ANALYZING THE IMPACT OF CHANGES IN FLOOD RISK ON HOUSING VALUE: EVIDENCE FROM A COASTAL COUNTY

Paper written by Travis LaHue
Discussion by Alexandra Marr

Overview

Question of interest:

How do house prices respond to changes in perceived risk?

Main contributions to literature:

- Usage of a FEMA flood map update
- Framework that separates insurance and salience effects
- Examination of heterogeneous effects by distance to old flood maps and time since map updates

Methodology:

- Regression on log sales price
- Leveraging of a quasi-random flood map update in Miami-Dade county
  - Actual flood risks didn't change dramatically around the time of the map update however perceived risks and insurance costs did
- Parcel fixed effects/ repeated sales methodology
  - Strong fixed effects control for all parcel level time invariant characteristics

Main findings

- Estimates house price discount effects that are almost twice as large as the NPV of the insurance premium, pointing to potentially large salience effects
- Contrary to previous literature estimates a negative (though smaller) effect of being mapped out of a flood zone, again pointing to a potential salience/stigma effect
- Finds discount effects are heterogeneous with distance to previous flood map zone
  - Areas mapped into flood zones, further away from previous flood zones experience larger discounts
- Finds heterogeneous effects by neighborhood compositions
  - Effects are greater in neighborhoods with larger minority populations
  - Discount effects increase as a neighborhoods poverty level increases

Insurance coverage and land vs. structure value

Insurance typically only covers structure value and/or contents. NFIP specifically covers up to 250,000$ of structure damage and up to 100,000$ of belongings damage.

Areas with large location amenities (beaches, weather) tend to have high land to structure value ratios

- This might be a key driver to the heterogeneous neighborhood composition effects found in the paper
  - Insurance cost (as a percent of sales prices) may be decreasing with price, causing larger insurance effects (in terms of sales price percentage) for those in less expensive homes
- Average effects may be inappropriate in this situation
  - If Miami-Dade has large differences in land to structure value ratios average effects may not accurately reflect the actual effects experienced
  - This may be extra problematic when backing out estimated discount values from the estimated averages
- Could be driving some of the heterogeneous distance effects
  - If distance to previous flood zone is correlated with variances in the land to structure ratio

Why might an area get mapped out of a flood zone?

"How water flows and drains can change due to new construction and community development or natural forces such as changing weather patterns or terrain changes. Also, communities may build levees and dams, decreasing flood risk over time."

- Why do flood maps change by FloodSmart.gov

- Communities that developed a lot of infrastructure pre map change may have experienced different price trends over the analysis period then the control areas
  - Depending on the direction of these time varying community effects it could be artificially diminishing or increasing the mapped out effects
  - If pre-map community development is indicative of continued community development during the analysis period, negative effects may be indicative of increased supply rather than a salience effect

This paper finds extremely interesting results on the potential existence of salience effects when it comes to flood risks, however, we need to better understand the underlying behavioral mechanisms if we want to leverage these affects.

A.) What are these additional non-insurance costs that were being priced into the Miami-Dade market?

- Are these “psychic”/time costs? If so how might these effects differ with the amenities being offered by the disaster risks? How might they differ with residence type, I.e. vacation home

B.) How might these discount effects differ in different economic environments? Did the post-recession era of this analysis induce larger discount rates?

- A buyers market may allow buyers the power to discount the “psychic” costs of buying a house in a flood hazard area, however those costs may need to be internalized by buyers in a sellers market.

C.) How is the flood risk/stigma information being transmitted when a property is no longer in a flood zone/required to purchase insurance?

Additional questions

Q1.) From working on this paper do you have any additional thoughts/anecdotal evidence on the potential flow of information for the salience effect?

- Are buyers seeing older maps, news stories, realtors, word of mouth?

Q2.) How do you rectify the differences in estimated effects from Shr and Zipp 2019, specifically the larger discounts and lack of asymmetric effects?

- Differences in methodology? Or are effects different because Miami-Dade is a coastal county?