



BANK OF ENGLAND

# Speech

---

## Has Oil Lost the Capacity to Shock?

Speech given by

David Walton, Member of the Monetary Policy Committee, Bank of England

23 February 2006

I would like to thank Lavan Mahadeva, Alex Muscatelli and Jennifer Deaville-Powner for their invaluable research assistance in the preparation of this speech. I am also grateful to Peter Andrews, Martin Brooke, Colin Ellis, Charlotta Groth, Richard Harrison, Neal Hatch, Bob Hills, Mervyn King, Stephen Nickell, Adam Posen, Jumana Saleheen, Chris Shadforth, Ryland Thomas and Tony Yates for helpful discussions and comments. The views expressed are my own and do not necessarily reflect those of either the Monetary Policy Committee or the Bank of England.

## Has Oil Lost the Capacity to Shock?

### Summary

1. Despite a doubling in oil prices between the end of 2003 and the summer of 2005, the UK economy appears, so far at least, to have emerged relatively unscathed. GDP growth fell below its long-run average of 0.6 per cent a quarter (2½ per cent annualised) during the second half of 2004 but it reached a trough in early 2005 and recovered gradually back to around trend at the end of last year. Consumer price inflation rose above the Government's 2 per cent target during the second half of 2005, reaching a peak of 2.5 per cent in September, but it has since fallen back to around the target.

2. In this speech I examine the last five episodes in which oil prices have risen significantly to try to uncover the reasons for the relatively benign outcome on this occasion. The size and nature of the oil price shock are important. But so too are the mechanisms by which the shock gets propagated through the economy. Among other things, this depends on the state of the economy at the time the shock hits, the extent of rigidities in the economy, the monetary policy framework and the monetary policy response.

3. After considering each of these in turn, I conclude that there are three main explanations.

- First, *the size and nature of the shock have been different*. Relative to previous episodes, the shock has taken longer to unfold. The economy is also less dependent on oil than during the 1970s. And oil prices have risen as a consequence of strong global demand rather than as a result of supply disruptions associated with wars.
- Second, *the UK economy has been better placed to absorb the current oil price shock*. The Monetary Policy Committee's constant focus on inflation meant that there were few inflationary pressures in the economy when oil prices first began to rise sharply, unlike on some previous occasions when there was clearly evidence of excess demand at the time the oil shock hit. There has also been little sign subsequently of higher wage demands. Structural changes have increased the flexibility of the labour market, reducing real wage resistance. This has been in marked contrast to the 1970s when, on occasions, real wage resistance seemed unwittingly to have become an objective of government policy.
- Third, *the monetary policy framework has played an important role*. Inflation targeting has helped to anchor inflation expectations, yet it has allowed the MPC to respond flexibly to the oil shock.

4. This episode has also provided important lessons for the conduct of monetary policy. An oil shock can have effects on supply and demand in the economy, both in the short run and the long run. It is the balance between supply and demand that matters most for inflation and, hence, interest rates. But the magnitude and timing of these demand and

supply effects are very hard to determine. There is no mechanical formula that can be applied to tell the MPC how to adjust interest rates to deal with higher oil prices.

5. With inflation expectations remaining stable, the MPC did not have to respond directly to the first round effects of higher oil prices on consumer price inflation. The MPC was able instead to pay more attention initially to the negative consequences for demand: interest rates were cut 25bp in August 2005.

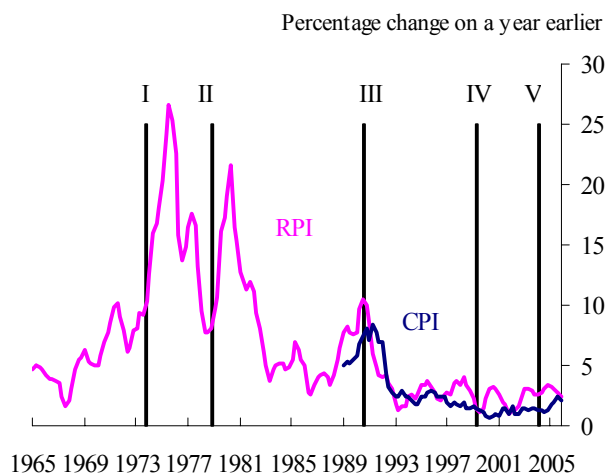
6. But the Committee also needs to watch carefully for any signs of an adverse impact on supply, particularly now that GDP growth appears to have returned to around its long-run average rate. And we do not yet know how large the shock will be ultimately. After dipping during the final months of last year, oil prices have been rising again in recent weeks; wholesale gas prices have also risen sharply. At all times, the Committee's focus will be on achieving the appropriate balance between demand and supply to keep consumer price inflation on track to hit the government's target of 2 per cent.

## Has Oil Lost the Capacity to Shock?

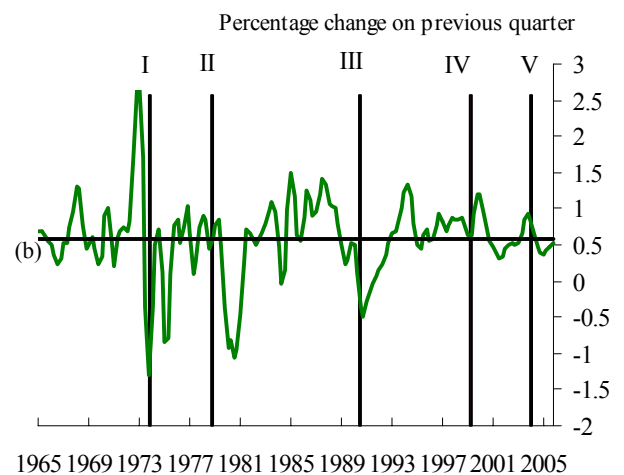
Despite a doubling in oil prices between the end of 2003 and the summer of 2005, the UK economy appears, so far at least, to have emerged relatively unscathed. GDP growth fell below its long-run average of 0.6 per cent a quarter (2½ per cent annualised) during the second half of 2004 but it reached a trough in early 2005 and recovered gradually back to around trend at the end of last year. Consumer price inflation rose above the Government's 2 per cent target during the second half of 2005, reaching a peak of 2.5 per cent in September, but it has since fallen back to 1.9 per cent in January.

