

## IV. Monetary policy in the advanced industrial countries

### Highlights

The period under review was marked by uncertainty and a major shift in the policy stance. Short-term interest rates in many countries generally continued to rise through the early part of last year in the light of strong growth and increasing inflationary pressures. As the period progressed, however, the global interest rate cycle turned in response to perceptions that activity was starting to weaken rapidly. By early 2001 evidence had begun to mount that a significant slowdown was indeed under way in a number of countries, leading central banks generally to lower interest rates. In spite of the change of direction in policy rates during the period under review, long rates in the major industrial countries broadly tended downwards and yield curves moved towards inversion over much of the period. However, more normal relationships were re-established after March 2001.

The global pattern of changes in economic conditions and financial markets was most evident in the United States. Policy continued to tighten during the first half of last year, but this was reversed in early 2001 when signs of a dramatic turnaround in economic activity became apparent. The Federal Reserve twice cut interest rates in unanticipated inter-meeting moves, in part to bolster conditions in financial markets, which are arguably more important in determining the level of demand in the United States than elsewhere.

In Japan the zero interest rate policy was abandoned in August as the central bank judged that the recovery had become self-sustaining and concerns regarding the risk of deflation abated. With downward pressure on the price level increasing during the autumn, and a sharp deceleration of activity around the year-end, the Bank of Japan also relaxed monetary conditions in early 2001. A particularly worrisome development was the gradual but cumulatively large decline in equity prices. There was concern that this might have some impact on the stability of the financial system, given the lack of clear evidence that restructuring had really begun in earnest.

In the euro area, headline inflation remained close to 2%, the upper limit of the Eurosystem's definition of price stability, during the spring of last year. However, it jumped in the summer and rose further in the autumn, reflecting higher oil prices and the weakening of the exchange rate. These developments contributed to a steady rise in policy rates. As these influences were reversed, inflation fell but there was no firm evidence of a weakening of economic activity until early 2001. With its projection

suggesting that inflation would be slow to return to the price stability range, the Eurosystem elected not to reduce interest rates until May.

The interest rate cycle also turned in many of those countries that have an explicit target for inflation. During the first half of the period, the last phase of the earlier tightening in monetary conditions was completed. The rise in headline inflation experienced in most of these economies in late 2000 was judged to be the result of temporary factors, such as the increase in oil prices, and a further tightening of policy was deemed to be unnecessary. In early 2001, the principal central banks with explicit inflation targets cut interest rates in response to downward revisions in forecasts of output growth for the near future.

The achievement and maintenance of low inflation in economies all over the world, amid the continuing expansion of financial markets, have had important implications for central banks. A particular problem concerns the choice of indicators on which to focus when setting policy rates. In this area, central banks have explored a wide range of information variables drawn from both the real economy and, increasingly, financial markets. The importance of communicating with financial markets has grown and policymakers increasingly have to consider the markets' reaction in determining the appropriate timing of policy decisions.

## United States

The period under review was a difficult one for policymakers. During the first three quarters of 2000, inflationary pressures appeared to be building. At the same time, however, share prices and other financial indicators warned of an impending slowdown in consumption and investment spending. Moreover, uncertainty about future productivity growth clouded the outlook for inflation, as well as the prospects for firms' profits and the near-term health of financial markets. Then, towards the end of 2000, new data heralded a dramatic deceleration in economic activity. Significant uncertainty surrounded the potential depth and length of the expected period of below par economic performance. How rapidly monetary policy should ease, particularly given the possibility of an unwelcome rebound in stock prices, called for an unusual degree of judgment about both the economy and market psychology.

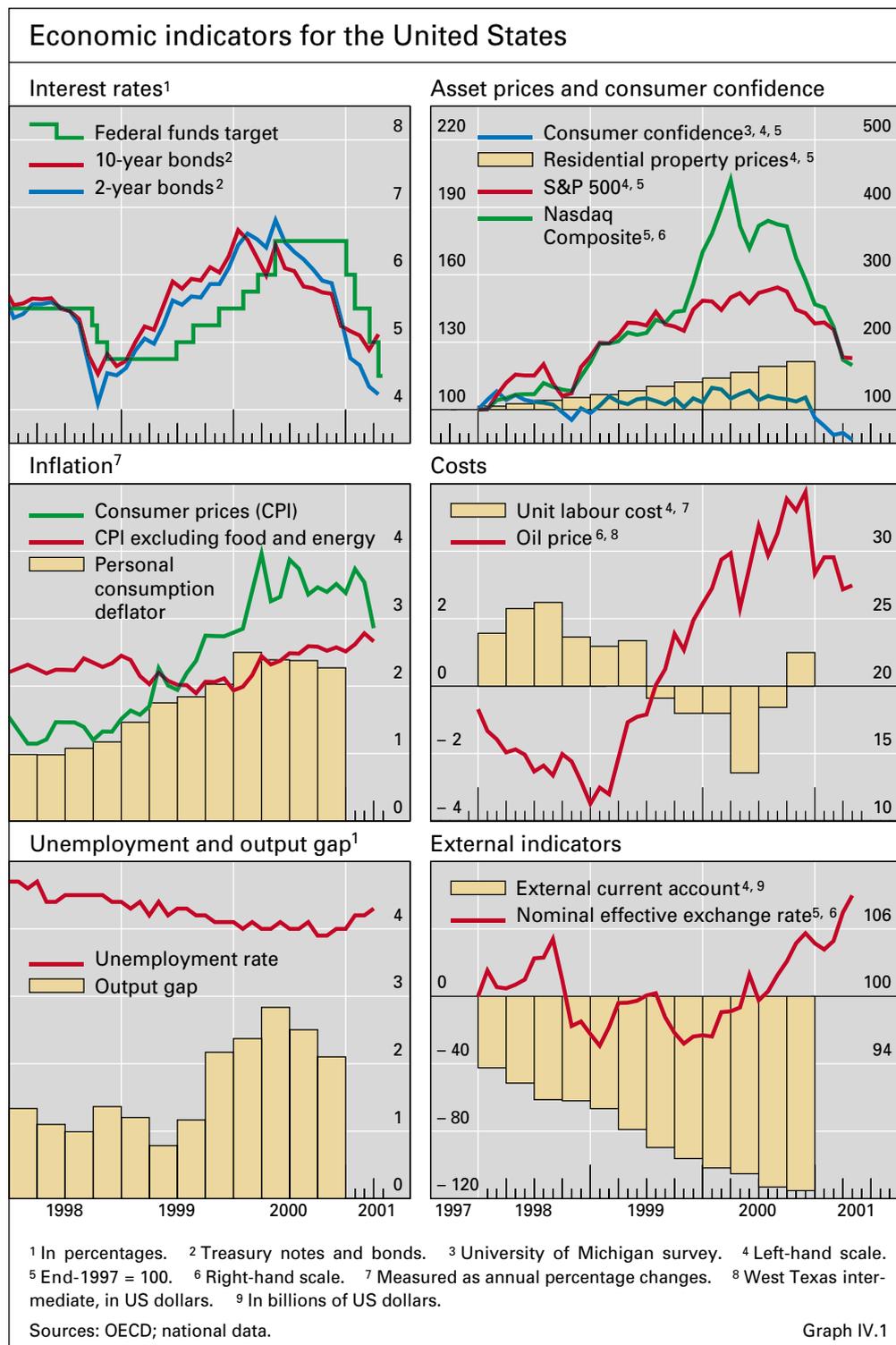
Inflationary pressures

The beginning of the period saw the culmination of a year-long tightening of monetary policy by the Federal Reserve. The raising of the federal funds rate target by 50 basis points in May 2000, following increases totalling 1¼ percentage points dating back to June 1999, was part of a measured attempt to restrain a rapid rate of expansion in aggregate demand with potential implications for inflation. However, in late spring and summer, forward-looking indicators suggested an incipient slowdown in economic activity. This led the Federal Open Market Committee (FOMC) to put on hold further increases in its target rate, although it continued to maintain a bias towards tightening. Through the autumn, the risk of an increase in inflation remained at the forefront of the FOMC's assessment. On the one

Monetary tightening continued up to May 2000 ...

