

ECON Seminar

Date	April 3, 2019 (Wednesday)
Speaker	Prof. Lin Tian
Affiliation	European Institute of Business Administration (INSEAD)
Paper Title	Division of Labor and productivity advantage of cities: Theory and evidence from Brazil
Abstract	<p>Firms are more productive in larger cities. This paper investigates a potential explanation that was first proposed by Adam Smith: Larger cities facilitate greater division of labor within firms. Using a dataset of Brazilian firms, I first document that division of labor is indeed robustly correlated with city size, controlling for firm size. To quantify the importance of division of labor in explaining productivity advantages of cities, I propose and estimate a quantitative model that embeds a theory of firms' choice of the optimal division of labor in a spatial equilibrium framework. In the model, the observed correlation between firm's division of labor and city size is generated by both a selection effect—firms endogenously sort across space, choosing different extents of division of labor—and a treatment effect—larger cities increase division of labor for all firms, by reducing the costs associated with greater division of labor. Exploiting a quasi-experiment that changes the cost of division of labor within cities—the gradual roll-out of broadband internet infrastructure—I validate key model assumptions and structurally estimate model parameters. Through a counterfactual analysis, I estimate that division of labor contributes to 15% of the productivity advantages of larger cities in Brazil, half of which is due to firm sorting and the other half to the treatment effect of larger city size.</p>