Agricultural Shocks and Social Conflict in Southeast Asia

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Does harvest affect conflict?

Conflicts happen... everywhere and all the time.

But in some places and at certain times more of them happen.

We focus on low- and middle-income countries of Southeast Asia, where agriculture employs and pays large shares of population, and ask the question:

> Do harvest-time agricultural shocks lead to changes in forms of conflict?

It amplifies violence and (maybe) reduces protests

The answer to the research question is hardly unequivocal.

Relative to the rest of the year, at harvest time we observe:

- four-to-eight percent increase in violence against civilians
- up to ten percent decrease in protests*
- excess rain during the growing season mitigates the effects
- the results are mainly driven by rainfed locations

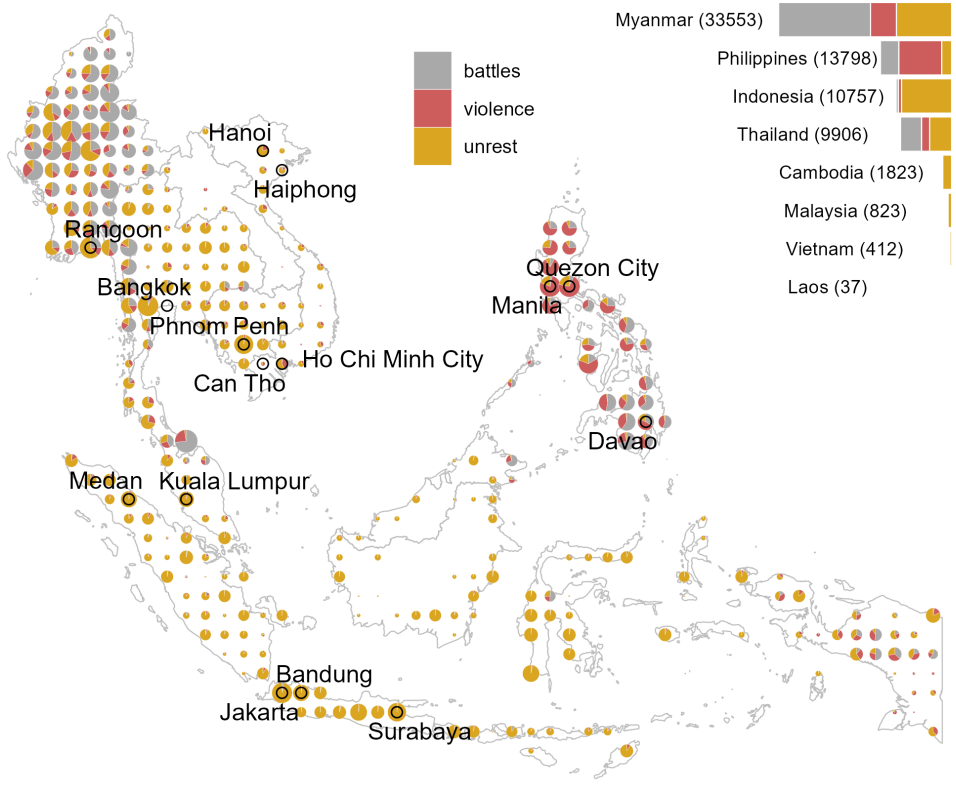
*sensitive to data subsetting.

Conflicts happen all across Southeast Asia

From the ACLED Project, over 70 thousand incidents of:

- **battles**,
- **explosions/remote violence**,
- **violence against civilians**,
- **riots**, and
- **protests**

observed over the 2010-2022 period.

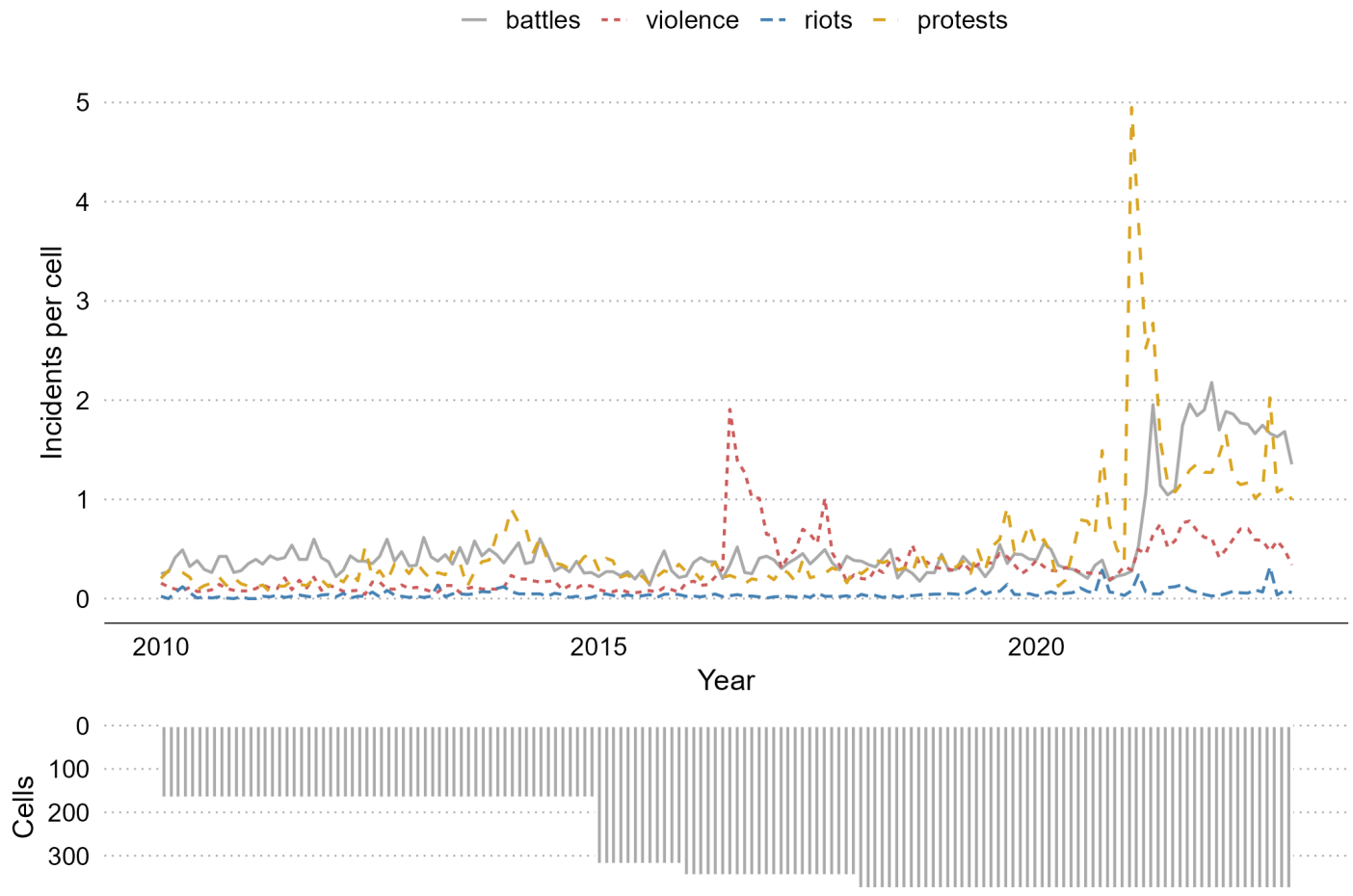


Conflicts happen all the time in Southeast Asia

Unbalanced panel of eight countries.

