

# Discussion: Strategic Behavior in the Homeowners Insurance Market by Nowak, Powell, Ross

George Krivorotov

Office of the Comptroller of the Currency

October 25, 2024

**Disclaimer:** The views expressed in this paper are those of the author alone and do not necessarily reflect those of the Office of the Comptroller of the Currency or the US Department of the Treasury. All errors are my own.

# Motivation

- Reports in media - roofers approaching homeowners and offering free roof replacements.
  - AOB system - roofers sue insurance company on behalf of owner.
  - One way attorney fees - insurance company pays if they lose. Onus is on insurance company to prove.

## Question

How do you prove systematic home insurance fraud following a storm without any direct observations on insurance claims vs. damage?

## Answer

Use a policy discontinuity for homes  $> 30$  years of age which require inspection.

# Three sources of variation

## Proposition

Homeowners/third parties will commit **fraud** if there is a possibility (**disaster**+ **limited insurer info**)

- Time effect - 2013 inspection policy change for > 30 yr old house.
  - decreases fraud in disasters, but only for > 30 yr old house.
- Policy discontinuity - (↑ information for > 30 yr old house)
  - Post 2013, decreases fraud, but only in disaster.
- Disaster effect - (hurricane vs. no hurricane)
  - increases fraud, but only for  $\leq 30$  yr old house.

# Three sources of variation

## Proposition

Homeowners/third parties will commit **fraud** if there is a possibility (**disaster**+ **limited insurer info**)

- **Time effect** - 2013 inspection policy change for  $> 30$  yr old house.
  - **decreases** fraud in disasters, but only for  $> 30$  yr old house.
- **Policy discontinuity** - ( $\uparrow$  **information** for  $> 30$  yr old house)
  - Post 2013, **decreases** fraud, but only in disaster.
- **Disaster effect** - (hurricane vs. no hurricane)
  - **increases** fraud, but only for  $\leq 30$  yr old house.

# Three sources of variation

## Proposition

Homeowners/third parties will commit **fraud** if there is a possibility (**disaster**+ **limited insurer info**)

- **Time effect** - 2013 inspection policy change for  $> 30$  yr old house.
  - **decreases** fraud in disasters, but only for  $> 30$  yr old house.
- **Policy discontinuity** - ( $\uparrow$  **information** for  $> 30$  yr old house)
  - Post 2013, **decreases** fraud, but only in disaster.
- **Disaster effect** - (hurricane vs. no hurricane)
  - **increases** fraud, but only for  $\leq 30$  yr old house.

# Three sources of variation

## Proposition

Homeowners/third parties will commit **fraud** if there is a possibility (**disaster**+ **limited insurer info**)

- **Time effect** - 2013 inspection policy change for  $> 30$  yr old house.
  - **decreases** fraud in disasters, but only for  $> 30$  yr old house.
- **Policy discontinuity** - ( $\uparrow$  **information** for  $> 30$  yr old house)
  - Post 2013, **decreases** fraud, but only in disaster.
- **Disaster effect** - (hurricane vs. no hurricane)
  - **increases** fraud, but only for  $\leq 30$  yr old house.

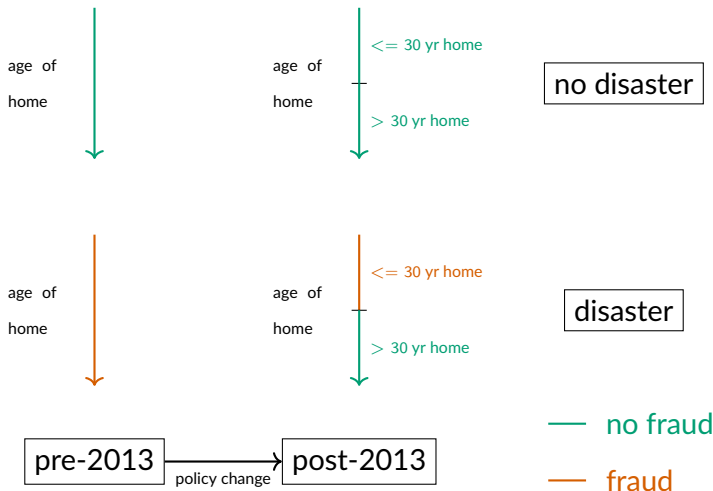
# Three sources of variation

## Proposition

Homeowners/third parties will commit **fraud** if there is a possibility (**disaster**+ **limited insurer info**)

