

Modelling Financial Markets Comovements During Crises: A Dynamic Multi-Factor Approach

Abstract

We propose a novel dynamic factor model to characterise comovements between returns on securities from different asset classes from different countries. We apply a global-class-country latent factor model and allow time-varying loadings using Kalman Filter. We are able to separate contagion (asset exposure driven) and excess interdependence (factor volatility driven). Using data from 1999 to 2012, we find evidence of contagion from the US stock market during the 2007-09 financial crisis, and of excess interdependence during the European debt crisis from May-2010 onwards. Neither contagion nor excess interdependence is found when the average measure of model implied comovements is used, as consequence some securities display diverging repricing dynamics during crisis periods .

JEL: C3, C5, G1.

Keywords: Dynamic Factor Models, Comovements, Contagion, Excess Interdependence, Kalman Filter, *Autometrics*.