
Monetary stability: rhyme or reason?

Mervyn King, Executive Director and Chief Economist of the Bank, discusses⁽¹⁾ the importance of monetary stability. He argues that the period of post-war inflation has produced an inflation generation—a generation for whom inflation is the norm and affects every major economic decision. Mervyn King reviews the static and dynamic costs associated with inflation and concludes that the benefits of price stability are substantial.

Introduction⁽²⁾

Inflation in Britain is currently 2.9%. Twenty years ago it was 15%, and earlier in the 1970s it had been as high as 27%. Is inflation dead, or merely dormant? If dead, was it killed by a wave of creative destruction resulting from intense competition in world markets, was it murdered by contract killers chosen by an electorate disillusioned by the inflationary excesses of the 1970s, or did it simply commit suicide as inflation itself undermined the factors that had led to a sharp acceleration of prices? If dormant, is inflation likely to return to haunt a future government?

To understand the risks posed by inflation in the future, it is necessary to understand why inflation rose in the past. In the 1960s, the intellectual consensus was that moderate inflation was a recurrent feature of modern economic life, and, moreover, a little inflation was probably a good thing. Since then the views of economists and policy-makers have changed. Low inflation and balanced budgets are all the rage. Tonight I want to analyse the reasons for that new consensus by examining three questions. First, why did inflation rise in the post-war period? Second, does price stability matter? Third, how should monetary policy be set in Britain today?

Now, at this point you might well be wondering if this is going to be yet another lecture by a central banker on the boring virtues of stability. I am afraid the answer is—yes! Last week the *Daily Telegraph* remarked that to talk about the virtues of price stability required inspiration in order to lift the subject from the tedious to the merely dull. So in search of inspiration I went to the London Library. And there I stumbled upon a quite brilliant piece of polemical writing from 1933 by J R Jarvie entitled ‘The Old Lady Unveiled’. With such a promising title I had surely hit upon a winner. But I was taken aback by its opening words:

‘The object of this book is to awaken the public to the truth that the Bank of England, commonly

believed to be the most disinterested and patriotic of the Nation’s institutions, has been since its foundation during the reign of William of Orange a private and long-sustained effort in lucrative mumbo jumbo.’ (Jarvie, 1933 page 7)

Jarvie’s book was quite a discovery. Highly critical of the Bank, and scathing about the qualifications and careers of its directors, the work is not mentioned in any history of the Bank, nor in any relevant biography or bibliography, and nor was it known to anyone of my acquaintance.⁽³⁾ It has, in fact, been ignored by the Bank—until tonight. I am happy, after 63 years, to put matters right and give Jarvie his due.⁽⁴⁾ I should point out, however, that Jarvie was not overly impressed by economists:

‘If you want to find violence of language, go to the economists. No zealot, religious or political, can work himself up to such a white heat as a professor of the dismal science in defence of a theory.’ (page 75)

More of Jarvie later. But, suitably chastened, it is time to turn to the great post-war inflation and the experiences of what I shall call the inflation generation.

The inflation generation

The single most striking fact about the price level in Britain is its extraordinary rise in the post-war period. Chart 1 shows how unusual the great post-war inflation has been. No other period in our history has seen such a prolonged and rapid rise in prices. It has produced an inflation generation—a generation for whom inflation is the norm and which affects every major economic decision from the choice of career (does a job offer an index-linked pension?) to investment in housing (will inflation erode the real value of the mortgage?). Institutional arrangements have developed to cope with the uncertainty generated by an unstable and unpredictable inflation rate.

(1) In a speech given at the Economic and Social Research Council Seventh Annual Lecture, on Thursday 17 October 1996.

(2) I am indebted to Spencer Dale, Andrew Haldane and Neal Hatch for many helpful conversations as well as invaluable research support. As members of the inflation generation, I hope they will live to see sustained price stability in Britain.

(3) Who was J R Jarvie? And why was he so upset with the Bank of England? Was he, by any chance, related to the J Gibson Jarvie described as ‘an old friend of the Bank’ in the latest official history of the Bank? (Fford, 1992, page 762).

(4) The book has some relevance today. He described in vivid detail the ‘heads I win, tails you lose’ manner of lending by UK investors to foreign sovereign borrowers, irrespective of their credit worthiness, who were later bailed out by the United Kingdom and other governments. The Austrian crisis of 1931 was especially on his mind, and there are clear parallels with the Mexican crisis of 1995. The recent G10 Deputies report on sovereign liquidity crises, produced in response to the Mexican experience, also contained an explicit warning that the major countries should and would not bail out private lenders.

The experience of the inflation generation can be seen by considering the cohort born in 1966 and who are celebrating their 30th birthday this month. Those young people have seen prices increase ten-fold during their life-times. The purchasing power of £1 when they were born has shrunk to only 10p. The inflation generation no longer has a stable monetary standard as Chart 1 shows only too clearly. The last time prices were no higher than a year earlier was March 1960. And since 1945, prices have risen more than twenty-fold.