These developments are in marked contrast to the economy's performance after several previous oil price shocks; periods that were often characterised by both rising inflation (see Chart 1) and recession (see Chart 2). In the following, I investigate the reasons for this much more benign outcome and consider what we have learned from oil shocks, past and present, for the conduct of monetary policy.

**Chart 1**  
**Retail price and consumer price inflation**



**Chart 2**  
**Real GDP growth<sup>(a)</sup>**



Source: ONS and own calculations

Notes: The five oil shocks identified in the text begin: I=1973Q4; II=1978Q4; III=1990Q3; IV=1999Q2 and V=2004Q1.

(a) GDP at basic prices growth, smoothed by a five-term Henderson trend until 2005.

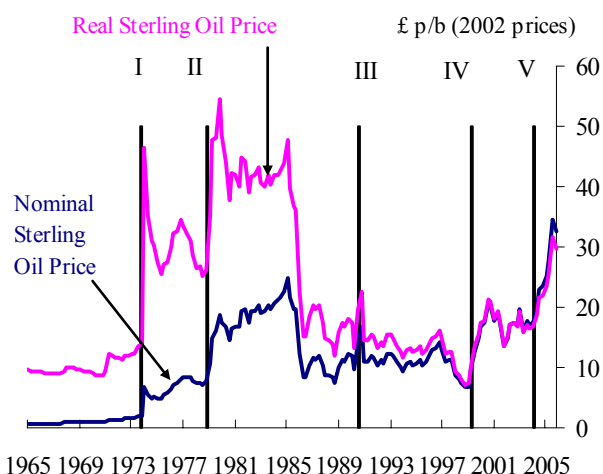
(b) Average (1965-2005) = 0.6%.

### The size and nature of the oil shock

Part of the reason for the difference in economic performance may relate to the size and nature of the shock.

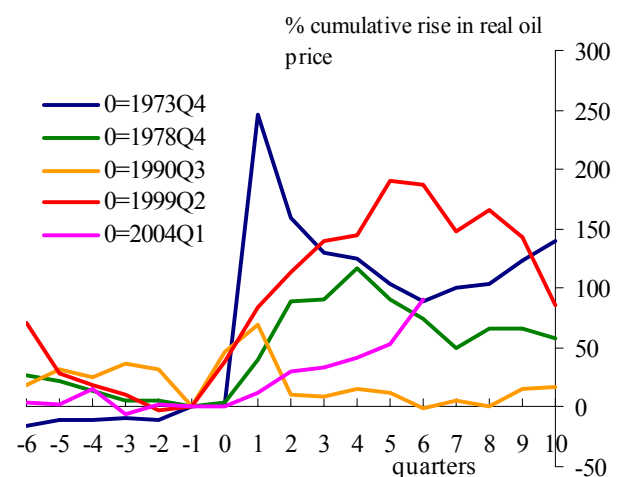
- Including the most recent episode, there have been five significant periods of rising oil prices since 1970 (see Chart 3): 1973-74, 1978-79, 1990, 1999-2000 and 2004-05.<sup>1</sup> The cumulative increase in real sterling oil prices during these episodes is shown in Chart 4. The doubling in real oil prices on this occasion, though comparable in size to other oil shocks, has taken much longer than usual to unfold.

**Chart 3**  
**Sterling oil price**



Source: IMF IFS (Brent Crude Oil Prices); Datastream (US Dollar exchange rate), ONS (UK RPI level). All quarterly averages.  
Notes: I=1973Q4; II=1978Q4; III=1990Q3; IV=1999Q2 and V=2004Q1.

**Chart 4**  
**Oil price episodes (Real sterling price level)**

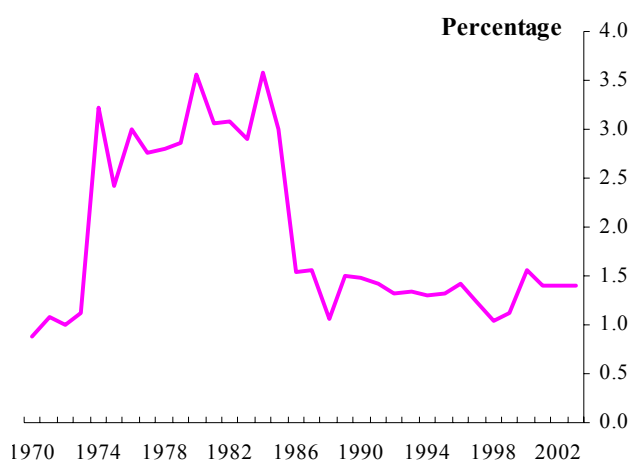


- The economy is less dependent on oil than during the 1970s, reducing the impact of any given oil price rise on the economy.<sup>2</sup> Energy use was a little less than 1.5 per cent of non-oil gross final expenditure in 2003, down from a peak of 3.5 per cent in the early 1980s (see Chart 5). The share of household spending on fuels has also declined steadily over the past twenty years (see Chart 6).
- Oil price hikes in 1973-74, 1979-80 and 1990 were all associated with armed conflicts in the Middle East. As well as disrupting oil supplies, wars might have an adverse psychological impact on the behaviour of households and companies. By contrast, the driving force behind the upturn in oil prices in 1999-2000 and 2004-05 was strong global demand for oil, particularly from the rapidly growing Chinese economy.