For most countries, the data are available from 2010 onward, except for:

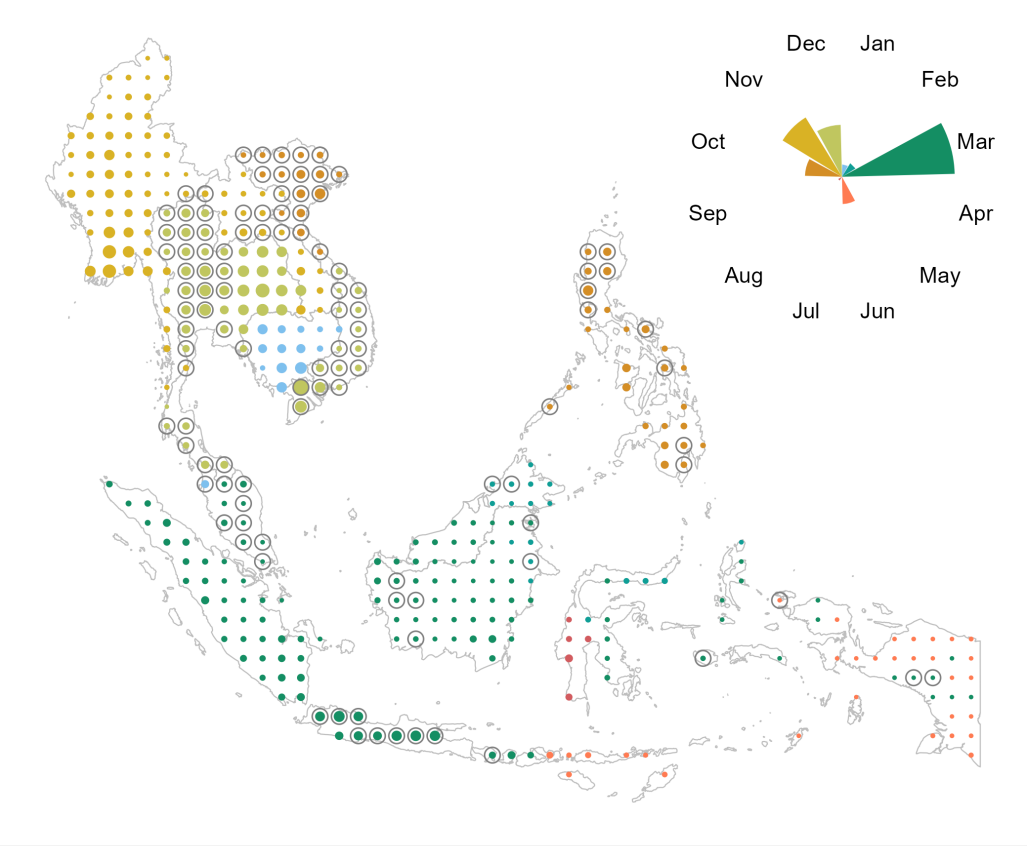
- Indonesia (2015-)
- Philippines (2016-)
- Malaysia (2018-)



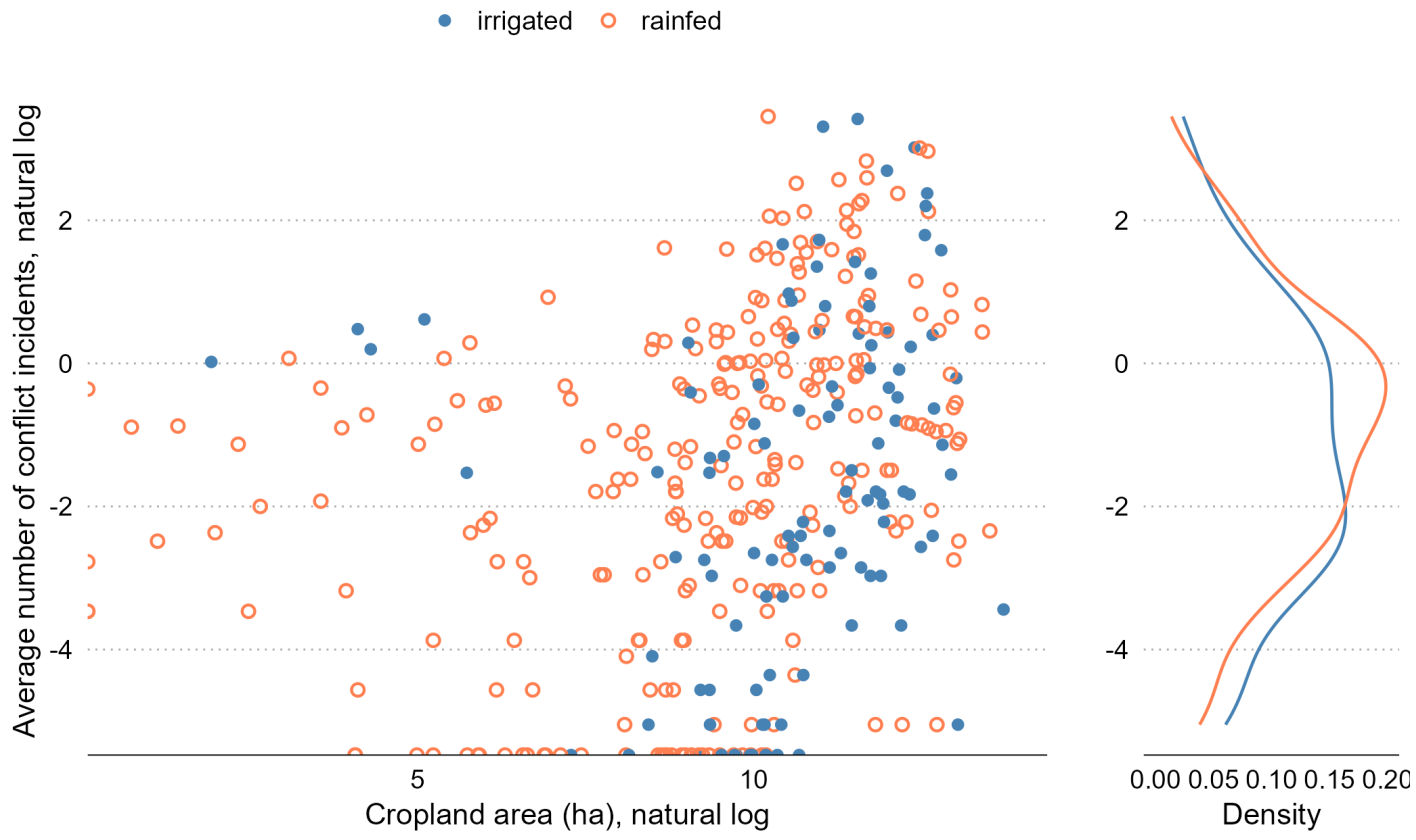
Rice is cultivated across all of Southeast Asia

