

# Global Inflation: Dead or Hibernating?

## Special Report

May 2009

# BLACKROCK

### EXECUTIVE SUMMARY

In this Special Report, we examine the prospects for global inflation and its implications for investment and hedging policy.

- Following the 'scare' in mid-2008, global inflation has collapsed and is likely to be negative over the next few months in many developed and emerging economies. This decline reflects the impact of global recession on commodity prices in particular, but also on a broader range of goods and services.
- Inflation views are becoming increasingly polarised. Forecasts beyond the next few months can be sorted into three camps: deflation, a secular rise in inflation, or a continuation of low but positive inflation broadly in line with central bank inflation targets. We see inflation moving back around central bank targets over the next few years, but with no secular increase beyond those levels.
- Cyclical influences suggest a low global inflation environment over a multi-year period. The 'output gap', a broad measure of capacity utilisation, is likely to widen substantially in all major economies and persist for a long time in the absence of a strong and sustained economic recovery. History suggests that excess capacity will remain a dominant influence on price pressures.
- We do not believe that the cyclical downturn will deliver a genuinely deflationary environment. We define this as one in which price declines are widespread, significant, and sustained, and price declines are widely anticipated. While we expect a deep cyclical recession followed by weak recovery initially, we do not foresee a depression. Moreover, the sensitivity of inflation to cyclical conditions appears to have diminished and is not high enough for even a steep recession to generate deflation. In addition, there is little sign of longer-term inflation expectations incorporating a deflationary environment.
- Inflation risk would increase if a strong, sustained cyclical recovery were to occur. We do not expect this. Concerns have arisen that some aspects of the global policy stance, including substantial budget deficits accompanied by significant growth in central banks' balance sheets, will be inflationary.
- As we need a powerful policy stimulus to simply offset the severe growth headwinds, it is unlikely we will generate the very robust growth to fuel inflation significantly. Moreover, the stimulus is likely to be wound down as economic and financial conditions normalise. We acknowledge there are risks to the extent of the stimulus; it could persist too long, be withdrawn prematurely, or not be sufficiently large to begin with.
- The commodities sector could be of particular importance in the event of a strong cyclical recovery. Meaningful capacity reductions raise the risk that commodity prices could begin to rise at an early stage of a recovery period. Nevertheless, a very robust cyclical recovery would be required to raise commodity price inflation sufficiently to accelerate the broader measures of inflation, and we believe that this is a low probability event, at least for the next few years.

### About BlackRock

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### About the Author

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- In principle, the policy background could generate higher inflation simply by raising inflation expectations. We consider this unlikely in a growth-constrained world. Large budget deficits could be much harder to eliminate than monetary stimulus. Even if this proves to be the case, the outcome is likely to be higher real interest rates and 'crowding out' of private sector investment rather than higher inflation. A period of extended fiscal restraint could contribute to subdued growth persisting even beyond the next few years.
- Government bond markets are priced for very low - and in some cases negative - inflation for the next few years, with some eventual normalisation back to central bank targets. Inflation hedging against an uncertain long-term outcome could be warranted, particularly for clients who have explicit real long-term liabilities. In those cases, our scenario of positive but low inflation has greater cost implications, particularly over the long term. Therefore, the cost of establishing an inflation-matching strategy for longer-term liabilities may represent a worthwhile insurance premium.
- We do not believe there is a fundamental mispricing of inflation prospects in current expectations, and in the near term there are risks that discounted inflation could edge lower. Other less precise inflation hedges include commodities and commodity equities. We are increasingly sceptical that equities can be an effective inflation hedge. Non-commodity earnings can come under pressure in this environment, and, importantly, higher inflation in the past has been associated with some de-rating of equities.

## THE PROSPECTS FOR GLOBAL INFLATION

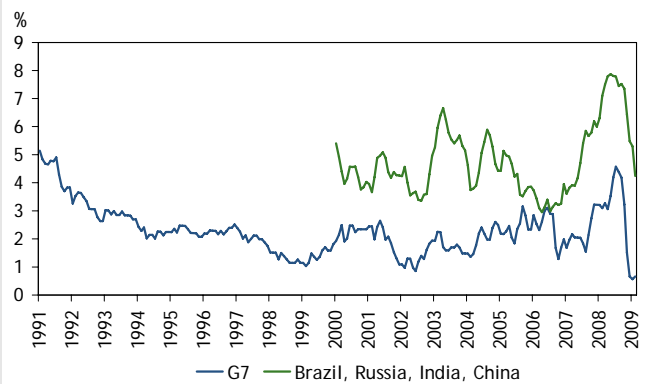
### From Inflation Surge to Inflation Collapse

Less than a year ago, inflation in many economies had hit new cyclical highs. In the G7<sup>1</sup> economies, consumer price inflation reached 4.6% in July, the highest level since the early 1990s. The situation has, however, been transformed. G7 inflation has dropped to little more than zero, the lowest level in decades, and a similar rate is evident in many emerging economies (Figure 1). Moreover, in the next few months it is virtually inevitable that inflation will turn negative in many countries. Indeed, this process is already underway in some instances, notably the US but also the UK.

There is, nevertheless, considerable uncertainty over the longer-term trend in inflation, with concerns that sustained deflation beckons coinciding with fears that inflation is rather set to accelerate strongly. Either outcome would mean that the 'Great Moderation', the 30-year period in which global inflation and inflation volatility first declined and subsequently stabilized at low levels, is over. Since the decline in inflation since the early 1980s was associated with a significant improvement in economic performance in many countries, and in enhanced returns to many financial assets, the ultimate resolution of the issue is critical. So what are the factors that will determine the eventual outcome?

<sup>1</sup> The G7 countries are the larger industrial economies: the US, Canada, Germany, France, the UK, Italy, and Japan.

Figure 1: G7 and BRIC Inflation



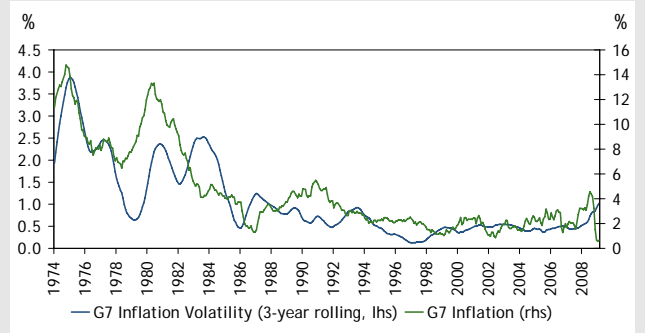
Source: Datastream, BlackRock; data as of 28 February 2009

### What Happened in the Great Moderation?

If there is to be a departure from the low but positive inflation regime which has characterised recent years, it is important to understand that regime's key characteristics. In particular:

- (1) Inflation has become much less volatile at a lower level of inflation (Figure 2)

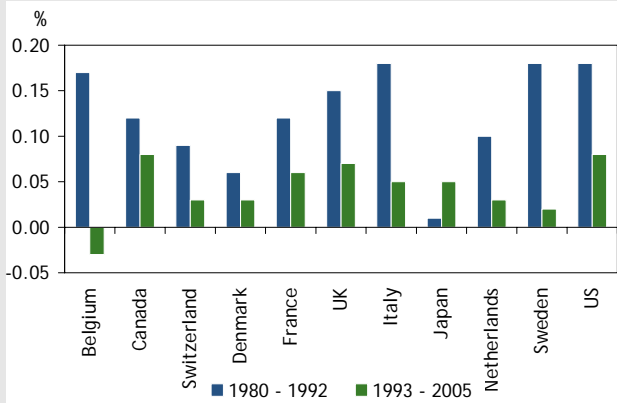
Figure 2: The Great Inflation Moderation