Chart 1
UK price level



Sources: 1270–1850 ‘Seven centuries of the price of consumables, compared with builders wage-rates’, Phelps-Brown and Hopkins, *Economics*, November 1956; 1851–1914, ‘An introduction to the study of prices’, Layton and Crowther, Macmillan, 1938; 1915–95 Office for National Statistics.

Previous generations did not experience such sustained declines in the purchasing power of money, although there were, of course, fluctuations in prices with the ebb and flow of the trade cycle. Suppose that we were to stroll the few yards from this room down to the Embankment and to imagine that the price level was represented by the height of water in the River Thames. Variations in wind and weather lead to changes in the height of the water. In 1800 the Thames was approximately 8 feet deep. Between then and 1914, the prevailing economic weather led to movements in the height of the inflationary river. For most of the time the water depth was between 5 and 7 feet, and was never less than 4 feet and never more than 10 feet. Even under the stormy conditions of two world wars and the inflation and subsequent deflation of the inter-war period, the water depth never moved outside of a range of 6 to 13 feet, and by 1945 was 10 feet, only a little above the level in 1800. But from 1945 we have been out of our depth. The flood tide of price rises has led to the latest wave registering a depth of well over 200 feet, enough to swamp any craft that did not anticipate the impending inflation. Before the Second World War inflation was followed by deflation, returning the price level to its original level. To use the language of economics, for most of our history the price level was stationary—there were shocks, often violent ones, but no sustained upward trend. But in the post-war period the price level has been highly non-stationary.

Of course, inflation in Britain has never matched the levels that occurred in the European hyperinflations of the

inter-war period and, more recently, in Latin America, Israel and the former Soviet Union. In the most extreme hyperinflation, in Germany in 1923, the water, to use our analogy, reached a height of no less than 1,000 miles, which destroyed much of the economic and social fabric of the country. That experience of hyperinflation has not been repeated in the developed world. But ‘moderate inflation’ has been endemic. Table A shows the post-war inflation rate, by decade, in the G7 countries. Whereas hyperinflations contain the seeds of their own destruction

Table A
G7 inflation by decade^(a)

	1950s	1960s	1970s	1980s	1990–95
United Kingdom	4.3	3.5	12.7	6.9	4.6
United States	2.1	2.3	7.1	5.5	3.5
Japan	2.9	5.3	8.9	2.5	1.7
Germany	1.1	2.4	4.9	2.9	3.2
France	6.5	4.0	8.9	2.3	2.4
Italy	3.1	3.6	12.3	11.2	5.3
Canada	2.4	2.5	7.4	6.5	2.7

Source: International Historical Statistics 1750–88.

(a) Inflation is measured in terms of the consumer price index, except in the United Kingdom where RPIX is used, which excludes mortgage interest payments. The average inflation rate is calculated by comparing the level of the price index at the beginning and end of each decade.

(through currency substitution, for example), creeping inflation can persist. In the main industrial countries, after the immediate post-war reconstruction and the Korean war, inflation rose steadily, peaked in the 1970s, and has fallen, often painfully, subsequently. Only Germany can claim to have come close to price stability in the post-war period. That pattern is difficult to explain in any way other than as a response to the changing ideas of economists about the causes and consequences of inflation.

Given the shattering inter-war experience of both inflation and deflation it is interesting to ask why price stability was not central to post-war macroeconomic policy. After all, during the inter-war period leading economists, such as Maynard Keynes and Irving Fisher, drew the conclusion that it was sharp and unexpected movements of the price level—both up and down—that led to booms and depressions. Price stability, in their view, went hand in hand with stability of output and employment. So why did inflation rise in the post-war period? True, inflation crept up only slowly. In the 1950s it averaged around 4%, and that figure included the impact of the commodity price increases caused by the Korean war. But by the late 1950s the water had already reached a height of over 17 feet.

Economists of the time were not unaware of the water lapping around their feet. As early as 1959, Nicholas Kaldor delivered two public lectures at the London School of Economics. At the outset he stated that

‘the trend of rising prices has assumed an extent and a duration, in most of the advanced economies of the West, not previously encountered under peace-time conditions’. (Kaldor, 1959, page 212)

But Kaldor's objective was to argue against price stability. He looked at inflation in the context of a model of economic growth. That model contained two equilibrium conditions. The first was that, given a fixed propensity to save, the nominal rate of profit consistent with steady growth is proportional to the growth rate of nominal GDP. In an economy with a naturally low rate of growth, low inflation means a low rate of nominal GDP growth and hence a low rate of profit. The second equilibrium condition was that the rate of profit must be at least as great as the rate of return required by investors—the sum of the nominal interest rate and a risk premium. The problem was that the required rate of return had a floor under it, equal to the risk premium, because nominal interest rates could not fall below zero. Hence the required rate of return might exceed the rate of profit consistent with steady growth. Inflation was necessary to raise the nominal growth rate, and hence the profit rate, thus ensuring that equilibrium was compatible with growth. In Kaldor's view

‘a slow and steady rate of inflation provides a most powerful aid to the attainment of a steady rate of economic progress’.