From IFPRI's Spatial Production Allocation Model (SPAM) and Monfreda et al. (2008),

- regional variation in harvested areas
- regional variation in harvest seasons
- regional variation in proportion of irrigated land



Positive correlation between conflict and croplands



We study the effect of harvest on forms of conflict

The outcome variable is the number of conflict incidents observed at a cell in a given time. We consider:

- each form of conflict separately,
- all forms of conflict combined.

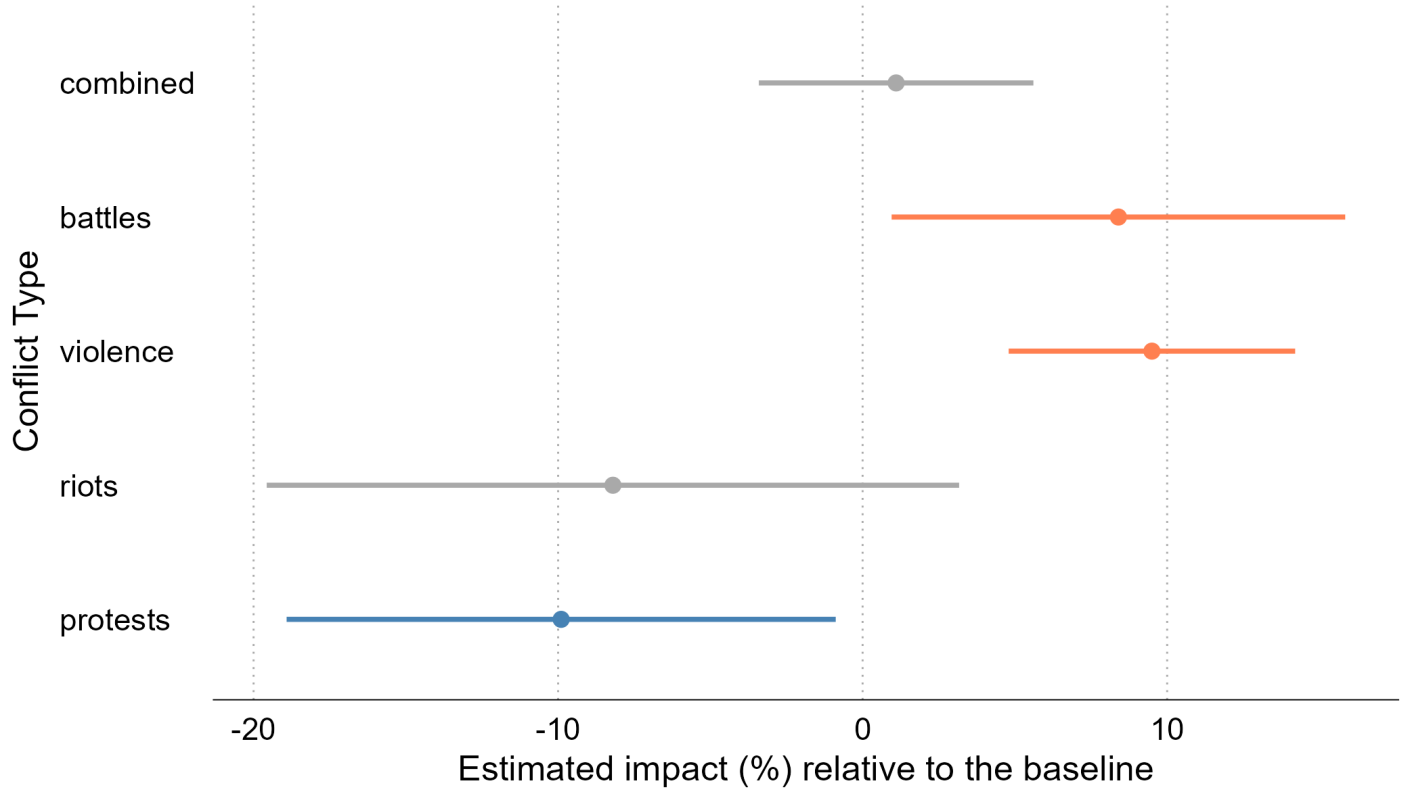
The treatment variable is the product of the cell-specific area (hectares) and harvest season (binary).

Fixed effects: cell, country-year, year-month.

