



BANK OF ENGLAND

# Speech

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## **The UK inflation outlook if this time isn't different**

Speech given by

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<sup>1</sup> I would like to thank - without implicating - my colleagues on the MPC, as well as Chris Carroll, Joe Gagnon, Ken Kuttner, Neil Meads, and David Romer for enlightening discussion of these issues. Tomas Hellebrandt provided excellent research assistance and much helpful input. The views expressed here are solely my own, and not those of the MPC, the Bank, or of PIIIE.

Thank you for having me here to share in your pre-Christmas cheer this morning. Even discounting what I've learnt from watching "The Only Way is Essex," it is a pleasant surprise to see so many people out and interested in discussing economics on a winter morning. I gather that usually at this event there is some discussion of members' predictions, and I look forward to hearing yours for the New Year. In that spirit, I would like to offer a forecast of my own for inflation in the UK, but at a slightly longer two- to three-year horizon, since that is the medium-term over which the Monetary Policy Committee's [MPC] inflation target is to be achieved. Given a series of above target recent readings on CPI inflation for the British economy, this is a good time for members of the MPC - and for the public to which we are accountable - to think critically about what is the right forecast. For an inflation targeting central bank, like the Bank of England, monetary policy should follow directly from the medium-term forecast (barring the rare kind of rapidly evolving crisis we experienced in 2008-09).

The first point I want to make is that neither our forecast nor our policy going forward should overreact reflexively to that above target inflation, even though it will persist for the next few months after the coming VAT rise. As much as we may be tempted to demonstrate to the public or to markets how upset we are about being above target, we have to take the right lesson from our mistakes and try to forecast better in future – we help no one in this economy by getting our forecast incorrect, or worse, by setting our policy to compensate for past mistakes rather than basing it on our best forecast.

As I said to the Treasury Select Committee last month (Posen 2010d), the persistently above target CPI inflation the UK economy is experiencing is almost entirely due to the combination of the depreciation of Sterling prior to January 2009 and the increase in VAT in January 2010.<sup>1</sup> As a committee, our forecast underestimated the size and particularly the persistence of these inflationary effects, and I accept my share of responsibility for that mistake. The lesson we need to take therefore is to update our estimates of transmission from external shocks going forward. That said, annual inflation in the UK as measured in the CPIY series, which excludes the price effect of indirect taxes, has been below target throughout this calendar year. Thus, if we allow for even just some exchange rate pressure upwards on prices over this period as well, underlying UK inflation has stayed well below target. Recognizing that fact has to be the starting point for our forecast.

This is not to dismiss the harmful impact of the past months of higher inflation on the vast majority of British citizens. British households do suffer from increases in consumption taxes and in import costs, as well as from inflation more generally. What British households have suffered in this regard over the last year, however, is a decline in their purchasing power due to one-time factors that is neither amenable to reversal through monetary policy nor going to feed a more general rise in prices and wages. The MPC would only make things worse by making policy looking in the rear-view mirror, trying to make up for past mistakes, especially given the fact that the underlying trend inflation rate is below target. In particular, the MPC should

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<sup>1</sup> See also the fuller discussions largely sharing this assessment in Bank of England (2010), Bean (2010), Dale (2010a and b), Fathom (2010), Fisher (2010), and Posen (2010b).

not tighten in response to the inherently temporary effects on measured CPI inflation of a VAT increase, when it is essentially equivalent to a payroll tax increase in short-term impact, and thus a fiscal policy tightening, that just is labeled differently.<sup>2</sup>

Moreover, both the MPC and the British public should maintain some perspective on the size of our inflation forecast error given the magnitude of the shocks to which the UK economy has been subjected. That is not an excuse, but a reality check. I think both the Bank of England and the public gained an exaggerated confidence over the NICE decade of 1997-2007 about just how finely the MPC could both forecast and control inflation. We can still control inflation over the medium-term, but the degree of extreme predictability seen then was due not just to the good policy regime, but was also partly due to good luck in terms of the absence of major shocks, and thus was misleading. The Federal Reserve, another central bank coming off a fortunately stable period, also only in part due to good monetary policy, has also gotten its inflation forecasts wrong of late on a similar scale, albeit having US inflation come in below expectations.

Given an appropriate degree of humility about our ability to forecast inflation, and the right mindset to keep looking forward by learning from past errors (rather than doing harm by trying to make up for them), how should we make our inflation forecast? To me, the right way to think about it is to consider what has happened to the UK and other similar economies when they have been in post-financial crisis situations like the one we are in now. As an already classic recent book (Reinhart and Rogoff (2010)) reminds us, economic policymakers as well as investors get into trouble when they arrogantly say “this time is different.” If anything, part of the reason the UK and other western economies got into the difficulties we have been in is because many of us assumed this time was different during the mid-2000s boom.

Yet, the UK situation today shares many important parallels with other advanced economies’ experiences in the last few decades, and it behooves us to learn from those precedents. Put differently, I would rather look at several cases, or even better try to draw conclusions statistically from a large sample, and try to take into account the specific conditions of the UK economy at present, than to just leap to conclusions from our current indicators or from comparison with one or two prior UK recessions. In fact, the experience of the last couple of UK recessions which came about due to monetary tightening, not as the result of a financial crisis, may be more different in nature from today’s situation than other economies’ post financial crisis experiences, and thus be misleading as a guide to policy.

As I pointed out in Posen (2010c), if one plots the course of our current recovery versus that of the UK from recession in 1992 and that of Japan from its initial recession in 1993, one can discern no significant divergence between them.<sup>3</sup> And we all know what terrible things happened to Japan after 1993, and both credit and fiscal developments in the UK today look a lot more like Japan then than the UK at the same time. My point is not, and never has been, that the UK now is just like Japan in the 1990s – my argument has

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<sup>2</sup> See the discussion in Bernanke, et al (1999) and Posen (2010c).

<sup>3</sup> Those charts are reproduced in this text’s appendix.

always been that Japan's problems in the 1990s did not arise from Japan being different, but are best understood as something that could happen to other major economies faced with similar shocks and given similar policy responses (just as Japan's lost decade paralleled the 1930s in the US in key ways).<sup>4</sup> Unfortunately, on some critical aspects that similarity currently is playing out in a number of countries, including the UK. One cannot simply compare the UK recovery today solely to its own of the early 1990s and draw any reliable conclusions. So today, I will show you some analyses which I think provide a better basis for forecasting what is likely to happen to UK inflation over the next couple of years, based on my and others' research on these kind of cross-national comparisons.