... with a risk of higher inflation still present in autumn

hand, measures of core inflation continued to hover around 2%, a level deemed to be consistent with price stability, and evidence of an economic slowdown was accumulating. On the other hand, persistently high oil prices appeared to be causing upward revisions in long-run inflation expectations, while continued tightness in labour markets, as reflected in increases in compensation and unit labour costs, threatened to push underlying inflation rates higher.



By December, it was clear that a significant slowdown in economic activity had begun, as evidenced by a sharp fall in retail sales, an excessive accumulation of inventories, a marked reduction in consumer wealth, and sharp declines in both consumer and business confidence. At the same time, financial conditions in both equity and corporate debt segments deteriorated considerably (see Chapter VI).

Evidence of a sharp downturn surfaced in late 2000

In response, after changing its bias in December to reflect the increased risk of economic weakness, the FOMC lowered interest rates on 3 January 2001. The timing and size of the move, between meetings and twice the standard magnitude of policy rate changes, appeared to catch markets by surprise, as equity prices rose sharply and long-term bond prices fell. The likely reason for the surprise move was to demonstrate a prompt response to unfolding events and thereby bolster the confidence of both consumers and financial market participants. Following a further 50 basis point cut in the federal funds rate at the FOMC's late January meeting, and the continued improvement of conditions in financial markets, except for stock prices, it seemed possible that a prolonged period of slow growth could be avoided. After factoring in the effects of this rate cut, the Federal Reserve projected in mid-February that annual growth would fall only slightly below its estimated long-run potential during 2001, and that headline inflation – based on the personal consumption expenditure index – would be around 2%. But as time passed, further evidence accumulated, raising the odds of a longer and sharper downturn. At its meeting in March, the FOMC again lowered interest rates by 50 basis points; on 18 April, it repeated this cut following an inter-meeting consultation; and on 15 May it reduced rates by another 50 basis points. This brought the total reduction in the federal funds rate to 250 basis points in the first five months of the year, the sharpest rate of easing in the postwar period. While the spread between long- and short-term interest rates generally narrowed during 2000, this process was reversed in early 2001 in the aftermath of the easings of policy. For instance, the yield on the 10-year Treasury note increased by 56 basis points between 23 March and 20 April.

A surprise interest rate cut in early 2001 ...

... followed closely by four more rate changes

Underlying the evolution of monetary policy in the United States over the last few quarters, as in previous years, was a debate centred on the question of whether the sustainable level of productivity growth had increased (see the discussion on policy indicators below). In the earlier phase of tightening, the Federal Reserve had been anxious to obtain accurate estimates of the output gap to assess the inflationary implications of robust aggregate demand. In contrast, as equity prices continued to fall and output growth decelerated sharply in the fourth quarter of 2000, the focus of both policymakers and market participants switched for a time to the shorter-term prospects for productivity growth. The preferred outcome was that productivity growth would be sustained, with favourable implications for profits, stock prices and spending. Such an outcome (see Chapter II) would also imply that some of the apparent imbalances in the US economy were more sustainable than might have been thought. Of course, if the maintenance of higher productivity growth meant fewer hours worked, as well as lower employment and household income, the danger remained that consumer confidence might nevertheless be negatively affected.

Uncertainty over productivity growth remained

## Japan

Prices declining  
but interest rates  
raised

Given significant GDP growth and rising industrial production in the spring of 2000, the Bank of Japan faced a difficult question. Should it, and if so, when should it abandon the zero interest rate policy that had been adopted a year earlier? The Policy Board increasingly took the view that the ongoing decline in consumer prices primarily reflected supply side developments, including deregulation and changes in the distribution channels. Downward pressure on prices stemming from a weakness of demand seemed to be diminishing. As the year-on-year rate of decline of prices (excluding fresh food) stayed at  $-0.3\%$  during the spring, and with some indications that a recovery was under way, the target for overnight rates was raised to  $0.25\%$  in August. Although this entailed a slight tightening of monetary conditions, the Bank of Japan argued that they remained stimulatory on balance.

The economy  
slowed ...

During the autumn and winter, however, the economy slowed again and the underlying rate of decline of consumer prices increased. Long-term bond yields, which had been stable during most of the year, fell from  $1.8\%$  in October to  $1.7\%$  in December and reached  $1.1\%$  in early March 2001. This decline suggested that financial markets expected the economy to weaken further. Moreover, it became increasingly apparent that little progress had been made in reducing the stock of non-performing loans, as write-offs were replaced by new non-performing loans.

... in the wake of  
the US slowdown  
and falling equity  
prices

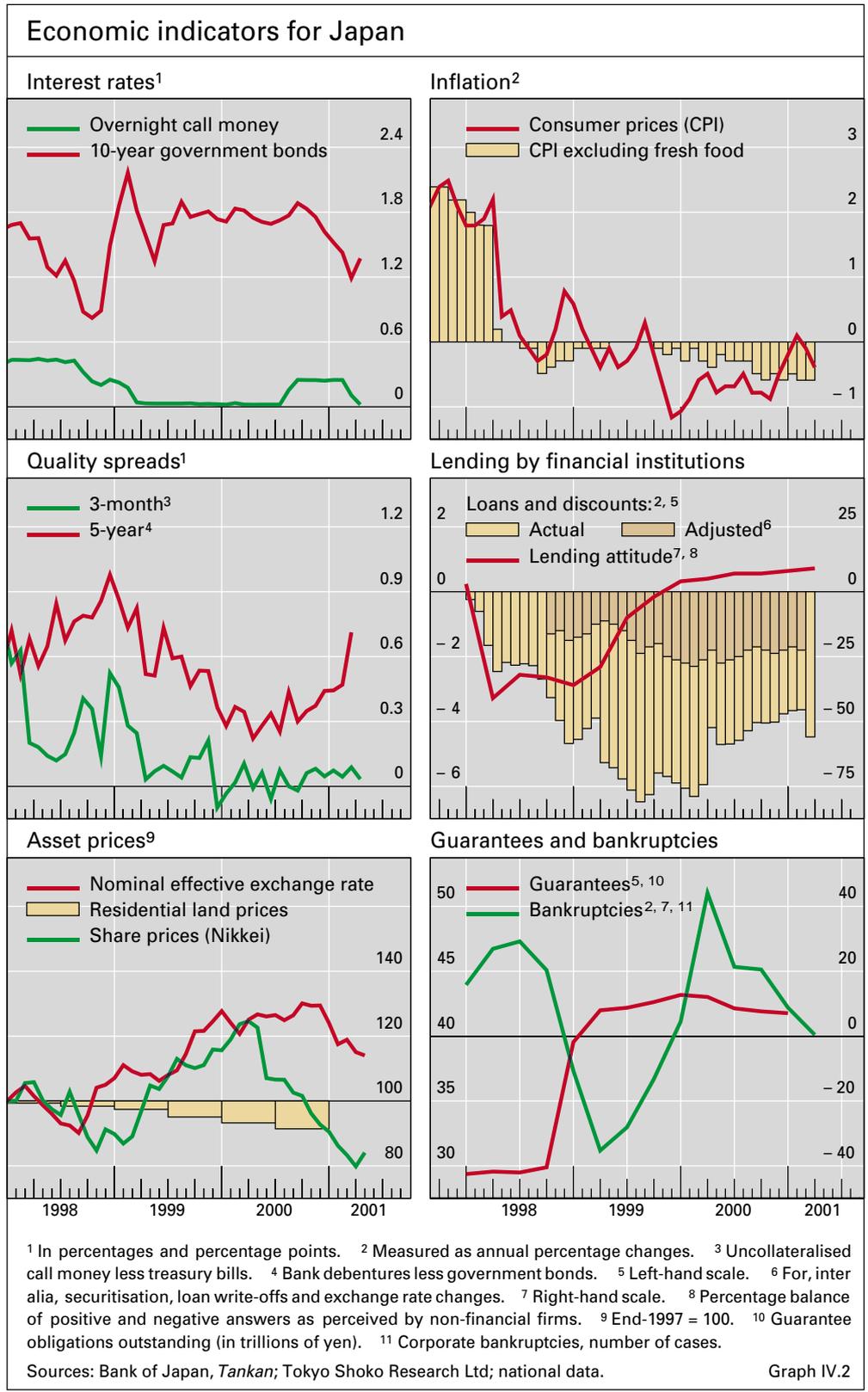
Several factors contributed to these developments. In particular, the sharp drop in exports to Asian countries, due largely to the impact of the US slowdown on these economies, led to a decline in industrial production in the first quarter of 2001. Another factor hindering the incipient recovery was a further erosion of banks' ability to lend resulting from the large fall in equity prices that had started in the spring of 2000. In the past, banks had mitigated the impact of loan losses on profits by realising capital gains on their stock portfolios. However, they now had little leeway to do this as equity prices, measured by the Nikkei index, reached a 15-year low in the spring of 2001.

