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The Relationship between Spanish Economic Variables: Evidence from the Wavelet Techniques

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Abstract : We analyze six relevant economic and financial variables for the period 2000M1-2015M3 in the context of the Spanish economy: a financial index (IBEX35), a commodity (Crude Oil Price in euros), a foreign exchange index (EUR/USD), a bond (Spanish 10-Year Bond), the Spanish National Debt and the Consumer Price Index. The goal of this paper is to analyze the main relations between them by computing the Wavelet Power Spectrum and the Cross Wavelet Coherency associated with Morlet wavelets. By using a special toolbox in MATLAB, we focus our interest on the period variable. We decompose the time-frequency effects and improve the interpretation of the results by non-expert users in the theory of wavelets. The empirical evidence shows certain instability periods and reveals various changes and breaks in the causality relationships for sample data. These variables were individually analyzed with Daubechies Wavelets to visualize high-frequency variance, seasonality, and trend. The results are included in Proceeding 20th International Academic Conference, 2015, International Institute of Social and Economic Sciences (IISES), Madrid.

Keywords : economic and financial variables, Spain, time-frequency domain, wavelet coherency
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