We on the MPC are faced with some observers who recommend that we make our forecast by looking primarily at the better than expected recent data, supposedly without preconceptions (or with the assumption that this time is different). Advocates of this view are skeptical of macroeconomists' models, and take very seriously the fact that growth and inflation both come in above forecasts using those models over the last few quarters of data. To me, such an approach means treating the few months of good news on some indicators such as exports and (relatively speaking) employment, as well as anecdotes about successful individual UK businesses, as highly significant, and just extrapolating them forward. This kind of short-term data focus without interpretation, however, is short-sighted at best. Data is meaningless without some kind of benchmark and reasoning behind that benchmark by which to judge developments.<sup>5</sup> Yes, economic models (which should be seen as a way of summarizing and explaining such a benchmark) need to be confronted with hard empirical data, and if they are proven wrong, discarded. But that must not be done on the basis of getting too excited by short-term blips in economic outcomes, especially when there is not a realistic let alone established story to explain those blips.

Let me offer two analogies to illustrate the point. As my accent reveals, I used to live in the United States. Many politicians and pundits there are in absurd denial about global warming. Every time we had a bad winter, or even a few cool days in summer, those deniers would announce, 'see, the temperature is not trending up!' Of course, such short-term fluctuations say nothing about the underlying long-term trend of global warming. In fact, some of the better developed models that try to understand the forces behind global warming even predict that we should see more short-term fluctuations in weather, and more out-of-season temperatures in both directions, as a result of the underlying process. The deniers' interpretation looking backwards at a few weeks' or months' temperature outcomes was profoundly wrong, and would have been a harmful basis on which to make climate policy going forward.

Turning inwards, as part of my assimilation to the UK, I have tried to follow Premier League Football (I live 15 minutes walk from Emirates Stadium, so I am disappointed by the latest ManU-Arsenal result). Earlier this season, both Bolton and Newcastle had runs of success, while Liverpool was doing awfully. Had I taken too seriously these teams exceeding (or failing to meet) expectations over the first few games of the season, and

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<sup>4</sup> See the discussion in Posen (1998a, 2009, 2010a).

<sup>5</sup> Krugman (2010) makes this point strongly in the current context of interpreting the Great Recession.

thereby assumed that this time was different, I might have been tempted to run down to my nearest betting shop and wager that at season's end Newcastle would challenge for the title or that Liverpool would be relegated. As you know better than I do, these would have been quite foolish bets, given the long-term patterns and determinants of success in English football. Of course, it was *possible* that something fundamental had changed either for one of these teams, or even in the nature of competition in the Premiership overall. But it was highly unlikely, and without a good story or set of reasons to explain why it should be different, and with expert opinion believing that the fundamentals largely were unchanged, I was right not to place my bet that way.<sup>6</sup> As the season has played out, a fundamentals based forecast that Newcastle would be a little improved but not a rival to the top teams, and that Liverpool would have a less good than usual season but be in no danger of relegation, has proven correct. So it should be for the forecasting of inflation in the UK economy.

One more point before getting into the forecast itself. I want to be clear that I am talking today about my own central forecast for inflation in 2012-13 – solely my own, and not necessarily any other member of the MPC's<sup>7</sup>; and central, meaning the outcome I expect on average. This latter point is important to note. The argument I am making today for my forecast is not dependent upon scary perhaps low probability 'downside risks', or even the kind of negative feedback dynamic from insufficient growth to contracting potential that I discussed in Posen (2010c), though I believe both are relevant to the UK outlook today. Nor, as I will discuss, is my inflation forecast dependent upon some speculative assumption about the Bank's credibility, and it certainly is not motivated by a desire to make up for past inflation forecasting mistakes by erring on the upside. Once we rightly (to my mind) assume that this time isn't different for the UK, it follows logically that my central forecast is that headline CPI inflation will be well below the MPC's inflation target two years' from now.<sup>8</sup> Events, including in commodities markets and the euro area, could overtake this or any inflation forecast (as outlined in Bean (2010)), but on balance, that is where I think the UK economy will be at our target horizon.

### **Empirical Regularity 1: Employment Affects Inflation at 1-2 Year Horizons –**

Most macroeconomists, especially policymaking economists, tend to focus a lot of attention on the deviation of national output from its long-run growth trend, and of unemployment from its estimated full-employment level. Even inflation targeting central bankers do this because the degree of spare capacity in output and labor plays a huge role in determining subsequent inflation movements. Every so often, some economic pundits will insist that the Phillips Curve relationship between short-run output/employment and inflation developments no longer holds, or that the NAIRU (or natural rate of unemployment) is a misleading concept at best, or that output gaps are useless for policymaking. This is one of the primary and recurring ways in

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<sup>6</sup> For the record, I don't actually bet on football or anything else, although my wife and I have lottery tickets.

<sup>7</sup> As noted in Posen (2010d) and Bank of England (2010), our latest *Inflation Report*, at present my view differs from the one held by the majority of the MPC.

<sup>8</sup> To pick a number, at least 0.5% below and probably closer to twice that. Of course, that is just the central forecast and I do have a fan chart in my mind over the range of outcomes.

which economists trying to be clever mistakenly insist that ‘this time is different.’ We had people making claims of this sort in the US during the internet boom of the late 1990s, and during the Japanese bubble of the late 1980s, and elsewhere. And every time such claims have been proven to be unfounded, even if a few months of data here or there do deviate from the relationship for some idiosyncratic reason.<sup>9</sup>

More plausibly, some economists looking at the UK of late have wondered whether the Phillips Curve might have flattened. This would mean that while a short-run tradeoff between output or unemployment and inflation still existed, the amount of inflation movement for a given movement in output (or employment) would be smaller. Thus, for forecasting purposes, one would still look at output, but put less weight on movements in it to forecast inflation. As my MPC colleague Charles Bean and others pointed out in the mid-2000s, there is evidence that over the last 30 years the UK Phillips Curve has gotten flatter, due to some combination of monetary policy credibility and globalization.<sup>10</sup>

Has it flattened further at this time, so we should put even less emphasis on unemployment (or output) when forecasting inflation? In Chart 1, I show the relationship in quarterly data between CPIY inflation (excluding indirect taxes) and unemployment from 2004-present.<sup>11</sup> That is a pretty vertical looking Phillips Curve, indicating a strong trade-off between employment and inflation for forecasting purposes of late. So I am not accused of simply focusing on latest data without justification myself, let me explain why this makes relationship sense to me as consistent with fundamentals. Phillips Curves should be more vertical the more flexible are prices. In a world with no nominal rigidities, such as long-term wage contracts or catalogue listed fixed-prices on products for sale, the Phillips Curve should be close to vertical around natural rate of unemployment. In terms of long-term trends, the weakening of union bargaining power, the move of an increasing share of product sales to the internet and other IT-based formats allowing rapid repricing, and the enhanced ability of businesses to hedge cost shocks in financial markets all have reduced nominal rigidities in recent years. In terms of short-run developments, we know there has been a great deal of wage and hour flexibility by British workers negotiated with their employers in response to the recession (i.e., fall in GDP, rise in unemployment) – this shows up clearly in our conversations with business people as well as in the aggregate data on hours and wages.

