Monetary policy and wealth management in a small petroleum economy

Speech by Governor Øystein Olsen at Harvard Kennedy School, 9 April 2013.

Please note that the text below may differ from the actual presentation.

Introduction

I am delighted to be here at the Harvard Kennedy School, and I really appreciate this opportunity to talk to you. My topics are Norwegian monetary policy and the central bank's management of Norway's oil fund, the Government Pension Fund Global.

I will begin with some background on the macroeconomic policy framework in Norway, and why we believe it works well. A rules-based approach was adopted after two turbulent decades of boom-bust economic cycles. The path towards the current regime was developed and supported by successive governments in the 1990s and early 2000s as it gradually came into place. Since 2001, the operational target of monetary policy has been annual consumer price inflation of around 2.5 percent over time.

With growing petroleum revenues, asset management has also become one of Norges Bank's main tasks. Both in our conduct of monetary policy and in asset management, transparency is a guiding principle. I will explain how we see ourselves as a global financial investor, and elaborate on the main elements of our investment strategy.

Some background

<Chart: Oil wealth has brought strong rise in prosperity>

In order to put the Norwegian economy into some perspective, we can compare Norway with Sweden, our close neighbour and a country with many similar characteristics. The relative income level between the two countries was stable – until 1969, when oil was discovered in the Norwegian part of the North Sea. Since then, Norway's income has pulled ahead.

<Chart: Terms of trade and real exchange rate in Norway and other countries>

Our national income reflects the considerable improvement in Norway's terms of trade over the past couple of decades compared with other resource-rich countries. Nonetheless, the real exchange rate in Norway has not appreciated as sharply as in these countries.

The extraction of oil and natural gas from the sea bed along Norway's coast has come to play a major role in the economy. The petroleum sector now accounts for 50 percent of our exports and more than 20 percent of GDP. Furthermore, tax payments by oil and gas companies [1] and direct government ownership interests in oil and gas fields ensure that

economic rent largely accrues to the public sector. Petroleum income makes up 30 percent of government revenues.

<Chart: Oil and gas exporters>

On the world market, Norway's most significant role is that of natural gas exporter. Norway was the world's second largest exporter of natural gas in 2010 [2]. Our role in the world market for oil exports is more modest.

Back in the 1970s, policymakers' handling of the newly discovered petroleum wealth got off to a rather weak start. Public spending surged before export revenues had started to kick in. Fiscal policy fuelled a boom and had to be reversed and tightened. By the late 1970s, Norway was in the midst of a deep recession.

In the mid-1980s, the Norwegian economy experienced a new boom, this time fuelled by private debt growth. After the fall in oil prices in 1986, we experienced a collapse in housing prices, as well as a severe banking crisis and a soaring public deficit. The turbulence made clear how vulnerable a small open economy is to terms of trade disturbances.

The downturn in the early 1990s was the deepest that Norway had experienced since World War II. The authorities realised that the old policy framework was no longer suitable. With a globalised economy and deregulated credit and capital markets, our economy was more vulnerable to external shocks than before. A number of major reforms were implemented to improve cost competitiveness and boost growth. And the establishment of the oil fund in 1990 and the reform of the monetary policy framework in 2001 made the economy more robust to external shocks.

<Chart: Norwegian exports>

The need for a robust policy framework is greater than ever: Petroleum products now make up more than 50 percent of exports, and – more recently – oil services exports have also picked up. Exports of other commodities add to the vulnerability of our economy to terms of trade shocks. [3] The total commodity-related share of exports has risen from less than 40 percent in 1978 to a good 65 percent in 2012.

Rules-based fiscal policy

We know that commodity producing countries tend to experience pronounced economic cycles. However, as noted by Jeffrey Frankel (2011) [4], this can be reduced through well-chosen regimes for fiscal and monetary policy:

"We need to set up regimes ex ante which are more likely to deliver the right result ex post, in a world inhabited by human beings, not angels."

In Norway, the act of parliament relating to the oil fund, passed in 1990, provided a new framework for fiscal policy. The policy guidelines were clarified in 2001, and rules governing the interaction between Norway's petroleum wealth and fiscal policy were established. These rules state:

<Chart: The Government Pension Fund Global and the fiscal rule>

- All government revenues from the oil sector must be transferred to the fund.
- Government spending, on average over the cycle, must be limited to the expected real return on the fund – estimated at 4 percent. This is known as the fiscal rule. The aim is to spend only the return generated by the fund's investments, not the capital itself.
- All of the fund's capital is invested abroad.