Policy relaxed in  
February ...

In the light of these worsening economic conditions, and with the growing possibility of the United States entering a recession, the Bank of Japan in early February 2001 took further measures to support the economy. In order to increase the provision of liquidity, it introduced a new lending (lombard) facility under which banks could borrow on request at the official discount rate, which was lowered from  $0.5\%$  to  $0.35\%$ . This facility effectively provided a ceiling for overnight rates in the interbank market. Further policy measures were undertaken in the same month, with the target for overnight rates being reduced to  $0.15\%$  and the official discount rate cut to  $0.25\%$ . As evidence of a pause in the recovery mounted, other monetary policy measures were taken in March. By changing the operating target from the overnight rate to the outstanding volume of current account balances at the Bank of Japan, and by expanding the latter from  $\text{¥}4$  trillion to  $\text{¥}5$  trillion, the overnight interest rate was pushed towards  $0.05\%$ .

... and March

Along with the other policy changes in March, the Bank of Japan announced a “CPI guideline”. This stated that the new measures would remain in force until consumer prices had stopped falling, presumably with a view to generating expectations that interest rates would stay very low for an extended period, thus lowering the entire yield curve. While the Bank



remained cautious regarding the introduction of an explicit medium-term target for inflation, the announcement underlined the growing importance it attached to avoiding further declines in prices.

Quantitative easing

With overnight interest rates essentially at zero, there was no room for a further relaxation of interest rate policy. Moreover, the Bank of Japan felt that the likelihood of quantitative easing supporting economic activity was limited by the weakness of the financial system and the corporate sector. In particular, increases in the monetary base through large-scale purchases of government bonds were unlikely to encourage banks to expand lending, given the state of their balance sheets and the low demand for new loans. In addition, while purchases of foreign exchange might induce a depreciation of the yen, thereby stimulating the export sector, some firms might not be able to pass on any rise in import costs owing to the weakness of domestic demand. A depreciation could therefore reduce profit margins in some sectors, potentially having a contractionary effect on activity. And it could also be problematic in that it would have a negative impact on other economies in the Asian region.

Importance of reforms

With the effectiveness of monetary policy limited, and fiscal policy constrained by the rapid growth of public debt in recent years, the onus of returning the economy to growth was increasingly seen to be on reforms aimed at resolving the widespread balance sheet problems in the financial and corporate sectors. Raising the core profitability of banks on a sustainable basis was also viewed as an essential element of any successful strategy. While low levels of interest rates were welcome in that they supported demand, they were also seen as reducing incentives to restructure since non-performing loans could be refinanced at very little cost. This made it all the more imperative that the low interest rate policy be accompanied by other incentives to push through structural reforms.

## Euro area

The weakening euro a complicating factor

The monetary policy environment in the euro area was also difficult last year, with the outlook for inflation again shifting rapidly. The main challenge facing the ECB up to the autumn of 2000 was to prevent the energy-linked rise in inflation from becoming embedded in wage contracts and triggering second-round effects. Subsequently, the chief problem was to determine to what extent the slowdown in the United States and the world economy more generally would dampen activity and reduce price pressures in the euro area. A complicating factor was the weakening of the euro and the risk that the rate of depreciation could accelerate. While the exchange rate was not a target of policy, it influenced inflationary pressures both directly through import prices and potentially indirectly through inflation expectations (see also Chapter V).

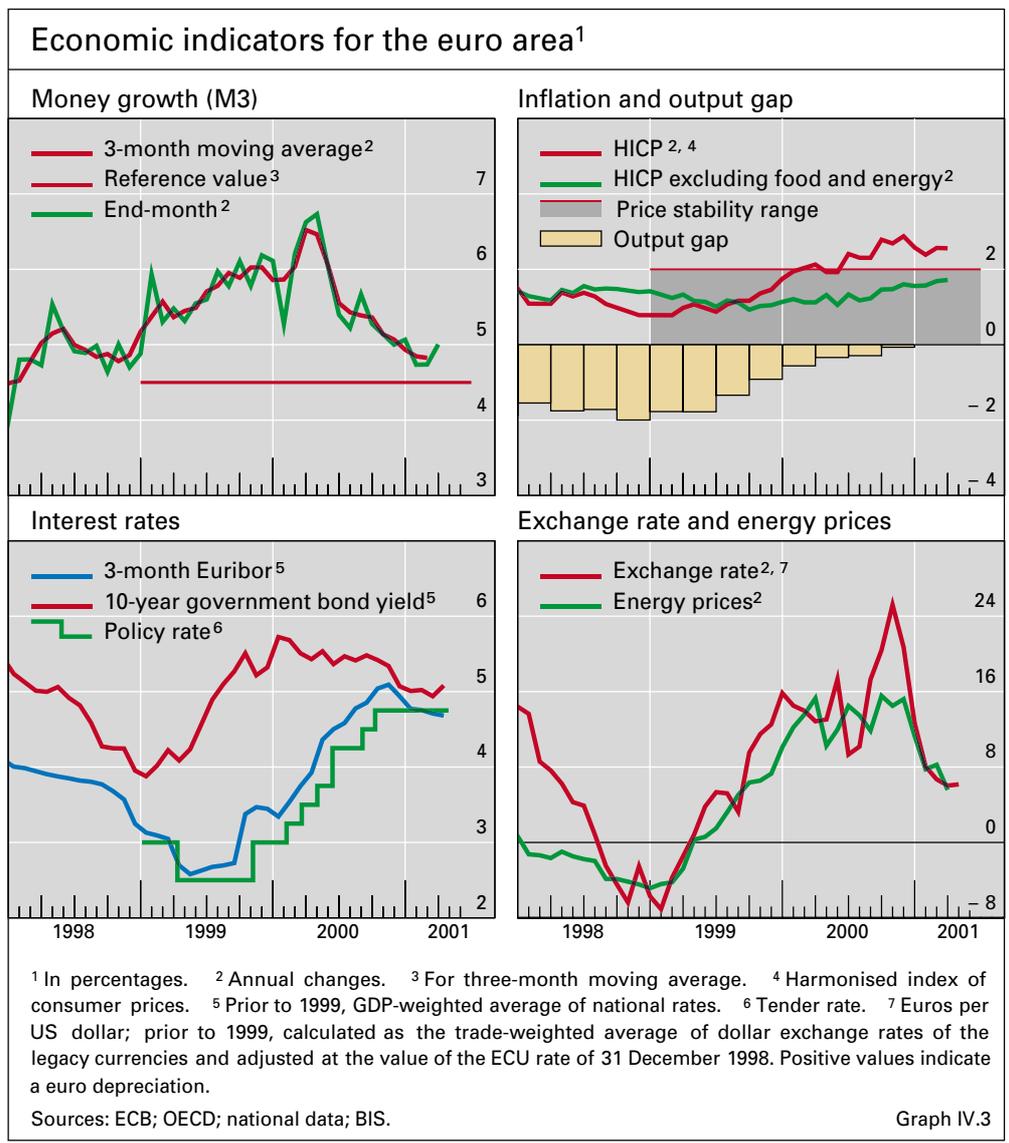
Headline inflation rose in response to oil prices and exchange rate depreciation

