

Christian Noyer: Central bankers' dilemmas under uncertainty

Speech by Mr Christian Noyer, Governor of the Bank of France, at a seminar in Buenos Aires, 5 June 2006.

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Ladies and gentlemen,

- Thank you for inviting me to this seminar. It is a great pleasure to address such a challenging theme, namely "Central Bankers' dilemmas under uncertainty".
- In the first part of my address, I will recall the nature of uncertainty and its importance for the central banker; in the second part, I will sum up proposals for addressing uncertainty.

I The nature of uncertainty

Uncertainty arises in many forms. It is crucial to central bankers in general (I/1) and maybe even more to the Eurosystem (I/2).

1) *The importance of uncertainty for the central banker*

The relevance of risks and uncertainty for economic analysis was suggested in 1921, by Frank Knight (*Risk, Uncertainty and Profit*). "Risk" refers to situations where the decision-maker can assign probabilities to the randomness that he is faced with; "uncertainty" to situations where this randomness cannot be expressed in terms of probabilities.

Uncertainty is crucial to central bankers: according to Alan Greenspan, "Uncertainty is not just an important feature of monetary policy; it is the defining characteristic of that landscape". Thus, I will focus on monetary policy, although the topic is also relevant for financial stability, which is another important issue for central banks.

2) *The Eurosystem faces general but also specific sources of uncertainty*

- As regards the general sources of uncertainty, one can mention uncertainties related to:
 - macroeconomic data, which may be unobservable (output gap) or subject to revisions (GDP);
 - the nature and the persistence of shocks: e.g. oil and commodities shocks, the degree of pass-through to prices, etc.;
 - the transmission of monetary policy to the real economy, since Milton Friedman showed that "monetary policy works with long and variable lags";
 - the potential asset prices misalignments and wealth effects.
- But uncertainty may be more pronounced in the case of the euro area:
 - the available time series are short;
 - the euro area has potentially experienced a regime shift *à la Lucas*;
 - the euro is a catalyst for structural changes.

II How to deal with uncertainty?

The economic literature has proposed some monetary policy guidelines (II/1) and approaches (II/2) to address uncertainty.

1) ***Monetary policy guidelines***

a. Disregard uncertainty

- If the uncertainty is related to data or shocks (the so called “additive” uncertainty), it may be optimal to take decisions as if there were no uncertainty at all.
- In these cases, the “certainty equivalence principle” (Poole, 1970) calls for policy to respond to the best estimate of variables in the same way that it would to perfectly measured variables, were they to be observable.

b. Be cautious

- This is an approach popularised by Brainard: “parametric” uncertainty gives grounds for addressing economic disturbances cautiously, supporting a gradualist approach (Brainard, 1967). Furthermore, transmission uncertainty related to the fact that, according to Milton Friedman, “monetary policy works with long and variable lags”, cautions against trying to “fine-tune” the economy through monetary policy intervention.
- Moreover, a central bank should not adjust policy simply because the market expects it¹:
 - the behaviour of financial markets is mimetic whilst central banks are very cautious;
 - markets are sensitive to speculative bubbles while central bankers focus on fundamentals;
 - markets are short-term oriented whereas central banks are medium- to long-term oriented.
- However, erroneous decisions may be made in private markets if monetary policy does not match the policy anticipated. This requires the central bank to be intertemporally consistent. A usual policy guideline in this context is to gradually adjust the policy rate.
- Thus, from a practical point of view, gradualism has many advantages:
 - it reduces the risk of having to quickly reverse policy decisions;
 - it reduces the probability of financial market disruptions;
 - it is particularly beneficial in the face of major risks.

Debate on the difference of behavior between the Eurosystem and the Fed.

- Less aggressive interest rate cuts in the euro area than in the US after 2001 and prolonged period of stable policy rates between 2003 and 2005 raised the question: is the Eurosystem “too passive”?
- Activism and gradualism refer to the number and magnitude of changes in the policy rate over a given period.
- Research recently conducted on the basis of an estimated model for the euro area and the US over the last two decades has yielded three findings:²
 - the monetary policy strategies pursued by the Eurosystem and the Fed do exhibit some differences;
 - the degree of interest rate smoothing, taken as an indicator of monetary policy gradualism, is quite similar in the euro area and the US;
 - the differences in patterns can be ascribed to differences in size and nature of shocks. Most of the differences are due to demand shocks, which were larger in the United States.

