

## IV. Monetary policy in the advanced industrial countries

### Highlights

With inflation approaching zero in some countries and prices even declining in others, issues regarding the appropriate conduct of monetary policy in conditions of near price stability took on new importance in the major industrial countries last year. One relevant question is how central banks can prevent a decline in prices from generating extrapolative expectations of future price declines. The maintenance of average inflation rates close to zero for extended periods of time will also raise issues regarding the relative merits of price level versus inflation targeting. A further concern is whether the efficacy of monetary policy is reduced in periods of stable or declining prices. The turbulence in international financial markets following the Russian crisis last August also raised the question of the extent to which policy should react to developments in asset markets in the absence of data suggesting that they have started to influence prices of goods and services.

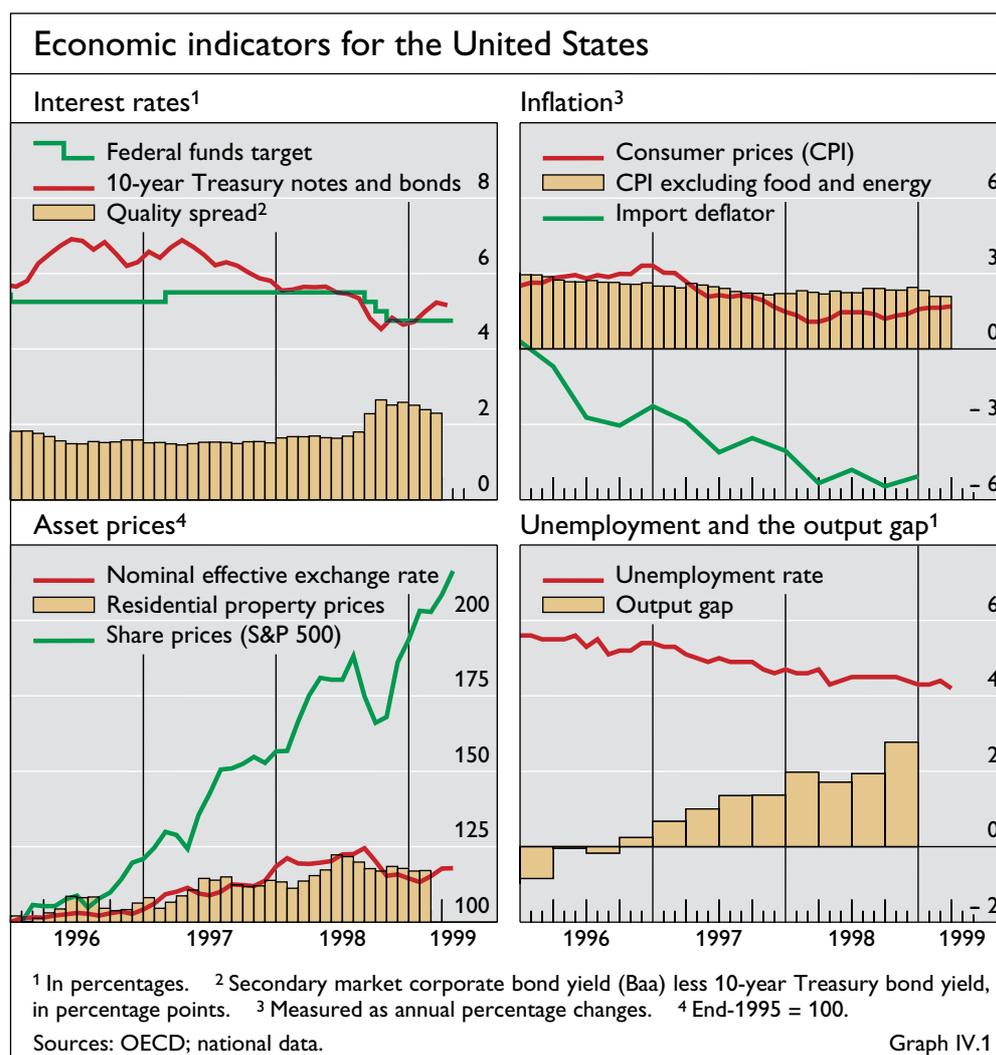
Monetary conditions in the United States were eased despite strong real growth and tightening labour market conditions in the light of a benign outlook for inflation and in the expectation that the economy would slow. The difficulties of conducting monetary policy at very low inflation and with volatile financial markets were most evident in Japan, where the authorities faced a sharp worsening of conditions in both the domestic economy and financial markets. While short-term interest rates were reduced effectively to zero, serious weaknesses in the financial system appear to have reduced the responsiveness of banks and households to policy stimuli.

A unique event in the period under review was the introduction of the euro in January 1999. In this context, policy attention last year was focused first on the need to determine at what level interest rates should converge during the transition to EMU. Although economic conditions in several smaller euro area countries were relatively strong, the weakness of activity in Germany and Italy, which together account for about 50% of euro area GDP, allied with uncertainty about the prospects for global economic recovery, led to convergence at 3%. This entailed interest rate cuts even in the countries that previously had the lowest rates. The European Central Bank faced the important question of how to conduct policy in the entirely new environment brought about by the establishment of the single currency. To this end, the ECB adopted a policy framework consisting of a numerical definition of price stability, which is the primary objective of monetary policy, a reference value for M3 growth, which serves as a key policy indicator, and a broad-based assessment of the inflation outlook. This framework thus combines elements of policy strategies based on monetary aggregates and inflation targeting.

Monetary policy in the countries targeting inflation was also eased last year, as the central banks took measures to ensure that inflation remained in, or returned to, the target band despite the slowing of activity and the concomitant reduction in price pressures. This relaxation occurred despite an exchange rate depreciation in most of these countries due to falling commodity prices. The authorities generally interpreted the exchange rate pressure as constituting a real disturbance that monetary policy should not respond to. In Canada the fall in the exchange rate was rapid, raising the risk that extrapolative expectations would take hold, and leading the Bank of Canada to increase interest rates temporarily.

## United States

In assessing the outlook for inflation, the Federal Reserve has recently had to focus carefully on conditions in financial markets along with more traditional indicators of economic developments. With real GDP growth at 3.9% in 1998, output rising increasingly above previous estimates of potential and unemployment reaching its lowest rate for almost 30 years, policymakers



Policy unchanged until late summer ...

had to take account of the possibility of growing inflationary pressures. Moreover, rising asset prices raised concerns that a financial bubble might be developing, a consideration which also warranted a bias towards tightening. However, with the global slowdown in economic activity leading to sharp falls in energy and primary commodity prices, and with the dollar appreciating until August, inflationary pressures remained subdued and the policy stance was therefore left unchanged until late summer.

... when the Russian crisis led to volatility in financial markets

The Russian financial crisis in mid-August triggered considerable uncertainty in financial markets in the United States and elsewhere, which had potentially important implications for domestic demand conditions and the outlook for inflation. By reducing household wealth and raising the cost of capital, sharply falling equity prices could have undermined consumer and investment spending. Moreover, large risk spreads, high levels of volatility and declining liquidity in many market segments raised the probability of substantial losses for financial institutions and an associated risk that credit conditions would tighten. To shield the economy from these effects and to provide some insurance against an unexpectedly sharp downturn, the Federal Reserve cut interest rates in September, October and November by a total of 75 basis points to 4.75%. Following the policy easing, financial market conditions improved. Equity prices, which had fallen by 19% between mid-July and end-August, rebounded and gained 34% by end-March 1999. Monetary policy was subsequently left unchanged in the absence of signs that inflationary pressures were rising despite continuing rapid real growth and tight labour markets.