Thus, our forecast for UK inflation should take into account a forecast for movements in GDP growth and unemployment.

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<sup>9</sup> See the discussion in Posen (2010c), and Claessens, et al (2009), Fuhrer and Olivei (2010), Liu and Rudebusch (2010), Meier (2010), and Stock and Watson (2009, 2010).

<sup>10</sup> A long line of argument has found it odd that greater monetary credibility is said to lead to a flatter Phillips Curve rather than to a steeper one. See Debelle and Fisher (1994), Posen (1998b), and Posen and Popov Gould (2007).

<sup>11</sup> The CPIY series only goes back to 2004, hence the limited range of the figure.

## Empirical Regularity 2: Large Output Gaps Persist After Financial Crises –

Of course, a reasonably robust relationship between output/employment and inflation is just a starting point. Taking that for granted, to forecast inflation the next question is whether the economy is running above, below, or close to capacity. If a large number of productive factors in the economy are unemployed, be they labor or equipment, to a first approximation the economy can grow faster than its long-run trend without causing inflation; if the economy is close to or over normal full capacity, in the short-term growing too quickly will lead to upwards pressure on prices and wages, just as it would for an individual business. Therefore, when an economy contracts due to a major financial shock, a critical question is how much of the contraction is due to a collapse in demand, leaving the productive capacity of the economy largely unchanged, and how much is due to a reduction in supply, meaning the economy would hit capacity constraints sooner. Relatedly, a negative demand shock would tend to leave the trend rate of growth of which the economy is capable initially undiminished, whereas a negative supply shock would usually tend to decrease the trend rate of growth consistent with stable inflation.

In general, what has happened to economies' potential capacity in the aftermath of financial crises? The evidence is that financial crises do tend to reduce supply capacity, but by far less than the total amount of the decline in actual output experienced, and that the sustainable trend rate of growth is largely undiminished. Abiad, et al (2009) is a recent cross-national study of output dynamics after banking crises that supports this characterization based on a large sample of cases. Claessens, et al (2009) and Meier (2010) are other recent studies consistent with this view. My own work on Japan's lengthy Great Recession of the 1990s (Posen 1998a, 2010a) establishes that in the worst of crisis aftermaths, even if the recession is allowed to drag on, trend output is largely unaffected, so output gaps tend to persist. In short, financial crises in advanced economies do not destroy enough productive capacity to offset the disinflationary fall in demand.

For the UK today, this would suggest that a sizable output gap still exists exerting downward pressure on inflation, all else equal. This is the message of Governor King's justly famous line "it's the levels, stupid" (Bank of England (2009)) - that is, that output in the UK is so far below potential if we had grown at trend, some 10% below, we must still have a sizable output gap even allowing for some decline in supply capacity and some re-employment of spare capacity and labor over the last year of recovery. This belief, well-founded in my estimation, underlies the majority of the MPC's current forecast that inflation will come down to close to target in two years' time. (Bank of England (2010)). As recently discussed in detail by my MPC colleagues Charles Bean (2010) and Martin Weale (2010), while there is some uncertainty about the size of the output gap in the UK at present, we can put a lower bound on estimates that says we are still a good ways away from full capacity.<sup>12</sup>

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<sup>12</sup> The estimates of the output gap and potential output growth from the Office of Budget Responsibility, for example, are on the low end of consensus, and even those would imply that we need two years of growth at well above 3% to close the output gap, i.e., before growth caused inflation on its own. My own estimate, at the high end of consensus, would suggest that the gap is at least 3% of GDP, and probably above 4%, which means with minimal diminishment in potential trend growth the UK economy could grow faster for longer without generating inflation from overheating.

Suggestions that the current observations of above target inflation in the UK are due to overheating are to me misguided examples of focusing too much and too literally on the latest data without a sensible story to explain it. Not only do such suggestions have to assume no effect on inflation from past VAT and Sterling movements (otherwise, there is no high inflation to attribute to the supposed overheating). More dubiously, they also have to argue that this time is different in the UK, and productive capacity was destroyed rapidly in the aftermath of the financial crisis.

Yet, if anything, the specifics of the UK current case suggest that productive capacity should have declined even less than usual in a post-crisis situation: unemployment rose by less and corporate liquidations were fewer for the size of the drop in GDP than in past crises. It is the destruction of human and intellectual as well as physical capital associated with redundancies and business closings that destroys capacity. As I am fond of pointing out, the workers of the United Kingdom did not wake up one morning in October 2008 and find that their left arms had fallen off and half of their offices had disappeared. (Posen (2010c)) Yes, there are some British business surveys at present that seem to suggest that capacity utilization has increased faster than we might have expected, and thus imply inflationary pressures from capacity constraints. But, these surveys are really designed to ask what is the number of businesses who feel capacity utilization is rising or falling, not to get precise measures of the amount of capacity remaining; accordingly, these surveys will tend to be misleading in times when utilization has moved quickly far away from normal levels, as in fact has happened here.<sup>13</sup> As comprehensively assessed in Lui, et al (2011a and b), the predictive power for economic outcomes of these business surveys is limited for quantitative (as opposed to directional) forecasting.

Thus, our forecast for UK inflation should start with the assumption that output is well below potential and the inflation we are experiencing is due to shocks, not overheating.

### **Empirical Regularity 3: Private Consumption Contracts in the Medium-Term During Fiscal Consolidations –**

The next step for our inflation forecast for the UK two-plus years out is to think about what will happen to output growth in the next year or two. There is a recovery underway, currently fuelled by a combination of fiscal and monetary stimulus and (partly as a result) strong consumption, with recovery in investment lagging somewhat behind.<sup>14</sup> We can hope that net exports continue to pick up, given strong growth in Germany and the US. The largest change to the economy over the next couple of years, however, is likely to be the fiscal consolidation of upwards of 1.5% of GDP a year through a combination of spending and benefits cuts and some tax increases. It is not my role as an MPC member to evaluate the decision to undertake fiscal

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<sup>13</sup> I am grateful to Ian McCafferty and Martin Weale for their elucidations of the strengths and weaknesses of these surveys for forecasting.

