

ECONOMIC SURVEY OF NORWAY 2007:
MONETARY POLICY UNDER LOW INFLATION

*This is an excerpt of the OECD Economic Survey of Norway, 2007,
from the section on Monetary policy in chapter 2: “Monetary policy under low inflation”*

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Macroeconomic risks and tensions

Risks may paradoxically be high when times are good.¹ Unlike the case of a positive supply shock which has arisen from domestic structural policy reforms, one that has been generated abroad exposes the economy to unpredictable reversal in any of its elements (commodity prices, Chinese inflation, value of the dollar, etc.). Besides, much of its impact may have been one-off rather than permanent, as the world trading system adjusts to a higher non-OECD share of trade that eventually levels off. Monetary policy has reacted to these shocks by allowing expansion in the real economy as a trade-off against the sustained low core inflation. Should these shocks level off; inflation is likely to pick up and the monetary policy stimulus should be withdrawn accordingly. There is still a risk that inflation will pick up faster than currently envisaged which in turn, would require a faster monetary policy tightening.

Unwinding of positive supply shocks

Norway may be vulnerable to the next world downturn for the very reason it benefited so much from the upswing. A pronounced slowdown is being cited as a non-negligible risk for 2007 or 2008 by many forecasters, given possible global multiplier effects of a cooling US housing market and perhaps disorderly correction of external imbalances. This could entail a collapse of commodity prices recalling that the last major US recession in the mid-1980s gave a rude shock to oil price expectations at that time. Non-oil commodity prices are predicted to soften substantially even in the central scenario.² A second external risk is higher Chinese inflation once the productivity miracle there ends, although this may be still some way off and other countries like India may take up the baton. Bean (2006) suggests that high oil prices are but the “flip side” of low manufactured import prices from developing Asia, implying that the risks on both sides may be correlated. Materialisation of these risks would reverse the presently favourable terms of trade for Norway. A protectionist backlash in the OECD could also precipitate such a shock.

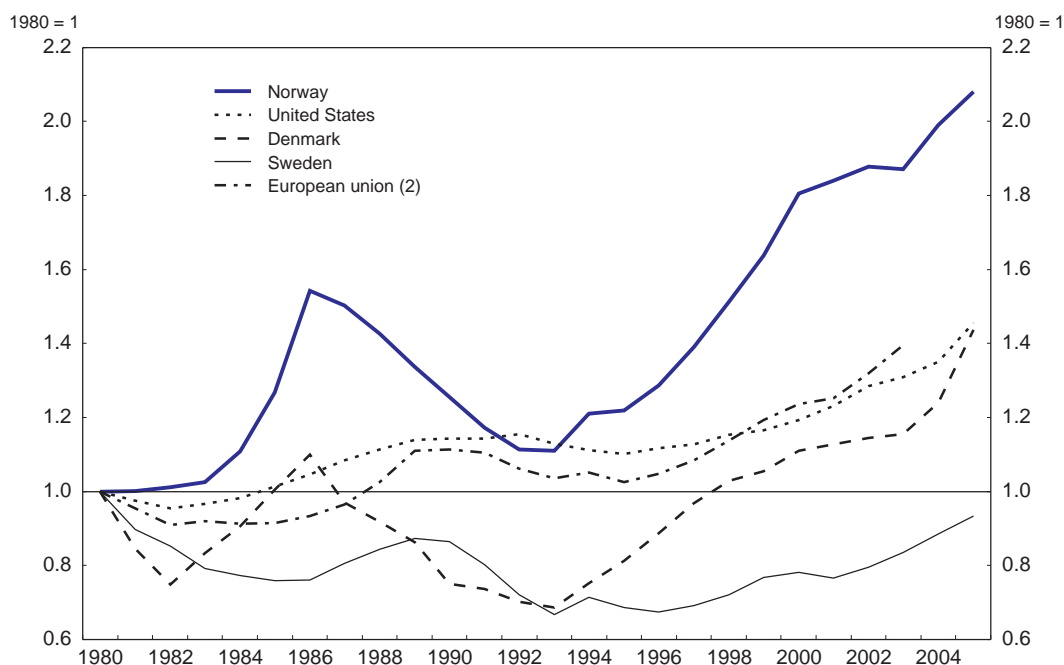
Domestic productivity gains arising from the pressures of global competition could be largely one-off and exposed to global reversals, unless solidly grounded in domestic competition policies and dynamic market forces. Meanwhile, the government has overruled four merger decisions made by the Competition Authority over the past year and signalled that state ownership will be upheld in major companies, in

contrast to OECD recommendations and trends (Annex 1.A2). This might reduce the chances for installing more dynamic forces of competition and innovation in the economy. A mainstay of productivity growth has been in the oil sector, but its resource base is being slowly depleted and oil production is close to starting its long descent, increasing the importance of vigorously enforced competition policy as a driver of continued productivity growth and low domestic inflation.

Housing market imbalances

Structural changes in the Norwegian economy and high income growth can to a large extent explain the sustained high growth in housing prices since the early 1990s. In the past few years, however, lower interest rates and the decline in the expected level of mortgage rates is likely to have reinforced this trend. Household debt levels (nearly 200% of disposable income) already exceed those of the pre-crisis late 1980s.³ Measuring asset price against replacement cost (Tobin Q), Norway is situated at the high end of an already highly valued OECD-wide housing market (Figure 2.1). House prices grew by 15% in the first 9 months of 2006, up from 9% in all of 2005. Hence, as elsewhere the liquidity flooding the system seems to have gone into supporting a house price surge rather than goods and services price inflation.^{4, 5} House rent inflation has fallen due to a shift in demand towards ownership of homes, due *inter alia* to factors such as the relatively low interest rate, moderate CPI-growth, a strong labour market and a generally optimistic household sector. The shift in demand away from rental dwellings may, paradoxically, have pushed down the CPI even more.⁶ This raises the question of whether resources are being well allocated in Norway, especially since tax policy heavily favours housing. It also raises social equity issues as less well-off and younger first time buyers may be hard pressed to find affordable housing – yet feel pressured to buy, fearing further house price rises. On the other hand, in Norway the rental market functions fairly well compared with other Nordics, so that even if rising house prices have raised entry barriers for first-time buyers such people could still find proper housing in other segments.

