



THE IMPACT OF HURRICANES ON HOUSEHOLD POVERTY

Evidence from Jamaica

presentation by

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Panel on “Risk, Poverty, and Financial Solutions”

An aerial photograph showing a residential area with significant damage. Several houses with red and grey roofs are visible, some with missing roof sections. Debris is scattered across the green lawns and streets. Trees are stripped of leaves, and some are broken. The overall scene depicts the aftermath of a tropical storm or hurricane.

INTRODUCTION

- Few would doubt that tropical storms have some impact on household poverty – but how much and how long?
- Handful of studies on impact on households (Azreen & Noy, 2014)
- General conclusion: negative impact, but little consensus on how much

INTRODUCTION

- Two empirical challenges :

1. Need to follow Households over time (i.e., panel data):

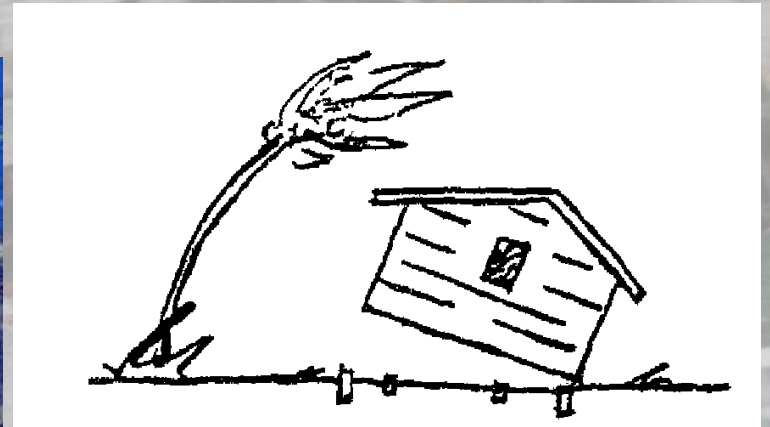
Before



Event

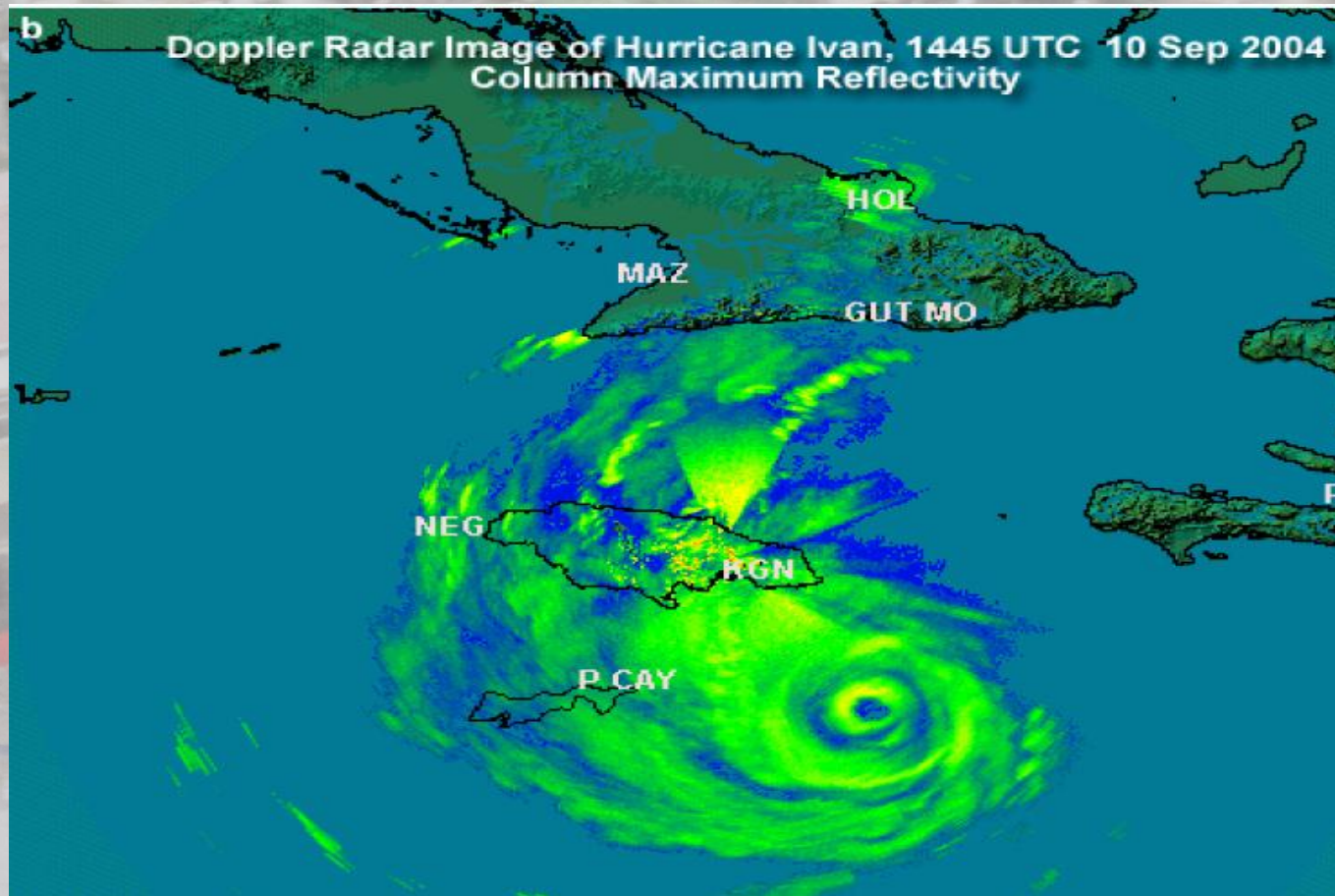


After



INTRODUCTION

2. Tropical Storms need to be modeled as 'local' phenomena



INTRODUCTION

THIS PROJECT: A case study of Jamaica using household panel data

(joint with Nekeisha Spencer, U of the West Indies & Michael Henry, U of Birmingham)



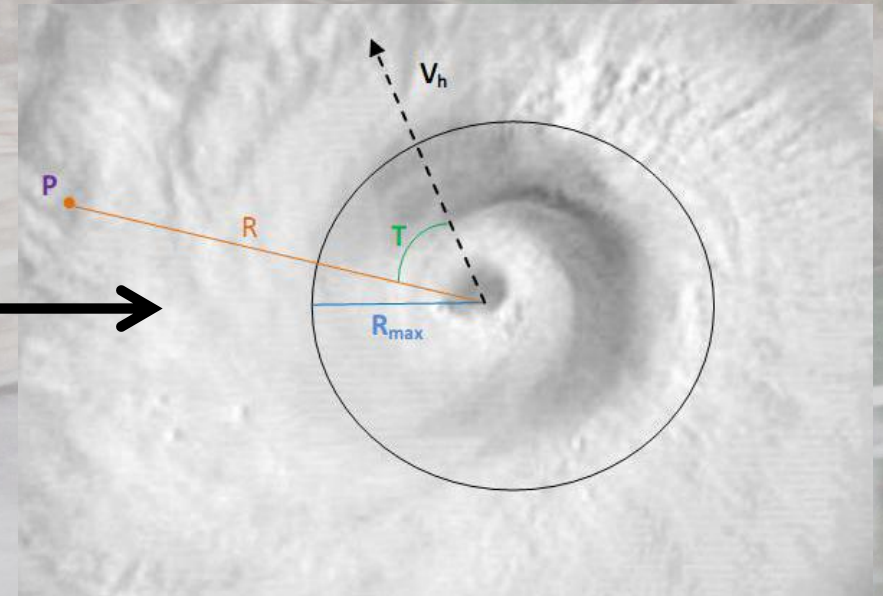
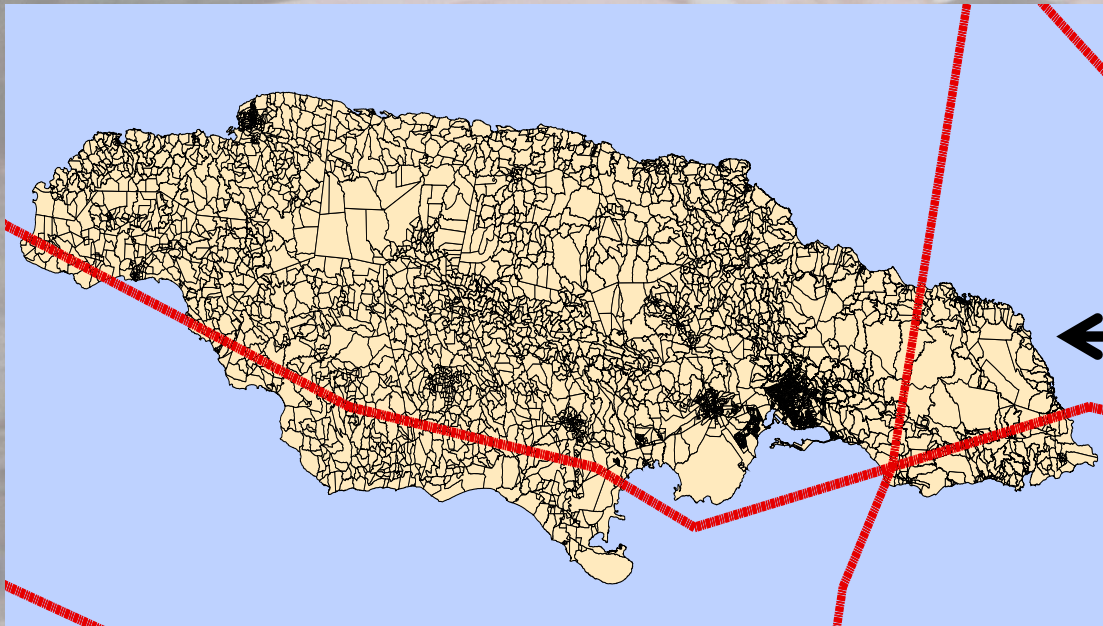
An aerial photograph of a residential area in Jamaica, showing several houses with damaged roofs and scattered debris on the ground, likely the aftermath of a natural disaster. The image is slightly faded and serves as a background for the text.

