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PRESS RELEASE

The Influence of the Taylor rule on US monetary policy

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The Taylor rule has undoubtedly influenced the debate about monetary policy over the last 20 years. But has it also influenced actual monetary policy? According to the survey by Kahn (2012), the answer seems to be 'yes'. The transcripts from the Federal Open Market Committee (FOMC) meetings include several references to the Taylor rule. References to the Taylor rule can also be found from policy meetings in other central banks.

However, the fact that the Taylor rule has been referred to in the policy meetings does not necessarily imply that it has had a significant influence on the decisions made. One way of analyzing the importance of the Taylor rule is simply to consider the correlation between the (original) Taylor rule and the actual Federal Funds Rate. Based on this approach, Taylor (2012) argues that the Fed followed the Taylor rule quite closely until around 2003. After that, Taylor argues that the Fed abandoned the Taylor rule around 2003 and moved to a more discretionary monetary policy. Some observers see the large deviation from the Taylor rule in the period 2003 - 2006 as a policy mistake contributing to the build-up of financial imbalances and the subsequent crisis.

Instead of simply comparing the original Taylor rule with the actual interest rate, another common approach is to estimate more general specifications of the Taylor rule, e.g., by including the lagged interest rate and forward-looking terms. Clarida, Galí and Gertler (2000) showed that the Fed's policy during the Volcker-Greenspan period can be represented well by a forward-looking Taylor rule. Moreover, Bernanke (2010) replied to Taylor's critique of the large deviations from the Taylor rule prior to the financial crisis by showing that a forward-looking Taylor rule would have implied an interest rate closer to the actual one. However, the fact that monetary policy can be represented by an (estimated or calibrated) interest rate rule does not necessarily mean that the central bank follows a rule-based policy. Also, a purely discretionary policy can be characterized by an interest rate "rule".

Following a simple policy rule mechanically is both unrealistic and undesirable. This point is also recognized by proponents of rules-based policy, who recommend that one should deviate from the rule when one has information that justifies such deviations. With the premise that a rule should be a guideline, but not a straitjacket, the question is when there are good reasons to deviate from the rule. Obviously, this depends on the particular shocks hitting the economy. Unless the intercept term in the Taylor rule is constantly adjusted, the Taylor rule tends to give inefficient stabilization of output and inflation when there are changes in the natural rate of interest, as it will then fail to close the output gap in the short run (see Woodford, 2001). The inefficiency of the Taylor rule under certain shocks was also noted by Fed staff members, who, according to FOMC transcripts from November 1995, argued that the Taylor rule might be well suited for supply shocks, but a greater weight on the output gap would be better suited for demand shocks.

In this paper, we show that the empirical fit of optimal policy improves if one allows policy-makers to pay attention to simple rules. To assess the importance attached to the Taylor rule by the Fed, and analyze if the period after 2003 represented a shift away from it, we introduce a policy preference function which includes a weight on the Taylor rule. We therefore assume that, in addition to the commonly used (*ad-hoc*) loss function, the policy-maker dislikes deviations of the interest rate from the Taylor rule. Our modified loss function can either be interpreted as optimal policy with cross-checking by the Taylor rule, or alternatively as optimal deviations from the Taylor rule. This approach seems to be consistent with the way in which policy-makers reach their interest rate decisions in practice. For example, Vice-Chair Janet Yellen (2012) formulates the role of the Taylor rule in monetary policy assessments as follows: "One approach I find

helpful in judging an appropriate path for policy is based on optimal control techniques. [...]. An alternative approach that I find helpful [...] is to consult prescriptions from simple policy rules. Research suggests that these rules perform well in a variety of models and tend to be more robust than the optimal control policy derived from any single macroeconomic model." Given that policy-makers make use of both (explicit or implicit) optimal policy and simple rules, our modified loss function provides a unified approach for analyzing monetary policy decisions.

We conduct the estimations within the framework of a medium-scale DSGE model - the Smets and Wouters (2007) model - using Bayesian estimation techniques. We find that the model with the loss function that includes the Taylor rule has a better empirical fit than the model with the standard loss function. Our result therefore confirms the indirect evidence in Kahn (2012) on the influence of the Taylor rule on the FOMC's policy decisions. Moreover, we find no reduction in the weight on the Taylor rule in the period after 2003, contrary to what Taylor (2012) argues. When decomposing the various shocks hitting the US economy, we find that in the period 2001 - 2006, large negative demand-side shocks were dominating. As noted above, this is the type of disturbance that should make the policy-maker deviate from the Taylor rule. Indeed, the optimal policy response to these shocks implied an even lower interest rate than the actual Fed Funds Rate. We thus find that in the period 2001 - 2006 the Fed conducted a more contractionary policy than would have been implied by their historical reaction pattern.