Figure 2.1. House prices relative to construction costs¹



1. Nominal house price index divided by the deflator of gross fixed investment residential.
 2. Average index of Denmark, Finland, Germany, Ireland, Netherlands, Spain, Sweden, United Kingdom.
- Source: OECD Analytical database.

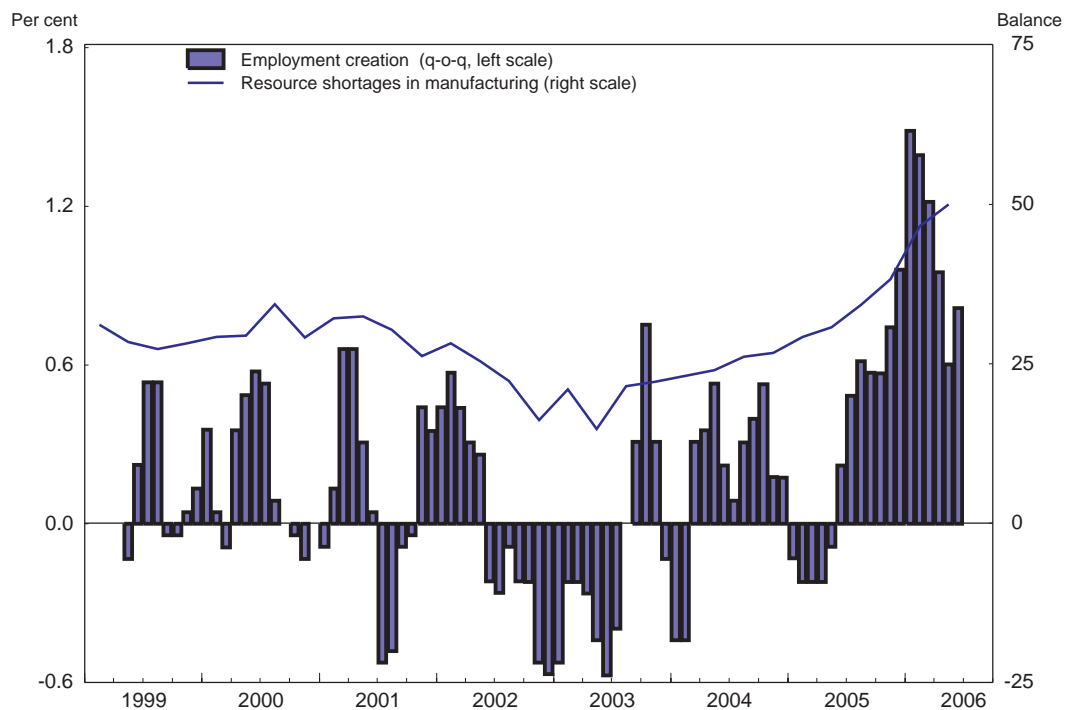
Most worrying, the real and financial imbalances that could be generated by the housing boom have adverse implications for future output. Rising interest rates will – to the extent that the increase is unexpected – trigger an adjustment of these imbalances, but since mortgages are overwhelmingly flexible rate, this too could quickly tighten borrowers' budget constraints and produce financial distress for vulnerable groups.⁷ A house price bust would amplify the shock while reducing perceptions of wealth more generally.⁸ Even if prices stabilise, rents could suddenly catch up with past price rises as speculative fervour subsides.⁸ Financial conditions may be much less fragile than in the early 1990s, but still might constrain the central bank as it tightens. On the other hand, a too slow tightening might exacerbate the boom and its implicit risks. Still, the bank should take into account impacts of house prices into account only to the extent that they affect the outlook for inflation and the real economy.

Possibly mitigating these risks, some structural changes might explain part of the strong expansion of housing demand and mortgage debt. Socio-demographic changes imply a large increase in single households which raises the demand for housing on a permanent basis. There has also been a strong domestic migration toward the big urban centres, notwithstanding the extensive regional policy, in turn increasing demand for new housing. The higher inflows of foreign workers and immigrants also boost housing demand, though less so than their numbers might suggest as they tend to share accommodation. There have also been major structural changes in the financial sector suggesting a higher tolerance to risk by both banks and households. The shift to Basle II has made mortgage lending more appealing to banks since it gets a lower standard risk rating than lending to firms. Hence banks are competing fiercely for mortgages, and have reduced lending margins and designed new mortgage products to facilitate borrowing (such as no downpayment and long repayment periods without capital amortisation). The banks are also able to unload credit risks from their balance sheets by the use of derivatives.