Policy eased in autumn

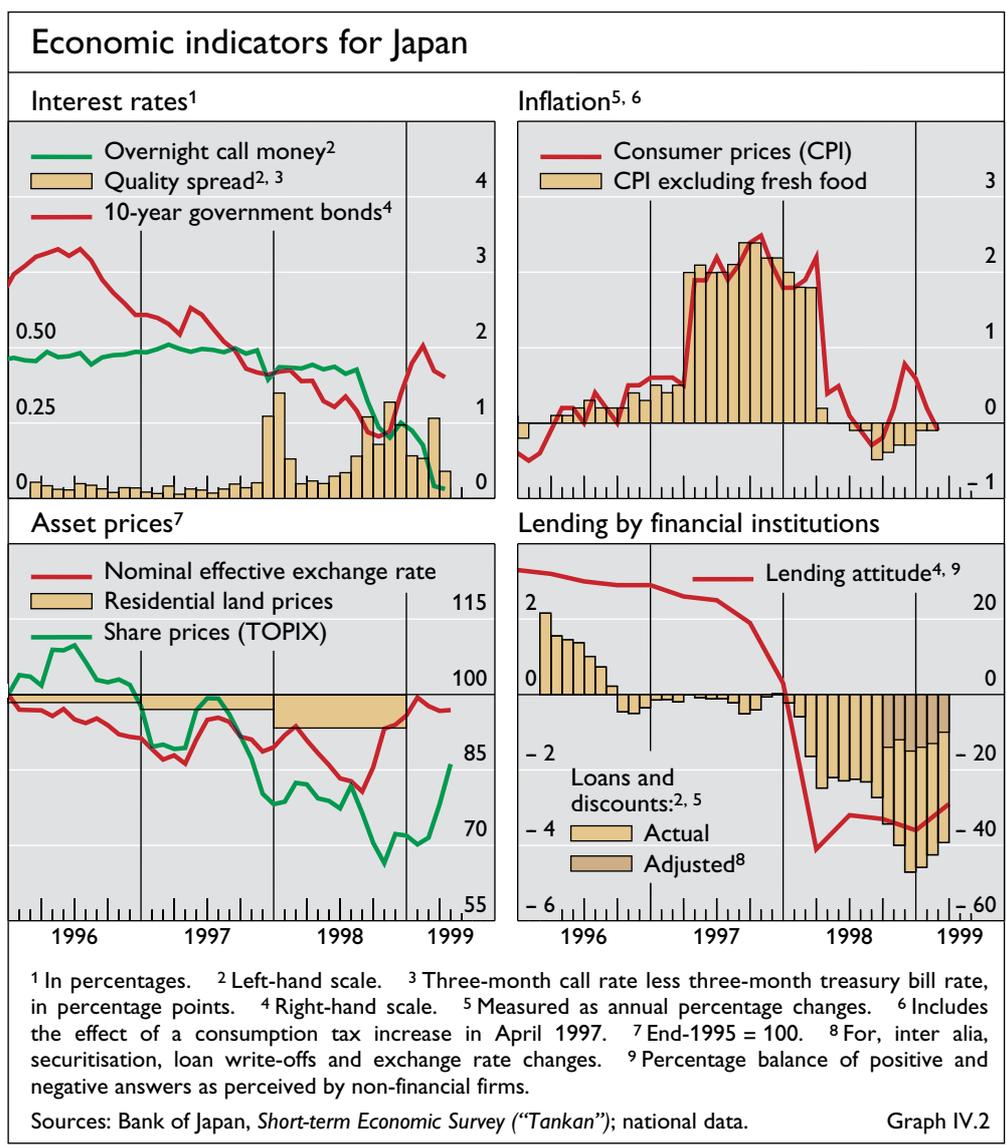
Episodes of large swings in the prices of financial assets, such as that which took place last autumn, present a challenge for monetary policymakers. The effects of financial disturbances are immediately apparent in sharp increases in trading volume and market volatility and in a flight to safety and liquidity. However, given the time lags between shifts in financial market sentiment, real activity and inflationary pressures, the broader macroeconomic effects may at first not be clearly identifiable. Policy may therefore be inadvertently too tight or too lax. This was illustrated in some countries following the steep fall in equity prices in October 1987. A number of central banks opted at that time to relax monetary conditions in response to concerns that the equity price declines would lead to a slowdown of economic activity. With hindsight, however, the effects of the fall in equity prices on aggregate demand were overestimated, and the easing of policy may have contributed to the subsequent upswing in both activity and inflation. This episode thus suggests that, while taking monetary policy measures in response to market turbulence is desirable, it is important to redirect the focus of policy to domestic price stability once financial conditions have settled sufficiently.

Important to focus on domestic price stability once financial conditions settle

## Japan

Conditions deteriorated further ...

The Bank of Japan last year had to contend with the possibility that a deflationary cycle might develop given high levels of excess capacity and corporate debt and continuing serious problems in the banking sector. Overall economic conditions deteriorated further, with real GDP contracting by 3% in



1998 and persistent downward pressures on price indices. With import and oil prices falling in response to global developments and the yen appreciating from October onwards, falls in consumer prices were recorded for the first time since 1995–96. Domestic wholesale prices, which have been declining since 1991, continued their downward trend.

The worsening of the economic outlook came at a time when the traditional interest rate channel of monetary policy seemed likely to be of limited effectiveness. While the discount rate was held at 0.5%, the Bank of Japan decided in September to reduce the overnight call rate, which had previously been kept slightly below the discount rate, to 0.25%. In addition to being designed to prevent deflationary pressures from developing further, this easing of policy was judged appropriate to maintain the stability of financial markets. Additional relaxations of policy took place in February 1999, when the call money rate was reduced to 0.15% or lower, and early March, when massive liquidity injections by the Bank of Japan effectively pushed the overnight rate down to zero.

... and the call money rate was reduced effectively to zero

Policy measures to facilitate firms' financing

During the turmoil in financial markets in Japan and elsewhere last autumn, concerns about counterparty risk triggered sharp increases in the spread between three-month interbank and treasury bill rates. In response, the Bank of Japan supplied ample liquidity to financial markets. While this led to a narrowing of the spread between interbank and treasury bill rates, the spread nevertheless remained substantial. Despite the acceleration in the expansion of the monetary base in recent years, the growth rate of M2+CDs, which is the key monetary aggregate in Japan, has remained subdued. Banks have been increasingly unwilling to extend credit in an environment where the solvency of both customers and some of the banks themselves has been questioned. To improve the credit allocation mechanism, the Bank of Japan took steps to facilitate firms' financing operations by expanding its repo operations in commercial paper, which in turn enabled banks to increase their activities in the primary commercial paper market. In addition, the Bank established a lending facility for refinancing part of the new loans provided by financial institutions in the fourth quarter.

Political pressure can be counterproductive

The adoption of an increasingly stimulatory policy stance has to some extent been offset by the sharp appreciation of the yen in October and the rapid rise in long government bond yields from November onwards. The latter, which has been attributed to the large increase in planned issuance in fiscal 1999 and the announcement that the Trust Fund Bureau would stop outright purchases, also led to higher corporate bond yields and long-term prime lending rates. If sustained, such developments could depress economic conditions further. To limit upward movements in long interest rates, political pressure was exerted on the Bank of Japan to step up its purchases of government bonds. Such pressures can be counterproductive if they generate the perception that monetary policy is part of the broader political process. This could have adverse effects on the credibility of central banks, and potentially lead to higher rather than lower interest rates.

During the year the government took several measures to restore soundness to the financial system. These included temporarily nationalising Long-Term Credit Bank and Nippon Credit Bank as well as encouraging the merger of several other institutions and persuading surviving banks to restructure in exchange for public funds. While market reaction to these measures has been favourable, as indicated by the disappearance of the "Japan premium" and a rebound in bank share prices, the remaining issue is whether banks will succeed in carrying out the restructuring measures that they have pledged to take. In particular, a conflict might arise between their commitments to increase domestic lending and at the same time reduce costs. A sharp cutback in the international operations of Japanese banks might help resolve this problem, albeit at the risk of creating others.

## Euro area

Monetary policy in the countries participating in EMU was dominated during 1998 by the need for interest rates to converge at a common level by the end of the year. A complicating factor was the fact that, despite the considerable

nominal convergence that had been achieved in previous years, marked differences remained between economic conditions in the different countries. In the end, policy rates converged at 3%. This entailed small interest rate reductions in the countries with the lowest interest rates, but quite large cuts elsewhere.

Interest rates converged at 3%

In the months before the introduction of the euro in January 1999, the ECB announced its monetary policy framework incorporating a numerically defined final objective of price stability, a reference value for money growth and a broad-based assessment of the inflation outlook.

### *Economic and policy developments*

Economic conditions in the countries forming the euro area remained unequal during the period under review, with continued strong growth in several smaller countries and weak overall conditions in some of the larger ones. Prior to January 1999 individual central banks had to balance domestic inflation considerations against the need for interest rate convergence.

In Ireland extremely strong growth for the fifth year in a row led to a further rise of output above potential and mounting inflationary pressures. During the autumn, however, the real economy started to slow and inflationary pressures abated. With inflation falling from a peak of 3.2% in August to 1.7% in December and a need to reduce interest rates for convergence reasons, monetary policy began to ease in October. Growth was also very strong in Finland and the Netherlands, leading to estimated output gaps becoming positive. Inflationary pressures in Finland, which had built up gradually in 1997 and early 1998, started to decrease during the spring following a slowdown in import prices, and inflation fell below 1% by year-end. Inflation in the Netherlands also moderated and averaged 2% for the year.

