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Measuring Sovereign Contagion in Europe

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Abstract

This paper analyzes sovereign risk shift-contagion, i.e. positive and significant changes in the propagation mechanisms, using bond yield spreads for the major eurozone countries. By emphasizing the use of two econometric approaches based on quantile regressions (standard quantile regression and Bayesian quantile regression with heteroskedasticity) we find that the propagation of shocks in euro's bond yield spreads shows almost no presence of shift-contagion in the sample periods considered (2003-2006, Nov. 2008-Nov. 2011, Dec. 2011-Apr. 2013). Shock transmission is no different on days with big spread changes and small changes. This is the case even though a significant number of the countries in our sample have been extremely affected by their sovereign debt and fiscal situations. The risk spillover among these countries is not affected by the size or sign of the shock, implying that so far contagion has remained subdued. However, the US crisis, does generate a change in the intensity of the propagation of shocks in the eurozone between the 2003-2006 pre-crisis period and the Nov. 2008-Nov. 2011 post-Lehman one, but the coefficients actually go down, not up! All the increases in correlation we have witnessed over the last years come from larger shocks and the heteroskedasticity in the data, not from similar shocks propagated with higher intensity across Europe. These surprising, but robust, results emerge because this is the first paper, to our knowledge, in which a Bayesian quantile regression approach allowing for heteroskedasticity is used to measure contagion. This methodology is particularly well-suited to deal with nonlinear and unstable transmission mechanisms especially when asymmetric responses to sign and size are suspected.
Keywords: Sovereign Risk, Contagion, Disintegration