

# Thinking the unthinkable

Global

## Unconventional ways of fighting deflation

- ▶ **Central banks are on deflation alert**
- ▶ **We present a Federal Reserve “Five Stage Strategy”...**
- ▶ **...that may send US 10 year Treasury yields down to 2.5%**

With inflation at risk of turning into deflation, we highlight some of the key issues that will confront both policymakers and the markets in 2003 and 2004. In response to a number of both conventional and unconventional policy changes, we now expect US 10 year Treasury yields to fall to just 2.5% in 2004, with the dollar spiralling down against the euro. However, we are less than convinced that the range of unconventional measures on offer provides a “quick fix” to the post-bubble problems now affecting the US and other parts of the world.

We argue that the Federal Reserve (and, for that matter, the US Government) is in the middle of a “Five Stage Strategy” designed to, first, prevent the emergence of deflation and, second, to cure deflation should it ever materialise.

The first and second stages – lower short term interest rates, looser fiscal policy – have already been largely enacted. The third stage, potentially imminent, lies in manipulating the yield curve. The fourth stage, not yet discussed by the Fed but a growing possibility given the high level of private sector debt, is a debt bailout involving protection against deflation. The fifth stage is the creation of future inflation expectations, through any one of a number of options: printing money, price level targets, inflation targets, and incredibly large budget deficits.

We argue that the interest rate cuts seen so far, by failing to ward off deflationary fears, may have made matters worse. They have simply contributed to a further increase in private sector debt levels that will become increasingly burdensome should the US economy continue to proceed in its current, insipid, form.

We suggest that there has been a mis-diagnosis of America's post-bubble problems. Based on an “Austrian economics” interpretation of the events of the late-1990s, it may be that the US economy suffers from too much, or the wrong type, of capital stock. Under these circumstances, attempts to boost growth through lower interest rates may simply defer, rather than deal with, the required adjustment. Indeed, the results of this policy may make any subsequent deflationary cure less successful.

Two novel features of this piece are, first, the simple table on page 16 that summarises each of the five stages, describes how each of them might work and points out their weaknesses and, second, a more detailed list on page 17 that summarises the possible variant policies that could be implemented to ensure that each stage is met. We give each stage marks out of 10. Our overall conclusion is that, faced with the current post-bubble challenge, there is no easy solution: we expect short rates to remain at very low levels throughout this year and next and budget deficits to get a lot bigger: gone are the days of budget surpluses and gone are the days of strong rebounds in economic activity.

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### Disclaimer & disclosures

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# Central banks can change

## New threats to price stability

*"...the probability of an unwelcome substantial fall in inflation, though minor, exceeds that of a pickup in inflation from its already low level."*

### Federal Reserve policy statement, May 2003

*"...the Governing Council agreed that in the pursuit of price stability it will aim to maintain inflation rates close to 2% over the medium term. This clarification underlines the ECB's commitment to provide a sufficient safety margin to guard against the risks of deflation."*

### European Central Bank press release, May 2003

There is only one way to consider these statements from either side of the Atlantic Ocean. Whether it's the Federal Reserve or the European Central Bank, our central banks are becoming more concerned about inflation being too low, rather than too high. We may have got used to central banks battling against the forces of inflation over the last three decades but there's now a new enemy: falling prices, or deflation. And, no matter what central bankers say, it's deflation that gives them their biggest nightmares. The reason is simple: we have lived through periods of inflation and, eventually, central banks and governments have combined to defeat this particular enemy. Deflation, however, is a peculiar disease: the US experience in the 1930s and the Japanese experience in the 1990s show that, once deflation arrives, it can become a particularly intractable challenge which responds to treatment either very slowly or not at all.

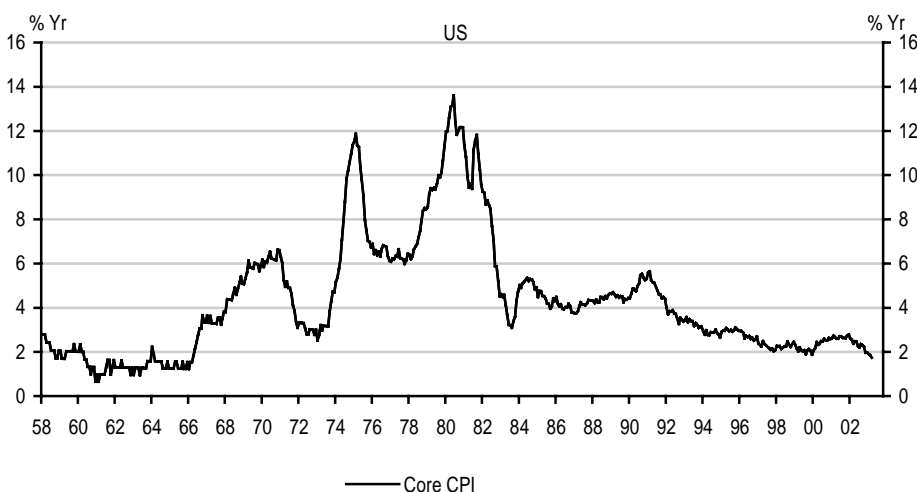
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## 1. US inflation continues to surprise on the downside



Source: HSBC, Thomson Financial Datastream

## Central banks can change

The risk that inflation could be too low has grown over the last two years. In the US, attempts to kick-start a recovery in economic activity have largely floundered: yes, growth was stronger than expected in 2002 but confidence in the pace of recovery generally remains low. Meanwhile, inflation has continued to surprise on the downside, suggesting that further weak growth could tip the US economy into an environment of falling prices. In Europe, deflation appears to be a relatively distant prospect in most countries but there is one major exception. Germany, which accounts for one third of eurozone GDP, has remarkably low inflation: a fall in overall eurozone inflation could be enough to push Germany into a deflationary environment. Under these circumstances, the risk is obvious: the three biggest economies in the world – the US, Japan and Germany - could find themselves all succumbing to the “Japanese disease”.

## Two reasons to fear low inflation

Why worry about too low a rate of inflation? After all, there have been plenty of periods in the past when countries have had perfectly benign deflations. In the 19<sup>th</sup> century, for example, inflation and deflation alternated through the decades, yet this was a time of rapid industrial progress for much of the western world. For those who are interested, we provided a detailed assessment of “good” and “bad” deflations in “Why worry about deflation?” (World Economic Watch, 18 October 2002): for the purposes of this paper, however, it’s probably worth elaborating on two specific – yet very different reasons – for concern.

The first worry is simple: if inflation persistently comes in lower than expected, it might be a symptom of inadequate demand in the economy. Under these circumstances, it would seem sensible for policy makers to lower interest rates or loosen fiscal policy to ensure that actual demand rises to meet supply potential. On the basis of this argument, an undershoot of inflation simply shows that there is an output gap: the economy is capable of producing more without bumping into any capacity constraints.

The second worry is more complex and provides the key reason for sleepless nights at central banks. Low inflation might be a *cause* of further economic disruption: it might contribute to a downward spiral in economic activity that renders central banks increasingly impotent. To show in simple terms why this might be, first consider a world in which the promises of central banks are entirely credible. Let’s say, for example, that the central bank has an inflation target of 2.5% per year and that everyone in the economy believes that the target will be met, year in, year out. On this assumption, someone who chooses to borrow \$100 in any one year will know what will happen to the real value of that loan in subsequent years: by the end of the first year, the loan will have declined by 2.5% in real terms. The real value of the loan will decline by a further 2.5% in the second year. Ten years down the road, the loan will be only 78 per cent of its original value when adjusted for inflation.

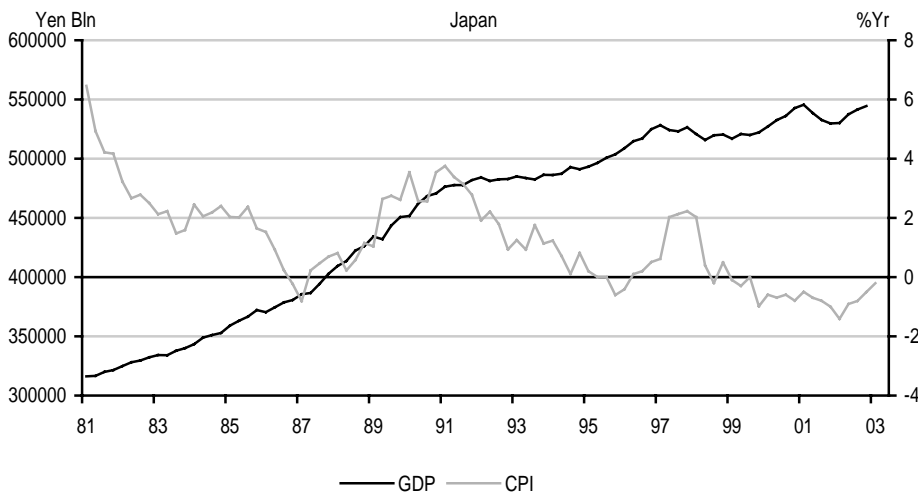
Of course, lenders will also know what will happen to inflation and will demand a level of interest rates that will compensate them for the erosion of their underlying assets through the gradual increase in the price level. At all times, then, the central bank meets the expectations of both borrowers and lenders and monetary policy has an entirely benign

## Central banks can change

influence on economic performance. So long as everyone believed that central bankers were infallible and inflation targets were completely transparent and credible, the economic outlook would seem to be entirely benign.

Then switch to a world where the central bank gets things wrong, where it is potentially fallible. In this world, assume that inflation unexpectedly undershoots target in the first year. Let's say, for example, that inflation comes in at zero. Under these circumstances, lenders are better off than they expected to be (inflation hasn't eroded their savings as quickly as they had expected) but borrowers are worse off (inflation hasn't eroded their debts as quickly as they had hoped). In other words, there is a redistribution of income from borrowers to savers. At this point, interest rates should fall and, of course, they can do so as long as they are above zero. If, however, inflation persistently undershoots and eventually leads to deflation, the zero rate bound on interest rates will eventually be reached: then, savers will persistently benefit at the expense of borrowers. Assuming that savers have a higher marginal propensity to save than borrowers – a perfectly reasonable assumption in most cases – the economy might enter a downward spiral.

### 2. Unexpectedly low inflation can impact the real economy



Source: HSBC, Thomson Financial Datastream

Put another way, downward surprises on inflation can have an impact on the real economy. This is a fundamental point. After all, over the last thirty years, we have got used to the idea that booms cause inflation and recessions get rid of inflation. The vast majority of econometric models are based entirely on this one-way causality. But in a world of unusually low inflation and interest rates that are close to zero, the causality can be reversed. Unexpected changes in inflation can have a serious impact on the pace of economic growth because of their impact on income distribution between lenders and borrowers. Japan provides an excellent – and worrying – example of this problem. The more that prices have fallen, the more that real debt levels have risen and the more that the private sector has struggled to repay a nominal debt stock that simply refuses to go away.

## Inflation and debt dynamics

A simple numerical example can be used to demonstrate the problem of low inflation in a world of high debt. Tables 3 and 4 show two scenarios, both of which assume that debt is repaid at the end of a ten year period. In the first scenario, we have assumed a nominal GDP growth rate of 6% and an interest rate of 6%. In the second scenario, we have assumed that interest rates are zero throughout and that, after an initial period in which nominal GDP rises modestly, it then stabilises over the following eight years.

### 3. Example A: Nominal GDP growth of 6 per cent, interest rates at 6 per cent

	Nominal income	Debt	Interest rate	Interest cost	Debt plus service cost	Payment	Carried forward	Payment as share of nominal income (%)
Year 1	100.0	300	6	18.0	318.0	40.8	277.2	40.8
Year 2	106.0	277.2	6	16.6	293.9	40.8	253.1	38.5
Year 3	112.4	253.1	6	15.2	268.3	40.8	227.6	36.3
Year 4	119.1	227.6	6	13.7	241.2	40.8	200.4	34.2
Year 5	126.2	200.4	6	12.0	212.5	40.8	171.7	32.3
Year 6	133.8	171.7	6	10.3	182.0	40.8	141.3	30.5
Year 7	141.9	141.3	6	8.5	149.7	40.8	109.0	28.7
Year 8	150.4	109.0	6	6.5	115.5	40.8	74.8	27.1
Year 9	159.4	74.8	6	4.5	79.2	40.8	38.5	25.6
Year 10	168.9	38.5	6	2.3	40.8	40.8	0.0	24.1

Source: HSBC

### 4. Example B: Stable nominal GDP after initial weak recovery, interest rates at zero

	Nominal income	Debt	Interest rate	Interest cost	Debt plus service cost	Payment	Carried forward	Payment as share of nominal income (%)
Year 1	100.0	407.57	0	0.0	407.6	40.8	366.8	40.8
Year 2	103.0	366.8	0	0.0	366.8	40.8	326.1	39.6
Year 3	106.0	326.1	0	0.0	326.1	40.8	285.3	38.5
Year 4	106.0	285.3	0	0.0	285.3	40.8	244.5	38.5
Year 5	106.0	244.5	0	0.0	244.5	40.8	203.8	38.5
Year 6	106.0	203.8	0	0.0	203.8	40.8	163.0	38.5
Year 7	106.0	163.0	0	0.0	163.0	40.8	122.3	38.5
Year 8	106.0	122.3	0	0.0	122.3	40.8	81.5	38.5
Year 9	106.0	81.5	0	0.0	81.5	40.8	40.8	38.5
Year 10	106.0	40.8	0	0.0	40.8	40.8	0.0	38.5

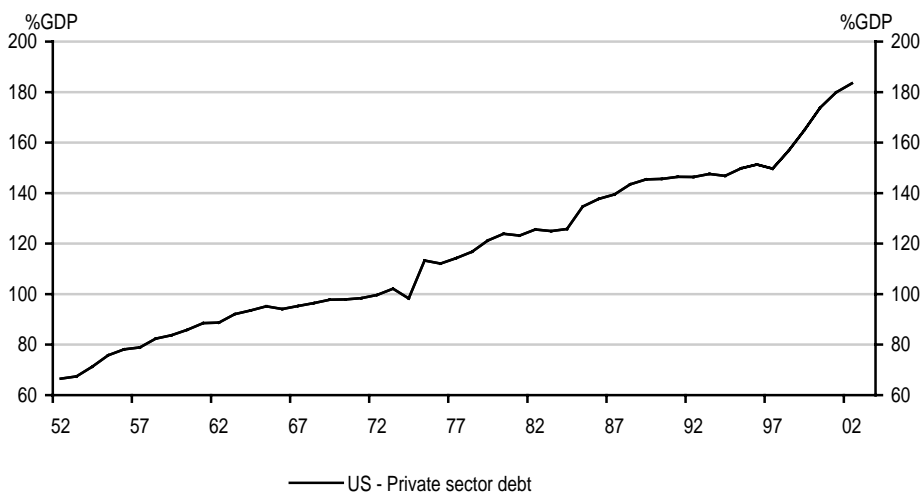
Source: HSBC

We have also assumed that borrowers suffer from partial money illusion. In the second example, they see interest rates at zero and think that this must be a wonderful time to borrow. To incorporate this point, we assume that borrowers seek to reach an equilibrium level for their debt and interest rate repayments as a share of their income in the first year. This means, of course, that the total amount of debt held in the zero interest rate second scenario is a lot higher than in the first scenario.