In early 2000, the ECB continued the process of gradually tightening monetary policy that it had initiated in late 1999. Headline inflation, as measured by the year-on-year change in the harmonised index of consumer prices (HICP), which had reached a low of 0.8% in January 1999, rose steadily thereafter,

and peaked at 2.9% in November 2000. This acceleration was largely attributable to the surge in oil prices and the cumulative depreciation of the euro by 16% between January 1999 and December 2000. These developments were associated with a marked increase in import prices, which rose by 22% in the 12 months to September 2000. Despite the fact that underlying inflation, as measured by the HICP exclusive of food and energy prices, remained very well behaved, the repurchase rate was raised in a series of steps from 3.0% in early 2000 to 4.75% in the autumn. For some months, the Governing Council maintained a “wait and see” attitude even as the US economy began to slow sharply and inflationary pressures in the euro area showed some signs of abating. With wage increases remaining moderate and the prospects for growth revised downwards, the ECB reduced rates in May 2001.

Several factors appear to have played a role in conditioning the Eurosystem’s policy response. In announcing its policy framework, the Governing Council had stated that a temporary breach of the 2% threshold should not be seen as incompatible with price stability. Nevertheless, given the institution’s limited track record the authorities may have been concerned

Factors conditioning policy



that their credibility would have suffered had there not been at least a limited policy response to the target being breached. In addition, M3 growth above the 4.5% reference value, the first pillar of the policy framework, urged caution. A further influence on monetary policy was the historical sensitivity of wages in many continental European economies to movements in inflation and labour market tightness. With headline inflation rising and unemployment in the euro area continuing to decline from 9.5% in January 2000 to 8.6% in December, there was a possibility of higher inflation expectations and second-round adjustments in labour markets.

Risk of second-round effects

In the event, long bond yields remained stable around 5.5% for much of the year and then started to decline, reaching 4.9% in mid-March 2001. On the one hand, this could be viewed as primarily driven by a similar downward trend in US long rates, a conclusion consistent with subsequent trends to higher bond rates in both the United States and Europe. On the other hand, it could suggest that the upward movements in headline inflation did not influence inflation expectations because the Eurosystem's stability-oriented policy continued to be seen as credible in financial markets and among the general public. The latter interpretation seemed further supported by the absence of evidence to date that the rise in headline inflation had become embedded in labour costs.

Policy remained credible

### Inflation targeting countries

The centrepiece of the monetary framework in many industrial countries is an announced quantitative target for inflation. Indeed, the number of central banks adopting such a strategy increased in the period under review as both Iceland and Norway announced inflation targets in March 2001.

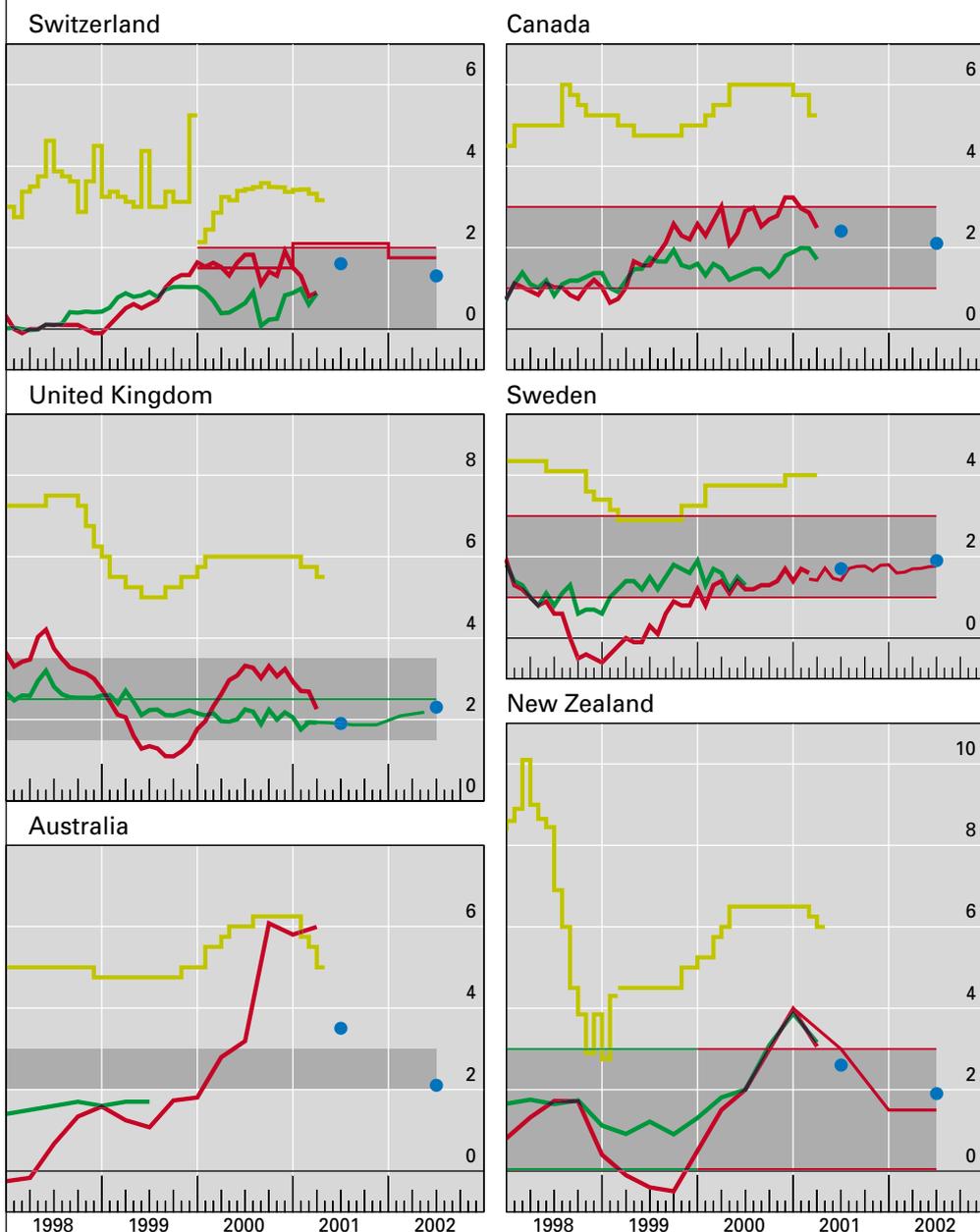
In the first half of 2000, central banks in most countries with inflation targets implemented a final phase of the general tightening of policy which had begun in 1999. Thereafter, they kept interest rates fairly stable up to the end of the year. The Bank of England actually held policy rates steady for nearly all of last year, reflecting the fact that, while domestic demand was strong and labour markets remained tight, there was almost no evidence of increases in underlying inflation rates. The interest rate cycle then turned downwards in early 2001. Policy rates were lowered in Australia, Canada, New Zealand, Switzerland and the United Kingdom, as inflation remained subdued while output growth was forecast to fall below trend largely owing to similar developments in the larger industrial countries.

