

**FOR
AGENDA**

SM/02/57
Correction 1

CONTAINS CONFIDENTIAL
INFORMATION

February 27, 2002

To: Members of the Executive Board
From: The Secretary
Subject: **Norway—Selected Issues**

The attached corrections to SM/02/57 (2/15/02) have been provided by the staff:

Page 11, para. 20, line 4: for “where the governor of the deputy governor”
read “where the governor or the deputy governor”

Page 20, Figure 3, Title: for “Headline CPI and CPI Adjusted for Changes in Real Taxes”
read “Headline CPI and CPI Adjusted for Changes in Real Taxes and
Energy Prices”

Questions may be referred to Mr. Soikkeli (ext. 37533), Ms. Cerra (ext. 38596), and
Mr. Horvath (ext. 38529).

Att: (2)

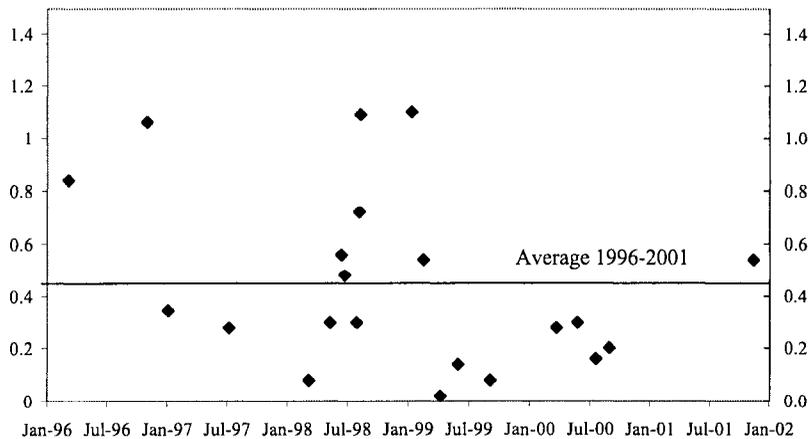
Other Distribution:
Department Heads

bank's inflation forecast, see Box 1). In addition to the *Inflation Report*, the central bank also employs other supplementary information channels to communicate its view on the economic outlook and to explain how it conducts monetary policy.

20. **In addition to the *Inflation Report*, further assessments of the inflation outlook are provided every six weeks in connection with the Executive Board's monetary policy meetings.** The central bank issues a press release with the Board's decision after every monetary policy meeting. A press conference is held, where the governor or the deputy governor analyzes the Executive Board's updated view on the inflation outlook and explains the Board's decision. In public, the Executive Board speaks with a unanimous voice, and no minutes of monetary policy meetings are published. While there are different views on whether the framework would benefit from the publication of voting records and/or minutes of the meetings, such a step could send an additional signal of the central bank's policy bias to the markets, and thus reduce the potential for surprise.

21. **Norges Bank also uses other supporting information channels to strengthen the transparency of its monetary policy framework.** In addition to the publication of the *Inflation Report* and regular press releases, Norges Bank has published several articles, and delivered various speeches and lectures explaining the role of monetary policy and discussing its view on recent economic developments. This has contributed to the public's understanding of what monetary policy can and cannot do. It has also clarified the range of issues that the central bank should be held responsible for, thus strengthening the accountability of the regime. Furthermore, additional analysis is provided in both the *Inflation Report* and the quarterly *Economic Bulletin*, where the use of modeling tools and the assessment of the Norwegian economy are discussed in more detail. Indeed, the market reactions to changes in Norges Bank's key policy rate suggest that monetary policy has become somewhat more predictable in recent years (Figure 2).

Figure 2. Predictability of Monetary Policy: Change in Three-Month Money Market Rate Divided by the Change in Deposit Rate (Absolute Value)



Source: Norges Bank.