The flaw in the argument is the implicit assumption that both the propensity to save out of nominal income and the required rate of return would not change with inflation. Yet in the 1970s that is exactly what happened—saving rates and bond yields rose with inflation. Kaldor's view that a little inflation each year is good for growth depended entirely on the ability of monetary authorities to fool investors and savers most of the time. As we have learned to our cost, that is not possible. More generally, the failure was to ignore inflation expectations as an important determinant of economic behaviour that would respond to changes in the monetary policy regime. It is surprising that those who professed to follow in the footsteps of Keynes ignored both money and expectations to such an extent.

Nowhere was the failure to think clearly about expectations more apparent than in some of the interpretations placed on the then recently discovered Phillips curve which related the rate of increase of earnings to unemployment. The existence of a short-term trade-off between inflation and unemployment, for a given set of inflation expectations, was translated into a belief in a permanent trade-off. Inflation was good for both output and employment. Chart 2 shows the Phillips curve in Britain for each decade in the post-war period. In most decades a short-term negative relationship is indeed apparent (apart from the 1960s and 1970s when both inflation and expectations were changing rapidly). But the final panel in Chart 2 shows the relationship for the period as a whole. No long-term trade off is apparent. As Friedman and Phelps argued in 1968, holding unemployment indefinitely below its natural rate can be achieved only by allowing inflation to accelerate faster than expected. But the lag between ideas and practice meant that the genie had already been let out of the bottle.

One obstacle to a more rapid change in the intellectual climate was that inflation itself did not rise quickly. During the 1960s it averaged only 32%. One of my vivid recollections as a student in Cambridge in the late 1960s was listening to the late Lord Kahn—Richard Kahn of the multiplier fame—trying to alert us to the dangers of ‘creeping inflation’. But the numbers were simply not big enough to jolt the consensus that inflation was the acceptable price of maintaining a high level of demand and employment. And, even when concern translated itself into action, it took the form of trying to suppress the symptom—by controls over wages through a series of incomes policies promoted by Conservative and Labour governments alike—rather than tackling the cause itself—too rapid a growth of nominal demand. One cannot blame politicians for these failures. Alec Cairncross' recent history of economic policy in the 1960s is an indictment of the intellectual framework provided by many economists to policy-makers at that time. It is impossible now to read Reginald Maudling's 1963 and 64 Budget speeches without a sense of impending doom. The Budgets were framed to achieve a target rate of growth of 4% a year—well above any previous experience of sustained growth—which, said the Chancellor, ‘can be attained, and attained without any strain upon our currency, if we as a nation have the will to achieve it’.⁽¹⁾ Even in the best of times the will of the nation is no substitute for monetary policy. Economic policy was based on a sort of inverse Say's law—supply would expand to meet the demand created for it.

That strategy ended in tears. Inflation in the 1970s cannot be blamed solely on supply shocks, especially the rise in oil prices. Inflation had already risen before those shocks occurred. By the early 1970s, underlying inflation was over 5% in the United States and even higher in Britain. There was a case for accommodating the oil price shock as a one-off rise in the price level. But, in the absence of a credible monetary regime, accommodating the shock meant that inflation expectations rose and it was impossible to resist the second-round effects on domestic wages and prices without substantial losses of output and employment. By then the costs of allowing inflation to rise were only too apparent. After the intellectual flights of fantasy of the 1960s, one is tempted to say that ‘economics was coming home’. But the benefits of returning to price stability were less clear. And the subsequent 20 years have been spent in trying to decide on how far inflation should be brought down. What should be the target for inflation? Does price stability matter?

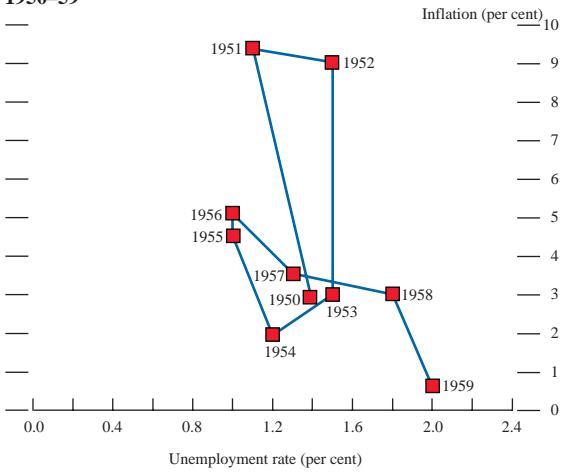
Does price stability matter?

A natural starting point is to ask households directly about the costs which they associate with inflation. Most of the survey evidence comes from North America. When inflation was at its peak in the 1970s and early 1980s it was seen as the number one problem facing the nation in the United States. Although its ranking has fallen subsequently, inflation still appears in more news stories than any other

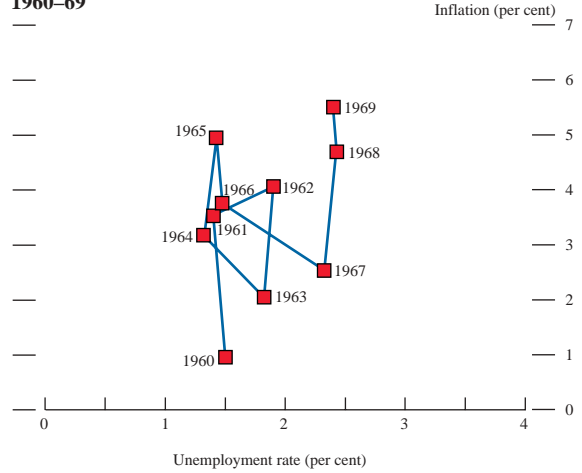
(1) Hansard, 3 April 1963, page 455.

