Modelling sovereign debt contagion: a smooth transition approach

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The unprecedented recent sovereign debt crisis has shown persistent negative effects reaffirming financial contagion as a transmission channel of instability and systemic risk. In this paper, the timing and extent of sovereign debt contagion are investigated. It is measured and detected by a significant increase in cross-market correlations that we assume follow a non-linear Smooth Transition Conditional Correlation (STCC-) GARCH process. Over time, cross-market correlations change smoothly between two states according to an observable transition variable. When this variable is specified as a function of time, a pre-crisis and two crisis sub-periods are identified. Results show evidence for contagion effects within the periphery countries, notably Greece and Portugal, and between the periphery and core countries during the recent sovereign debt crisis.