Zdeněk Tůma: Forecasting at the Czech National Bank

Speech by Mr Zdeněk Tůma, Governor of the Czech National Bank, at the Bank's Forecasting Dinner, Prague, 18 February 2010.

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Ladies and gentlemen, dear colleagues,

Over the last seven years I have had the privilege to welcome you here at the premises of the CNB and open the Forecasting Dinner with my thoughts on forecasting and related issues. Unsurprisingly tonight it won't be any different. However, as it is almost certain that this is my last chance to speak to such distinguished audience still as the governor of the Czech National Bank, I would like to use this opportunity and discuss the forecasting process in the Czech National Bank from a little bit broader perspective. Those of you who were expecting exact inflation and GDP growth numbers I will kindly ask to refer to our latest Inflation Report that was published last Friday.

As many of you well know it is generally recognised that central bank policies must be forward-looking. As emphasised by Milton Friedman, for example, there are long lags between monetary policy actions and their impact on the economy. In this tradition Alan Greenspan when being the chairman of the US Federal Reserve System pointed out that: "Too often in the past, policymakers responded late to unfolding economic developments and found they were behind the curve .... Those who wish for us ... to await clearly visible signs of emerging inflation before acting are recommending we return to a failed regime of monetary policy that cost jobs and living standards. I wish it were otherwise, but there is no alternative to basing policy on what are unavoidably, uncertain forecasts".

Forecast is a keystone for our monetary policy framework, i.e. inflation targeting, yet practical forecasting is pretty far from being an easy job. The rule number one in this business is that whereas a failure in the stochastic part of the forecast is still something you can live with, a failure in forecasting trend changes can cause enormous inaccuracy of the forecast. Consequently, forecasting techniques do not necessarily have to match for any short-run movement; however, they should not fail when break points in the economy are under consideration.

As a good example of the above point serves our, i.e. Bank Board of the Czech National Bank, decision to cut the interest rate in August 2008 when there was no visible sign of any recession among the European countries, inflation was above our inflation target because of oil and food prices and the European Central bank raised its interest rate only month before. Although it is certain that the, at that time actual, forecast did not match the data perfectly, with no doubt it identified the break point and by that served very well its purpose.

Naturally, the forecast accuracy, i.e. the ability to identify breaking points reasonably well, has not come out of the blue sky. The actual way in which forecasts are produced and used in central banks has changed substantially over the past two decades. These changes have reflected developments both in the economic (and econometric) theory and in monetary policy regimes. Bearing in mind the failure of large-scale models in 1970s, the profession has started to prefer smaller-scale models with a sounder microeconomic background, built in recent decades usually along the lines of New Keynesian Economics.

Well, maybe we are still not able to match all the statistical numbers perfectly, but I hope that we are more skilled in recognising important breaks in the development of our economies than we were 10 years ago. Indeed, the use of general equilibrium models forces us to think about the economy in a consistent way and the use of multivariate filters has improved our knowledge about the current position of the economy in the business cycle. You probably all remember that inflation targeting was in our case introduced in a challenging situation, after a period of currency turmoil in May 1997, which ended the fixed exchange rate period and resulted in higher inflation and rising inflation expectations. The economy needed a new nominal anchor in order to return to a disinflation path. Inflation targeting was chosen as "the best of all bad" alternatives at the time.

Such a sudden switch from a fixed exchange rate system to inflation targeting required a radical and fast change in the central bank's mentality. This was perhaps the biggest challenge that the CNB had to face. Over the past five years it has involved much work on improving our forecasting tools, leading to substantial development in our internal analytical processes.

At the beginning of 2002, the CNB settled on a new forecasting process. This integrates expert judgment and short-term analyses – which were the key pillars of the CNB's forecasting tool-kit in the first years of inflation targeting – with a macroeconomic model that provides a consistent framework for the policy analysis. An important element of this step was a switch from a forecast with a fixed-interest-rate assumption to an unconditional forecast that includes a reaction function of the central bank.

The initially established quarterly projection model was a small-scale model belonging to the second generation of such models. It was thus relatively simple and arguably missed many important links in the economy. Nevertheless, it was already quite close to the state-of-the-art among the inflation-targeting central banks around the world, and intense work has been in progress to build a higher-generation model. As a result from July 2008 the CNB's forecast is based on latest generation general equilibrium model, which is fully based on micro specifications. Of course, expert judgment and short-term analyses still play an important supplementary role in the design of the final forecast.

It is worth mentioning that the development of our forecasting system has been part of the wider evolutionary process that the Czech inflation targeting regime has gone through. The first years of the new regime were not easy, and included frequent numerical target misses. Nevertheless, the Czech Republic enjoys low inflation, and inflation expectations seem to be firmly anchored at low levels at present. Monetary policy decision-making is rule-based and transparent, thereby enhancing the credibility of the CNB.

Let me conclude with the statement that a "forecast based" monetary policy framework seems to fully allow an independent central bank to commit credibly to its long-term goal of price stability and this certainly means a lot.