Chart 2
The Phillips curve in the post-war period

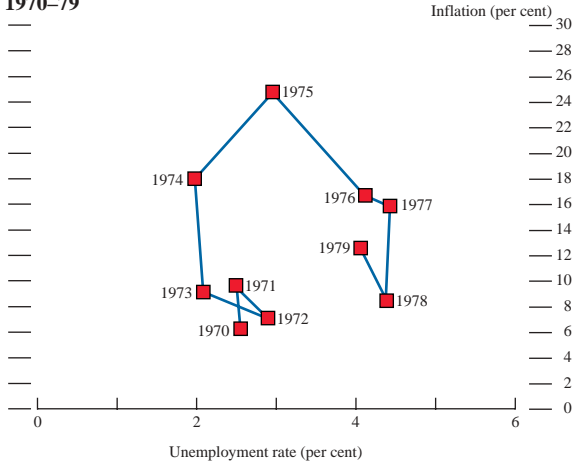
1950–59



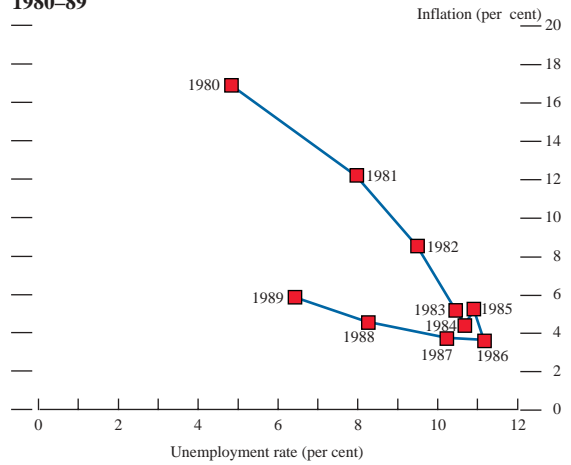
1960–69



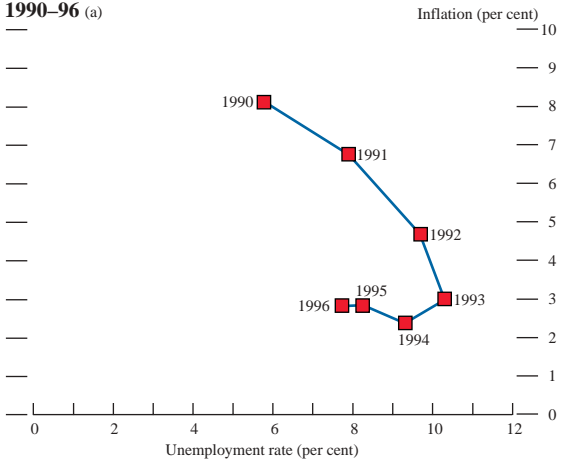
1970–79



1980–89

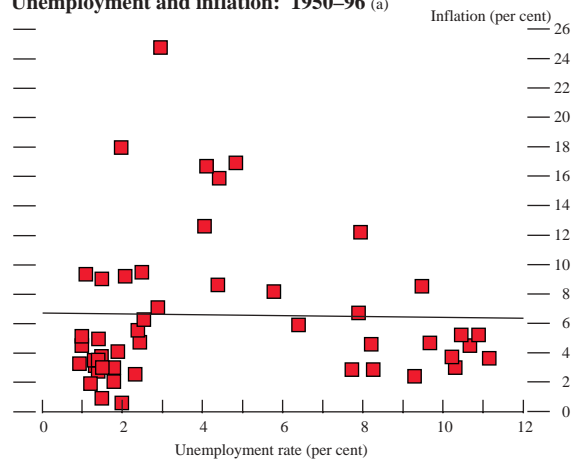


1990–96 (a)



(a) 1996 observation equals average of first eight months.

Unemployment and inflation: 1950–96 (a)



(a) 1996 observation equals average of first eight months.

economic term. The most detailed survey of attitudes toward inflation is that conducted by Robert Shiller (1996) in the United States, Germany and Brazil. Respondents were concerned about inflation for two reasons. First, inflation was seen as increasing uncertainty about their future standard of living. Second, inflation was thought to introduce an arbitrary element into income distribution and to lead to a loss of social cohesion. Indeed, political instability was seen by many respondents as highly correlated with inflation. These concerns are very different from those generally identified by economists as the costs of inflation, and I shall return to them later.