Economy-wide overheating

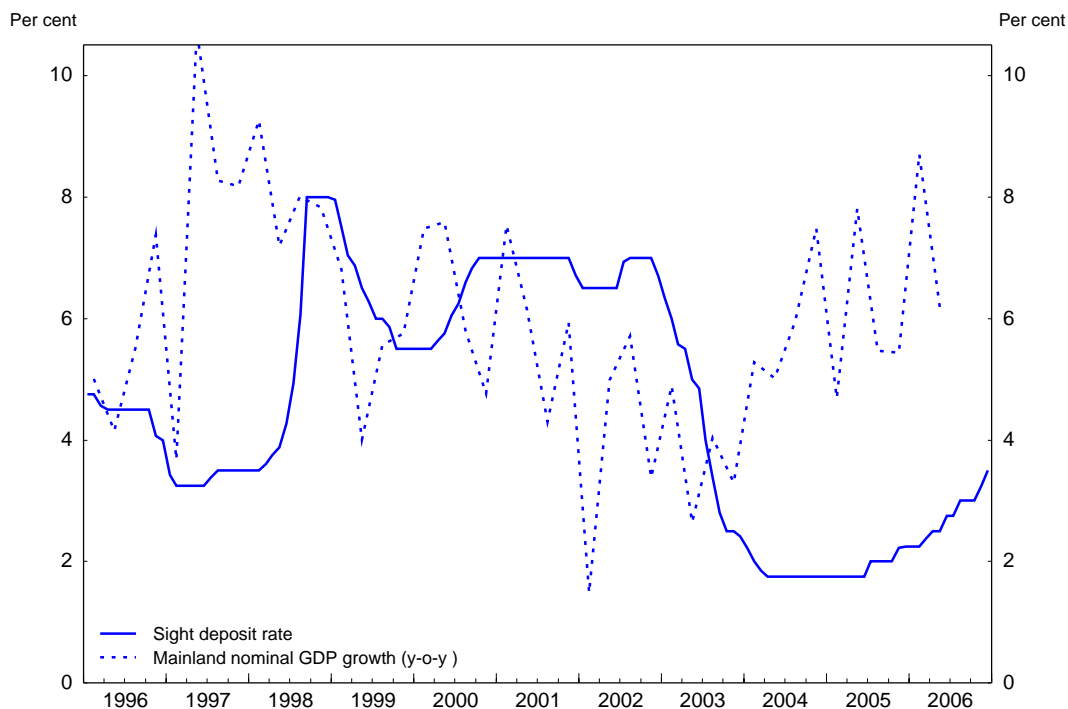
Protracted monetary stimulus has been necessary to bringing inflation and safeguard inflation expectations on target. Consequently, clear signs of resource tightness have emerged in 2006 (Figure 2.2). The unemployment rate fell to 3.3% by Q3 2006, and headline inflation already reached 2½ per cent in mid-year. Core inflation, however, did not pick up and remained low through 2006. A wide gap between the nominal interest rate and nominal GDP growth may suggest latent inflation pressure even though core inflation is still significantly below the inflation target (Figure 2.3). Inflation dynamics may already be set in motion, appearing in the form of wage drift in the latter half of 2006. Past experience suggests that a positive output gap and unemployment significantly below the 4% mark (NAIRU)⁹ is likely to provoke wage push, higher margins and inflation, with a lag.¹⁰ Thus, just as the slowdown in economic activity in late 2002 and early 2003 contributed, along with declining import prices, to the subsequent slowdown in domestic inflation, so are the sizeable positive output gap predicted for 2006-08 and tighter labour markets, together with the possible – but hard to predict – waning of so-called structural factors of low imported inflation and increased competition, likely to herald coming inflation pressure. A sudden wage surge would presumably be met by a sharp monetary response, possibly leading to an appreciation of the exchange rate and hurting the exposed sector as in 2002, though with the possible added dimension of a housing market shock.

Figure 2.2. Resource tightness



Source: Statistics Norway, Norges Bank, Gallup business survey.

Figure 2.3. Latent inflation pressure



Source: Norges Bank, OECD Economic Outlook 80 database.

The stabilisation framework

The current macroeconomic stabilisation framework assigns to monetary policy the task of anchoring inflation and stabilising growth, while fiscal policy looks after the real exchange rate (Box 2.1). The framework has performed rather well thus far. Norges Bank has earned a high reputation for its conduct of monetary policy and is considered an exemplary inflation-targeting central bank. The current imported low inflation has provided a golden opportunity to consolidate its credibility, by keeping inflation impressively low without the need for any restriction. Fiscal policy has held in reasonable check the pressure to spend more of the oil revenues and the oil fund mechanism is often considered a world-class model for managing oil revenues. The current oil price hike has likewise given fiscal policy a golden opportunity to consolidate its credibility, allowing respect of the deficit target without the need for restriction. It will be critical to further build up credibility while global conditions are favourable. Globalisation's shocks pose challenges even to such a highly successful policy framework.

Box 2.1. The institutional framework for macroeconomic stabilisation

The institutional framework for macroeconomic stabilisation in Norway rests on four pillars: flexible exchange rate, the oil fund mechanism, flexible inflation targeting and the fiscal rule. The first two pillars were introduced in the 1990s and the latter two in 2001. The new strategy has proved successful in reducing macro volatility in its first decade of existence. It has also been adaptive, rather than rigid.

Flexible exchange rates and inflation targeting

Macroeconomic policy management in Norway has long been implemented against a background of a centralised and outward-oriented process of wage formation that was geared to maintaining international competitiveness (formalised in the 1992 "Solidarity Alternative"). Like in many other small open economies, monetary policy was initially geared towards stabilising the exchange rate, while fiscal policy had a main responsibility for stabilising the economy.

Around the mid-1990s, however, as bigger oil money receipts and liberalised capital flows made it harder to target the nominal exchange rate, there began a *de facto* shift to a flexible exchange rate policy. In March 2001, flexible inflation targeting was formally adopted. This regime seeks to provide a nominal anchor to the economy in the form of stable inflation expectations, while also stabilising output. The nature of the shocks that disturb the economy is pertinent. A demand shock moves prices and output in the same direction; hence, monetary policy can bring them back to their equilibrium values rather quickly. A supply or terms of trade shock moves them in opposite directions, however, so that a trade-off emerges and monetary policy must correct deviations of inflation from target in a smoothed and gradual fashion so as not to jerk real growth and employment around too much in the process.

The oil fund and the fiscal rule

Shortly before flexible exchange rates were adopted, an oil fund mechanism was set up, investing oil export revenues abroad so as to neutralise their exchange rate impacts and minimise disruptions to the real economy. When inflation targeting was formally adopted, a fiscal rule was also created and made effective as of 2002, specifying a gradual phasing in of oil money into the fiscal budget. That is, 4% – the assumed long-run real rate of return – of the fund's capital value at the start of each year would be transferred back to the budget within a medium term perspective. The objective was to make predictable and stabilise as far as possible future fiscal spending pressure, and thus stabilise real exchange rate expectations and the current exchange rate which incorporates such expectations. A longer run objective was to save the oil wealth for all future generations of Norwegians, while allowing the current generation to spend the income being generated by the fund.

Has the new framework reduced macroeconomic volatility?

Macroeconomic stability in the short to medium run is a necessary foundation for strong growth in the long run. Transition costs of output and especially of employment volatility are considerable, while a nominal anchor is essential for avoiding endemic high inflation, or conversely deflation, either of which could distort resource allocations severely. Excessive real exchange rate volatility might cause heavy disruption in a small open economy such as Norway's, and deter investments in the exposed sector. The new policy framework seems to have done well in this regard: inflation volatility has declined and inflation expectations have stabilised around target since the introduction of inflation targeting (Figure 2.4). Exchange rate volatility has increased but this may be the converse of greater inflation stability. Output volatility has diminished, but this is also true elsewhere as all central banks have become more independent and forward-looking, so Norway's relative standing is about the same (Table 2.1). Norway is also susceptible to real oil

price cycles even though the foreign investments in the State Pension Fund may to a certain degree neutralise the impact of such cycles (see Annex 1.A1).

