Do safety net programs reduce conflict risk? Evidence from a large-scale public works program in Ethiopia

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Motivation

1) *Persistent poverty can create the grounds for increased social discontent which can lead to violent conflict […]* (Justino, 2006)
   - Civil conflicts have been concentrated in poorer countries
   - Negative income shocks is often found to increase conflict risk
2) In the last two decades, safety net programs, including cash transfer programs, have become a mainstream policy tool to address chronic poverty (and vulnerability to shocks).

Despite 1) & 2), there has been relatively little research assessing the degree to which safety net programs alter the risk of conflict.

Previous (micro) literature

- Premand and Rohner (2024, AER-I) study the short-term impacts of a government-led cash transfer program in Niger finding that the program did not reduce the risk of violence. In contrast, there was a short-term increase in terrorist attacks aimed to undermine government legitimacy in the program areas.

- Fetzer (2020, JEEA) shows how the NREGA program in India insures poor households against weather shocks, thus weakening the link between income shocks and conflict.

- Larger body of literature looks at impacts of transfer programs on 'individual level' conflict: criminal activity (Bertrand et al., 2021; Garg et al., 2024) and intimate-partner violence (e.g., Haushofer et al., 2019; Roy et al., 2019; Hirvonen, 2023).

This study

- We revisit this question in the context of Ethiopia's Productive Safety Net Program (PSNP), the largest and one of the longest running public works programs in Africa.

- We combine geocoded conflict data (ACLED) with administrative data to identify PSNP districts.
- We use these data to apply difference-in-differences methods to study the impact of PSNP on violent events, demonstrations, and conflict-related fatalities.

ACLED = Armed Conflict Location and Event Dataset

Summary of the findings

- We find that the PSNP did not significantly alter the risk of violent events.
- However, it had a negative impact on demonstrations (protests and riots) as well as fatalities.
- These effects are most pronounced during the period of 2014-18, coinciding with widespread protests in Amhara and Oromia, the two largest regions in Ethiopia.

- In 2005, the Government of Ethiopia launched the PSNP to provide seasonal consumption support:
  - 6 months of food or cash transfers provided through labor intensive Public Works; households with limited labour capacity receive unconditional Direct Support. The public works mainly occur during January-June.
  - Successful in improving food security & asset holdings (Berhane et al., 2014)

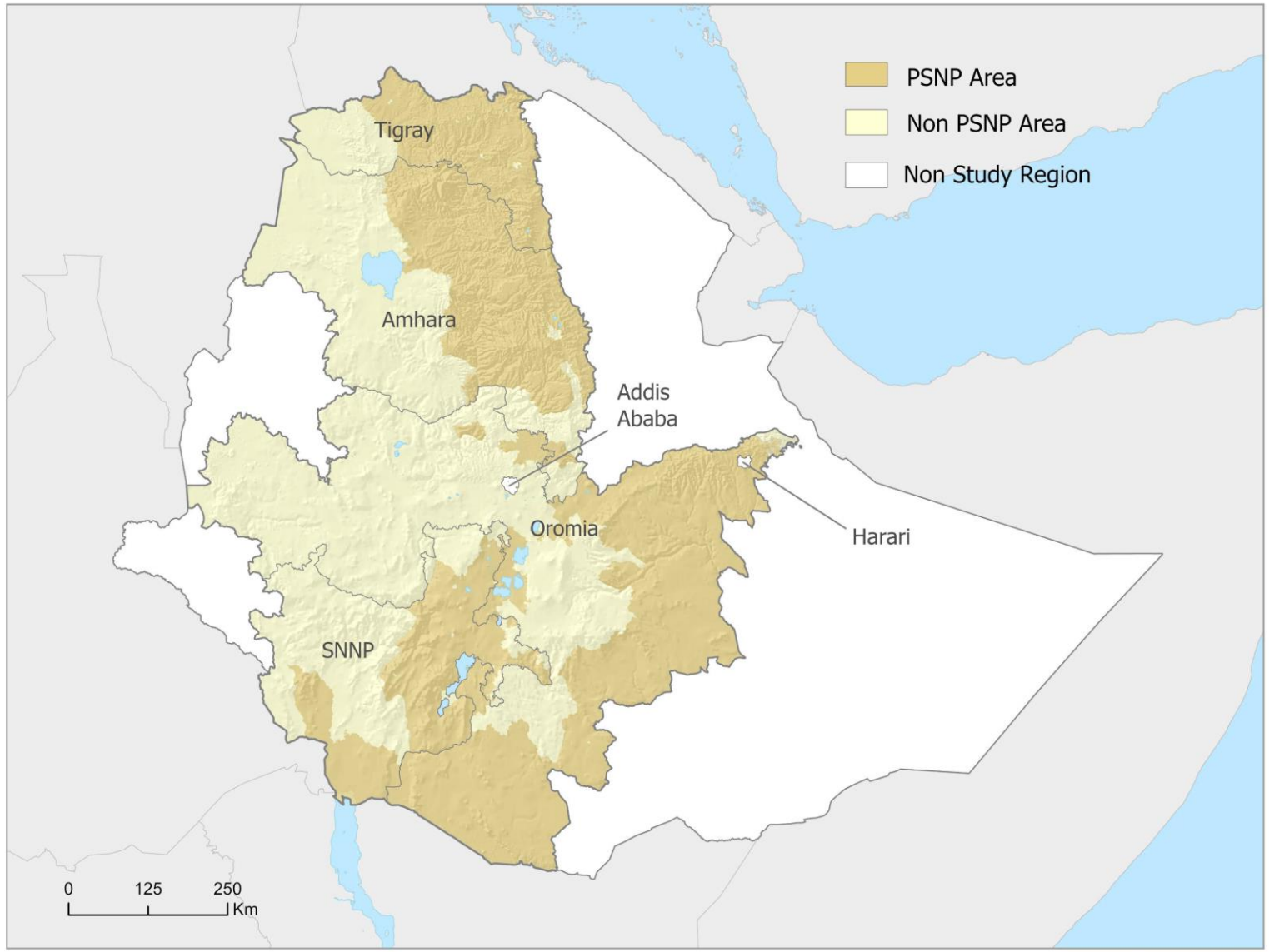
- The PSNP combines geographic and community level targeting:
- **Geographic targeting:**
  - PSNP districts were initially chosen based on how often they had requested and received emergency food aid before the program's 2005 launch.
  - Recent evaluations of the geographic targeting suggest that many impoverished and food-insecure districts are not covered by the PSNP (World Bank 2020).
- **Community level targeting:**
  - Communities identify the most food-insecure households to receive PSNP assistance. Studies based on household data from PSNP areas indicate that the program is generally well-targeted at the community level (Coll-Black et al., 2011).

Focus on the highland regions of Ethiopia

- We focus the analysis on the four highland regions of Amhara, Oromia, SNNP and Tigray where the program has been operational since its launch in 2005 and characterized by fewer implementation challenges (vs the lowland regions). Also, 70 % of the PSNP beneficiaries are located in these 4 regions.

- To date, none of the districts that were part of the PSNP have exited the program (World Bank, 2020).

- Final data:
  - 617 districts observed in 1997-2019 = 14,191 observations
  - 40 % (247 districts) are PSNP districts


PSNP Area
Non PSNP Area
Non Study Region
Tigray
Amhara
Addis
Ababa
Oromia
Harari
SNNP
0
125
250
Km

Conflict data (ACLED)

