Monetary Policy and Real-Time Data: The Case of Europe, Asia and the US

Franz Seitz, Christina Gerberding and Andreas Worms[1]

1 Introduction

The question of how an efficient and robust monetary policy should look has a long tradition. In recent years, this question is usually dealt with in estimating monetary policy reaction functions in the spirit of Taylor (1993). In these two respects, the monetary policy of the Federal Bank of Germany (Bundesbank) is of special interest as it is usually seen as a comparatively successful central bank. One obvious distinctive feature of the Bundesbank´s monetary policy since 1975 was that it announced annual targets for monetary growth and – according to its own descriptions – based monetary policy decisions on deviations of actual money growth from these targets. However, recent empirical studies analysing the Bundesbank´s monetary policy generally find that monetary aggregates did not

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play a significant role for the Bundesbank´s interest rate decisions, rather its policy can well be described by a standard Taylor rule.[2]

There are several ways to explain this apparent contradiction. One is that the Bundesbank did not practise the strategy of monetary targeting that it preached. Alternatively, one can question whether the econometric estimations that led to these results are correctly specified. In order to test the second hypothesis, we concentrate on two potential sources of misspecification: (a) a "real-time" problem and (b) the choice of the explanatory variables and the way they actually enter the Bundesbank´s reaction function.

The first source of misspecification relates to the fact that most of the empirical studies on monetary policy reaction functions use the latest vintage of data available. In other words, they are based on ex post revised data. This may not be adequate for the analysis of past monetary policy decisions since some of the relevant data and estimates undergo major revisions in the course of time. Furthermore, the construction of gap measures like the output gap necessitates the estimation of a trend or equilibrium value of the respective variable which may be complicated by the occurrence of supply and demand shocks and the problem of distinguishing between temporary and permanent disturbances. By re-estimating policy reaction functions for the US-Fed, Orphanides and others have shown that the use of real-time information can considerably change the outcome of an analysis of past monetary policy decisions.[3] To test whether this is the case for other countries as well, we have compiled a real-time data set for Germany which includes real and nominal output, the Bundesbank's own estimates of potential output, the rate of change in the consumer price index and the growth rate of the official monetary target variable. Moreover, we illustrate that different countries show the same pattern in this direction as regards the level of the output gap.

Besides the use of revised data, another source of misspecification may be the choice of explanatory variables and the way they enter the reaction function. For instance, the standard Taylor rule restricts the set of variables which reflect the central bank's concern about the real economy to the *level* of the output gap. As recently pointed out by Walsh (2003) and others when discussing the economic outlook, however, monetary policy makers seem to focus on the *growth* in output (relative to the *growth* in potential) rather than on the *level* of output (relative to the *level* of potential). Second, there is a growing theoretical and empirical literature suggesting that in the presence of imperfect information about the level of the output gap, it might be a good idea for central banks to target the change in the gap – which is equivalent to the growth rate of output relative to trend growth.[4] We therefore add the (real-time) estimate of the change in the output gap as well as the (real-time) growth rate of money relative to target to the set of explanatory variables of the Bundesbank's reaction function.

The paper is structured as follows. In section 2, we present the structure of our real-time data set and discuss the extent of the revisions. We also refer to the situa-

[2] See e.g. Clarida et al. (1998), Faust et al. (2001), Smant (2002).

[3] E.g. Orphanides (2001), Orphanides and Williams (2003).

[4] See Orphanides et al. (1999), Orphanides (2003a), Walsh (2004).