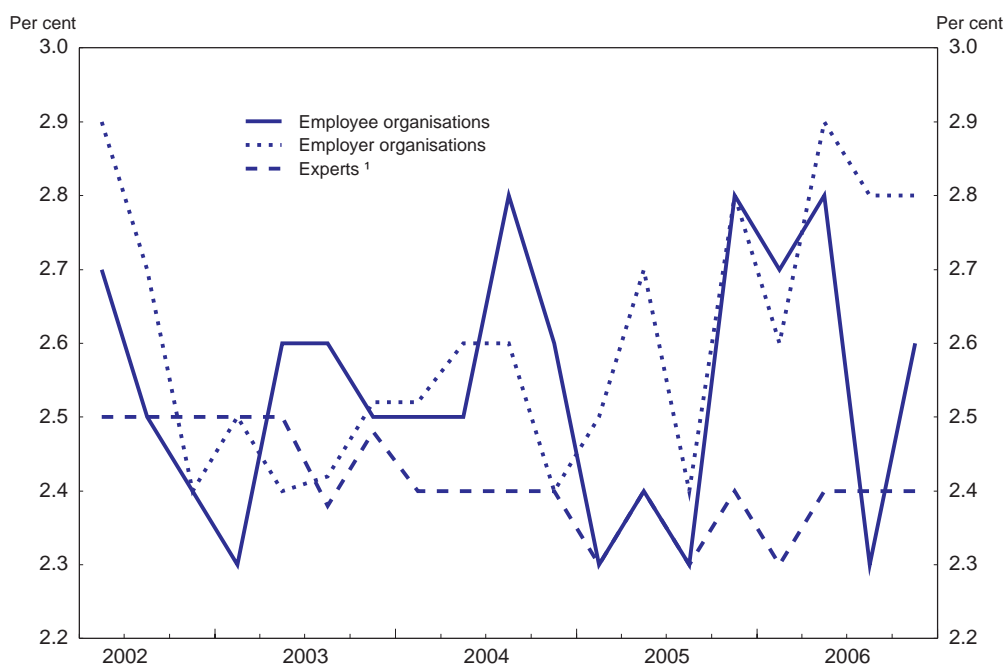
Is it robust?

The framework has adapted as circumstances require, and flexibility is an important component of its robustness:

- Globalisation has diminished policy control over long-term rates. Hence, starting in 2005, Norges Bank took the risk of publishing its own policy interest rate path in an effort to better influence market expectations of future rates. Its communication of how it sees the economy functioning and how it arrives at policy conclusions are increasingly transparent.² It is careful to explain inflation forecast errors to maintain credibility, and has widened the field of underlying inflation indicators it examines to improve forecasting ability. The success of this approach can be seen in declining market reactions to policy pronouncements.³ Moreover, market interest rate expectations are well aligned with the Bank's forecast in the first three to four quarters. Implied market forward rates are, however, below Norges Bank's further out on the curve (see Figure 2.6). It is hard to ascertain whether this reflects differences in expectations or risk premia.
- The oil fund mechanism does not specify the actual use to which the money should be put in future, and its recent renaming to Government Pension Fund Global is only indicative and not a legal obligation. The fiscal policy rule is likewise vague about the extent and duration of deviations from the 4% spending rule that are permitted under conditions of market or economic volatility. This approach may intentionally leave a margin for compromise and manoeuvre that helps hold at bay political/populist temptations to raid the fund.

Figure 2.4. Inflation expectations

Expected consumer price inflation, 5 years ahead



1. Employees in financial industry, macro analysts and academics.
Source: TNS Gallup.

1. See OECD (2005a) for a complete description of the Government Petroleum-Pension Fund.
2. See OECD (2005a) for a description of past progress in Norges Bank communications and transparency.
3. See *Inflation Reports* 2/06 and 3/06.

Table 2.1. Output, inflation and exchange rate volatility
Standard deviation of annualised growth rate

| | 1980-1990 | | | 1990-2000 | | | 2000-2005 | | |
|---------------|---------------------|------------------------|---------------------------------|---------------------|------------------------|---------------------------------|---------------------|------------------------|---------------------------------|
| | Output ¹ | Inflation ² | Effective nominal exchange rate | Output ¹ | Inflation ² | Effective nominal exchange rate | Output ¹ | Inflation ² | Effective nominal exchange rate |
| France | 1.8 | 4.5 | 6.9 | 1.7 | 1.1 | 4.7 | 1.7 | 1.0 | 3.6 |
| Norway | 4.1 | 4.4 | 6.1 | 4.7 | 3.5 | 6.0 | 3.8 | 3.2 | 9.0 |
| Netherlands | 4.9 | 3.8 | 7.9 | 2.5 | 1.9 | 5.9 | 1.7 | 2.0 | 4.7 |
| Sweden | 6.0 | 3.8 | 8.4 | 3.3 | 5.3 | 12.5 | 1.6 | 2.2 | 7.4 |
| Finland | 5.5 | 3.6 | 5.7 | 4.6 | 2.5 | 10.8 | 3.0 | 2.7 | 4.1 |
| USA | 3.9 | 2.5 | 14.6 | 2.2 | 1.2 | 11.1 | 2.0 | 1.0 | 8.7 |
| UK | 3.5 | 3.3 | 15.4 | 2.2 | 2.8 | 11.8 | 1.0 | 1.1 | 6.9 |

1. Mainland GDP in volume.

2. Calculated from consumer price deflator.

Source: OECD calculation.

Monetary policy facing high uncertainty

The Norwegian central bank has set its interest rate path so as to promote a “soft landing” for the economy, while deferring attainment of the inflation target: endogenous cyclical slowing in housing, oil investment and foreign demand should be sufficient to offset continuing, albeit diminishing, policy ease. The OECD expects that such a benign scenario will come about only with a more aggressive tightening (Table 2.2). The success of the gradualist strategy, especially as interest rates remain so low for so long, requires an adequate assessment of the state of the economy and a good knowledge about the policy transmission mechanism. Such an understanding is challenged by major structural changes related to intensive global competition and financial market innovations. With new uncertainty about the functioning of the economy and the exogenous shocks affecting it, Norges Bank faces several sharpened dilemmas.

