

Income-based inequality in post-disaster migration  
is lower in high resilience areas:  
Evidence from U.S. Internal Migration

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# Climate-change induced Natural Disasters and Migration



Steven Martin

"House Damaged by Hurricane Andrew, Leisure City" by Steven Martin (CC BY-NC-ND 2.0)

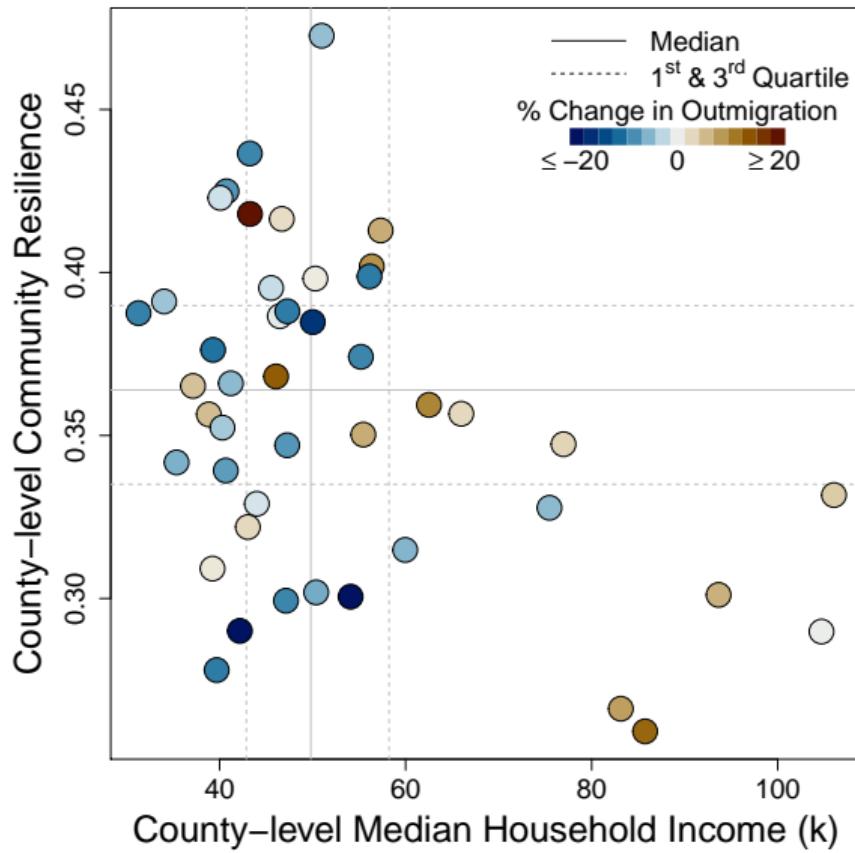
# Questions about Post-Disaster Relocation

Do individuals respond to extreme weather events by relocating?

How does economic welfare impact decisions to relocate after natural disasters?

How does disaster resilience factor into this?

