Business entry dynamics and Cross sectoral relationships around a Corridor

Author: Shagun Mittal

Committee: Dr. Satish V. Ukkusuri (Chair), Dr. Indraneel Kumar, Dr. David Yu

Inter-business networks are important components of business dynamics and industrial clusters. Extensive literature proclaims the existence of a variety of networks including, but not limited to, knowledge, input-output, brand alliances and supply chain networks. Researchers also claim the benefits of diversity of sectors, existing in the networks. However, the literature falls short in quantification of these relationships across numerous economic sectors. In the first part of the thesis, using the National Establishment Time Series (NETS) database, I analyze the establishments entering the region around the highway U.S.-400, largely in Kansas across a period of 20 years (1992-2011). The establishments are categorized into 20 industrial sectors on the basis of their economic activities. Using spatial econometric models and thereafter, partial least squares regression, yearly relationships (attraction/impedance) among these categories are estimated. Utilizing empirical evidence, we establish and quantify the impacts of cross-sectoral relations (networks) among economic activities. The inferred relationships could be used to understand associations among various sectors and how policies alterations in one sector may perturb other sectors.

In the second part, I seek to understand the effects of corridor construction on economic growth. This is executed by evaluating the impacts of corridor construction on business entry (direct effects) and on the cross-sectoral relationships (indirect effects). A quasi-experimental ("What-if") analysis was conducted using Bayesian Structural time series (BSTS) model. This analysis was performed for State Highway-130, located in central Texas, fully constructed and opened for traffic in 2006. It was observed that a majority of suburban regions surrounding SH-130 have benefitted due to corridor construction whereas the effects on business entry are negative for rural regions. Moreover, sectors like Manufacturing, Services, Accommodation and food services, experience significantly positive effects. Thereafter, we estimate cross-sectoral relationships and observe that the business patterns shift towards tertiary activities unlike the counterfactual scenario. Moreover, the presence of services based businesses is observed to urbanize the areas, inducing demands for other sectors which seek urban zones.