<Chart: Projected size of the oil fund>

At the time the fund was established, Norway was in the midst of a deep recession, and many doubted that any petroleum revenues would ever be saved. However, after a few years, the government's cash flow from the petroleum sector started to increase sharply. The savings plan has since remained intact and the fund has now reached a size of more than USD 700 billion, or 140 percent of GDP.

<Chart: Structural non-oil budget surplus>

As a result of the fiscal rule, economic policy is more robust: First, by decoupling spending from current petroleum revenues, the fiscal rule provides for a gradual and sustainable phasing-in of petroleum revenue spending. Second, the guidelines ensure the necessary flexibility to allow automatic stabilisers to work. Third, they allow for careful countercyclical policy. [5] Structural public non-oil deficits have counteracted movements in the output gap since the fiscal rule was adopted. In particular, reserves accumulated in the fund provided fiscal leeway during the economic setback in 2008 and 2009.

At the same time, cyclical fluctuations in mainland production are strongly influenced by petroleum-related demand. This indicates that there is a strong link between Norway's mainland output gap and the oil price.

<Chart: The size of Norges Bank's balance sheet including the oil fund>

There is a direct link between the fund mechanism and the central bank's purchases of foreign exchange. Petroleum taxes are paid in Norwegian kroner. The central bank buys foreign exchange to transfer to the fund in order to secure the necessary net capital outflow. The fund ends up on the asset side of the central bank's balance sheet and these assets are exactly offset by government claims on the central bank. Bank reserves held in the central bank are unaffected by this and have remained low and stable in comparison.

<Chart: Real exchange rate and oil price >

The krone clearly responds to oil price shocks. However, compared with other commodity-based economies, like Canada, Australia and New Zealand, fluctuations in the real exchange rate have been moderate. [6] The build-up of the fund may have helped contain a temporary real appreciation during a period of high oil revenues.

Inflation targeting with interest rate forecasting

<Chart: Inflation >

When the fiscal rule was introduced in 2001, Norges Bank was charged with the task of keeping consumer price inflation low and stable. The value of the krone exchange rate was allowed to float freely. The operational target of monetary policy is annual consumer price inflation of close to 2.5 percent over time, under a regime of flexible inflation targeting.

In the conduct of monetary policy, the aim of reaching the inflation target is balanced against the aim of stabilising output and employment. In addition, monetary policy should be robust by seeking to mitigate the risk of a build-up of financial imbalances. Over the past ten years, average inflation in Norway has been somewhat below, but close to, 2.5 percent.

<Chart: Key policy rate in the baseline scenario>

The degree of transparency regarding Norges Bank's interest rate decisions has increased gradually since inflation targeting was introduced. We provide clear guidance about the future path of the key policy rate. Explicit interest rate forecasts were introduced in 2005.

A key objective is to convey the contingency and the uncertainty in the forecast. To that end, we seek to be transparent about the considerations underlying each interest rate forecast and what the objectives and trade-offs are. We consider it important to explain why our forecast has changed. In our Monetary Policy Report, the interest rate forecast is accompanied by a separate chart showing the revision since the previous report due to changes in news and new assessments. Monetary policy also seeks to mitigate the risk of a build-up of financial imbalances. Operationally, and as a support to monetary policy decisions, our objectives and trade-offs are described by a monetary policy loss function.[7] The loss function is minimised subject to our model of the Norwegian economy, and the implied interest rate path is an important aid to the policy decision process.[8] Since models are simplifications, our projections are based on a combination of model analyses and professional judgement.

Transparency allows financial market participants and other interested parties to make their own judgments on the revisions to our interest rate forecast – and the revisions will often be anticipated. Ideally, our response pattern is reflected in market interest rates as soon as economic news arrives, enhancing the effectiveness of monetary policy.

And we do indeed find that market expectations tend to react to economic news largely in line with the Bank's response pattern. We also find evidence of reduced volatility in market interest rates on the days interest rate decisions are announced, compared to the period before the introduction of the interest rate forecast. This suggests that a more precise communication of policy intentions has improved market participants' understanding of the central bank's response pattern. [9] The contingency of the forecasts seems to be well understood.