# Income, Resilience, and Relocation



# Empirical Approach

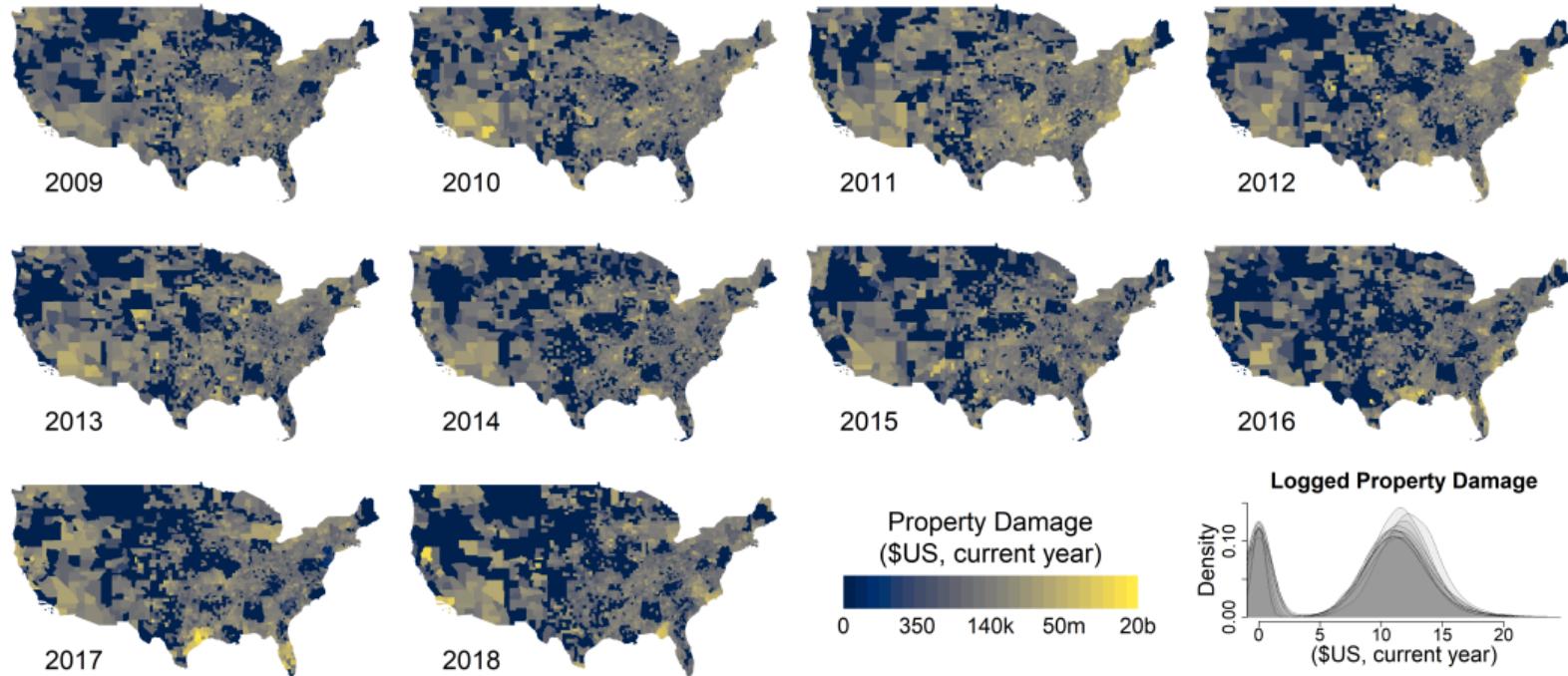
## Data

- ▶ Network data on US county-to-county migration flow 2009-2018
- ▶ Natural disaster is measured in terms of property damage
- ▶ Income and other sociodemographic variables from the US Census
- ▶ Disaster resilience in two ways: community-level and institutional-level