Table 2: ACLED Event Types

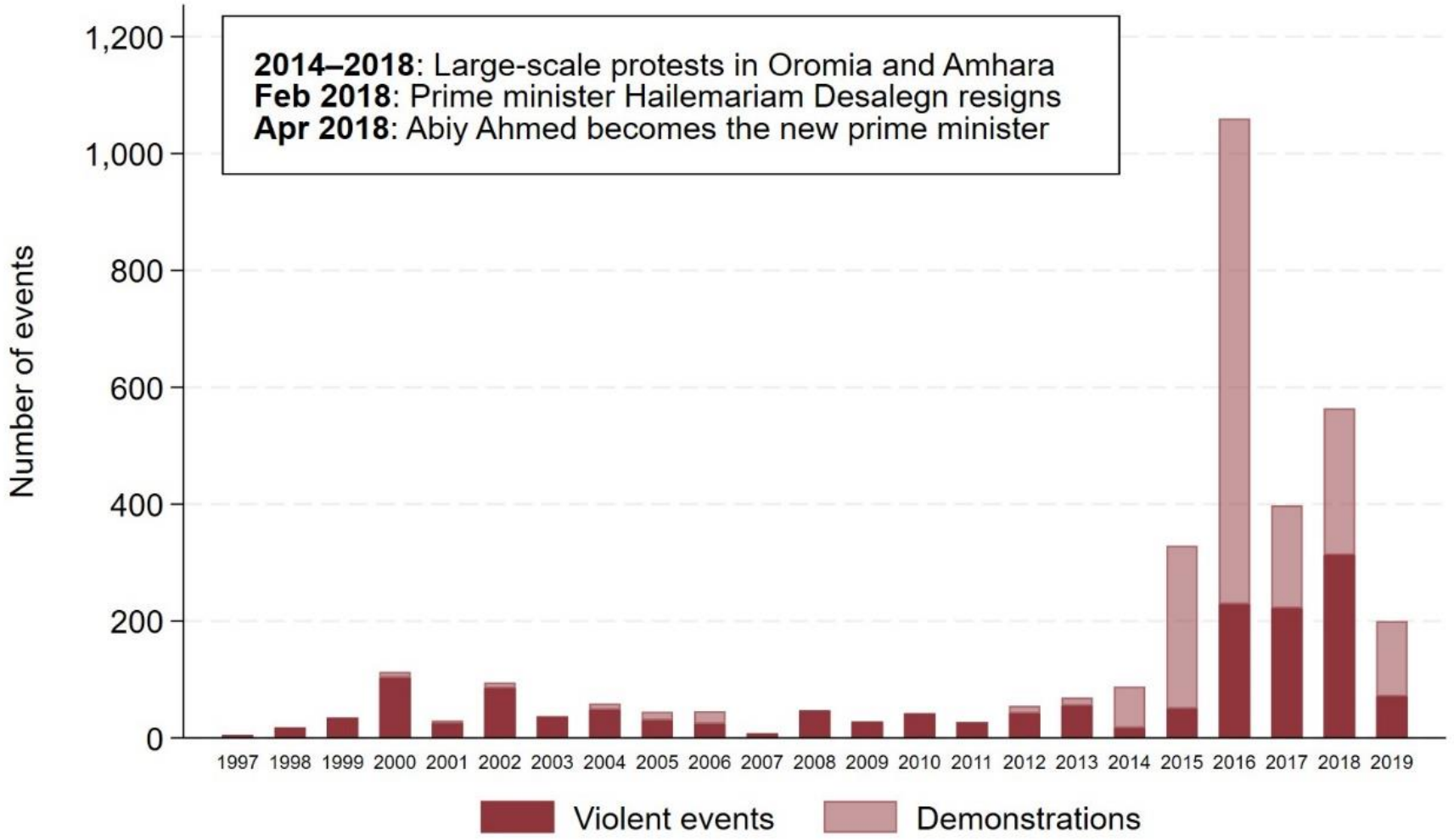
General	Event Type	Sub-Event Type
Violent events	Battles	*Armed clash*
		Government regains territory
		Non-state actor overtakes territory
	Explosions/Remote violence	*Chemical weapon*
		Air/drone strike
		Suicide bomb
		Shelling/artillery/missile attack
		Remote explosive/landmine/IED
		Grenade
	Violence against civilians	*Sexual violence*
		Attack
		Abduction/forced disappearance
Demonstrations	Protests	*Peaceful protest*
		Protest with intervention
		Excessive force against protesters
	Riots	*Violent demonstration*
		Mob violence
Non-violent actions	Strategic developments	*Agreement*
		Arrests
		Change to group/activity
		Disrupted weapons use
		Headquarters or base established
		Looting/property destruction
		Non-violent transfer of territory
		Other

- We remove events involving Eritrean military forces; categorized as strategic developments; the lowest geographical precision
- --> 3,398 conflict events recorded in the four highland regions between 1997 and 2019.
- Out of these, 46 % are classified as violent events and 54 % as demonstrations.
- The number of recorded fatalities related to these conflict events was 14,293.

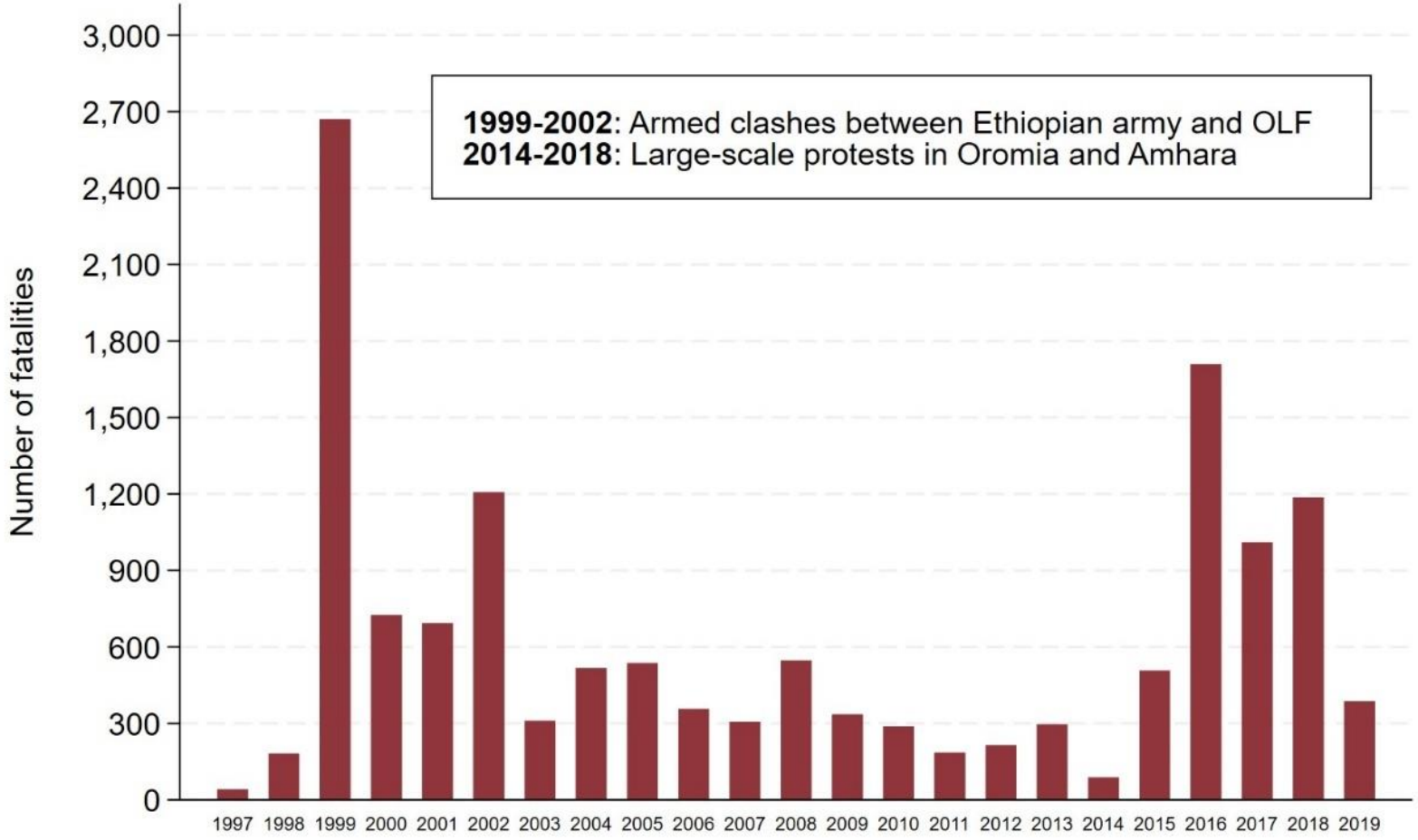
(Very brief) political context

- Ethiopia is the second most populous country in Africa (after Nigeria).
- Never colonized.
- Federal governing structure formed of regional states divided along ethno-linguistic lines.
- Brutal civil war 1974-1991.
- A coalition party, EPRDF (1991-2019): a relatively peaceful period, progress on several development domains but limited political freedoms.
- ‘Tigray war’: November 2020 – November 2022.
- We focus the analysis to 1997-2019 period.

