

Speech by

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**AFTER THE RECESSION: THOUGHTS ON THE GROWTH POTENTIAL
OF THE UNITED KINGDOM**

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Thank you very much for inviting me to talk at this conference. I remember one of my economics lecturers saying in 1977 that Britain's poor economic performance had been a matter of concern since the later part of Queen Victoria's reign. During that time plenty of policies had been tried to improve things and, as far as one could tell, they had not worked.

In this speech I would like to discuss first of all the impact that the recent crisis and its aftermath may have had on the potential level of output of the economy, secondly the effect it might have had on trend growth together with some of the other influences on trend growth and thirdly the particular question whether monetary policy is in a position to play any extra role in supporting the economy at the present time.

The Potential Level of Output

I should point out that there are plenty of precedents for arguing that periods of contraction result in semi-permanent loss of output. Perron (1989) was one of the first to develop a statistical method of exploring this, and found that there were permanent output losses in the United States associated with both the contraction of 1929-32 and the oil crisis of 1973-4. But he did not identify the causes of these output losses. There are three issues I would like to discuss. First, an increased price of risk may have affected the desired capital labour ratio in the economy. Secondly the increase in unemployment may have led to a loss of labour productivity and perhaps also an increase in long-term unemployment. Thirdly, rebalancing of the economy consequent on the crisis may itself have an impact on potential output.

In the aftermath of the financial crisis it is likely that there is a greater awareness of the risks that the economy as a whole faces. As a result, of course, the return required by investors on capital is likely to be higher than before the crisis. Such an increase in the cost of capital will, in turn result in an economy which is less capital intensive and one therefore where the trend level of output is lower than it seemed before the crisis. The margin on corporate bonds (Chart 1) over government stock offers an indication of the market price of risk. This has fallen back since the peak of the crisis between October 2008 and March 2009. But it remains at over 200 basis points. Using this as a guide to the overall increase in required returns, Ray Barrell at the National Institute, updating earlier

work (Barrell, 2009) suggests that it is likely to lead to a loss of 2-3 per cent of GDP as compared to what had seemed possible before the crisis.

Such an effect could reasonably be seen as a consequence of the price of risk returning to a reasonable level rather than increasing from a normal to an abnormally high level. In that sense it is, of course simply a return to reality after some years of living in a fools' paradise and not in any real sense a cost of the crisis.

The second effect on supply is more obviously a consequence of the disruption resulting from the crisis. There are quite good reasons for believing that people's earning power is related to the intensity of their work (e.g. the effect of learning on the job on productivity and earnings). For example, Sefton and van de Ven (2009) found that such an effect was needed to explain retirement. Their model was calibrated with the assumption that one year's unemployment as compared to full-time work reduced all future potential earnings by 3½ per cent. Without this effect people tended to spread their leisure over their life-time instead of concentrating it in a period of retirement.

The employment rate (the share of the population aged 16-64 who are employed), has fallen from 73.0 per cent to 70.3 per cent since the peak in 2008Q1. The Office for Budget Responsibility forecast shows the unemployment rate falling by 2 percentage points between 2010 and 2015. If we assume that this is translated into a linear increase in the employment rate of the same magnitude, then, based on Sefton and van de Ven's findings, the consequence is that the cumulative effect of reduced employment is to reduce aggregate labour productivity by ½ percentage point. Since this is equivalent to a reduction in the effective labour force, it is likely to lead to a parallel reduction of the capital stock and thus to depress the trend level of GDP by ½ per cent.

It is difficult to know how much weight to put on such figures. Chang, Gomes and Shorfheide (2002) try to identify learning by doing effects in a real business cycle model of the United States economy. Their analysis probably points to a rather higher figure of 1 ½ per cent to 2 per cent. In any case the OBR figures show the employment rate remaining below its pre-crisis level up to 2015. So perhaps the overall losses as a result of reduced labour market experience are more likely to be above rather than below the ½ per cent figure mentioned above.