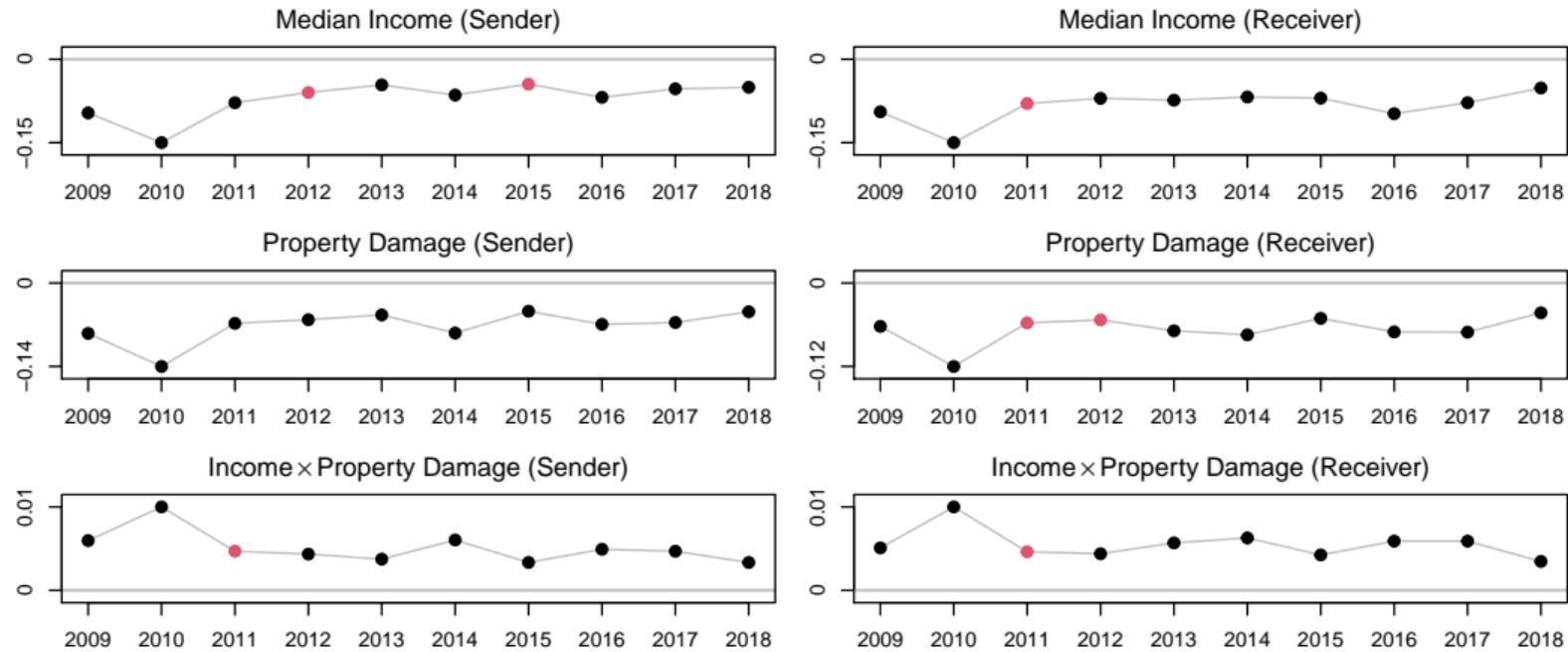
## Methods

- ▶ Year-by-year gravity models of county-to-county migration flow
- ▶ OLS estimates with MRQAP testing

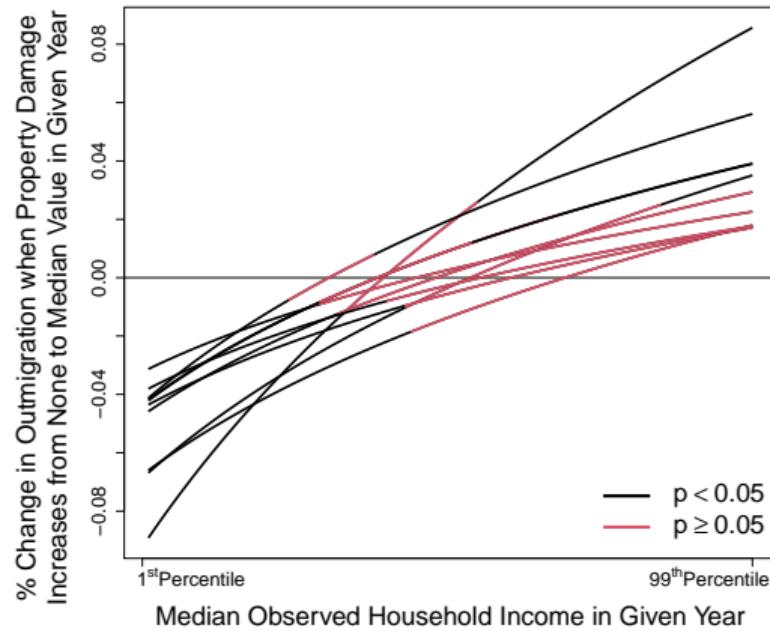
# Disaster-induced Property Damage in the US