<sup>14</sup> UK exports have been growing strongly, but *net* exports have been negative until the last quarter, due to continued strength in imports, and it is net exports that are an accounting component of output growth.



consolidation in the United Kingdom in this form at this pace – it is my role to make the best forecast I can for the UK economy, taking the fiscal policies set by elected officials as given. We do know from cross-national studies something about fiscal policy and its impact on consumption growth and inflation that gives me a good basis for making such a forecast.

The record is that fiscal policy works when it is tried, though its impact varies with the structure and state of the economy trying it.<sup>15</sup> A recently published authoritative study by the IMF (Leigh, et al, (2010)) confirms broad patterns already known. The smaller and more open your economy, the more fiscal impulses leak abroad, so the smaller the multiplier (that is, the impact on the private economy of changes in the government deficit beyond the direct impact of government spending and taxes). The more indebted your economy, the less effective fiscal stimulus will be, and the less costly consolidation will be. When fiscal policy contracts, a key determinant of the contractionary impact on the economy as a whole is whether monetary policy eases in response. The only examples of economies that have expansionary (for the economy overall) fiscal contractions are those small economies with very high initial debt to GDP ratios that drive down their government interest rates and attract large inflows of foreign investment relative to the size of the economy through consolidation. Think of Ireland, for example.

For most economies, Leigh, et al (2010) show that household consumption, the lion's share of GDP, grows more slowly and in fact usually contracts during a fiscal consolidation. Figure 2 shows what happened to household consumption in 49 fiscal consolidation episodes identified in their sample of 15 advanced economies from 1980 to the present. The darkened swathe shows the path of consumption for cases between the 25<sup>th</sup> and 75<sup>th</sup> percentile of outcomes (meaning, we leave out the extreme cases). Consumption declines from trend over the first year of consolidation by half a percent on average, and stays that amount below trend through the succeeding three years before recovering.

Figure 3 repeats the exercise looking only at 27 fiscal consolidation episodes since 1990. I pull this out because it should limit the assessment to cases more comparable to our present situation in the UK in terms of average inflation rates, monetary regimes, debt levels, and globalization. The contractionary impact of fiscal consolidation on household consumption is at least as great as in the wider sample – the range of consumption declines (still only to the 75<sup>th</sup> percentile) extends to much greater magnitudes, which means that the more contractionary cases make up a higher proportion of the more recent consolidations than in the total post-1980 sample. On average, the pattern is largely the same as in Figure 2, with a sustained multi-year but not precipitous decline in household consumption growth versus trend. These charts make no distinction between cases when monetary policy was eased in response to the consolidation, including cases where it did, but Leigh, et al's (2010) more detailed assessment suggests that the upper end of the swathe (less contractionary) is associated with monetary ease.

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<sup>15</sup> See Auerbach and Gale (2009), Fatas and Mihov (2009), Kuttner and Posen (2002), and Posen (1998), and the references therein. Ilzetki, et al (2010) give a somewhat opposing view, emphasizing the dependence of fiscal outcomes on exchange rate and monetary regimes (the latter not inconsistent in Leigh, et al (2010), however).

How should the current fiscal contraction program in the UK fit in to the forecast, given these patterns and the specifics of the UK situation? The consolidation program announced by the Coalition government is more ambitious in size and speed than most of the fiscal consolidations seen in the last 30 years. The UK is a larger economy than many of the economies that undertook previous consolidations. The UK starts out with a lower debt/GDP ratio, far longer maturity debt, and a higher credit rating than most of the economies that undertook fiscal consolidations. Perhaps most importantly, interest rates on long-term UK government debt are already at historic lows in both nominal and real terms, so there is little room for an offset for interest rates to fall further in response to the consolidation program.<sup>16</sup>

I would add at this point that there is good long-term reason to believe that the rate of consumption growth in the UK should decline temporarily, even absent fiscal consolidation. If one takes the standard determinants of variation over time in national household savings rates – wealth, income growth, and uncertainty (usually proxied by unemployment) – the UK savings rate should have gone up as a result of the crisis.<sup>17</sup> Moreover, if the UK is to rebalance its accumulation of foreign debt through current account deficits, the country has to save more (and increased government savings alone will not be enough to do it, given current public budget deficits). In fact, one would expect the UK household savings rate to be a good 3pp or 4pp of disposable income higher than it is right now, since it has returned to the low rate seen in the height of the boom of 2004-07. Perhaps one can attribute the support of consumption to the impact of the Bank's easy monetary policy, and that certainly has played a role as intended.<sup>18</sup> But the Federal Reserve has also engaged in massively stimulative monetary policy, and the US household savings rate has risen by 4pp of disposable income since the crisis began. Household indebtedness is at similar levels in the two countries, so that is not the explanation. In fact, as shown in Figure 4, of the advanced economies worst hit by the crisis, the UK has had the smallest increase in household savings since the crisis began.<sup>19</sup>

Thus, absent additional monetary ease of the sort I advocated in Posen (2010c) to offset the impact of fiscal consolidation, we should forecast a substantial drag on household consumption growth over the next three years, beyond the direct impact of government austerity. As shown in Figures 5 and 6, where we match up the Leigh, et al (2010) consolidation cases with inflation outcomes, fiscal consolidations are also usually associated with declines in inflation, on average by 1% over two years – even when cases where monetary accommodation accompanied fiscal consolidation are left in the sample. In Table 1 we pull out the cases where inflation initially was above the colored swathe (i.e., inflation above the 75<sup>th</sup> percentile in the sample) since 1990. Even in all seven cases with inflation relatively high at the start of the consolidation, inflation

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<sup>16</sup> The UK government's commitment to fiscal consolidation may well have pre-empted interest rate increases of the sort seen in the euro area, and that is a legitimate motivation for undertaking such a program. As a matter of forecasting, however, pre-empting a bad outcome does not show up as a boost to growth in the short-term. It is like those NHS ads telling you how much money you'll save and how much healthier you'll be if you quit smoking – if you pre-empt problems by never smoking, you're better off, but you don't get the bonus from quitting.

<sup>17</sup> The economists Christopher Carroll and John Muellbauer developed these workhorse models of forecasting household savings behavior, and the theory underlying them.

<sup>18</sup> To smooth out the business cycle from the drop in 2008 versus saving more later when the economy is stronger.

<sup>19</sup> Updated Irish data was unavailable, though it is clear that consumption there has dropped a great deal.

declined by at least 1% over three years.<sup>20</sup> Another reason for taking the coming fiscal consolidation into account when making the forecast for UK inflation.

