
[Download](#)

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

Riascos Villegas, Álvaro J.

Chitiva, Julián

Salazar, Carlos

The series [Borradores de Economía \(Working Papers on Economics\)](#) contributes to the dissemination and promotion of the work by researchers from the institution. On multiple occasions, these works have been the result of collaborative work with individuals from other national or international institutions. This series is indexed at Research Papers in Economics (RePEc). The opinions contained in this document are the sole responsibility of the author and do not commit Banco de la República or its Board of Directors.

Publication Date:

Wednesday, 09 November 2022

Abstract

We introduce a methodology for generating alerts of potential anti-competitive practices in the Colombian wholesale electricity market. The methodology is made up of two parts: (1) Based on the declared availability of the agents, those that can potentially have a high impact on the stock price are identified (i.e., pivotal in the sense of the residual supply index - IOR) and (2) Using machine learning methods, the energy offers (i.e., prices) of those pivotal agents are identified that, according to the state of the market and its history (i.e., past offers, water resources, generation technology, etc.) could be considered atypical or anomalous. Based on these two indicators, alerts of potential anti-competitive practices are generated. We report the results of the application of this methodology to the Colombian wholesale market in the period August 16, 2018 - July 30, 2019. An important characteristic of this methodology is that it can be applied with the information available from the system operator, 24 hours before that the results of the market are observed and generating alerts ex ante to the realization of the events. This possibility of generating alerts almost in real time is even more important in view of the new intra-day market that will soon come into force in the Colombian electricity system.