D. Design of the Framework

22. **The Norwegian inflation-targeting framework has several characteristics similar to those adopted in other industrial countries.** Although there exists no uniform design of

Box 1. Norges Bank's Inflation Forecast

Reliable forecasts of inflation are essential for the effective conduct of monetary policy because of the lags between monetary actions and their impact on inflation. Inflation targeting is necessarily a forward-looking regime, and the inflation targeting central banks of industrial countries usually rely on large-scale macroeconomic models to form their inflation forecasts. Additional models that simulate the monetary transmission channel or the impact of various shocks on the economy are often used to support the analysis. Norges Bank's inflation projections are based on analyses of the most significant relationships in the economy, and on key assumptions about economic policy and international conditions. The central bank's macroeconomic model, RIMINI, is an important forecasting tool in this work. Results from supporting models that have been developed to study special issues are incorporated in the model, and it provides the basis for the projections published in the *Inflation Report*.

The central bank's inflation forecast employs several technical assumptions underlying the baseline scenario. First, interest rates are expected to remain unchanged at the present level over the next two years¹, and then gradually move towards the yield curve based on expectations in the money and bond markets as reflected in forward rates. Second, the exchange rate is assumed to remain unchanged at the average level that prevailed for the last three months over the forecast period. Third, Norges Bank has its own forecast for oil prices, which is constantly compared with the market's assessment based on the pricing of futures and options in the oil market. Fourth, the central bank uses its own assessment of the fiscal stance.

The central bank also uses survey data and long-term interest rates to acquire supplementary information on inflation expectations. Norges Bank uses survey data such as *Consensus Forecast* to obtain information about financial market observers' inflation expectations. In the absence of inflation indexed bonds, Norges Bank also observes developments in the ten-year forward rate, which can be interpreted as a sum of expected long-term money market rates and any maturity premiums, to measure changes in inflation expectations, although limited liquidity in Norwegian money and bond markets may distort this information. Moreover, the central bank monitors the long-term forward rate differential against Germany to estimate the impact that developments in international money and bond markets have on Norwegian forward rates.

The forecast presented in the *Inflation Report* is a result of the central bank's overall macroeconomic assessment including qualitative judgment of the risks to the economic outlook. The uncertainty surrounding the baseline inflation forecast and the central bank's assessment of the various risk factors represent essential additional information for judging how the central bank's view on inflation outlook may develop. The central bank's baseline forecast is presented as the mode of a probability distribution assuming unchanged interest rates, and the distribution surrounding the forecast signals the central bank's view about the balance of risks. If the risks are not perceived as being balanced around the baseline forecast, this results in an asymmetrical, skewed distribution, which can be interpreted as the bank's view of interest rate developments ahead i.e. its monetary policy bias.

¹ For possible problems associated with the use of constant interest rate assumption, see the *Selected Issues* volume for the 2000 Article IV consultation with the United Kingdom, "Issues Relating to Inflation Targeting and the Bank of England's Framework" (IMF Staff Country Report 00/106).

expectations concerning the exchange rate are to be achieved by implementing a monetary policy aimed at low and stable inflation, not by targeting a certain level of the exchange rate. Moreover, Norges Bank has underlined that it will react to a change in exchange rate only to the extent that the change is likely to have an impact on inflation.

32. Monetary policy also aims at contributing to stable developments in output and employment. In the presence of demand shocks, inflation is likely to deviate from its target in the same direction as the output gap; therefore, monetary policy would need to react in the same direction to stabilize both inflation and the output gap. Moreover, since the output gap is often a useful predictor of future inflation under these circumstances, a forward-looking inflation targeter, such as Norges Bank, already implicitly bases its policy decisions on information about output and employment. However, supply shocks, such as movements in terms of trade—which are very common for small open economies such as Norway—or changes in indirect taxes, tend to shift inflation and output in opposite directions. These shocks pose a dilemma for policymakers, since stabilizing inflation and output require conflicting monetary policy actions in the short term. Indeed, bringing inflation rapidly back to the target could be very costly in terms of lost output.

33. There are several ways to accommodate supply shocks in an inflation-targeting framework, even if output stability is not explicitly included in a central bank’s objective function. These include: (i) choosing a target that excludes the first round effects arising from probable supply shocks (see paragraphs 35–38 for discussion), (ii) allowing a greater variation of inflation around its target by the use of inflation target bands (see paragraph 40), and (iii) adopting a somewhat longer target horizon that permits bringing inflation back to its target more gradually, as well as including explicit escape clauses in central bank legislation that make it possible to extend the target horizon in case that a severe shock hits the economy. As shown in Svensson (1997), the rate at which inflation is adjusted toward the inflation target is directly related to the weight on output stabilization in the central bank’s objective function. Thus, bringing inflation back to its target gradually is likely to reduce output fluctuations.

