Spatial Asset Pricing of Global Real Estate Returns

BING ZHU* AND STANIMIRA MILCHEVA**

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Although asset returns have been widely modelled using spatial techniques to capture the co-movement across regions, a spatial element has not yet been incorporated when pricing assets. During periods of turmoil, however, the co-movement across assets can be enhanced and lead to contagion across regions. We use an innovative approach and estimate a Spatial Capital Asset Pricing Model (SCAPM) to account for systemic risk across international real estate returns. We extend the four-factor CAPM in Fama and Fench (2012) to capture cross-country return co-movements using a variety of bilateral country linkages, such as geographic distance, cross-border bank exposure, foreign direct investment (FDI), portfolio investment and trade. Ortalo-Magne and Prat (2010) present an equilibrium spatial asset pricing model in which the endogenous choice of households where to live determines the spatial allocation of real estate which in turn affects the pricing of all assets. Used to account either for systemic risk or for the location choice of households, we show that the SCAPM substantially improves the model fit compared to the four-factor CAPM model. The SCAPM also performs substantially better than the CAPM during the period of the Global Financial Crisis (GFC) and the European sovereign debt crisis. Those risks are captured in the beta coefficients generated by the SCAPM.

Keywords: Spatial CAPM, Systemic risk, Location choice, Listed property returns, Financial and geographic integration

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*University of Regensburg, Faculty of Economics, bing.zhu@irebs.de, ** University of Reading, Henley Business School, s.milcheva@reading.ac.uk