#### **Empirical Regularity 4: Unit Labour Costs Are a Significant Predictor of Inflation –**

This point should seem self-evident, especially to anyone with knowledge of the British economy in the 1960s and 1970s, so I will be brief. A huge determinant of inflationary pressures is the development of wages. What matters is not wage growth in nominal terms per se, however, but wage growth versus productivity.<sup>21</sup> In other words, what are the costs to businesses and consumers in terms of labor for the products you get – if worker productivity rises, so more goods are produced with the same labor inputs, wages can rise commensurate with that productivity increase without causing inflationary pressures. It is when wage costs rise faster than productivity that inflation rises. Economists therefore track what are called unit labour costs, meant to capture this labor input per widget produced across the whole economy, as well as wage developments themselves. For the UK, there is a strong statistical relationship between annual growth in unit labour costs and CPI inflation a year later (see Figure 7). This relationship has held up through the last two decades, including during the most recent years.

In fact, as shown in Figure 8, movements in unit labour costs and CPI a year later track rather closely in direction, even if not always in magnitude. Right now, unit labour costs in the UK have declined markedly with the revival of labour productivity in British businesses. This suggests that wage growth in the coming year will be coming down from its already low level. This ignores the likely freeze or contraction of wages throughout the public sector to come, and whatever spillover effect that and public sector layoffs may have on private sector wages as well.

Just to be consistent, let me place this result in a cross-national context, although no one to my knowledge challenges the fundamental basis for a relationship between wage growth and inflation. Figure 9 plots the average annual nominal wage growth for various multi-year periods for a set of 15 advanced economies starting in 1996. This is not shown in terms of unit labour costs, because comparable ULC data is not entirely reliable, but since in the advanced economies productivity growth rates tend to be pretty stable in recent decades, the distortion is not that great from using nominal wage growth instead.<sup>22</sup> Again, the relationship is quite robust across countries over time, even in the low inflation period with monetary regimes and globalization most comparable to our own situation today.

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<sup>20</sup> We include Portugal in 2000 which did not start out with above 75<sup>th</sup> percentile inflation, and it is the exception.

<sup>21</sup> Posen and Popov Gould (2007) discuss some of the literature on this point.

<sup>22</sup> 2009 observations are broken out separately because that was when the crisis hit labor markets leading to way off trend productivity behavior.

## The UK Inflation Forecast If This Time Isn't Different –

I believe the best forecast for the UK economy and for inflation over the medium-term is made on the basis of well established empirical regularities from similar situations to the one we now are in, following a financial crisis. I believe that over-interpreting recent runs of data, whether they are of good news (like UK exports or growth abroad) or of bad (the above target CPI inflation outcomes for many months) will lead to bad forecasts, and bad forecasts lead to bad monetary policy. We have to take the right lessons from our past forecast errors, and not over react to them in a defensive manner to confirm our counter-inflationary *bona fides*. Otherwise, the Monetary Policy Committee does the British people a disservice.

Most importantly, we should recognize that things are not fundamentally different in the UK economy at this point from what has happened in other post crisis advanced economies. That means:

- Output and employment still have a meaningful effect on inflation;
- The UK economy still has a large output gap to close, pushing down on inflation;
- UK household consumption will likely decline in response to fiscal consolidation;
- UK inflation will likely decline in response to fiscal consolidation; and,
- UK unit labour costs are declining, pushing down on inflation.

All of these taken together lead me to a forecast for UK inflation well below that of the November *Inflation Report*, and more importantly a forecast that at the target horizon of two-plus years, annual CPI inflation will be significantly below target (perhaps by 1pp or more). Shocks from the eurozone or from commodity prices – or factors I have not thought of – could overwhelm this forecast between now and then, but if there was good reason to believe those shocks were all to one side for inflation, or were likely to eventuate, I would put them into my central forecast. I do not think that is necessary, and in the absence of such shocks, the list of fundamentals I just gave should determine UK inflation.

One could insist that the recent outturns of data give a different picture, but to my mind that requires assuming this time in the UK is different, and therefore denying a majority if not all of the empirical regularities that I have set out today. That strikes me as a misguided way to make a forecast, especially in the absence of a convincing story to explain the anomalous behavior implied by such a forecast. Yes, it is *possible* that UK supply capacity disappeared despite relatively low increases in unemployment and liquidations, that a large and ambitious fiscal consolidation undertaken at a time of already low interest rates will not be a drag on consumption, that declining unit labor costs do not presage a meaningful decline in inflation, and so on. It is also possible that our recent snows mean that global warming is not happening, and recent performance in matches mean that Newcastle will win the Premiership. Possible, but I would not bet on it, and I certainly would not make policy on the basis of such a forecast.

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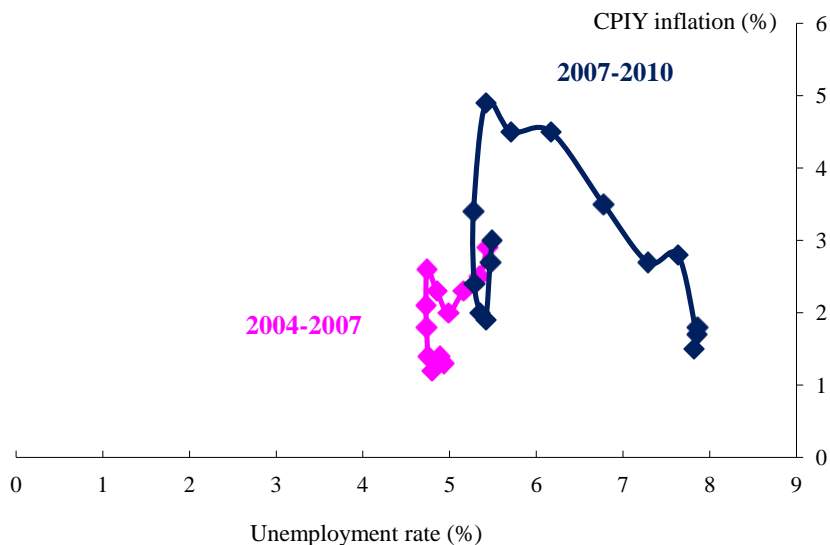
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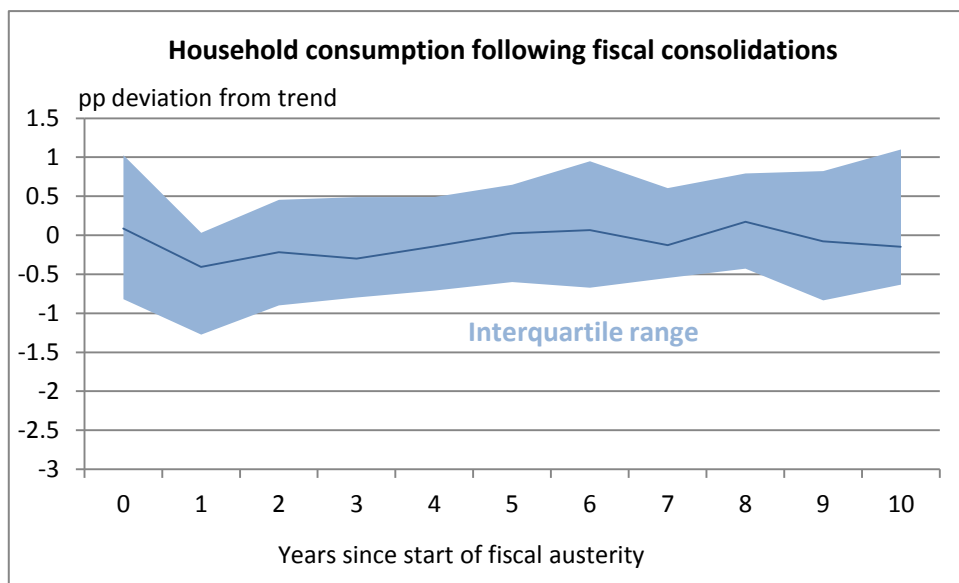
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**Chart 1: Phillips curve relationship in the UK**