Conflict events in highland Ethiopia



Conflict related fatalities in highland Ethiopia

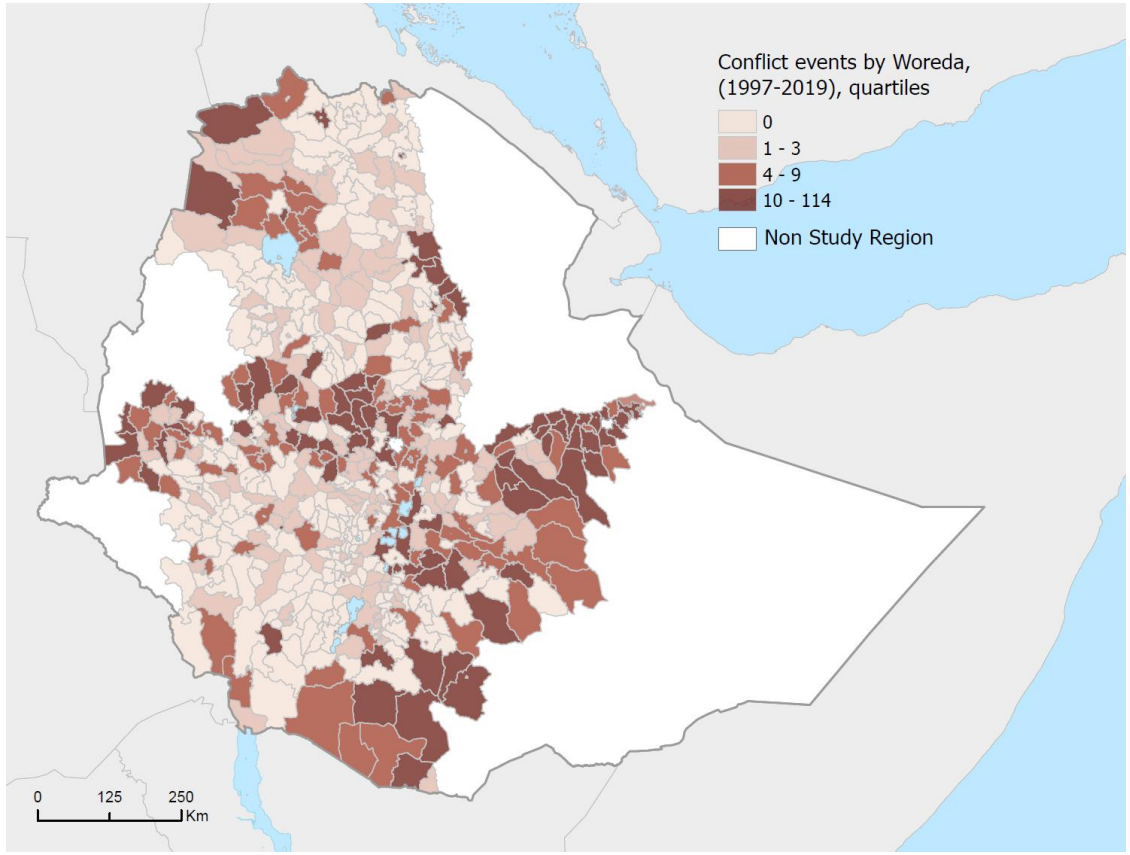


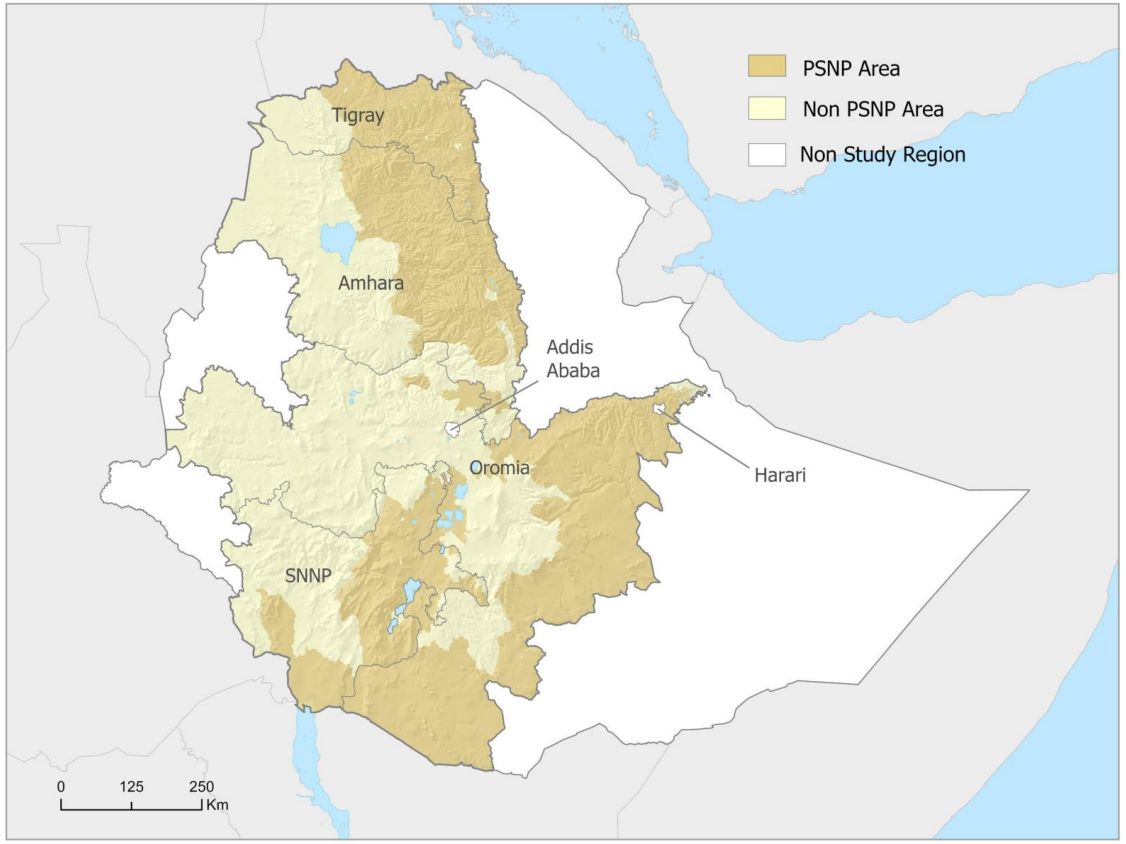
Note: OLF = Oromo Liberation Front.

Oromo (and Amhara) protests: 2014-2018

- Sparked by Addis Ababa expansion plan, igniting long-term frustrations.
- 2014 student protests
- 2015 large-scale protests
- 2016: *Irreecha* festival; state of emergency; protests spread to Amhara
- 2018: PM resigns, new PM Abiy Ahmed (Oromo Democratic Party) is sworn in.

[Photo source: Reuters]


Conflict events by Woreda,
(1997-2019), quartiles
0
1 - 3
4 - 9
10 - 114
Non Study Region
0
125
250
Km


PSNP Area
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Non Study Region
Tigray
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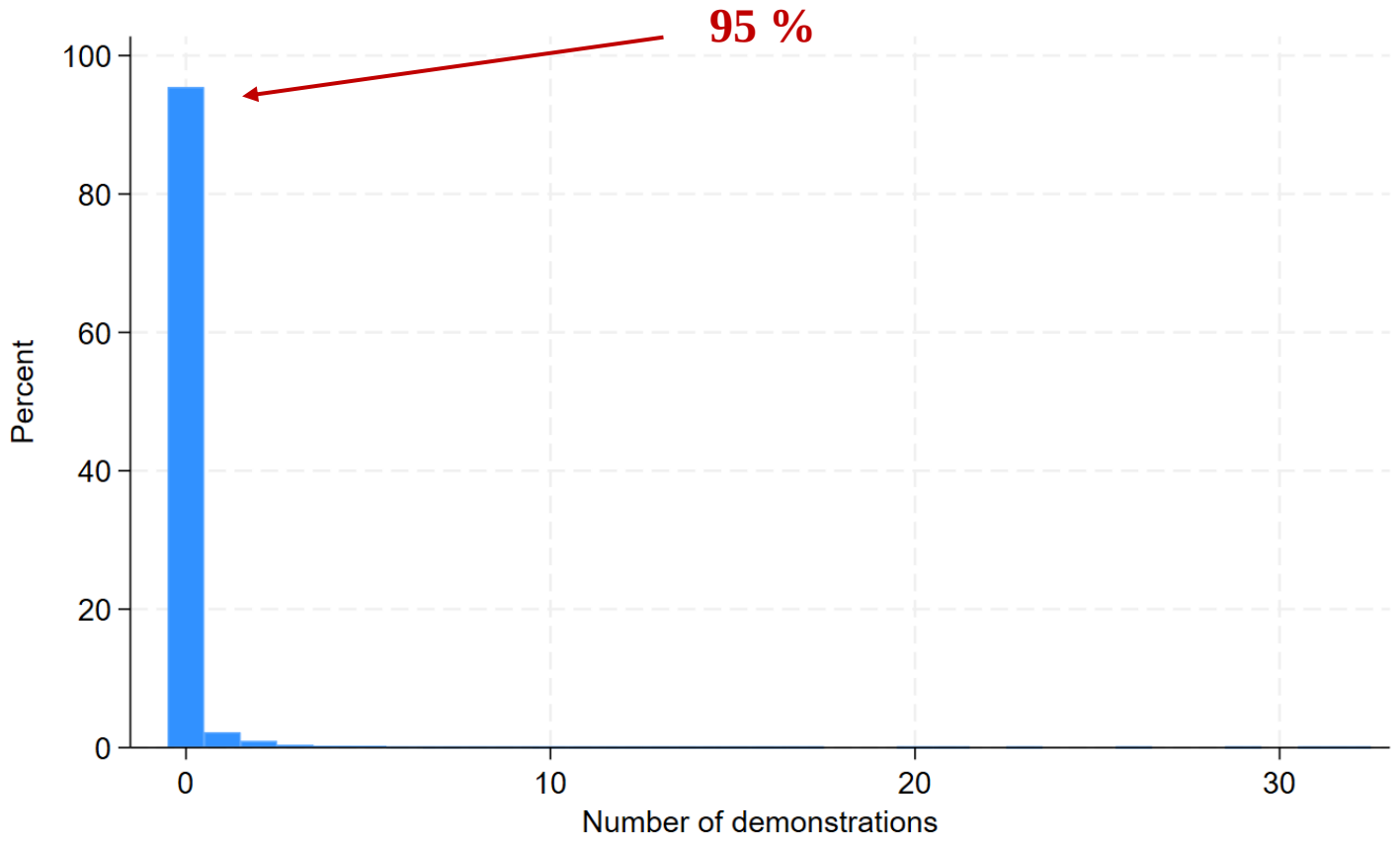
SNNP
0
125
250
Km

Highly skewed outcome data

- The likelihood that a violent event, demonstration, or a fatality in a district in year t is about 5 % (for each type of conflict), on average.