Interest rates followed the US cycle

In the period under review, the paths of short-term interest rates in the industrial countries targeting inflation resembled that of the US federal funds rate, consistent with a pattern that has been evident for at least the past two years. In fact, most of these countries were at a similar point in the business cycle to that of the United States. This was true of Canada in particular. From November 1999 onwards, almost all changes in official interest rates in Canada followed on the heels of changes in the federal funds rate. With four fifths of Canadian trade conducted with the United States, and with highly connected capital markets, the monetary policies of the two countries often chart a similar, albeit not identical, course.

## Inflation and policy rates in countries with inflation targets<sup>1</sup>

— CPI inflation      — Central bank inflation forecast       Inflation target  
— Underlying inflation<sup>2</sup>      ● Market inflation forecast<sup>3</sup>      — Policy rate<sup>4</sup>



Note: Switzerland does not target inflation but instead uses a broad-based inflation forecasting strategy primarily focused on a numerical target for price stability.

<sup>1</sup> Inflation rates are measured as annual percentage changes. CPI inflation is targeted by Canada, Sweden, Australia (since October 1998) and New Zealand (since 2000), while underlying inflation is targeted by the United Kingdom (and previously also by Australia and New Zealand). <sup>2</sup> For Switzerland and Canada, CPI excluding food and energy prices (for Canada also excluding indirect taxes); for the United Kingdom, retail price index excluding mortgage interest payments; for Sweden, CPI excluding indirect taxes, subsidies and house mortgage interest expenditure; for Australia, CPI excluding seasonal food, petrol, mortgage interest payments, public sector charges and other volatile prices (publication suspended in June 1999); for New Zealand, CPI excluding credit services. <sup>3</sup> Of annual CPI or, for the United Kingdom, underlying inflation; surveys conducted in April 2001. <sup>4</sup> For Switzerland, actual three-month Libor (the target band is set 50 basis points above/below Libor); prior to 2000, lombard rate. For Canada, ceiling of the operating band; for the United Kingdom and Sweden, repo rate; for Australia, cash rate; for New Zealand, cash rate (prior to March 1999, call rate).

Sources: © Consensus Economics; national data.

Graph IV.4

High aggregate demand in 2000

As suggested by the similarity in their interest rate cycles, the central banks with explicit inflation targets had to grapple with common policy issues. Until the autumn of 2000, one of their main concerns was economic overheating, as demand was thought to be outstripping supply. In addition, labour markets appeared to be tight, although generally modest changes in unit labour costs gave little sign of wage increases accelerating above productivity gains. Nonetheless, a number of central banks continued to tighten policy for fear of allowing underlying inflationary pressures to build. The Bank of Canada raised its key policy rate by 50 basis points in May 2000, the fourth increase since November 1999; the Reserve Bank of Australia raised its cash rate by 50 basis points between April and August 2000, on the heels of previous increases amounting to 75 basis points; and the Reserve Bank of New Zealand increased rates in April and May by a total of 75 basis points. The Swedish economy also continued to grow at an above average rate in 2000, although the Riksbank judged it could postpone a further increase in interest rates until later in the year.

Central banks faced similar issues, such as continuing uncertainty over productivity growth ...

A first issue of interest to policymakers was whether the productivity gains observed in the United States since 1995, and believed by many to be largely permanent, would materialise in their economies as well. This was an important question, since uncertainty about the trend in labour productivity made it difficult to assess potential output and inflationary pressures, and thus the appropriate policy stance. In most countries with inflation targets, only small and relatively recent increases in productivity growth could be detected. Moreover, most such increases seemed to be explicable by cyclical factors. The one important exception was Australia, which had enjoyed very high productivity growth throughout the 1990s. Nevertheless, in the United Kingdom some members of the Bank of England's Monetary Policy Committee (MPC) stated that they had leaned towards cutting interest rates during 2000 on the presumption that long-term productivity growth had risen. The postponement of rate increases during 2000 in Sweden also reflected the belief that the level of sustainable productivity growth had increased, in part due to the strong performance of the domestic IT sector.

... the impact of oil price increases ...

A second issue was how to treat the further sharp increase in oil prices after mid-2000, which subsequently pushed headline inflation rates above the targets of most central banks. Interest rates were not raised in response, as it was generally felt that the oil price shocks were transitory. However, a number of inflation targeting central banks made it clear that, while they would not react to the first-round effects of these price shocks, they would consider tightening policy further if indicators pointed to the emergence of second-round effects. The Reserve Bank of Australia held interest rates steady even as a combination of tax increases and the jump in oil prices pushed headline inflation up sharply in the third quarter. In Canada, long-term inflation expectations barely rose with the increase in oil prices, and remained near the midpoint of the Bank of Canada's inflation target range. Towards the end of 2000, declines in oil prices alleviated pressure on headline inflation in most countries, which significantly reduced the probability that second-round effects of earlier price increases would materialise.

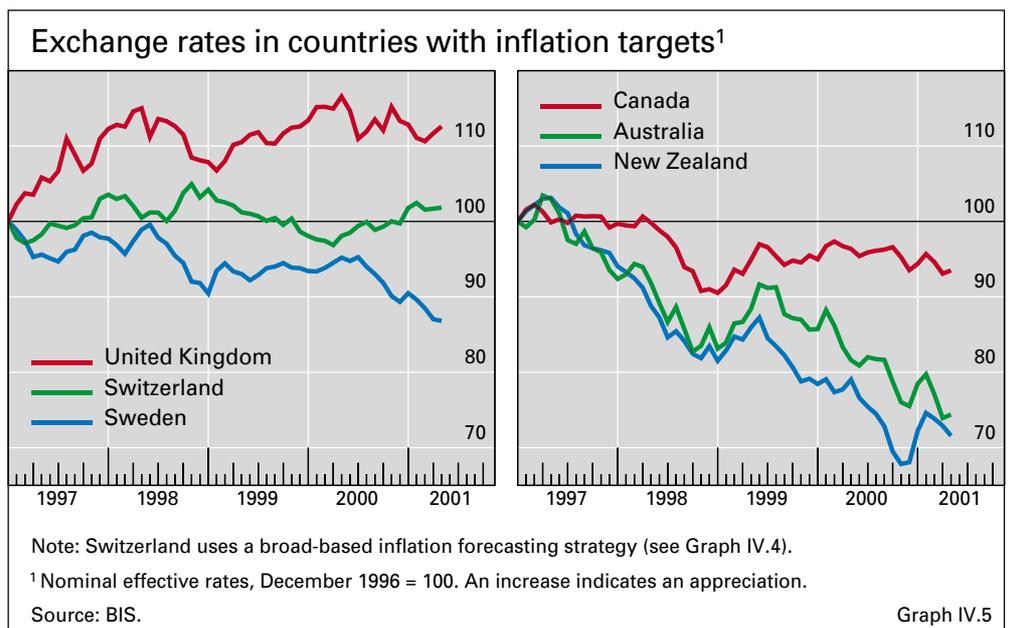
A third issue for policymakers during the period related to exchange rate developments. For most of 2000, one of the main concerns in the United Kingdom was the growing sectoral imbalance caused by the high value of the pound against the euro. This was reflected in poor growth performance in some exporting sectors, while at the same time domestic demand grew rapidly. A decline in interest rates might have precipitated a depreciation of the pound, thereby helping exporting industries, but this would have fuelled a further increase in an already worryingly high level of domestic demand. Given continuing expectations that its aggregate inflation target could be met, the Bank of England held the main policy rate steady at 6%.