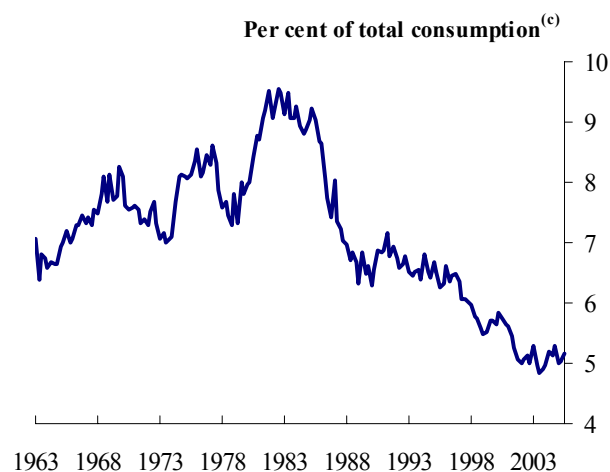
<sup>1</sup> The measure of oil prices used here is the Brent crude price series in US dollars taken from the International Monetary Fund's International Financial Statistics database. This has been taken back to the 1960s by linking it to the prices of similar types of crude oil. See International Monetary Fund (2005), Country Notes, page 6. The dollar price has been converted to sterling. When expressed in real terms, the oil price has been compared relative to the level of UK retail prices.

<sup>2</sup> Throughout this speech, I am referring mainly to the non-oil economy. The impact of higher oil prices on the overall economy is attenuated to some extent by virtue of the UK being a net exporter of oil until recently.

**Chart 5**  
**Nominal energy intensity (1970-2003)<sup>(a)</sup>**



**Chart 6**  
**Household spending on fuel<sup>(b)</sup>**



Source: ONS and own calculations

Notes: (a) Intermediate consumption of oil and gas as a share of gross final expenditure (excluding UK oil and gas production). This is not a measure of the share of energy in production, which would be better captured by intermediate consumption of oil and gas as a share of GDP value-added plus intermediate imports together, but no data for this are available back until the early 1970s.

(b) Motor fuels plus household energy bills.

(c) Excludes non-profit institutions serving households (NPISH).

The size and nature of the oil price shock are clearly important considerations. But so too are the mechanisms by which the shock gets propagated through the economy. Among other things, this depends on the state of the economy at the time the shock hits, the extent of rigidities in the economy, the monetary policy framework and the monetary policy response. It is to each of these that I now want to turn.

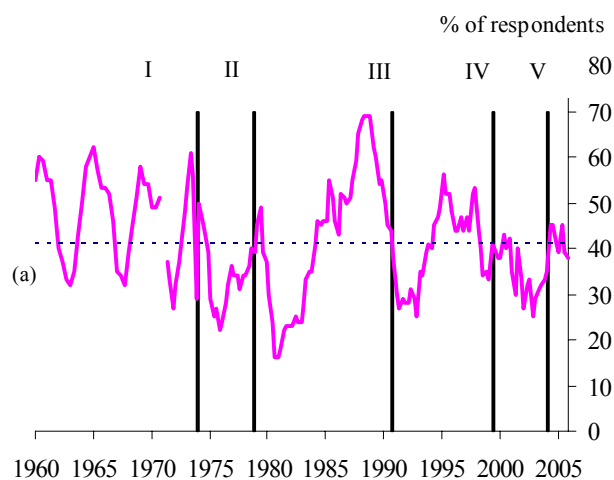
### **The state of the economy at the time each oil shock hit**

A closer look at Charts 1 and 2 suggests that, for some episodes, while the oil shock might have exacerbated the economic downturn and helped to boost inflation, it is hard to argue that it was the fundamental cause of either. In 1973, for example, the UK economy had peaked in the first half of the year, several months before the first oil shock hit. And although the economy went into recession around the time of the August 1990 shock, GDP growth had peaked 18 months earlier. The same is true of inflation. Retail price inflation began to rise in earnest during the second half of 1970, three years before the first oil shock hit. And it was on a rising trend from mid-1988, two years before the 1990 shock.

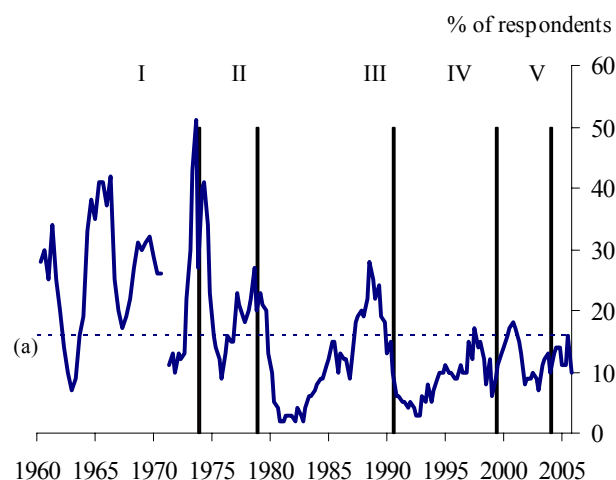
For the 1973-74 and 1990 episodes, there is plenty of evidence of excess demand in the economy prior to the oil shock that monetary policy was initially slow to respond to. Taking the CBI Industrial Trends Survey (see Charts 7 and 8), for instance:

- Business optimism was running at unusually high levels from mid-1971 onwards. Employment intentions jumped sharply in early 1973 and remained extremely high throughout the year. Skilled labour shortages went through the roof during 1973 as did shortages of other labour. Meanwhile, official short-term interest rates hit a low of 5 per cent in September 1971 and only began rising in June 1972, reaching 9 per cent at the end of the year. They were then cut several times during the first half of 1973 to 7.5 per cent, at a time when RPI inflation was running at about 9 per cent. Subsequently, interest rates rose to 13 per cent during the second half of 1973 but were then cut steadily during 1974 and early 1975 to a low of 9¾ per cent in April 1975. Retail price inflation peaked at 27% per cent in August 1975.
- Business optimism was running at a high level during 1987. Employment intentions were positive during 1988 (highly unusual for this series). Capacity utilisation was extremely high during 1988. Interest rates were cut on several occasions after the October 1987 stock market crash, hitting a low of 7.5 per cent in May 1988. They were raised progressively thereafter, reaching a high of 15 per cent in November 1989, the level at which they stood when the August 1990 oil price shock hit.