Ireland

Finland and the Netherlands

The output gap also closed in Portugal and headline inflation accelerated, rising from 2.3% in late 1997 to 3.2% by end-1998. The continued strong output growth and associated price pressures were due in part to interest rate convergence. With policy-controlled interest rates being cut from 6% to 3% between mid-1997 and end-1998 and with inflation accelerating in the same period, real interest rates fell by over 4 percentage points. A similar process, although less pronounced, took place in Spain. With policy rates reduced from 5.25% to 3% between mid-1997 and end-1998 and headline inflation only marginally lower, real short-term rates fell by some 2.5 percentage points in the same period.

Portugal

Spain

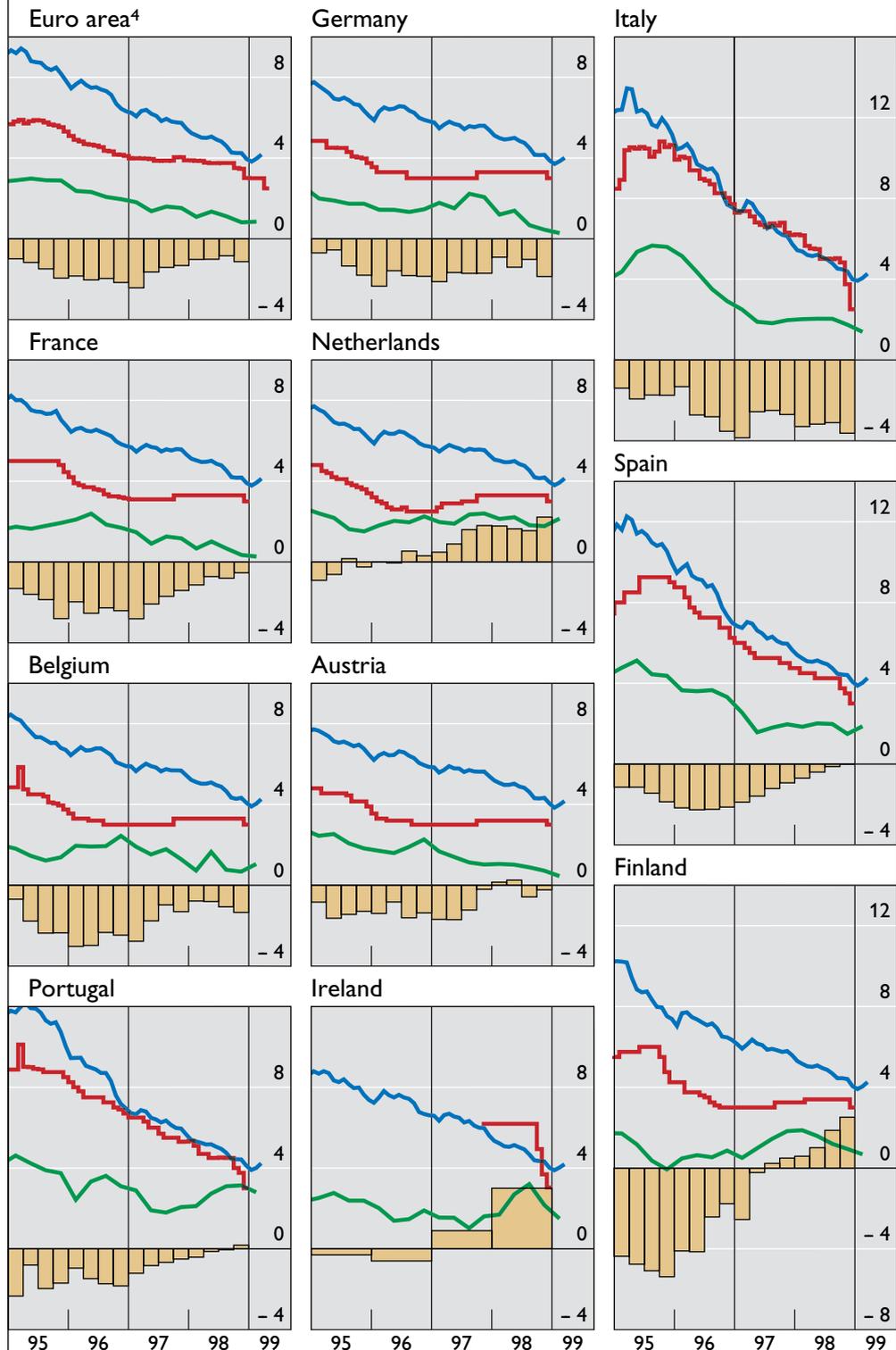
Among the three largest economies, economic conditions were by far the strongest in France. With growth averaging 3.2% in 1998, the output gap narrowed considerably. Nonetheless, inflation declined to 0.3% for the year. By contrast, economic conditions in Germany and Italy remained weak on average and worsened during the year. After strong growth in the first quarter in Germany, Austria and Belgium, GDP growth moderated thereafter, averaging around 3% for the year. In Italy growth was low, at only 1.4%. With sizable output gaps remaining essentially unchanged in these countries, inflation pressures generally abated, with rates ranging between 0.4% in Germany and 0.7% in Austria. In Italy inflation fell to 1.7%.

The three largest economies: France, Germany and Italy

## Output gaps, inflation and interest rates in the euro area

In percentages

Output gap    Inflation<sup>1</sup>    Policy rate<sup>2</sup>    Bond yield<sup>3</sup>



<sup>1</sup> Four-quarter change in consumer prices. For the euro area, harmonised definition as from 1996; for the individual countries, national definitions. <sup>2</sup> For Belgium, central rate; for the Netherlands, rate for special loans; for Portugal, intervention rate; for the other countries, tender rate. <sup>3</sup> Representative government bonds (usually 10-year). <sup>4</sup> Excluding Luxembourg.

Sources: ECB; OECD; national data; BIS estimates.

Graph IV.3

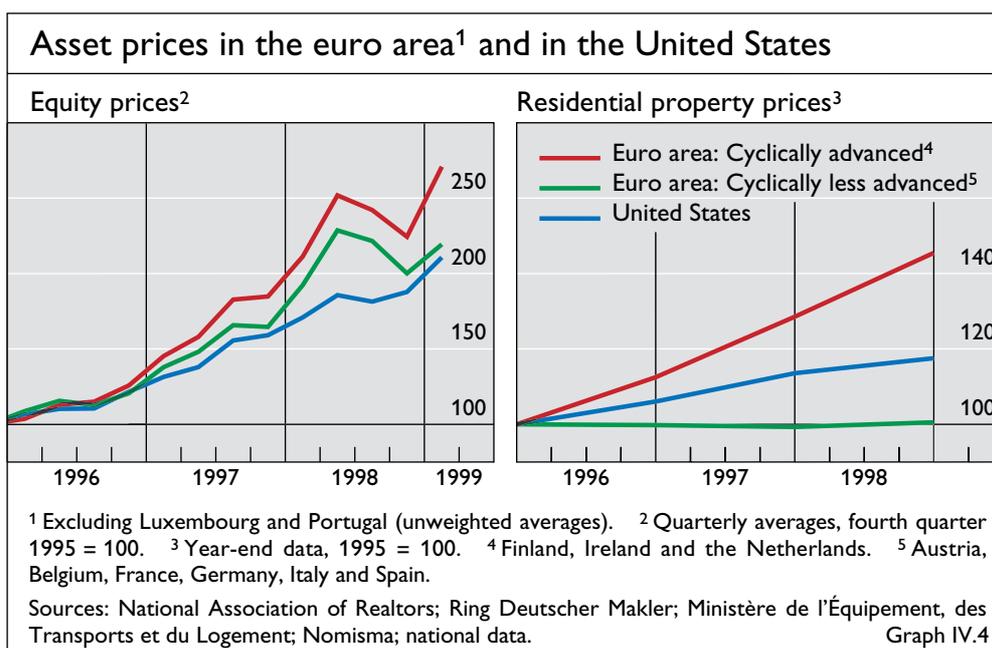
In the light of these developments and with the ECB's monetary policy strategy regarded as credible in financial markets, interest rates in the euro area were allowed to converge at 3% after a coordinated reduction of rates in December 1998. In April 1999, the ECB lowered its policy rate further to 2.5% in a context of subdued inflation pressures.