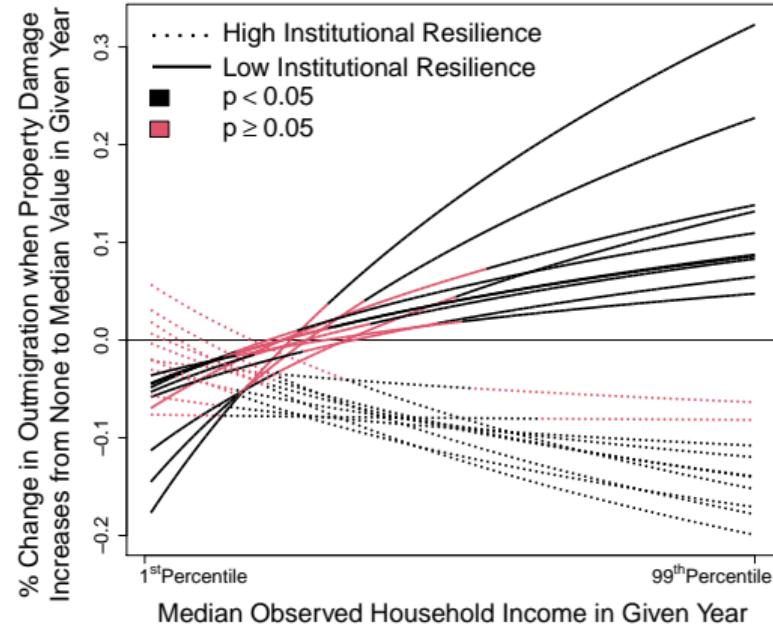
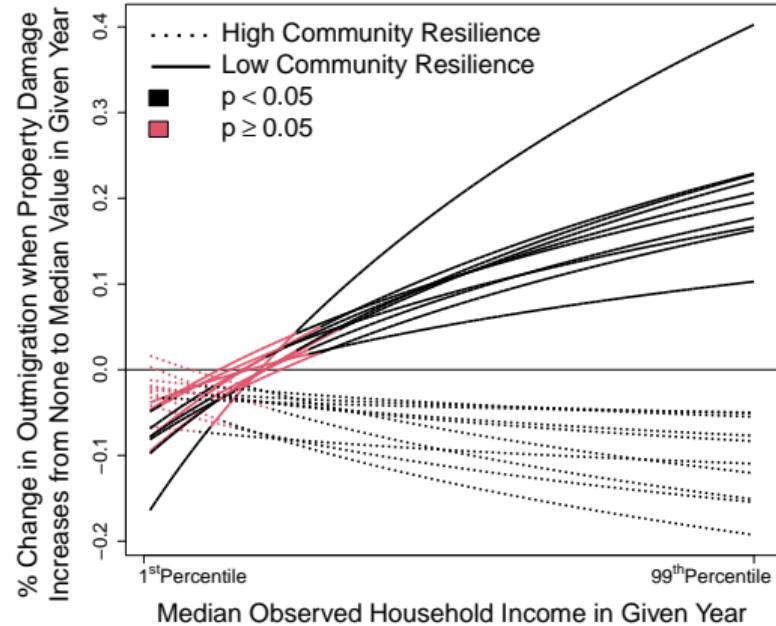
# Findings: Overview



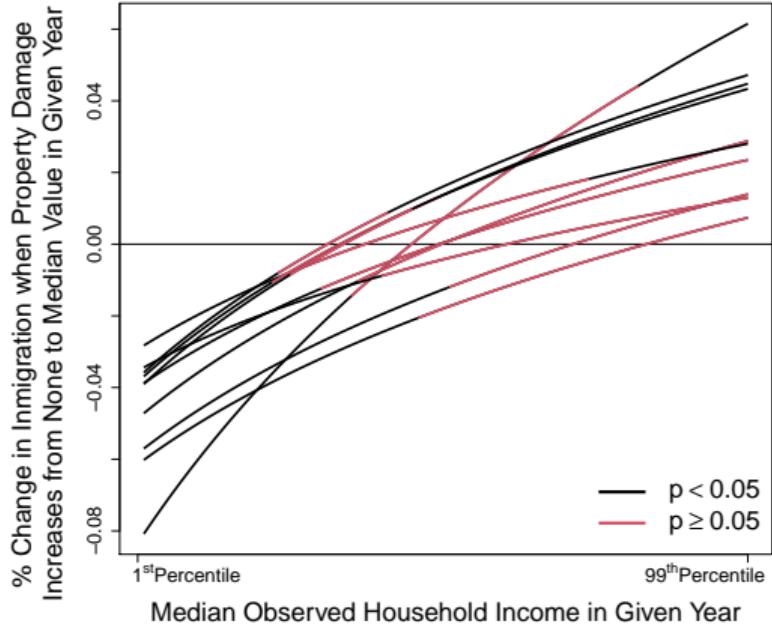
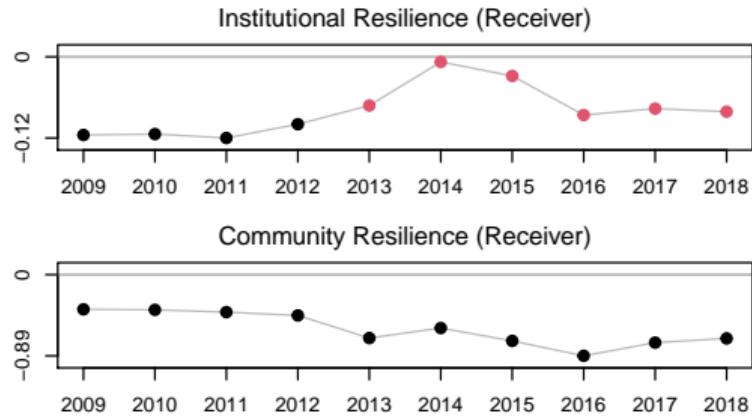
# Income-based Inequality in Post-Disaster Migration