Source: Datastream, BlackRock; data as of 15 February 2009

- (2) Inflation 'shocks' have become less persistent. If inflation spikes higher, it has become much less likely to remain high. For example, for the G10 countries it is estimated that between 1970 and 1989 more than 80% of price increases in the previous six months persisted into the next six months. After the 1990s this dropped to 50% in the US and other economies.
- (3) The extent to which food and energy prices and exchange-rate changes passed through into broader inflation measures also appears to have declined.
- (4) Inflation expectations have also fallen to low levels and have typically been much less volatile.
- (5) The short-run sensitivity of inflation to changes in cyclical conditions has weakened, making inflation declines in the face of weak economic growth, or inflation surges in the face of strong economic growth, less apparent (Figure 3).

Figure 3: Cyclical Influences on Inflation Diminish (Response of Inflation to National Output Gaps)



Source: Datastream, BIS and BlackRock

(6) There is some evidence that the inflation process has become less national and more global with individual countries' inflation outturns reflecting global trends to a greater extent<sup>2</sup>.

An explanation of this low inflation regime would be that central banks and other policy makers have been successful in 'anchoring' longer-term inflation expectations close to official inflation targets (either formal targets as in Europe, Japan, and some emerging markets, or informal as in the US). As a result, such expectations are less sensitive to historic inflation rates and temporary influences on inflation, such as exchange-rate changes and commodity-price fluctuations. Since widespread changes in inflation expectations tend to be self-fulfilling, actual inflation has also become lower and less volatile as longer-term expectations have themselves stabilised at low levels.

Cyclical influences on inflation are still clearly relevant: periods of cyclical strength and weakness still affect pricing trends. However, as shown above, a lower cyclical sensitivity to inflation has also emerged. Inflation would fall by less in a recession and rise by less in a boom if longer-term expectations are well-anchored, as cyclical fluctuations in inflation would be generally seen as transitory. From this perspective policy-makers get much of the credit for getting inflation expectations low and keeping them low. However, they have also been assisted by the process of globalisation, which has acted as a structural influence supporting lower inflation.

An important driver of inflation going forward is therefore the extent to which policy makers can continue to anchor inflation expectations at low but positive levels, and avoid the twin threats of inflation and deflation. This implies a need for policy makers to retain the confidence of financial market participants, and firms and workers more generally, that their inflation objectives remain the same and can still credibly be met.

### Global Recession and Commodity Price Weakness Drives Inflation Down

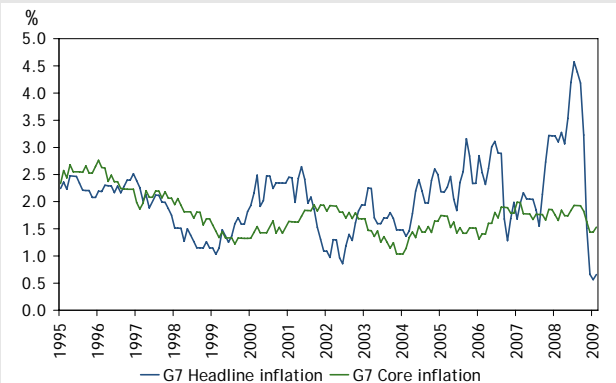
Cyclical influences on inflation may have diminished, but in the face of a large enough macro 'shock' such influences clearly still matter, particularly in the short term. The recent collapse in inflation has been a genuinely global phenomenon, with global determinants. The proximate determinant of the recent fall in inflation has been the

<sup>2</sup> See "Globalisation and the determinants of domestic inflation", W. White, BIS Working Paper 250.

marked weakness in commodity prices, notably oil. The commodities price boom had been mainly responsible for the inflation surge in the first half of 2008. The subsequent collapse in energy and food prices in the second half of last year has been by far the most substantial influence driving inflation lower.

Commodity price weakness was, however, mainly the result of the downturn in demand, which has brought about a deep and widespread global recession. Demand weakness has also contributed to a more broad-based, if less substantial, decline in inflation excluding food and energy prices. This 'core' measure of inflation has remained positive, but has clearly begun to grind lower (Figure 4).

Figure 4: G7 Headline and Core Inflation



Source: Datastream, BlackRock; data as of 15 February 2009

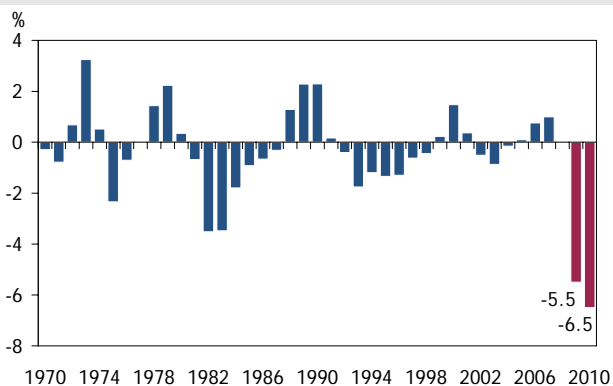
### Recession Influences on Inflation Will Intensify

The coming months are likely to see deflation concerns dominate inflation concerns. Not only will global inflation be very low, and probably negative, but also the broader cyclical background is likely to be one that will contribute to price pressures remaining in abeyance, possibly for an extended period. The recession has already led to the emergence of a significant level of spare capacity globally, and it is highly likely that excess capacity will increase still further. This would be the case if global recession persisted or in the event of a very subdued economic recovery.

Figure 5 suggests that the broadest measure of global spare capacity, the 'output gap'<sup>3</sup>, is highly likely to become very large in a historic context and much greater than at the end of the recession earlier in the decade. A conventional approach to inflation forecasting would suggest that a positive output gap is required to generate higher inflation, and that a negative gap would imply ongoing downward pressures on prices. Even if the recent tentative hints of some stabilisation in global demand are the precursor to a recovery of sorts, any upturn is likely to be very subdued for an extended period, even into 2010. This results from the inability of the global financial system to finance an effective recovery and the high leverage amongst consumers in the Anglo-Saxon countries.

Obviously the output gap would increase if the level of economic activity continues to fall. Moreover, if any eventual rise in economic activity is less than the long-term trend rate, then the output gap would also continue to widen. This is our central case. In this scenario, global excess capacity could continue to rise for the next eighteen months or so, reaching a level well in excess of that in global downturns for many decades. This seems to set the scene for a multi-year period in which inflation remains low and deflation risks are never fully dispelled.