While policy was set to reflect overall economic developments in the euro area, the process of convergence has led to a situation in which interest rates have fallen the furthest in Ireland, Italy, Spain and Portugal, where inflation rates remain relatively high. The implications of the observed regional differences in inflation rates in the euro area should, however, not be overemphasised. Although differences in inflation rates may threaten the sustainability of the exchange rate commitment in a system of fixed but adjustable rates, they have no comparable implications in a single currency regime. Moreover, the importance of the diversity in regional inflation rates is further limited to the extent that they reflect differences in the demand for, and the rate of increase in prices of, non-traded goods. On the other hand, with nominal exchange rate changes no longer possible, adjustment to any past relative price movements is shifted entirely to labour and goods markets. Promoting domestic wage and price flexibility in response to declines in competitiveness within the euro area has thus become all the more important.

A further source of potential concern is disparate asset price developments. As Graph IV.4 shows, asset prices have in general risen more in Finland, Ireland and the Netherlands, where economic conditions have been strong, than in the rest of the euro area. While there is a broad consensus in the central bank community that monetary policy should not be directly geared to asset price developments, the possibility of divergent asset price movements suggests that a common monetary policy could also lead to regional property cycles, like those observed within the United States and Canada.

Interest rates fell the most where inflation was relatively high

Divergent asset price developments

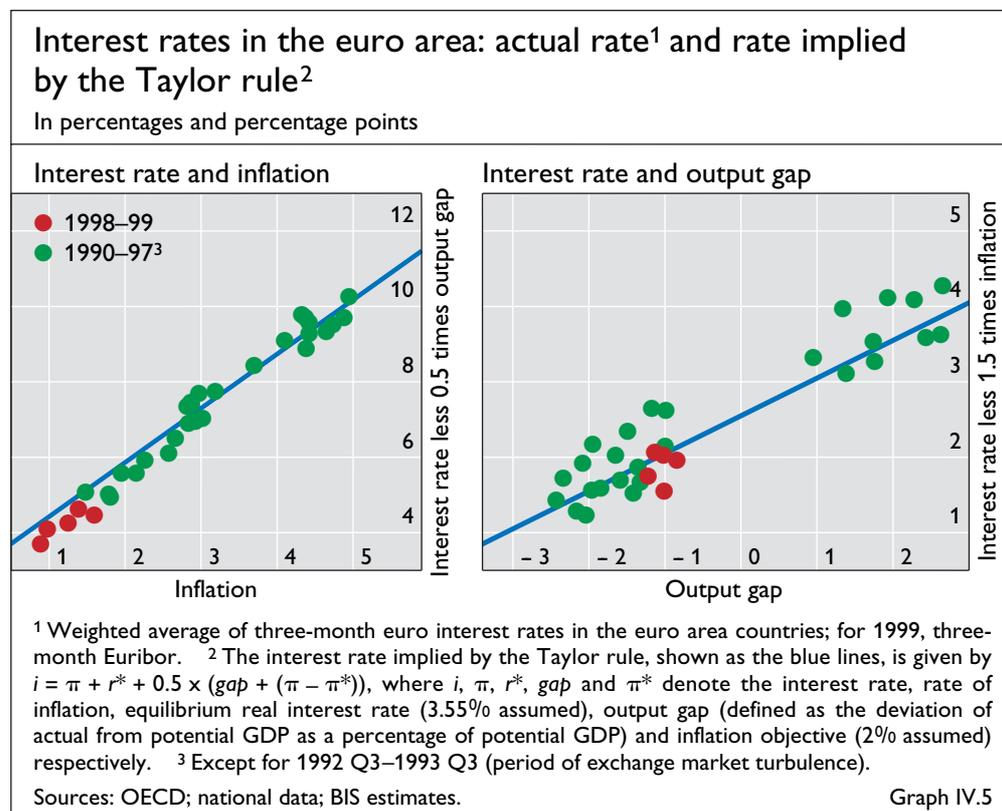


## Monetary policy strategy of the ECB

While interest rates moved as suggested by the Taylor rule ...

As noted in last year's Annual Report, interest rates in the euro area countries, as measured by a weighted average of three-month interest rates, have in the past displayed a close relationship with similarly weighted averages of output gaps and headline inflation. In particular, short-term interest rates appear to have moved as suggested by the so-called Taylor rule in that they have risen by 1.5 percentage points per 1 point change in headline inflation, and by 0.5 percentage points per 1 point increase in output above potential. Graph IV.5 illustrates that this empirical relationship remained close last year and implies that the relaxation of monetary policy in the period under review was well explained by movements in output gaps and inflation in the overall euro area.

Despite the similar evolution over time of average EMU-wide interest rates and those implied by the Taylor rule, the ECB does not rely on this relationship in conducting policy. Indeed, several considerations suggest that it would be hazardous for it to do so. First, there is considerable uncertainty about the "equilibrium level" of real interest rates, which, moreover, might well shift over time in response to a range of factors, including changes in the monetary policy regime. For instance, if lower inflation is associated with lower risk premia, equilibrium real interest rates may recently have fallen. Setting policy on the basis of past relationships between interest rates, inflation and output gaps therefore risks leading to inappropriate monetary conditions. Second, EMU is likely to induce structural changes which could imply that earlier correlations between output gaps and inflation become unreliable. Given a single currency, wages may become more sensitive to competitive



conditions within the euro area and less sensitive to output gaps. With the inflationary pressures arising from a given output gap reduced, it would be appropriate for the ECB to react less to output gaps than would be suggested by past correlations between interest rates and gaps. Third, while current inflation rates and output gaps contain information about near-term inflationary pressures, a range of other factors – including economic conditions abroad, changes in fiscal policy and import prices – play a critical role in the inflation process. Since simple policy rules do not fully capture the complexity of the inflation process, they are no substitute for policy judgement.

... there is no substitute for policy judgement

During autumn 1998 the ECB announced the framework it would use to pursue monetary policy in the new and still changing environment created by the introduction of the euro. At the core of the framework lies a primary objective of price stability. Publicly defining what is understood by price stability is helpful in that it provides a clear criterion by which the public can judge the conduct of monetary policy, thereby increasing policy transparency and making it easier to hold the ECB accountable for any deviations of inflation from this objective.

Policy framework announced with price stability as the primary objective ...

The objective has been quantified as a year-on-year change in the harmonised index of consumer prices (HICP) in the euro area of 0–2% in the medium term. Several aspects of this choice of index are notable. It implies that the ECB has adopted the practice of many central banks of focusing on CPI measures of inflation, which are available with short time lags, are well understood by the public and are not revised over time. The use of an EMU-wide measure of inflation also highlights the fact that the ECB's conduct of policy will be focused on euro area rather than national economic developments. By emphasising the medium-term horizon of policy, the ECB recognises that its ability to control movements in inflation due to temporary factors – such as commodity price shocks and tax changes – is at best limited. Finally, this definition implies that periods of prolonged declines in the level of the HICP would not be deemed consistent with price stability.

In pursuing price stability the ECB intends to follow a two-pronged strategy. One element of this is a reference value for M3 growth, set at 4.5% for 1999. This choice reflects the fact that money growth is a structural determinant of inflation in the long run. The ECB has explained that this reference value should not be interpreted as a target since this would require the growth of the monetary aggregate to be controllable in the short run, which is not likely to be the case. Thus, deviations of money growth from the reference value will not necessarily trigger automatic movements in the ECB's policy instruments. Rather, such developments will prompt deeper analysis of the sources of the deviations and whether they in fact constitute a risk to price stability.

... a reference value for M3 growth ...