Table 2.2. Economic projections

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|-------------------------------|--|------|------|------|------|
| | Current prices NOK billion | Percentage changes, volume (2003 prices) | | | | |
| Private consumption | 720.0 | 4.7 | 3.4 | 3.9 | 3.2 | 2.9 |
| Government consumption | 354.2 | 2.2 | 1.5 | 2.0 | 2.7 | 2.6 |
| Gross fixed capital formation | 276.6 | 8.1 | 10.9 | 6.7 | 6.1 | 2.6 |
| Final domestic demand | 1 350.9 | 4.8 | 4.5 | 4.1 | 3.8 | 2.7 |
| Stockbuilding ¹ | 14.3 | 1.2 | 0.2 | 0.4 | 0.0 | 0.0 |
| Total domestic demand | 1 365.1 | 6.1 | 4.6 | 4.5 | 3.7 | 2.7 |
| Exports of goods and services | 637.4 | 0.6 | 0.7 | 1.8 | 3.4 | 3.8 |
| Imports of goods and services | 425.8 | 8.9 | 7.4 | 7.9 | 4.9 | 4.3 |
| Net exports ¹ | 211.6 | -2.2 | -1.8 | -1.4 | 0.2 | 0.6 |
| GDP at market prices | 1 576.7 | 3.1 | 2.3 | 2.4 | 3.2 | 2.7 |
| GDP deflator | – | 5.6 | 8.4 | 7.7 | 2.0 | 3.8 |
| <i>Memorandum items</i> | | | | | | |
| Mainland GDP at market prices ² | – | 3.8 | 3.7 | 3.7 | 3.0 | 2.6 |
| Consumer price index | – | 0.5 | 1.5 | 2.2 | 1.7 | 2.6 |
| Private consumption deflator | – | 0.9 | 1.2 | 2.2 | 2.1 | 2.6 |
| Unemployment rate | – | 4.5 | 4.6 | 3.6 | 3.3 | 3.4 |
| Household saving ratio ³ | – | 9.6 | 12.4 | 5.2 | 5.6 | 5.9 |
| General government financial balance ⁴ | – | 11.4 | 16.2 | 19.3 | 18.0 | 18.1 |
| Current account balance ⁴ | – | 13.6 | 16.6 | 20.0 | 20.2 | 21.5 |
| Short term interest rate | -- | 2.0 | 2.2 | 3.1 | 5.0 | 5.6 |

Note: National accounts are based on official chain-linked data. This introduces a discrepancy in the identity between real demand components and GDP. For further details see OECD Economic Outlook Sources and Methods (www.oecd.org/eco/sources-and-methods).

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.

2. GDP excluding oil and shipping.

3. As a percentage of disposable income.

4. As a percentage of GDP.

Source: OECD Economic Outlook 80 database.

Inflation forecast uncertainty

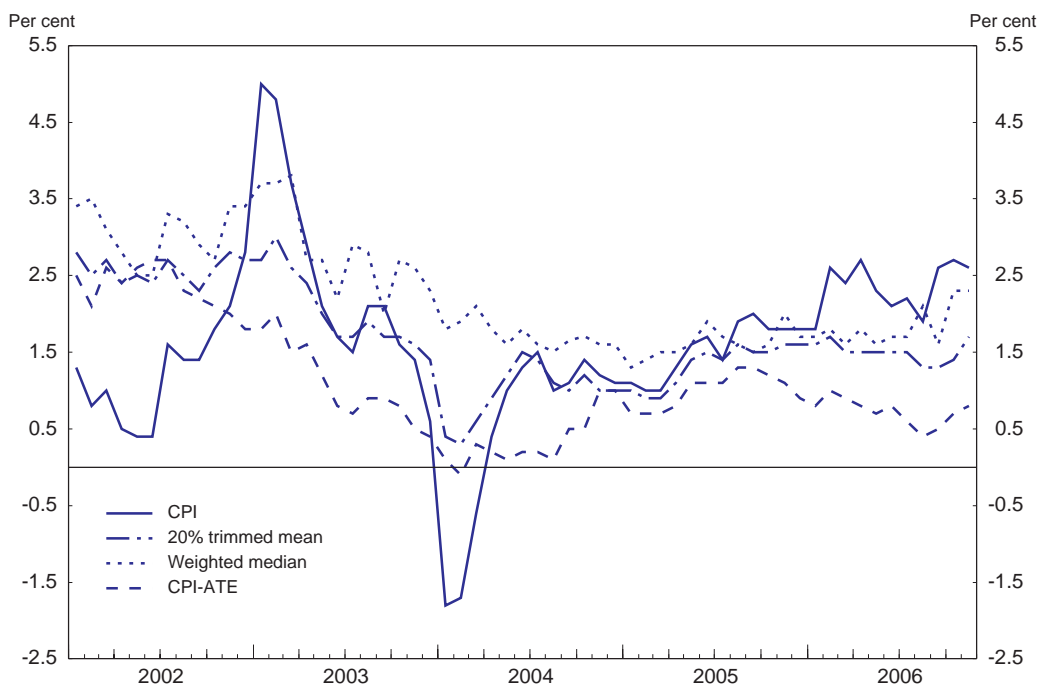
At the outset of its inflation targeting mandate, Norges Bank emphasised CPI-ATE (CPI, excluding energy price and indirect tax changes) as a measure of underlying inflation.¹¹ However, low inflation as measured by CPI-ATE may be providing misleading signals insofar as rising world energy prices and

falling manufactures import prices are complementary aspects of the same globalisation process.¹² If equilibrium oil and electricity prices have shifted upwards due to permanent higher global energy demand but non-energy import prices have shifted downwards (especially for Norway, see Chapter 1) due to a higher global capital stock and expanded worldwide labour supply, then the wedge between CPI and CPI-ATE has been disturbed by a major shock which may take a while to close. It could even take longer than the horizon of the Bank's inflation forecasts.