**Chart 7**  
**CBI data on capacity utilisation**



**Chart 8**  
**CBI data on skilled labour shortages**



Source: CBI Industrial Trends Survey.

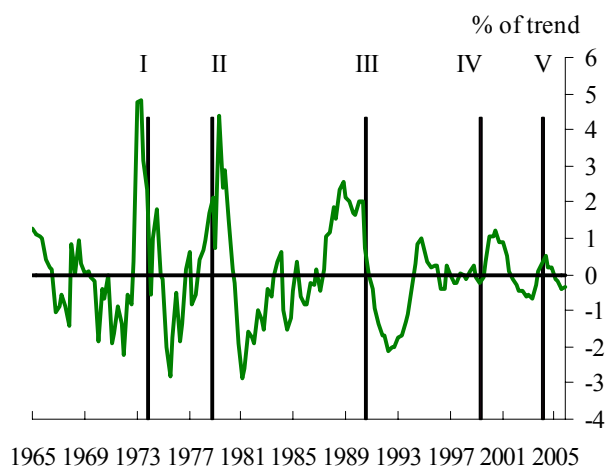
Notes: Chart 7 presents the survey data in the form of one hundred minus the proportion of firms working below capacity, so that a higher percentage indicates a higher level of capacity utilisation. Chart 8 shows the percentage of respondents indicating that the availability of skilled labour is a factor that may limit output over the following three months. (a) denotes average values since 1960. I=1973Q4; II=1978Q4; III=1990Q3; IV=1999Q2 and V=2004Q1.

Though the evidence of excess demand is clearest in these two episodes, the economy also seems to have been operating above potential at the time the 1978-79 oil shock hit. Chart 9 shows a time series for the output gap derived using the familiar Hodrick-Prescott

filter to detrend real GDP. It suggests that output was well above trend prior to each of the first three oil shocks.<sup>3</sup>

### Chart 9

#### Hodrick-Prescott filter estimate of the output gap



Source: ONS and own calculations.

Notes: Estimated using GDP at basic prices (1960-2005) and smoothing parameter = 1600.

I=1973Q4; II=1978Q4; III=1990Q3; IV=1999Q2 and V=2004Q1.

By contrast, statistical estimates of the output gap and survey measures of capacity utilisation and labour shortages suggest that the economy has been operating fairly close to potential in recent years. Inflation expectations are less likely to be destabilised if an oil shock hits when the economy is operating close to normal capacity than if there were already considerable inflationary pressure in the system.

#### Real wage rigidity hinders the economy's adjustment to an oil shock

In the face of higher oil prices which raise firms' costs, the real consumption wage (ie the post-tax wage paid to workers deflated by consumer prices) must fall if firms are to maintain their profit share, and maintain employment. If workers resist the fall in the real consumption wage by bidding for higher nominal wages, thereby raising the real product

<sup>3</sup> Any statistical estimate for detrending GDP, such as the HP filter, can give misleading estimates of the output gap in real time if either the data are revised significantly or the subsequent evolution of the economy is significantly different from the recent past. For the first two oil shocks, the conclusion that real GDP was above trend holds even on the basis of the data available at the time. However, using the HP filter, policymakers could have been misled into believing that the economy was below trend when the 1990 oil shock hit. This is because the subsequent recession was so deep that it led to a significant re-estimation of the statistical trend in GDP in the run-up to the oil shock. Nelson and Nikolov (2003) provide evidence from policymakers' statements at the time that suggest they were routinely too optimistic about the extent of spare capacity during the 1970s and 1980s. Recent statistical estimates of the output gap should be treated with great caution.



wage in value added terms (ie the full cost of labour to firms divided by the price firms get for their product), the end result will be lower employment. The decline in employment will be reinforced if monetary policy is tightened in response to these so-called second round effects on wages.

The extent to which the real consumption wage must fall depends on the size of the oil price change, the shares of oil and labour in gross output and the degree of complementarity between factors of production. Estimates of the required fall in the real consumption wage to maintain employment range from 1 per cent to 2½ per cent.<sup>4</sup>

There is evidence of real wage rigidity in the 1970s, partly because of the unfortunate timing of two wage accords.

- At precisely the time that the impact of the first oil shock was working through, Edward Heath's Conservative government introduced an incomes policy under which wages would be permitted to rise in strict proportion to increases in the cost of living above a specified threshold.<sup>5</sup> This was the first time that an incomes policy had contained a formal link between increases in pay and prices.
- In August 1979, the newly elected Conservative government accepted the Clegg Commission recommendation for staged pay increases for public sector employees of up to 26 per cent. A further wedge was driven between the real product wage and the real consumption wage when the government financed a significant reduction in income tax by a large increase in VAT, adding 3½ to 4 percentage points to retail price inflation. Both factors contributed to a rapid rise in whole economy average earnings growth which peaked at over 20 per cent in 1980.<sup>6</sup>

Sachs (1979) and Bruno and Sachs (1985) show that when consumer prices rise relative to the price of domestically produced goods (the GDP deflator at basic prices), the real

---

<sup>4</sup> The range given for the required fall in the real consumption wage depends on how easily producers can compensate for higher energy prices by substituting away from energy. The smallest fall in the real wage would be generated if energy use could be flexibly adjusted so as to keep the energy share of gross revenue unchanged. A rough approximation in this case, see Rotemberg and Woodford (1996), would be that the fall in the real consumption wage is equal to the share of energy in gross revenue (say 1.5%) divided by one minus that share (98.5%) multiplied by the log change in the real energy price (69%). The largest fall in the real wage would be implied if instead the quantity of energy inputs had to be used in a fixed proportion to the output produced. Then, a rough approximation would be the share of energy (1.5%) divided by the share of labour (60%) in gross revenue multiplied by the percentage change in the energy price (100%). These calculations depend on estimates of the share of capital and imported non-energy intermediates in gross revenue.