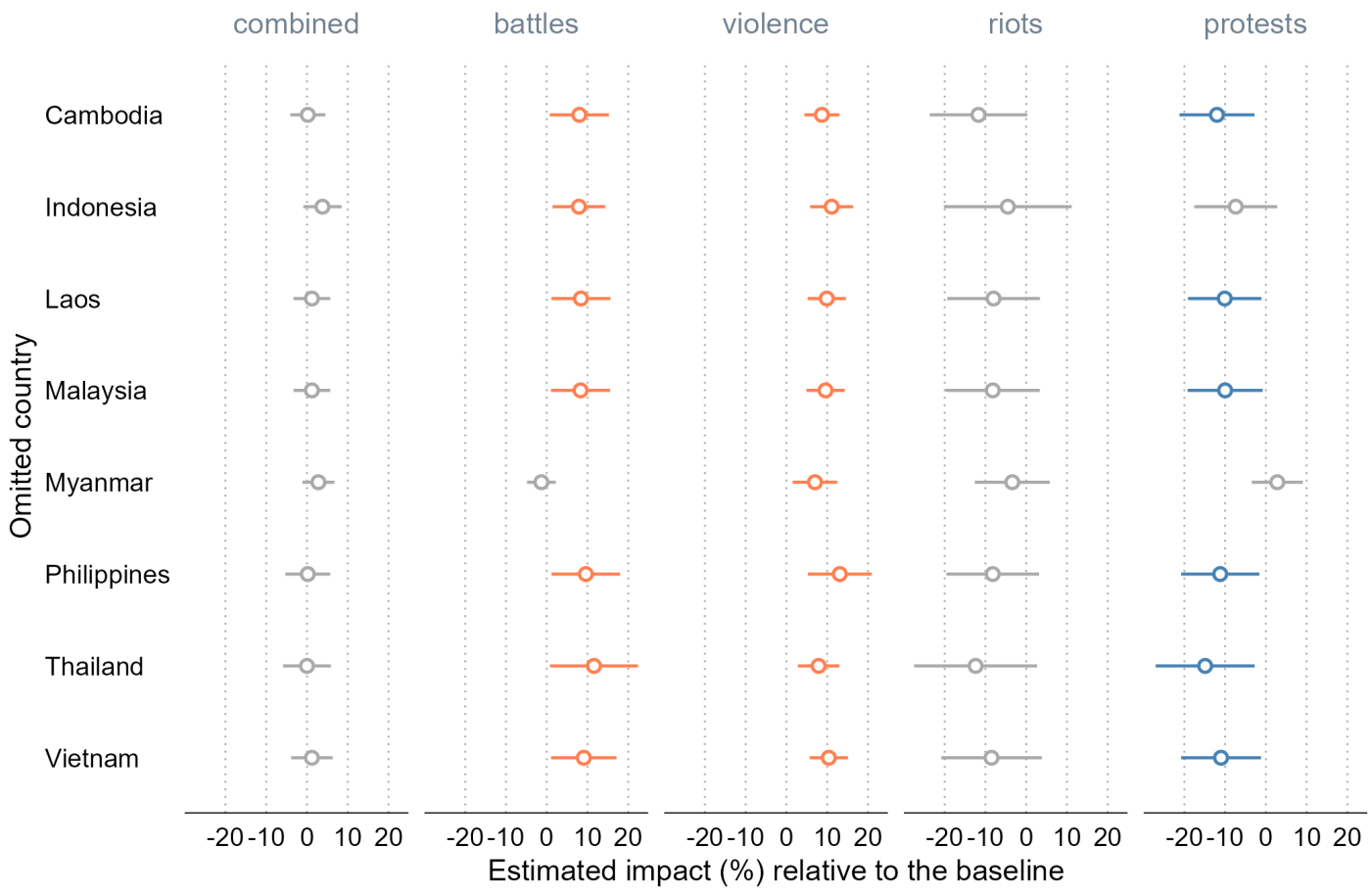
Battles and violence increase and protests decrease

The estimated effect is evaluated at the average size of the cropland and relative to the average conflict.

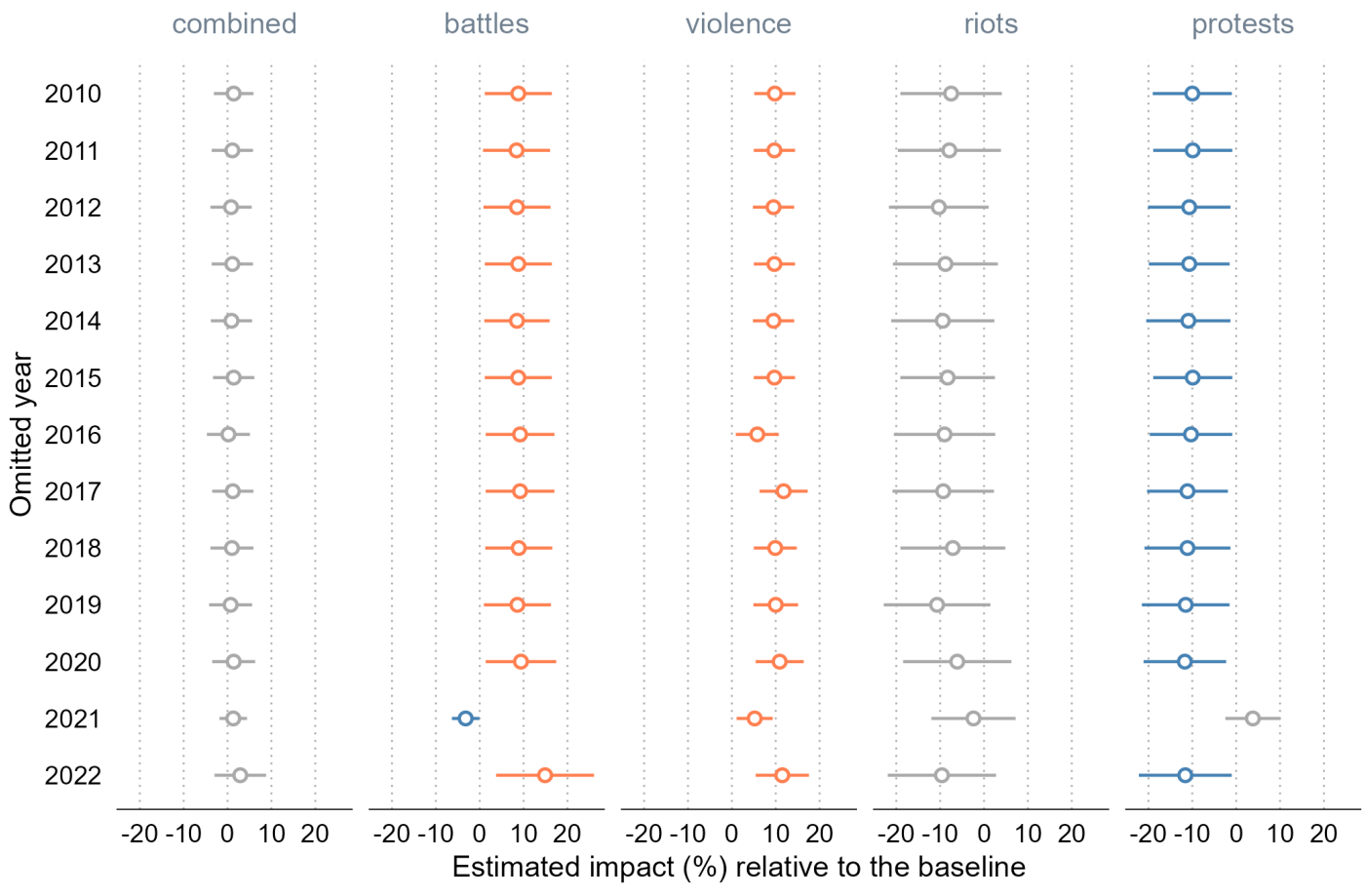
The dots are point estimates, and errorbars denote 95% confidence interval.