Norges Bank has begun to ease up on its reliance on CPI-ATE as an indicator of underlying inflation by additionally publishing alternative measures that strip out price components with large fluctuations (Figure 2.5).¹³ These indicators suggest somewhat higher underlying inflation than CPI-ATE, though these may be not so easy to communicate, or anchor to, as they are statistical constructs. The Bank has also noted in recent communications that CPI-ATE has tended over time to under-predict headline inflation by about 0.3 percentage points. In its Inflation Reports and the press releases following the interest rate meetings, the Bank now states its view on current core inflation in terms of an interval. Moreover, the Bank has underlined that the attainment of the inflation target over time should be measured by CPI. In its recent Inflation Reports the Bank has introduced a forecast of CPI with a separate fan chart around it in addition to the forecast of CPI-ATE. In mid-2004 the Bank reformulated its fixed two year horizon, stating that it will aim at meeting the inflation target within a reasonable time horizon, normally 1-3 years. The relevant horizon will depend on disturbances to which the economy is exposed. The Bank should strive to develop and communicate appropriate measures for underlying inflation.¹⁴

Figure 2.5. Various measures of underlying inflation

12-month rise



Source: Norges Bank.

However, problems persist. Even though for the time being, policy enjoys high credibility as the overall economic outcome is very satisfactory – low inflation with high growth – the ultimate goal of inflation targeting is to firmly anchor inflation expectations. The Bank has put stress on designing an

interest rate path that “looks good” (Qvigstad, 2006), based on the following expanded list of criteria: anchoring inflation expectations; getting the balance between inflation and output right; robustness with respect to alternative assumptions; interest rate smoothing; financial stability; and cross-checks with simple monetary policy rules. The grounding of interest rate projections in an empirically valid model for monetary policy analysis, leading to best possible inflation forecasts contingent upon this future interest rate path, seems critical in order to assure such a result (Box 2.2). If benign supply side shocks persist and inflation expectations are well anchored at the target Norges Bank should perhaps allow itself longer than 3 years to reach its inflation target, while raising interest rates now in order to stabilise the economy.

Box 2.2. Inflation forecasting by the central bank

The credibility of the inflation targeting regime rests fundamentally on the ability to make reasonably accurate inflation and corresponding interest rate forecasts given real time information and understanding of the policy transmission mechanism. This becomes all the more important with the lags in transmission of monetary policy, which the Norges Bank has itself identified (quoting Milton Friedman) as “long and variable”. The quality of forecasts of the common explanatory variables for inflation, viz. wages, exchange rates, foreign prices, and the output gap, are essential inputs into this process, so that unforeseen movements in any of these should be traceable to genuine exogenous shocks, not endogenous forecast failures. These will require data-consistent estimates or calibrations of the parameters and lags involved in the endogenous determination of these variables, *inter alia* via domestic interest rates, and of their relationship to the dynamic core inflation process.

Since the output gap – like underlying inflation – is itself unobservable, getting an accurate reading on the extent of economic pressures, and hence future inflation, is a main challenge and source of uncertainty, and indeed the starting point of the whole forecasting exercise (see Kloster, 2006). Norges Bank has perfected its information gathering tools with the help of a strong regional network providing information ahead of the formal data issued by Statistics Norway, which gives a good idea of resource tightness in the economy. Hence, the quality of data going into the decision process seems adequate, though the thrice-yearly frequency of the inflation report at some point lags the availability of quarterly data national account releases, as discussed in Dørum and Holden (2006). The short term estimates of the output gap and underlying inflation, and important exogenous variables, then feed into the Bank’s “core model” of the macro economy (see Husebø *et al.*, 2004) with parameters calibrated in accordance with economic theory and available empirical evidence. This model produces interdependent forecasts of the key macroeconomic variables (output gap, inflation, interest rate, exchange rate) in an interactive process with a surrounding system of smaller models, as well as an element of judgement (see Koster and Solberg-Johansen, 2006). Unlike a variety of models is seen as a way to reduce inherent modelling uncertainty.

Norges Bank’s forecast of CPI-ATE inflation has been characterised by significant errors, sometimes even in the first forecast quarter, since 2002. It has attributed the negative surprises to unforeseen shocks in import prices, the exchange rate and increased competition in domestic markets. For the forecasts made in 2002 and 2003, CPI-ATE outcomes ended up frequently outside the 90% confidence interval, which constitutes a forecast failure. As this should be a rare, not recurrent event, the confidence intervals shown around the central forecasts appear to exaggerate the precision of the forecasts (confidence intervals shown by the Swedish Riksbank are for example much wider). The Bank apparently got a better handle on the inflation process, allowing it to markedly reduce its inflation forecast errors especially after the first quarter of 2005, by taking into account the rising share of low-cost imports in total imports due to domestic demand shifts toward such goods (see Åserud, 2005). Still, Dørum and Holden (2006) consider that true uncertainty is likely to be greater than indicated by the fan charts.

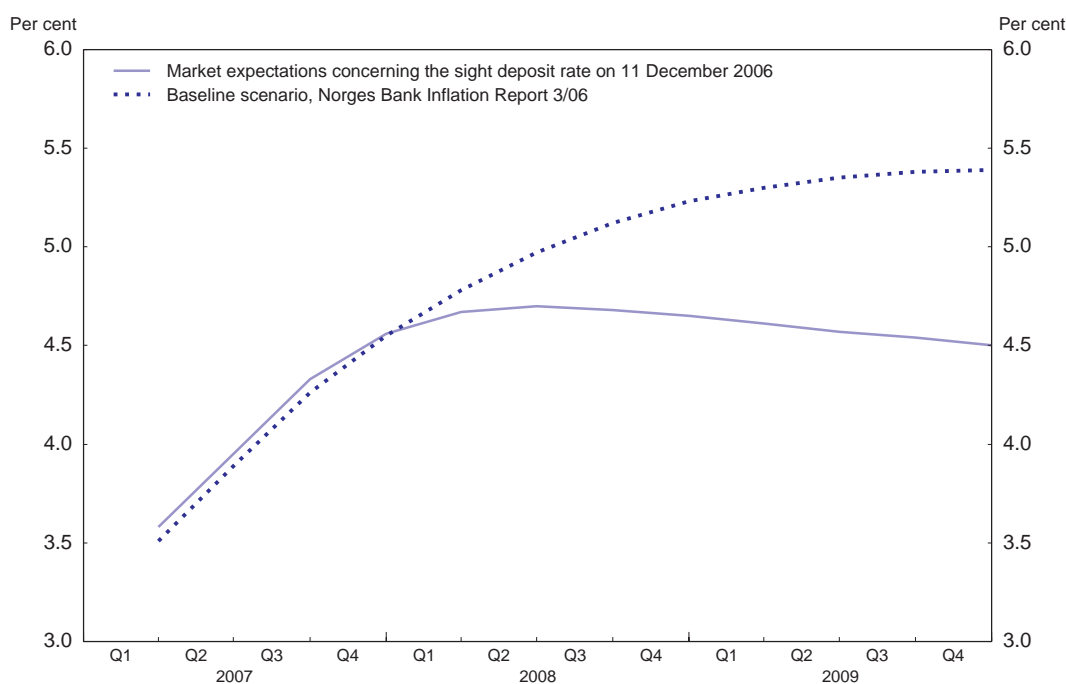
Financial stability (asset price) concerns