Standard two-way fixed effects specification

$$Y_{i,t} = \beta(D_i * T_t) + \alpha_i + \delta_t + \epsilon_{i,t,}$$

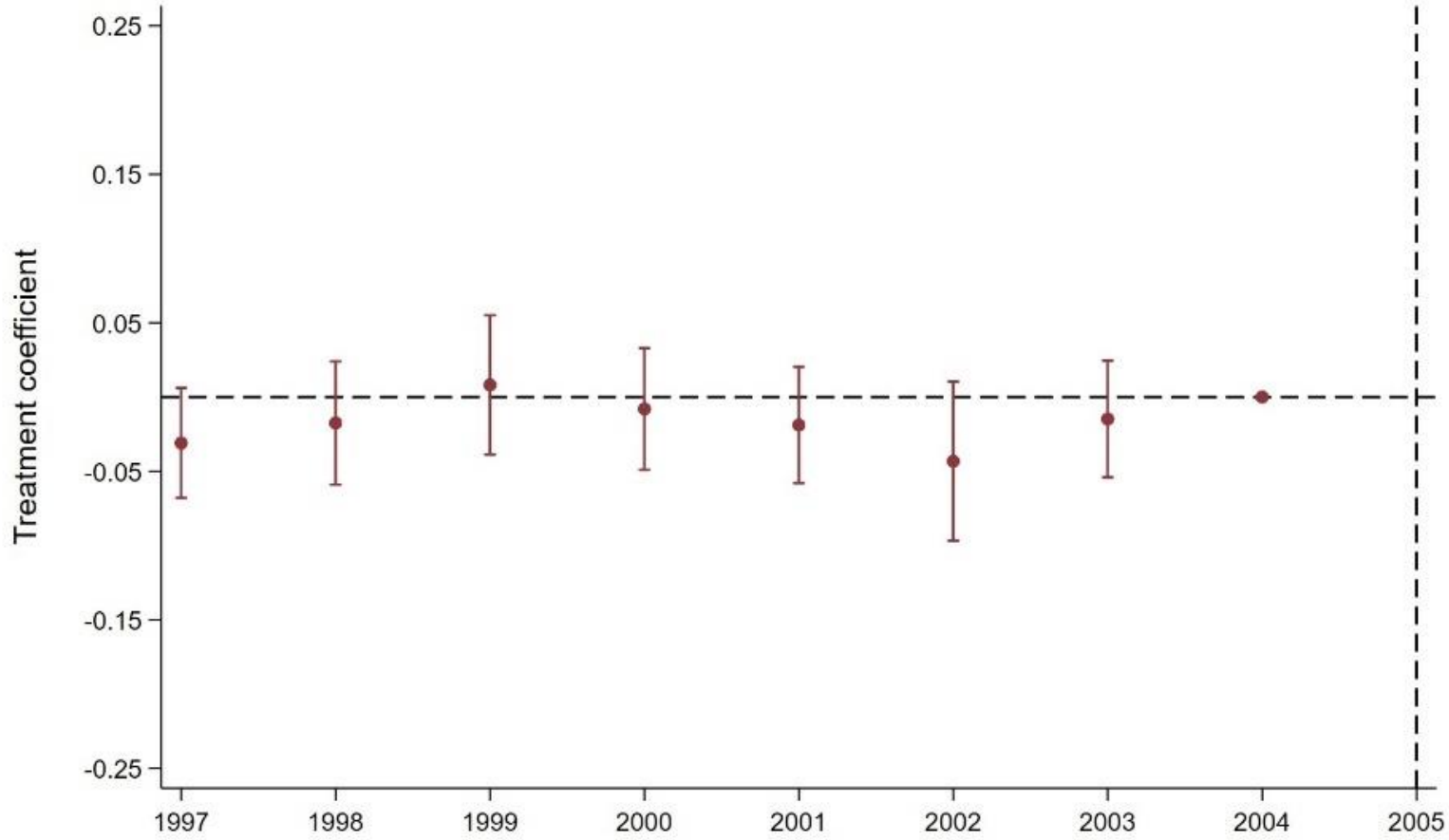
- $Y_{i,t}$ is a binary: 1 if woreda *i* experienced a violent event, demonstration, or a fatality in year t.
- D_i is a binary: 1 if PSNP district.
- T_t is a binary: 1 if year is 2005-2009 (when PSNP is active)
- The terms α_i and δ_t are woreda and year fixed effects.
- The treatment effect is estimated as β.
- Standard errors clustered at the district level (unit of treatment)

+ We will also estimate an event study DiD

Districts either become treated in year 2005 or are never treated during the study period.

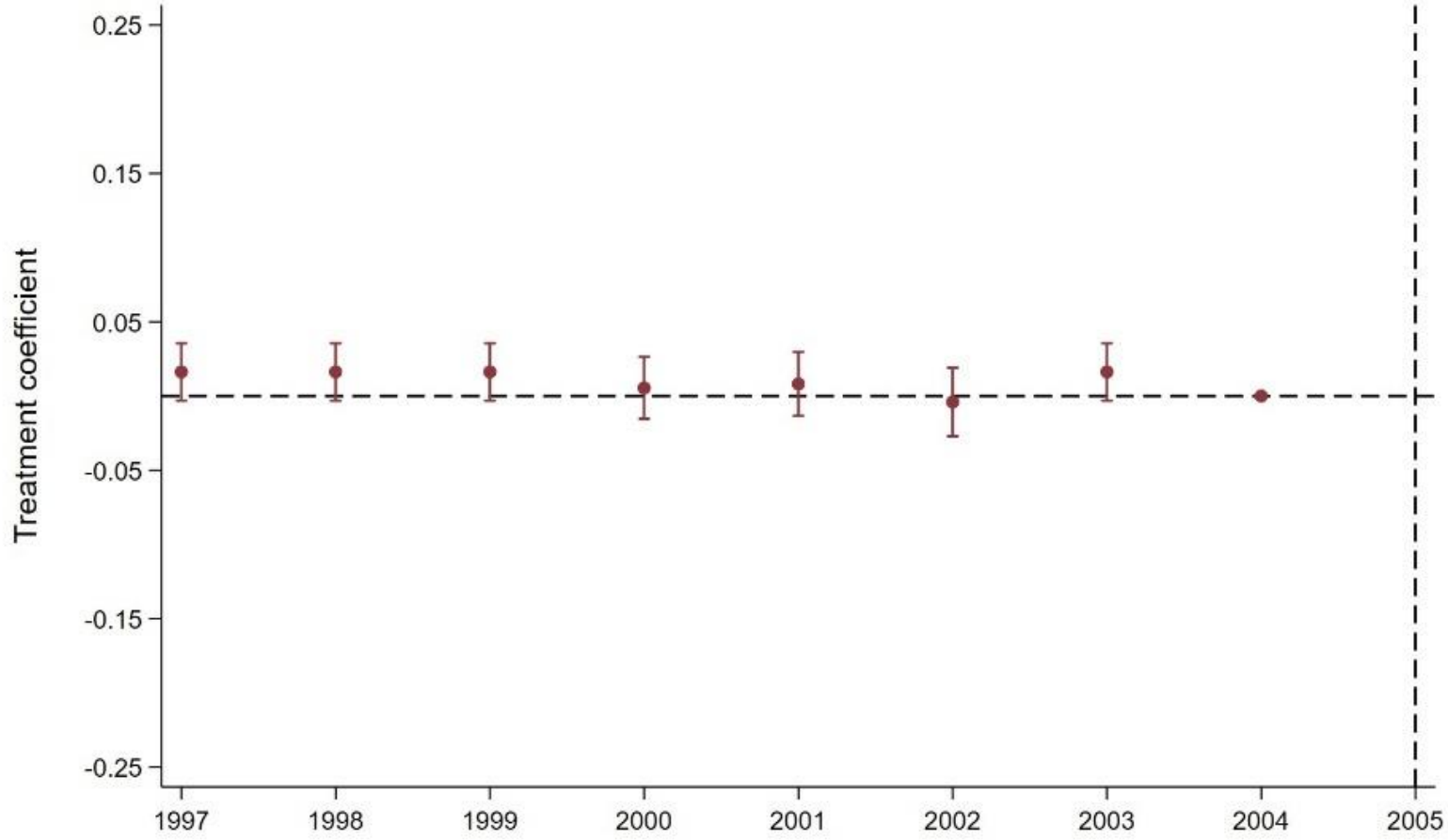
Pre-treatment trends (event study DiD)

