NOMINAL GDP TARGETING AND THE TAYLOR RULE ON AN EVEN PLAYING FIELD

The Taylor rule is a standard guideline that central banks, such as the Federal Reserve (Fed), use for setting monetary policy. In its most basic form, a Taylor rule stipulates that central banks should set their interest rates in response to changes in inflation and in the output gap, which is the difference between actual and potential real gross domestic product (GDP). However, central banks continually face the problem of accurately forecasting these variables in real time.

In a new study for the Mercatus Center at George Mason University, Mercatus Senior Research Fellow David Beckworth and Joshua R. Hendrickson, assistant professor of economics at the University of Mississippi, demonstrate how a nominal GDP targeting rule is superior to a Taylor rule. A nominal GDP targeting rule targets the sum of all spending in an economy and would require less real-time knowledge on the part of policymakers than a Taylor rule, meaning it would be less prone to forecasting errors and would produce less economic volatility.

To read the entire study and learn more about its authors, please see "Nominal GDP Targeting and the Taylor Rule on an Even Playing Field."

THE KNOWLEDGE PROBLEM AND THE TAYLOR RULE

The "knowledge problem" refers to the circumstance that knowledge needed for economic planning is decentralized among many individual firms and households and thus is inaccessible to central planners. Monetary policy is no exception to this rule. Many economists argue that monetary authorities should rely less on their own discretion and should instead follow a rule or formula that allows markets to predict how monetary policy will be conducted.

- In the 1990s, the Taylor rule, named after Stanford economist John Taylor, emerged as a popular rule for central banks to follow. If a central bank followed a Taylor rule when setting monetary policy, it would raise its interest rate when inflation was above target or

output was above its potential, and it would lower its interest rate when inflation was below target or output was below its potential.

- While the Taylor rule does reduce central bank discretion, the knowledge problem still obstructs choices about how to measure and weigh inflation and the output gap. The biggest challenge is how to measure the output gap in real time, because (1) output data is generally revised over time and (2) potential output estimates are based on trends that rely on ever-changing endpoints.

- The central bank has to have perfect information about the output gap in order for the Taylor rule to work optimally. However, empirical evidence from the Federal Reserve Bank of Philadelphia shows that the Fed's forecast of the output gap has diverged significantly from the ex post estimate of the output gap for prolonged periods of time. Forecast errors by the Fed and other central banks can potentially induce unanticipated changes in the short-term nominal interest rate, distinct from a standard monetary policy shock. From 1987 to 2007, the Fed's forecast errors may have accounted for up to 13 percent of the fluctuations in the output gap.

NOMINAL GDP TARGETING

A nominal income target or nominal GDP target is a rule that targets the level or growth of nominal spending in the economy. Unlike a Taylor rule, which requires knowledge of inflation, actual output, and potential output, a nominal GDP target requires knowledge only of overall spending. While targeting nominal GDP growth might be subject to measurement error, it likely minimizes the significance of this measurement error in real time.

A series of simulations of economic shocks helps evaluate how a nominal GDP target compares with a Taylor rule with perfect information and with a Taylor rule with imperfect information at stabilizing inflation and minimizing the output gap:

- The nominal GDP target would result in less volatility in inflation than either Taylor rule.

- The nominal GDP target would result in a smaller output gap than the Taylor rule with imperfect information.

- The Taylor rule with perfect information would result in a smaller output gap than the nominal GDP target. However, as this paper argues, the assumption that the central bank will have perfect information in real time is unrealistic.

CONCLUSION

A nominal GDP target is superior to a Taylor rule because

1) it allows central banks to target a single variable,

2) it reduces the knowledge central banks need in order to conduct policy,

3) it eliminates central banks' need to control a real variable (i.e., a variable that is largely determined by economic factors outside monetary policy), and

4) it does not require central banks to conduct monetary policy in accordance with real-time estimates of the output gap.

A nominal GDP target overcomes the knowledge problem better than the Taylor rule does and is therefore more likely to smooth out business cycles and mitigate economic booms and busts.