



Real-time data and monetary policy[☆]

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Available online 18 July 2005

Abstract

This paper provides an introduction to the problems and opportunities provided by the availability of real-time data. We stress the importance of analyzing policy issues relying on real-time data. A summary of papers presented at a Conference hosted by the Bundesbank in 2004 is also provided. © 2005 Published by Elsevier Inc.

Keywords: Monetary policy; Real-time data

1. Introduction

Successful monetary policymaking is replete with real-world challenges. A particularly vexing one is that monetary policy decisions are, by necessity, always based on imperfect knowledge of the evolution and state of the economy. Decisions are made in real time. Preliminary estimates of aggregate measures of production, employment, prices, money and credit, and other variables, are frequently subject to substantial errors and are prone to subsequent revisions. Furthermore, key concepts whose availability could greatly improve forecasts of the economy and simplify policy decisions, such as the level of the economy's potential supply, its natural rate of growth, the natural rate of unemployment, or the equilibrium

[☆] The opinions expressed are those of the authors and do not necessarily reflect views of the Board of Governors of the Federal Reserve System or the Deutsche Bundesbank.

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values of interest rates and exchange rates, are always significantly easier to assess with the benefit of hindsight, long after they have ceased to be of value for real-time policy decisions. While waiting to assess the economic environment and re-evaluate the context in which a policy decision may have been made with the benefit of hindsight is typically the strategy adopted in monetary policy analyses, policymakers plainly do not always have this option.

Despite its pervasive influence on real-world policymaking, this aspect of decision-making is often neglected in theoretical treatments of the monetary policy problem. It is common practice to estimate models and simulate economic decisions with only the latest rendition of historical data. Indeed, it is often convenient to use the latest available revised data, even if these did not exist or were substantially revised long after they could possibly have been employed by policymakers and other agents in the economy, who supposedly relied on such data for their decisions. In some settings, the complexity of modeling the underlying information problem proves too great. In other cases, the data needed for more careful real-time analysis may not be readily available. To be sure, theoretical simplicity can be a virtue when it does not interfere with the purpose of the analysis. For many questions of interest in monetary analysis, however, neglect of the real-time nature of the policy problem can render the analysis unreliable, if not outright misleading.

Characterizations of historical monetary policy can be particularly sensitive to the treatment of information. Consider, for instance, econometric attempts to characterize historical policy by estimating policy reaction functions. To the extent such estimated reaction functions correctly identify how policymakers responded to available information over time, comparisons across periods with better or worse macroeconomic performance can help identify better from worse policy practices. But estimated policy reaction functions could potentially lead to very different conclusions, depending on whether estimation is performed with data actually available to policymakers in real time or with ex-post revised proxies. Evidence from the U.S. experience, where the availability of data permits such comparisons, suggests that in some periods the resulting estimation issues are indeed severe (Orphanides, 2001). Interpretation of estimates based on the latest revised data appears untrustworthy.

The foregoing considerations also suggest that a retrospective analysis of the behavior of inflation over the past few decades needs some rethinking. For example, why was inflation so much higher and more volatile during periods of the 1960s, 1970s and 1980s in so many countries? A variety of reasons have been put forward and the search continues for a convincing understanding of the success of central banks to tame inflation to low and stable levels over the past decade in particular. Some explanations focus on institutional aspects of the relationship between the central bank and the government (and public), to whom it is ultimately accountable for the longer term effects of central bank successes or failures in the realm of monetary policy (inter alia, see Siklos, 2002). Other explanations simply point to policymaker competence or lack thereof. However, shorter-run explanations of inflation performance must, in large part, rely on the persistent misinterpretations of the state of the economy. Testing such a view is impossible, unless the investigator can reconstruct the information set available to policymakers when policy decisions that subsequently proved incorrect were made. For such analysis, the availability of real-time data is, of course, essential.

Further, consider the question of how forward-looking monetary policy should be. Under idealized conditions, forecasts of the economy may be quite accurate and forecast-based policies may anticipate and counteract, at least to some extent, macroeconomic disturbances.

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