



Changes in GDP's measurement error volatility and response of the monetary policy rate: two approaches

Working Paper No. 814 Keep in mind

The series Working Papers on Economics is published by the Office for Economic Studies at the *Banco de la República* (Central Bank of *Colombia*). It contributes to the dissemination and promotion of the work by researchers from the institution. This series is indexed at Research Papers in Economics (RePEc).

On multiple occasions, these works have been the result of collaborative work with individuals from other national or international institutions. The works published are provisional, and their authors are fully responsible for the opinions expressed in them, as well as for possible mistakes. The opinions expressed herein are those of the authors and do not necessarily reflect the views of Banco de la República or its Board of Directors.

AUTHOR OR EDITOR Julian A. Parra Carmiña O. Vargas AUTHORS AND/OR EDITORS Vargas-Riaño, Carmiña Ofelia

Using a stylized model in which output is measured with error, we derive the optimal policy response to the demand shock signal and to changes in the measurement error volatility from two different perspectives: the minimization of the expected loss (from which we derive the 'standard' policy) and the minimization of the maximum possible loss across all potential scenarios (from which we derive the 'prudent' or 'robust' policy). We find that: 1. the prudent policymaker reacts more aggressively to the shock signal than the standard one and 2. while the standard policymaker always mitigates her reaction if the measurement error volatility rises, the prudent one may even increase her response if her risk aversion is very high. When we incorporate forward-looking expectations, the second result is preserved but, in this case, the prudent policymaker is less aggressive than the standard one in responding to the shock signal.

The views expressed in the paper are those of the authors and do not represent those of the Banco de la República or its Board of Directors.