¹ A. Blinder (1998)

² Motto and Rostagno (2005) and Sahuc and Smets (2006)

Monetary policy and asset prices.

- Caution is also an answer to the following question: should monetary policy systematically react to perceived asset prices misalignments? Three factors of uncertainty come into the picture:
 - first, there is by essence a high degree of uncertainty surrounding the assessment of misalignments, related to their equilibrium prices and the channels of transmission to the real economy;
 - second, central banks have to keep in mind the balance of risks facing the economy: a monetary policy action that would reduce the risk of a large loss in the future might be very costly for the economy in the short run;
 - third, the effects of monetary policy decisions on asset prices are very uncertain.
- The announcement of a systematic reaction could therefore lead to moral hazard and undermine the central bank's anti-inflationist credibility, which is its most precious asset. Moreover, the single interest rate policy cannot be geared simultaneously towards two potentially conflicting objectives.

c. Be aggressive or experiment

There may be two cases where gradualism is not the systematic guideline.

- Worst-case outcomes may best be prevented by following policy rules that are rather aggressive in responding to inflation deviations from target.
- A more aggressive policy rule may generate more information, which would improve the learning of the central bank and thereby future policy performance. But the learning process might be costly since it could generate increased volatility.

2. *Some approaches to address uncertainty*

a. Rely on monetary policy rules

- Simple monetary policy rules (like the Taylor rule) may perform well in many different models. Another advantage of a rule-based approach is that policy becomes more predictable, which can facilitate the formation of expectations.
- However, followed as a systematic process, a rule will sometimes ignore information that may be relevant for predicting future risks to price stability. A drawback of too parsimonious rules is their inability to provide a real solution to the policy problem.

b. Pay attention to "tail" events

- Maintaining the stability of the financial system and containing the systemic risk that may arise in financial markets is central to a central bank's mission. In a market-based system, sound risk management by all market participants is essential to protect against the risk that a low-probability (or "tail") event could cause a financial crisis. Such practices enhance financial stability without increasing moral hazard. Market participants familiar with the risk metrics, the stress-test methodologies (and the associated market scenarios) would be more likely to continue to provide access to credit during periods of systemic and institutional stress.
- Stress tests employ either historical data from asset price distributions or hypothetical scenarios that would provide insights into the downside financial risks associated with investments and hedging strategies. Focusing market participants on the structure of stress might assist in limiting the affects of a highly infrequent but significantly costly tail event.

Let me conclude by explaining why I think that the Eurosystem is very well equipped with its strategic framework to deal with uncertainty.

- First, the Eurosystem takes the uncertainty related to transmission uncertainty into account with the medium-term horizon of the definition of price stability. It introduces flexibility in the decision-making process and avoids focusing on short-term developments. The medium-

term horizon is also a way to reconcile monetary policy and financial stability-related considerations, enabling the central bank to “look through the bubble”.

- Second, the Eurosystem does not rely on a single model. The two-pillar approach based on economic and monetary analyses contains complementary information on the short to medium-term horizon (economic analysis) and the long-term horizon (monetary analysis). The economic analysis relies on indicators on the one hand (hard data related to the real economy and soft data) and forecasts on the other hand (Eurosystem’s staff macroeconomic projection exercises evaluated together with the forecasts of other institutions). The monetary analysis is based on a comprehensive assessment of liquidity and credit conditions. These two analyses can be cross-checked to give an overall assessment of the risks for price stability. Alternative models of the inflationary process justify the full-information approach adopted by the Eurosystem in order to overcome uncertainty. In a way, the two-pillar approach rests on the same principles as the Bayesian model averaging, although it is less formal.
- Third, the higher the uncertainty, the greater the need for transparency and more important the credibility. The Eurosystem has been successful in anchoring inflation expectations remarkably close to its objective, showing a high level of credibility: in spite of very high and increasing oil prices, break-even rates have been stable around 2% since the beginning of 2006. By anchoring inflation expectations, credibility helps to reduce uncertainty about future developments and to stabilise the economy. This makes the economic agents understand more easily the interest rate decisions in the short term and the central bank reaction function in the long-term.