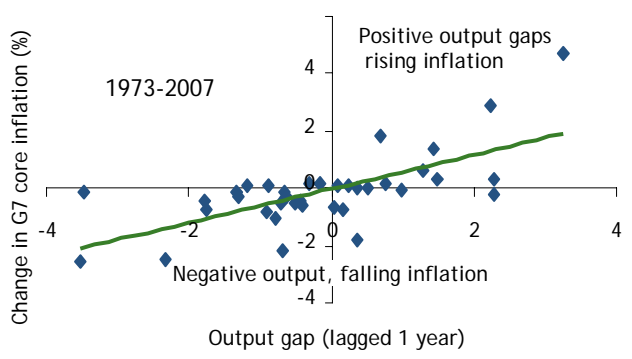
Figure 5: The Global Output Gap (% Global GDP) Increases Sharply



Source: Datastream, OECD and BlackRock; data as of 31 March 2009

The historic evidence supporting this view is strong. For example the surge in global inflation in the mid-1970s followed a sustained global boom that led to very severe capacity shortages globally. From this perspective, the surge in commodity prices that occurred at that time was more a reflection of a sustained period of strong economic growth rather than an independent cause of higher inflation in its own right. Similarly, the decline in inflation in the 1980s occurred in a period in which the global output gap was negative for virtually the entire decade. Figure 6 below shows that periods in which the output gap has been positive have coincided with rising inflation, and vice versa.

Figure 6: The Global Output Gap and G7 Inflation



Source: Datastream, BlackRock; data as of 31 March 2009

An exceptionally powerful economic recovery would be required to eliminate the level of excess capacity, which is likely to emerge. For example, if the global output gap does indeed reach around 6% of global GDP, and trend global growth is around 4% per annum, then in principle the global economy could grow by 6% per annum for three years before the global output gap is closed. To put this in context, the highest annual global growth rate in the last decade was a little over 5%, in 2006 and 2007. From this cyclical perspective, the recession appears sufficient to kill off inflation as a macro problem for many years, simply because an unparalleled global boom would be required for it to return.

<sup>3</sup> The output gap is defined as the difference between the actual level of economic activity and the 'trend' level. The output gap is negative if, as now, the estimate of trend economic activity exceeds the actual level. The growth in the trend of economic activity is determined by productivity growth and growth in the labour force. Estimates for trend growth in the US, for example, tend to be around 2.5% to 3%. If the actual rate of growth is positive but still less than the trend growth rate then the output gap would continue to increase.

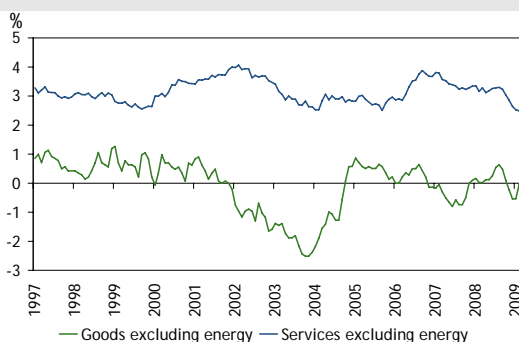
## Deflation Risks Still Low

Are downward pressures on prices so strong at present that inflation could decline not just for a few months but over a multi-year period? It is important to differentiate the period of falling prices which is probable in the short term from a genuinely deflationary environment. The near-term prospective decline in inflation reflects the fall in commodity prices, and can be regarded for many countries as 'good' deflation. After all, the fall in the oil price makes the recipients better off not worse off. In addition, the period of falling prices is likely to be only temporary, as commodity prices have stabilised in recent months. The point of maximum impact of commodity price weakness on global inflation rates is likely to be around July, with the full impact exhausted by year end.

Genuine deflation on the other hand involves sustained, widespread, and significant declines in the price level. Two conditions need to be met for this to happen. First, a very sharp contraction in economic activity, which makes the downturn more like a depression than a cyclical recession. Second, a collapse in inflation expectations, so that not only prices are falling but they are widely expected to continue to do so. We regard the emergence of a deflationary environment as a risk to our views but far from the most likely outcome. We do not expect a depression, and even a very large output gap could be insufficient to lead to widespread price declines. For example, using the estimates from Figure 3 above suggests a decline of 0.25% in G7 core inflation for a global output gap of around 6% of global GDP. That would take core inflation to around 1% in two years, still low but also clearly positive. In addition, inflation expectations, particularly longer-term expectations, have remained clearly positive, and indeed little changed from the average of the past decade or so.

Some prices will inevitably decline in all countries in the next couple of years, but this is not deflation. The inflation rates quoted for each country are simply an average of a wide range of goods and services, with significant dispersion around the mean. A decline in average inflation rates increases the chances of more prices declining. However, if some prices fall, that is neither deflation nor a change from recent years. Figure 7 shows the inflation rates of ex-energy goods and services prices in the US since the mid-1990s. The prices of goods have on average barely increased for over a decade, and show some cyclical variation around this zero average. From this perspective an environment of negligible price inflation has already been a reality for many US companies for many years. A similar phenomenon is also evident in other developed economies. It is probable that over the next couple of years proportionately more prices will decline than in recent years, but a sufficient number, particularly in the services sector, will continue to increase, keeping average inflation positive.

Figure 7: Goods and Services Price Inflation in the US



Source: Datastream, BlackRock; data as of 31 March 2009

## Regional Differentiation in Inflation

The current downturn in global economic activity has been highly synchronised in terms of the timing and magnitudes of the downturn across different countries, so that generalisations about the trend to lower inflation are easy to make. There has, however, been some regional dispersion. Figure 8 shows that the inflation declines have been most apparent in emerging markets, where the weights of food and energy prices in consumer price indexes are higher than in the developed world. Amongst the developed countries, exposure to oil price moves has been greater in the US than elsewhere, reflecting the lower tax component of petrol prices. Japan stands out not simply as a result of the lower starting level for inflation but also the current downturn appears to be more severe, leading to a still higher level of spare capacity than elsewhere. However, the main feature of the table below is the extent to which output gaps in the developed economies appear to be at broadly similar levels, hence indicative of broadly similar inflation prospects.

Figure 8 : Background to International Inflation Trends

	US	Euro Area	UK	China	Japan
Peak Inflation in 2008	5.6%	4.0%	5.2%	8.1%	1.6%
Current Inflation Rate	-0.4%	0.6%	2.9%	-1.6%	0.2%
Difference: Peak Less Current	6.0%	3.4%	2.3%	9.7%	1.4%
Current Inflation Rate Ex-Food and Energy	1.7%	1.5%	2.6%	N/A	-0.1%
Output Gap in 2010 (IMF)	-6.5%	-6.4%	-6.6%	N/A	-8.0%

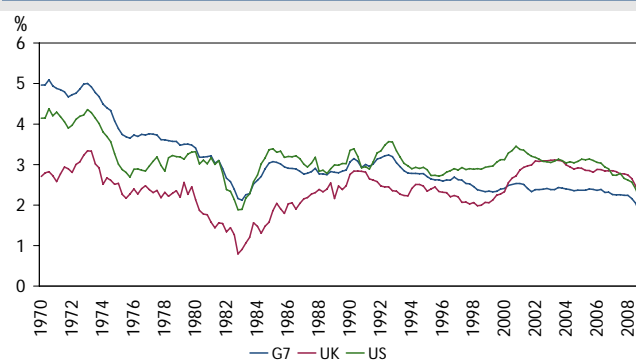
Source: Datastream, BlackRock; most recent data as of 31 March 2009

## Risks to the Cyclical Inflation Outlook

There are three caveats to the argument that inflation will remain low as a result of substantial excess capacity. First, in reality it is less straightforward to measure excess capacity than the relatively simple measures used here suggest. For example, it may be that some portion of firms' capital stock has become obsolete in prevailing economic conditions, potentially reducing the output gap. In addition, if the rise in unemployment leads to a significant increase in the numbers of long-term unemployed, these workers may in effect 'drop out' of the workforce. This too would diminish the aggregate level of spare capacity, potentially leading to an earlier return of inflation than the 'raw' calculations suggest. Through mechanisms such as these, slower actual economic growth also therefore diminishes the longer-term trend.

