

Accepted Manuscript

Uncovering the nonlinear predictive causality between natural gas and electricity prices

Jorge M. Uribe, Montserrat Guillen, Stephania Mosquera-López



PII: S0140-9883(18)30275-5
DOI: doi:[10.1016/j.eneco.2018.07.025](https://doi.org/10.1016/j.eneco.2018.07.025)
Reference: ENEECO 4104
To appear in: *Energy Economics*
Received date: 2 March 2018
Revised date: 31 May 2018
Accepted date: 26 July 2018

Please cite this article as: Jorge M. Uribe, Montserrat Guillen, Stephania Mosquera-López, Uncovering the nonlinear predictive causality between natural gas and electricity prices. *Eneeco* (2018), doi:[10.1016/j.eneco.2018.07.025](https://doi.org/10.1016/j.eneco.2018.07.025)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Uncovering the nonlinear predictive causality between natural gas and electricity prices

Jorge M. Uribe ^{a,b}

Montserrat Guillen ^{a,c}

Stephania Mosquera-López ^d

^a *Riskcenter, University of Barcelona, Spain*

^b *Department of Economics, Universidad del Valle, Colombia*

^c *Department of Econometrics, University of Barcelona, Spain*

^d *School of Industrial Engineering, Universidad del Valle, Colombia*

This version May 18th 2018

Abstract

We measure the directional predictability between electricity and natural gas prices at different quantiles of their respective price distributions. This reveals significant nonlinearities in the relationship that characterizes the interconnected gas and electricity markets of both New England and Pennsylvania-New Jersey-Maryland. We identify a double causality from gas to electricity and vice versa, which increases as their respective market prices rise. In general, this causality is decidedly higher for both price sets at market values at and above their median. The feedback effect from electricity to gas is stronger in the case of New England – where 50% of the power generation mix comprises natural-gas-fired plants – than it is in the case of Pennsylvania-New Jersey-Maryland – where only 24% of the generation mix relies on natural gas sources.

Keywords: Natural gas; Electricity; Directional predictability; Quantiles; Cross-quantilogram.

JEL Codes: Q40, L94, L95, C22.

Download English Version:

<https://daneshyari.com/en/article/11004777>

Download Persian Version:

<https://daneshyari.com/article/11004777>

[Daneshyari.com](https://daneshyari.com)