

# Catastrophes, Aid, and Civil Conflict: the Case of Floods in Colombia

Jorge Gallego  
Universidad del Rosario

Juan Vargas  
Universidad del Rosario

Austin Wright  
University of Chicago

Laura Becerra  
Universidad del Rosario

September 30, 2016

# Introduction

- ▶ Climate change increases frequency of extreme climatic events
- ▶ Catastrophes have become more common in recent years
- ▶ But many implications for political processes have not been fully understood
- ▶ What are the effects of natural disasters on civil conflict?
- ▶ No consensus in the literature as several mechanisms have been proposed

# Mechanisms

- ▶ Mechanism 1: Disasters stimulate pro-social behavior and cooperation → ↓ conflict (Fair et al., 2014)
- ▶ Mechanism 2: Disasters augment scarcity and competition for resources → ↑ conflict (Homer-Dixon, 1991)
- ▶ Mechanism 3: Disasters weaken states and create opportunities for rebels → ↑ conflict
- ▶ Mechanism 4: Disasters represent a positive shock on governments' budgets → ↑ conflict

# Our Story

- ▶ Rather than scarcity, disasters might represent abundance, in the form of aid
- ▶ Different forms of aid affect civil conflict:
  1. International aid (Besley and Persson, 2010)
  2. Food aid (Nunn and Qian, 2010)
  3. Development aid (Croston et al., 2014)
  4. Military aid (Dube and Naidu, 2014)
- ▶ How about disaster aid?
- ▶ The nature of aid and traits of illegal armed groups matter

# Preview of Results

Analyzing a disaster in Colombia, we find that

1. Paramilitary and FARC violence exacerbates in places more affected by the disaster and this effect is driven by aid
2. Differential effects: Paramilitary attacks respond to long-term reconstruction aid; FARC attacks to short-term relief
3. Reconstruction aid augments the number of civilians killed by Paras; Relief increases clashes between FARC and State
4. Reconstruction aid increases municipal corruption

## Context: Disaster and Violence

- ▶ Colombia's 2010-2011 rainy season: worst disaster in history
- ▶ Dramatic increase in floods and landslides
- ▶ Nationwide variation, more than 4 million victims
- ▶ State response: relief, reconstruction, rehabilitation. \$3.5 billion
- ▶ Myriad of illegal groups: left wing guerrillas (FARC, ELN), right-wing paramilitaries (AUC) and new paramilitaries
- ▶ State capture at different levels in several regions

# Empirical Strategy

- ▶ Dif-in-dif strategy to compare changes in attacks before and after the disaster, as a function of disaster exposure or aid

$$Attacks_{it} = \alpha_i + \beta_t + \delta(Aid_i \times Post2011_t) + \phi X_{it} + \varepsilon_{it}$$

$$Attacks_{it} = \alpha_i + \beta_t + \delta_1(Relief_i \times Post2011_t) \\ + \delta_2(Reconstruction_i \times Post2011_t) + \phi X_{it} + \varepsilon_{it}$$

- ▶ IV Strategy as aid might be endogenous: extreme episodes of rainfall, surface runoff, and its interaction

$$MaxRainfall_i \times Post2011_t, Runoff_i \times Post2011_t, MaxR\_Runoff \times Post2011_t$$