Violent events



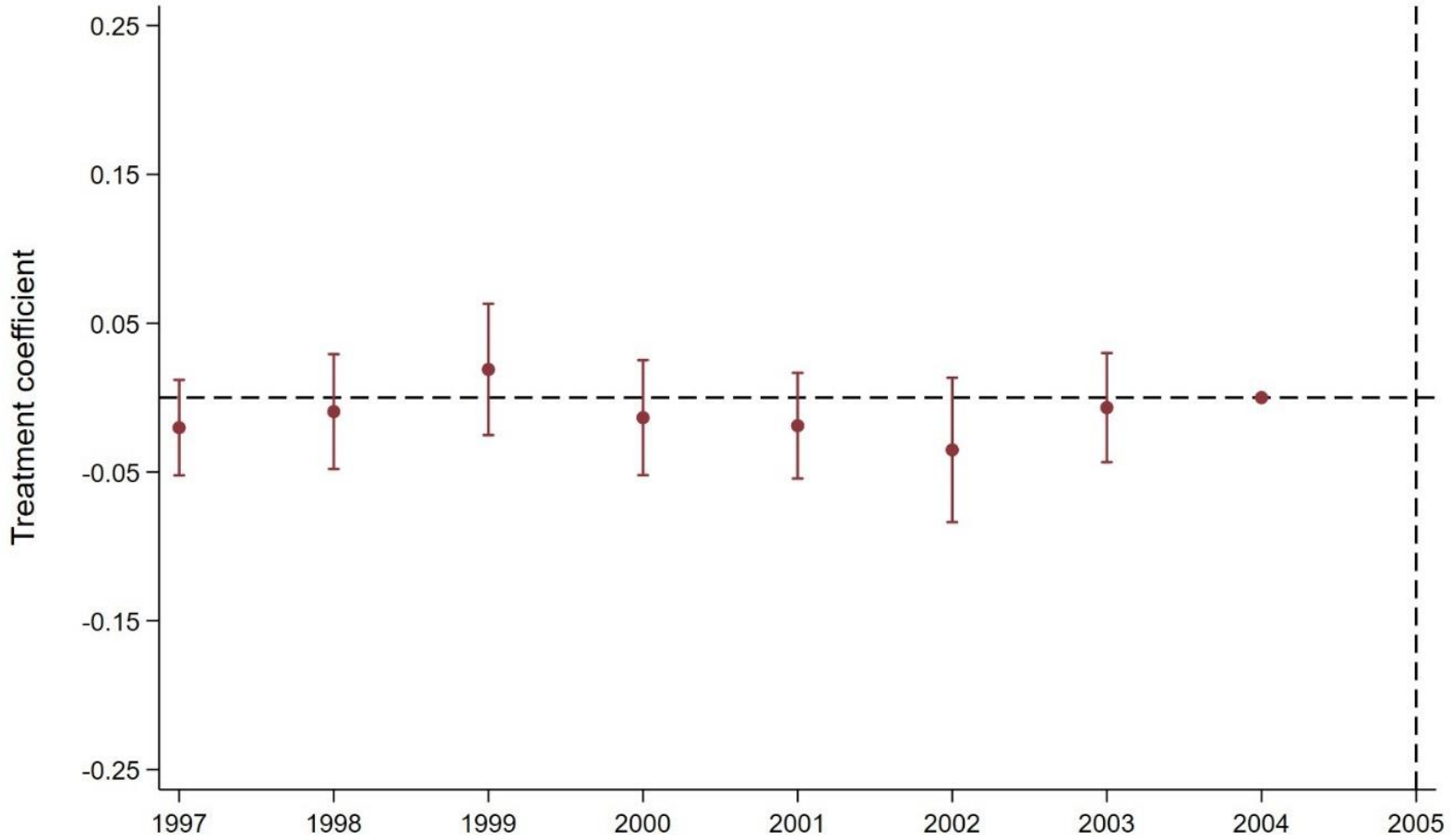
Pre-treatment trends (event study DiD)

Demonstrations

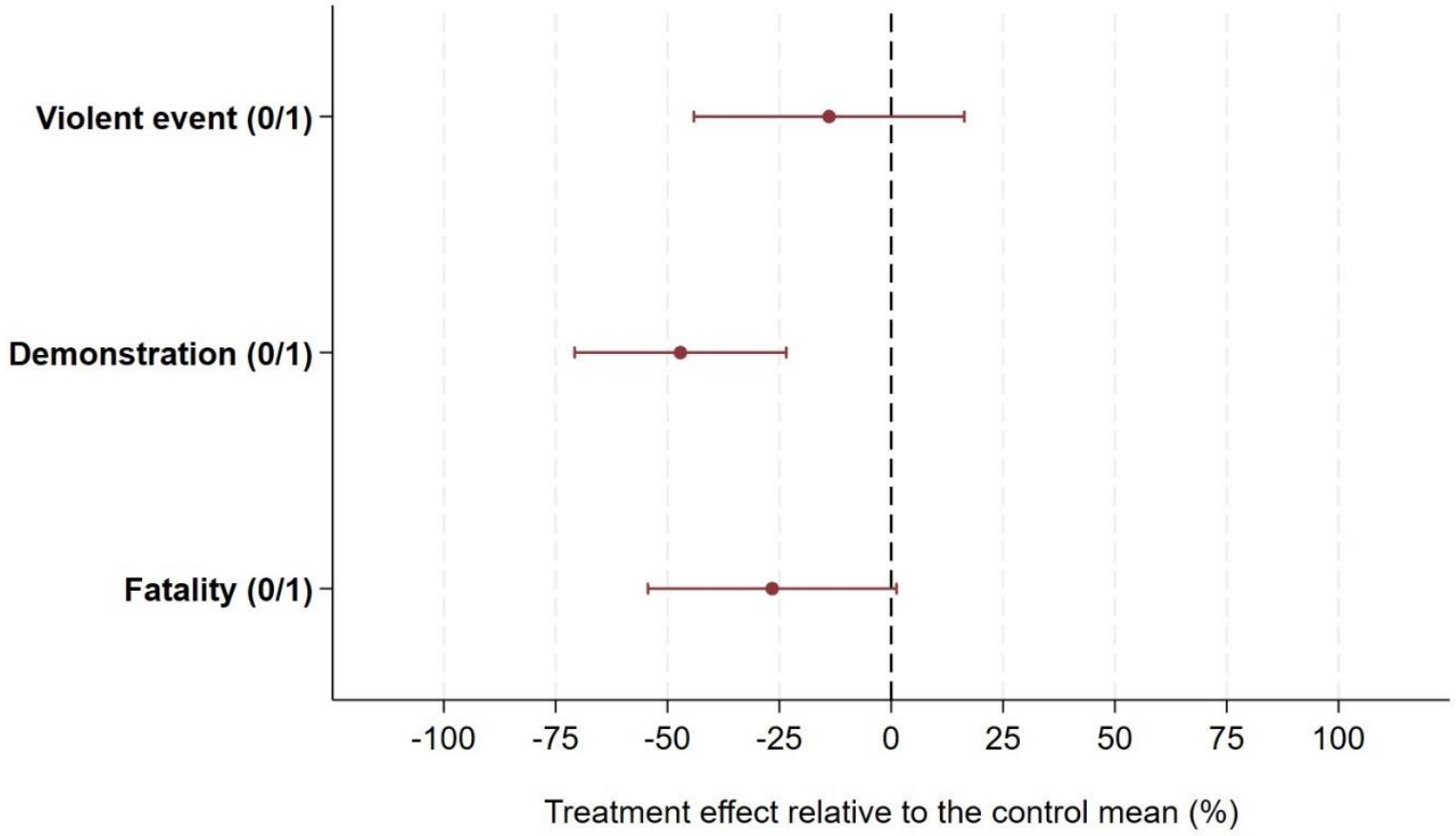


Pre-treatment trends (event study DiD)