A related argument concerns longer-term growth trends independent of any effect of recession. In the long term the rate at which economies can grow is determined by the growth in the labour force and productivity growth. Demographic trends in many economies point to labour supply slowing and some arguments have been put forward to suggest slower productivity growth, for example through slower capital spending. Figure 9 suggests that this trend to slower long-term growth may already be underway. Slower growth in the underlying capacity of an economy could mean that a strong economic recovery would generate higher inflation at an earlier stage of an upturn than generally expected.

Figure 9: 10-Year Averages in GDP Growth



Source: Datastream, BlackRock; data as of 31 March 2009

These effects are difficult to quantify but are likely to be small in magnitude<sup>4</sup>. For example, after the deep recession in the early 1980s there was little evidence that aggregate supply capacity was materially impaired. In addition, the sheer size of the output gap that looms is so great that even if some impairment to supply-side capabilities did emerge, it would still take considerable time for this to have a material impact on inflation. This argument rather relies on slower growth not delivering expected increases in standards of living, and hence precipitating more substantial wage claims to make up the deficiency. However, there is little evidence in its favour. Indeed the example, of Japan, where the long-term growth rate dropped from over 4% in the 1980s to only around 1% more recently, suggest that inflation is far an inevitable consequence of a downshift in economic growth potential.

Finally, the output gap argument, in its simplest form, suggests that inflation pressures always increase on a positive output gap, and always decline when the gap is negative. The implicit assumption is that all sectors in an economy hit capacity constraints at the same time. This assumption is far-fetched. Clearly different industries will reach capacity constraints at different times, and these constraints are more likely to be hit in periods of strong economic growth, independent of the starting level of the output gap.

So a strong cyclical recovery could, even if the output gap is large, start to deliver higher inflation well before the output gap has been completely eliminated. In this context, the commodities sector could be of particular importance. There have been meaningful capacity reductions in a number of different commodity industries, and this raises the risk that commodity prices could begin to rise at a relatively early stage of any recovery period as firmer demand collides with reduced supply. Nevertheless, a very robust cyclical recovery would still be required for strong growth to raise commodity price inflation sufficiently to deliver an acceleration in broader measures of inflation, and we believe that this is a low probability event at least for the next couple of years.

<sup>4</sup> This is an area of some debate. In the UK, for example, the Institute for Fiscal Studies has suggested that the current UK recession will permanently lower the level of GDP in the UK by 4% below where it would otherwise have been. This would take the output gap from being very large to very small.

## Global Influences on Inflation

Although a significant component of the fall in inflation in the 'Great Moderation' period can be attributed to policy changes, a parallel theme has been the emergence of secular global trends that also appear to have contributed to the disinflation process. For example much diminished transport costs have contributed to the globalisation of firms' supply chains, with productivity gains leading to lower corporate costs overall; the integration into the global economy of over 1 billion workers from China and India alone has led to significant price declines in goods produced by this additional labour supply; and the emergence of a more global market has led to greater competition in a wide range of areas.

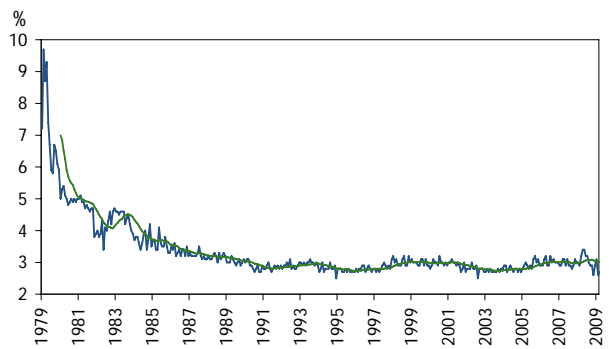
The issues to consider here are the extent to which these influences have contained inflation in the past and the extent to which they might be sustained in the future. In reality the impact on inflation in the developed economies from globalisation appears to have been relatively limited. Estimates of the impact of lower prices of manufactured goods on US inflation, for example, suggest that it has been 0.1% to 0.2% per annum over the past decade - nice to have but still a relatively small impact. This may seem to understate the impact of globalisation, but claims that it is much higher seem contradicted by other broad trends. For example, if 'pricing power' in the past few years has been substantially constrained by a harsher competitive environment, how could profitability up to the onset of the current recession have improved so strongly from the earlier part of the decade? In addition, this ignores the impact of higher commodity prices caused by greater demand from many faster growing emerging markets.

Analysis of these effects can produce somewhat varying results, and at different times the magnitudes will differ. The net effect could probably go either way but in any case is probably quite small. Indeed, the most powerful impact of the globalisation process has probably been on relative prices. The relative prices of goods with a high unskilled labour component have declined sharply, the relative prices of goods with a high energy component have risen sharply - with the impact on overall inflation probably variable and not particularly large. We do not expect this assessment to change much if at all over the next few years.

### The Importance of Inflation Expectations

The cyclical argument suggesting that inflation will remain low for a multi-year period is strong. Nevertheless, it is not overwhelming, as it does not provide a complete picture of the inflation process either globally or in individual countries. A more complete analysis would also incorporate potential changes in long-term inflation expectations as well as their key determinants. This is important, as inflation expectations tend to be self-fulfilling. For example, if there were widespread agreement that an economy which had had an inflation rate of 2% in the past will have an inflation rate of 5% in the future, it is likely to end up with an inflation rate of 5% sooner rather than later. Figure 10 shows how US inflation expectations, as measured by the University of Michigan survey, collapsed in the 1980s and have since been fairly stable. The interaction between cyclical pressures and inflation expectations has frequently been misunderstood in the past. In the mid-1970s, for example, the conventional wisdom was that expansionary macro policies could reduce unemployment at the cost of a higher level of inflation, as inflation expectations were perceived to be 'sticky',

Figure 10: US General Inflation Expectations



Source: Datastream, University of Michigan, and BlackRock; data as of 31 March 2009

lagging actual inflation. In reality, there was no such trade-off and the extent to which inflation expectations increased and remained high came as a genuine surprise.

In the early 1980s there was widespread pessimism about the potential for inflation to decline significantly, as expectations of inflation appeared very well embedded at high levels, and there was a presumption that such expectations would be insensitive to higher unemployment. In reality, inflation fell surprisingly quickly at that time in many countries. Finally, for much of the 1990s the conventional wisdom was that cyclical recovery after the recession at the start of the decade would lead to rising inflation. In fact inflation continued to decline well into the recovery period as longer-term inflation expectations remained low.

The starting point for the view that inflation will remain low in effect reflects the assumption that the cyclical sensitivity of inflation is high and inflation expectations will only be 'sticky' at a low level. Hence in the absence of a marked cyclical recovery, which appears improbable, low inflation appears inevitable. The threat of higher inflation would therefore rather result from a secular shift in inflation expectations. This would not arise from the immediate cyclical outlook, but from the policy response to it, and the ensuing impact on inflation expectations.