An economic assessment must look at both the static and dynamic costs of inflation. The former are concerned with the level of economic welfare and output, the latter with the rate of economic growth. The dynamic consequences I can deal with quickly. Empirical studies of the impact of inflation on growth in a large number of countries by Robert Barro and Stanley Fischer show that high inflation lowers growth. But at moderate inflation rates—below 10% a year—it is not possible to draw any firm conclusion about the relationship between inflation and growth because there is simply not enough variation in the data for industrial countries to enable us to detect the impact of small differences in inflation on long-run growth rates.

The static costs of inflation, however, can be shown to be substantial, even at moderate rates of inflation. These costs are of two kinds—those which result from fully anticipated inflation and those which are the consequence of unanticipated inflation. In turn, the former are of three types: ‘tax distortion’ effects, ‘inflation avoidance’ resource costs, and ‘menu costs’.

Taxes have distortionary effects. For most taxes, the impact of inflation on the tax system can be offset by adjusting the level of allowances and thresholds for higher rates each year. By and large our tax system does this, although chancellors have not been averse to deciding against indexation of thresholds in order to raise revenue. Much more serious is the measurement of income from capital. Despite indexation of capital gains, the tax treatment of income from capital is, broadly speaking, unindexed. Depreciation allowances do not take into account the higher replacement cost of purchasing capital goods to replace those wearing out, and both interest receipts and payments are calculated without taking into account the impact of inflation in eroding the real value of the principal. Effective tax rates on investment are, therefore, a function of the inflation rate—a property pointed out forcefully in the debate on fiscal neutrality in the 1980s.

Martin Feldstein has recently clarified the quantitative importance of these distortions to the tax system that arise even at low inflation rates. The reason why low inflation can generate large inefficiencies in the tax system is two-fold. First, an inflation rate of 3% is of a comparable magnitude to real rates of return on safe assets. With price stability and a tax rate of 50%, a real rate of return of 3% is

shared equally between the investor and the Inland Revenue. When inflation is 3%, the nominal and taxable rate of return rises to 6%. At a 50% tax rate, the real rate of return now accrues entirely to the Revenue and the investor receives a zero rate of return. In dealing with capital income low inflation rates matter. Second, given our current tax system, distortions would arise even with price stability. Hence a small increase in inflation does not move us from an efficient point to a slightly distorted situation. Instead, it increases a pre-existing distortion. That greatly magnifies the distortions that can be attributed to inflation—in the language of economists the welfare costs are measured not by triangles but by trapezoids.

How large are these costs? Feldstein calculated that in the United States a reduction in the inflation rate of two percentage points would result in a permanent addition to GNP of 1% a year. We have made some preliminary calculations along the same lines at the Bank of England. Partly because of the indexation of capital gains tax, the costs appear to be lower in the United Kingdom than the United States—roughly one half those estimated by Feldstein. But they are significant and will remain so in the absence of either a move to a personal and corporate cash-flow expenditure tax or complete indexation. There is no sign of the former, and the latter would be a practical nightmare.

The second type of cost I call the ‘inflation avoidance’ cost of inflation. It includes the traditional ‘shoe-leather’ costs of the reduction in the demand for real money balances which arise because attempts to economise on the use of cash involve spending time and resources in devising alternative means of making payments. More important, however, are the resources devoted to manipulating financial transactions in order to defer payments or accelerate receipts. Such rent-seeking behaviour is individually rational but collectively inefficient. Inflation increases the resources devoted to financial as opposed to real economic activity, as documented by Bill English (1996) of the Federal Reserve Board. In the same way as resources devoted to tax avoidance are a pure waste from the point of view of society as a whole, so also are the resources devoted to inflation avoidance in the private sector. And they are completely avoidable if the government maintains a stable price level.

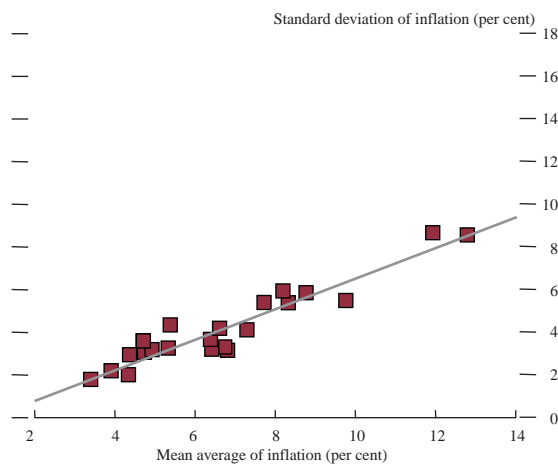
The third cost is that of revising quoted prices and contracts when inflation is positive—‘menu costs’ as economists call them. Such costs do not seem to be very important. In a survey of pricing behaviour by UK firms, the Bank of England found that only 7% of firms felt menu costs were important. A typical firm in Britain changes its prices about twice a year. That may be frequent enough to avoid significant distortions in relative prices but infrequent enough to prevent the costs of changing prices themselves from becoming significant.