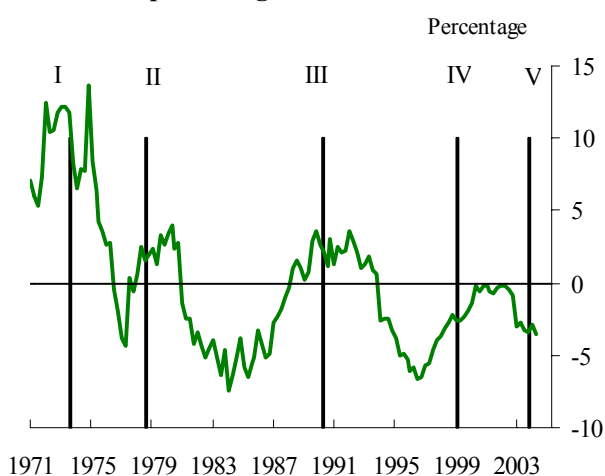
<sup>5</sup> In the second stage of an incomes policy, effective from November 1973, pay increases of up to 7 per cent were allowed, with various 'flexibility margins', plus flat rate increases of 40p per week for every 1 per cent by which the rise in the cost of living exceeded 7 per cent.

<sup>6</sup> As Chart 1 in Nickell (2006) shows, wage inflation responded almost immediately to the pickup in retail price inflation following the large rise in VAT announced in the June 1979 Budget.

consumption wage must grow less rapidly than labour productivity to maintain factor shares.<sup>7</sup>

In the first three episodes, the level of the real consumption wage was far higher than that consistent with keeping the real product wage share of employees at its market-clearing level, given trend movements in indirect taxes and benefits, terms of trade changes and productivity (see Chart 10). This suggests that there was real wage resistance on these occasions. By contrast, there is no evidence of excessive real wages in the more recent episodes.

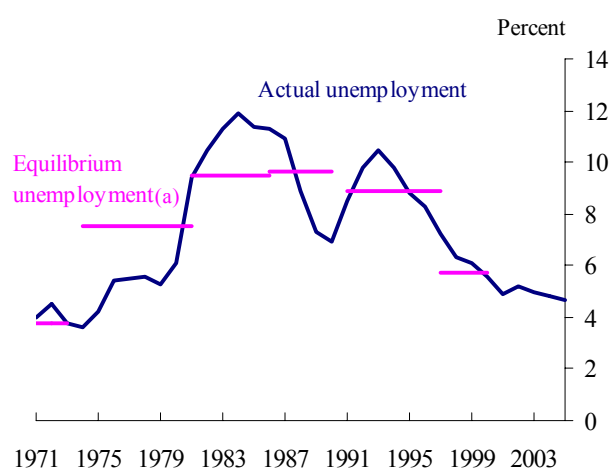
**Chart 10**  
Real consumption wage relative to warranted level



Source: ONS National Accounts data on compensation and own calculations. The actual real consumption wage is assumed to be a constant proportion of the warranted wage on average. The measure is centred on zero by adjusting for an estimate of that constant over the sample 1971-2005. The most recent estimates are sensitive to end-point bias (see footnote 3) and have been omitted for this reason.

Notes: I=1973Q4; II=1978Q4; III=1990Q3; IV=1999Q2 and V=2004Q1.

**Chart 11**  
Unemployment: actual and equilibrium rate



Source: ONS, ILO.

(a) Estimates of the equilibrium rate of unemployment for 1971 to 2000 from Nickell (2001), for overlapping periods.

<sup>7</sup> To see this, the labour share (S) is given by

$$S = WL/P_vV$$

where W is nominal wages, L is labour input, V is real value added (GDP) and  $P_v$  is the GDP deflator at basic prices.  $W/P_v$  is the real product wage which determines the demand for labour. Taking logs and differentiating, we have

$$\Delta S/S = \Delta W/W + \Delta L/L - \Delta P_v/P_v - \Delta V/V$$

Setting  $\Delta S/S$  to zero to keep the labour share constant, adding and subtracting the consumer price index ( $P_C$ ) and rearranging:

$$\Delta P_C/P_C - \Delta P_v/P_v = (\Delta V/V - \Delta L/L) - (\Delta W/W - \Delta P_C/P_C)$$

Not surprisingly, given these developments in real wages, both the actual and the equilibrium rate of unemployment rose substantially following the first three oil shocks (see Chart 11). The decline in the equilibrium rate of unemployment over the past 15 years can be attributed to structural changes in the labour market as documented by Nickell (2001) – notably a decline in the power of trades unions, particularly in the private sector, and a fall in the generosity of unemployment benefits coupled with an increase in strictness of the benefit system. Judging by the broad stability of both actual unemployment and wage inflation, recent oil shocks do not seem to have disturbed the lower equilibrium unemployment rate.

Low and more stable rates of equilibrium unemployment are suggestive, though not conclusively so, of smaller real wage resistance. Stronger support for the latter is given by Faggio and Nickell (2005) who estimate, using a sample of employees from the New Earnings Survey, that the elasticity of wages with respect to unemployment has increased since the mid-1980s.