## Inflation and debt dynamics

This might seem like an unfair assumption but it is not entirely unrealistic: after all, the policies of the Federal Reserve and the Bank of England, over the last two years, have explicitly tried to keep consumers borrowing through lower interest rates. As a result, although companies have attempted to repay debt, the overall debt burden of the private sector has continued to surge (chart 5).

### 5. Private sector debt burden continues to surge



Source: HSBC, Thomson Financial Datastream

The key aspect of our theoretical comparison is the total payment per year as a share of nominal income. Although this ratio is roughly the same in the first year, it thereafter begins to diverge. So long as nominal GDP expands, the debt repayment falls steadily as a share of GDP and, by the second half of the decade, is substantially lower than in the first half of the decade. If nominal GDP eventually flattens off, there is no significant reduction in the debt burden: ten years down the road, roughly the same share of income is still being used to pay off debt. Of course, if interest rates were to fall further, the debt burden could be reduced but, given that nominal interest rates cannot fall below zero, this is simply not a possibility.

The different debt dynamics that stem from these examples suggest that unanticipated changes in the inflation rate can have a major influence on the willingness to spend. In the first example, the growth of nominal GDP encourages people to borrow more over time because their debt burden is constantly falling away. In the second example, the debt burden does not decline over time, suggesting that those that borrow at the beginning of the period will have no real appetite to continue borrowing later in the period.

This might seem like a purely academic argument but there is an important practical implication. If a central bank chooses to cut interest rates aggressively in the hope that a recovery will take hold, it will be trying to persuade borrowers that they should, in the short term, take on board more debt. If, however, it turns out that nominal GDP growth is a lot

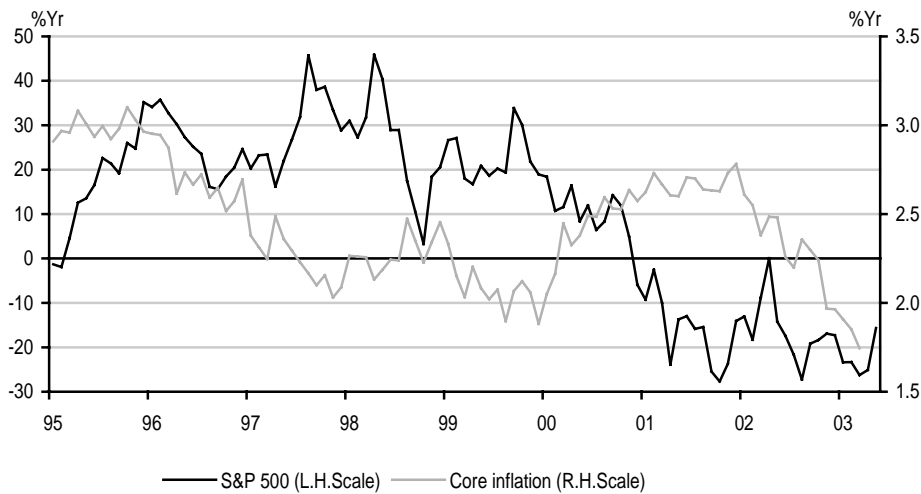
## **Inflation and debt dynamics**

lower than either the borrowers or, indeed, the central bank expected, the increase in debt in the short term threatens to become a biting constraint on growth in later years. Signs of that constraint might come from an economy's inability to return to decent economic growth and a persistent undershoot of inflation – exactly the signs that we appear to be seeing in the US economy today.

## Bubbles, busts and Austrians

If inflation is too low, how should the decline be interpreted? Should it be seen simply as a consequence of inadequate demand – suggesting that policies should be loosened to bolster demand – or should it be seen as a sign of a more malevolent influence? To answer this key question, it's worth reviewing what has happened in recent years.

### 6. Rapid rises in equity prices but low inflation in late 90s



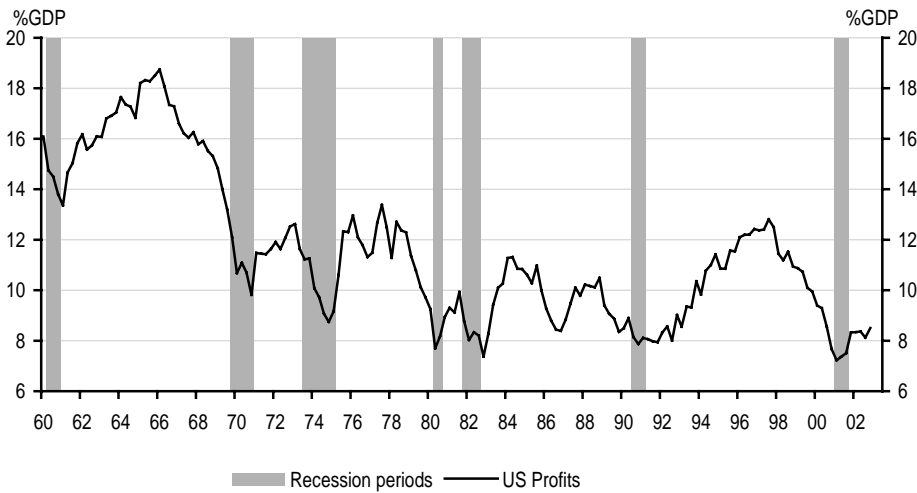
Source: HSBC

The unusual feature of the late 1990s was the combination of rapid increases in asset prices – notably share prices – and the persistence of low inflation. The gains in equity values suggested that investors were increasingly confident about future returns. And the persistence of low inflation suggested that there was no cyclical threat to the maintenance of “new paradigm” growth rates. Since 2000, however, this story has turned sour. First, equity prices have collapsed. Second, profits have fallen back a long way, suggesting that earlier hopes of a “new paradigm” nirvana were built on very shaky foundations. Third, the pace of recovery associated with a major loosening of monetary and fiscal policy in the US has ultimately been disappointing. Fourth, inflation appears still to be heading to lower rates despite the pick-up in economic activity through the course of 2002.

Had this been a standard economic cycle, it seems likely that, by now, growth would have been a lot stronger. After all, unlike earlier downswings, the Federal Reserve never had to raise interest rates aggressively to ward off inflation and, as a result, the risk of major output losses seemed relatively low. And, given that the Fed and the US fiscal authorities then subjected the US economy to the biggest policy easing in the post-war period, the subsequent results can only be regarded as disappointing. The good news three years ago was that, with low inflation, there were no real constraints on aggressive policy action. The bad news appears to be that the policy action itself appears not to have worked particularly well.

**Bubbles, busts and Austrians**

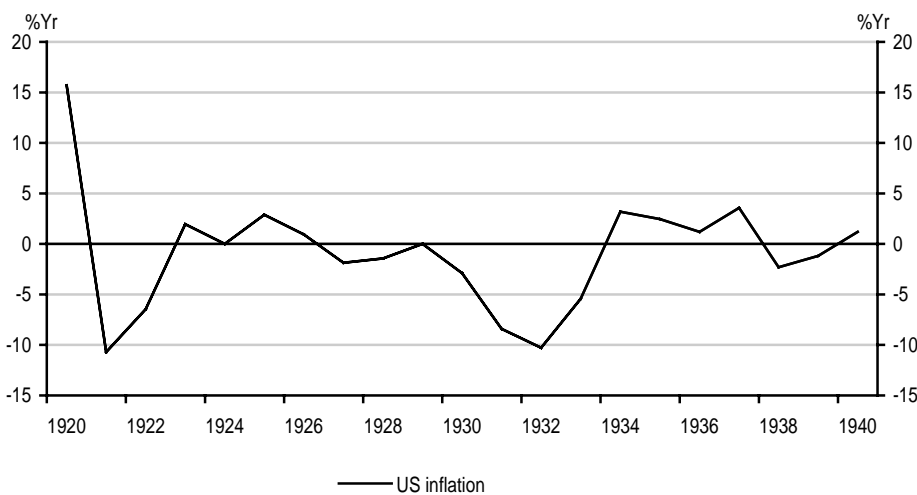
**7. Profits remain unusually depressed**



Source: HSBC, Thomson Financial Datastream

Why might this be? In *Decline and Fall* (January 2002), we argued that the US was suffering from an “unplanned” recession, one that was associated with a sudden shift in perceptions about future returns in the private sector. This was a downswing associated with resource misallocation or, at least, a misperception about the continuity of high returns. Among the general factors that might have contributed to this misallocation or misperception are the following:

**8. 1920s experience shows low inflation no guarantee of economic stability**



Source: HSBC, The Economist

## Bubbles, busts and Austrians

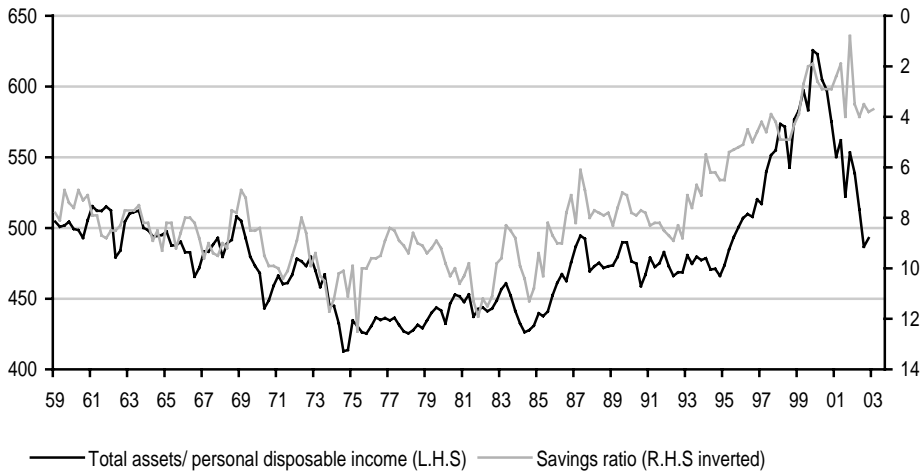
- ▶ The benefits of new technology may have been mis-priced. Although technological progress might be regarded, in general, as a good thing, it may be that too many people believed that the benefits would accrue to them at the exclusion of others. The failure, for example, to recognise that the flow of information technology might break down barriers to entry may have left shareholders with excessively optimistic views about the impact of technological progress on their returns.
- ▶ Central banks might have taken one look at the low rate of inflation in the late 1990s and concluded that their economies were on stable and sustainable paths. Yet, as we have subsequently discovered – and, indeed, should have known from the experience of the 1920s – low inflation is no guarantee of economic stability. It may have been the case that by focusing purely on this one particular measure of economic health, a series of other, potentially worrying, symptoms were ignored.
- ▶ The growing US current account deficit might well have reflected a belief in the superiority of US returns relative to those elsewhere in the world but, the more the rest of the world invested in the US, the more likely it was that US returns would eventually be brought down to meet the global average. The idea that the US would maintain higher returns on a seemingly infinite basis always seemed a little fanciful – ultimately, it was an argument similar to the claim that Japan had discovered the secret of economic success in the 1980s.
- ▶ The oddity of the US position in the second half of the 1990s was the combination of an ageing population with a very low saving rate. This suggested that requirements for future savings were being met through asset price inflation, not through genuine choices over whether to consume today or tomorrow. This asset price inflation strengthened the perception that everybody could be a winner: companies made higher profits because they no longer had to pour money into their pension funds and workers benefited through the rise in their portfolios and the emergence of share options as a major form of compensation. Yet, if the economy were subsequently unable to meet the expectations built into asset prices, people would eventually find themselves with insufficient assets.

These arguments suggest that the US economy – and others – could be suffering from problems associated with a fundamental mis-interpretation of the bubble period in the late 1990s. The arguments utilised here are based very much on the “Austrian” interpretation of events in the 1920s and 1930s which place the blame for the depression on the “exuberance” of the 1920s rather than on the policy mistakes of the 1930s.