There could be further medium- to long-term effects if, for example, recent immigrants leave the country because they find it offers fewer opportunities than they had hoped. But offsetting this there are a number of other policy changes such as raising the state pension age and welfare reform which may have the effect of raising future labour supply. Such effects might be seen as influencing underlying growth rather than the level of output because the impact of them is often fairly slow. But here I simply note that I am not taking them into account.

Moving on to rebalancing, the first point to note is how the structure of the economy has changed since 1997 (as is shown in Chart 2). The broad picture shown by this chart is that, although the movements have not been monotonic, the share of manufacturing has shrunk sharply from 20 per cent of GDP in 1997 to only 12 per cent in 2007 before the start of the financial crisis. The other sectors have all expanded, with public services rising from 21 per cent of value added in 1997 to 23 per cent in 2007, the financial sector from 7 per cent to 8 per cent and the rest of the private sector, which is of course mainly services, from 52 per cent to 56 per cent of value added. There have been further movements during the course of the recession, most notably with the share of financial services rising and that of manufacturing shrinking further. These movements can have some implications for the level of output, if only because levels of value added per worker are very different in different sectors.

Table 1 shows value added per job in the different sectors of the economy. The identification of the public sector (and thus also of the other private sector) is only approximate but is precise enough for our purposes.

Table 1: Value Added per Job

| £000 2007 | Public sector | Financial intermediation | Manufacturing | Other private sector |
|-----------------------|---------------|-----------------------------|---------------|----------------------------|
| | 29.0 | 91.7 | 48.5 | 40.9 |
| Sectors: SIC(2003) | L-O | J | D | A-C, E-I, K |

The financial sector is, however, defined by the 2007 SIC and the rest of the private sector is calculated as a residual

It is easy, and quite incorrect, to draw the conclusion from this that the public sector is not as productive as the components of the private sector. The figures at least partly reflect the difficulty in accurately measuring value added in a sector that does not typically sell its output and no one should pretend that such numbers say anything about whether private sector jobs contribute more or less to overall welfare¹ than do public sector jobs. But with the current measurement conventions, a shift of employment from the public sector to the private sector will raise measured GDP. For example, if that shift takes place into manufacturing the increase will be more marked than if it takes place into the residue of the private sector. Indeed, we can use the numbers above to calculate the effect of a shift away from the public sector and toward manufacturing. If 500,000 jobs are lost from the public sector and all eventually accrue to manufacturing,² then the effect is to increase measured GDP³ by 0.8 per cent, not a large amount but of a scale comparable to some of the other effects identified above. This would have the effect of raising manufacturing output by about 2 percentage points of GDP, a reasonable degree of rebalancing but not one which will necessarily happen.

Given the speed with which the financial sector expanded one might also wonder what would happen if some of that were reversed as part of the post-crisis process of rebalancing. In the past I considered the effect on GDP of a shift of employment away from that sector and to the rest of the economy (Weale, 2009). But there are some reasons for thinking that such a shift is unlikely, since the expansion of its share took place without any expansion of employment. Thus shrinkage of the financial sector as a share of GDP is likely to be reflected predominantly in the remuneration of its inputs rather than its input volume. Offsetting this, some of the changes likely to take place in the banking industry, could of course result in an increase in the margins collected by the industry tending to raise, rather than reduce, its share of nominal value added. Again this is a price effect and not a volume effect which reflects current measurement conventions rather than necessarily indicating any increased underlying importance to the economy.

As the Bank's Governor recently observed (King, 2010), most sales of financial intermediation are to other businesses. So if businesses rely more on non-bank sources of finance the share of the financial

¹ It is important to remember that GDP is not an indicator of welfare. The concept was devised in 1940 as a tool of war-time economic management.

² Which is not the same thing as assuming that all the people who lose their jobs in the public sector find jobs in manufacturing.

