

Accepted Manuscript

Multifractal detrended cross-correlation analysis of carbon emission allowance and stock returns

Sheng Fang, Xinsheng Lu, Jianfeng Li, Ling Qu

PII: S0378-4371(18)30688-5
DOI: <https://doi.org/10.1016/j.physa.2018.05.136>
Reference: PHYSA 19676

To appear in: *Physica A*

Received date: 8 January 2018

Revised date: 12 April 2018

Please cite this article as: S. Fang, X. Lu, J. Li, L. Qu, Multifractal detrended cross-correlation analysis of carbon emission allowance and stock returns, *Physica A* (2018), <https://doi.org/10.1016/j.physa.2018.05.136>

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.



Multifractal detrended cross-correlation analysis of carbon emission allowance and stock returns

Sheng Fang^a, Xinsheng Lu^{b,*}, Jianfeng Li^c, Ling Qu^b

^a *Department of Economics and Finance, SEM, Tongji University, Shanghai 200093, China*

^b *School of Business, University of Jinan, Jinan 250022, Shandong, China*

^c *School of Economics & Management, China Jiliang University, Hangzhou 310018, China.*

Abstract: The nonlinear relationship between carbon emission allowance and stock markets has attracted special attention from economists around the world. This paper uses the technique of multifractal detrended cross-correlation analysis (MF-DCCA) to investigate the cross-correlations between carbon emission allowance and stock series as well as their dynamics for European and Chinese markets, respectively. The results show that the cross-correlations between carbon and stock series are significantly multifractal in European and Chinese markets. The cross-correlations of small fluctuations are persistent while those of large fluctuations are anti-persistent. Moreover, the degree and width of multifractality is found to be stronger in China than in Europe. We confirm that the multifractality of cross-correlations could be attributed to both the persistence of fluctuations of carbon emission allowance and stock markets and fat-tail distributions of the time series. By employing rolling estimate of MF-DCCA, we find that the scaling exponent varies over time and across fluctuations in European and Chinese markets. In particular, the Hurst exponent fluctuates around 0.5 in recent years.

Keywords: Carbon emission allowance; Stock markets; Multifractal detrended cross-correlation analysis

*Corresponding author: Mobile: +86 15800368545 (X.Lu)

E-mail: fangsheng007@126.com (S.Fang), xinshenglu@hotmail.com (X. Lu),
1410319@tongji.edu.cn (J. Li), se_luxs@ujn.edu.cn (L.Qu)

Download English Version:

<https://daneshyari.com/en/article/7374873>

Download Persian Version:

<https://daneshyari.com/article/7374873>

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