The fundamental Austrian argument is that booms and bubbles arise because interest rates are kept artificially low by the central bank at a time when the economy is growing rapidly. At first, it is difficult to see how this might be relevant for the second half of the 1990s: chart 10, for example, shows that real Fed funds were relatively high in the US during that period. However, this does not prove that interest rates were high enough. Judged by inflation, the policies of the late 1990s could be seen as a success. However, judged on the basis of other yardsticks, different conclusions might apply.

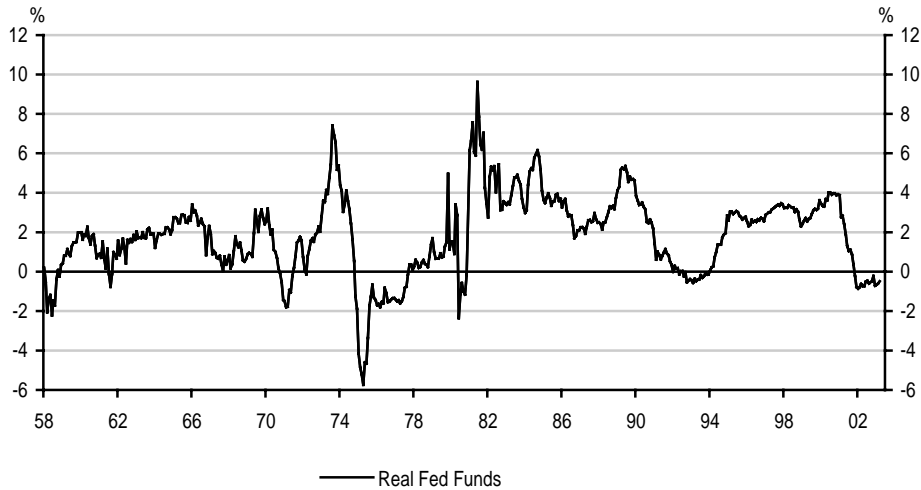
**Bubbles, busts and Austrians**

**9. Saving requirements met through asset price inflation in late 1990s**



Source: HSBC, Thomson Financial Datastream

**10. Real Fed Funds relatively high in late 1990s**



Source: HSBC, Thomson Financial Datastream

\*Fed Funds deflated by core inflation

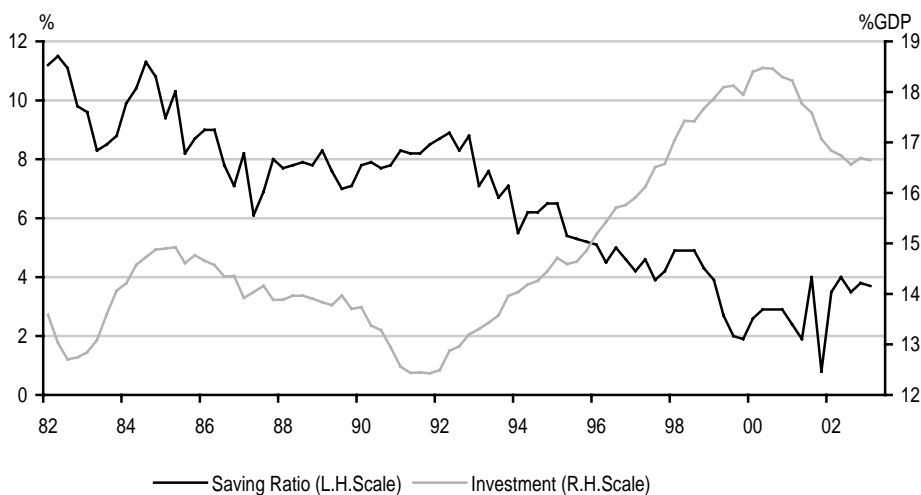
If interest rates are artificially low, a number of resource misallocation mistakes are likely to take place. After all, an interest rate is simply the price of goods consumed in the future relative to goods consumed today. Too low an interest rate will give the wrong signals to both savers and borrowers, potentially distorting the path for economic activity. If interest rates are artificially low, savers will think that there is little point in putting money aside for tomorrow because borrowers appear to be signalling to them that there are few attractive investment opportunities around (the lower the demand for funds, the lower the interest

## Bubbles, busts and Austrians

rate). Borrowers, on the other hand, will think that savings are unusually high (the higher the level of savings, the lower the level of interest rates) and will spend freely, anticipating that demand will be stronger tomorrow than it is today.

The US economy could easily have suffered from this problem in the late 1990s. First, there were good reasons at the time for the Federal Reserve to keep interest rates relatively low: the combination of the Asian crisis, the Brazilian crisis, the Long Term Capital Management collapse and the fears over Y2K provided an apparently strong case for not overly tightening monetary policy. Second, the consumer saving ratio collapsed in the second half of the 1990s as paper wealth rose dramatically. Third, the investment share in GDP rose very quickly, associated with a belief that technology would lead to much higher profits for companies who chose to invest. In other words, consumers spent – leaving less room to spend in the future – and companies invested – in the hope that consumers would spend in the future.

### 11. Consumers spent and companies invested

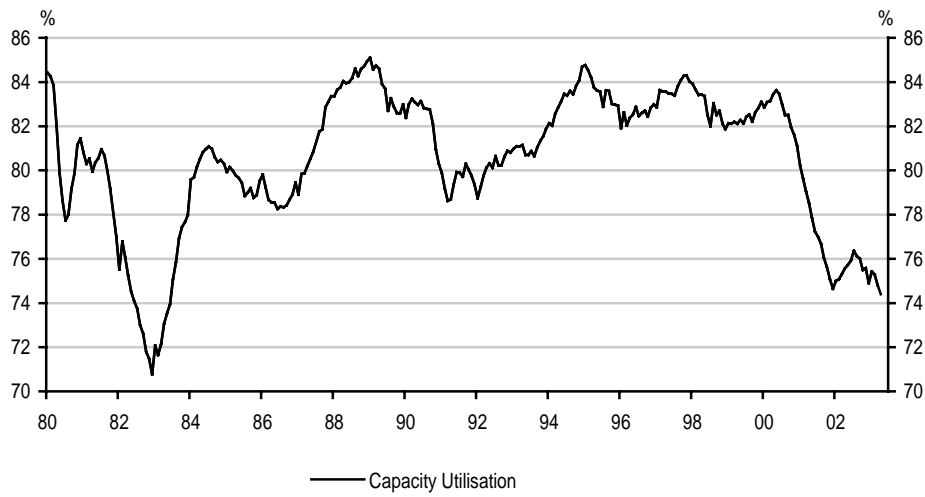


Source: HSBC, Thomson Financial Datastream

If this view is right, companies would find themselves in a post-bubble world with the wrong shape and size of capital stock – perhaps reflected in an unusually low rate of capacity utilisation – with low levels of profit and with high levels of debt. Consumers would eventually find themselves short of savings and would choose to replenish the value of their stock of assets. All in all, there would be a rise in national savings which, other things being equal, would tend to depress the pace of economic growth and lead to inflationary undershoots.

## Bubbles, busts and Austrians

### 12. Capacity utilisation at lowest rate since 1983



Source: HSBC, Thomson Financial Datastream

## A Fed five-stage strategy

The Federal Reserve's actual and likely response to our new, post-bubble, world can be seen as a five-stage strategy. The five stages are:

**Stage 1: Cut interest rates aggressively.** The case for this policy seems straightforward and was made powerfully in the Federal Reserve paper produced in June 2002 entitled "Preventing Deflation: Lessons From Japan's Experience in the 1990s" (Alan Ahearne, Joseph Gagnon, Jane Haltmaier and Steve Kamin, available on the Fed's website at <http://www.federalreserve.gov/pubs/ifdp/2002/default.htm>). The Fed's case against Japan was simple: the Bank of Japan had failed – although with good cause – to recognise the deflationary threat and, as a result, had not cut rates quickly enough to deal with the danger. By the time rates did come down aggressively, it was too late to deal with the deflation risk. Based on this view, fast action is better than slow action.

**Stage 2: Acquiesce in a fiscal loosening.** Central banks typically are not keen to accept fiscal loosening, seeing it as a threat to their own ability to set a credible policy agenda. The Fed's official position always warns against the perils of big budget deficits but, nevertheless, the Fed did not choose to offset the remarkable fiscal easing that came through in the second half of 2001 and through the course of 2002. Table 13 proves the point. In this table, we have shown the theoretical impact on growth in 2002 of both fiscal and monetary policy changes. We have also calculated a "monetary policy equivalent" of the fiscal changes alone – in other words, how far interest rates would have had to fall to provide the same stimulus as that provided by fiscal policy (assuming of course that the relationship between changes in interest rates and their impact on the economy remained reasonably stable). On this basis, interest rates and "interest rate equivalents" fell in total by 7½-8%. Given that actual interest rates peaked at 6½%, this clearly demonstrates that fiscal policy provided support in a way that traditional monetary policy on its own simply could not do.

### 13. Policy-induced growth in 2002

	GDP growth (%)	Fiscal impulse* (% pts)	Monetary policy impact** (% pts)	Average change in policy interest rates (% pts)	Interest rate equivalent of fiscal changes** (% pts)
US	2.4	2.4	3.8	-4.8	-3.0

\* Change in cyclically-adjusted financial balance. \*\*Based on simulations on the Oxford Economic Forecasting model keeping long and short-term interest rates unchanged at end-2000 levels. Source: HSBC, OECD, OEF

**Stage 3: Manipulate the yield curve.** If short term interest rates have fallen a long way but the economy has not responded particularly well, there may be a case for also lowering longer term interest rates. As we show in "Stage 3", the Federal Reserve could choose to do this in a number of different ways, using a variety of techniques. The philosophy of this approach is the polar opposite of the approach that was adopted by the Federal Reserve in the early-1990s and reflects the fundamentally different nature of today's problems. At the beginning of the 1990s, the main monetary challenge was a credit crunch – an inability or unwillingness of the financial system to extend credit. Back then, the way to deal with the problem was to engineer a steep yield curve. By doing so, the profitability of bank lending would improve and, hence, the incentive for banks to take risk would rise. This time around,

## A Fed five-stage strategy

the problem is not a shortage of credit but, rather, an excess of debt. There may be no shortage of willing lenders but there appears to be a major shortage of willing borrowers. If companies and, perhaps in time, consumers are more intent on paying off debt, a steep yield curve is not likely to be of any benefit. Instead, the preferable option from a Fed perspective might be to widen the benefits of Stage 1: in other words, reduce the cost of borrowing across all maturities to allow the existing debt to be repaid more quickly.

**Stage 4: Provide a debt bail-out.** The responsibility for this policy might lie either with the fiscal or monetary authorities but, in the battle against deflation, would be best served through a combined monetary and fiscal response. The aim would be to attack directly the high level of debt within the corporate sector with the aim of reducing the debt constraint on economic expansion. The rationale is simple: if inflation falls below expectations, real debt levels will rise above expectations. Under these circumstances, and assuming that interest rates have already hit zero, the more that inflation falls, the worse the debt problem becomes. As “Stage 4” argues, a debt bail-out could take a number of different forms, ranging from wholesale nationalisation to subsidies from the taxpayer. Any bail-out would ultimately boil down to a shift of debt within the economy as a whole off the balance sheet of the private sector onto the balance sheet of the public sector. The policy will work only so long as taxpayers fail to recognise that they will be burdened with higher taxes in the future: if they do, private savings will rise to offset the reduction in public savings and the economy will be back to square one.

**Stage 5: Create inflationary expectations.** The academic literature<sup>1</sup> increasingly argues that the defeat of deflation may require policies that, in effect, create expectations of inflation. The framework for these policies varies but most of them involve creating a target for an intermediate or ultimate economic objective. The obvious targets include objectives for money supply growth, the price level and the inflation rate. An external version of this approach might incorporate a target for exchange rate depreciation. In all cases, the objective is to make people believe that the price level will rise. If this works, there are two ways at looking at the solution. First, if the price level is expected to be higher, the real level of debt will be expected to be lower, thereby encouraging producers and consumers to borrow more. Second, if the price level is expected to be higher for a given level of nominal interest rates (presumably zero), the real interest rate will have declined. These two ways of looking at the solution are, in effect, identical. In both cases, they reduce the incentive for persistently high debt repayment and therefore should encourage a higher level of private sector demand. The reason for labelling this a “go crazy” policy is that it requires policymakers to persuade the public that they will pursue policies that, in a previous life, they would have treated as signs of the devil. After all, debauching the currency was a strategy recommended by Lenin and does not sit comfortably with the inherently conservative approach of the current central banking establishment.

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<sup>1</sup> See a selection of Paul Krugman's pieces on his website [www.wws.princeton.edu/~pkrugman/](http://www.wws.princeton.edu/~pkrugman/)

CONVENTIONAL

POLICY

UNCONVENTIONAL

Stage 1

Stage 2

Stage 3

Stage 4

Stage 5

**Policy:**

Cut short term interest rates swiftly and aggressively

**Policy:**

Loosen fiscal policy, either through tax cuts or spending increases

**Policy:**

Reduce interest rates further out the yield curve

**Policy:**

Provide debt relief and bailouts to the private sector

**Policy:**

Create inflationary expectations and buy assets like equities

**How it works:**

Standard policy designed to deal with shortfall of domestic demand. Lower rates reduce debt service costs and should encourage people to borrow.

**But:**

If debt is too high in the first place, may merely defer the day of reckoning

**How it works:**

If people are worried about a shortfall of demand, this policy should remove the concern. And, by doing so, there could be an upward multiplier effect.

**But:**

Unwanted debt in the private sector might reduce the multiplier effect to nothing.

**How it works:**

A number of options. Minimal policy to keep short rates low for prolonged period to drive long rates down. Maximal policy to buy paper, imposing an interest rate ceiling.