³ Calculated on the basis of 2009 employment patterns but 2007 figures for value added per worker, so as to avoid distortions arising from the recession.

sector shrinks and the share of the rest of the economy increases but there is no net impact on GDP or on the productivity of the economy as a whole unless bank credit is somehow more efficient than other forms of finance. However, there are some sales of financial intermediation directly to final demand and mostly to the household sector. Perhaps the most probable route by which shrinkage of the banking sector could affect the volume of GDP would be a move to a steady state in which the amount of loans to the household sector is lower than its current level relative to GDP. Obviously recently we have seen some shrinkage in real terms. But, we should not expect a large impact from this. The total contribution of financial intermediation was under 2 per cent of GDP at the 2006 price base with much of this resulting from loans to the household sector. It would need the real value of loans to households to halve relative to incomes for that to drop to 1 per cent of GDP. If money GDP grows at say 5 per cent a year that would require no net borrowing for fourteen years and it is hard to imagine prudence becoming so popular.

A reasonable overall conclusion, then, is that rebalancing is likely to have a positive effect on the level of GDP, once it has finally been achieved, but that the effect is likely to add less than 0.8 per cent. However, the negative effects that might be associated with falling household gearing, even if smaller, may well precede the positive effects of a rise in the share of manufacturing.

Overall, then, these calculations suggest that before allowing for rebalancing there may be an eventual loss of output of 2½-5 per cent relative to what had seemed to be the sustainable level before the crisis and that, if rebalancing proceeds successfully this may fall somewhat. To date the loss may be smaller both because the economy may not yet have adjusted fully to the higher cost of capital and because high unemployment has not yet lasted for as long as is assumed in my calculations of the full effect of unemployment on labour productivity.

Trend growth

I now want to move on to the question whether rebalancing might be expected to have any impact on the future growth rate and then to discuss a particular intervention which might have the potential to improve trend growth.

If we look at measured output growth per job in the different sectors of the economy⁴, the pattern shown is as in Table 2.

Table 2 Growth of Output per Job

| | Public sector | Financial intermediation | Manufacturing | Other private sector | Whole economy |
|--------------------|---------------|--------------------------|---------------|----------------------|---------------|
| % p.a. 1997 - 2005 | -0.2 | 5.3 | 4.3 | 2.2 | 1.9 |
| Sectors: SIC(2003) | L-O | J | D | A-C, E-I, K | |

The financial sector is, however, defined by the 2007 SIC and the rest of the private sector is calculated as a residual

Thinking back to my earlier observations on the changing structure of the economy, the two sectors showing rapid productivity growth – finance and manufacturing – were those whose share in value added expanded and shrank markedly. The public sector shows a slight decline in measured productivity. Obviously rebalancing from a sector where measured productivity is low to one where it is rising sharply will improve overall growth, provided that these historic growth rates are not much affected by rebalancing. I consider the earlier notional effect of moving 500,000 jobs from the public sector to manufacturing on the overall growth rate. A plausible estimate is that this would add modestly less than 0.05 per cent p.a. to overall growth. The effect would, however, become stronger if dynamic as well static rebalancing takes place, i.e. there is not only a one-off increase in the share of manufacturing but if the long-term downtrend in the share of manufacturing also halts.

But inevitably the miraculous growth of financial services productivity raises questions about whether this was serving to raise the overall measured growth rate artificially. Once again I need to

⁴ The data looking at growth of output per hour worked are not thought to be sufficiently robust for these purposes.

take account of the nature of financial intermediation. To the extent that the increase in output and productivity of the financial services industry was driven by bank lending displacing other forms of lending it had no impact on overall productivity or output growth apart from a possible small effect if one regarded bank finance as better than other forms of finance.

The effect of lending to the household sector is again different because, as noted above, the margins earned by lenders on household debt are treated as components of final demand and contribute to GDP. Had such lending grown only in line with GDP, the rate of growth of the economy would have been lower by more than 0.1 per cent over the period 1997-2005. Thus, if households do no more than maintain current gearing, the trend rate of growth of the economy will be reduced by over 0.1 per cent.

