

# Supporting Information

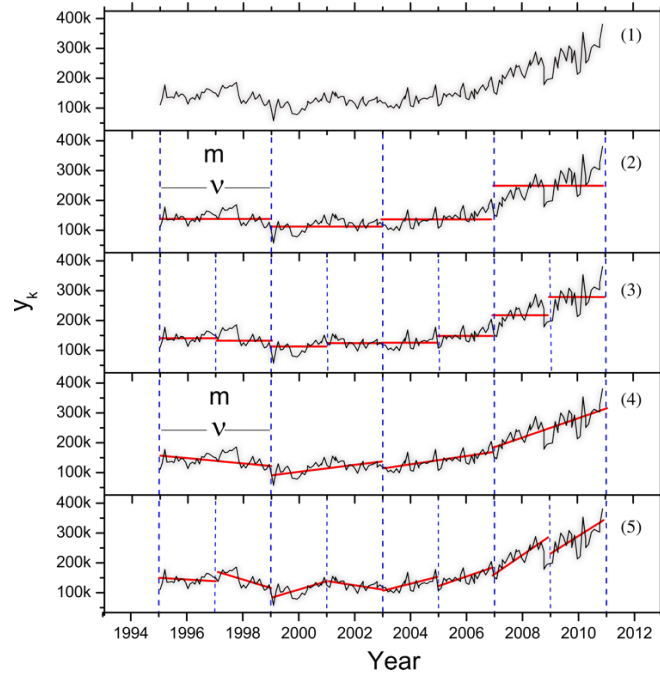
## Multi-Fractal Detrended Cross-Correlation Heatmaps for Time Series Analysis

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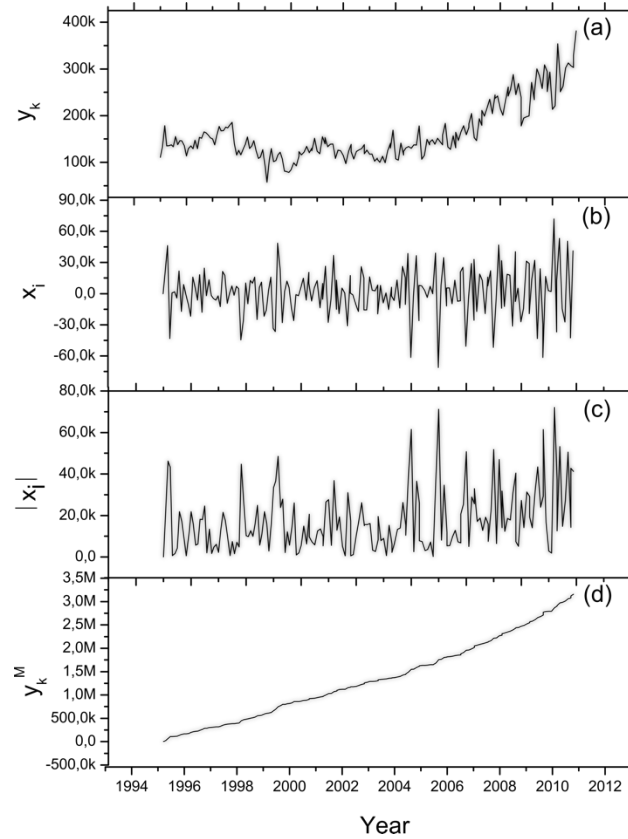
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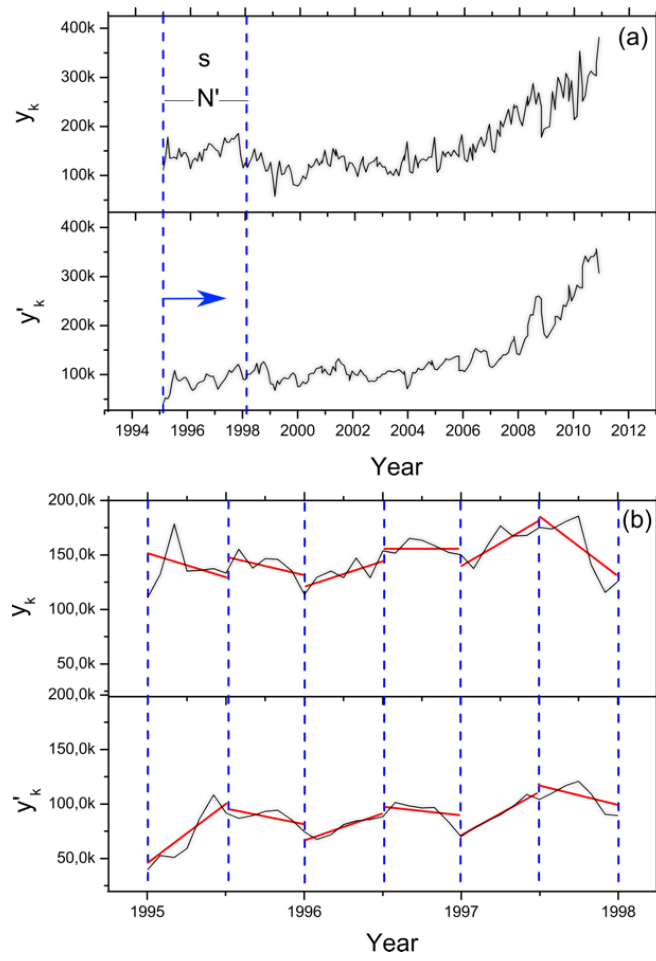
**Data Availability:** + The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.



**Figure S1:** Illustrative steps for Autocorrelation. (1) Time Series of sales  $y_k$  in units (Brazilian Automotive Sector), (2) Average (red) of Time series for four windows  $m$  of size  $v$ , and (3) eight windows. (4) First-order adjustment considering four and (5) eight windows, respectively.



**Figure S2:** (a) Time series of sales  $y_k$ . (b) Time series of successive differences  $y_k$ , where  $x_i = y_{k+1} - y_k$ . (c) Series of magnitudes for successive differences  $x_i$ , and (d) Integrated series of magnitudes with  $y_k^M = \sum_{i=1}^k |x_i|$ .



**Figure S3:** (a) Illustration of the local analysis procedure for sliding boxes of size  $N$ . (b) Expansion of the box  $s$  divided into six periods  $m$  of size  $v$ .