... and the puzzling course of exchange rates

The exchange rate also attracted attention in Australia and New Zealand, as the currencies depreciated very significantly. In the event, the ultimate influence of the depreciations on the stance of policy was less than might have been expected from past experience. In each country, the central bank judged that the pass-through of exchange rate changes to inflation had declined recently, and was therefore more inclined to wait and see whether currency movements would feed through to core inflation rates. In contrast, the Swiss National Bank felt that the degree of pass-through remained high. It therefore welcomed the appreciation of the Swiss franc vis-à-vis the euro as a means of curbing the inflationary impulses in the first half of 2000 that had arisen from the previous weakness of the nominal exchange rate.

In the second half of the period under review, the inflation outlook became more benign as projections of output growth were revised downwards in most countries. This largely reflected an expected decline in the pace of world economic activity, but also the previous tightening of monetary policy. However, the anticipated drop in growth was less than in the United States, as was the perceived likelihood of a particularly sharp downturn. This view was supported by fewer signs of financial imbalances in most of these economies, notably in credit and asset markets, compared

Projections of output growth revised downwards in early 2001



with the United States. Even so, indications of sectoral imbalances were apparent in some cases. In Australia, housing prices reached exceptional levels, and in Canada, both personal and corporate debt were near historical highs as a percentage of GDP (see also Chapter II).

In the event, the combination of projections of weaker growth and stable core inflation prompted many central banks to cut interest rates. In Canada, there was a perception that a slowdown could be under way due, in part, to a decline in US demand for Canadian exports. Moreover, there were also concerns that growth in consumption and investment could fall, in line with developments in the United States. As a consequence, the Bank of Canada began lowering interest rates in January 2001. At its meeting in January, the MPC at the Bank of England still judged that the risk of higher inflation was roughly balanced against the danger of below par growth taking hold. However, the Bank eased policy in February, after inflation had fallen temporarily to almost 1 percentage point below its target; and further cuts of 0.25 percentage points each were made in April and May. In Australia, with domestic demand already weak, fourth quarter slowdowns in economic activity in both the United States and Japan added support to the view that the decline in growth might be sustained. The Reserve Bank reduced its cash rate three times between February and April, viewing the cuts as still consistent with inflation falling to within the 2–3% target range over the subsequent two years.

Interest rates  
lowered in  
Canada ...

... the United  
Kingdom ...

... and Australia

## Rethinking how to conduct monetary policy

The most important change in the macroeconomic environment in the last two decades has arguably been the worldwide process of disinflation. While many factors have no doubt contributed to the current state of low and steady inflation (see Chapters II and III), the growing commitment by central banks to achieve and maintain price stability has been instrumental in bringing it about.

Problems finding  
reliable indicators

Despite their success in controlling inflation, central banks have faced the problem of finding reliable indicators to guide them in setting their policy rates. Since the breakdown of the Bretton Woods system and the widespread adoption of flexible exchange rate regimes, the search for such indicators has been a high priority given central banks' need to manage monetary policy more actively. In the 1970s, monetary targets were widely adopted to serve a dual role as explicit nominal anchors for guiding expectations and information variables for conducting policy. However, in most countries, financial liberalisation and innovation eventually reduced the reliability of money aggregates as indicators of future economic developments. Today, among the major industrialised countries only the two-pillar strategy of the Eurosystem still gives a prominent role to monetary indicators. Through the 1980s, central banks increasingly relied on a variety of information variables for guiding policy decisions, with real economic indicators, such as measures of the underlying production capacity and the potential output of the economy, being given renewed emphasis. The subsequent adoption and pursuit of announced inflation targets in many countries provided a

transparent and credible vehicle through which to implement a broad-based monetary strategy. Nevertheless, making the objective of policy clearer probably made the identification of reliable policy indicators more rather than less urgent.

In itself, the diverse and changing experience of central banks would suggest that a common set of reliable indicators for monetary policy purposes remains elusive. Moreover, the growth of financial markets in recent years has broadened the set of information variables at the disposal of policymakers, increasing the likelihood of heterogeneity. In addition to having important implications for the tactics of monetary policy, the increased significance of financial markets has also materially complicated the communication of policy changes to the public.

*The choice of policy indicators*

Unexpectedly low inflation in many industrial countries since the mid-1990s has forced central banks to re-examine traditional indicators and the models used to assess inflationary pressure. The United States, where real GDP growth has remained far above, and unemployment far below, historical norms, provides the most striking example. Since a standard view of the inflation process among many central banks is based on the Phillips curve, abnormal behaviour of output and unemployment relative to their perceived long-run equilibrium values has been a key reason for the recent systematic overprediction of inflation.

Traditional indicators have been misleading ...

One of the principal problems has been growing uncertainty regarding potential output. In recent years, much attention has been focused on understanding the behaviour of total factor productivity, in particular the extent to which measured increases reflect secular rather than cyclical factors. However, it is not always recognised that estimates of both the capital stock and the labour force are just as critical in assessing potential output. Measuring the capital stock is always fraught with difficulty, but it becomes even more so in periods of rapid technological progress, which can quickly render capital obsolete and its use unprofitable, thereby complicating the assessment of capacity utilisation rates. Likewise, shifts in labour force participation rates and demographic trends can have an impact on the effective supply of labour and therefore on the productive capacity of the economy. Moreover, calculation of the NAIRU, which is also critical in determining the contribution of labour to potential output, may be biased by influences (such as lower commodity prices or a stronger exchange rate) that temporarily reduce inflationary pressures and inflation expectations. Problems such as these have led many analysts to fall back upon purely statistical methods to provide estimates of potential output. And, while many central banks have gone down this path, they are understandably hesitant to base policy on such measures, recognising that these provide no information about the economic forces underlying the estimates.