Again there may be further effects arising from changes to the rate of growth of the labour force. The state pension age is to rise earlier than previously planned adding to labour supply growth, but, as noted earlier, migration patterns may change to reduce labour force growth. Proper discussion of the magnitude of such effects would be lengthy. For the time being it is important to be aware simply that they may be present.

Moving from an effect arising from slower growth of household debt which is arguably the consequence of a measurement convention to a more substantial issue and I hope of considerable interest to this conference, one way of raising the long-run level of output is by raising the educational attainment of the labour force. The effects of such a change are so slow that it is for practical purposes more helpfully thought of as a change to the underlying rate of growth rather than a change to the long-run level of output. Again one has to remember the costs as well as the benefits. Such calculations with respect to the effects of education are commonplace. But there is one particular time of enhancement on which I would like to focus. There have been a number of studies of the effects of life-long learning that suggest that the economic benefits are considerably smaller than those delivered through conventional study. But the National Institute of Economic and Social Research is a partner in the LLAKES Research Centre funded by the ESRC and run by the Institute of Education. A study of the effects of life long-learning on both men's earnings and labour force participation suggests that the long-run benefits of qualifications gained outside the normal path of full-time education are probably commensurate with those delivered by the conventional route. The

study (Dorsett, Lui and Weale (2010)), carried out using the British Household Panel Survey delivers an average effect of either acquiring an extra qualification without changing ones qualification level or of upgrading by increasing qualification level. On average men aged twenty-five who acquire qualifications which raise their educational attainment by at least one level raise their life-time earnings by 12-14 per cent but the effect for men with no initial qualifications, at 21 per cent is larger because men without qualifications have a particularly high chance of being unemployed while the chance of qualified men being unemployed is much lower. The overall costs of obtaining such qualifications need to be taken into account but these are unlikely to have a major impact on any estimate of the benefits of upgrading.

The relatively small number of cases means that it is not obvious that there is any point to looking in more detail than that. There are obvious questions whether the results were distorted by the possibility that people who go in for life-long learning are more motivated than those who do not. But we distinguished the consequences of qualification acquisition from the effect of being someone who acquires a qualification at some time in the sample period, so I think this effect was adequately controlled for.

This then raises the question why more people do not upgrade their qualifications. If one makes the assumption that qualification enhancement cannot actually damage earning power, then the risks associated with it are relatively modest. The answer may lie in behavioural economics; people perceive high costs to study or show inertia for other reasons and we are currently investigating how far this is a plausible explanation. But it also suggests that policies which promote participation in life-long learning may help meet the growth challenge.

Can Monetary Policy do More to Support the Economy?

I would like to finish by drawing attention to the complications that uncertainty about the degree of spare capacity in the economy and the underlying growth rate raise for the Monetary Policy Committee.

In Chart 3 I show the historic path for GDP together with the Monetary Policy Committee's forecast for GDP as shown in the November *Inflation Report*. I have, however, converted the fan chart for the level of GDP in the *Inflation Report* to one showing the probability ranges for deviations from the trend line for GDP for the period 1986 to 2005: GDP is currently just over 9 per cent below this trend. Given my own estimate of 2½-5 per cent reduction in capacity before rebalancing outlined above, this implies that there is spare capacity of the order of 4-6½ per cent of current GDP. The results are obviously sensitive to the period over which the trend is calculated, but there is no reason to think this has a substantial impact on the conclusion.

Nevertheless, it is worth noting that the results of this calculation lead to a figure somewhat below the sort of semi-permanent loss to output identified in some econometric studies. For example Cerra and Saxena (2008) find that financial crises on average depress output by 7½ per cent ten years after a financial crisis. The IMF (2009) finds an average output loss of 10 per cent seven years after a crisis. As Bean (2010) has recently pointed out, surveys of the British economy which ask businesses about spare capacity are reasonably coherent with the figures produced by Cerra and Saxena if not quite as gloomy as the IMF study. But, as he said, it is difficult to know quite what businesses have in mind when they reply to such surveys and therefore it is difficult to judge how to interpret them. On the other hand Fuceri and Mourougane (2009) put the loss at only 1½ per cent to 2½ per cent five years after a crisis, a figure less gloomy than the results of the accounting exercise I have described.

