Challenges Facing Property Insurance Markets: Affordability and Availability

Ben Keys Professor of Real Estate and Finance Wharton School, University of Pennsylvania

May 6, 2025

Property Insurance and the Cost of Climate Change

▶ The economic costs from increasing disaster risk on households are large

- Directly felt through higher insurance premiums
 - What caused the recent spike in insurance costs?
 - What is the relationship between disaster risk and premiums?
 - How are insurers responding to increased costs and increased risks?
- **The problem:** Existing data is inadequate to answer these questions
 - **Data Solution on Affordability:** New estimates derived from escrow payments
 - Data Solution on Availability: New non-renewal data from Senate Budget Committee

Keys and Mulder (2024) Escrow-Derived Premiums

- Our approach: Construct premiums from mortgage loan-level data
- Study where insurance premiums have changed over the last ten years
- Estimate time-varying relationship between risk and premiums
- Compare the influences of construction costs, risk, and reinsurance in explaining premium dynamics

Inferring Premiums from Escrow Payments

We create panel estimates of homeowner's insurance premiums paid by over 19 million mortgagors originated from 2014 to 2024

Over 84m premium observations inferred from mortgage escrow payments

- "PITI" Payments to Escrow: Total Payment = Principal + Interest + Taxes + Insurance
- ▶ In CoreLogic loan-level data, we observe Total Payment, P&I, and Taxes

 \blacktriangleright \rightarrow Insurance = Total Payment - P&I - Taxes

The Geography of Homeowners Premiums in 2024



Zip Code Premiums in Miami-Dade County in 2024



Premium Trends Over Time, 2014–2024



Premiums have increased 48% (20% real) from 2020 to 2024

Premium Dynamics by Disaster Risk Quintile, 2014–2024



Annual premiums increased over \$1100 in the top quintile of disaster risk versus only \$400 in the bottom quintile

Examining Drivers of Premium Increases

Average premiums increased nearly 50% between 2020 and 2024

- We estimate that 50% can be explained by rising structure values and another 30% by the rising "disaster risk beta"
- Zipcodes with more correlated risk saw larger increases in premiums, suggesting an important role for a "reinsurance shock"
 - Guy Carpenter Reinsurance Price Index doubled between 2017–2023
- ▶ We find that the reinsurance shock also slowed the growth of home prices
 - Potential channels: broader repricing of backward looking cat-risk models, shifting of homeowner beliefs about future premium trends

Thinking Ahead

- Premiums are rising for many reasons (rebuilding costs, general uncertainty about risk, limited capital to cover catastrophic risk)
- > These higher premiums are affecting housing and mortgage markets
- One implication: The cost of climate change will depend on efficiency of markets for sharing catastrophic risk
- Some broader views:
 - Market innovations or policy solutions for insuring correlated catastrophic risk will become increasingly important
 - Price regulation of homeowners insurance premiums will become increasingly untenable — more exits push risk to states
 - Big question is whether price signals will lead to large-scale adaptation

Policy Implications

- ▶ Households need high-quality & timely climate and insurance data
 - Data collection by FIO and Senate Budget Committee were good starts
 - Need weather and climate forecasts to be public and available to all
- Misaligned incentives can be re-aligned through government intervention
 e.g. short-term premium volatility and long-term pricing w/actuarial accuracy could be addressed through mortgage markets (Fannie/Freddie/FHA)
- Reinsurance market hardening suggests role for public backstop to provide continuous availability and coverage — "reinsurer of last resort"
- Ultimately we need to reduce our risks:
 - Invest (and experiment!) heavily in resiliency and preparedness
 - Financial products through Fannie/Freddie/private capital toward retrofits
 - Tax-advantaged disaster readiness accounts
 - Decarbonize the economy as fast as possible

Thank you! contact: benkeys@wharton.upenn.edu