Source: Office for National Statistics

**Chart 2: Household consumption following fiscal consolidations (1980-2009)**

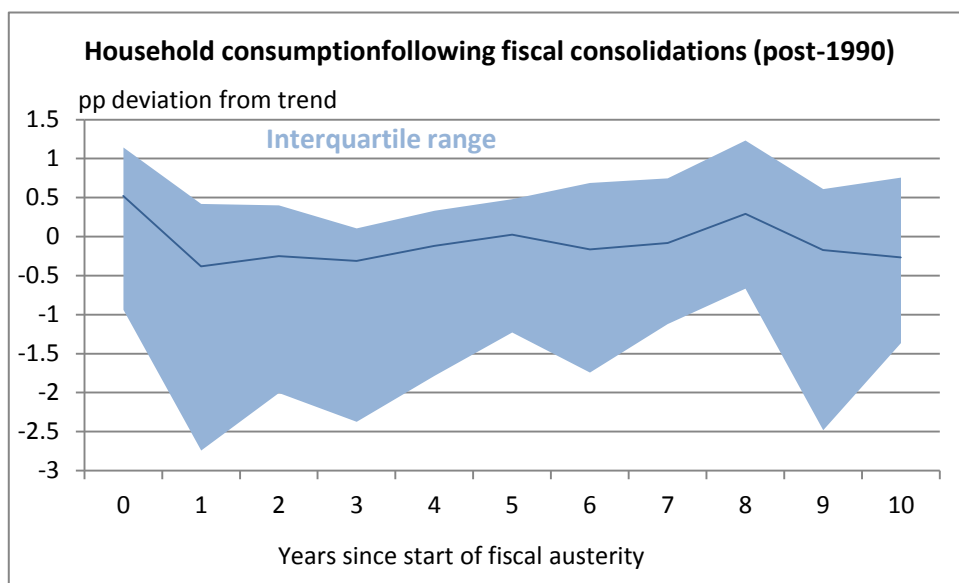


Sources: National Accounts (OECD), Leigh et. al. (2010)

Note: Based on 49 fiscal consolidation episodes in 15 advanced economies since 1980 as identified in Chapter 3 of the October 2010 IMF WEO using a “narrative approach”.



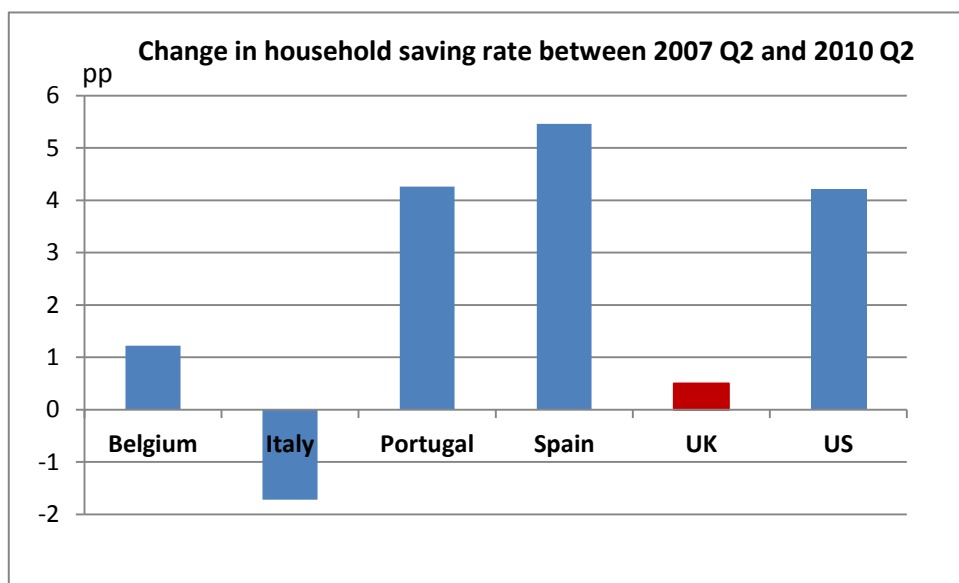
**Chart 3: Household consumption following fiscal consolidations (1990-2009)**



Sources: National Accounts (OECD), Leigh et. al. (2010)

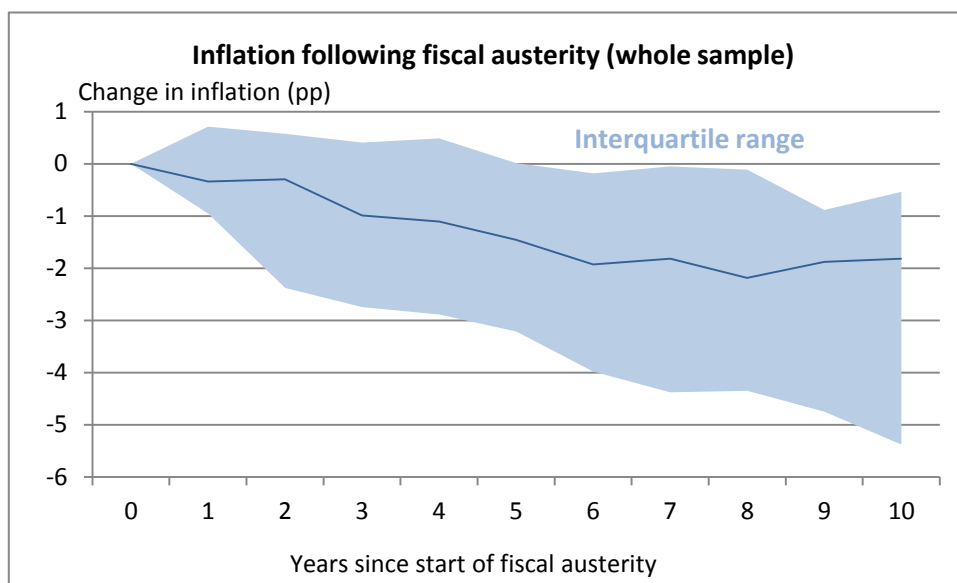
Note: Based on 27 fiscal consolidation episodes in 15 advanced economies since 1990 as identified in Chapter 3 of the October 2010 IMF WEO using a “narrative approach”.