In any case, some further words of caution are needed. Orphanides and van Norden (2002) provided policy-makers with a chilling warning of the difficulties in estimating the output gap, and thus the long-term effects of a crisis such as our current experience, in so-called real time. They pointed out that the revisions to US estimates of the output gap produced in the aftermath of the oil crisis of 1973-4 were of similar magnitude to the estimates of the output gap that had been produced at the

time, with data revisions contributing only a small part to the error. Nelson and Nikolov (2003) found the errors in the UK were even larger than in the US. Mitchell (2007) showed how wide a reasonable fan chart round real time estimates of the output gap might be whereas Chart 3 takes no account of uncertainty about the true pre-crisis trend.

To conclude, my own best estimate is that there is probably room for the economy to expand by 4 to 6½ per cent as a cyclical economic recovery. But that estimate is highly uncertain. The *Inflation Report* forecast in Chart 3 shows only partial progress in closing that gap over the next three years. At the end of 2013 the most likely outcome is that real GDP will remain about 6 per cent below its pre-crisis trend, although one also has to remember that trend growth has probably fallen a little. This is larger than my upper estimate of the reduction in supply in the aftermath of the crisis, suggesting that there is room for further cyclical expansion over and above what is shown in the forecast.

In such circumstances, it would be right for the Monetary Policy Committee to do what it could to stimulate the economy further, provided that such a stimulus were consistent with meeting the inflation target. We should never forget that spare capacity amounts to a waste of resources and that the associated unemployment is a source of misery. Furthermore, the more rapidly the gap is closed the lower is the productivity loss arising from sustained unemployment. But, as I have shown, the MPC cannot be sure that there is as much spare capacity as my calculations imply, and has to be sensitive to the fact that inflation in September was more than one percentage point above its target.

Indeed, inflation over the next few months may well rise further, even if a subsequent decline is expected. I certainly worry about the effect on inflationary expectations of introducing additional monetary stimulus in such circumstances. Many of you may not remember the experience of the 1970s first-hand but even a cursory examination of the data shows what can happen when policy-makers focus on maintaining demand and pay insufficient regard to the impact of rising nominal demand on inflation.