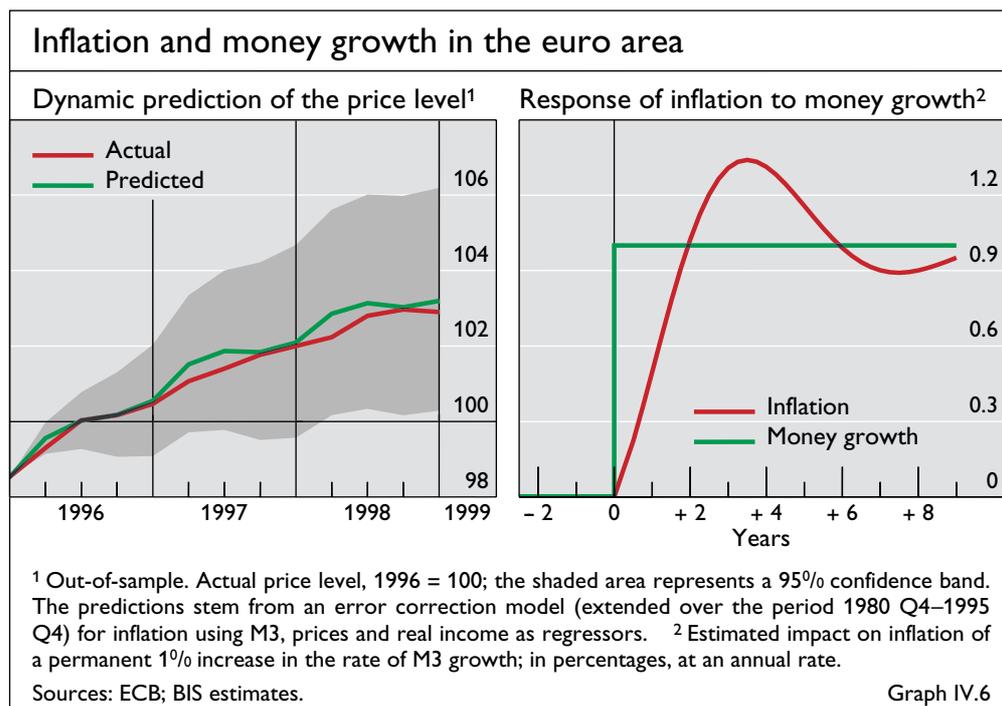
The indicator value of broad money growth presupposes that monetary disequilibria influence future inflation rates. By one estimate, this is the case. The left-hand panel of Graph IV.6 shows dynamic out-of-sample predictions for the euro area price level, based on a simple forecasting model. The model emphasises the monetary origins of inflation, but disregards variables such as energy and import prices which tend to play an important role in determining

price levels in the near term. Despite its simplicity, however, it predicts the euro area price level out-of-sample reasonably well. The right-hand panel shows the model's predictions of the response of inflation to a permanent 1% increase in the growth rate of euro area M3. The dynamic patterns indicate that while money growth has little impact on near-term inflation, this relationship is important over the medium term. Of course, these results do not suggest that monetary targeting would be desirable or even feasible, in particular since the stability of the estimated relationship is not guaranteed. Nor do they rule out the possibility that other forecasting models which do not incorporate money growth could predict future inflation even better. Yet they do lend some empirical support to the notion of using the growth rate of euro area M3 as an information variable for inflation two to three years ahead.

... and a broad-based inflation outlook

The second element of the policy strategy is a broad-based assessment of the outlook for inflation drawing on a wide range of economic indicators. These include inflation forecasts made by the ECB, international organisations, national authorities and market participants. However, in contrast to some but certainly not all central banks operating with explicit inflation targets, the ECB does not intend to publish its inflation forecasts. Doing so is not seen as usefully enhancing the transparency and clarity of the monetary policy strategy, given the uncertainties inherent in the forecasting process.

The use of the reference value for M3 growth together with an assessment of the inflation outlook suggests that in practice the ECB will conduct monetary policy in much the same pragmatic way as the Deutsche Bundesbank. Historically, the Bundesbank responded strongly to movements in inflation, given its final objective of price stability, and downplayed the importance of deviations of money growth from target when monetary relationships were disturbed by temporary factors that signalled little risk to



the inflation outlook. It should also be noted that many central banks that have adopted explicit inflation targets also pay considerable attention to monetary aggregates as indicators of cyclical conditions. The policy framework announced by the ECB is thus in some respects not dissimilar to an inflation targeting regime, albeit one in which inflation forecasts are not announced and M3 growth serves as a key information variable.

## Countries with explicit inflation targets

Monetary policy in countries with explicit inflation targets was also influenced by the slowdown in world economic activity, the decline in commodity and energy prices and the increased volatility in global financial markets. Monetary conditions were eased overall during the year under review. With headline and underlying inflation close to the lower edge of the target ranges, the authorities felt it important to demonstrate their commitment to react as firmly to inflation below as above target. Such a symmetrical approach helps build and maintain public support for monetary policy, upon which the independence of central banks ultimately relies.

Influence of world slowdown, commodity and energy price falls and financial market volatility

In the United Kingdom, where monetary policy had earlier been tightened repeatedly in the light of strong growth and concerns about inflation, a process of policy easing started in October 1998. Interest rates were cut from 7.5% to 7.25% in view of deteriorating prospects for world output and UK exports, a sharp change in the pricing of risk in financial markets and a weakening of business and consumer confidence. As incoming data confirmed that the economic slowdown was more marked than first anticipated, policy was progressively relaxed by a further 2 percentage points to 5.25% by April 1999.

United Kingdom

In Canada inflation was close to the lower edge of the inflation control range last year. While the fall in the external value of the Canadian dollar led to marked increases in import prices for many non-energy consumer goods and services, these effects were mitigated by excess supply in the domestic economy and continued declines in energy and commodity prices. Given the resource intensity of the Canadian economy, the fall in commodity prices during the year exerted downward pressure on the currency. This pressure strengthened considerably following the Russian crisis in August, when turmoil in international financial markets also spilled over to the Canadian economy. With risk premia in bond markets rising abruptly and the currency depreciating, the Bank rate was increased by 1 percentage point to 6% in late August despite the tendency of the economy to slow in response to developments in Asia. This measure succeeded in stabilising the markets, and interest rates were subsequently reduced in steps of 0.25 percentage points following each of the interest rate cuts in the United States in September, October and November, and also in March 1999. Although interest rates rose on balance during 1998, the overall stance of monetary policy was relaxed considerably under the influence of the decline in the Canadian dollar.

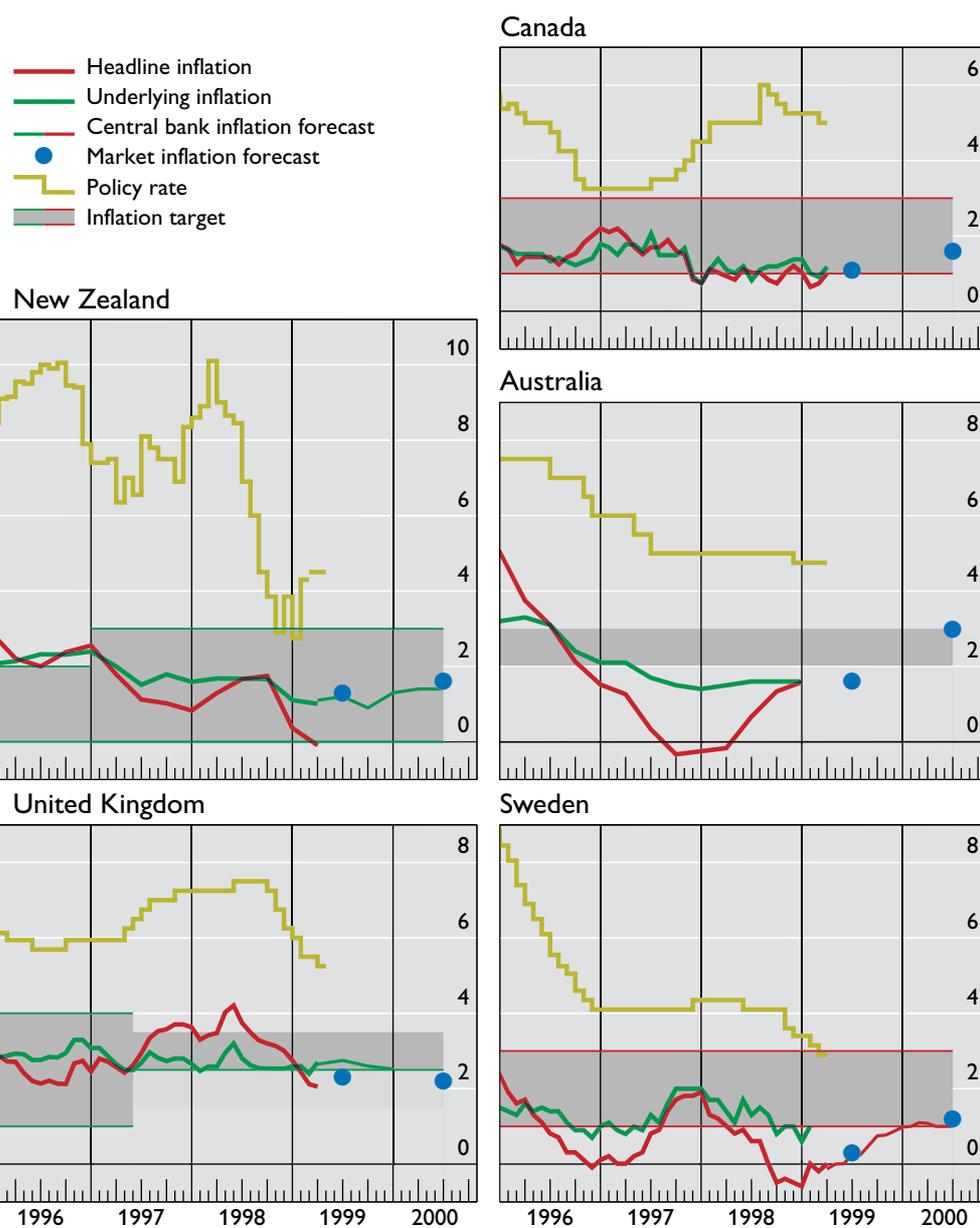
Canada

Inflation in Australia, where monetary policy aims at achieving an average inflation rate of 2–3% over the cycle, started to rebound but remained below 2%. Although the depreciation of the Australian dollar has led to increases in