Myanmar seems to be driving (some of) the results



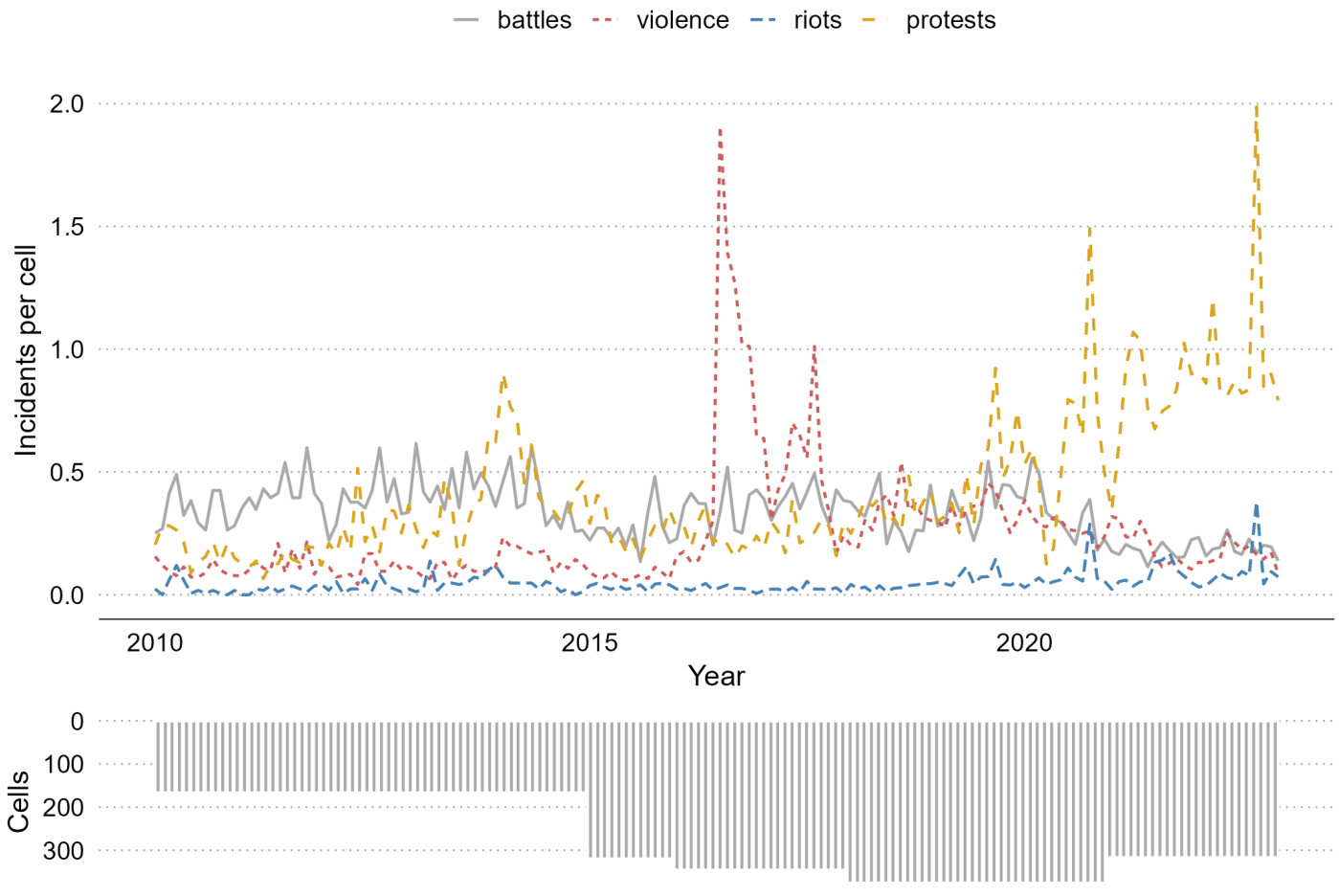
2021 seems to be driving (some of) the results



Conflict series look sensible w/o Myanmar 2021-2022

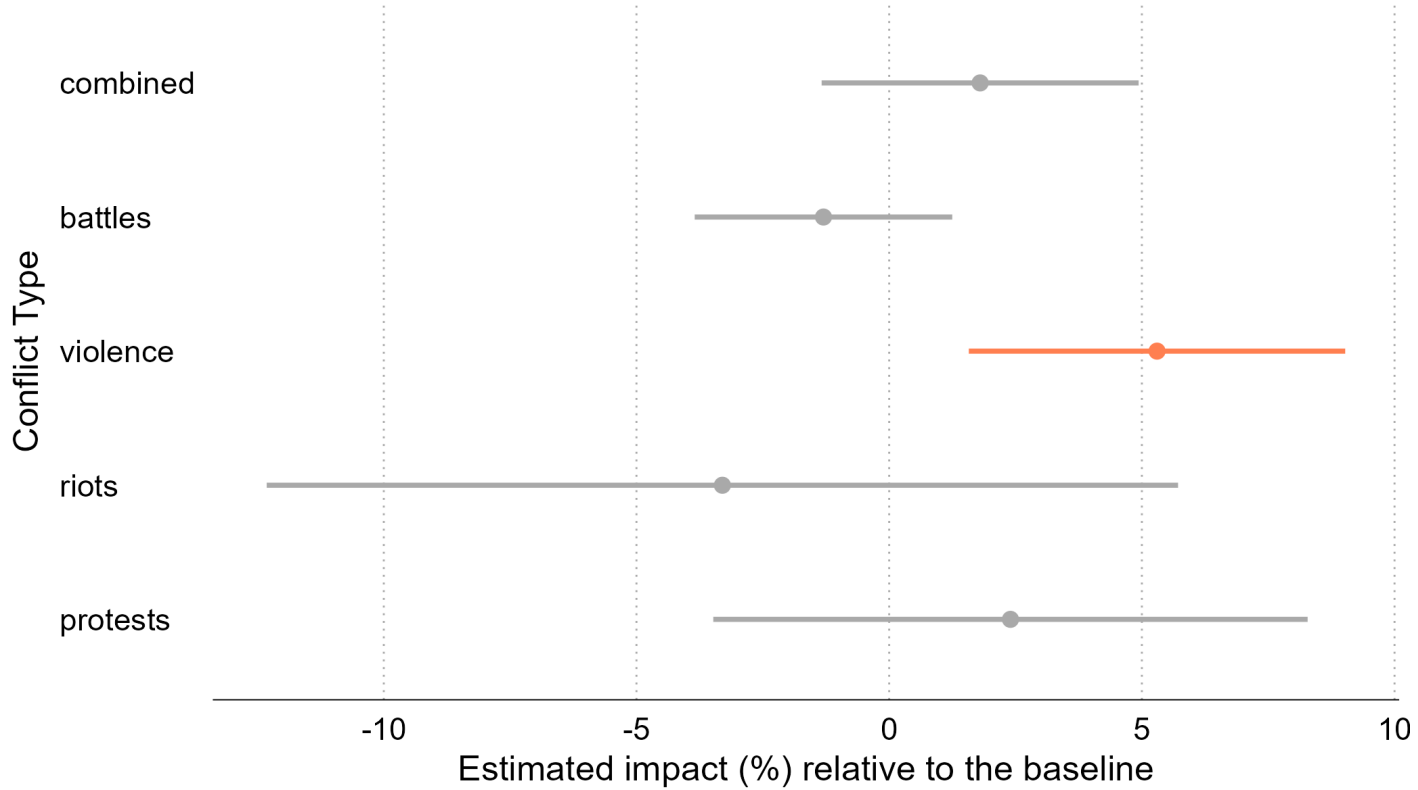
Full sample consists of 44,724 observations and 71,109 incidents.