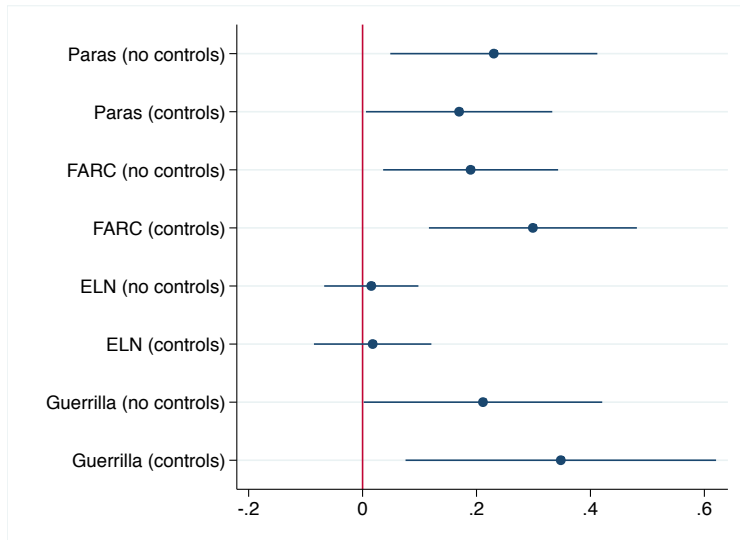
# Data

- ▶ Conflict: Restrepo et al. (2004). Attacks, clashes, deaths
- ▶ Disaster: DANE and Colombia Humanitaria. Victims, relief, reconstruction aid
- ▶ Climate: IDEAM. Rainfall, surface runoff
- ▶ Corruption: Martinez (2015). Mayors investigated, found guilty, and impeached
- ▶ Controls: DANE and SIMCI. Population, coca, poverty