An unfolding policy uncertainty relates to adverse trends in money and credit aggregates, due notably to fast rising household indebtedness. Norges Bank places emphasis on demographic and other structural factors in the explanation of excess housing demand and rising prices. However, like in other countries, the extended period of low long-term interest rates could well have reinforced these trends. Increasing indebtedness among groups of households increases the risk of future adjustment costs, especially in the case of a sharper than foreseen tightening in the next year or two. History shows that the larger threat to financial stability nevertheless derives from firms’ profitability, which is now robust. But looking forward there are risks. Firm profits are sensitive not only to household demand but also, in a very open economy, to fluctuations in the exchange rate.

Pursuing financial stability in the context of flexible inflation targeting is not straightforward, particularly with a supply shock that moves inflation and output in different directions. In general, it is not possible for the central bank to also target financial stability so long as it has only one degree of freedom (*viz.*, interest rate level, or alternatively, the speed at which inflation target is approached). It could try to vary the policy horizon beyond that needed to stabilise inflation and output only, although this depends on the choice of financial indicator – if it is the firm bankruptcy ratio, a longer horizon would be needed to allow a more gradual adjustment of the exchange rate to which this indicator is particularly sensitive; but if household debt, a shorter horizon may be preferable because the faster the rise in the interest rate the less likely an unsustainable pile up of mortgage debt. Either way, though, variability of the main targets might increase.¹⁴

By publishing its future interest path, starting with *Inflation Report 3/2005*, the Bank is better positioned to convey the message that the low interest rate level will not prevail, besides improving the predictability of policy and its ability to influence inflation expectations more generally.¹⁵ Rational agents would cut back their borrowing if they saw the rising costs of these loans in the future. However, this seemed to have had little impact as debt growth has continued unabated and market interest rate forecasts remain below those of the central bank (Figure 2.6). Hence, it seems the best that the Bank can do now is to keep a close eye on financial vulnerability indicators and factor them adequately into its inflation feedback mechanism and output forecasts. Indeed, this is what it indicates it is doing.

Figure 2.6. Future interest rate path: Norges Bank vs. market¹



1. Derived from estimated forward rates. A credit risk premium and a technical difference of 0.20 percentage point were deducted in calculating the sight deposit rate.

Source: Norges Bank.

In the current situation of emerging housing market imbalances *and* low inflation, Norges Bank may be doubly sensitive to the exchange rate consequences of its tightening actions: not only could it push inflation down even lower by driving the exchange rate up, it could also thereby exacerbate financial fragility concerns. The Bank is adamant about not targeting asset prices – whether house prices, exchange

rates or equity valuations – and rightly so, but it obviously places high weight on (and is constrained by) the exchange rate as an intermediate variable whether it is finally concerned about inflation, output, or financial stability. The exchange rate transmission channel is, after all, the quickest and perhaps strongest of the three (the other two being demand impacts of interest rates and price impacts of the output gap).¹⁶

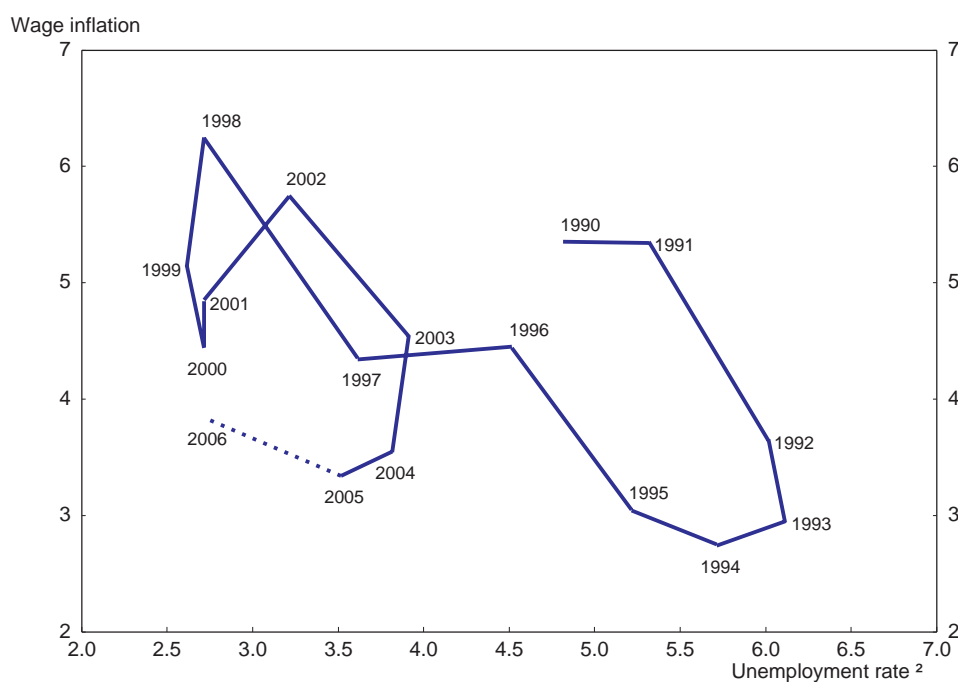
Uncertainty about the “Phillips curve”

Perhaps the most critical uncertainty lies in the relationship between labour market tightness and wage developments. A key part of the inflation process resides in wage behaviour. A possible downward shift of the NAIRU linked to greater labour market competition implies a smaller hypothetical “sacrifice ratio”, that is, by how much inflation rises in response to a given reduction in unemployment (Bean, 2006 sees this as “flattening” of the Phillips curve).¹⁷ A lower NAIRU will increase the resource utilisation of the economy and reduce the structural unemployment. It also implies that inflation will be curbed at lower unemployment rates than before. Norges Bank has under uncertainty about the NAIRU to decide whether it is safer (or conversely more costly) to err on the side of too much or of too little restriction.¹⁹