Taking these together, I would suggest that inflation avoidance activities in the form of rent-seeking behaviour and the interaction between inflation and an unindexed tax

base for income from capital constitute the major costs of anticipated inflation. Feldstein and others have argued that costs of this order are more than sufficient to outweigh the output costs involved in bringing inflation down to price stability. In that calculus, the cost is temporary and the benefits are permanent. Others believe that such a calculation is artificial. How is it possible to ensure that the reduction in inflation is permanent? Would the acceptance of a sacrifice of output today guarantee future price stability? Fortunately, inflation in Britain today is closer to price stability than for a very long time. The required fall in inflation to bring us towards a measured inflation rate of 2% a year—often associated with price stability—is small. What is most important is that we capture the real benefits of price stability by ensuring that inflation does not rise to levels from which only a costly recession could return us to price stability.

That proposition leads directly to the costs associated with uncertain and variable inflation. That there is a positive correlation between the level of inflation and its variability is clear from Chart 3. It plots the standard deviation of inflation against the average inflation rate for the OECD member countries over the period 1960–92.⁽¹⁾ In principle,

Chart 3
Inflation and inflation uncertainty in OECD countries 1960–92^(a)



Source: International Financial Statistics.

(a) Excludes Czech Republic, Iceland, Mexico and Turkey.

there is no reason why a rise in the average inflation rate should necessarily increase its variability. Why then is the positive correlation so strong? The reason, I think, is to do with expectations. A commitment to an inflation target equivalent to price stability is a clear statement that the government believes inflation has real costs. It is credible. A commitment to a constant inflation rate of, say, 5% a year is not. The public would probably believe that if the authorities were prepared to live with 5% inflation they would have little difficulty in accepting 6% inflation. As a result, a positive inflation shock would raise expected inflation thus making it much more costly for the authorities to return inflation to 5%. It would then be rational for the

authorities to let inflation vary. In contrast, a commitment to price stability would make it more likely that the public would not change their expected rate of inflation in the face of a positive inflation shock. Such a shock would be assumed to be temporary. A credible commitment to price stability allows the monetary authorities to reduce the output costs of holding inflation constant.

Inflation volatility generates three types of costs. The first is that uncertain inflation introduces an inflation risk premium into long-term interest rates. Risk averse investors need to be compensated for bearing the inflation risk. A comparison of yields on conventional and index-linked bonds provides information on expected inflation and the inflation risk premium. If inflation expectations were in line with the actual outturn for inflation over the past decade then the inflation risk premium could be estimated from the holding period returns on the two types of bond. That estimate is of the order of 50 basis points—not trivial in comparison with real rates of return. An increase in the real cost of capital resulting from an inflation risk premium lowers the equilibrium capital stock and productivity. That is costly in an economy which exhibits a low saving rate and inadequate investment. But far more research will be needed to identify the premium with any accuracy.

Second, the greater the uncertainty about inflation, the more difficult it becomes to distinguish relative from absolute price changes. The additional noise introduced by volatility of the average price level reduces the value of the price signals transmitted to consumers and producers alike. Such volatility is destructive not creative. It is not difficult to believe that variable inflation in the 1970s and 1980s made it harder to distinguish relative and absolute changes in house prices, with all the consequences for investment in property and mortgage commitments that proved so costly in the 1990s.

Third, uncertainty about inflation is likely to increase the volatility of real output and employment. In theory, it would be possible for an omniscient central bank to create price surprises designed to offset the supply shocks which hit the economy from time to time. In that way, real output and employment could grow steadily. And there is a role for monetary policy to react to such shocks. But central banks are not omniscient, and an unpredictable monetary policy designed to generate price surprises is likely to exacerbate fluctuations in output and employment. Those cyclical fluctuations matter—both because they may influence the trend itself and because they fall unevenly on different industries and individuals.

The final cost of inflation is structural. A world of price stability, in which there is a stable standard of value, is very different from one in which money values are unpredictable. That unpredictability tells us something about how our government works. It relates to the concerns of the

(1) The chart excludes the Czech Republic, Iceland, Mexico and Turkey, all of which experienced periods of extremely high inflation (100% a year or more).

respondents in Shiller's survey. If the Met Office changed its measure of temperature, it might take several months before we realised that Britain was not getting warmer and that weather forecasts were even more unreliable than we thought. Moreover, holiday brochures would have to be reprinted so as not to mislead people about the weather they could expect and their brochures would no longer be trusted unless we knew exactly when they had been written. We would lose confidence in the official measure of temperature. So it is with money. It is a stable standard of value and not inflation which oils the wheels of economic activity. The inflation generation to which I referred earlier did not grow up in a world of price stability. That has affected their choice of careers, their investment in housing, their wealth, and their attitude to wage bargaining. The cost-benefit analysis of a move to price stability is really about such structural changes.

Before concluding, I should touch on two arguments against price stability. Neither are new, but they have attracted some distinguished academic support in recent years. The first is that because there is downward rigidity in nominal wages, a low rate of inflation prevents a real wage adjustment that may be needed following shocks to the demand for different types of labour. Akerlof, Dickens and Perry (1996) have argued that the existence of nominal wage rigidity means that at very low rates of inflation there is a permanent trade-off between inflation and employment. The empirical evidence is inconclusive because there is little modern experience of price stability. A move to price stability would be a change of regime that, in itself, would make downward wage rigidity less likely. Money illusion is, after all, just that. It is quite different from rigidity in real wages. And low inflation has not prevented the United Kingdom and the United States from experiencing falling unemployment over the past four years.

