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Abstract

Willingness to pay to avoid flooding after a storm surge

The purpose of this study is to estimate the willingness to pay to avoid flooding after a storm surge in the coastal area. I conducted a first stage hedonic house prices study using a difference-in-differences approach. The analysis covers single-family houses located within the 3-kilometre buffer strip zone along the coastlines in 6 municipalities in Zealand, Denmark; more than 12,000 house sales transactions are included for the study during the period between 2007 and 2016. I used a historic storm, Bodil, which harshly hit Denmark in 2013, as a treatment for the setting of the difference-in-differences approach. Structural variables and environmental variables entered into the estimation as control variables and spatial and temporal autocorrelation were accounted for by spatial fixed effects and year dummies for the sales transactions.

I found that the value of the houses flooded in 2013 is lower than the unflooded houses within the study area. This difference was observed even though the material damage costs were reimbursed from the Danish Storm Council when the houses are flooded by a storm surge. Flooded houses and unflooded houses did not show any systematic differences in their price development before the treatment. This result could be evidence that there is the non-material cost of flooding reflected in the house values.