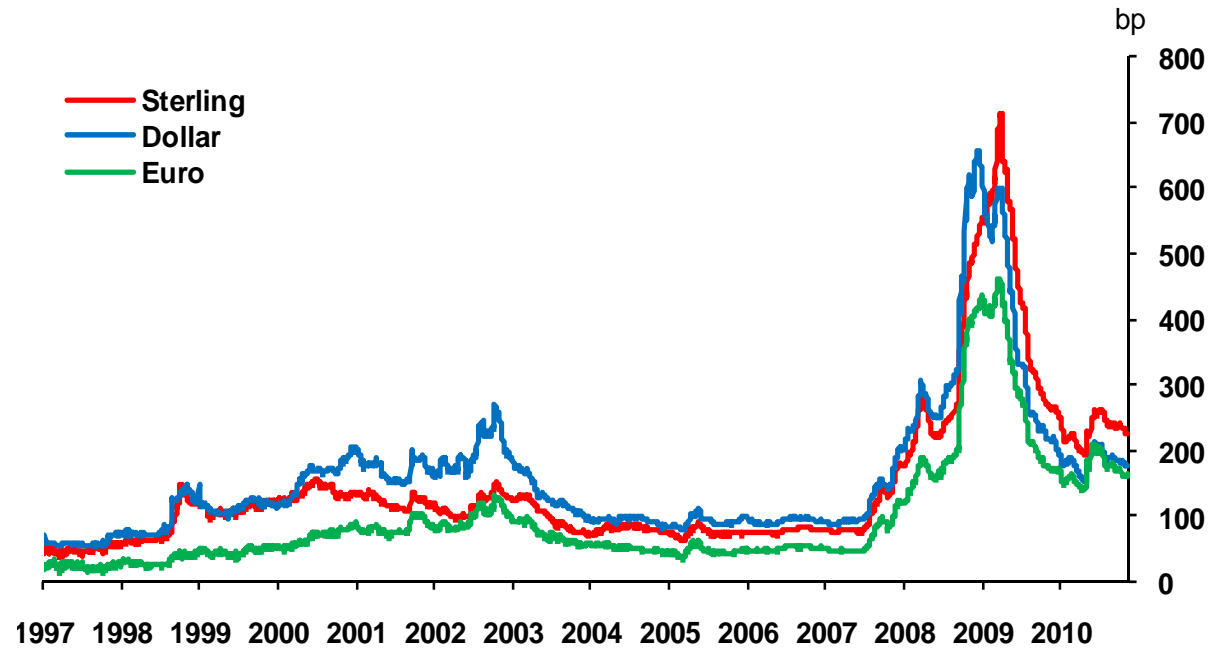
The Monetary Policy Committee has to chart a course between the Charybdis of recession and deflation and the Scylla of excess inflation. At the present time a majority of the Committee does not see a compelling case either for slackening or for tightening policy. This does not mean of course

that we cannot make up our minds. It means that, in the light of the information that we have and the knowledge we have as economists for interpreting that information, we think, at least for the time being, that the right course is to leave policy unchanged. Whether this will seem the right decision with the benefit of 20:20 hindsight is a question I will have to leave for a future occasion.

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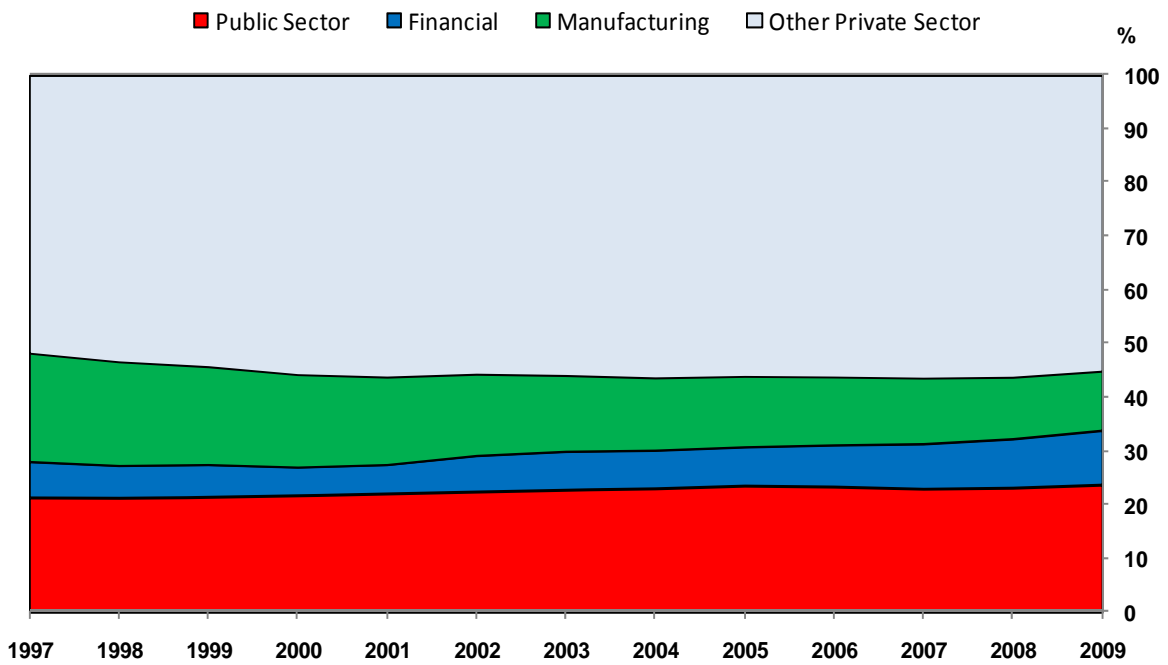
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Chart 1: Spreads on Corporate Bonds over Government Stock