**But:**

Potentially the same problems as stage 1

**How it works:**

Take debt off the balance sheet of the private sector and give it to the public sector. We suggest a deflation protection plan where deflationary increases in debt are offset by tax cut.

**But:**

Political/moral hazard issues with bail out

**How it works:**

Could involve money supply, inflation or price level target, printing money and fiscal ease. Requires credible policy of creating higher future inflation reducing urgency to repay debt.

**But:**

How do you make the policy credible? Policy not successful in Japan

**Marks (out of 10):**

Lack of success to date suggests that a lowly 3 is all the policy deserves

**Marks (out of 10):**

Despite a huge fiscal ease, inflation keeps falling. 4 out of 10

**Marks (out of 10):**

More unconventional does not mean much more success. 5 out of 10

**Marks (out of 10):**

A better bet if politically acceptable. 7 out of 10

**Marks (out of 10):**

Sounds good on paper but looks risky to policymakers. On that basis, only 6 out of 10

PREVENTION

DEFLATION

CURE

## UNCONVENTIONAL POLICY OPTIONS

### STAGE THREE\*: YIELD CURVE MANIPULATION

1. Fed commits to keep Fed Funds at zero for a pre-determined fixed length of time, or until some macroeconomic variable achieves a certain target (e.g. core PCE price index rises by more than 2½% y/y).
2. Fed buys Treasuries out the curve to get long rates down.
3. Fed announces explicit ceilings for short Treasury yields (up to 2 yrs).
4. Fed announces explicit ceilings for intermediate Treasury yields (3-6 yrs).
5. Fed announces explicit ceilings for long Treasury yields (this was done between 1942-51, when 2½% ceilings were enforced).
6. Fed buys Ginnie Mae paper/Agencies.
7. Fed buys private-sector bonds in open market operations (would require law change).
8. Fed lends to private sector via banks through discount window, by offering fixed-term loans to banks at low or zero rates. This hopefully reduces risk premiums on private assets.
9. Fed lends directly to corporations, partnerships & individuals (strict conditions apply but can be loosened in emergency times by FOMC).
10. Fed operates in forward interest rate market (possible example: Fed receives fixed rate on forward starting swaps to force forward rates down).
11. Fed writes options (possible examples: Fed sells puts on Treasuries, eurodollar futures, swaps, so as to offer cheap protection to investors who fear higher rates).
12. Fed buys euro-dollar futures.
13. Fed buys Fed funds futures contracts.

### STAGE FOUR: DEBT-DEFLATION BAIL-OUT

1. Government bails out the corporate sector in a corporate version of the S&L bail-out.
2. Government introduces Deflation Protection Plan (DPP), agreeing to compensate debtors for the amount that their real debt increases by, due to deflation. The funds are to be used to pay down debt. Administered through the tax system.

### STAGE FIVE: CREATING HIGHER INFLATION EXPECTATIONS

1. Fed announces and commits to a high **inflation rate target**.
2. Fed targets a CPI or PCE **price index level** for, say, five years out. For instance, the Fed could promise the CPI index will be 15% higher in five years, which roughly implies 3% inflation per year for the next five years. So if the Fed fails to generate 3% in the first year, it promises to make-up for it later, as the objective is a cumulative 15% CPI increase at the end of five years.
3. Fed over-supplies the quantity of reserves in the banking system (and hence base money), which acts to increase bank balance sheets, which might increase bank willingness to lend (if the banking system is not broken) and might create inflation expectations due to "printing money"
4. Fed adopts **money supply growth** target (the measure chosen could be anywhere from narrow money to broad money).
5. Fed adopts **money supply level** target (the measure chosen could be anywhere from narrow money to broad money).
6. Government cuts taxes, financed by "printing money" (the Fed would buy the entire Treasury issuance that finances the tax cuts).
7. Government increases spending, financed by "printing money" (the Fed would buy the entire Treasury issuance that finances the spending).
8. Dollar devaluation policy (at the extreme pegging the dollar at a very low rate)
9. Fed buys foreign government debt (part of a dollar devaluation policy)
10. Fed buys equities
11. Fed buys property

Source: HSBC, Ben Bernanke - FRB Governor, Alan Greenspan - FRB Chairman, Paul Krugman - Professor of Economics, Princeton University, Vincent Reinhart - Director, Division of Monetary Affairs, FRB, "Stage 1 is Fed funds cuts and Stage 2 is fiscal easing"

## Stage 1: Rate cuts

### Speed and aggression, yes. Success, maybe not

The first strategy in a downturn is to cut interest rates. If it is a normal cyclical downturn, the medicine should work, and a few quarters later, the economy should be back on its feet. Fiscal easing may not even be needed. However, if it is a structural economic breakdown caused by the bursting of a bubble and a substantial downward revision to future earnings expectations, then very aggressive rate cuts will be required to soften the blow. The Fed has done just that since January 2001. But even that might not save the economy. Why is it that sometimes aggressive rate cuts do *not* work?

Charts 14a,b and c shed some light on the dynamics at play. 14a shows the relationship between Fed funds and GDP growth, where the downward sloping *investment* line (and the available flow of saving available for investment) simply shows that the lower rates are, the higher growth should be. Assume that a severe negative demand shock occurs. This is shown as the *investment* line shifting down on chart 14a.

According to chart 14a, Fed funds have to be cut from 4% to -4% to provide sufficient monetary accommodation to get GDP back to trend growth. But nominal rates cannot go below zero, so in this case GDP is stuck at sub-trend growth, because rates are still too high at zero. Given the relationship between demand and inflation in chart 14b, this leads to falling inflation. And if it persists, falling inflation becomes deflation. In this example, rates of -4% are required to shift *aggregate demand* back up so that *aggregate supply* and *aggregate demand* intersects at trend growth again.

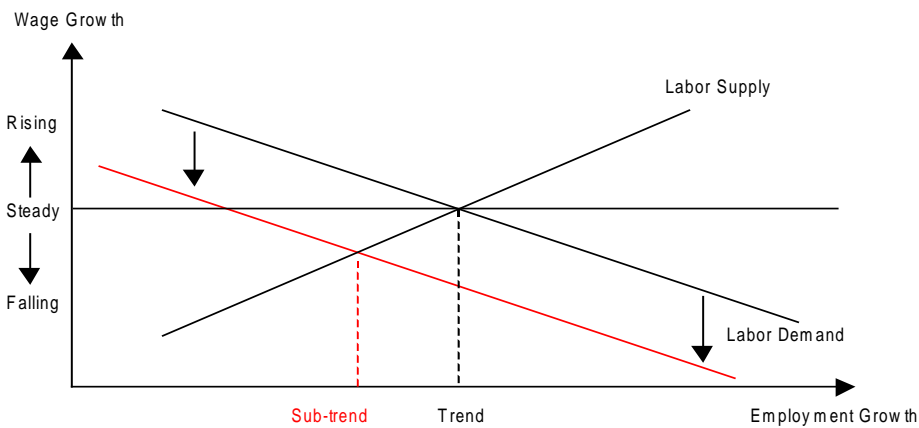
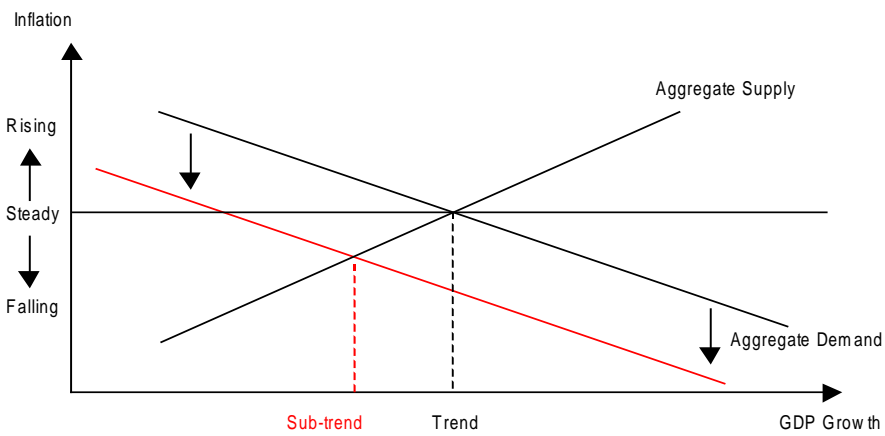
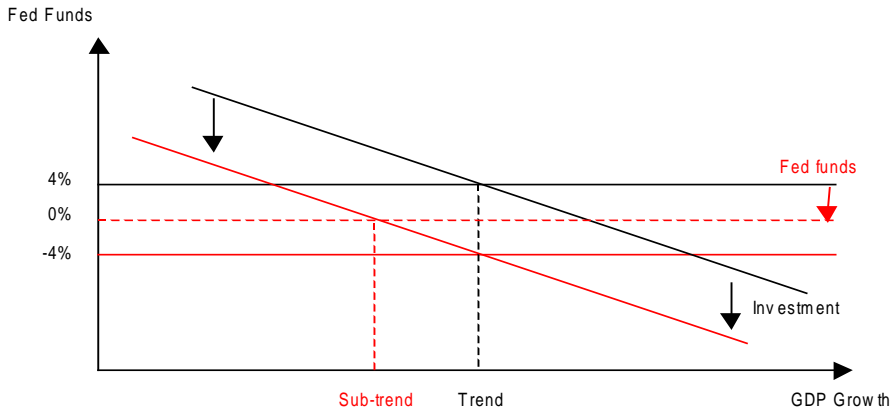
Meanwhile, the labour market deteriorates in response to the decline in demand growth. Chart 14c shows the reduction in *labour demand*, which results in declining wage growth, which if it persists too long, could result in falling wages (although rigidities are thought to stop that from happening, but that just means that unemployment then rises further).

As we are looking at these three charts in dynamic terms (in growth terms), it becomes apparent that the system can become a self-feeding deflationary cycle. As inflation falls, real interest rates rise, which then tightens monetary conditions further. That slows GDP growth further, which reduces inflation further, and on and on it goes.

At this point, aggressive rate cuts by themselves are insufficient to restore demand and stop deflation-pressure from intensifying. Our analysis implies that prices and wages would fall continuously (although in reality there would be more stickiness). In terms of rate cuts failing, there is some evidence to suggest that the US economy might now be at this stage, something we look at next.

**Stage 1: Rate cuts**

**14a, b and c. Why rate cuts sometimes fails**



Source: HSBC

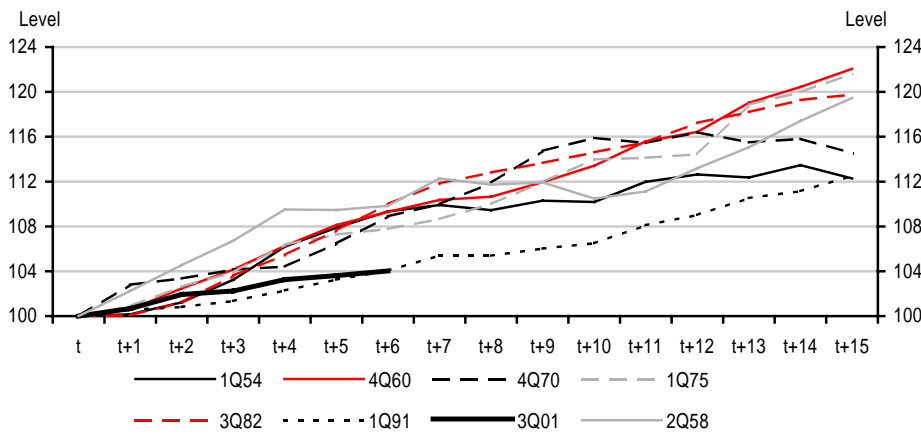
**Stage 1: Rate cuts**

The weakness of recovery implies US rate cuts have failed

Chart 15 shows that the pace of real recovery from the trough of the recession has been historically very weak, compared with other recoveries in the past. Furthermore, given that deflation is the key risk, the performance of the nominal economy matters too. It is equally unfortunate, therefore, that this cycle's recovery in nominal terms has also been poor compared to historical nominal recoveries (chart 16).

**15. This recovery is slow in real terms...**

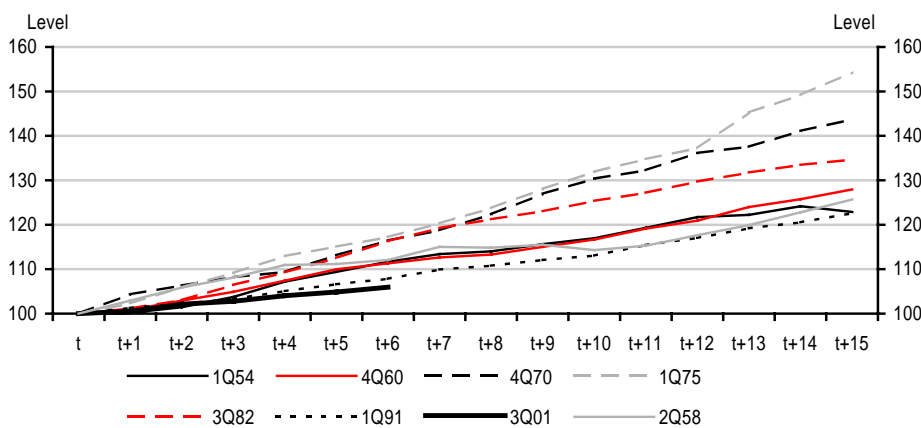
Recoveries from US recessions - from trough (real)



Source: HSBC

**16. ...and in nominal terms**

Recoveries from US recessions - from trough (nominal)



Source: HSBC

**Stage 1: Rate cuts**

These growth results, from both a real and nominal perspective, together with the fact that it has been 2½ years since aggressive rate cuts were instituted and 1½ years since Fed funds has been below 2% (or about zero in real terms), are disappointing. It suggests that the theoretical reason we outlined on why short-rate cuts might not work is operating in practice with the US economy today. If so, it's time to move on to additional policy options.