**Chart 4: Change in household saving rate between 2007 Q2 and 2010 Q2**



Sources: Eurostat, Office for National Statistics and Bureau of Economic Analysis.

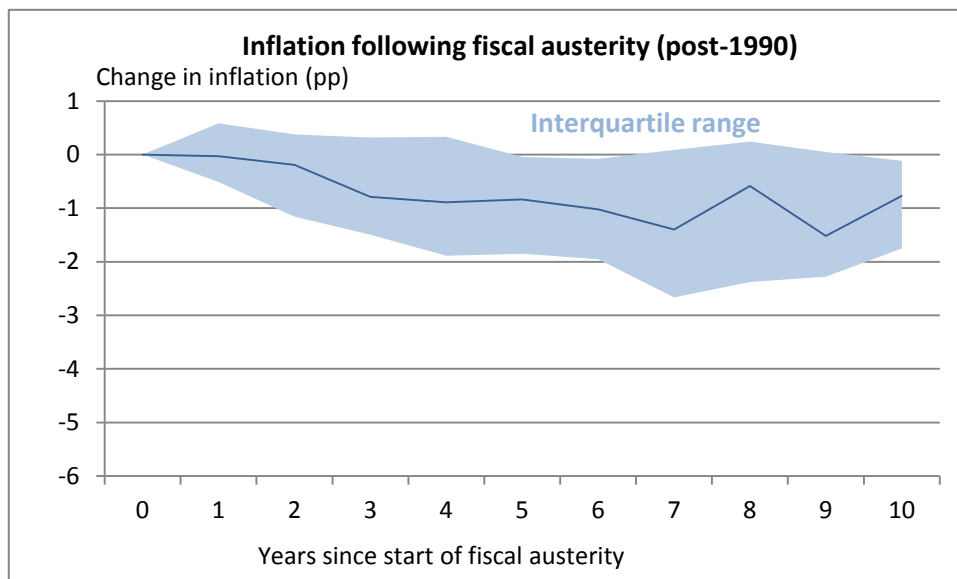
**Chart 5: Inflation following fiscal consolidations (1980-2009)**



Sources: Thompson Datastream, Leigh et. al. (2010)

Note: Based on 49 fiscal consolidation episodes in 15 advanced economies since 1980 as identified in Chapter 3 of the October 2010 IMF WEO using a "narrative approach".

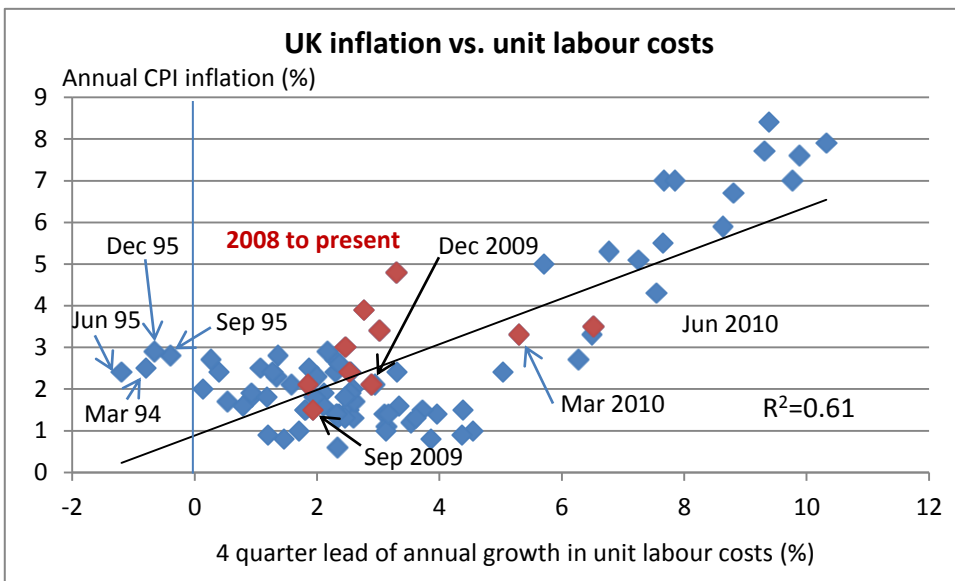
**Chart 6: Inflation following fiscal consolidations (1990-2009)**



Sources: Thompson Datastream, Leigh et. al. (2010)

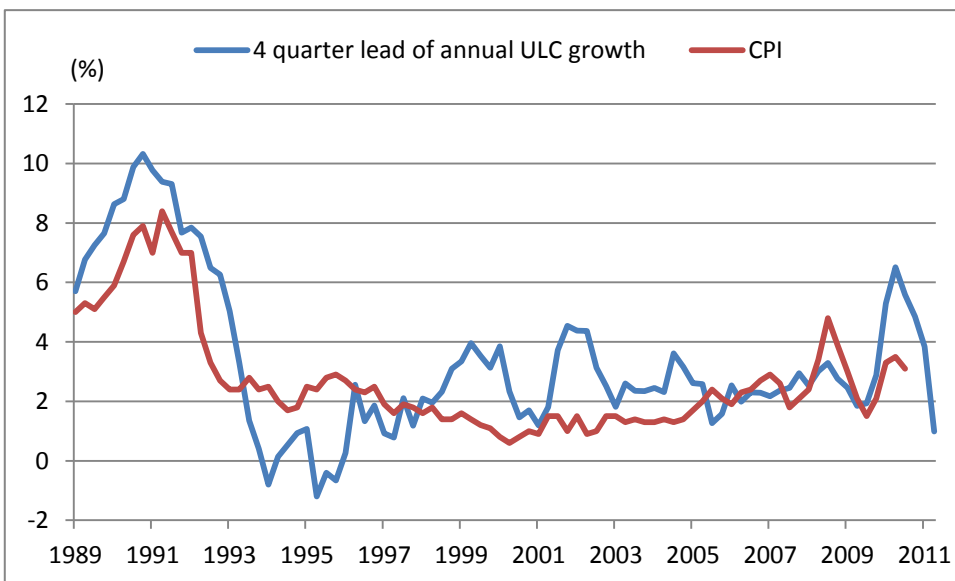
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**Chart 7: UK inflation and unit labour costs**



