

Speaker: Dr. Meagan McCollum, Assistant Professor at University of Tulsa

Title: Induced Seismic Risk and Residential Mortgage Lending (coauthor Minhong Xu, Nanjing Audit University)

Bio: Dr. Meagan McCollum is an assistant professor of finance at the University of Tulsa in the Collins College of Business. Prior to joining the University of Tulsa, she was an assistant professor of real estate at Baruch College. She holds a Ph.D. in finance from Louisiana State University. Her research focuses on real estate finance, financial intermediation, and credit risk analysis. She has published papers in several well-regarded journals in finance, real estate, and urban economics. She has presented her work at national and international conferences including the AREUEA Annual, National, and International Meetings, NBER Summer Institute, Financial Management Association, and the World Congress of Environmental and Energy Economists.

Abstract: Since 2013, the central and eastern United States has experienced an exponentially increasing number of manmade earthquakes, many of which have been induced by wastewater injection in shale oil and gas extraction. In the real estate market, the growing human-induced seismicity has received widespread attention and generate concern among homeowners and mortgage lenders. In this study, we focus on the risk perception of mortgage lenders toward human-induced seismic risk, using data from 2013-2017 home mortgage loans and earthquakes in Oklahoma, the state most impacted by induced seismic activity. Overall, we find evidence that perceived risk of earthquakes impacts lenders' decisions, at least in the short term. Across our full sample, we find lenders charge a higher rate of interest to price seismic risk rather than reducing credit supply or transferring the risk through securitization, but this effect is much larger in lenders that do not have local branches. Additionally, lenders' experience with seismic risks across their full national branch network is important. Only experienced lenders are more likely to price risk; lenders lower than average prior exposure to seismic hazards are more likely to respond to earthquake activity by selling the loans, specifically to government sponsored enterprises like Fannie Mae and Freddie Mac, which do not use earthquake risk as an underwriting criterion.