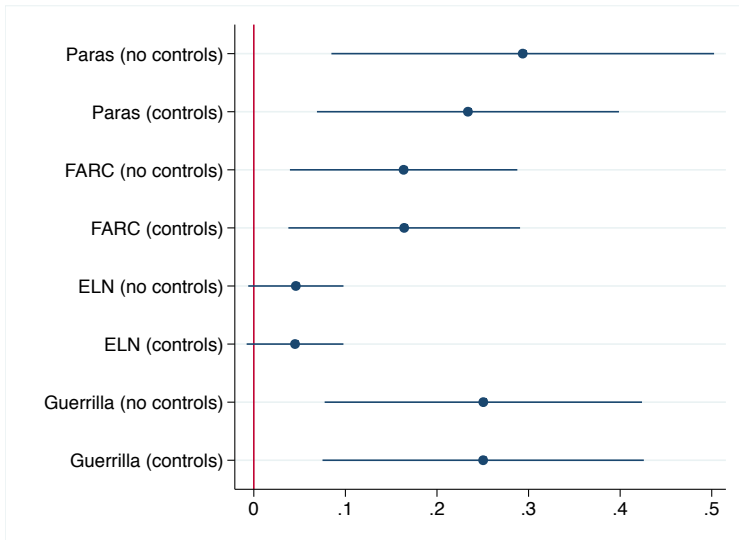
# Results: Exposure and Conflict

Figure: Victims per Capita and Attacks



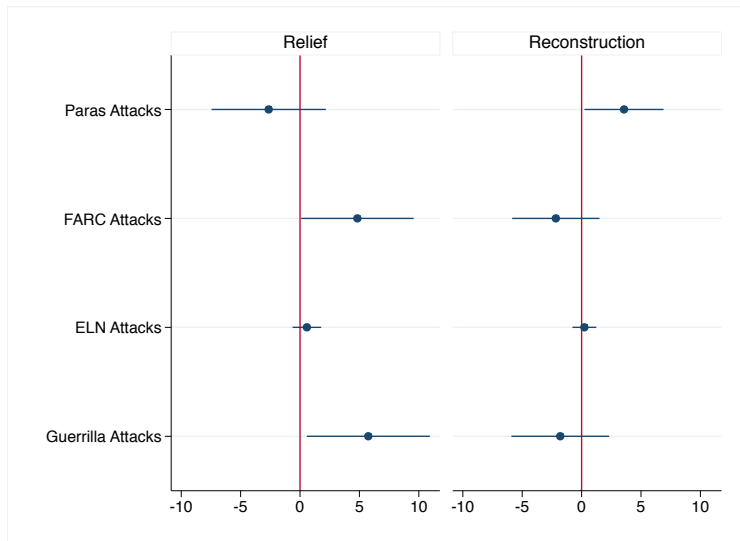
# Results: Aid and Conflict

Figure: Total Aid and Attacks



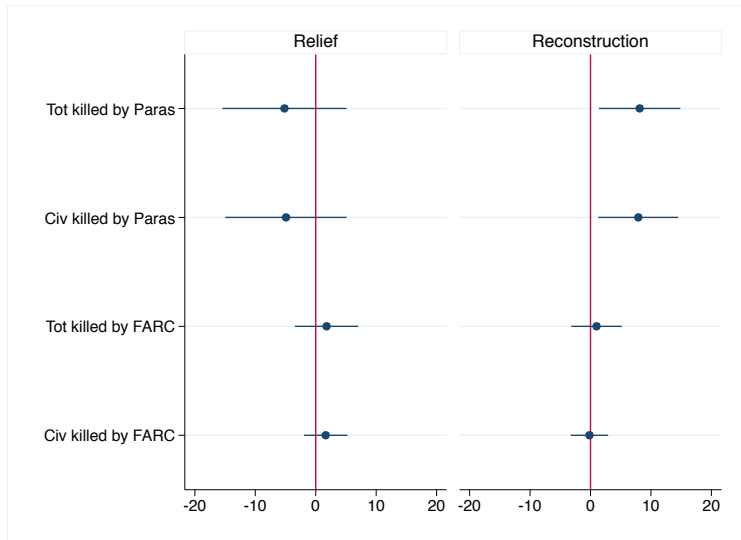
# Results: Relief vs. Reconstruction

Figure: Forms of Aid and Attacks: IV Approach



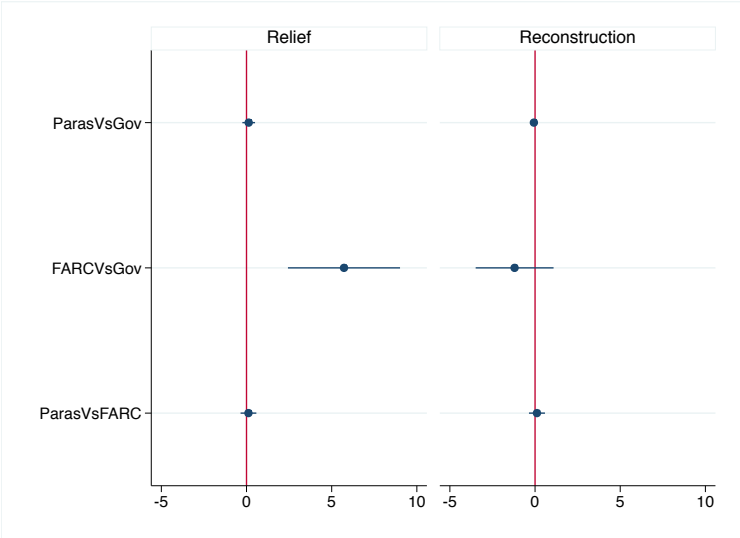
# Mechanism: Deaths by Group

Figure: Forms of Aid and Deaths: IV Approach



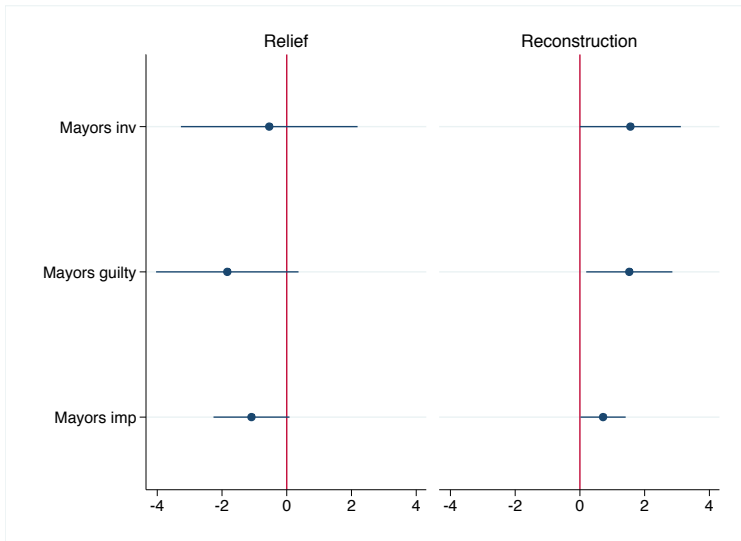
# Mechanism: Clashes between Groups

Figure: Forms of Aid and Clashes: IV Approach



# Mechanism: Inspector General Investigations

Figure: Forms of Aid and Investigations: IV Approach



# Conclusion

- ▶ Disasters exacerbate conflict
- ▶ Aid is the channel explaining this effect
- ▶ The exact reason depends on the nature of illegal groups
- ▶ Guerrillas go after short-term benefits and gain from State weakness
- ▶ Paramilitaries go for long-term gains guaranteed by corruption and State capture