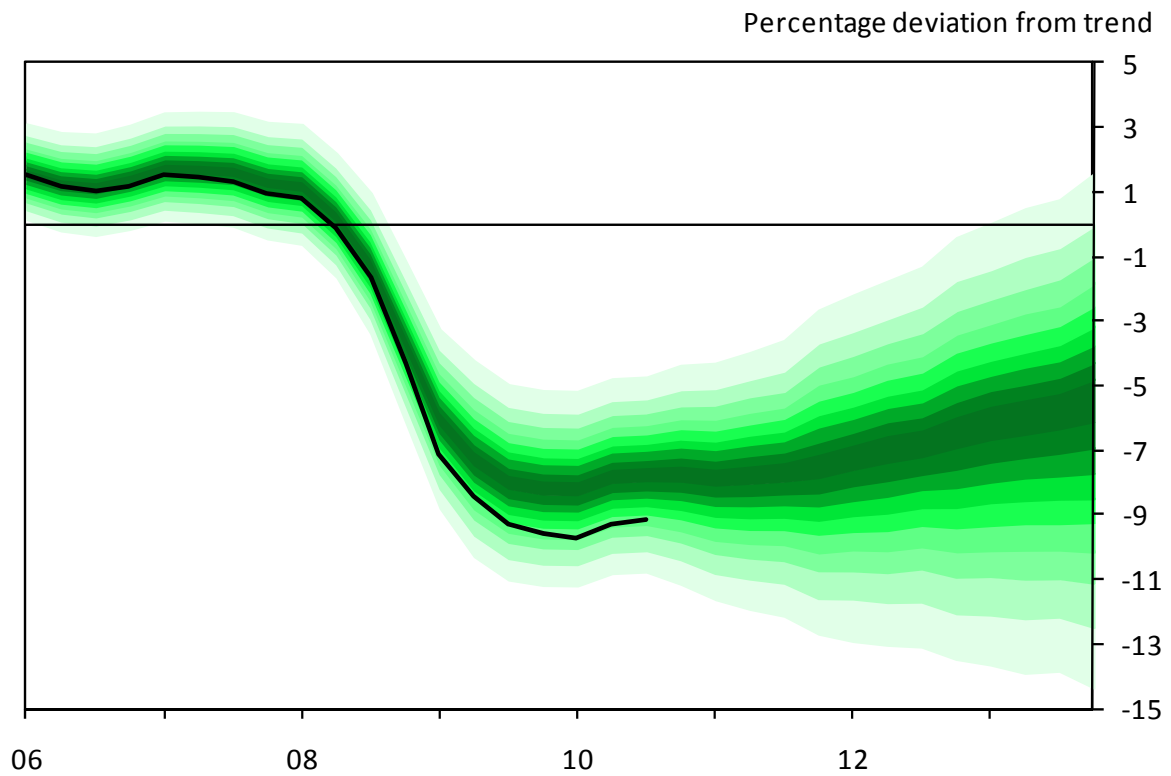
Source: Merrill Lynch

Chart 2: Sectoral Shares in Gross Value Added



Source: ONS

Chart 3: Deviation of Output from 1986-2005 Trend



The chart shows the density function for the level of real GDP in the November 2010 *Inflation Report* represented as the deviation from the deterministic trend for real GDP calculated from ONS quarterly data for the period 1986-2005. The solid line shows the ONS measure of real GDP relative to this trend line

Source: *Inflation Report* and author's calculations