Australia

## Inflation and policy rates in countries with explicit inflation targets

In percentages



Note: Inflation rates are measured as the annual percentage change in CPI. For New Zealand, underlying inflation is based on CPI excluding credit services, and the policy rate is the official cash rate (prior to March 1999, call money); for an explanation of underlying inflation and policy rates in the other countries, see last year's Annual Report, Graph IV.7 and Table IV.1. The market inflation forecast is of annual headline (for New Zealand and the United Kingdom, underlying) inflation; surveys conducted in March 1999.

Sources: © Consensus Economics, London; national data.

Graph IV.7

the wholesale prices of imports, the CPI has not risen by as much as historical relationships would have suggested. In the light of the favourable inflation outlook and expectations that the worsening of global economic conditions and the Asian crisis would dampen the robust growth in Australia, interest rates were reduced by 0.25 percentage points to 4.75% in December in an effort to support activity.

In New Zealand the easing of overall monetary conditions, as measured by an average of interest and exchange rates, that had started in late 1996 continued last year in response to the benign outlook for inflation, generated largely by the sizable excess capacity that had developed during the earlier slowdown. Unusually, however, most of the easing occurred through falls in interest rates rather than through depreciation of the exchange rate. Following the recent turbulence in international financial markets and the associated rise in risk aversion, investors have tended to unwind short positions in several currencies. This has supported the New Zealand dollar, as have market perceptions that the cycle of monetary easing may be over.

New Zealand

In Sweden, where the economy slowed and headline inflation fell below zero under the influence of falling mortgage interest rates, monetary policy was relaxed during the period under review. With inflation predicted to remain below the 1–3% tolerance band over the time horizon of one to two years used by Sveriges Riksbank, the repo rate was reduced in a series of cuts from 4.35% in June 1998 to 2.9% in March 1999. Since the exchange rate also fell in the second half of 1998, monetary conditions eased still further.

Sweden

#### *Exchange rates and monetary policy*

The recent experiences of countries with explicit inflation targets illustrate that the exchange rate plays a critical role in the monetary policy transmission mechanism. Given the link between the exchange rate and domestic prices, a rise in policy-controlled interest rates affects inflation faster and to a greater extent the more open the economy is. This effect arises through two different channels – a direct channel via the cost of imported goods that appear in the CPI, and an indirect channel via the effect of real exchange rate changes on aggregate demand. This observation raises important policy issues. Since the direct exchange rate channel operates relatively quickly, central banks in more open economies could in principle target inflation more narrowly and with a shorter time horizon. However, trying to offset a domestically generated price level disturbance by influencing the exchange rate might require pronounced movements in nominal and real exchange rates which could have marked effects on economic activity. Moreover, it could also create a danger of instrument instability. To limit these risks, central banks which target inflation have typically adopted a gradualist approach, and thus offset any movement of inflation away from the desired level only over time. In some cases, the time horizon has been lengthened as experience of the effects of exchange rate changes has accumulated. The Reserve Bank of New Zealand now operates policy with a time horizon of 18–24 months, as opposed to 6–18 months when inflation targeting was introduced. Allowing lags to operate is also appropriate if there is uncertainty about the strength of the transmission channels and the state of the economy. Moreover, such an approach helps limit the number of reversals of monetary policy. This may be desirable given that it is generally difficult to explain to the public that a change in the direction of policy should be seen as a reaction to new information rather than an acknowledgement of past policy mistakes.

The exchange rate plays a role in the transmission process ...

... and influences inflation through two channels

Problems of offsetting domestic price disturbances via the exchange rate

Use of MCIs

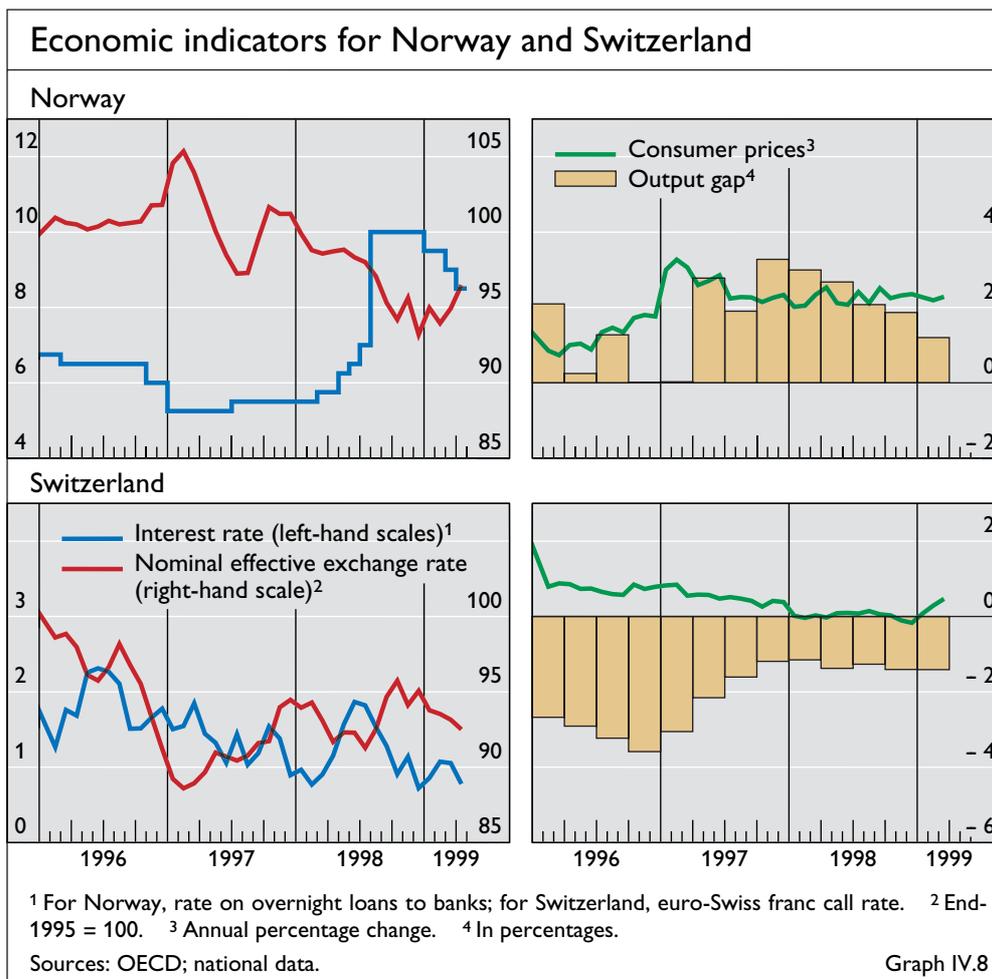
The existence of an exchange rate channel in the monetary transmission mechanism is also of importance in judging and determining the overall stance of monetary policy since both the exchange rate and interest rates affect aggregate demand, the output gap and inflationary pressures. Some central banks have even made use of a monetary conditions index (MCI), defined as a weighted average of a short-term interest rate and an exchange rate, as both a policy instrument and a measure of changes in the stance of policy. Given such an approach, changes in the exchange rate are more likely to be met by offsetting movements in short-term interest rates to keep the MCI at the desired level.