JAMAICAN HOUSEHOLD PANEL DATA

- **Survey of Living Conditions (SLC): rotating household panel**
- **Can follow 9,500 households from 1990-2012**
- **Detailed Information on consumption & expenditure**
- **Information on location (enumeration district) & building**

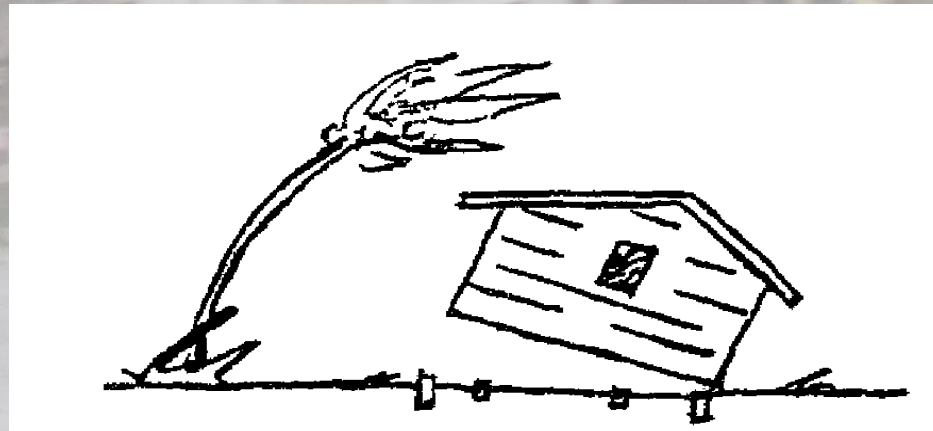
HURRICANE DAMAGE MODELING

- Tropical storm tracks & wind field model → wind speed for each storm in each enumeration district



HURRICANE DAMAGE MODELING

- Household damage (vulnerability) Function?
 - 1989 SLC: collected information on damages after Hurricane Gilbert
 - Info on Hurricane Gilbert damage & housing wall type
- Household specific damage proxy for each subsequent storm



An aerial photograph showing the aftermath of a hurricane. Several houses are visible, some with significant roof damage or missing roofs. Debris is scattered across the landscape, and many trees are stripped of leaves or broken. The overall scene depicts widespread destruction in a residential neighborhood.

ECONOMETRIC RESULTS

- **Result #1: Negative impact of hurricanes on Consumption/Capita**
- **Result #2: Cross-sectional data overstates impact**
- **Result #3: Effect only lasts one year & is not very large**
- **Possible reasons for Result #3**
 - (i) **Damage proxy is poor**
 - (ii) **Informal insurance**
 - (iii) **Budget reallocation**

ECONOMETRIC RESULTS

(ii) Informal Insurance

- Ex – Remittances?



- Result: some mitigating role...



CONCLUDING REMARKS

- **Role for household hurricane insurance in Jamaica?**
- **Possibly, but:**
 - Need clearer understanding of ‘informal’ mechanisms in place**
 - Would have to be heavily subsidized**