Management of the fund

Besides making monetary policy decisions, one of Norges Bank's main tasks is to manage Norway's oil fund.

<Chart: Governance structure>

The Ministry of Finance holds the political responsibility for the fund. The overall management principles and strategy are anchored in parliament and the Ministry reports to parliament at regular intervals.

The management of the fund is fully delegated to the central bank – to Norges Bank. Our task as manager of the fund is strictly commercial: to maximise returns within the guidelines defined by the government. All investment decisions are made by Norges Bank Investment Management, a separate division within the central bank. Neither Norges Bank's Executive Board nor the Ministry of Finance is involved in any individual investment decisions. This governance structure was set up to ensure that the fund was not used as an instrument of foreign policy.

The purpose of the fund is to ensure that future generations receive their fair share of Norway's petroleum wealth. To achieve this, the fund was designed to be invested for the long term. Size and a long investment horizon are the fund's two key characteristics. Together, they form the backbone of the fund's investment strategy:

- First, the fund's long investment horizon implies substantial risk-taking capacity. We are able to act as a countercyclical investor.
- Second, the fund's size makes it possible to take advantage of investment opportunities worldwide, in a number of asset classes.
- Thirdly, a fund owned by the government must be highly transparent, not only to the Norwegian public but also in an international context.

Let me elaborate on these aspects.

In the early summer of 2007, the fund's strategic equity share was raised from 40 to 60 percent. From summer 2007 to 2009, the fund bought equities worth USD 180 billion in international markets, equivalent to 0.5 percent of all globally listed equities. The largest volume of transactions was carried out in the midst of the financial crisis of 2008 and 2009.

The long-term horizon also enables us to invest countercyclically, by rebalancing asset classes: If the equity share increases by more than 4 percentage points from the target weight of 60 percent, we will sell equities and buy bonds. Conversely, if the equity share drops below 56 percent, we will sell bonds and buy equities.

The capacity to withstand market turmoil was demonstrated during the financial crisis in 2008 and 2009. For a period of 18 months, the fund's losses totalled roughly USD 120 billion – more than 25 percent of Norway's GDP. The losses did not go unnoticed. They led to lively public debate on the fund's investment strategy. However, the conclusion drawn was that the strategy was robust, and the government remained committed to it. [10] Norway would

have to accept that the fund's capital would fluctuate, sometimes dramatically, given the high equity share. Indeed, through 2009 and 2010, not only were those losses reversed, but additional gains were also made.

<Chart: Changing the regional allocation>

The investment strategy was further revised last year. The conclusion was a clear step towards a more globally diversified portfolio. From a considerable strategic overweight in European markets, a larger share of the fund will now be invested in the Americas and Asia. At the end of 2012, just short of 30 per cent of the fund was invested in US securities.

A key role of the bond investments in the fund is to reduce short-term fluctuations in the fund's value during periods of financial stress. One lesson of the financial crisis is that government bonds issued by countries with good debt-servicing capacity best fill this role. The new strategic benchmark for fixed income investments, which was adopted in 2012, clearly distinguishes between government bonds and corporate bonds. Government bonds comprise 70 percent of the bond portfolio. These bonds are now weighted according to the size of each country's GDP rather than the size of its debt. The strategic index for fixed income investments has also been simplified by removing certain bond classes, such as mortgage-backed bonds. We have also significantly reduced the number of bonds in the fixed income portfolio.

Several emerging market currencies were also added to our bond portfolio last year, among them the Mexican peso and South Korean won. These adjustments will provide a more balanced exposure to global output.

Two years ago, the fund made its first real estate investments in Europe. We have recently begun investing in US real estate. In February, the fund announced a joint venture with the TIAA-CREF [11], where we invested in five properties on the east coast. One of the properties is on Arch Street here in Boston. Direct real estate investments will provide a fairly stable, inflation-adjusted cash flow. Over time, we aim to invest up to 5 percent of the fund in real estate. Investments will be allocated to more countries as we gain experience.

<Chart: Further information>

Regulatory requirements may limit the distribution of certain types of information and must always be met. However, our aim is to be as relevant and transparent as possible in our communication. Our policy is to be transparent about our evaluation of markets. All of the fund's holdings at the end of 2012 are listed in the recently published annual report, as is the fund's voting at 10 000 shareholder meetings last year.