However, it is well recognised by central banks that monetary policy should not respond automatically to an exchange rate movement. Rather, the appropriate response depends on the source of the exchange rate change: whether it is due to real economic changes to which monetary policy should not react, or to inflationary disturbances to which it should react. One problem with the explicit use of an MCI is that it may mislead market participants into believing that monetary policy will automatically react to movements in the exchange rate. The fact that the anticipated policy response does not materialise may then contribute to a sentiment in the market that the central bank has lost control of developments. Large downward movements of exchange rates may therefore give rise to extrapolative expectations. In this situation, the goal of maintaining calm in foreign exchange markets must become the focal point of policy. Such a situation occurred in Canada after the Russian default when the currency came under strong pressure and the Bank of Canada had to raise interest rates abruptly to restore confidence. Because of market participants' tendency to occasionally misinterpret movements in the MCI, recently both the Bank of Canada and the Reserve Bank of New Zealand have announced that they will permit the MCI to fluctuate over a wide range without eliciting a policy response.

Exchange rate considerations also influenced the conduct of monetary policy in Switzerland in the period under review. Since the breakdown of the fixed exchange rate system in the early 1970s, portfolio disturbances of foreign origin have repeatedly led to episodes of appreciation of the Swiss franc which in turn have tended to slow economic activity in Switzerland. The turmoil in international financial markets during autumn 1998 triggered yet another such episode. In the current setting of essentially zero inflation and a sizable output gap, resisting an appreciation of the exchange rate was thought critical to prevent downward pressures on prices in an environment of inadequate growth. The Swiss National Bank responded to these movements by providing ample liquidity and pushing the overnight rate below 1%, thus maintaining the expansionary monetary policy stance adopted in recent years.

Importance of the exchange rate for Switzerland

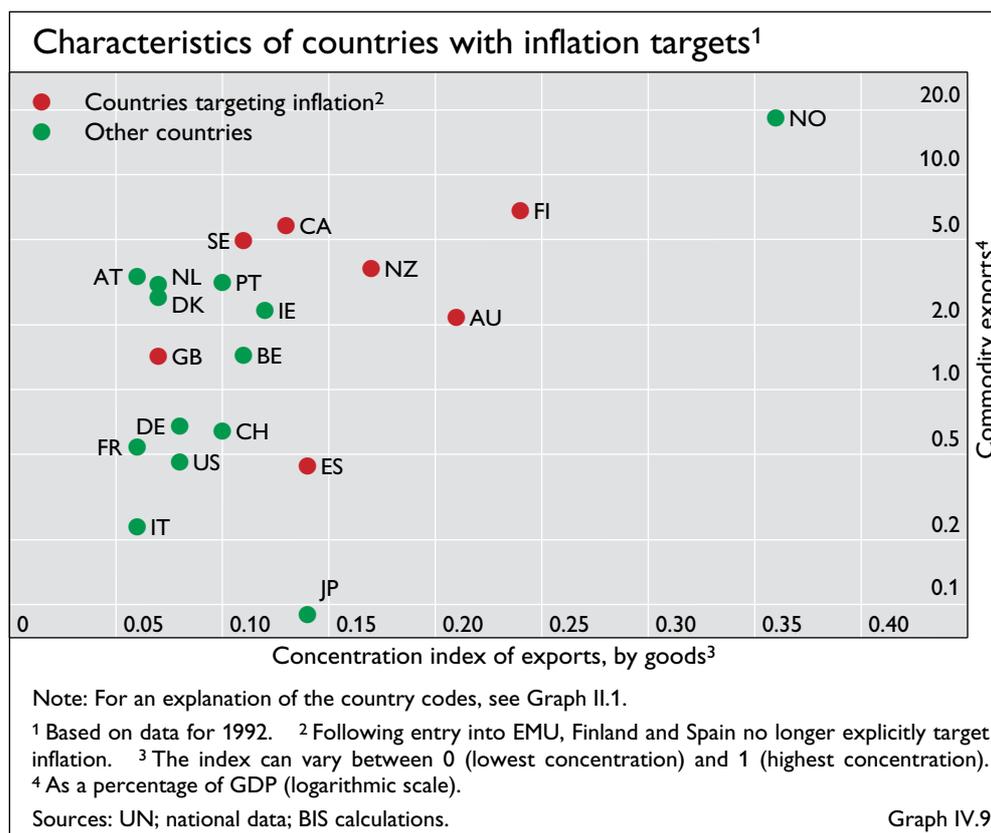
While the recent introduction of the euro did not have immediate repercussions on the exchange rate, any longer-term movement in the real exchange rate between the Swiss franc and the euro could have an important impact on economic conditions in Switzerland given its close trade links with the euro area. The Swiss National Bank has therefore signalled that such movements, depending on their causes and size, could trigger offsetting policy



measures. A permanent fixing of the exchange rate is, however, not seen as an option. Since a secular appreciation of the Swiss franc is apparently expected by financial markets, fixing the exchange rate would lead to an increase in the general level of interest rates in Switzerland, with adverse consequences for those sectors of the economy that are sensitive to interest rates.

Exchange rate movements also played an important role last year in the setting of interest rates in Norway, where monetary policy has been geared to maintaining the exchange rate against the ECU/euro in an implicit band, although with no presumption that this band should be defended at all times. The instructions issued by the government to the Central Bank of Norway state that if a pronounced exchange rate movement were to occur, monetary policy should be used gradually to return the exchange rate to the band. When the Norwegian krone came under downward pressure in August 1998, as did the currencies of other countries whose exports have a high commodity content, interest rates were raised cumulatively by 3 percentage points. In total, interest rates were raised by 4.5 percentage points in 1998 to limit the depreciation of the krone. Although this specific episode of tightening may have been appropriate to prevent an overheating of the economy, it illustrates the difficulties of exchange rate targeting in countries where terms-of-trade changes can be large. Indeed, as Graph IV.9 suggests, countries whose exports

The exchange rate and interest rates in Norway



have a high commodity content and are concentrated on a small range of goods have generally tended to adopt explicit inflation targeting. Such a framework requires the central bank to respond to exchange rate changes only to the extent that they have an impact on future inflationary pressures.

### Monetary policy under price stability

The achievement of price stability, and the likelihood of sometimes having to conduct monetary policy when prices are actually falling, poses a number of questions for central banks. Among these is whether an explicit objective for price stability is useful to prevent a decline in prices from generating extrapolative expectations of future price declines. If so, a further question is that of the relative merits of price level and inflation targeting. The issue of whether the effectiveness of monetary policy is impaired when prices are declining is also of importance. (See Chapter II for a discussion of the monetary policy implications of the increase in nominal price rigidity brought about by the decline of inflation in recent years.)

A major concern once price stability has been established is that falling prices might feed upon themselves, leading to a deflationary spiral. At the current juncture, the risks of such an outcome would not seem great. First, only in Australia, Japan, Sweden and Switzerland have consumer prices fallen recently, and then typically only for one or two quarters. Moreover, measures of core inflation have typically not been running at negative rates. Second, the reduction of inflation to low levels was largely due to sharp falls in commodity

The risk of a deflationary spiral ...

and oil prices, which have led to declining import prices. Since these price falls partly reflect the impact of the global slowdown on the demand for primary commodities, they may prove temporary. Indeed, the turnaround in commodity prices since early 1999 suggests that the process may be in the course of reversal. Third, central banks have in recent years attached increasing weight to maintaining inflation close to some explicit or implicit objective and have emphasised the importance of responding symmetrically to movements of inflation above and below this objective. In the 20th century, episodes in which prices have fallen sharply have been directly associated with monetary policy initiatives. The restoration of the gold standard at prewar rates in many countries in the 1920s and poor monetary policy during the Great Depression are cases from which central banks have presumably learned important lessons. The greater weight that central banks worldwide attach to maintaining inflation at a low but still positive level should reduce the likelihood that episodes of deflation will occur.

... is reduced by the increased weight on price stability in setting policy

### *Historical background*

One problem in assessing the consequences of declining prices and the policy issues they raise is that there have been virtually no such episodes since the end of the Second World War. It is therefore necessary to consider data from earlier periods. Table IV.1 shows average inflation rates and output growth rates for 10 countries going back to the 1880s, with separate columns for deflation and non-deflation periods. Since transitory disturbances can have a large impact on price levels, deflation is defined as an episode in which the CPI falls for at least two years. Moreover, given that the deflation episodes in the interwar period may have been different from those before the First World War, the table looks at the periods 1882–1913 and 1923–39 separately. Needless to say, it should be borne in mind in interpreting the table that historical data are likely to be of lower quality than modern data and that the structure of the economies has changed fundamentally over the last century, with the production of services, which may be cyclically more stable, having a much greater weight.