... due in part to difficulties in projecting productivity growth

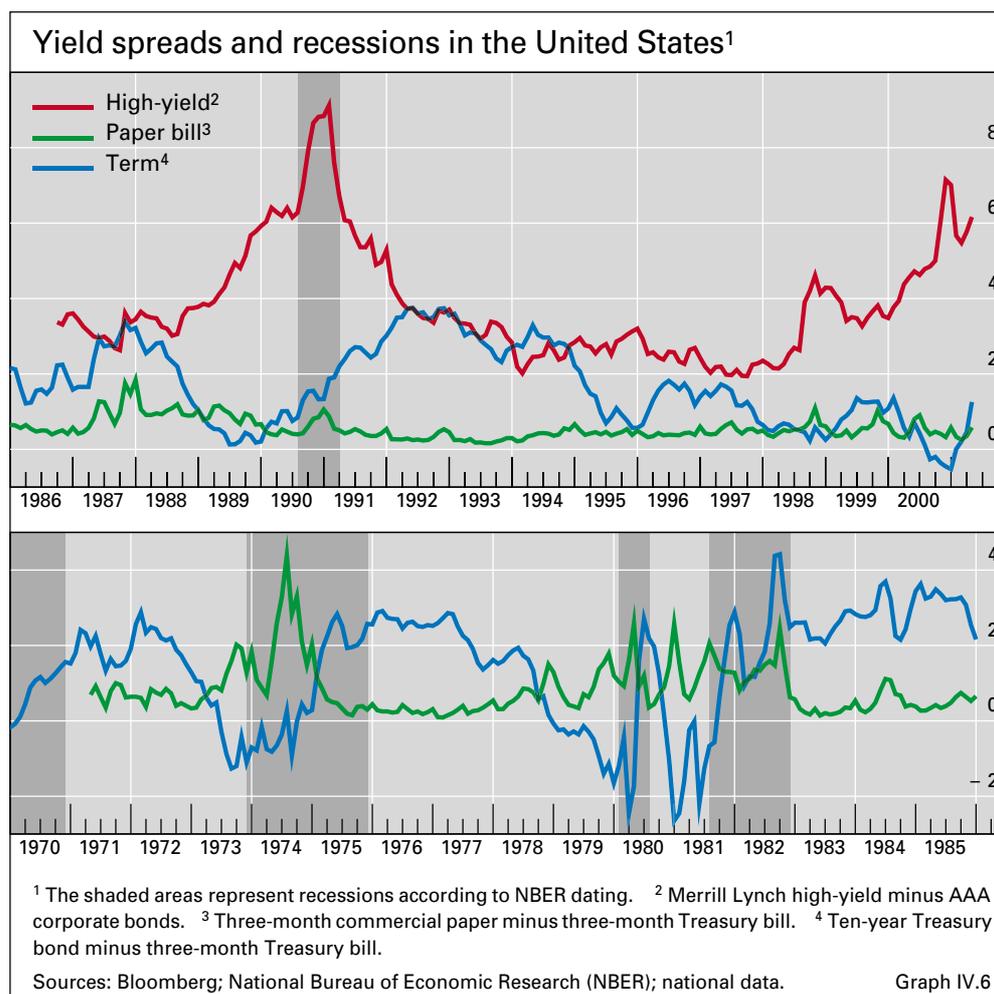
Partly in the light of the difficulties of interpreting real economic indicators, and with the growing importance of financial markets in the transmission mechanism of monetary policy, central banks have increasingly

Financial indicators may be more useful

paid attention to financial indicators as a guide for monetary policy. One set of examples includes various yield spreads. In the past, the term spread, that is, the difference between long-term bond yields and short-term rates, proved a useful indicator of future economic activity in many countries. In addition, in the United States, the difference between commercial paper and short-term Treasury bill rates also seemed to have predictive power for output growth. Movements in both of these spreads have been closely related to changes in monetary policy; for instance, a sharp decline in the term spread leading to an inverted yield curve has usually accompanied a significant increase in policy rates. Because most recessions since the early 1970s appear to have been precipitated by a tightening of monetary policy to fight inflation, the term spread has been a good indicator of impending weakness in economic activity.

For much the same reason, however, this spread would fail to predict slowdowns not primarily induced by monetary policy. The recession in the United States that began in 1990 seems to be a case in point. On that occasion, it was a sharp rise in the spread between high-yield and investment grade corporate debt that appeared to foreshadow the slowdown. There is, in fact, some evidence that this spread has also been a useful indicator of output growth in the more recent past. The likely reason is that it can reflect

Quality spread



changes, some of which may be induced by monetary policy, in credit conditions that influence investment by small and medium-sized firms. Arguably, the high-yield spread is potentially a more useful indicator than other interest rate differentials to the extent that its movements are not specifically tied to the course of monetary policy, but also reflect other developments driving the business cycle.

Nominal exchange rate changes and related import price developments have also been utilised in assessing inflationary pressure in many countries. These movements have direct effects on inflation as well as an influence on wage setting behaviour and changes in non-tradable goods prices. However, as discussed above and in Chapter II, recent experience suggests that the exchange rate pass-through into inflation has diminished or been delayed. This would seem to reduce the potential importance of these indicators for monetary policy.

Exchange rate

Finally, as mentioned earlier, monetary or credit aggregates have played a varying role in the conduct of monetary policy over the past 30 years. Central banks, with a few notable exceptions, have increasingly expressed doubts about their indicator properties for near-term movements in both inflation and output. At the same time, their information content seems likely to differ across financial systems. For instance, broad monetary aggregates are likely to be more useful in countries where banks are the main external source of investment funding. By contrast, in countries where firms fund themselves mainly by issuing equity and debt, such as the United States or the United Kingdom, other indicators such as broad credit aggregates, equity prices and risk spreads are likely to be more relevant. Regardless of these differences, the monitoring of credit and monetary aggregates may still be useful in assessing longer-term threats to financial stability (see Chapter VII).

Monetary aggregates

*Communicating with financial markets*

Besides broadening the range of potential indicators for monetary policy, the rapid development of financial markets has also posed communication challenges for central banks. In particular, the authorities have generally made greater efforts to be transparent with markets, with a view to avoiding market surprises. For instance, while in the 1980s some central banks, including the Federal Reserve and the Reserve Bank of Australia, conducted monetary policy by guiding overnight interest rates towards an undisclosed target, central banks now typically announce policy changes immediately. They also provide more and timelier information about the reasons underlying policy changes. Moreover, some central banks, including the ECB and the Bank of Japan last year, have started to announce their projections or forecasts for future inflation and other variables.

Policy changes announced immediately

Despite this, questions remain as to whether communication could be improved further. One controversial issue concerns whether central banks should prepare markets for future policy actions, for instance by announcing a “bias” as is done by the FOMC, providing other indications about their next policy move or even publishing their projections for the likely future course of interest rates. Doing so may allow central banks to influence longer-term

Announcing possible future policy actions ...

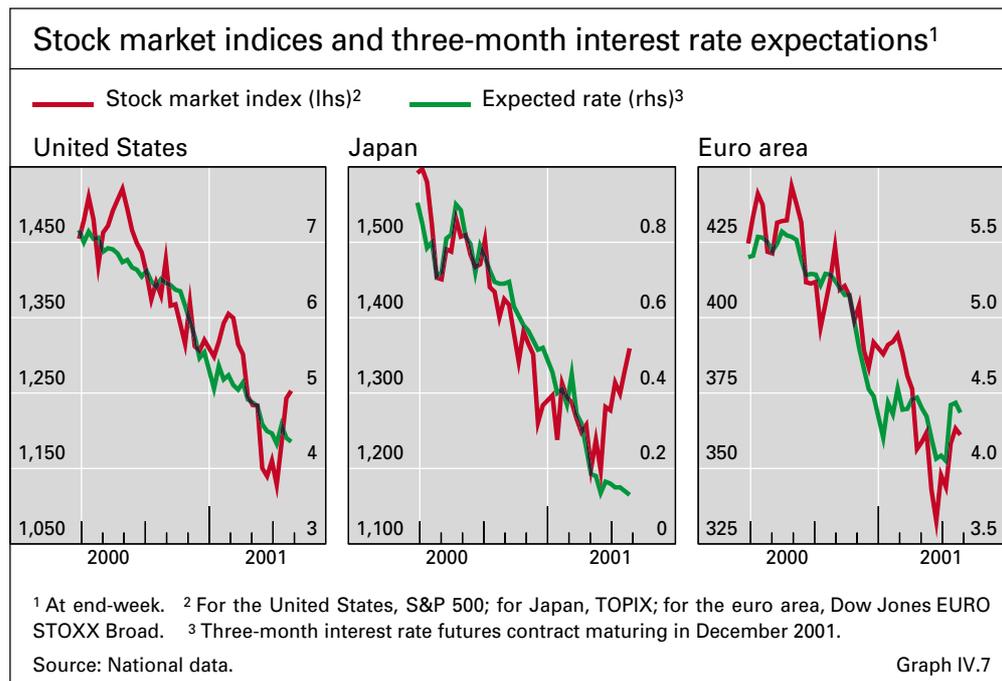
interest rates more effectively and hence strengthen the transmission of monetary policy impulses to the economy. However, several factors suggest that this may be both more difficult and less desirable than was perhaps previously thought.

