustainable levels of growth and employment. Economic stability has an important role to play in achieving this, and depends on maintaining low and stable inflation and sound public finances. Past macroeconomic policy instability was a factor preventing higher growth in the UK and restricted the rate of improvement in living standards.

The Government's economic strategy aims to raise trend growth by putting macroeconomic policy on a more stable footing, strengthening employment opportunities and raising productivity. The evidence suggests that these policies are beginning to bear fruit. At present the Government believes that a neutral estimate of the economy's annual trend growth rate is 2½ per cent, some ¼ percentage point higher than during the 1990s. This estimate is subject to upside risk as it does not allow for any improvement in labour productivity. The Government is determined to take a prudent approach by erring on the side of caution when uncertainties exist.

However, future events are uncertain. Trend growth over the next 5 years may turn out to be higher than 2½ per cent but it could also be lower. Lessons from past experience call for a prudent approach to projecting the public finances. Fiscal policy will therefore continue to be set on the basis of an assumed annual trend growth rate of 2¼ per cent until the evidence of higher trend output is conclusive.

Annex 1: Trend extraction methods

There are four basic methods commonly used to determine the trend rate of growth from historical data.

One approach is to apply univariate statistical filters such as the Hodrick Prescott (HP) filter. The HP filter estimates a trend path minimising the difference between the trend path and actual GDP outturns subject to a smoothness constraint. The greater the degree of smoothness imposed, the closer the trend path will be to a linear trend. Theoretically, the chosen smoothness constraint should reflect the relative variance of demand to supply shocks hitting the economy. The main reasons for using the HP filter are relative simplicity and limited resource and data requirements.

A limitation of the HP filter is that it requires the user to set the smoothness constraint ie the user must already be able to identify demand and supply shocks hitting the economy. In practice, most studies use the value set in the original study, though there is no guarantee that this produces valid results. One important limitation concerns the ability of the filter to account adequately for variations in output at the end-point of the sample, where estimates of trend output are most needed by policy-makers.

An alternative approach is to use a multivariate statistical filter, of which the Kalman filter is one technique. It supplements the statistical approach by bringing to bear additional information based on known economic relationships that are useful for estimating the cyclical position of the economy, eg, the Phillips curve relationship or movements in import penetration. This approach adds a degree of complexity to the HP filter and has increased data and resource requirements. However, it can generate more accurate estimates of trend output with the 'end point' problem reduced.

A further intuitive approach is to estimate trend output using structural methods, typically within a production function or growth accounting framework. It allows a decomposition of long term growth into growth in labour and capital inputs, and technological progress. While a more comprehensive analysis of the factors influencing economic growth is possible using this approach, it is more complex - assumptions need to be made about the form of the production function, for example - requires more resources, and is heavily dependent on the availability and quality of the relevant data. Obtaining good capital stock data is a particularly significant constraint. In addition, failure to cyclically-adjust the components means that the aggregate estimates of trend output using this approach often tend to be pro-cyclical: trend output rises in response to higher investment spending and greater labour force participation, even though these may be cyclical effects.

The Treasury looks at a variety of different measures of trend output, including those derived using the methods outlined above. However, the approach preferred is to use a wide range of cyclical indicators - typically those which are not themselves trended, such as the results of various business surveys, the level of unemployment and vacancies, wage inflation - to inform a judgement of the dates at which the economy is on trend. For completed cycles, the estimate of trend output is simply a linear interpolation between on-trend points. Thus this

approach imposes a linear trend growth path which may vary between successive cycles, but which is assumed constant within each cycle. This approach is highly transparent. Estimates of the output gap formed on this basis are also less subject to revision in the face of new GDP data than other approaches.