

---

[Working Paper No. 160](#)

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

[Javier Gomez, Juan Manuel Julio](#)

AUTHORS AND/OR EDITORS

[Gómez-Pineda, Javier](#)

As originally drawn and estimated by professor Phillips, the Phillips, curve is a curve indeed, not a

---

---

straight line as often thought. Following Laxton, et. al. (1999) we estimate a convex Phillips curve and model de NAURI as a variable that is unobserved. Using Colombian data, we provide confidence bands for the NAURI and report estimated sacrifice ratios. Using the unobserved components methodology along with the Kalman filter, we find evidence in favor of a nonlinear Phillips curve and no evidence against a NAURI that is constant. This latter finding is explained by the high level of uncertainty in the estimation of the NAURI. Nonlinearity implies that the sacrifice ratio increases with unemployment, in other words, the cost of decreasing inflation is higher the higher the unemployment rate.