Two further remarks are relevant to the Akerlof *et al* hypothesis. First, the existence of (a) positive aggregate productivity growth and (b) the fact that, because official price indexes do not adequately take into account changes in the quality of goods and services, price stability corresponds to a measured inflation rate of some 1% to 2% a year, means that there is in fact quite a lot of scope for real wages to fall, even if nominal wages are inflexible downwards. Indeed, an operational inflation target corresponding to price stability should allow average nominal wage growth of 3% to 4% a year which erodes much of the force of Akerlof's argument. Second, since labour can move from one firm to another, what matters is less shocks to the demand for individual firms' products and more the derived demand for particular types of labour. Changes in relative real wages appear to reflect less cyclical fluctuations in demand and more trend changes in skill levels. The fall in real wages of the unskilled that we have seen in the past 20 years could have quite easily been accommodated in a world of price stability. To believe that nominal wage rigidity would permanently raise unemployment is to place a great deal of weight on the very money illusion which price stability is designed to overcome.

The second argument against price stability is that since nominal interest rates cannot fall below zero, an expected inflation rate close to zero means that real interest rates cannot be negative. At various points in the economic cycle, negative real interest rates might be necessary to stimulate economic recovery. Unlike Kaldor's argument, this one is based on the assumption that the private sector reacts rationally to changes in the monetary policy regime. The argument, put forward by Larry Summers (1991), has not been subject to systematic assessment. It is true that in Japan, where prices have if anything been falling, official short-term interest rates have fallen very close to zero. But it is debatable whether any further relaxation of monetary policy in Japan would have been better implemented by negative real interest rates now as opposed to a reduction in real interest rates earlier in the cycle. And most of the examples of the need for negative real interest rates relate to recessions caused by earlier monetary policy mistakes. A stable monetary policy might well reduce the magnitude of the boom and bust cycle, thus reducing—if not eliminating—the need for negative real interest rates.

In my view, these objections to price stability do not outweigh the advantages of a stable monetary standard. But there is one other, rather common, reaction to the proposition that monetary policy should be directed toward price stability. That is the view that setting price stability as the overriding objective of monetary policy means paying insufficient attention to the real economy. I believe that view to be false. But it is easy to see why it has gained currency. Disinflation in Europe has been accompanied by rises in unemployment to a level previously unimaginable—there are 18 million unemployed people in the European Union—and with little immediate prospect of substantial improvement. Central banks have been coy about discussing the link between monetary policy and unemployment. The fact that there is no long-run trade-off between inflation and output does not mean that there is no link in the short run.

The short run can, of course, last for many years. That was the essence of the criticism of the Bank of England in the inter-war period in its pursuit of a return to the gold standard. The wish to return to a monetary regime that had proved enduring and credible was not foolish. That judgment looks a good deal better today than it did to the Bank's critics given the frequency with which we have changed the monetary policy regime since the war. But it was a mistake to confuse the choice of regime with the particular parity at which sterling returned to the gold standard. The reputation of the Bank of England, and Montagu Norman in particular, suffered as a result. During that period, Montagu Norman often travelled abroad under an assumed name and, when visiting the United States in 1932, he adopted the disguise of Professor Clarence Skinner. Our friend Mr Jarvie had some harsh words about this episode:

"To many straight-laced people the [use of the title] "Professor" was bordering on the dubious. It is an

offense to use a degree to which you are not entitled, and while professorship is as often as not an honorary designation, being legitimately adopted by unqualified singing masters, boxing instructors and the more elegant vendors of pills in market-places, the unearned professorship of Mr Montagu Norman was, I have the strongest reasons for divulging, frowned upon in the best University circles, excluding the London School of Economics.’ (Jarvie, 1933 page 104)

In some of the best university circles, concern has been expressed that the pursuit of an inflation target may imply excessive volatility of output and employment. I do not believe that to be true.

The existence of a Phillips curve, albeit unstable, leads to a long-run trade-off between the volatility of inflation and the volatility of output. A central bank can take countercyclical actions to reduce fluctuations in output, at the cost of accepting slightly higher volatility of inflation, provided that such actions do not alter inflationary expectations and hence build in a potential inflationary bias. It is precisely the absence of a credible commitment to price stability which has meant that, over the past 20 years, any accommodation of an upward shock to inflation has raised inflation expectations and increased the output cost of meeting low inflation in the long run. A central bank that does not have credibility cannot afford to engage in as much flexibility in monetary policy as can a central bank which has established a track record for a commitment to low inflation. When credibility has been attained then year-to-year fluctuations in inflation are less important. That can be seen by a comparison between the volatility of inflation in the nineteenth century, when the price level was stationary, and the volatility in the post-war period when, as we have seen, the price level was highly non-stationary. Table B shows the standard deviation of annual changes in inflation and of changes in average inflation rates over ten-year periods. It

Table B
Two inflationary regimes

		Average inflation rate (a)	Standard deviation	Standard deviation over a ten-year horizon (b)
United Kingdom	1801–1904	-0.33	6.78	1.50
	1950–86	7.08	5.42	3.82
United States	1801–1904	-0.45	5.79	2.30
	1950–86	4.20	3.59	2.39
France	1816–1904	0.45	8.77	1.52
	1950–86	6.98	4.50	2.49

Source: International Historical Statistics.

