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Real-time data for Norway: Challenges for monetary policy

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Abstract

Monetary policy conducted in real time has to take into account the preliminary nature of recent national accounts data. Not only recent data, but also numbers dating many years back are potentially subject to revision. This means that there is a danger that an important part of the central bank's information set is flawed for a substantial period of time. In this paper, we present results based on quarterly vintages of real-time data for Norway from 1993Q1 to 2003Q4. In the spirit of Orphanides and van Norden [Orphanides, A., & van Norden, S. (2002). The unreliability of output gap estimates in real-time. *Review of Economics and Statistics, 84*(4), 569–583], we analyze how data revisions, the accumulation of new observations in real time, and model uncertainty affect the reliability of output gap estimates. We find that total revisions of output gap estimates are heavily influenced by uncertainty about the trend at the end of the sample and that data revisions are of less importance, i.e., they are of smaller magnitude and show less persistence, than other sources of output gap revisions. Finally, we discuss the implications of output gap uncertainty for monetary policy using a small New Keynesian macroeconomic model.

Keywords: Monetary policy; Output gap; Real-time data; Interest rate rules

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1. Introduction

A central bank processes huge amounts of information when it assesses the state of the economy as part of the monetary-policy process. Data uncertainty may disturb this assessment, and as data are subsequently revised this complicates the evaluation of the conduct of monetary policy. Some variables, such as the level of production in a particular period, may be substantially revised over time. Thus, final data – available with a lag of 2–3 years – will typically deviate from real-time data. Hence, final data may – in retrospect – tend to point in the direction of some other path for the policy rate than the one chosen by the central bank on the basis of real-time information. This is not, of course, to say that the central bank decisions were based on bad judgment at the time they were taken. Nevertheless, it is the final data – and not real-time data – that determine what would have been the appropriate monetary policy in the past. In the process of conducting monetary policy, it is therefore important for the central bank to evaluate the consequences of the lack of accuracy of the available real-time information.

While inaccuracy of real-time information may apply to many macroeconomic variables that the central bank assesses when setting the interest rate, the problem is particularly severe for measures of production and economic growth. First, they are crucial input variables for monetary-policy decisions: a reliable measure of current production is important for forecasting inflation, and the task of stabilizing the real economy under flexible inflation targeting is dependent on a sound assessment of the current state of the real economy. Second, production data are subject to frequent and sometimes substantial revisions. For other variables important in the monetary-policy process, like consumer price inflation, credit growth and wage growth, real-time observations deviate less from final observations and the problems created by data revision are less severe.[1]

Academics and policy makers have recently invested more resources in this area, and there is a growing literature on the properties of real-time data and their consequences for current practices in monetary-policy decisions. The pioneering work of Croushore and Stark (1999, 2001)[2] has set a standard for systematic work with real-time data and recent applications include Orphanides (2001), Croushore and Stark (2002) (with comments) and Orphanides and van Norden (2002). Kozicki (2004) provides an overview of this literature in the U.S. and discusses how data revisions may affect the evaluation and conduct of monetary policy.

The output gap is frequently regarded as a basic summary measure of the state of the real economy, and as a theoretical concept the output gap is a key monetary-policy variable. In addition to the real-time data problems mentioned above, there are also important methodological problems associated with finding reliable estimates of the output gap. Orphanides and van Norden (2002) compare a wide range of different models and present an assessment of the reliability of output-gap estimates in real-time. They argue that great caution is required and that output-gap mismeasurement may pose a serious problem for the correct assessment of the state of the economy. Furthermore, they argue that disregarding this

[1] The lack of revision in consumer prices does, of course, not guarantee that observations are accurate and free of biases that may distort policy decisions.

[2] See also Croushore and Stark (2000) for a non-technical presentation of the real-time database for the U.S.