### Can Unprecedented Policy Expansion Destabilise Inflation Expectations?

On a range of perfectly sensible criteria, global policy stimulus is building up to be the most substantial implemented in a short period for many decades, and possibly ever. Inflation concerns revolve around the fact that in many periods in which inflation has accelerated significantly in the past, macro policies were very similar to those being implemented at present. In particular, fiscal policy is being loosened significantly, short-term real interest are close to zero, and central banks' balance sheets have in some instances grown substantially - with central banks seemingly engaged in 'money printing' - notably in the US and the UK. This combined policy stimulus could at some stage appear simply too large to be consistent with a credible strategy from policy makers to keep inflation low over time. If so, then longer-term inflation expectations could begin to increase to a material extent, even if prevailing cyclical conditions remained very weak. The issue is as much scale as direction. Periods of low real short-term rates and large budget deficits are not unprecedented, but this misses the full picture. It is perfectly normal and indeed desirable for macro policy to be eased in a recession, but the magnitudes involved at present are substantially in excess

of historic norms. Figure 11 below shows the average budget deficits in a number of major economies over the past thirty years, and previous high points for general government borrowing relative to GDP. These are then compared with forecast deficits. The break with the past is clearly apparent. These prospective deficits will clearly have implications for the ratio of outstanding government debt to GDP in each of the countries. These ratios have trended down in all the major economies for three decades. Over the next few years they are likely to rise sharply, increasing to levels not seen since the 1970s.

Figure 11: Summary of Policy Stimulus

	US	Euro Area	Japan	UK
Budget Deficit Forecast 2009 (% GDP)	-13.6%	-6.1%	-9.9%	-12.5%
40-Year Average (% GDP)	-3.0%	-3.1%	-3.1%	-2.9%
Previous High (% GDP)	-5.6%	-7.6%	-11.2%	-8.0%

Source: Datastream, OECD, and BlackRock; data as of 31 March 2009

Any moderately competent economic decision maker when asked "how can you generate inflation" would probably reply "Simple - lots of government borrowing, financed by central banks". This policy stance is becoming the global norm, and history is replete with such examples of such policies generating not just inflation but also hyperinflation. So why is this time different?

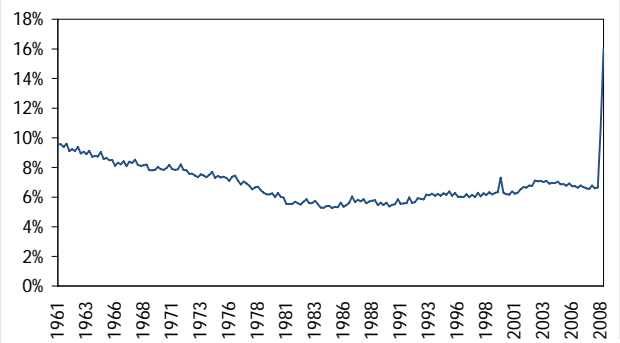
### Policy Stimulus Required to Prevent Financial Collapse

The key difference is the starting point. In a 'normal' environment, prevailing policy stances would be dangerously destabilising. However, the current environment clearly is not normal. The global financial system has ceased to function effectively and remains under severe stress. In addition, there has been a collapse in private sector demand in all of the major economies, and the ensuing recession could well be the deepest global downturn since the 1930s. In these highly unusual circumstances highly unusual policy responses are required, and their effects are likely to be very different than if implemented in a less growth-challenged world.

### Inflation Threat from Quantitative Easing is Exaggerated

Although the inflation risk associated with the expansion of central banks' balance sheets may seem greater compared to the fiscal background, in reality it is easier to control. Central banks have in effect become significant financial intermediaries. They have expanded their own balance sheets substantially by lending directly to the private sector, both financial and non-financial companies through, loans, guarantees, and purchases of securities. Central banks have had to step in to fill the large hole left by the implosion of securities markets, and by the severe constraints commercial banks are currently experiencing in expanding lending, as actual and prospective losses have severely curtailed their capital bases. From this perspective, central banks are not adding to the broader process of credit creation: they are preventing the financial system from imploding. More figuratively they are struggling to fill the leak in a dam, not adding to the water level in the reservoir.

Figure 12: US Federal Reserve Assets (% GDP)

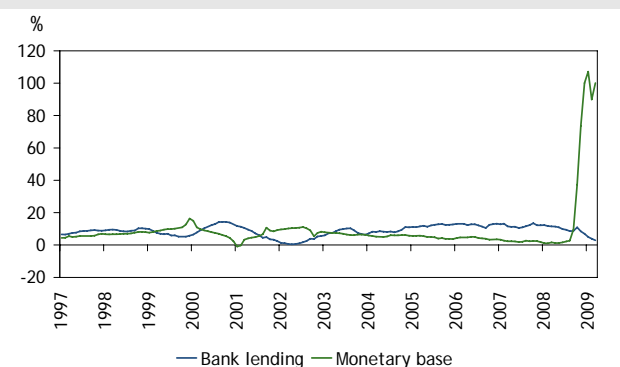


Source: Datastream, BlackRock; data as of 31 March 2009

More generally, the 'printing money' analogy associated with quantitative easing, conjuring up images of wheelbarrows of banknotes being used in a wide range of transactions, is both emotive and highly misleading. Central banks are financing their asset purchases to a greater extent not by issuing new securities to the private sector, but by increasing central banks' deposits with commercial banks. These deposits, rather than notes and coins, comprise the monetary base, and this is indeed growing very rapidly in some cases. From this perspective monetary growth is indeed exploding. In a very simple framework banks can lend out a multiple of the monetary base, so in principle bank lending, and hence aggregate demand and inflation could explode too.

In the more complex real world, however, this is not happening. Banks are short of capital and are highly risk averse. In the absence of an adequate capital base, they are simply accumulating reserves, not using them to support new lending. The additional liquidity provided by central banks therefore remains trapped in the financial system rather than affecting the broader economy to a significant extent. The evidence? More inclusive measures of the money supply which reflect more accurately the trend in bank lending are still decelerating, from initial levels which were already low.

Figure 13: US Bank Lending and Monetary Base Growth



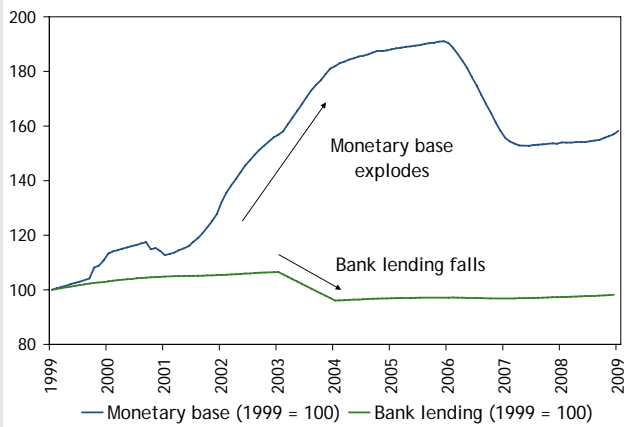
Source: Datastream, BlackRock; data as of 31 March 2009

### What Happened in Japan?

The experience of Japan is useful in analysing quantitative easing. A similar strategy was followed by the Bank of Japan earlier in the decade. There were significant purchases of government bonds by the Central Bank and these purchases were financed by an increase in the

monetary base. So what happened? The monetary base exploded, virtually doubling. Did this lead to an explosion in bank lending and inflation? Absolutely not. Bank lending actually fell slightly over the same period. And inflation, which was slightly negative at the start of the process was still slightly negative when the policy was abandoned. So what appeared to be an example of extreme central bank mismanagement in reality had much less of a dramatic impact.