Myanmar 2021-2022 includes 1,416 (3.2%) observations and 23,550 (33.1%) conflict incidents.



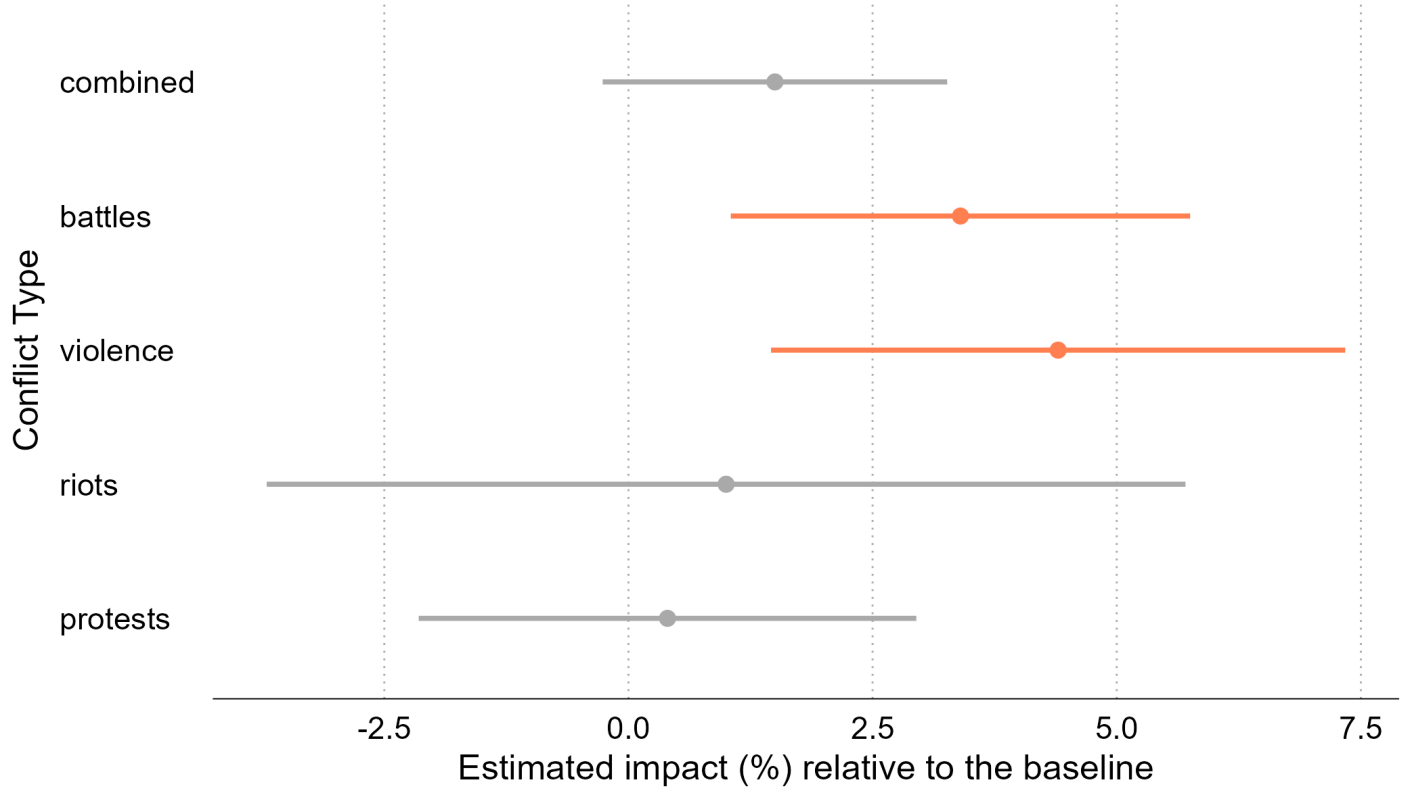
When we omit Myanmar 2021-2022 data...

Violence increases (but nothing else changes)



When we use incidence as the outcome variable...

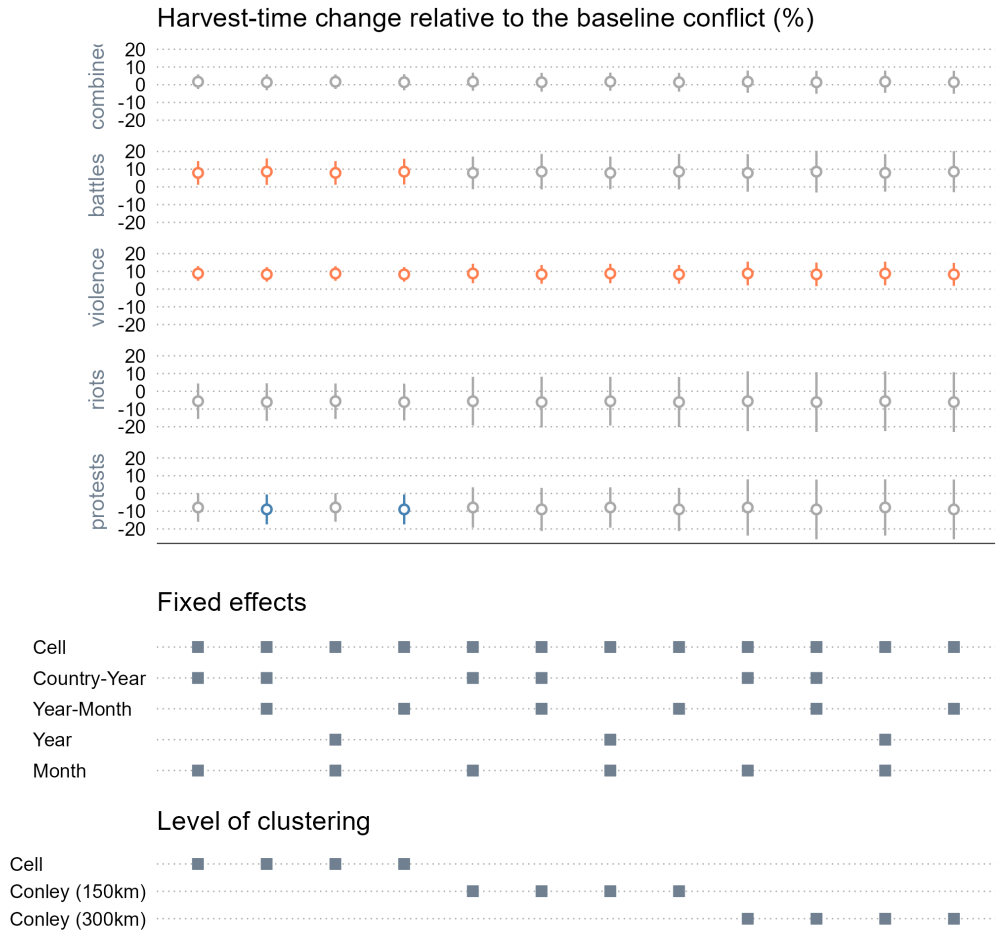
Battles and Violence increase (protests and riots don't change)



The specification chart (incidents, full sample)

The effect on violence robust across specifications.