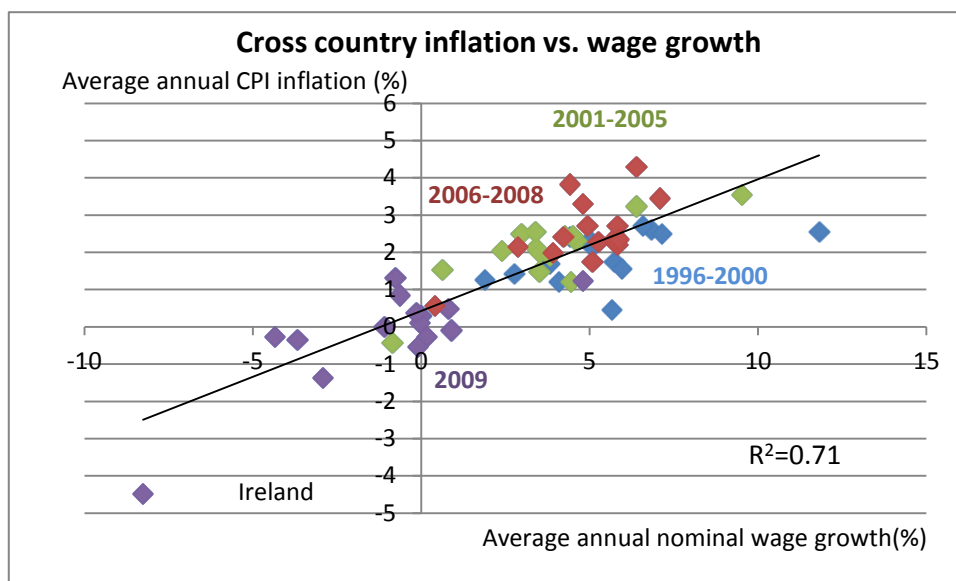
Source: Office for National Statistics

**Chart 8: UK inflation and unit labour costs**



Source: Office for National Statistics

**Chart 9: Inflation and nominal wage growth across countries**



Source: Thompson Datastream

Note: Based on 15 advanced economies: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, Spain, Sweden, United Kingdom, United States.

**Table 1: Change in inflation in consolidations with highest initial inflation**

Country	Year austerity began (year 0)	Above 75th pct. in year 0	Above 75th pct. on average in first 3 years	Inflation in year 0 (%)	Change in inflation in first three years (pp)
Belgium	1990	yes	no	3.4	-1.0
Germany	1992	yes	yes	5.1	-2.4
Italy	1992	yes	yes	5.0	-1.0
Portugal	2000	no	yes	2.8	0.8
Portugal	2002	yes	no	3.6	-1.2
Spain	1992	yes	yes	5.8	-1.1
US	1990	yes	yes	5.4	-2.3
US	2000	yes	no	3.4	-1.9

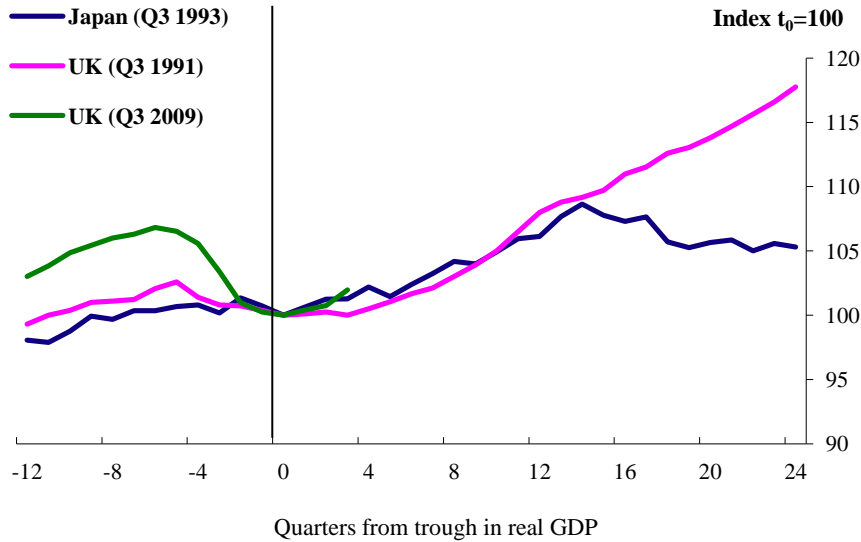
Sources: Thompson Datastream, Leigh et. al. (2010)

Note: Based on 27 fiscal consolidation episodes in 15 advanced economies since 1990 as identified in Chapter 3 of the October 2010 IMF WEO using a “narrative approach”.

**Appendix – Comparison to Japan and UK past recoveries**

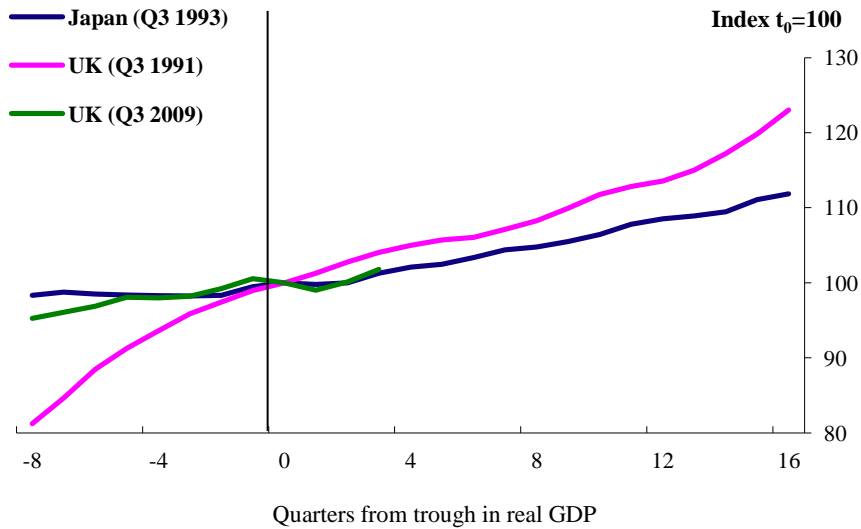
From Posen (2010c)

**Figure A1: UK and Japanese recoveries in context: Real GDP**



Source: OECD and Bank calculations

**Figure A2: UK and Japanese recoveries in context: Broad Money**



Note: Japanese M2 +CDs, UK 1991 = M4, UK 2009 = M4 ex. Intermediate OFCs

Source: Bank of England, Bank of Japan and Bank calculations