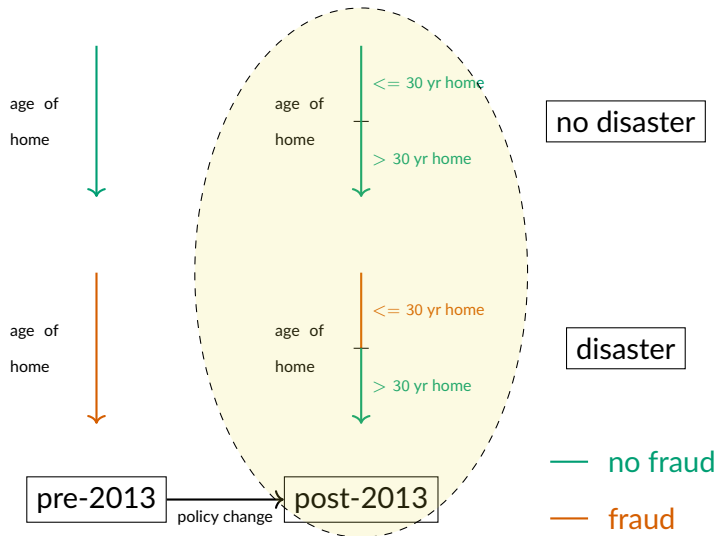
- **Time effect** - 2013 inspection policy change for  $> 30$  yr old house.
  - **decreases** fraud in disasters, but only for  $> 30$  yr old house.
- **Policy discontinuity** - ( $\uparrow$  **information** for  $> 30$  yr old house)
  - Post 2013, **decreases** fraud, but only in disaster.
- **Disaster effect** - (hurricane vs. no hurricane)
  - **increases** fraud, but only for  $\leq 30$  yr old house.

# Visualization of theoretical effect



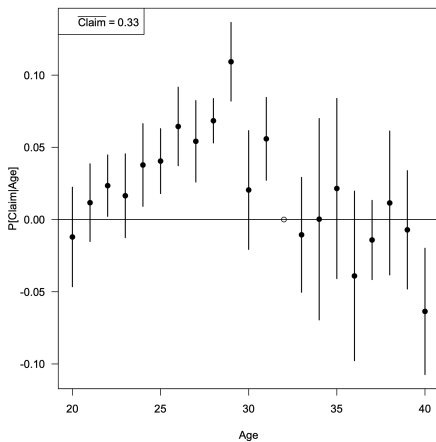


# Visualization of theoretical effect



# Main results

**Figure 4:** Relative Probability of Filing a Claim for Hurricane Irma, Tile Roofs Only



# Confounding factors

- **Next step:** how to disentangle claims between **fraud** and **non-fraud**.
- What is fraud? Claims made in excess of disaster damage.
  - Pre-2022, insurer liable for entire roof
- **Challenge:**
  - Do not know damage or claim amount info, only disbursement and insurer-paid legal fees.
  - Tile roof may need to be replaced anyway at 30-50 years.
- **Identifying assumption:** Controlling for observables, there should not be a jump in claims, disbursement, or legal fees in home age (27-30) compared to (31-33).
  - Non-storm damage repair rates should not explain spike.

# Non-disaster roof replacement rates.

- Important test to exclude nonlinear roof replacement patterns.
- Could it be explicitly incorporated in main specification?

Figure 9: Probability of Replacing Roof in 2015 or 2016, Tile Roofs Only

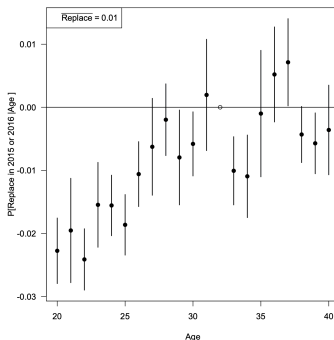


Figure: Figure 4

## Mechanisms and threats to ID

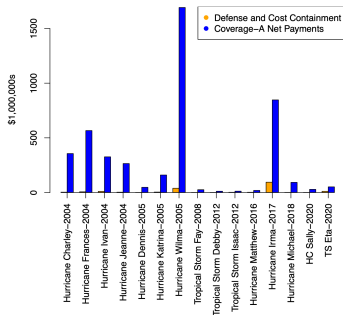
- What is the source of fraud?
  - Pattern is more pronounced for more delayed claims following disaster.
  - Suggests third parties
- Claim patterns are similar between homes with and without 4-point inspections.
  - This information is known only to homeowner and not roofer.
  - Why do roofers not ask?
- Results only hold on non-Florida Building Code compliant homes, suggesting some homeowner complicity.
- Building code changes seem to bias in opposite direction.

Overall tests are very convincing of validity of main hypothesis!



# Time trend

Figure 1: Wind Claims by Catastrophe



NOTE: Dollar amounts are in millions of 2004 dollars. Only wind claims associated with catastrophes with more than 1,000 wind claims are used for calculation in Figure 1.

## Questions - time trend

- *Ceteris parabis* there would be more fraud in Wilma.
- Large amount of payments in Wilma but little DCC (legal costs).
- Wilma had more fraud and less insurance contesting? Or more legitimate claims and less fraud?

## Suggestion - better understand time trend

- Secular increase in fraud? Or related to depopulation patterns?
- **Challenge 1:** Wilma, Irma, and other disaster disbursement likely different due to different damage pattern.
  - Issue: zip code level FE only sufficient for cross-section.
  - Solution -damage data? - FEMA individual assistance inspections (zip code), property-level modeled historical damages.
- **Challenge 2:** Tile roofs not insured by citizens pre-2009 (Wilma is 2005.)
  - Asphalt roofs? First (< 15 year home age) and second (< 30 and > 15 year home age).



# Parting impressions

- Irma work is convincing.
  - Analyses on threats to ID are well executed.
- Further questions:
  - Did 2022 law solve the problem?
  - Is the issue further generalizable?
- Very well done paper!