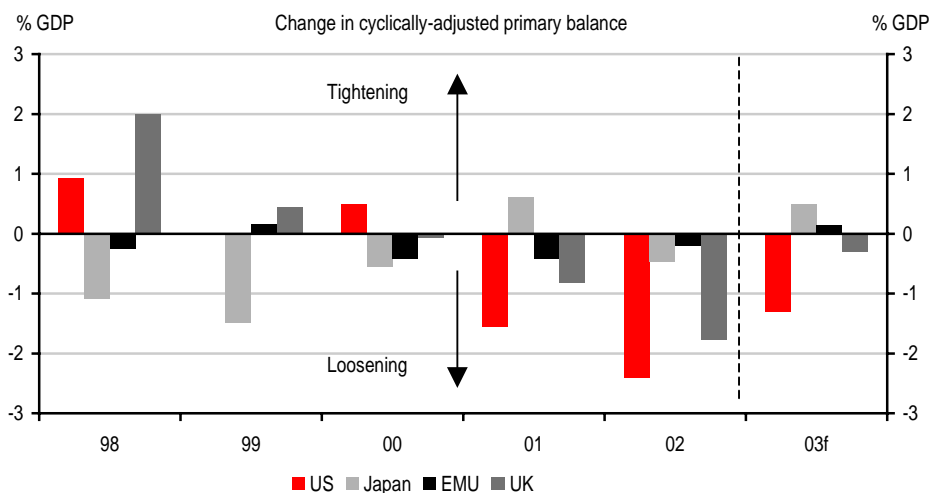
## Stage 2: Fiscal policy

### Let the government do the work

In the standard Keynesian model, demand either leaks from, or is injected into, the economy. In a post bubble world where there is a threat of deflation, the private sector will tend to increase savings. This higher leakage can be offset by an injection of demand from the public sector, returning the economy back to full employment.

In one sense, this is exactly what both the US and UK governments have tried to achieve over the last two years. Table 17 shows the changes in the cyclically adjusted primary budget balance for each of the world's major economies over the last four years: the figures show clearly that fiscal expansion has been at its most aggressive in the US and the UK. For the US, the expansion came mainly in the form of tax cuts whereas, for the UK, the expansion was driven mainly through increases in public spending.

#### 17. Big fiscal ease in 2001-2002



Source: HSBC, Thomson Financial Datastream, OECD

The scale of the fiscal loosening was so big that, in a standard approach, it might be reasonable to expect a sizeable multiplier effect: the boost to incomes stemming from the initial stimulus would lead to a further increase in spending, ultimately driving the economies back to something approaching full employment with a healthy level of profits.

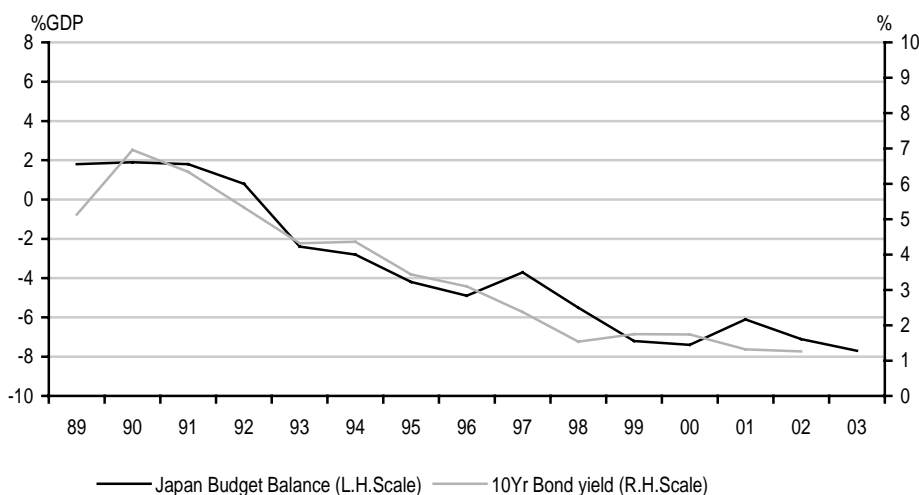
It is odd, therefore, that the US and UK economies should now find themselves in a relatively vulnerable position. Could it be that the standard Keynesian solution has failed? And, if so, why?

## Stage 2: Fiscal policy

There are three possible reasons for failure:

- ▶ First, it may simply be the case that the loosening of fiscal policy has merely offset the loss of demand coming through in the private sector. In the absence of a significant recovery in equity values and with a continuation of low profits, high debts and excessive capacity, it might simply be that the public sector is being “crowded in” through an absence of demand for funds from the private sector. There is some evidence to support this view: typically, higher government borrowing would tend to lead to higher long term interest rates yet, over the last two years, long term interest rates have persistently fallen: this is simply another way of showing that the multiplier effects associated with the initial fiscal stimulus have not come through. This should be familiar to anyone who has looked at the Japanese experience over the last decade or so (chart 18).

### 18. Higher government borrowing does not always mean higher bond yields

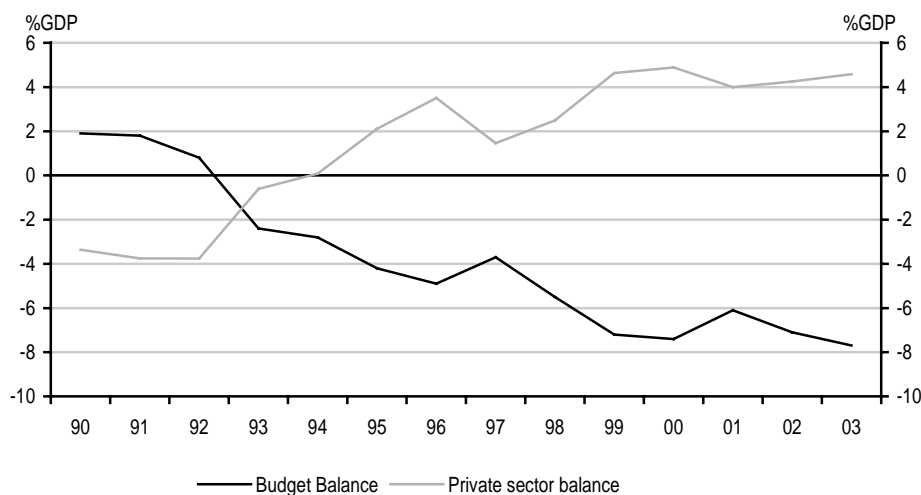


Source: HSBC, Thomson Financial Datastream, OECD

- ▶ Second, the Keynesian solution is primarily based on the idea that the private sector, on its own, has suffered from some form of contemporaneous market failure. The argument tends to be that the labour market is below full employment because the goods market is not producing enough and the goods market is not producing enough because the labour market is not generating enough final demand. If the government recognises this problem, the obvious solution is simply to boost demand: then the product and labour markets will be brought back into simultaneous equilibrium and the economy will be restored to full employment. This argument, however, may be less relevant in an Austrian-style world: in this environment, the problem lies with a misallocation of resources over time. When consumers and producers realise that they have over-consumed and over-invested, they may simply have no appetite for increasing demand still further. Under these circumstances, the public sector merely replaces private sector demand rather than increasing private sector demand. Again, the Japanese experience is relevant.

## Stage 2: Fiscal policy

### 19. Public sector demand has merely replaced private demand in Japan



Source: HSBC, Thomson Financial Datastream, OECD

- ▶ Third, Ricardian-equivalence may play a role in reducing the power of fiscal policy. Ricardian-equivalence is a straight-forward idea: higher government borrowing today implies higher taxes tomorrow and, as a result, rational consumers and producers will save more today in anticipation of higher future taxes: the net result is that the public sector replaces, rather than replenishes, the private sector. The argument against this view is that the public sector ultimately has better access to capital markets. On the assumption that the private sector is credit constrained as a result of financial market regulation and banking sector risk aversion, the idea is that a switch from private borrowing to public borrowing will provide greater access to funds and, as a result, a bigger boost to demand. Yet it is difficult to see why this argument should be so relevant today in a world of financial market disintermediation with the emergence of a very liquid agency and corporate bond market. Moreover, with ageing populations, savers will be a lot more concerned about future tax obligations: should borrowing rise today, there could be higher tax payments tomorrow which will simply force those who expect to be retired tomorrow to save more today.

In our view, budget deficits will climb a lot further in the years ahead. It is not difficult to envisage the US deficit rising to 5% of GDP, the UK deficit rising to 4% of GDP and the European Stability Pact slowly breaking up. However, these increases in government borrowing, unless matched by more unconventional policies, are better regarded as replacements for lost private sector demand rather than solutions to the private sector problem.

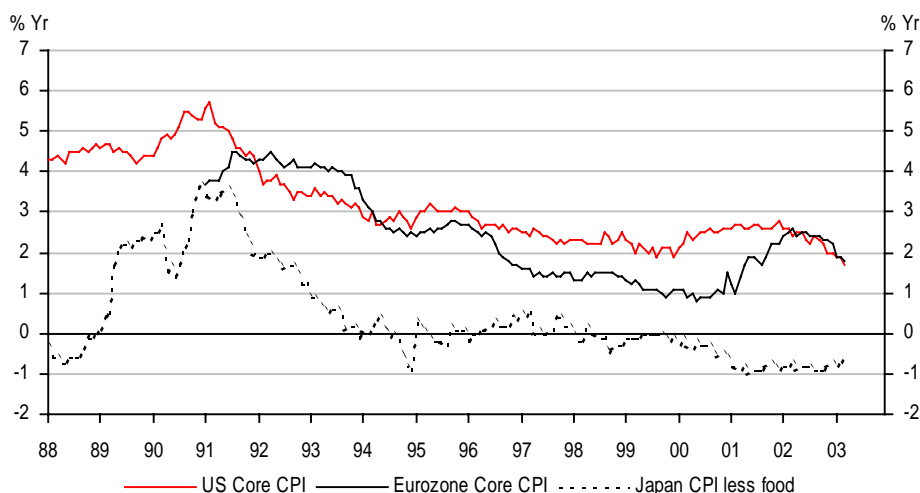
## Stage 3: The yield curve

### When short rate cuts and fiscal policy fail

If it is clear that rate cuts and fiscal expansion are failing to lift demand back towards potential, it suggests that the economic problem is more structural than cyclical, and more drastic measures for helping the economy have to be considered. The central bank's next step is to enter the twilight zone of unconventional policy options – a difficult but crucial step if incipient deflationary pressures are to be reversed.

If policy makers act early enough, there is a chance that a sufficiently low long-term nominal interest rate will do the trick in restoring the economy to health. Yield curve manipulation is then the policy of choice. It is crucial to recognise that it will only work if deflation-expectations have not yet become in-built into the economy. Then, a low nominal long-term private interest rate can be sufficiently low enough in real terms to improve economic performance. It represents an economy that may be heading towards a liquidity trap, but has not quite fallen into it yet. There is still time to avoid the trap. This is plausibly the situation that the US and Eurozone faces today, with actual and expected underlying inflation rates still in positive territory (chart 20). Japan passed this threshold years ago and is in a much more intractable situation.

#### 20. Not yet caught the Japanese disease



Source: HSBC

### Reducing the private nominal cost of capital

Yield curve manipulation is actually too simplistic a term, as at the end of the day it is merely a means to an end. The fuller aim of this strategy is to **sufficiently reduce the nominal cost of capital for the private sector so as to return the economy to its potential output level**. Nominal private long-term interest rates are not low enough despite zero or near-zero short-term interest rates and an apparent loose fiscal stance. If only private-rates

### Stage 3: The yield curve

could be made to go lower, the theory goes, consumers and businesses will then be motivated to borrow and lift their spending. Private rates could be “too high” because expectations for the future may remain too upbeat, or risk premia is high, or both.

There are many ways for the central bank to manipulate the yield curve and attempt to reduce private long rates adequately. Federal Reserve Board Governor Ben Bernanke and Vincent Reinhart, Director of the Division of Monetary Affairs at the Fed, have so far been the most vocal on the issue. Overall, it is useful to think of yield curve manipulation on two levels: through

- Indirect manipulation: guiding long rates lower, but allowing financial markets some room to determine where yield levels should be
- Direct manipulation: imposing an asset price target (and hence yield) that a range of government and private fixed income assets (or other assets) should trade at.

### Indirect manipulation

#### **Fed Funds strategy to influence long rates**

Once the decision to take unconventional steps has been made, a central bank's path of least resistance is to guide longer-term government yields lower. Based on the pure expectations theory of interest rates, a long rate can be seen as a series of short rates. To that extent, the Fed can commit to keep the Fed funds rate at zero or near-zero for a pre-determined fixed length of time, with the hope of quickly guiding long rates down. Or if the Fed does not want to tie itself into a fixed-time obligation (say, because inflation might actually start rising by an unwanted amount), it could keep Fed funds at zero until some macroeconomic variable achieves a certain target.

