

Understanding spill-over effects in financial constraints for UK SMEs

Antonia Gieschen – Raffaella Calabrese – Jake Ansell – Belen Martin-Barragan

Small and Medium sized Enterprises (SMEs) represent a very diverse group of firms, though, there are often dependencies amongst them. This dependency arises from both the business networks to which they belong, as well as spatial spill-overs and business demographics such as their industrial sector. Many of these dependencies are opaque to those exploring SME behaviour. This paper examines the use of spatio-temporal clustering, using available information about SMEs to explore the dependencies which cast light on their behaviour. Our approach allows segmentation of the SMEs, identifying important variables in the development of spatial econometric regression models based on W matrices to represent spatial and business demographics. This can have the computational benefit of creating a sparse W matrix of dependency.

Our prime focus in this research is the banking acceptance of SMEs for loans and overdrafts. Previously it has been established that there are spatial aspects relating to closeness to the banking system, with rural areas gaining relatively fewer acceptance than large urban centres. Another study discussed a connection between interdependencies among London SMEs including their spatial location and prediction of default. Our results demonstrate the importance of accounting for the spatial distribution of financial variables in the risk assessment of SMEs.