



In Partial Fulfillment of the Requirements for the Degree of

Master of Science
Jing Liang

Will present her scientific paper

Do Energy Retrofits Work?
Evidence from Commercial and Residential Buildings in Phoenix

Abstract

Whether energy efficiency retrofits save energy in practice is an ongoing debate. This paper quantifies the energy savings of the Energize Phoenix program in Phoenix, Arizona. Impacts of retrofits are analyzed using pre-post treatment billing data from January 2008 to April 2013, which includes 201 residential buildings and 636 commercial buildings. There are five types of retrofits for residential buildings and six types for commercial buildings. Empirical results from fixed effects panel regression models indicate monthly energy savings of 12% for commercial buildings and 8% for residential buildings. The realized energy savings are 30-50% lower than those predicted by engineering models. We have also separated the energy savings provided by individual retrofits and retrofit bundles, and estimate how the effectiveness of retrofits varies based on building attributes, all of which should be considered when making energy efficiency decisions. Learning effects are also observed in this program, which means as the post-retrofit time increases, there is a possibility for improved learning and control of energy use for the Energize Phoenix program.

Friday, June 9, 2017
10:30 AM
WGHL 308

Faculty, students, and the general public are invited.

Supervisory Committee:
Yueming (Lucy) Qiu, co-chair
Joshua Abbott, co-chair
Harvey Bryan, member