The latest Norges Bank Watch report (Dørum and Holden, 2006) advises erring on the side of low inflation, which actually should be seen as a chance to lower unemployment more than would otherwise be possible rather than as a threat to policy credibility. This in turn implies the need to step up the present pace of policy tightening. If it turned out that the Bank was tightening too fast after all, say if the economy slowed more than expected, it could easily correct the mistake by easing back down, having more room to do so; but if it made the opposite mistake of tightening too slowly, thereby provoking an uncontrolled overheating, it could be much harder to get the inflation down again. However, the Bank’s overall concern must be to anchor inflation expectations on target.²⁰

It is also possible that the Phillips curve has not changed after all, and that wages will respond to the 3¼ per cent (and falling) unemployment rate much as in the past (Figure 2.7). If that were the case, a forward looking policy would probably have implied a faster tightening, geared to attaining the neutral rate of interest by end 2007 at the latest. Since Norges Bank did not do this, then it may have believed that the Phillips curve has indeed shifted, at least temporarily, not least because memories of severe monetary tightening in 2002 and of the worldwide “jobless recovery” are still strong, and unions – who fundamentally care about employment – have internalised the Bank’s policy response to wage immoderation.²¹ However, this inclination may be changing. In its 1st of November 2006 monetary policy strategy meeting, Norges Bank announced that, because of signs of increasing resource tightness and incipient wage pressures, it was raising its projected policy interest rate path by about ½ percentage points on average, implying that the neutral rate of interest would now be reached in 2008, instead of 2009, and that inflation was now expected to increase at a somewhat later point in time. It seems that publishing an explicit interest rate projection has ensured greater policy consistency and stimulates the Bank to explain changes in its strategy satisfactorily.²² Indeed, the greater monetary policy transparency has been working very well.

Figure 2.7. Phillips curve ¹



1. Data for 2006 are estimations.
 2. Registered unemployed persons as a percentage of labour force.
- Source: Ministry of Finance, National Budget 2007.

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1. A growing body of literature shows that reduced risk levels make asset prices more vulnerable to changes in risk perceptions. Hence, volatility can be higher because risk margins are so thin.
2. The latest IMF World Economic Outlook November 2006, is predicting a collapse of non-oil commodity prices by the end of the decade.
3. Household and enterprise debt grew at 15 and 18% respectively annual rates in the first 9 months of 2006.
4. See OECD (2005).

5. This could reflect that the external positive supply shock has been common to all OECD countries, with China putting further downward pressure on OECD wide interest rates through its policy of holding US Treasuries instead of letting its currency appreciate. Norway is of course following a similar strategy regarding its oil receipts, albeit holding a more diversified portfolio of foreign assets than is China.
6. Norges Bank estimates this effect at around 0.2 percentage points currently.
7. Even though the overall debt-to-asset ratio is satisfactory, those individual households that are most heavily indebted, typically young first-time owners and lower income groups are not the same as those who own the assets. See Riiser and Vatne (2006).
8. Empirical estimates indicate that for each 1 percentage point increase in the projected medium-term policy interest rate path, house prices and housing wealth could fall by over 3% by 2009 (Berge *et al.*, 2006).
8. In a low inflation environment, a fall in house prices is more likely to be needed in order to realign relative prices. This could have especially damaging impacts on output growth, as housing wealth effects have been estimated to be strong in Norway, on the order of those estimated for the United States.
9. The OECD estimates the NAIRU at 4.14 %.
10. See *e.g.*, Jafarov (2005) which finds a notable estimated impact of domestic unit labour costs and output gap, as well as imported prices (representing foreign labour costs and output gap), on domestic core inflation. Akram and Nymoene (2006) estimate models of the inflation process which depends on imported inflation and domestic wages, themselves a function of the unemployment rate in Phillips curve type relationship. Nymoene (2005) presents a reduced form type relationship relating core inflation directly to the unemployment rate, foreign inflation, domestic and foreign interest rates and exchange rates.
11. Norway's energy supply is mainly based on hydro, the price of which tends to fluctuate strongly with the weather, making headline inflation too volatile for inflation monitoring. Although this problem has been somewhat alleviated with establishment of the "Nordic pool" for energy trading, Sweden which also produces hydro tends to face the same weather conditions, thus reducing the diversification effect. Besides, smelters are heavy users of hydro in Norway, notably because companies have access to cheap hydro (long-term contracts are often said to be implicit public subsidies). This reduces electricity production capacity in the winter because of high utilisation rates of hydro in the summer, and leads to distortions in factor allocations and prices.
12. See also S. Checcetti, "Core inflation is an unreliable guide", *Financial Times*, 12 September 2006.
13. This is line with recommendations in the previous Survey.
14. The Bank of England and the ECB have recently tended to focus more on headline than on core inflation. On the other hand, the US Federal Reserve continues to consider core inflation as the best indicator of underlying inflation.
14. (see Akram *et al.*, 2006).
15. See Woodford (2006) for a discussion of publishing central bank interest rate projection.
16. The previous Survey of Norway suggested that the Bank be clearer about not targeting exchange rates as an end in themselves, which would be antithetical to inflation targeting, and the Bank has been careful in its communications to stress this point. At the same time, the last two Norges Bank Watch reports seem to have chided the Bank for not taking stability of the exchange rate more seriously as an end in itself, as is specified in the central bank's mandate written by the Ministry of Finance.

17. Indeed, the labour unions believe that the numbers of Polish and Baltic workers are much higher than estimated and that the threat of outsourcing is larger than commonly appreciated (source: LO discussions with OECD mission in October 2006).
19. Interestingly, a few years ago central banks such as the Federal Reserve were worried about the excessive risks of deflation. Thus, interest rates may have then been kept low longer than otherwise in order to “take out an insurance policy” against the perceived costlier risk. The present situation would seem to be the opposite.
20. In any event, the transmission lags from interest rates to inflation are normally longer than those to output.
21. Besides, there is no downward trend in unemployment; statistically trend unemployment remains around 4%, the threshold below which wage pressures have typically emerged in Norway.
22. See Bergo (2006).