Climate Risk and Household Finance

Stefano Giglio
Yale School of Management
Climate Risk and Household Finances

• **Many channels** through which climate risk can affect household finances.

• My remarks will focus on the **asset side** of household balance sheets.
  
  • **Real estate** (Giglio, Maggiori, Rao, Stroebel, and Weber, 2020)
  • **Stock market** (Engle, Giglio, Kelly, Lee, and Stroebel, 2020)

• **Key issues** in addressing these risk exposures
Climate Risk and Real Estate
(Giglio, Maggiori, Rao, Stroebel, and Weber, 2020)

• **Real estate** is a fundamental asset for most people

• Inextricably tied to **location**, exposed to physical climate risk
  - Flooding and hurricanes
  - Wildfires
  - Rising Sea Levels

• Which houses are exposed, and how exposed are they?
  - **Measurement** of differential exposure to climate risk
  - Geocode locations + merge with NOAA maps on 6-feet sea level rise predictions
Climate Risk and Real Estate
(Giglio, Maggiori, Rao, Stroebel, and Weber, 2020)
Climate Risk and Real Estate
(Giglio, Maggiori, Rao, Stroebel, and Weber, 2020)

• Aren’t high-exposure and low-exposure houses different in other dimensions?
• Exploit time variation in attention to climate change
• Climate attention measured at zip-quarter level by share of real estate listing mentioning climate-related issues (e.g., elevation, flood plain, etc.)

Example 1: Diamond in the Rough on water with pier and dock! Owner holds letter of exemption from FEMA, stating high elevation, flood insurance may not be required, minutes to area beaches, Close to Jacksonville and Wilmington.

FINDING: After increases in climate risk attention, there is a differential decline of more-exposed vs. less-exposed property prices.

→ Climate Risk is Priced in Real Estate, therefore directly important to households through this channel
Households are also exposed to climate risks through their equity portfolios. How?

- Use E-scores to measure exposure to climate risks
- Climate attention measure: Mentions of climate change in WSJ (also adjusted by ‘sentiment’ – good vs. bad news)

**FINDING**: Firms with high E-scores outperform in periods with negative news about climate change.

→ **Climate Risk is Priced in Equity Markets**
→ Can use factor-neutral long-short portfolio based on E-Scores to hedge negative climate news
Key Issues

1. **Measurement**
   • Risk exposures of households’ assets

2. **Communication**
   • Are households fully aware of these risk exposures?

3. **Risk-sharing**
   • Heterogeneity in risk exposures: opportunity to share risks
   • Appropriate financial instruments to hedge these risks

4. **Time-horizon**
   • Many of the risks linked to climate change operate on very long time scales