### **The monetary framework matters**

Is it a coincidence that the inflationary effects of oil price shocks have been significantly smaller since the introduction of inflation targeting? There are several reasons to believe not.

First, and foremost, in the current monetary framework, the Monetary Policy Committee (MPC) will fight any deviation in consumer price inflation from the 2 per cent target that threatens to be persistent. If inflation moves by more than one percentage point away from target, the Governor is required to write an open letter to the Chancellor explaining the reasons for this, the policy actions taken to bring inflation back to target and the period within which this is expected to occur. In a highly transparent inflation targeting framework such as this, it is hard to see why inflation shocks should be highly persistent.

Second, and related to the first point, if the monetary framework is credible, inflation expectations are less likely to be dislodged in the event of a cost shock. Real wage resistance might be reduced if workers realise that the MPC will react to any attempt by workers to be compensated for the unavoidable loss of spending power in the event of an oil shock. Both factors lower the likelihood of second round effects on wages, reducing the persistence of the inflation shock. There will also be a smaller hit to output if the MPC does not have to raise interest rates to rein in second round effects.

Third, low inflation is typically less volatile. In a volatile inflation regime, unpredictable movements in costs and prices make it harder for employers to share information with their employees about the trading conditions they face. Wages might then become too closely linked to the general consumer price level. In more stable regimes, it is easier for firms and workers to distinguish the signals that matter for their own business, and to agree wages appropriately.

Fourth, because the monetary framework recognises that excess demand is the key cause of persistent inflationary pressure, it is less likely that the economy will be running a significant positive output gap when an oil shock hits. As documented by Nelson (2005), during the 1970s many politicians and economists believed that persistent, not just temporary, shifts in inflation were driven by special or “cost push” factors, not excess demand. It was widely believed that that these factors dominated the behaviour of inflation regardless of the course that monetary policy took.

Benati (2005) finds that inflation persistence is not an intrinsic structural feature of the UK economy; the behaviour of inflation seems to be related to the monetary regime in place. From an examination of the behaviour of inflation during different monetary regimes since the seventeenth century he concludes that inflationary shocks were only highly persistent in the period after the breakdown of the Bretton Woods system in June 1972 until sterling’s departure from the exchange rate mechanism of the European Monetary System in October 1992. For much of this period, it is unclear exactly what the nominal anchor for the economy was.

### **How should monetary policy respond to an oil shock?**

Under the Bank of England’s remit, monetary policy has to stabilise consumer price inflation at 2 per cent while trying to avoid unnecessary fluctuations in economic activity. Following *any* shock that moves inflation away from target and output from its normal level, the MPC’s job is to work out how best – notably over what time period – to bring inflation back to target without causing undesirable volatility in output. The MPC sets interest rates accordingly and provides a justification for its actions in the published minutes of MPC meetings, and a more detailed explanation, including projections for GDP growth and inflation, in the quarterly *Inflation Report*.

Higher oil prices have posed a challenge for the MPC since, as has been evident over the past 18 months, they tend simultaneously to push up inflation and depress economic activity. Monetary policy has needed to be sufficiently “tight” to prevent the inflationary impulse from the rise in oil prices becoming entrenched through second round effects on wages and inflation expectations. At the same time, monetary policy has needed to be sufficiently “easy” to avoid unnecessary negative effects on demand and output.

Higher oil prices have a fairly immediate impact on consumer price inflation working through higher petrol prices, heating bills and transport services.<sup>8</sup> Whether the MPC needs to respond directly to this depends on the credibility of the monetary policy framework. If inflation expectations rise, nominal interest rates would need to rise by as much to maintain the stance of monetary policy. But if firms and households believe that the MPC will do whatever is necessary to keep inflation, on average, at 2 per cent, there

---

<sup>8</sup> Between 2004Q1 and 2005Q3, consumer price inflation rose by 1.1 percentage points. Petrol, utilities and transport services accounted for around 0.8 percentage points of the rise. Thus oil intensive elements of the CPI contributed 70 per cent to the rise in inflation over this period.

is little obvious need for the MPC to react to the first round impact of higher oil prices since this is just a shift in relative prices.

Of course, monetary policy will only remain credible if the MPC consistently behaves in a manner that keeps inflation on target. An oil shock can have effects on supply and demand in the economy, both in the short run and the long run. It is the balance between supply and demand that matters most for inflation and, hence, interest rates.

There are several mechanisms by which demand might be reduced by higher oil prices, at least in the short term, without any help from monetary policy.

- High oil prices act like a tax, transferring money from consumers to oil producers, leaving many of us worse off. Since the price elasticity of demand for energy is fairly low, households will need to direct a greater proportion of their income to energy-related items and cut back on discretionary spending. Over time, this will be offset to some extent by higher spending by oil producing countries on UK exports. Reflecting the UK's position as an oil producer, households will benefit from higher dividends by oil companies. The UK government is also a beneficiary of higher oil prices; higher oil-related taxes can be used to cut taxes elsewhere or boost public spending, providing support for demand.
- A large increase in oil prices may generate uncertainty both about the future outlook for oil prices and the economy as a whole. If the future is uncertain, households may decide to postpone spending on consumer durables and businesses may decide to postpone investment. Over time, though, high energy prices may act as a spur to spending on consumer durables and investment, as households and companies invest in cars and capital equipment that use energy more efficiently.

There are also several mechanisms by which potential output might be reduced by higher oil prices.