The table indicates that periods of declining price levels were quite common before the First World War. More strikingly, output growth remained positive in these periods, although lower than in periods of rising prices. In the interwar years, by contrast, episodes of deflation were associated with falls in real output. However, this finding appears to be entirely due to the occurrence of the Great Depression. Since this was arguably attributable to, or exacerbated by, monetary policy mistakes, it is instructive to note that if the years 1930–33 are disregarded, income growth rates were also positive on average during other episodes of declining prices in the interwar period. This historical evidence thus suggests that the notion that deflation depresses the level of output is largely shaped by the experience of the Great Depression.

Price declines were common before WWI without triggering output falls

The Great Depression an exception

It is interesting to hypothesise why, except for the episode in the early 1930s, periods of declining prices have not been associated with falls in output. Two explanations suggest themselves. Since falls in prices may be due to either contractions of aggregate demand or expansions of aggregate supply, a first

Deflation in perspective					
	Deflation periods <sup>1</sup>		Non-deflation periods		Memo item: Years of deflation
	Prices	Output	Prices	Output	
	Average annual percentage growth				
1882–1913					
United States	-3.7	-1.2	1.4	4.4	5
Japan <sup>2</sup>	-3.7	1.8	4.4	2.7	4
Germany	-2.0	4.0	1.8	2.6	8
France	-1.1	2.1	0.2	1.6	2
Italy	-1.2	1.3	1.4	2.2	14
United Kingdom	-3.0	1.4	1.0	1.9	8
Canada	-4.7	1.1	1.1	4.6	3
Belgium	-4.2	1.6	1.5	2.1	8
Sweden	-2.8	2.0	2.2	3.3	12
Denmark	-3.5	2.8	1.8	3.0	10
Average	-3.0	1.7	1.7	2.8	7
1923–39					
United States	-4.2	-3.8	1.8	7.3	8
Japan	-6.7	0.9	5.7	6.6	8
Germany <sup>3</sup>	-6.4	-2.2	1.6	7.1	4
France	-5.8	-1.9	10.2	3.7	5
Italy	-5.4	1.1	6.1	3.4	8
United Kingdom	-3.1	0.6	1.9	4.1	9
Canada	-6.2	-8.6	0.6	6.6	4
Belgium	-5.6	-1.1	8.7	2.6	5
Sweden	-3.0	2.7	1.5	4.2	8
Denmark	-5.0	2.3	3.0	3.5	7
Average	-5.1	-1.0	4.1	4.9	7
of which: 1923–39 excluding 1930–33					
United States	-1.6	1.1	1.8	7.3	4
Japan	-4.2	0.5	6.3	7.9	6
Germany <sup>4</sup>	-	-	1.6	7.1	0
France	-6.1	-1.8	11.1	4.4	2
Italy	-5.5	3.1	6.1	3.4	4
United Kingdom	-2.3	1.8	1.9	4.1	5
Canada	-	-	0.6	6.6	0
Belgium	-3.8	1.3	9.6	2.7	2
Sweden	-3.3	5.9	1.5	4.2	4
Denmark	-5.8	3.0	2.9	3.5	4
Average	-4.1	1.9	4.4	5.1	4

<sup>1</sup> Deflation defined as at least two consecutive years of price decreases. <sup>2</sup> 1885–1913. <sup>3</sup> 1926–38.  
<sup>4</sup> 1926–29 and 1934–38.

Sources: B R Mitchell, *International Historical Statistics: Europe 1750–1993*, Macmillan, 1998; US Department of Commerce, Bureau of the Census, *Historical Statistics of the US*, 1975. Table IV.1

possibility is that periods of declining prices have historically occurred at times of relatively favourable aggregate supply movements. Episodes of diffusion of new technologies such as railways and electrification in the late 19th century and, more recently, computers and telecommunications come to mind. The second explanation is that prices did not fall long or far enough to engender

extrapolative expectations of further price decreases. This conjecture is supported by the fact that long-term interest rates typically did not fall to any great extent during periods of declining prices, except during the Great Depression. This was presumably because financial market participants believed that price declines were temporary phenomena.

#### *Anchoring expectations*

The hypothesis that the Great Depression was exacerbated by the tendency of price declines to lead to expectations of future price falls suggests that it is important for central banks to try to anchor inflation expectations at a low level in order to render them less sensitive to current economic developments. Moreover, to the extent that price setting depends on expectations of future price developments, anchoring long-run expectations is helpful in that it may reduce the impact on prices of an economic downturn.

Importance of anchoring expectations

One potential way to prevent a decline in prices from triggering expectations of further price falls is for the central bank to adopt a numerical definition of price stability. Recently, several central banks have set explicit objectives for the rate of inflation as the linchpin of their monetary policy framework. However, in situations in which the concern is to offset falls in the price level, the question arises whether there would be benefits in adopting an explicit target (which potentially could be rising over time) for the price level. One difference between an inflation and a price level target is that the latter requires the central bank to offset past deviations from target whereas the former does not. This distinction could be of importance in a situation in which prices unexpectedly fall. Under an inflation target, the central bank is merely required to restore inflation to the proper range. By contrast, under a price level target the central bank is also required to make up for the under-shooting of the target. Consequently, an unexpected fall in the price level could lead to a higher expected near-term rate of inflation under a price level target than under an inflation target. This in turn implies that expected real interest rates could be lower under a price level target than under an inflation target and policy potentially more stimulatory. Such arguments may explain why the single instance of a central bank adopting an explicit price level target – when Sveriges Riksbank briefly abandoned its exchange rate parity in 1931 – occurred in a situation where the main task of monetary policy was to offset deflationary tendencies.

Price level versus inflation targets

Of course, whatever target is adopted, it must be seen as credible to be helpful. This suggests that it would be better for it to be introduced well in advance of an episode of declining prices. Announcing an explicit objective once strong downward pressures on the price level have already developed runs the risk that the authorities will be unable to deliver on their commitment.

Importance of credibility

#### *Policy implications of low inflation*

There is broad agreement that maintaining inflation at very low levels is conducive to economic growth and therefore desirable. However, the achievement in a number of countries of inflation rates close to zero suggests

Possible downward rigidity of nominal wages ...

that central banks may experience brief episodes of declining prices more frequently in the future. A potential concern in this context stems from the possibility that nominal wages may be rigid downwards. If so, a fall in the price level could raise real wages, depressing employment and economic activity. A second concern arises because nominal interest rates cannot be made negative. If a contractionary demand shock were to occur and prices started to fall, real interest rates would rise and could reduce aggregate demand further.

... should not be overemphasised

While the empirical evidence on whether nominal wages are in fact rigid downwards is by no means clear, there are at least two reasons why the importance of any such wage stickiness should not be overemphasised. With episodes of declining prices rare in the recent past, it is not surprising that nominal wage cuts have been unusual. If average inflation rates remained in the vicinity of zero for extended periods of time, downward nominal wage flexibility might well increase. Moreover, the importance of any downward nominal wage stickiness is mitigated by the fact that unit labour costs can fall even if nominal wages are constant provided productivity is rising.

Zero floor on nominal interest rates

It is also not clear whether, and if so how severely, the efficacy of monetary policy is impaired in situations of declining prices because of the fact that nominal interest rates cannot fall below zero. Expected long-term real interest rates are likely to be more important in the transmission mechanism than realised short-term real rates. As argued above, episodes of declining prices are therefore likely to be of concern only to the extent that they last long enough to engender expectations of continuing price falls. It also needs to be borne in mind that monetary policy affects aggregate demand not only by influencing real interest rates but also through exchange rate and credit availability effects. Cutting nominal short-term interest rates to zero may well be sufficient to stimulate demand by depreciating the currency, provided of course that this strategy is followed only by one or a few countries. Finally, monetary policy measures that strive to reduce credit constraints are likely to be effective even if nominal interest rates are close to zero.

Role of asset prices

However, episodes of sustained declines in the price level constitute a serious problem to the extent that they affect asset prices. Of particular concern in this context are falls in the value of assets used as collateral for bank lending. With asset prices inversely related to real interest rates, a rise in real interest rates stemming from a deflationary episode could have a large impact on the value of collateral and thereby lead to a tightening of credit conditions, which in turn might worsen contractionary pressures. As suggested by the recent experience in Japan, where the fall in asset prices since the early 1990s has impaired the strength of the banking system, an outright fall in the price level may well have its greatest impact on economic conditions through its effect on the banking system.