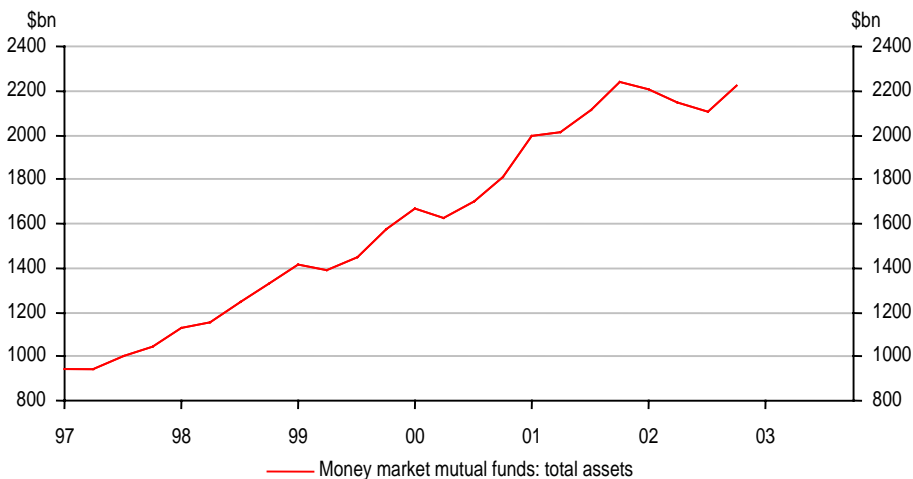
What should that target be? Here, a promise to keep rates low until inflation reaches 2½-3½% on a sustained basis is probably the right step. This way, if growth should speed up, but inflation remain too low due to excess capacity, financial markets are less likely to raise long rates prematurely on an initial growth spurt. Therefore, a “growth target” such as 4-5% annual GDP growth would be the wrong signal to start raising rates, given the uncertainty of the size of the negative output gap and hence the uncertainty of what the growth impact will be on inflation.

#### **Zero Fed Funds: the Money Market Mutual Fund dilemma**

Cutting rates to zero would ideally be the preferable Fed funds setting for getting long rates down. It has been noted it could be difficult to cut all the way to zero due to the impact it would have on the money market mutual fund ( MMMF) industry. MMMFs typically charge around 30bp for institutional clients and 70bp for retail clients. So a Fed funds rate of much below 0.75% would not cover the fees and charges associated with a MMMF, suggesting that such funds could “break the buck”, industry-speak for a capital loss. Of course, to the extent that people withdrew such funds and spent the money instead, the strategy could be considered a success.

### Stage 3: The yield curve

#### 21. Money market funds growth stalls



Source: HSBC

Nevertheless, there is a valid risk that a shift of money out of MMMFs would simply be relocated into bank deposits instead. If it happened in a gradual and orderly fashion, that would be fine. The Fed should not care about who the microeconomic winners and losers are if the macroeconomic strategy is right. But if there were a large and sudden withdrawal from MMMFs, the loans that the MMMFs in turn provide to the commercial paper (CP) market would be severely disrupted, making the financial stresses of the corporate sector worse, not better, despite the Fed's best intentions. Fears of a liquidity-crunch in the CP market could then result in a widening of corporate spreads more generally, pushing private long rates higher, and worsening the economy.

This is a fair consideration - whether to cut Fed funds all the way to zero, as opposed to, say, 0.75%. Table 22 shows, however, is that the size of the CP market is small relative to the size of the MMMFs, so the distress could be limited, which raises the odds of Fed funds going all the way to zero.

#### 22. Money Market Mutual Funds

	1999	2000	2001	2002
Total Financial Assets	1578.8	1812.1	2240.7	2223.9
Deposits	431.0	521.2	703.8	712.3
Credit Market Instruments	1147.8	1290.9	1536.9	1511.6
Corporate and Foreign Paper	123.7	161.9	163.0	170.7

Source: Federal Reserve

Other commonly cited reasons to keep funds above zero do not hold as much sway. MMMFs aside, the Fed should cut all the way to zero aggressively and quickly, as opposed to "keeping some powder dry". As the Bank of Japan learned the hard way, it is better to drop rates to zero while an economy still has inflation and inflation expectations embedded, so as to allow real rates to go negative. This maximizes the impact of monetary easing. If

### Stage 3: The yield curve

the Fed waits until deflation arrives, then it is too late, as real rates will be too high, even at zero Fed funds. In other words, there is no point in keeping one last bullet in the chamber just in case. In his final speech before retiring from the Federal Reserve Board on January 16, 2002, Lawrence Meyer espoused this view in no uncertain terms, and it likely reflects general Fed thinking.

#### **Longer-term Treasuries, corporate bonds and derivatives**

Once the Fed sets short rates at zero or near-zero, it can complement the strategy of reducing long rates through purchases of Treasuries out the curve. Announcements of large and sustained planned purchases through time could result in a dramatic impact on the long-end of the curve. And if financial markets are concerned that the Fed could be overly successful in generating too much growth and inflation, and therefore keep yields too high despite Fed purchases, then the Fed could try to convince markets that the funds rate will not be rising for an extended period by buying euro-dollar futures, or even Fed funds futures! These are obviously extreme and seemingly wacky ideas, but we are talking about unconventionality here.

Yield curve manipulation of government securities is no guarantee that private sector interest rates will fall. Corporate spreads could widen significantly, as presumably it might if a serious deflation were a major risk. Instruments to counter this include the central bank purchasing large volumes of corporate bonds. The hope is to reduce the risk premium associated with holding these assets, thereby lifting confidence and reducing the corporate sector's cost of capital. However, this would require a change in the law for the Fed to do this, as Ben Bernanke pointed out in his November 2002 speech.

Of course, even if the law was changed, all sorts of uncomfortable questions of which bonds to buy would bring up "moral hazard" issues. Does the Fed choose some companies' bonds over another? Does it choose particular sectors over another? Is it wise to buy bonds of sectors that were in a bubble and now in bust? Doesn't this all sound too much like "picking winners"?

One could narrow the purchases involved to AAA credits, but that is only a small part of the economy, while in a deflation period there would presumably be migration down the credit curve. One possible way to avoid this sort of quagmire is to get forward rates down more generically, by forcing long-term swap rates down. This should have positive knock-on effects on corporate bonds. The Fed could institute this by announcing and entering swap contracts, agreeing to receive fixed rate liabilities on say five, seven and ten year swap rates. Alternatively, or in tandem, the Fed could write options, such as selling puts on Treasuries, euro-dollar futures and swaps so as to offer cheap protection to investors who fear higher rates. These steps allow the Fed to "put their money where its mouth is", making it more likely that long rates would then stay down.

### Direct manipulation

The measures outlined in the previous section should in theory reduce private-sector long rates substantially. But if it does not, the Fed may be forced to dabble in "asset price

### Stage 3: The yield curve

targeting” of fixed income assets. Philosophically, the Fed could at the outset find it difficult to adopt direct asset price manipulation as it has consistently stated that it does not target asset prices. That might be true in a boom, but it could be tougher to keep that promise in a bust.

#### Explicit ceilings on government yields

FRB Governor Bernanke has gone as far as suggesting that in the event of adopting unconventional options, he favours explicit ceilings for Treasury yields of up to 2-year maturities. And if that failed, intermediate maturities (3-6 years in particular) could also have such ceilings applied. The Fed would announce their intention to stand ready to be unlimited buyers of these Treasuries to ensure that the targeted yields were achieved. And there has been a precedent. Fed Chairman Alan Greenspan reminded financial markets in a speech in December 2002, that 2½% ceilings were applied on 25-year bonds between 1942 and 1951. Moreover, the Fed held relatively little of these bonds, as a proportion of the outstanding stock, suggesting the Fed’s bark can indeed be more effective than its bite.

#### 23. The real yield on 25-year bonds when the ceiling applied was 2.5%



Source: HSBC

#### Explicit rate-ceilings on corporate bonds and Fed loans to firms

A more severe intervention option would be to set rate ceilings on corporate bonds for a particular grade (say, AAA), or apply explicit spreads on corporate bonds over Treasury yields. Once again, the Fed would have to be a credible buyer of unlimited quantities. Moreover, the Fed could back this action with loans to the corporate sector, either through banks at the discount window or directly.

#### Capital flow repercussions

Of course, financial markets and capital flows were much more regulated in the 1940s, and the rate ceiling was installed during Wartime. So one wonders whether such action would be

### Stage 3: The yield curve

more challenging in today's global and free-flowing capital market. After all, roughly 40% of the stock of Treasuries is now owned by foreigners, which could plausibly disrupt the process. For instance, the prospect of capital gains in bonds could drive the dollar higher, which tightens monetary conditions, as demand for Treasuries rises.

Or might it help the process? As the Fed buys paper from foreigners, foreigners will sell their dollar-proceeds (or at least some of it) back into their home-currency, driving the dollar down, complementing the monetary loosening. The weird thing is that this form of "capital outflow" is caused by capital gains in bonds, as opposed to the usual situation where a capital outflow tends to cause a country's asset prices to decline.

And since the current account deficit will not be getting smaller (indeed, an expansionary policy widens the deficit because a rise in output raises import demand), the capital inflow required to fund the current account deficit needs to stay the same. So the loss of foreign capital from the sale of US bonds needs to be offset by foreign buying of other US assets. If that is not forthcoming, then the dollar could become destabilised. Whether that is a good thing or not depends on whether dollar-devaluation is seen to be desirable (see Stage 5).

#### **The challenge of adopting strange policies and keeping confidence up**

Successfully reducing private rates, either through indirect or direct manipulation, may have perverse consequences. To some degree, the authorities are involved in a confidence trick here. The Fed needs to lower long rates adequately, but at the same time, somehow convince private agents that these actions have in no way left the Fed's view of the medium term outlook for profits and incomes in poorer shape.

This is tricky, given that a Fed announcement and action to combat deflation risk could presumably lower profit expectations, due to the private sector now being more alert to deflation risk. If so, the benefit of a lower cost of capital that the Fed produces would be offset by lower profit expectations, keeping investment in a slump. Indeed, the cost of capital could decline because of a downward revision to the expected return on capital – ironically caused by the Fed. The clearest sign of such an awry outcome would be a substantial decline in stock prices.

#### **If it works, it could still go wrong**

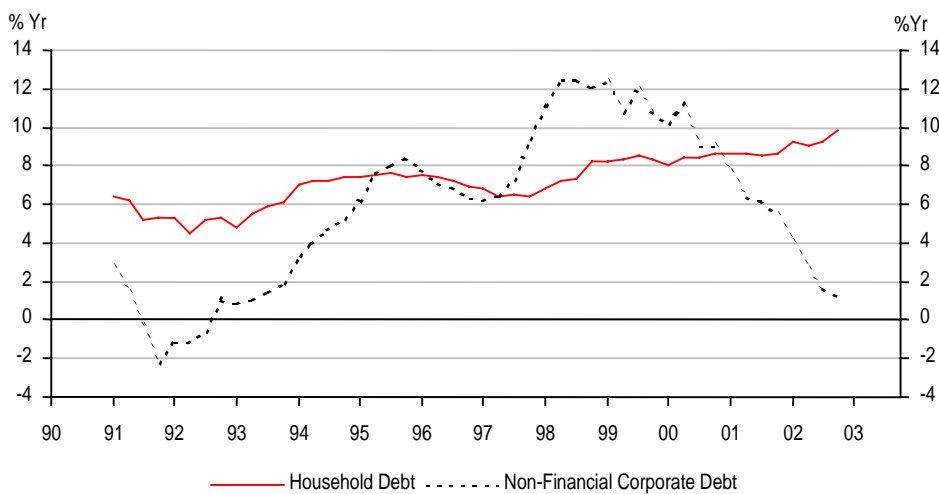
We have outlined some of the yield curve manipulation strategies that could be employed. The Fed itself has already touted many as possible strategies, suggesting such policies could be a lot closer to approval than many think. Let us assume the policy works. There is still the risk that despite a successful decline in private rates, it ends up being the "wrong" policy prescription for the economy. This goes back to our earlier argument in "Bubbles, Busts and Austrians". In this context, it relates to the different motivations of producers and consumers.

Further long rate declines could see consumers continue to pile up debt, while the corporate sector remains unsure to invest given their already high debt levels. In other words, given that consumers are relatively healthy and producers are relatively weak, it could be that the consumer has the greater marginal propensity to raise debt levels at this juncture, exacerbating the already wide imbalance between the two.

### Stage 3: The yield curve

This has the hallmarks of stoking up what is already a strong property market, which could easily turn into a self-feeding housing bubble (if it is not already one) while the corporate sector stays on the sidelines, failing to invest or hire. This lack of investment and hiring ultimately hurts the consumer too, triggering a burst in an over-heated property market. Consumers then join producers in the debt trap, leaving the economy in a worse position than what existed before yield curve manipulation occurred.

#### 24. Corporate and consumer debt – going their separate ways



Source: HSBC

#### Conclusions

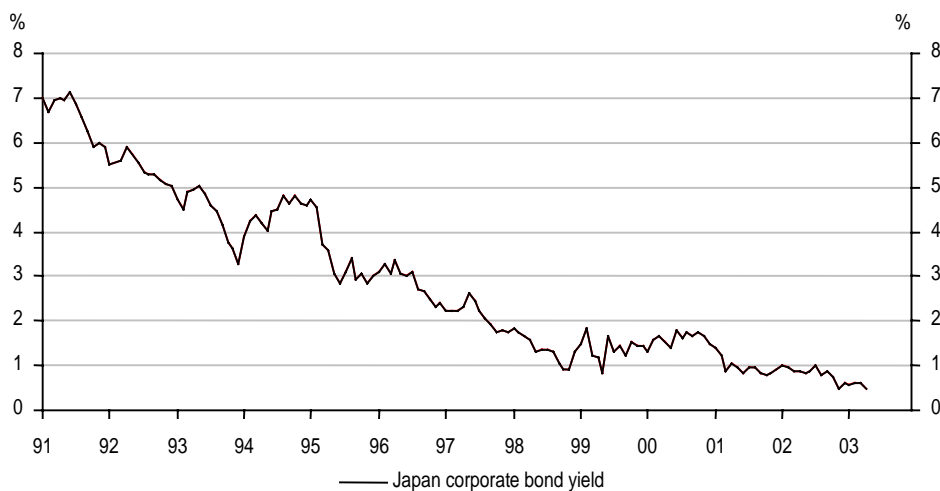
When all is said and done, yield curve manipulation is simply a form of rate cutting, but the difference is that it is cutting long rates. So just like short-rate cuts, there is the depressing possibility that yield curve manipulation, even if successfully applied, just fails to deliver the sustained improved performance in the economy. It is possible that low long-term nominal yields may simply be “too high” an interest rate, given high debt. The “real rate”, in other words, is too high.