The effect on protests not significant in most instances (even with full sample)



Harvest-time violence may be linked to rapacity

Ubilava et al. (2023) investigate the effect of cereal price change on seasonal violence in the croplands of Africa.

The key finding: much of the annually accrued effect—which is positive, statistically significant, and economically meaningful—happens during the first three months of the crop year.

Accords with the *rapacity mechanism*: farmers attacked when most gains are to be made (or maximum damage incurred).

Opportunity cost may explain less protests

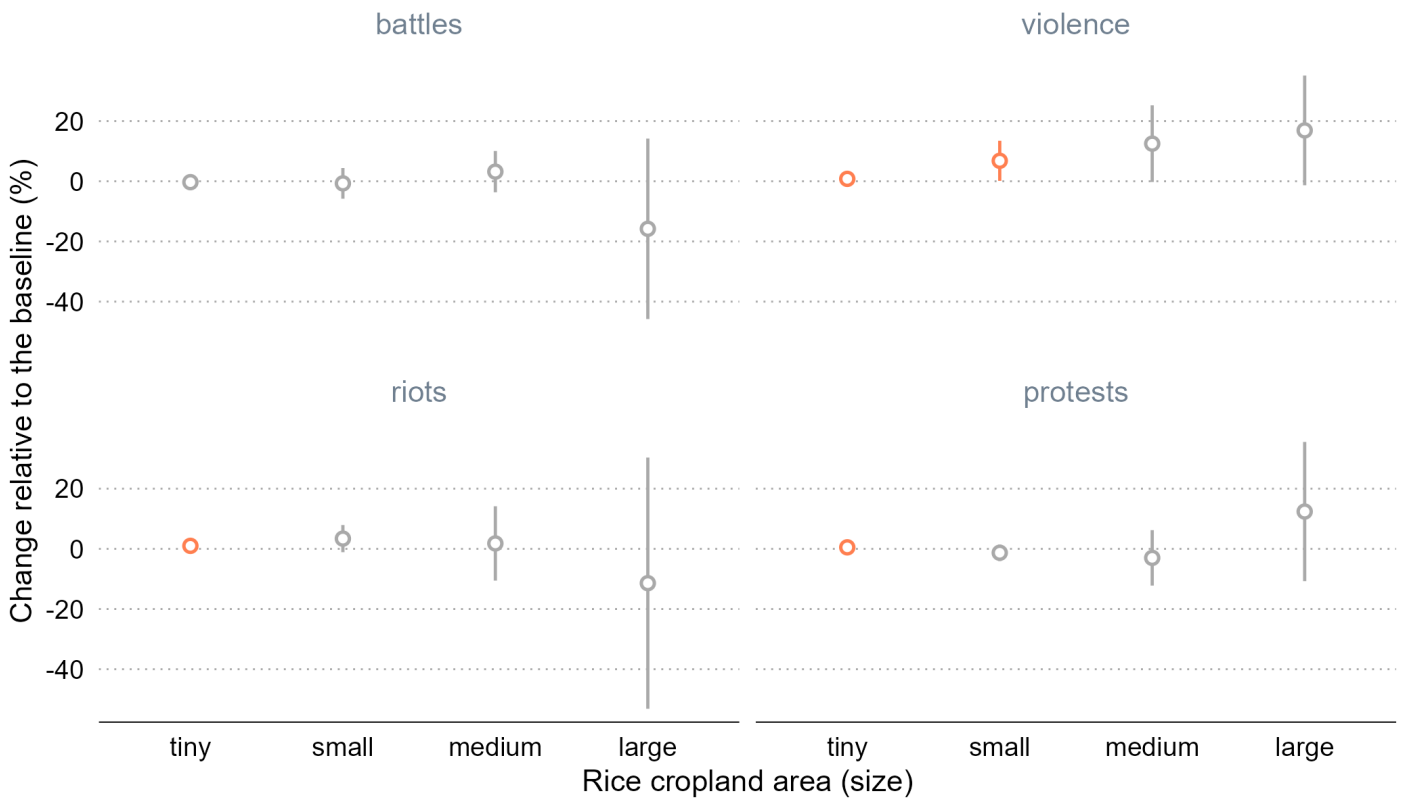
The *opportunity cost mechanism* often is portrayed as a trade-off a person faces between farming and fighting.

Agricultural shocks may push a person in one direction or another... but this is a longer term engagement.