Figure 14: Japanese Monetary Growth in the 'Quantitative Easing' Period



Source: Datastream, BlackRock; data as of 31 March 2009

This does not imply that the Bank of Japan's policy was a failure. Government bond yields and other interest rates were probably somewhat lower than they would otherwise have been and bank lending, although weak, was probably somewhat higher. In the current environment, central banks are more likely to judge similar policies in terms of their contribution to immediate financial stability and to eventual recovery as one measure amongst others, not as the crucial policy tool.

### Monetary Stimulus Can Be Quickly Unwound

The key conclusion is that there is no good reason to believe that what, in more normal circumstances, would be dangerously inflationary policies will deliver the same result in the abnormal financial environment that currently prevails. However, what will happen as and when the financial environment normalises? The inflation risk in the longer term is that central banks will maintain their aggressive liquidity provision in a period of cyclical recovery, leading to a period in which policy stimulus is clearly inappropriate and excessive.

This risk is exaggerated. The process of central bank balance-sheet expansion can be reversed quickly, and indeed is partially self-correcting. Central banks have acquired their role as lender-of last resort to financial and non-financial sectors because there are insufficient buyers for the securities and other assets they now hold. In a more normal environment, the market process will operate more efficiently and demand for the assets on their balance sheets will increase. Many assets are at short maturities and simply need not be rolled over. Others are of longer maturity, but in markets which are either liquid already or would become more so in a less dysfunctional world, so relatively rapid disposition of assets need not be difficult. At worst, such considerations would slow the rate of balance sheet decline rather than act as a longer-term constraint.

Moreover, the Federal Reserve (Fed) in particular has to some extent 'automated' the potential decline in its balance sheet, setting lending and borrowing rates on some programmes that will become more unattractive as financial conditions normalise. Other programmes require that financial markets are "unusual and exigent" and by law must be eliminated when they are not. More generally, the Fed has some discretion as to how the increase in its balance sheet is financed. This need not be through increases in the monetary base: it could also occur through issuing other securities into the market. So the technical constraints in terms of unwinding a large central bank balance sheet need not be particularly onerous.

There is indeed a judgement call to be made in terms of when this easing of central bank balance sheets should begin to occur. As with other decisions made by central banks, the timing of such a move may after the event prove to have been flawed. However, there is no strong reason as to why the timing should be biased in terms of the policy stimulus being withdrawn too late rather than too early.

### Central Bank Independence Compromised?

A key concern is not so much the technical ability of central bankers to reduce policy stimulus at the appropriate time, but potential political constraints on their ability to do so. Central banks are to varying degrees, independent. However, the degree of legal independence varies, as do the more informal channels through which central banks and political circles interact. One risk, particularly in the US, is that the boundaries between central banks and other branches of government are becoming blurred in the context of the financial rescue packages being implemented. Central banks may find it hard to disentangle themselves from this political process, leaving independence compromised and longer-term inflation trends at risk. This issue is hard to quantify, but we would regard it as tail risk in the long term rather than having a clear detrimental near-term impact on inflation expectations.

Indeed, the more likely trigger for a deliberate attempt by central banks to increase inflation could come not from political pressure but from a further substantial deterioration in the economic environment, to the extent that depression rather than deep cyclical recession appears likely. In such an environment, one policy option would be for a central bank to move from an inflation target to a price level target. For example, if actual inflation of minus 2% was delivered against a target of 2%, this undershoot of 4% would explicitly be made good, with the target for the next year or beyond recalibrated to inflation of 6% (2% inflation plus 4% shift back to initial target level). Highly stimulative policies would clearly be required to make such a policy target credible. Once again, however, this appears to be much more of a tail event than a central forecast and such policies would be implemented only in an environment that is far worse than the one we envisage, and in which for a period deflation concerns would inevitably dominate.

### Fiscal Policy

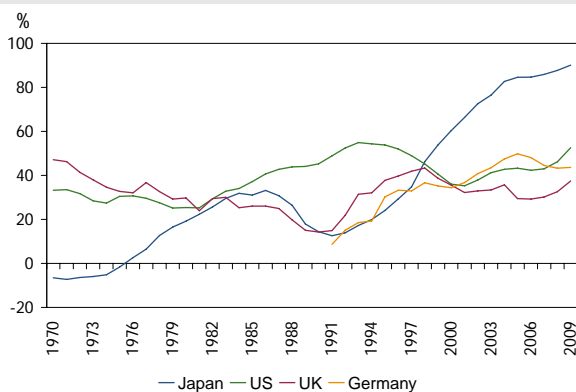
The other leg of the prevailing policy stimulus is the large increase in budget deficits. In some respects, the longer-term inflation threat from this source is more pernicious. Fiscal adjustment is more cumbersome than shifts in monetary stances, and more exposed to the uncertainties of political processes. In principle, a successful budgetary

expansion would involve a pre-specified ensuing reduction in the stimulus over time. In practice, such clarity is clearly missing in several of the large economies, even though it is clear that a multi-year period of fiscal restraint is required. It is not enough simply to hope for economic recoveries. Although a part of the deterioration in public finances reflects the severity of recession, even strong economic upturns would need to be supplemented with fiscal restraint to reduce budget deficits to sustainable levels in the long-term in all the major economies.

What is the inflation risk from this source? The historic record implies little clear relation between the trends in government debt and deficits, and inflation outcomes. In the UK, for example, the government debt/GDP ratio was over 200% in the aftermath of the Napoleonic wars and after the Second World War, and in neither case did inflationary disaster ensue. Indeed, for the UK and other countries, even prospective debt/GDP ratios are not particularly excessive in a longer-term historic context.

One possible argument in this context is that higher debt/GDP levels provide an incentive for governments to deliver higher inflation to erode the real value of debt over time. In the past there are examples of inflation performing this role - the UK in the 1970s for example. However, this has been the exception rather than the rule. A recent study of industrialised countries since 1960 suggested that fiscal adjustments are removed mainly through policy tightening (80% to 100% of the total), with less substantial roles played by inflation (0% to 10%) and GDP growth (0% to 20%)<sup>5</sup>. This time may be different, but the presumption that high budget deficits automatically lead to higher inflation is clearly challenged by these results. Moreover, while there is a common argument that governments now have an incentive to adopt highly inflationary policies to erode the real value of their debt, it is far from clear that this is feasible in a modern context. Such policies would be transparent, destabilise financial markets, and be quite likely to raise real interest rates as risk premia increased. This would exacerbate adverse long-run debt trends, not resolve them. There is a particular issue in the US, where the significant unfunded liability associated with Medicare/Medicaid is subject to a cost of living adjustment.