Here, deflationary expectations have begun to take a foothold on the economy. If the “real rate” is too high, then a paradoxical outcome would be a narrowing in corporate spreads, as at near-zero rates, both government and corporate paper become attractive in real terms. For instance, assume the required negative real interest rate is  $-4\%$ , and the required corporate spread over government rates is 100bp, so that the equilibrium real corporate yield should be  $-3\%$ . With 2% deflation, for example, the real government yield could not go lower than  $+2\%$  (0% nominal yield less 2% deflation), while the real corporate yield could not go lower than  $+2\%$  too (0% nominal yield less 2% deflation, again). Both real yields are higher than their equilibrium yields, and hence are attractive. Investors become indifferent between holding government and corporate paper because of deflation.

### Stage 3: The yield curve

In Japan, for instance, this is already a reality, where the corporate bond yield is just 0.7%, just a few basis points above the government rate (chart 25). Yet the Japanese corporate situation still looks as hopeless as ever. Under these circumstances, yield curve manipulation is doomed to failure, or is at least insufficient to get the economy out of its hole. Further, and arguably more dangerous steps, are now needed.

#### 25. Japanese corporate bond yields do not reflect cheap capital



Source: HSBC

## Stage 4: Debt relief and DPP<sup>2</sup>

### Bringing debts down

On the assumption that deflation risks have become heightened, and that rate cuts, fiscal easing and yield curve manipulation fail to help improve economic conditions sufficiently, the next step may be to tackle the source of stress directly – bailing out debtors using public money.

It is certainly true that the worst offenders of the bubble-era have been eliminated from the corporate landscape. Goodwill write-offs, too, have been sizeable. However, liabilities as a proportion of output for the non-financial corporate sector remains just as high today as it was in the beginning of the recession of 2001, after being heavily increased through the late 1990s during the bubble. The spectre of deflation would make the debt burden worse.

#### 26. Corporate debt remains high



Source: Federal Reserve

Hence, unusual fiscal involvement in confronting the debt issue head on, through debt restructuring and orderly debt default using public funds, could be considered. Examples of success in this area might include the Resolution Trust Corporation in the US and the wholesale nationalisation of banks in Sweden in the early 1990s. In both cases, taxpayers' money was targeted towards areas of the economy that, if left to their own devices, might have triggered a deflationary shock.

Resolutions of debt-crises have typically involved the financial system due to the threat of systemic risk. Today's situation in the US is different, in that the banking system appears to be fundamentally sound (thanks to mortgage lending), even though the non-financial corporate sector is weak. So the bail-out option would have to be targeted directly to non-financial firms.

<sup>2</sup> Deflation Protection Plan

## Stage 4: Debt relief and DPP

### The Deflation Protection Plan (DPP)

Bail-outs in the traditional sense probably are unworkable on a broad macroeconomic basis, as it distorts the allocation of capital that a free market would arrange. It gets too closely involved in the microeconomic problems of certain firms or sectors, and could end up complicating the macroeconomic battle against deflation. But the war against deflation is serious, and the public interest may demand something in the form of unconventional fiscal actions for such unconventional times.

#### How it would work

One novel solution is what we have dubbed the “Deflation Protection Plan” or DPP. The essence of the DPP is that the government compensates firms for deflation, so as to ensure that existing debt burdens do not rise in real terms. The way it works is simple. Assume 2% deflation occurs over the course of a fiscal year for a particular firm, and that the stock of debt that existed at the end of the previous fiscal year was \$1bn.

In real terms, this particular firm’s real debt burden has risen by 2%, or \$2mn, even though its nominal debt is unchanged. The government would then compensate this particular firm \$2mn, thereby keeping its real debt burden unchanged. The simplest way to arrange payment is through the tax system, where the DPP payment could be recorded as a tax credit in the firm’s tax return. It would then be compulsory for the funds to be used for debt reduction, either through corporate bond buybacks or paying down bank loans, for instance.

This way, all firms benefit - both healthy and sick firms. Tricky questions about which firms or sectors to favour never need come up. Of course, companies who do not have debt at all may cry foul. But the justification is that debt-deflation would ultimately hurt firms with no debt too, due to the knock-on effects of deflation.

#### How much would it cost?

##### 27. Debt levels and the DPP cost of 2% deflation in dollars and % GDP

Sector	Debt	Cost	%GDP
Non-financial corporate	\$5 trillion	\$100bn	1.0
Non-corporate business	\$3 trillion	\$60bn	0.6
Household	\$8.5 trillion	\$170bn	1.7
Total	\$16.5 trillion	\$330bn	3.3

Source: HSBC

How much would the Government’s DPP cost? The non-financial corporate sector currently has \$5 trillion in debt, in the form of credit market instruments. 2% deflation, were it to occur, would therefore cost the federal government \$100bn, or 1% of GDP. This looks huge given that the budget deficit is already heading for \$400bn in FY2003, and probably more in FY2004. But we would argue that it is a small price to pay in the event that deflation did actually occur. It would end up costing less than the S&L crisis. (Besides, as we argue later, if the aim is to create higher inflation expectations too, such steps could be financed by “printing money”, so that the public debt would not have to rise as a result). The non-

## Stage 4: Debt relief and DPP

corporate business sector might also be included in the scheme. Their debts total \$3 trillion, so 2% deflation would cost \$60bn (0.6% of GDP).

Given that the debt stresses are most problematic in the business sector right now, the government could exclude the household sector from the same benefits if it is feared that the result would further overheat the property market. Should the property market ever burst, however, Congress could then allow households to participate too. This gets relatively expensive. The household debt burden is currently \$8½ trillion, so 2% deflation would cost the government \$170bn (1.7% of GDP).

## Corporate bail-out schemes

One cannot exclude the possibility that a mix of high debt and deflation would sink one or two major players in a major industry. If enough jobs or “strategic interests” were on the line, it is conceivable that Congress would bail out specific industries or companies, perhaps conveniently wrapped up as part of the war against deflation.

### Past bail-outs

Bail-outs have occurred periodically for non-bank firms in the US, but have been rare, and have usually involved relatively modest amounts. The Chrysler bail-out of 1979 and Lockheed Aircraft bail-out of 1971 were two major events. Both occurred around recessions. These bail-outs involved mainly providing loan guarantees, which if all goes well, does not have to result in public costs what so ever. The railroad company Penn Central, in 1976, was a different story, where the most extreme form of a bail-out –nationalisation – occurred, which later required \$7bn of public funds just to keep it afloat. The savings & loans (S&L) crisis was perhaps the most spectacular, with over 1200 S&Ls forced to close down, costing the public purse \$124bn in the 1980s and into the early 1990s.

### 28. Past US bail-outs and associated costs

Bail-out recipient	Year	Type	Amount	Near a recession?
Lockheed Aircraft	1971	Loan Guarantees	\$250mn	Yes
New York City	1975	Loan Guarantees	\$1.65bn	Yes
Penn Central	1976	Nationalisation	\$7bn	Yes
Chrysler	1979	Loan Guarantees	\$1.5bn	Yes
Savings & Loan Industry	1989		\$124bn	Yes
Airlines	2001	Aid/Loan Guarantees*	\$15bn	Yes

Source: Business Week, \*due to impact of Sep-11 terrorist attacks

### Recent bail-outs

In more recent times, the airline industry received \$5bn in emergency aid and \$10bn in loan-guarantees due to the September 11 2001 terrorist attacks. Europe has recently seen its fair share of bail-outs too. In the after-math of the high-tech crash, France pumped €9bn into France Telecom in late 2002, while Germany came up with a €400mn package for MobilCom, a floundering mobile phone operator. In 1999, Germany brokered a deal to save the construction firm Philipp Holzmann (which ended up going bust in 2002 anyway).

## Stage 4: Debt relief and DPP

### **Bail-out pitfalls: politics, public disapproval and trade agreements**

Bail-outs, we admit, have their limitations. A persistent and serious deflation would probably require so many bail-outs that it is difficult to imagine politicians agreeing to sign on to the idea. Moreover, is it wise for the government to bail out the likes of Enron and Worldcom? Probably not. To bail out such firms would only postpone their day of reckoning. Moral hazard emerges, while governments could be accused of “picking winners”. And bail-outs slow the “creative destruction” process that characterizes the US economy.

Getting the required congressional approval for bail-outs has also traditionally been a prickly and frustrating process. Moreover, public reaction to bail-outs can be unexpectedly severe, as was the case in Japan in 2001. When the government announced a bail-out for Japan’s department store group Sogo, the plan elicited a furious public backlash that caused government approval ratings to sink.

In a world of trade agreements, bail-outs also elicit suspicions and complaints. The France Telecom and German MobilCom bail-outs were suspected of being against EU rules and were examined by the European Commission. When Korea bailed out Hyundai Electronics to the tune of \$2.1bn, the US Senate passed a resolution calling for the end of the bail-out and that the “...relationship between the US and South Korea has been and will continue to be harmed significantly by the bail-out...”. In other words, bail-outs could threaten trade wars and protectionism, particularly if the bailed out firm is involved in global competition.

### **Conclusions**

This section has explored unconventional fiscal actions, particularly deflation protection plans and bail-outs, and its consequences for taxpayers. We conclude that the DPP is probably the better way to go than traditional corporate bail-outs. The DPP does have some interesting consequences for monetary policy too, in that if the Fed chooses to cut the Fed funds rate to zero, the DPP stops the real Fed funds rate from rising above zero in the event of deflation. In other words, the DPP is complementary to a deflation-fighting monetary policy strategy, and may actually enhance its chances of success.

## Stage 5: Create inflationary expectations

### A touch of madness may be required

The case for “madness” comes from the key problems associated with persistent deflation. If prices are persistently expected to be lower in the future than in the present, people will be incentivised to save rather than spend. Deflation is an attempt to drive the current price level down to the expected future price level. This process is likely to be painful: no one likes to see their wages or profits falling in nominal terms yet resistance to the process simply makes things worse. To avoid this, it might make sense to come up with a policy that raises the expected future price level compared with the current price level.

At this point, we get into the realm of printing presses, aggressive inflation targets, price level targets and attempts to depreciate the currency in aggressive fashion. Assume, for example, that deflation has left debt levels too high. If people expect prices to fall in the future, they have an incentive to repay debt today: but by doing so, collectively they will deliver the very decline in the price level that they feared in the first place. So, if people's expectations of future prices and incomes can be changed, the urgency to repay debt in the first place will begin to go away, thereby ending the downward spiral of deflation that otherwise might prove to be so damaging.

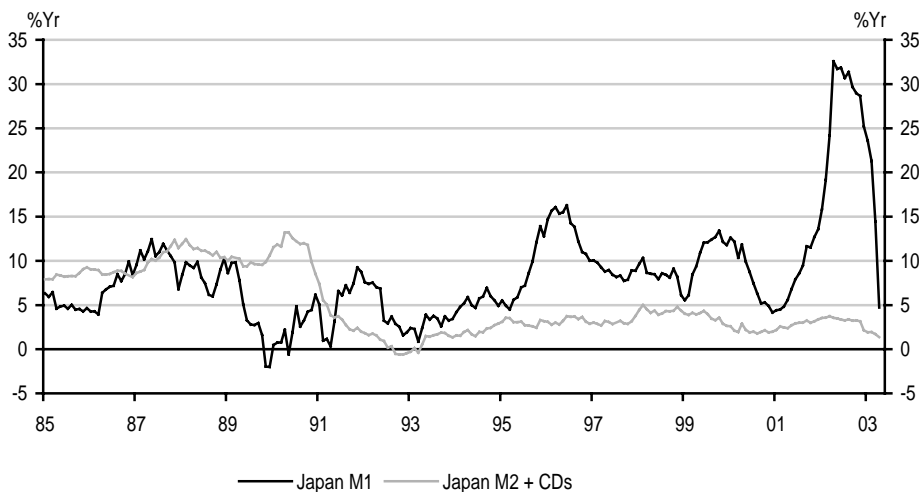
### The monetarist hope

The standard argument that deals with this point is the monetarist argument in favour of printing money. If we take the standard Fisher identity,  $MV=PT$  (where  $M$  is the money stock,  $V$  is the velocity of circulation,  $P$  is the price level and  $T$  is the level of transactions (real GDP)), a rise in  $M$  will lead to either a fall in  $V$  (which monetarists will tend to dismiss as a realistic possibility), a rise in  $P$  or a rise in  $T$ . A rise in either  $P$  or  $T$  constitutes a rise in nominal GDP and, therefore, would seem to reduce the risk of extended deflation. So, printing money should do the trick.

A nice theory, perhaps, but it may not always work in practice. Chart 29 provides a particularly good example of a potential failure of utilising the printing press. The Bank of Japan has been “printing money” over the last two years and, in the process, M1 growth has risen very quickly. Yet broader money supply growth has failed to take off. One possible reason for this failure might be the weakness of the Japanese banking system but, on closer inspection, this does not appear to be the best explanation. Most companies simply do not want to borrow because, in a world of deflation, they are more interested in reducing debt than they are in borrowing for investment opportunities. In this world, printing money may not take the central bank very far. It may be possible to flood the banking system with liquidity but there will be no benefit unless there is an appetite for borrowing: deposit multiplier arguments so beloved of textbooks break down if there is an absence of willing borrowers.

