

Scale-Free Tails in Colombian Financial Indexes: A Primer

Working Paper No. 812 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 Carlos León

A maximum likelihood method for estimating the power-law exponent verifies that the positive and negative tails of the Colombian stock market index (IGBC) and the Colombian peso exchange rate (TRM) approximate a scale-free distribution, whereas none of the heavy tails of a local sovereign securities index (IDXTES) are a plausible case for such distribution. Results also (i) support critiques regarding the flaws of ordinary least squares estimation methods for scale-free distributions; (ii) question the validity of Zipf's law; (iii) suggest that IGBC and TRM display the scale-free nature documented as a stylized fact of financial returns, and that they may be following a gradually truncated Lévy flight; and (iv) suggest that local financial markets are self-organized systems.

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.

Updated: 03/10/2014 09:44 a.m.