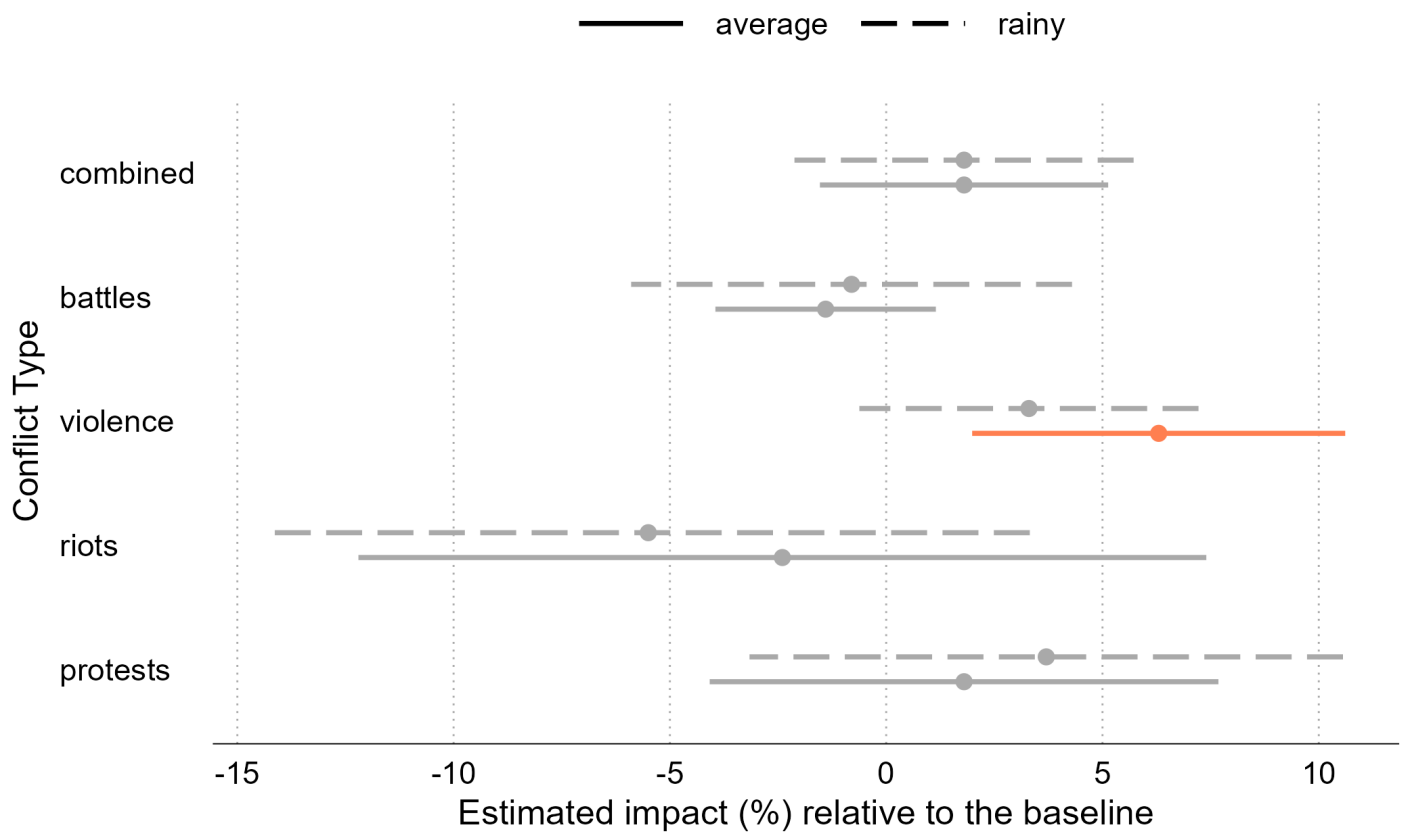
In the short run, the opportunity cost mechanism is well-suited to explain the lack of protests at harvest time.

Although, some of this may be offset by *resentment*, i.e., when people feel being worse off only because others are doing well.

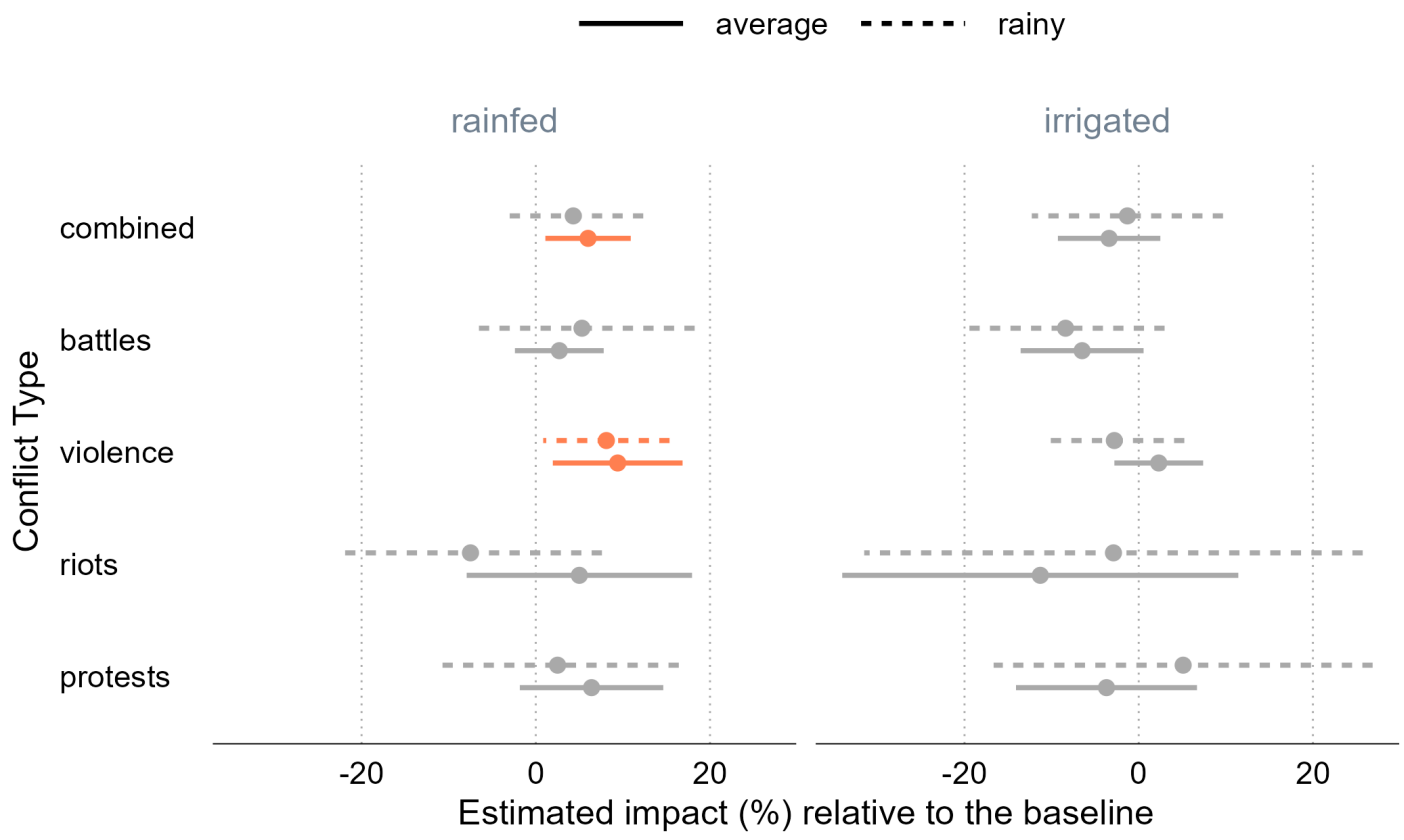
The cropland size aplifies the effects



Excessive rainfall mitigates the effects



Much of the effect comes from rainfed locations



We contribute to three strands of conflict literature

Climate shocks and conflict (Burke et al., 2009; Hsiang et al., 2013; Crost et al., 2018)

Economic roots of conflict (Berman et al, 2011; Crost and Felter, 2020; McGuirk and Burke, 2020)

Seasonality of conflict (Harari and La Ferrara, 2018; McGuirk and Nunn, 2023; Guardado and Pennings, 2023)