## Stage 5: Create inflationary expectations

### 29. Broad money growth has failed to take off



Source: HSBC, Thomson Financial Datastream

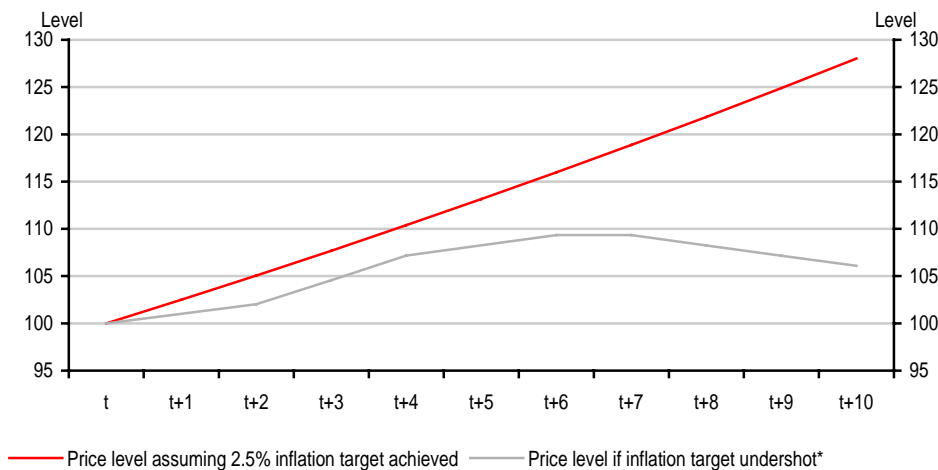
## Price level targeting may be better than inflation targeting

The same argument applies to other variations on the “printing money” theme. An inflation target, for example, will only work if the central bank is seen as credibly able to meet the target. A target for the price level suffers from similar disadvantages. Nevertheless, in our view, a price level target might be more effective in preventing, rather than curing, deflation than a simple inflation target. The key difference between a price level target and an inflation target is that a price level target is both backward- and forward-looking: it must take into account past undershoots of inflation in formulating a strategy for the future.

The following example may help to explain the key difference between price level targeting and inflation targeting. Let’s say that the central bank wants to achieve an inflation rate of 2.5 per cent per year over the next ten years. Assume, also, that the price index is 100 in the “base” year. The price level therefore has to rise to 128 ten years down the road if the economy is going to achieve an inflation rate of 2.5% per year on average. Now assume that, in the first year, inflation undershoots target. Under the inflation target regime, the central bank is only obliged to push the inflation rate back to 2.5% in the second year. Under the price level target regime, the central bank has to do more: it has to deliver inflation of above 2.5% on average in the remaining nine years to ensure that the ultimate price level objective is met.

## Stage 5: Create inflationary expectations

### 30. Inflation vs price level targeting



\* Assumes inflation rate of 1% in years 1 and 2, 2.5% in years 3 and 4, 1% in years 5 and 6, 0% in year 7, -1% in years 8,9 and 10.  
 Source: HSBC, Thomson Financial Datastream

The advantage of the price level target approach should be obvious: it provides an *ex ante* guarantee that the central bank will make real debt levels predictable, a potentially critical guarantee in a world in which nominal interest rates are relatively low and, therefore, could fall to zero. It provides a contract between the public and private sectors to ensure that the stock of assets and liabilities is not subject to the vagaries of shocks to the price level. And, as a result, the need for the public to repay debt in a “panic” fashion, thereby leading to a downward deflationary spiral, would be reduced.

### Asset price targeting

To complement the aim of creating a higher price level, buying equities or real estate in order to create asset inflation too could also be considered, particularly if asset prices are still tumbling when the price level targets are announced and implemented. As bizarre as this sounds, such strategies have already been proposed in Japan. However, there are two key risks: (1) they involve significant market distortion; and (2) there is no clear exit strategy. The assumption is that, by buying enough stocks, for example, stock prices will rise substantially and the economy will be jolted into a higher growth equilibrium that is consistent with the central bank’s target level for the stock market. This would be nice if it was true. However, there is little empirical evidence that such multiple equilibria exist. If it does not exist, then the central bank is just locked into buying equities forever, not a desirable position for a central bank to be in.

## Stage 5: Create inflationary expectations

### Prevention may come too late: what about cure?

This policy, however, is only likely to work as a “preventative” policy. Once deflation has arrived, the introduction of a price level target might be too little, too late. The critical issue is the credibility of any target set by the central bank. Imagine a world where the private sector believes that deflation is rife and that its own debt levels are, say, 30% too high. In this world, the private sector has a strong incentive to lower debt levels as fast as possible but the reduction in demand leads to more deflation and, hence, debt levels in real terms do not come down particularly quickly.

The central bank then comes along and promises to create inflation of, say, 6% per year, hoping that, within five or six years, the real debt level will have fallen quite quickly. Of course, if the private sector believed the central bank, then there would be little reason to repay debt early and, as a result, the risk of deflation would recede relatively quickly. However, if the deflation risk appeared to recede and the central bank policy actually worked – inflation moved swiftly higher – the private sector might reasonably assume that interest rates would then go up to prevent inflation from accelerating. But if rates went up to push inflation back down, the debt problem would immediately return: in other words, the policy would not work unless the private sector really believed that the central bank was happy to tolerate persistently higher inflation.

The problem is obvious: central bankers are inherently conservative and believe in the pursuit of something approaching price stability. We have all been taught that inflation is bad for us and will find it very difficult to believe that previously inflation-hating institutions will suddenly become inflation-loving institutions.

Another possible approach is to change the shape of the institutions themselves. The last ten years have apparently taught us that central bank independence is the best thing around and any attempt to compromise this independence through political interference is doomed to failure. This argument works particularly well in circumstances where inflation needs to be brought down from a high level but may be less relevant in a deflationary environment. We have already learnt from the Japanese experience that printing money, on its own, does not appear to be very successful, due to the absence of willing borrowers within the private sector. Another option, then, is to turn the public sector into a willing borrower. In this model, the central bank creates money and “lends” it to the public sector rather than injecting it into the banking system. The public sector, unlike the private sector, is willing to spend the money and, in time, the economy slowly recovers.

This seems sensible but there is still a potential catch. Although the initial injection of demand from the public sector will help secure a higher level of activity, it may still be the case that the multiplier effects associated with the policy will be rather low. After all, if the private sector is debt constrained, it may choose to use any apparent increase in income to repay debt even faster. Of course, if debt is repaid quickly, eventually there will be a recovery, but the policy as it stands does not automatically change behaviour in the private sector: it still may fear the possibility of declining prices.

To get around this problem, the fiscal authorities could choose to be a lot more radical – indeed, they could opt for truly “crazy” policies. One way to do this would be to increase

## Stage 5: Create inflationary expectations

government borrowing by such a huge degree in the short term that people would realise that, politically, there would be no way in which the government could subsequently raise taxes to repay the debt. The only option, under these circumstances, would be to create inflation to reduce the size of the debt as a share of GDP. That, in turn, would lead to a loss of central bank independence and a complete reversal of the moves towards the separation of fiscal and monetary policy levers that has taken place over the last two decades.

Additionally, we have some doubts about the effectiveness of this story. For debtors, the expectation of higher future inflation would be a good reason for spending today rather than repaying debt. For savers, however, surely the increase in inflationary expectations would be a worrying development. Already hit by falling equity prices, possibly falling house prices, pension fund “black holes” and all the other baggage associated with a post-bubble environment, they would suddenly have to accept that they might be made even worse off through a dose of inflation. In a world in which people work and then they die, this might not be a major problem. In a world, however, where people work, retire and then live for another twenty years, higher expected inflation might simply persuade them to save more.

There are two objections to this argument. First, so long as debtors have a higher marginal propensity to consume than creditors, the redistribution of wealth from creditors to debtors as a result of inflation would still lead to a stronger economy. Second, at the margin, savers will also be tempted to substitute out of future consumption into current consumption.

Yet the second of these arguments may ultimately be flawed. It's certainly true that if the stream of goods and services consumed through a lifetime changes very little from decade to decade, it might be reasonable to think that higher inflation tomorrow will imply higher spending today. In the real world, however, the stream of goods and services that a fifty year old will want to consume in twenty or thirty years' time is likely to be very different from the goods and services that he or she will want to consume today. Under these conditions, it seems a lot less likely that consumption would be brought forward as a result of higher inflationary expectations.

All of this might seem like highly fanciful idle speculation. Yet, at the end of the day, it seems to be increasingly clear that the current institutional arrangements – designed to deal with the threat of inflation – may be a lot less relevant in an environment of threatened or actual deflation. As a result, it is important to think now about the weird, wonderful and downright peculiar because what seems bizarre today could easily become part of the conventional wisdom tomorrow. Also, it is important to consider which of the various institutions around the world is more likely to consider pursuing these controversial policies. To date, for example, the US appears to have been much more willing to talk about unconventional policy options than Europe. In part, this may reflect the differing institutional arrangements. The US, which has federal monetary and fiscal arrangements, would find it relatively easy to co-ordinate monetary and fiscal policy: the same cannot be said so easily about Europe. As a result, the dollar is potentially vulnerable to a shift towards unconventional policies in the US but not in Europe.

## Likely actions, market responses

Hopefully, our discussion of the various options open to policy makers will have shown that there is no easy, or obvious, solution to the problems of threatened or actual deflation. An Austrian economist, of course, would not be surprised. If the resource allocation mistake has already been made, there is little that can be credibly done now to unwind that mistake.

Nevertheless, policymakers have reasonably clearly defined objectives. Central banks have to achieve price stability. Some of them also have objectives for growth, employment and interest rates. Regardless, therefore, of Austrian arguments, policymakers will still be obliged to act to deal with the dangers of deflation.

Short term interest rates, in our view, will come down further and, perhaps more importantly, will stay low through both 2003 and 2004. In the US, we are not sure whether Fed funds will fall below 0.75%, primarily because of the potential funding issues for the commercial paper market, although the Fed might ideally like to head towards zero. Nevertheless, it seems increasingly likely that the Fed will want to convince markets that rates will remain low for an indefinite period of time: one way to do this would be to say that rates would remain low until – and only until – inflation rose above a certain target rate.

The European Central Bank is unlikely to be quite so explicit although its recent concerns about deflation appear to reflect a modest shift in perceived risks for the future. We expect the ECB to reduce interest rates further – to 1.75% or below – through to the first quarter of 2004. However, we are concerned that the ECB may be too relaxed about the strength of the euro: after all, aggressive monetary easing in the US that pulls the dollar down to lower levels is, whether intended or not, a way of shifting US deflation risk across to the other side of the Atlantic.

Given the sluggish nature of recovery so far, however, policymakers are likely to do more. We see a strong likelihood that the Federal Reserve will move towards “Stage 3” of our roadmap. The key aim will be to lower the cost of capital to the private sector more broadly. Although a number of different techniques exists to accomplish this feat, we think the key objective will be to lower the whole yield curve. Given that short rates cannot fall very far, this should imply much lower bond yields. We expect US 10 year Treasury yields to fall to just 2.5% in 2004, on the assumption that these policies are adopted.

A further strong rally in the bond market associated with implicit or explicit yield ceilings provided by the Federal Reserve should be accompanied by a weaker dollar, particularly if the ECB is perceived to be more “conventional” than the Fed. It may also be the case that a guarantee of lower bond yields could, initially, be helpful for equities. However, the arguments at this stage come back to the issue of debt. Rate reductions, whether at the short end or the long end, will not easily remove the debt problem, particularly if the “equilibrium” level of interest rates required to kick start the economy is less than zero. In the same way that short rate cuts ultimately failed to do the trick, we think the same may apply to rate reductions further out the yield curve. If so, the continuation of sluggish, stagnant, growth is likely to mean that bonds will outperform equities on a structural basis.

Our ideas for debt reduction – including the Deflation Protection Plan (DPP) – have their roots in the S&L crisis and the wholesale nationalisation of Swedish banks in the early 1990s. We think the DPP has considerable merit – in a way it is simply an admission by the

## Likely actions, market responses

authorities that they contributed to the “irrational exuberance” of the 1990s and therefore should now compensate those who, at the time, were seduced into taking on too much debt. The automatic nature of the DPP reduces the difficulty of “picking winners” for a bail-out and also helps to reduce fears of excessive, deflation generated, debts. However, there is a clear political cost: private sector debt would be shifted onto the balance sheet of the public sector, implying an increased burden on future tax payers. This could generate a rise in private saving that might reduce the benefit associated with the initial bail-out.

Our arguments on generating inflation expectations suggest that this is no easy task. “Printing money” sounds like an easy enough task for a central bank that wants to do so, but there are good arguments for thinking that the effects might be rather small. To raise inflationary expectations sufficiently to persuade people to spend today rather than tomorrow could ultimately require a monetised expansion in budget deficits that no politician might be prepared to sanction. Moreover, any move in this direction is easier to do only in economic regions where fiscal and monetary policy co-ordination is relatively easy: the US stands at an advantage relative to the eurozone, another good reason for dollar depreciation.

Whatever the outcome, it seems increasingly clear that both conventional and unconventional policies will lead to two seismic shifts in the economic landscape. First, we are likely to see the emergence of very big budget deficits and rules that demand fiscal discipline – the Stability Pact in the eurozone, the golden rule in the UK – will wither on the vine. Second, central bank independence and inflation targeting will increasingly come under attack: they may have been successful structures when inflation was too high but it’s a lot less obvious that they are the right structures in a world of deflation and excessive private sector debt.

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