Figure 15: Net Debt to GDP Ratios



Source: Datastream, BlackRock; data as of 31 March 2009

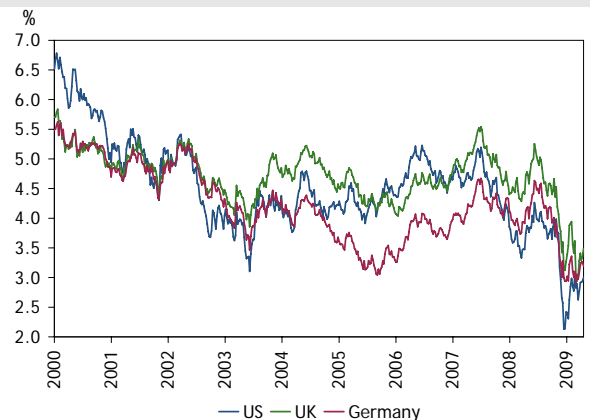
Why has the relationship between fiscal policy and inflation been so loose? The key sensitivity is how the deficits are financed. Put simply, the more that deficit finance comes through the issuance of government bonds

to private investors and the less through finance from central banks, the lower the inflation risk. The current period in which central banks purchase significant amounts of government debt is, as argued above, highly unlikely to survive the period of dysfunctionality in the global financial system. We expect central banks to preserve their longer-term bias to low inflation, and not gravitate towards a permanent process of debt monetisation.

Even before shifts to quantitative easing, government bond yields had declined to exceptionally low levels by historic standards. This is not unusual when recessionary pressures meet the inflated bond supply created by cyclical pressures on government finances. While market focus has been on the potential inflationary implications of higher government supply, other influences on the demand and supply of government bonds have altered, helping to ease funding pressures. For instance, corporate bond issuance in the US, which earlier in the cycle had exceeded government supply, has collapsed, easing the competition for funds. Part of the reason for the global recession has been an increase in personal sector saving, which has increased the private sector funds available to finance budget deficits. Furthermore, the flight to quality from riskier assets has enhanced the attractiveness of government bonds; and there is strong demand for bonds as pension funds continue to move to more conservative asset allocations, a process that is likely to persist given recent funding pressures. Moreover, the regulatory response to the banking crisis is likely to involve more stringent liquidity requirements, which could increase the demand for bonds from the banking system.

High budget deficits which are financed predominantly from private investors rather than central banks can have a range of damaging effects, for example higher real interest rates, the 'crowding out' of private investment and slower economic growth in the longer term. This is a much more realistic outcome if budget deficits remain high than a strong impetus to higher inflation - and even that can be avoided if more evident deficit reduction policies were to be clarified. If such policies do emerge in the medium term, this would limit the extent to which a strong cyclical boom could emerge, in turn limiting inflation risks.

Figure 16: Bond Yields Low Despite Increased Issuance



Source: Datastream, BlackRock; data as of 30 April 2009

<sup>5</sup> "Inflation implications of rising government debt", C.Giannitsarou & A.Scott, NBER Working Paper 12654.

## Conclusion - A Low Inflation Environment

- in the short term global inflation will be negative;
- this period will be only temporary, and inflation will turn positive again into 2010;
- the high level of excess global capacity will keep inflation low over a multi-year period, but not a long way below central bank targets, and we do not expect global price deflation;
- the outlook is inevitably uncertain over a longer time horizon, but the most likely outcome is that the prevailing substantial policy stimulus can and will be unwound as required over time, and that it is not the precursor to a secular shift upwards in global inflation;
- this implies that current inflation targets generally remain a good guide to medium-term inflation trends.

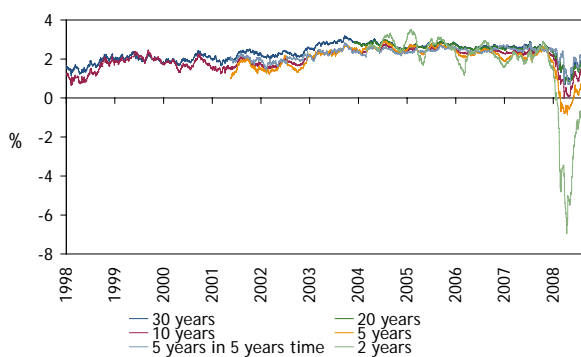
## IMPLICATIONS FOR INFLATION HEDGING

### Pricing in Index-Linked Markets

However, investment policy should be based not only on a single view, but also how that view compares to what is discounted in market prices, and the risks around that view. So what sort of inflation hedges might be appropriate in the current environment given market pricing?

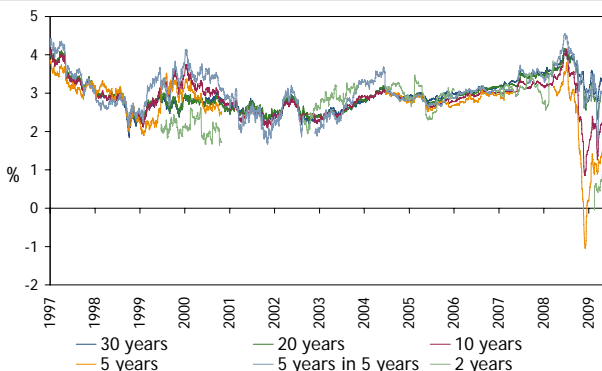
We focus here on the implied inflation rates discounted in government bond markets rather than a broader range of hedges, such as commodities and inflation swaps. The key trends for each market are shown in Figures 17 to 19. To extract inflation expectations we have simply deducted the yield on index-linked securities from those on equivalent maturity conventional bonds. The figures show the details for inflation expectations at different maturities in the US, the UK, and the Euro area.

Figure 17: US Implied Inflation



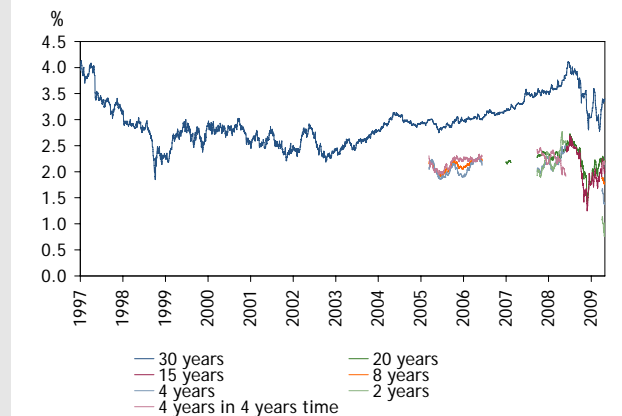
Source: Datastream, BlackRock; data as of 30 April 2009

Figure 18: UK Implied Inflation



Source: Datastream, BlackRock; data as of 30 April 2009

Figure 19: French Implied Inflation



Source: Datastream, BlackRock; data as of 30 April 2009

There has been significant volatility in inflation expectations in recent months. Two factors in particular have contributed to this. First, the sharp fall in oil prices in the second half of last year meant that the short-term inflation outlook did indeed change radically. In the USA, for example, the oil price decline knocked around 5% off inflation compared to the price remaining unchanged. Second, against a background of significant financial turmoil, the premium for relatively liquid assets increased. Since conventional bonds are more liquid than inflation-linked bonds, this will have reduced conventional bond yields to a greater extent than inflation-linked bonds. This in turn will have reduced measured inflation expectations relative to the true level of such expectations.

These caveats notwithstanding, there are three features of the environment which stand out.