Fatalities

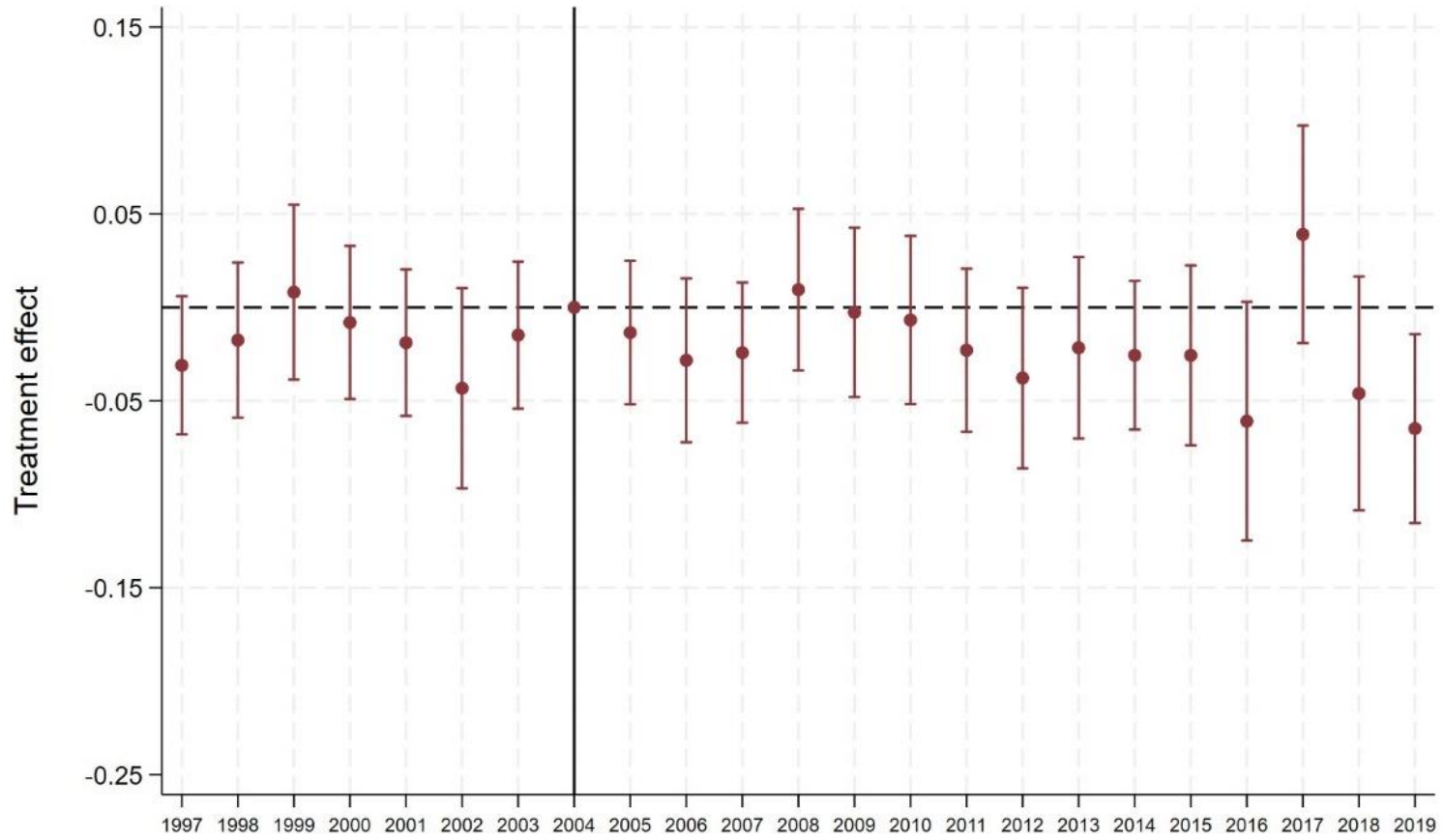


Impact of PSNP on conflict risk



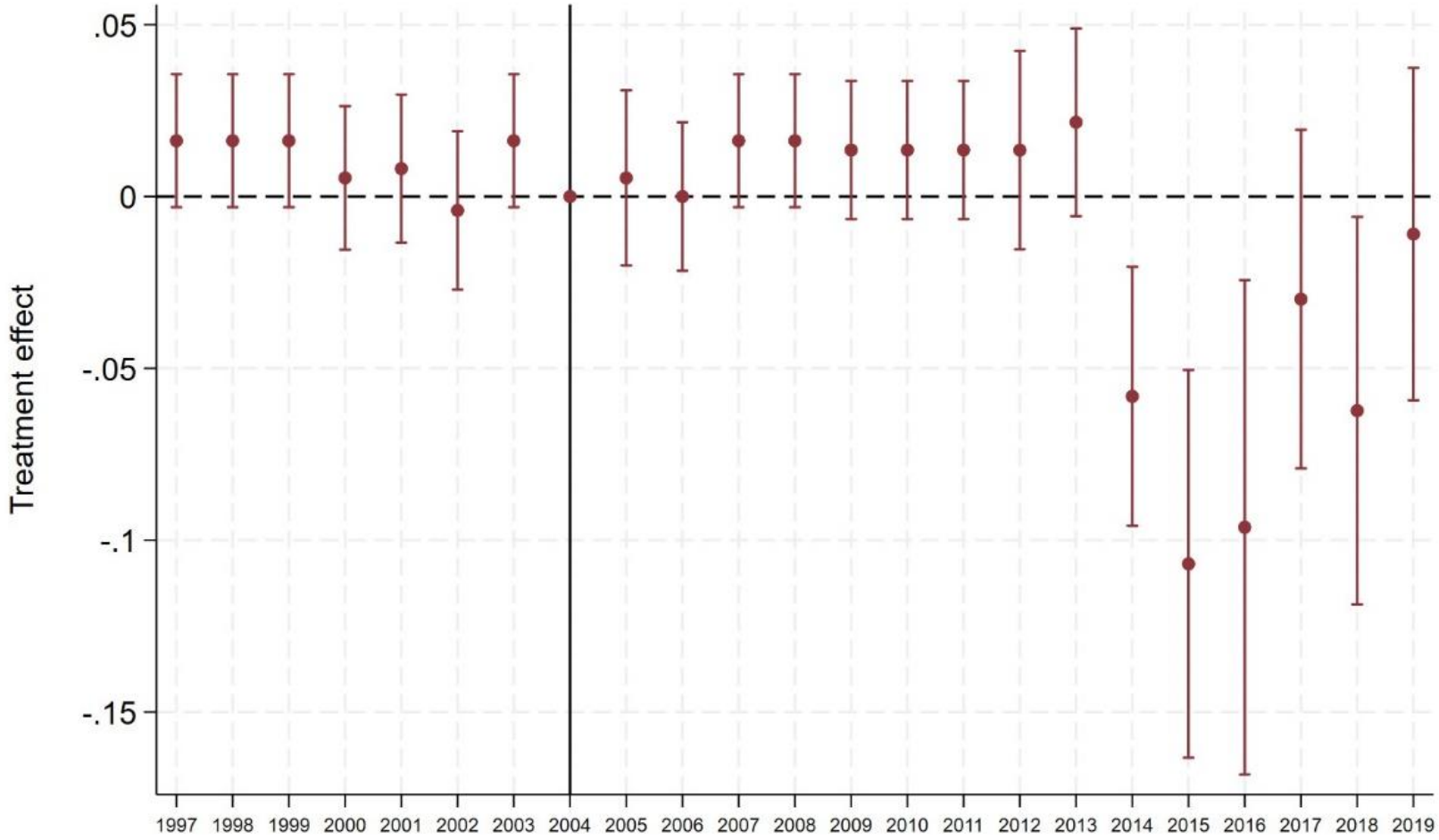
N=14,191; 95-% confidence intervals

Impact of PSNP on likelihood of a violent event



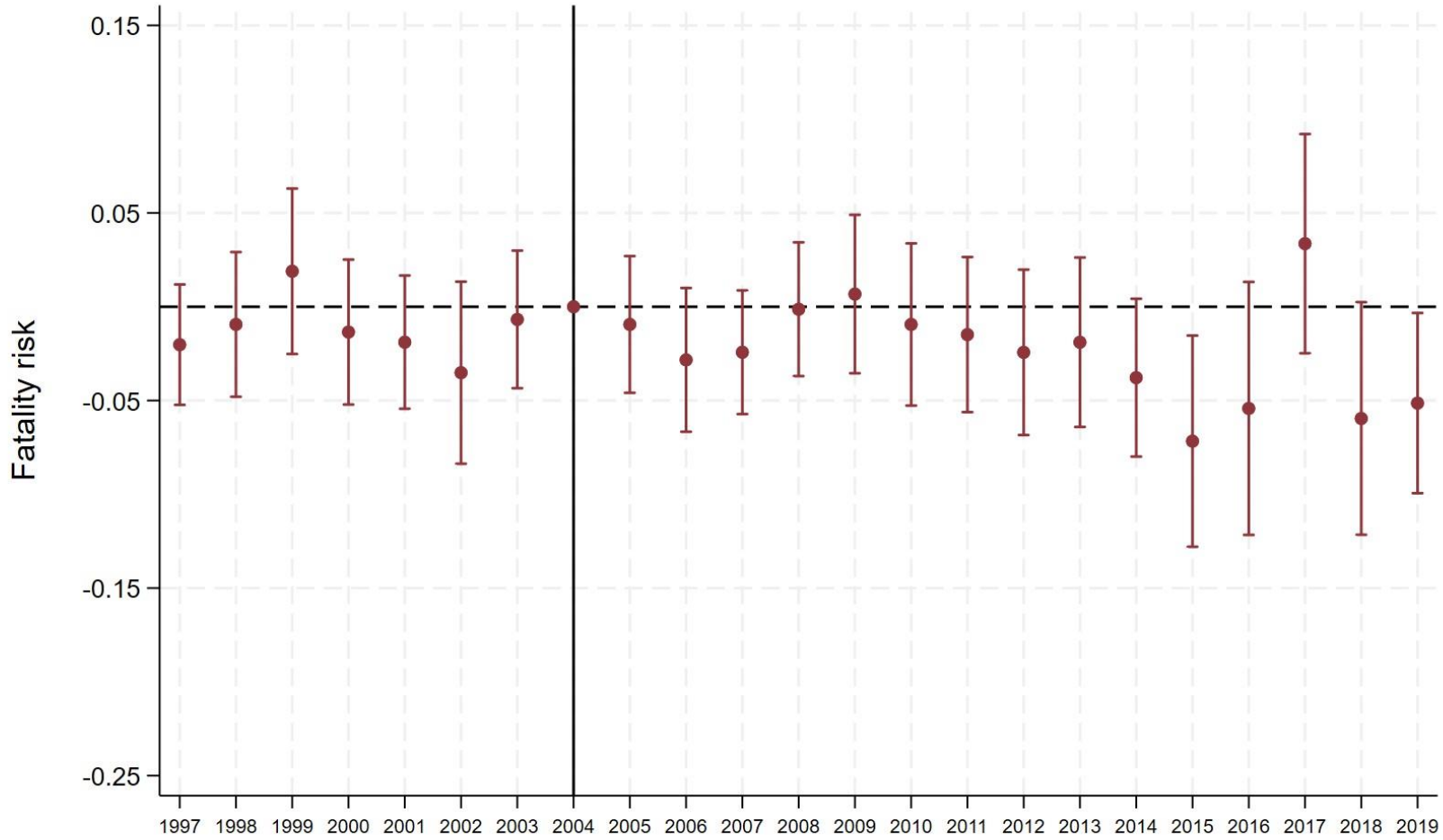
N=14,191; 95-% confidence intervals

Impact of PSNP on likelihood of a demonstration



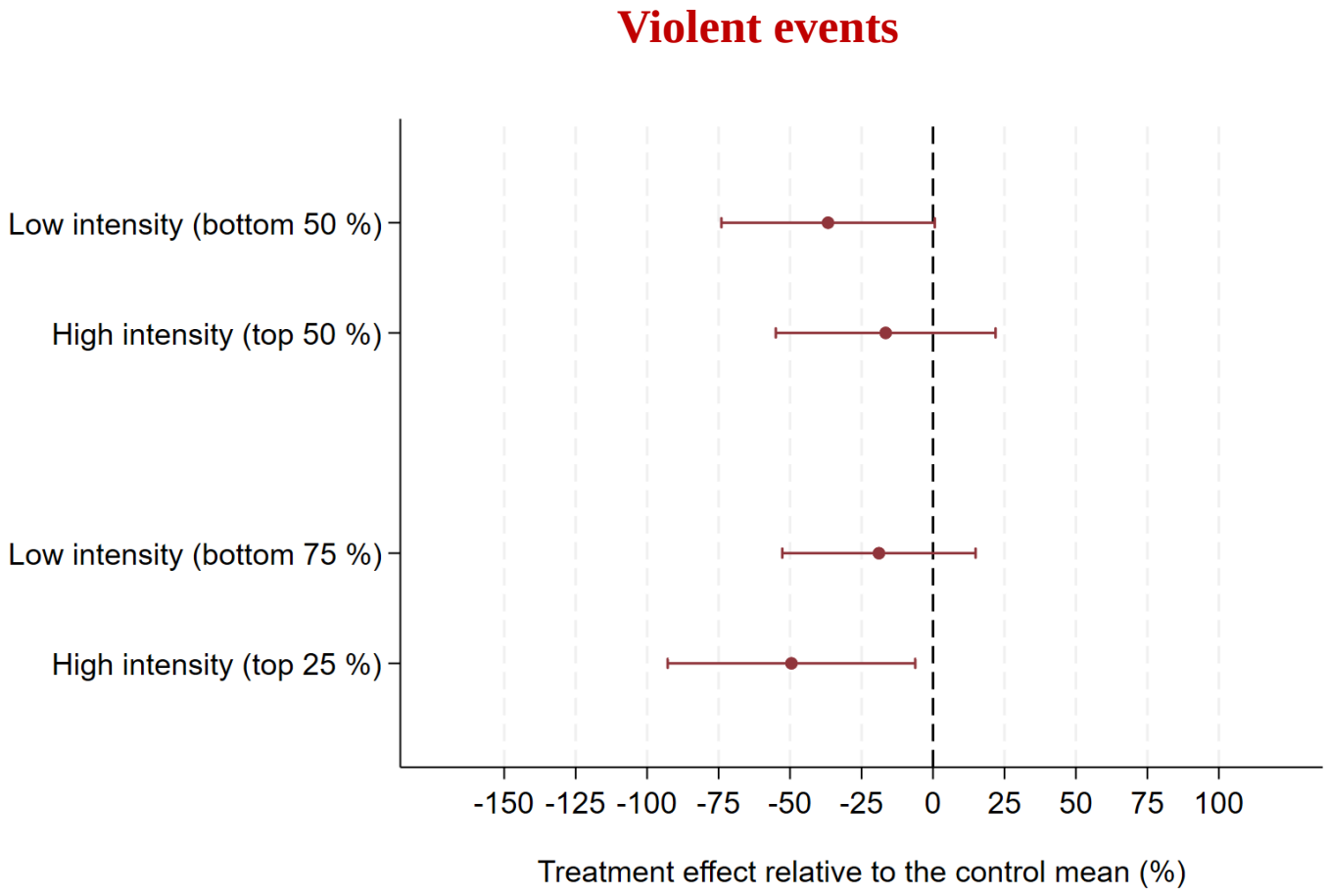
N=14,191; 95-% confidence intervals

Impact of PSNP on likelihood of a fatality

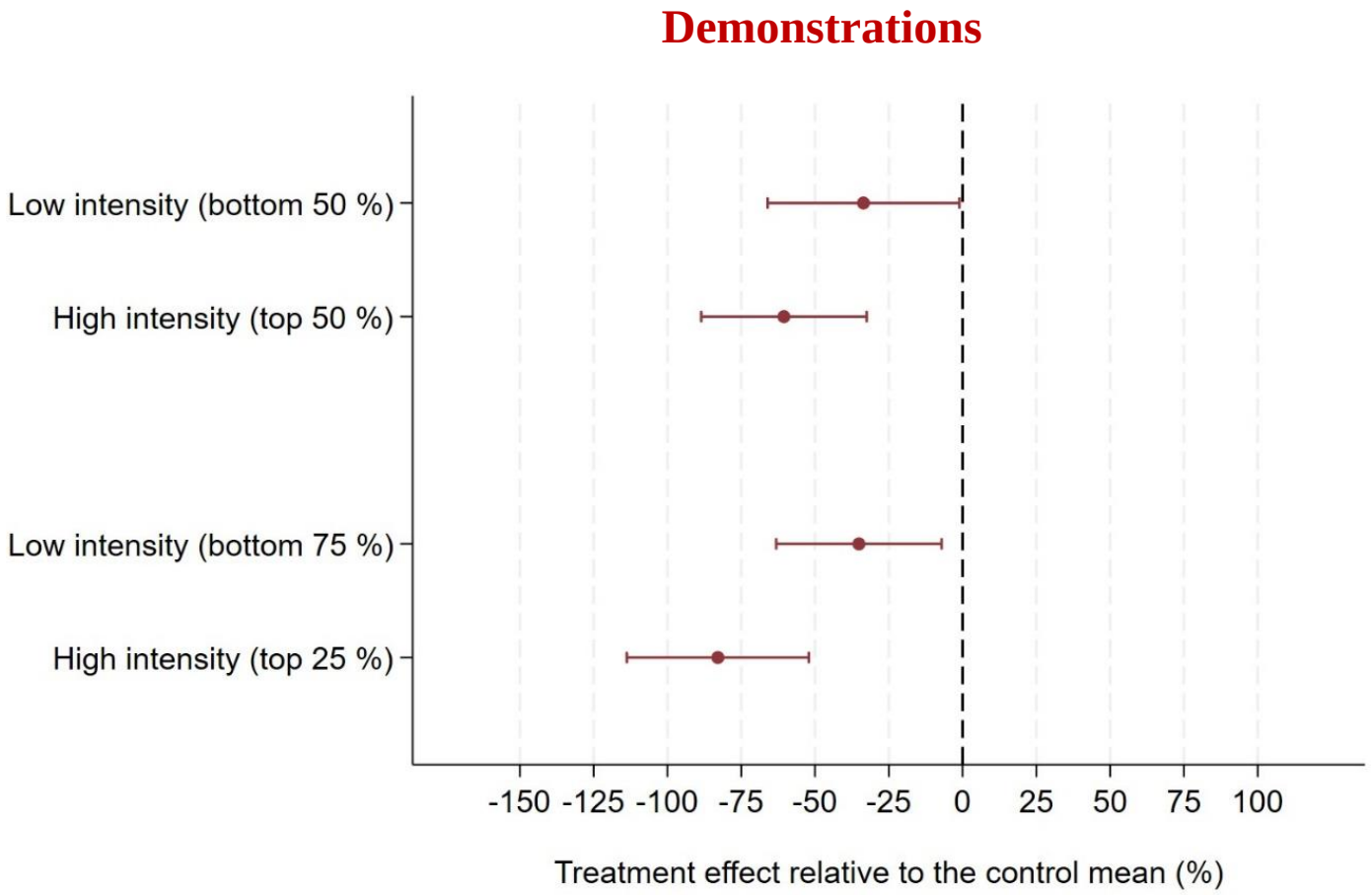


N=14,191; 95-% confidence intervals

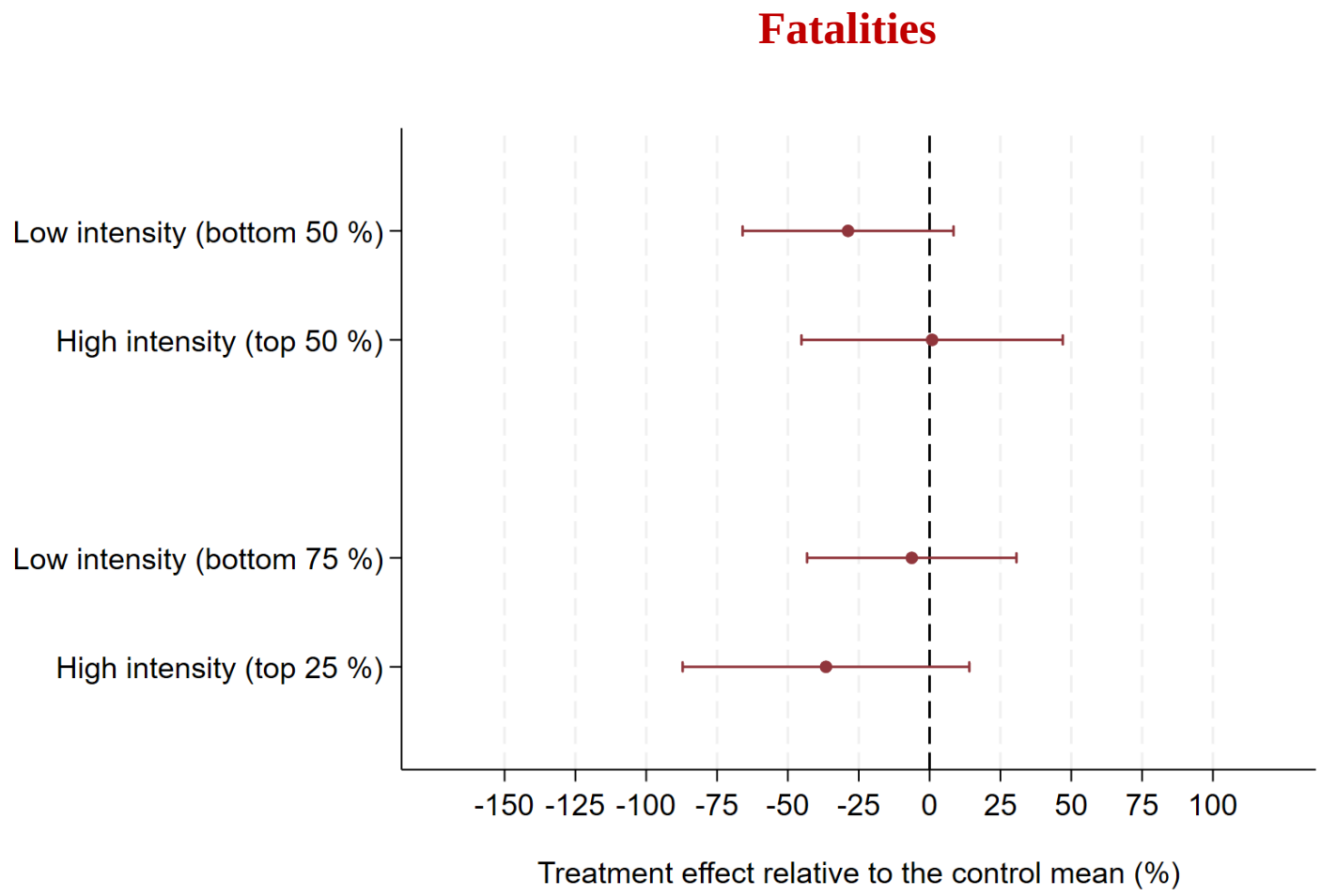
By PSNP caseload intensity



By PSNP caseload intensity



By PSNP caseload intensity



Robust to:

- Inverse probability treatment weighing + trimming poor matches
- Controlling for relative dryness (or rainfall) in the district (lagged or contemporaneous)
- Outcome variable as the number of events, instead of using a binary variable.
- Omitting one year at a time. Omitting one woreda at a time.
- Including events involving Eritrean troops.
- Only considering events with geo-precision = 1.