The fund is a large investor in a macro perspective. At company level, however, we are a minority shareholder. Strengthening shareholder rights and promoting equal treatment of shareholders are two of our key targets when we work with companies and standard-setting authorities. In this regard, we are happy to cooperate with the program on corporate governance at Harvard Law School [12].

Final remarks

The Norwegian economy has over the past four decades benefitted enormously from its rich natural resources. Lessons have been learned, and policy rules have been established for the management of our oil and gas reserves. For the moment, the petroleum industry both provides exposure to an entire global economy and shields us from the current low growth environment across the OECD area.

However, it is too early to say whether Norway has managed to establish a framework that makes the economy robust enough to withstand strong fluctuations in our terms of trade. Our present framework has yet to be tested against a large and persistent negative oil price shock. I believe the real test of our framework will come when the present boom in the petroleum industry – at some point – is reversed. Norway's oil and gas resources, though rich, will not last forever. As in any other country, emphasis should be given to further development of human capital as the primary source of long-term prosperity and wealth.

Thank you for your attention.

Footnotes

[1] Both ordinary income tax and an additional resource rent tax.

[2] For more information about the Norwegian petroleum sector, see "Facts 2012: The Norwegian petroleum sector", Ministry of Petroleum and Energy, http://www.regjeringen.no/en/dep/oed/documents-and-publications/Reports/2012/facts-2012-the-norwegian-petroleum-secto.html?id=714606

[3] Using a factor-augmented vector autoregressive (FAVAR) model that allows them to distinguish between different groups of countries, Aastveit et. al (2012) find that demand from emerging economies (most notably from Asian countries) is more than twice as important as demand from developed countries in accounting for the fluctuations in the real price of oil and in oil production. See Aastveit, Knut Are, Hilde C. Bjørnland and Leif Anders Thorsrud (2012): "What drives oil prices? Emerging versus developed economies", Norges Bank Working Paper 2012/11.

[4] Frankel, Jeffrey A. (2011), "How Can Commodity Producers Make Fiscal and Monetary Policy Less Procyclical?" in *Beyond the Curse: Policies to Harness the Power of Natural Resources*, ed. by Rabah Arezki, Thorvaldur Gylfason and Amadou Sy, International Monetary Fund.

[5] Norwegian fiscal policy has become more countercyclical. See e.g. figures 2 and 3 in Frankel, Jeffrey A., Carlos Végh and Guillermo Vuletin (2011): "On graduation from fiscal procyclicality", NBER Working Paper 17619

[6] Chen, Yu-Chin. and Kenneth S. Rogoff (2003): "Commodity Currencies", *Journal of International Economics* 60, 133-169, documents that commodity exports have a strong and stable influence on the floating (real) exchange rates of Australia, Canada and New Zealand. Ferraro, Domenico, Barbara Rossi and Kenneth. S. Rogoff (2012): "Can Oil Prices Forecast

Exchange rates?" NBER Working Paper 17998 extends the analysis to higher frequency data and out-of-sample forecasting and finds that both contemporaneous and lagged oil prices have significant predictive ability for the NOK/USD-exchange rate and oil prices.

[7] The monetary policy loss function is described in e.g. http://www.norges-bank.no/en/about/published/publications/monetary-policy-report/1/ p.15. In March 2012, the operational loss function was revised in order to make Norges Bank's consideration of financial stability when setting the key policy rate more explicit.

[8] For further comments on the Norwegian framework, see also Lars E.O. Svensson (2011): "Inflation Targeting", Chapter 22 in Benjamin M. Friedman and Michael Woodford (eds.), *Handbook of Monetary Economics*, Volume 3B, Amsterdam: North-Holland in an imprint of Elsevier, 2011.

[9] See Holmsen, Amund, Jan F. Qvigstad, Øistein Røisland and Kristin Solberg-Johansen (2008): "Communicating monetary policy intentions: The case of Norges Bank", Norges Bank Working Papers 2008/20. See also Taylor, John. B. (2010): "The Transparent Effect of Foreign Interest Rates on Central Bank Decisions", 26 September, in his blog *Economics One*

[10] The fund's risk-bearing capacity is also exploited through rebalancing, please see NBIM discussion note 1-2012: "Time-varying expected returns and investor heterogeneity: foundations for rebalancing"

[11] Teachers Insurance and Annuity Association – College Retirement Equities Fund

[12] For more information on the Harvard Law School Program on Institutional Investors, see http://pii.law.harvard.edu/.