# Disaster Resilience is Associated with Lower Income-based Inequality



# Climate Factors Associated with Immigration



# Summary

- ▶ Income-based inequality in post-disaster relocation is offset in areas with higher disaster resilience.
- ▶ However, people are more likely to stay in these areas, which may be detrimental to climate change adaptation in the longer term.
- ▶ Future work should look at incentives for equity in relocation from disaster prone areas.

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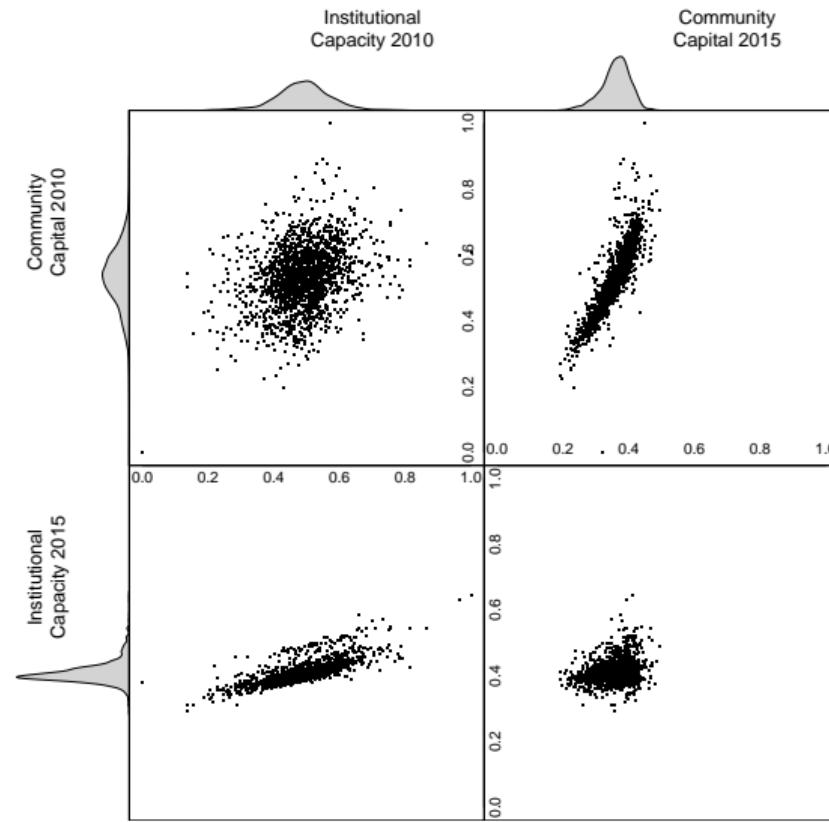
These slides are available at <https://tedhchen.com/assets/apsa21.pdf>.

# Model Terms

County-level Measure	Source	Included Model Terms		
		Sender	Receiver	Dyad*
Disaster-induced Property Damage	SHELDUS	•	•	
Median Household Income	ACS	•	•	•
Community Resilience	BRIC	•	•	
Institutional Resilience	BRIC	•	•	
Population	ACS	•	•	•
Median Age	ACS	•	•	•
Percent Bachelors or higher	ACS	•	•	•
Percent Unemployed	ACS	•	•	•
Percent White Population	ACS	•	•	•
Percent Native-born Population	ACS	•	•	
GOP Vote Share	MIT Election Lab	•	•	•
Percent Manufacturing Employee	NAICS		•	
Disaster-induced Bodily Harm	SHELDUS	•	•	
Geographical Location	-			•
State	-			•

\*Dyadic measures are distance/similarity/homophily terms depending on the base measure.

# Relationship between Resilience Measures



# Joint distribution of property damage, household income, and resilience