- (a) Inflation is measured by annual changes in the wholesale price index. The greater stability of the basket of goods considered by the wholesale price index, compared with cost of living indices, aids historical and cross-country comparisons.
- (b) Measures the standard deviation of the average rate of inflation in the ten-year period following the observation year. For example, the observation for 1986 refers to the average rate of inflation in the ten-year period 1986–95.

can be seen that although average inflation was higher in the post-war period, the standard deviation of annual changes in inflation was actually lower than in the nineteenth century. But the reverse is true for the standard deviation of changes in inflation over ten-year periods. A world of price stability

is one in which the price level in the medium term is predictable, even though there may be year-to-year fluctuations in inflation.

Any central bank that wishes to accommodate temporary shocks to inflation must ensure that private sector agents understand its motives and accept the reasoning for its policy. If the markets suspect that the central bank is not fully committed to its inflation target then the outcome will be either a rise in inflation or a larger loss of output. Transparency and openness of the central bank’s actions are a natural partner to its commitment to low inflation and a countercyclical use of monetary policy. There is much greater transparency of monetary policy now than in the days of Montagu Norman. The conversations between Chancellor and Governor are among the most highly documented relationships of our time. Contrast this with the inter-war period. In October 1932, writing in the columns of *The Spectator*, Philip Snowden, the former Chancellor of the Exchequer, wrote about the relationship between Chancellor and Governor.

‘The relations between the Chancellor and the Governor of the Bank are intimate and confidential. What takes place between us is inviolable as if under the seal of the confessional.’

The minutes of this particular confessional are now published once a month. Our friend, Mr Jarvie was outraged by Snowden’s statement.

‘Isn’t it damned insolence when you think of it? Why the secrecy? Why the inviolability? ... Lord Snowden did not retire a day too early.’ (page 131)

Mr Jarvie’s day has come.

Conclusions

The benefits of price stability—by which I mean a rate of inflation sufficiently low and sufficiently stable that it does not affect economic decisions—are substantial. Estimates of the cost of anticipated inflation are, as recent research has shown, potentially large and sufficient to outweigh the cost of a carefully designed transition to price stability. The costs of unanticipated inflation are less tangible but potentially more important. Uncertainty about future inflation reflects a concern about the consistency of government policy. That is why inflation is correlated with inflation uncertainty, and why both, if sufficiently high, can be shown statistically to lower growth rates. Inflation is a symptom of a country that cannot come to terms with its own budget constraint.

Inflation is also an unnecessary problem. There are far more important real economic problems which face us. Few people enter politics to keep inflation low. Nor should we expect them to do so. Price stability should be part of our economic constitution, common to all parties, providing a degree of macroeconomic stability to enable governments to

devote both the time and energy to debate the great issues of the day.

I have argued tonight that price stability is the *raison d'être* of central banks. Price stability is a timeless virtue. And the pursuit of price stability does not prevent the use of monetary policy to reduce fluctuations of output and employment.

The inflation rate in October 1996 is likely to be almost the same as that in October 1986. We have yet to achieve price stability, and yet to prove that we can combine it with economic growth. Both theory and history suggest that it is within our grasp provided that we continue to pursue consistently a suitable inflation target. In the 1930s, Fisher and Keynes argued that monetary stability was crucial for stability of the economy. And, at the same time, the target of Jarvie's polemic was that the institution responsible for monetary stability should be accountable to the public. Monetary stability, on the one hand, and transparency and accountability, on the other, go hand in hand. As a country, we have travelled a long way since the mistakes of the 1960s and 1970s. But that does not mean that we have reached our destination. On monetary stability, the test is not whether inflation is below a certain number on a particular date. It is whether the regime of monetary policy leads to the widespread expectation that inflation will not be a relevant factor in economic decisions in the future.

Accountability means that a modern central bank must be open about its actions and its motives. It must explain its ideas. It will make mistakes. But if it wishes to be judged by the public on a fair and honest basis, it must forsake mystique and mumbo jumbo for transparency and openness. It must not forget that its main purpose is to be a rock of stability, not a source of excitement. In an era when, to paraphrase Andy Warhol, policies are famous for fifteen minutes, a central bank must not be afraid to eschew distractions and focus on the single objective of price stability. It is difficult to better the words of T S Eliot from *The Rock*

The endless cycle of idea and action,
Endless invention, endless experiment,
Brings knowledge of motion, but not of stillness;
Knowledge of speech, but not of silence;

..

Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?

If I invoke Eliot you may think that the case for price stability is more rhyme than reason. But I hope that I have convinced some of you that monetary stability is not just a mantra of central bankers. It is the talisman of honest government and a successful economy. It is in fact not rhyme but reason.

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