



An Introductory Review of a Structural VAR-X Estimation and Applications

Borrador de economía, núm. 686 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 Sergio Ocampo, Norberto Rodríguez

This document presents how to estimate and implement a structural VAR-X model under long run and impact identification restrictions. Estimation by bayesian and maximum likelihood methods is presented. Applications of the structural VAR-X for impulse response functions to structural shocks, multiplier analysis of the exogenous variables, forecast error variance decomposition and historical decomposition of the endogenous variables are also described, as well as a method for computing HPD regions in a bayesian context. Some of the concepts are exemplified with an application to US data.

The results and opinions expressed in this document do not compromise in any way Banco de la República or its board of directors. We wish to thank Eliana González, Martha Misas, Andrés González, Luis Fernando Melo, and Christian Bustamante for useful comments on earlier drafts of this document, of course, all remaining errors are our own.