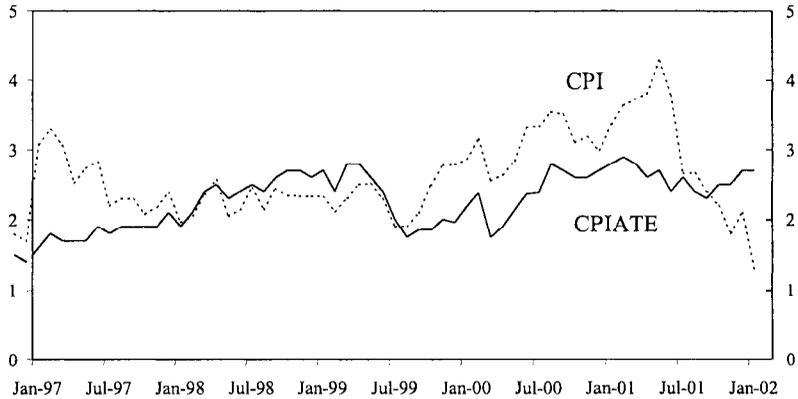
Relevance of the chosen target price index

34. According to the New Regulation on Monetary Policy, its operational target “shall be annual consumer price inflation of approximately 2.5 percent over time.” However, since substantial changes in the inflation rate may at times occur as a result of extraordinary fluctuations in certain product markets or changes in direct and indirect taxes, the new regulation also states “the direct effects on consumer prices resulting from changes in interest rates, real taxes, and excise duties, and extraordinary temporary disturbances, shall not be taken into account.” Therefore, in assessing its monetary policy and presenting its inflation forecast together with the associated uncertainty, Norges Bank uses the consumer price index adjusted for the direct effects of changes in real taxes and energy prices (CPIATE). By the two-year horizon the CPI and CPIATE are expected to converge.

35. **In recent years, changes in energy prices and indirect taxes have caused increased volatility in the consumer price index.** Electricity and fuel prices represent a large share of the overall CPI, and substantial fluctuations in these components have made it more difficult to gauge general inflation tendencies simply by focusing on changes in the headline CPI (Figure 3). Also, changes in indirect taxation and excise duties have been a source of temporary fluctuations in price inflation, thus arguing for the exclusion of these items when assessing monetary policy.

However, Norway does not make adjustments for the effects of interest rate changes since the headline measure of consumer price index (CPI) excludes direct interest costs.²¹ Furthermore, interest expenses are not directly included in other components of the CPI either, and thus, the direct effects of interest expenses on the CPI appear negligible.

Figure 3. Headline CPI and CPI Adjusted for Changes in Real Taxes and Energy Prices^{1/} (percent change, year-on-year)



^{1/} CPIATE: Norges Bank's estimates up to August 2000, thereafter figures published by Statistics Norway.
Sources: Statistics Norway and Norges Bank.

36. **The publication of the underlying index by an independent agency is welcome.** In October 2001, the country's statistical agency (Statistics Norway) began publishing information on CPI adjusted for changes in real taxes and energy prices (CPIATE).²² Norges Bank had previously published charts of a corresponding series (CPIXE) dating back to 1995. In the future, when assessing consumer price inflation adjusted for temporary disturbances, Norges Bank will make use of the CPIATE index. Currently, historical series for the CPIATE are available from August 1999 onward. However, the publication of a combined history of CPIXE and CPIATE would be welcome for analytical purposes.

²¹ Contrary to Sweden and the United Kingdom, the Norwegian CPI measures housing costs by a survey-based house rent index instead of estimating mortgage costs.

²² This was accompanied by a publication of CPI adjusted for changes only in real taxes (CPIAT) and continued publication of CPI adjusted for changes in the prices of energy prices (CPIAE). For further information on how these indices have been constructed see a press release published by Statistics Norway on October 10, 2001 (www.ssb.no).