

Zdeněk Tůma: Forecasting and its role as an information source in the decision-making of the central bank

Speech by Mr Zdeněk Tůma, Governor of the Czech National Bank, at the Forecasting Dinner 2005, Czech National Bank, Prague, 18 February 2005.

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Ladies and gentlemen,

Last year when I was speaking on the occasion of the Forecasting Dinner, I discussed several points connected with the forecasting processes at central banks and at the CNB in particular. Tonight I shall talk about some aspects of uncertainty in forecasting and in particular about the role market forecasts can play as an information source in the decision-making of the central bank.

The essential question I have in mind is to what extent should the central bank follow market forecasters' expectations about the future development of the economy. In other words, should the central bank, in order to achieve its target, follow the market's expectations or can it surprise the market from time to time?

To your common knowledge, the CNB nowadays operates under the inflation targeting regime, which is a monetary policy regime that considers the forecasting process to be the heart of monetary policy decision-making.

Although the forecasting process pays main attention to the future development of prices, this does not necessarily mean that central bankers are obsessed with inflation. In fact, inflation targeting requires us to look for and use a broad range of information, including market expectations. On the other hand, since the inflation forecast is not only an important internal decision-making tool, but also a crucial communication device, market participants have a good knowledge of the central bank's forecast and can compare their own view on the economy with the central bank's one. This implies that both the central bank and the market are well informed about each other's forecast.

It is clear that a huge portion of uncertainty is inherent to any practical forecasting. Moreover, from the monetary policy perspective this uncertainty is complicated by the fact that the results of today's monetary policy action will be effective with a significant lag. On top of that, from the economic theory we know not only that today's monetary policy decision is important, but also that the expectation about future monetary policy has an important impact.

With a certain degree of simplification we can state that in general any future value of inflation depends on three main factors. These are the current state of the economy and its underlying inflationary pressures, current and future monetary policy actions and, of course, future economic shocks. Consequently, the surrounding uncertainty can also be divided into similar parts.

Let me first shortly address the last point, something we can call the "shocks" uncertainty. It is necessary to admit that both today's central bank forecast and today's central bankers' decision are deterministic from this point of view. This means that no shock that the economy will face in the future is incorporated into both the forecast and the decision. In other words, there is no way of avoiding the last-mentioned uncertainty connected with future shocks and neither the central bank nor the markets have any superior information about them.

The uncertainty surrounding the first two mentioned points – the current state of the economy and future monetary policy – will be the heart of my remarks tonight. Being forecasters we all face uncertainty surrounding the knowledge about the current state of the economy. This current state should be thought of as a shortcut to all the inflationary determinants brought from the past, but due to the transmission lags having an impact on future developments. Every forecaster, and of course also the central bank, has his own opinion about the economy's current state.

One question arises immediately: Should the central bank look at market forecasts and use them as a source of information about the economy's current state and for its decision-making? My answer is: Market forecasts should not be neglected. On the other hand they cannot be the core for decision-making and the central bank must rely primarily on its own structural modelling. This implies that despite all the transparency and communication, the central bank will – from time to time – have to surprise other forecasters and the market.

Let me now briefly explain why this is the case. In their article “Inflation forecasts and monetary policy”, Ben Bernanke and Michael Woodford discuss the case of the central bank fully relying on market forecasts for its decision-making. They conclude that relying only on the market inflation forecast the central bank cannot perfectly stabilise inflation on the target. In the economist’s technical jargon, it can be shown that the rational expectations equilibrium under such circumstances does not exist.

Although such a statement looks suspicious, there is quite a simple intuition behind it. Let’s assume that the central bank can infer the current state of the economy only from the market forecasts. Then, following the market forecasts, the central bank will clearly settle monetary policy in order to achieve its target. Consequently, at the end of the day inflation will in fact be equal to the target. In the world of rational expectations, the market forecasters immediately accommodate this experience and their next forecasts will already be equal to the target. Facing market forecasts equal to the target, the central bank can infer nothing about the economy’s current state, which is of course inconsistent with the initial supposition that the central bank can infer the information about the economy’s current state from the market forecasts. Put differently, once we admit that expectations are formed rationally, market forecasts cannot be used as pure information about the economy’s current state.

Understandably, we live in a world of information asymmetry and the rational expectations theory does not hold in its “strong” version. But in this case it can be shown that the rational expectations equilibrium does exist but is not unique. Intuitively, the fact that the central bank uses for its decision-making market forecasts, which already implicitly assume certain central bank behaviour, could produce huge output and inflation volatility. Former Fed Vice-Chairman Alan Blinder wrote about this issue: “This can create a dangerous ‘dog chasing its tail’ phenomenon wherein the market reacts, or rather overreacts, to perceptions about what the central bank *might* do, and the central bank looks to the markets for guidance about what it *should* do.” Bernanke and Woodford call the situation a “sunspot equilibrium” in which the central bank responds to random variables only because it is expected to do so.

The main message I would like to pass on to you tonight is that the uncertainty surrounding the evaluation of the economy’s current state cannot be solved simply by following the market expectation. As a straightforward implication I would like to stress that the central bank must rely primarily on its own evaluation of the economy’s current state. The central bank must both develop its own structural model of the economy and gather relevant information from a variety of sources. As a consequence, surprising the market is nothing the central bank should be blamed for, and the market should be prepared to face such surprises from time to time.