Financial markets contagion - the spatial approach

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Financial contagion is usually referred to as a cross-market transmission of shocks or the general cross-market spillover effects. It can take place both during "good" times and "bad" times. Thus, contagion does not need to be related to crises. However, it is emphasized during crisis times. If present, it may mitigate the benefits of diversification precisely when those benefits are needed most and have serious consequences for investors. Therefore, understanding this highly nonlinear effect is of great interest not only to financial theorists but to practitioners as well.

The spatial approach, introduced by Bradley and Taqqu in 2004, is based on the following meaning of contagion:
"There is contagion from market X to market Y if there is more dependence between X and Y when X is doing badly than when X exhibits typical performance."

Since copulas are the most general tools to describe the dependence among random variables, the above was restated more precisely (Durante, Jaworski (2010)) in the following manner:
"There is contagion from market X to market Y if the conditional copula of the market returns X and Y, when X is smaller than certain quantile, dominates the conditional copula when X is around its median."

In my talk I will present a method of detecting and quantifying the spatial contagion and discuss the choice of the most suitable multivariate stochastic process for modelling this effect. As an empirical illustration of the above methodology two markets will be considered: the New York Stock Exchange (US) and SWX Swiss Exchange AG in Zurich (Switzerland). I will compare the daily log-returns of the indices - Dow Jones Industrial Average (DJIA) and Swiss Market Index (SMI) related to the period November 1990 - May 2013.

Literatura