- Expectations for inflation over the next two years are still relatively depressed. In the US, for example, implied inflation over this period is slightly negative; in the UK, it is still below 1%; and in the euro-zone (France) it is also around 1%.
- A gradual increase in inflation beyond two years is also discounted. Five-year rates in the US, the UK, and France respectively are 0.8%, 1.5%, and 1.5%. These low levels for the five-year periods as a whole partly reflect the fact that discounted inflation is so low in the early part of the period.
- Beyond about five years, the inflation environment is generally priced to normalise. The five-year inflation rates discounted for the period starting in five years time are around 2% in the US, 3% in the UK, and 2.3% in France. These levels are close to those on average over the past decade or so, and are broadly in line with central bank targets. Discounted inflation on this measure, which is less affected by the volatility in the oil price, fell very sharply at the end of last year, but has been rising again so far in 2009. This is consistent with deflation concerns reaching a peak in the latter part of last year, and then fading again more recently.

<sup>6</sup> In the UK, the difference between conventional and index-linked gilts is affected by the significant structural demand for index-linked bonds relative to the supply. This can lead to measured inflation expectations exceeding the true level. Current inflation expectations for the UK are close to the average of the past decade, a period in which the inflation target has on average been hit.

## Limited Requirement for Inflation Hedging

In short, the conventional wisdom as reflected in government bond markets is for cyclical pressures to dominate in the short term, with discounted short-term rates remaining relatively low. A return to inflation rates consistent with those in evidence in the later part of the 'Great Moderation' period is then discounted. What is clearly not in the price is a secular acceleration in inflation taking inflation beyond central bank targets for an extended period. This also implies that longer-term forwards discount an inflation environment that is lower than longer-term average inflation rates - for example 30 years - which go back beyond the era of central bank inflation targeting.

So does inflation hedging make sense in the current environment? Obviously much depends on individual client circumstances. Given the low level of discounted inflation, there is little in the price for immediate adverse inflation surprises, although we are sceptical that the immediate economic environment is consistent with such surprises emerging. Indeed, if actual inflation does become more clearly negative in the coming months and deflation risk is perceived to increase, breakeven rates could edge lower once again. On the other hand, we would ordinarily expect breakeven rates to include a premium reflecting the value of the hedge.

The higher level of breakeven rates discounted at longer maturities would be consistent with rising cyclical inflation risk, albeit from a very low starting point to an end game in which inflation is still relatively muted. The interesting point is that what is clearly priced in is the return of the low but positive inflation environment which has prevailed from the 1990s, but not a secular increase.

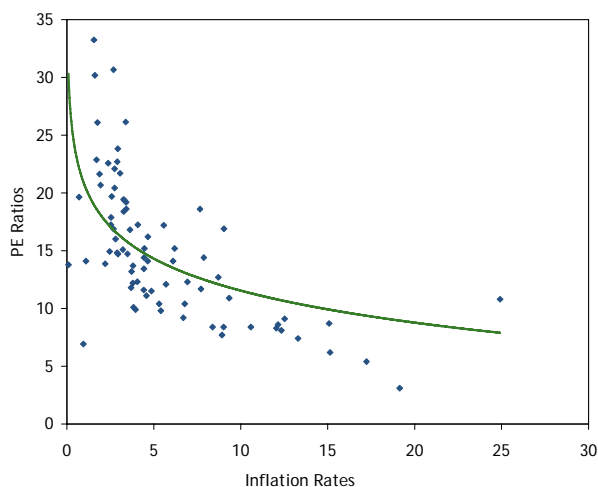
Although our central view is that inflation risks can and will remain muted in the medium term, the absence of any secular risk of higher inflation being reflected in discounted rates implies that there is some strategic purpose for having an inflation hedge at the longer maturities - in other words buying inflation-linked rather than conventional bonds. However, we are sceptical that such positioning need be particularly aggressive. Nevertheless, we believe it is important to distinguish between clients that have an explicit focus in their investment objectives on matching real liabilities as opposed to clients for whom inflation hedging is part of meeting an overall absolute return objective. In the first case, the risk that our central case scenario of positive but moderate inflation we outlined in the first section of this report is not met has greater cost implications, particularly over the long term and therefore the cost of putting in place an inflation matching strategy for longer term liabilities may represent a worthwhile insurance premium. In the second case, less precise hedges may be more appropriate.

## Other Inflation Hedges Can Work but Are Not Perfect

So what other strategies would be suitable if inflation does accelerate? One argument is that equities act as a good inflation hedge as the real value of corporate profits is maintained as prices rise. There are two problems with this. First, higher inflation is associated with higher inflation volatility. Higher volatility tends to deliver lower multiples for equity markets, and these de-ratings depress equity returns if the de-rating is delivered by share prices

falling. Second, higher inflation sometimes results from higher commodity prices. These support the earnings of commodity-related firms, but can undermine the rest of the market. So commodity-related equities rather than a more diversified approach can be a more effective hedge against inflation accelerating.

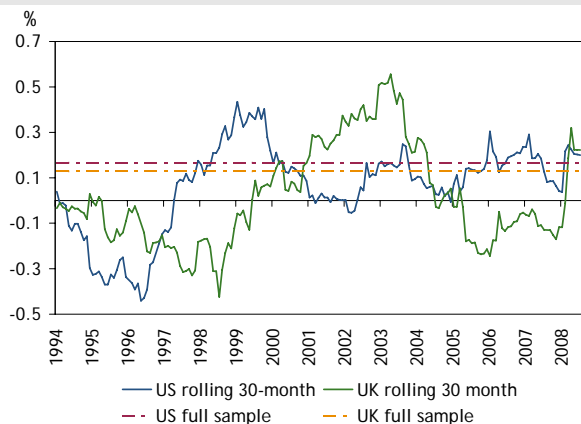
Figure 20: Lower Inflation Has Been Associated with Higher PE Multiples (US and UK 1980 - 2008)



Source: Datastream, BlackRock; data as of 31 December 2008

A further possible inflation-hedging strategy is to purchase commodities themselves. This has the advantage of potentially going directly to the cause of the inflation issue rather than intermediating through equities, as a range of other influences can affect share prices. Commodity returns are, however, extremely volatile, certainly much more volatile than the typical profile for inflation, and short-term and long-term correlations with actual inflation are not particularly stable (Figure 21). While an effective hedge in a directional sense, the appropriate scale can therefore be variable. In addition, commodities can typically only hedge against a sufficiently broad-based global acceleration in inflation. They would be less appropriate to hedge against an expected rise which is idiosyncratic, with the origins in a particular country rather than at the global level. Clearly, both strategies outlined above are hedges and not matches.

Figure 21: Correlation Between Commodities and G7 Inflation



Source: Datastream, BlackRock; data as of 31 March 2009

## Conclusion - Limited Need for Aggressive Inflation Hedging

- The appropriate level of inflation hedging is dependent on individual circumstances, but it makes strategic sense to hedge longer-term liabilities against the risk of our central low inflation scenario not materialising, particularly for clients that need precise matching.
- However, we do not believe there is a need to move aggressively as breakeven rates could still go lower.
- Commodity-related equities and commodities represent alternative hedges to inflation-linked bonds but are necessarily less precise and therefore more appropriate for clients who seek to hedge inflation as part of an overall absolute return objective.

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