- An increase in oil prices increases companies' costs and, hence, the prices at which they are willing to supply their products. At higher prices there will be less demand, leading to lower output and employment for a time. This cyclical loss of output could become permanent if workers refused to accept a lower real consumption wage and, instead, bid for higher nominal wages to offset the rise in final goods prices.
- Higher oil prices may make some of the existing capital stock redundant or reduce the utilisation of capital. This would reduce for a time the growth of measured total factor productivity (TFP).<sup>9</sup>

---

<sup>9</sup> "True" total factor productivity (TFP) should not be affected by a lower capital stock. But "measured" TFP will typically be reduced because it is difficult for estimates of the capital stock or capital services to pick up the effects of scrapping.

- Higher oil prices may lead to a reallocation of resources within the economy. This may result in an under-utilisation of resources and higher unemployment during the adjustment phase.
- If firms postpone investment decisions because of increased uncertainty, this will reduce temporarily the growth of the capital stock and the growth of potential output.

The magnitude and timing of these demand and supply effects are very hard to determine. Nevertheless, they are likely to be very important for the profile of the output gap and, hence, for inflation and interest rates.<sup>10</sup>

To illustrate this, suppose the economy is initially operating at normal capacity, ie there is a zero output gap, and is then hit by an adverse oil shock. Charts 12-14 show various stylised paths for demand (GDP) and supply (potential GDP) and the output gap.

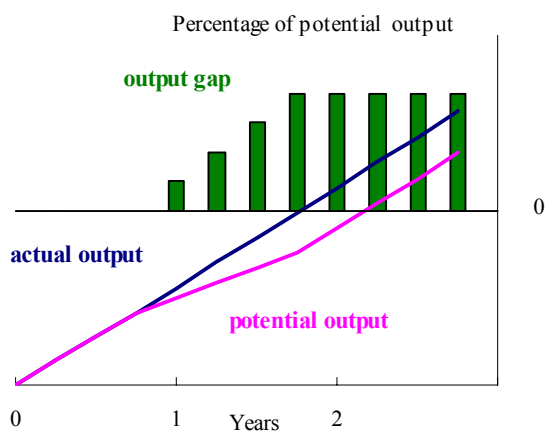
- In case (i), the oil price shock is assumed to reduce potential GDP immediately. Unless aggregate demand falls in line with the reduced potential, a positive output gap would be generated, resulting in increased inflationary pressure. Other things equal, higher interest rates would be needed to reduce aggregate demand in line with supply.
- In case (ii), the oil price shock is assumed to reduce demand immediately. Unless potential GDP is also reduced, a negative output gap would be generated, resulting in reduced inflationary pressure. Other things equal, lower interest rates would be needed to boost aggregate demand in line with supply.
- In case (iii), the negative demand effects are assumed to come through quickly then start to dissipate, while the negative supply effects build up gradually through time. In this case, interest rates might initially need to be lower to counteract the negative output gap but could end up higher as demand recovers and a positive output gap emerges.

It should be clear from these stylised examples that there is no mechanical formula that can be applied to tell the MPC how to adjust interest rates to deal with higher oil prices. The appropriate monetary policy response will depend on the size and nature of the shock and how households and businesses react. There is a wide range of possible outcomes. Demand could conceivably soften too much if business and consumer confidence are damaged. Inflation expectations could become destabilised if inflation moves too far away from target. And some productive capacity could be lost permanently. Each of these will affect the chances of meeting the inflation target and, hence, the appropriate level of interest rates. As King (2005) argues, inflation targeting is the natural way to conduct policy when there is a great deal of uncertainty about the transmission of shocks to the economy; inflation targeting accommodates learning by both the private sector and policymakers.

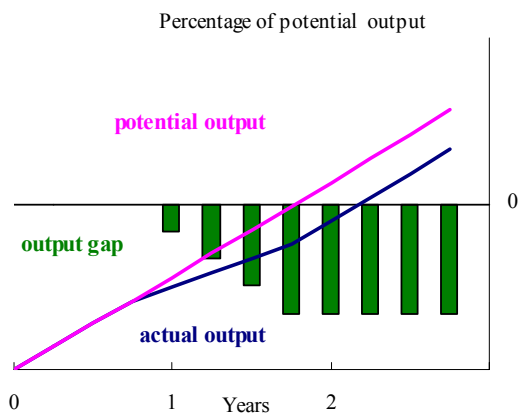
---

<sup>10</sup> Hunt (2005), for example, reporting simulations from the International Monetary Fund's Global Economic Model, finds that energy price increases can result in significant disruptions to real economic activity and persistent inflation if the monetary authority underestimates the negative impact of an energy shock on the economy's supply capacity and there is real wage resistance.

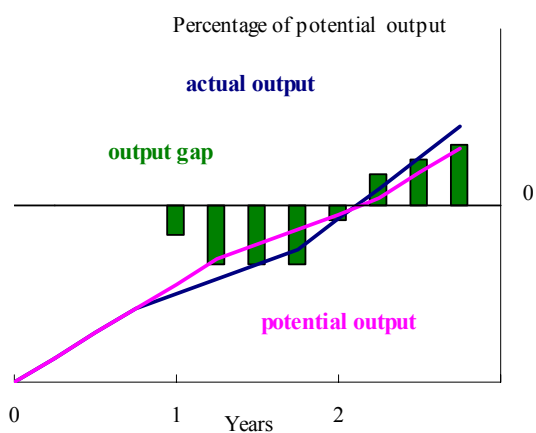
**Chart 12**  
**Stylised output gap: case (i)**



**Chart 13**  
**Stylised output gap: case (ii)**



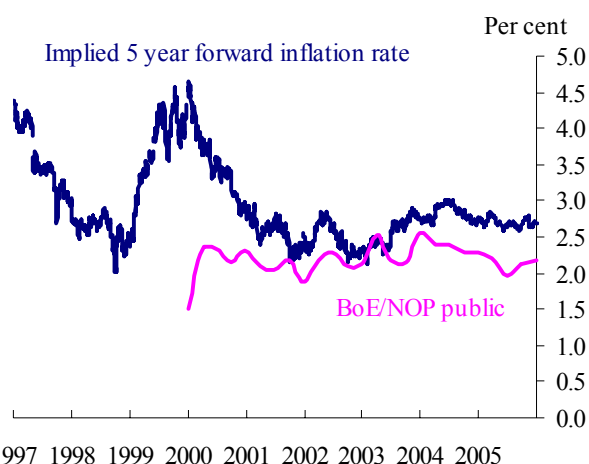
**Chart 14**  
**Stylised output gap: case (iii)**



## Recent monetary policy considerations

Encouragingly, inflation expectations – whether measured from surveys, financial markets or pay settlements – have remained very stable over the past two years (see Chart 12). This meant that the MPC did not need to respond directly to the first round effects of higher oil prices on consumer price inflation.