... may yield little gain ...

First, having to decide on both current policy rates and the likeliest course of future interest rates greatly complicates the decision-making process and may prove unmanageable, especially if policymakers meet frequently. Second, policymakers may not have a single view of what their likely future decisions might be. Many central banks conduct monetary policy through a formal or informal committee that reviews the state and probable near-term evolution of the economy. They then reach agreement on the current level of interest rates, either by consensus or by voting. Under such an arrangement, it would be difficult to adopt a firm stance about future interest rate changes. Third, deviating from earlier announcements regarding likely future interest rate levels could damage a central bank's credibility. Even if deviations were warranted by new information, markets might simply take a different view about the significance of unfolding events. Hinting at future policy moves may thus unnecessarily constrain the central bank's options.

... except, perhaps, under extraordinary circumstances

These considerations suggest that little may be gained by seeking to provide precise indications about possible future policy changes except, perhaps, under extraordinary circumstances. For instance, this might be appropriate in situations in which interest rates are far from their normal levels, such as in the United States in the early 1990s, when the federal funds rate was kept low because of financial sector headwinds. In such situations, returning rates to more normal levels without intimating such changes to the markets would risk engendering greater market volatility. However, rather than announcing possible future policy changes, it might still be preferable to outline under what conditions interest rates would be adjusted and let



financial markets form expectations by judging for themselves whether those conditions are in place. The Bank of Japan effectively followed this strategy in indicating that the relaxation of monetary policy in March 2001 would be maintained until year-on-year changes in the price level became zero or positive.

Another important issue regarding communication strategies is how central banks can convey to the markets which factors have the strongest influence on policy decisions when many variables change at the same time. For instance, equity prices often fall when output growth is expected to decline, but central banks also typically reduce interest rates in response to the expected slowdown. Such measures may be misinterpreted as indicating that policy is geared to supporting asset prices. This danger increases if the wealth-to-income ratio is high, equities are a large share of wealth and real activity is a key factor in the inflation outlook. That this problem is of practical importance is evident from Graph IV.7, which shows that, as equity markets fell in the three major economies last year, market expectations of future short-term interest rates were also lowered.

#### *The tactics of monetary policy changes*

The growth of financial markets has also had implications for the tactics of monetary policy, in particular the timing of policy changes. As mentioned above, in many central banks a formal monetary policy committee makes interest rate decisions at preannounced points in time. As noted by the Bank of Canada last year, when it moved to a schedule of fixed announcement dates, this reduces uncertainty for market participants since they do not have to worry about policy moves on other dates except under extraordinary circumstances. However, if a fixed meeting schedule is indeed used, a question still arises concerning the pros and cons of policy changes between meetings, such as the interest rate cuts by the Federal Reserve in early January and mid-April 2001. Although the need for interim interest rate changes depends on the frequency of policy meetings – policy committees that meet twice a month, as at the Bank of Japan and the ECB, may have little need for interim policy changes – central banks will always wish to retain this option. They may particularly wish to do so in the case of disturbances to financial markets that arise quickly and can lead to dramatic changes in the economic outlook.

The desirability of changing policy in the inter-meeting period is related to the broader issue of whether central banks should try to avoid surprising financial markets. In general, central banks should act consistently over time and communicate their intentions clearly in order not to spring surprises. An unanticipated change in policy might end up unsettling markets if it is interpreted to mean that the central bank has negative private information or has lost control of developments. Nevertheless, occasions may still arise when policy intentions and market expectations diverge sharply. Obviously, a central bank should not refrain from pursuing policies it deems appropriate simply because they are not expected by financial markets. Nevertheless, this fact may be relevant to the choice of tactics. On the one hand, there

Fixed policy  
announcements

Concern over  
surprising markets

may sometimes be merit in central banks taking firm policy measures, even between policy meetings, in order to clarify their intentions and not to appear hostage to market views. On the other hand, the above-mentioned concerns about unsettling markets imply that it might be desirable for central banks to implement the desired but unexpected changes in interest rates only gradually.

A closely related issue is whether central banks should normally smooth interest rates. A central bank engages in smoothing if, in response to new information, it distributes changes in interest rates over time. Thus, in this case, one would expect a number of small interest rate changes in the same direction rather than a single large one. There is in fact circumstantial evidence that central banks do engage in this practice (Table IV.1). However, the observed pattern may be due to gradual shifts in the central bank's view of the state of the economy rather than a consciously gradual shift in the policy instrument itself.

One argument in favour of distributing interest rate changes over time is that policy changes may have stronger effects on financial variables and aggregate demand if they are expected to continue in the same direction. Smoothing may thus make monetary policy more potent, permitting the central bank to achieve the desired effect on demand while reducing interest rate volatility. A second argument in favour is that it makes it easier for market participants to ascertain how central banks respond to news. Sudden, large switches in the direction of interest rate changes could make it more difficult for observers to judge which information is most important in conditioning the overall stance of policy. A third, and related, argument in favour of smoothing is that it can also guard against losses to central bank credibility if frequent rate reversals are interpreted by markets as revealing a lack of

Evidence of  
interest rate  
smoothing

Arguments for ...

Meeting frequency and interest rate smoothing				
	Frequency of policy committee meetings <sup>1</sup>	Average absolute change in policy rate <sup>2</sup> between reversals	Average number of policy rate changes between reversals	Average number of weeks between reversals of policy rate
Australia	monthly	3.5	5.6	111
Canada	8 times a year	2.1	6.7	52
Euro area	bimonthly	1.5	3.0	39
<i>Germany</i>	<i>bimonthly</i>	<i>0.4</i>	<i>4.9</i>	<i>20</i>
Japan <sup>3</sup>	bimonthly	.	.	.
Sweden	monthly	1.6	8.5	60
United Kingdom	monthly	2.0	4.8	65
United States	8 times a year	2.0	6.0	84

Note: For Australia, cash rate (1990–2001); for Canada, ceiling of the operating band (1994–2001); for the euro area, rate for standing facility (1999–2001); for Germany, repo rate (1990–98); for Japan, overnight call money (uncollateralised, 1990–2001); for Sweden, repo rate (1994–2001); for the United Kingdom, repo rate (1990–2001); for the United States, target for federal funds rate (1990–2001).

<sup>1</sup> Current practice. <sup>2</sup> In percentage points. <sup>3</sup> During the period March 1991–August 2000, there were no policy reversals.

Table IV.1

confidence or inconsistency in policymaking. However, there is also an argument against smoothing interest rates. If central banks overestimate the need for gradualism in setting policy, warranted policy changes may be enacted with a delay, which in turn could accentuate swings in inflation and output.

... and against smoothing

The growth of financial markets also means that market conditions may exert a greater influence on the timing of monetary policy moves. One example is provided by situations in which market liquidity is limited (such as over the year-end or in special cases such as the Year 2000 changeover) and central banks might abstain from changing interest rates in order to avoid triggering sharp market reactions. A second example concerns episodes of market turbulence. In such instances, central banks must judge the significance of the disturbance, particularly with regard to potential ramifications for the real economy. If central banks do decide to take action, intervention can range from selectively providing liquidity to reducing interest rates, as the Federal Reserve did following the stock market decline in 1987 and during the episode of heightened market volatility following the Russian debt moratorium in 1998. Such actions, however welcome, still run the risk of being misinterpreted as indicating that policymakers are responding to the level of asset prices, which also tend to fall in periods of stress.

Market conditions and the timing of policy changes