Property values and perceived flood risks in NSW

Examining cognitive limits in flood risk perception for residential property values, we analyse the Richmond housing market in the state of New South Wales, Australia. Using micro-level home sales data, our study reveals that the market has integrated long-term flood risk into property values. A notable 10.8 % price discount is observed for properties within 1–100 Annual Exceedance Probability (AEP) flood zone, 4.4 % for those in an AEP 500 zone, with no discounts for AEP 1000 flood zone properties. Comparisons of 2019 and 2023 flood maps and property's Time-on-Market (TOM) affirm that people's cognitive limits constrain to the AEP 500 level.

Why the study:

- In Australia, more than one in 10 houses are situated in flood zones. Flooding from intense rainfall and overflowing rivers is the most common and costliest natural disaster.
- Actions are based on people's perceptions rather than objective risk, introducing cognitive biases.

What we did:

- Using home sales data from the Richmond area in the state of New South Wales, Australia, along with the 2019 and 2023 flood maps for this region, we explored individual cognitive limits in perceiving flood risk and its impact on residential property values.

What we found:

- A 10.8% price discount in the AEP 100 flood zone, 4.4% in the AEP 500 flood zone, and none in the AEP 1000 flood zone.
- Comparisons of 2019 and 2023 flood maps and property's Time-on-Market (TOM) affirm that people's cognitive limits constrain to the AEP 500 level or "1 in 500 years' flood event.

What this means:

- Digital flood risk maps have shaped people's perceptions of flood risk, however low-probably risk is often dismissed, and maps can be misinterpreted.
- Living in a flood zone could be costly due to decreased property values and increased long-term insurance costs.
- For severe rainfall or flood events, authorities should release the AEP level in advance, along with digital flood maps to help people better prepare for disaster risk reduction.

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