**Chart 15**  
**Inflation expectations remain stable**



Source: Bank of England.

With inflation expectations remaining stable, the MPC was able instead to pay more attention initially to the negative consequences for demand. A majority of the MPC felt that a 25bp repo rate cut to 4.5 per cent was necessary in August 2005 to prevent inflation from undershooting the target in two years time, particularly taking account of the downside risks to growth and inflation relative to the MPC's central projections. In the first half of 2005, GDP growth had been more subdued than expected. The notable areas of weakness in demand were household spending on consumer durables and business investment, consistent with the idea that the uncertainty associated with higher oil prices had discouraged households and firms from committing to large items of expenditure. Since then, there have been signs of a pick-up in the pace of economic activity to around its long-run average rate, though business investment remains weak.

It is also possible that the energy shock will have depressed temporarily the growth of potential output. In particular, labour productivity growth has ground to a virtual halt over the past year. While this may mostly reflect cyclical factors and a possible under-recording of output, it could also reflect a slower pace of capital accumulation and some capital scrapping. Both factors would reduce the degree of spare capacity for any given level of demand. Weaker demand growth over the past couple of years might therefore have been accompanied by weaker growth in potential supply. Consistent with this, there



has not been much net change in capacity utilisation over this period according to business surveys.

And we do not yet know how large the shock will be ultimately. After dipping during the final months of last year, oil prices have been rising again in recent weeks. Wholesale gas prices have also risen sharply in recent months. In the *Inflation Report* published last week, the Committee's central projection was for consumer price inflation to remain close to 2 per cent over the next two years but there are substantial risks in both directions.

## **Conclusions**

I have offered a number of reasons why the economy seems to have emerged relatively unscathed from a doubling in oil prices since the end of 2003. In summary:

*The size and nature of the shock have been different.* Relative to previous episodes, the shock has taken longer to unfold. The economy is also less dependent on oil than during the 1970s. And oil prices have risen as a consequence of strong global demand rather than as a result of supply disruptions associated with wars.

*The UK economy has been better placed to absorb the current oil price shock.* There were few inflationary pressures in the economy when oil prices first began to rise sharply, unlike on some previous occasions when there was clearly evidence of excess demand at the time the oil shock hit. There has also been little sign subsequently of higher wage demands. Structural changes have increased the flexibility of the labour market, reducing real wage resistance. This has been in marked contrast to the 1970s when, on occasions, real wage resistance seemed unwittingly to have become an objective of government policy.

*The monetary policy framework has played an important role.* Inflation targeting has helped to anchor inflation expectations, yet it has allowed the MPC to respond flexibly to the oil shock. With inflation expectations remaining stable, the MPC did not have to respond directly to the first round effects of higher oil prices on consumer price inflation. The MPC was able instead to pay more attention initially to the negative consequences for demand. But the Committee also needs to watch carefully for any signs of an adverse impact on supply, particularly now that GDP growth appears to have returned to around its long-run average rate. At all times, the Committee's focus will be on trying to achieve the appropriate balance between demand and supply to keep consumer price inflation on track to hit the government's target of 2 per cent.

## References

**Benati, L (2005)**, 'U.K. monetary regimes and macroeconomic stylised facts', *Computing in Economics and Finance* 2005 107, Society for Computational Economics.

**Bruno, M and Sachs, J (1985)**, *Economics of Worldwide Stagflation*, Basil Blackwell: Oxford.

**Faggio, G and Nickell, S (2005)**, 'The responsiveness of wages to labour market conditions in the UK', *Labour Economics*, 12(5), October 2005, Pages 685-696.

**Hunt, B (2005)**, 'Oil price shocks: can they account for the stagflation in the 1970s?', *International Monetary Fund Working Paper*, WP/05/215.

**International Monetary Fund (2004)**, *International Financial Statistics Country Notes*.

**King, M (2005)**, 'Monetary policy: practice ahead of theory', The Mais lecture 2005, *Bank of England Quarterly Bulletin*, Summer 2005, pp. 226-236

**Nelson, E (2005)**, 'The great inflation of the 1970s: what really happened?', *Advances in Macroeconomics*, 5(1).

**Nelson, E and Nikolov, K (2003)**, 'UK inflation in the 1970s and 1980s: the role of output gap mismeasurement,' *Journal of Economics and Business*, 55(4), pp. 353-370.

**Nickell, S (2001)**, 'Has UK labour market performance changed?', Speech given at the Society of Business Economists, 16 May 2001

**Nickell, S (2006)**, 'Monetary policy, demand and inflation', Speech given at the Bank of England's South East and East Anglia Agency, 31 January 2006

**Rotemberg, J and Woodford, M (1996)**, 'Imperfect competition and the effects of energy price increases on economic activity', *Journal of Money, Credit and Banking*, 28(4), pp. 550-577.

**Sachs, J (1979)**, 'Wages, profits and macroeconomic adjustment: a comparative study', *Brookings Papers on Economic Activity*, 2, 269-319.