

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

[Juan Manuel Julio](#)

Preliminary and delayed Colombian GDP reports are replaced with optimal in-sample now-casts of “true” GDP figures derived from a model for data revisions. The new GDP time series is augmented with optimal out-of-sample forecasts and back-casts of the “true” GDP figures derived from the same model. The trend-cycle component of the augmented GDP series is filtered. The resulting gap is more resistant than the ordinary HP filter to the end of sample optimal filtering problem as well as to GDP revisions and delays. The short term noise of the final output gap estimate is also reduced. Adjusting for data revisions and delays reduce the uncertainty of estimated gaps. The extended and further extended HP estimates

---

of the output gap show an impressive efficiency gain with respect to the ordinary HP gap, 43% and 47% respectively, on average. The new extension increases the efficiency in 7.4%, on average, with respect to extended HP estimates. These results constitute a benchmark to future work on real time estimation of the output gap under GDP revisions and delays in Colombia.

Any errors as well as the conclusions and opinions contained in his paper are the sole responsibility of its author and do not compromise BANCO DE LA REPUBLICA, its Board of Governors or Universidad Nacional de Colombia.