

Spatial Methods in Econometrics

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In this talk I will give a brief overview of the characteristics of spatial data, why it is useful to use such data and how to use the information included in spatial data. The first question to be answered is: how to detect spatial dependency and spatial autocorrelation in data? Such effects can be found by calculating Moran's I, which is a measure for spatial autocorrelation, and using tests for spatial autocorrelation (Moran's test). Once we found some spatial structure we can use special models and estimation techniques. There are two famous spatial processes, the SAR- (spatial autoregressive) and the SMA- (spatial moving average) process, which are used to model spatial effects. For estimation there are mainly two different possibilities, the first one is called spatial filtering, where the spatial effect is filtered out and standard techniques are used, the second one is spatial two-stage least square estimation. Finally there are some results of a spatial analysis of R & D spillovers data (for 22 countries and 20 years) shown.