Research Working Papers

The Optimal Monetary Instrument and the (Mis)Use of Causality Tests

by: A. Lee Smith and John W. Keating

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Since the EMV liability shift in October 2015, both chargebacks and fraud loss rates have increased for merchants, particularly from signature-based, card-present transactions.

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This paper uses a New-Keynesian model with multiple monetary assets to show that if the choice of instrument is based solely on its propensity to predict macroeconomic targets, a central bank may choose an inferior policy instrument. We compare a standard interest rate rule to a k-percent rule for three alternative monetary aggregates determined within our model: the monetary base, the simple sum measure of money, and the Divisia measure. Welfare results are striking. While the interest rate dominates the other two monetary aggregate k-percent rules, the Divisia k-percent rule outperforms the interest rate rule. Next we study the ability of Granger causality tests—in the context of data generated from our model—to correctly identify welfare-improving instruments. All of the policy instruments considered except for Divisia Granger cause both output and prices at extremely high levels of significance. Divisia fails to Granger cause prices despite stabilizing inflation better than these alternative policy instruments. The causality results are robust to using a popular version of the Sims causality test for which we show standard asymptotics remain valid when the variables are integrated, as in our case.

JEL Classification: C43, C32, E37, E44, E52

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Related Research

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Author

A. Lee Smith

Senior Vice President

Andrew Lee Smith is a Senior Vice President and Economist at the Federal Reserve Bank of Kansas City. In this role, Lee has oversight of macroeconomic research and serves as an advisor on monetary policy matters.Lee's research has focused on the effects of expanding and unwinding the Federal Reserve's balance sheet, the impact of forward guidance on financial markets and the economy, and, more generally, how central bank communication can influence expectations and economic conditions.Prior to joining the Bank in 2014, Lee received a Ph.D. in economics from the University of Kansas. He also holds a B.A. in economics and mathematics from Drury University in Springfield, Missouri.