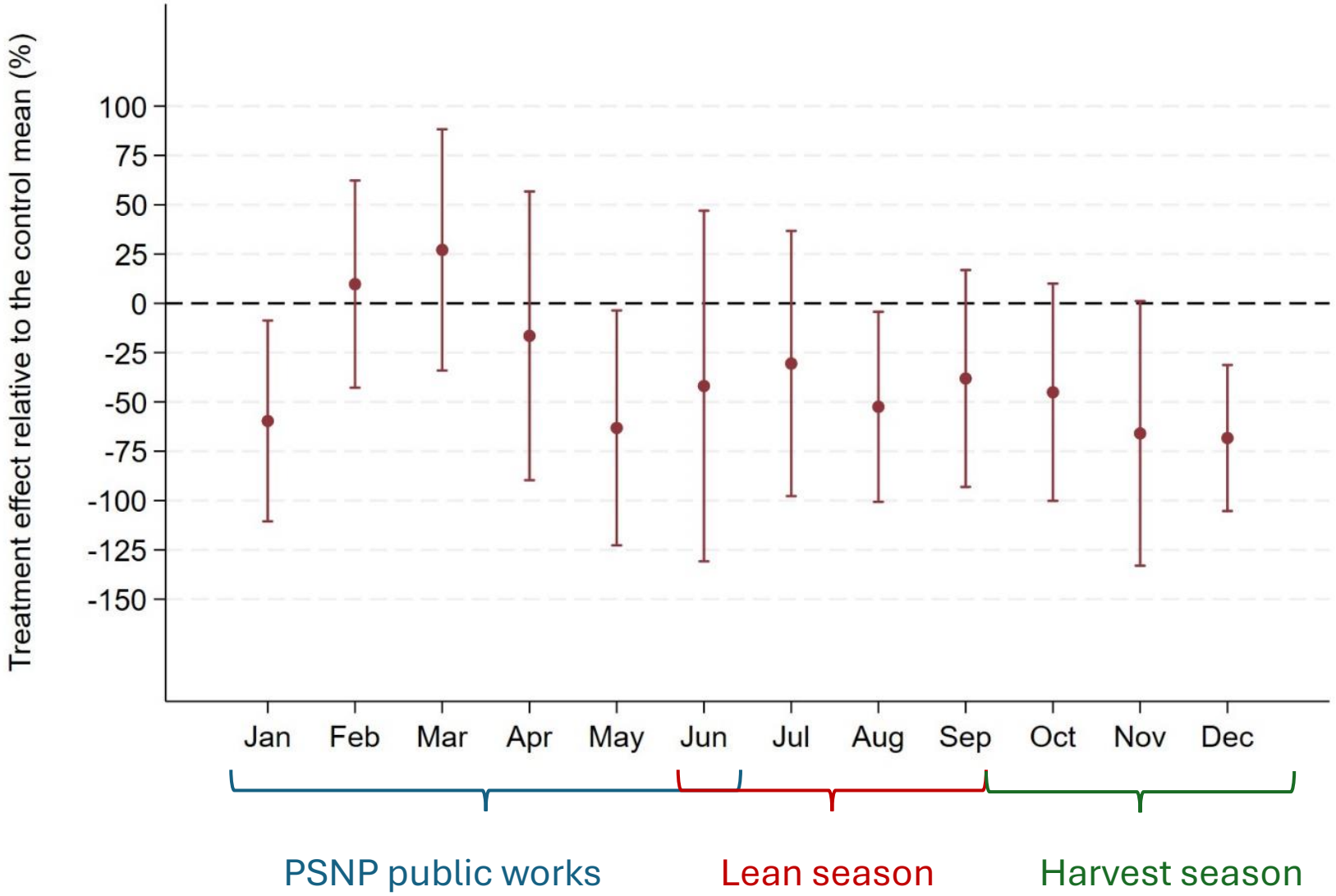
Uppsala conflict data (fatalities): Not enough events. Direction and magnitude are similar but not statistically significant.

Mechanism

Hypotheses

1) PSNP households too busy to take part in demonstrations:
   - No evidence that impacts are lower or higher during the public works season (next slide)

Impact on demonstrations, by month



Mechanism

Hypotheses

1) PSNP households too busy to take part in demonstrations:
   - No evidence that impacts are lower or higher during the public works season (next slide)
2) Weather shocks (droughts) increase the risk of conflict and PSNP buffers that risk.
   - No robust evidence (subsequent slide)

Weather shocks and PSNP

	(1)	(2)
Outcome variable:	Demonstrations (0/1)	Demonstrations (0/1)
Definition of weather shock:	Rainfall z-score	Rainfall z-score (positive rectified)
Weather shock	-0.013*	-0.023**
	(0.007)	(0.010)
Weather shock X PSNP	0.002	0.002
	(0.008)	(0.016)
PSNP	-0.025**	-0.025***
	(0.012)	(0.008)
District fixed effects?	Yes	Yes
Year fixed effects?	Yes	Yes
Observations	11,723	11,723

Note: The standard errors are reported in parentheses and based on Conley (1999) with a 500 km distance cut-off.
Statistical significance denoted with * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Weather shocks and PSNP

	(1)	(2)	(3)	(4)
Outcome variable:	Demonstrations (0/1)	Demonstrations (0/1)	Demonstrations (0/1)	Demonstrations (0/1)
Definition of weather shock:	Rainfall z-score	Rainfall z-score (positive rectified)	SPEI	SPEI (positive rectified)
Weather shock	-0.013*	-0.023**	-0.004	0.001
	(0.007)	(0.010)	(0.007)	(0.010)
Weather shock X PSNP	0.002	0.002	-0.012*	-0.010
	(0.008)	(0.016)	(0.008)	(0.015)
PSNP	-0.025**	-0.025***	-0.024**	-0.028**
	(0.012)	(0.008)	(0.011)	(0.011)
District fixed effects?	Yes	Yes	Yes	Yes
Year fixed effects?	Yes	Yes	Yes	Yes
Observations	11,723	11,723	14,191	14,191

Note: The standard errors are reported in parentheses and based on Conley (1999) with a 500 km distance cut-off.
Statistical significance denoted with * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. SPEI = Standardised Precipitation-Evapotranspiration Index.

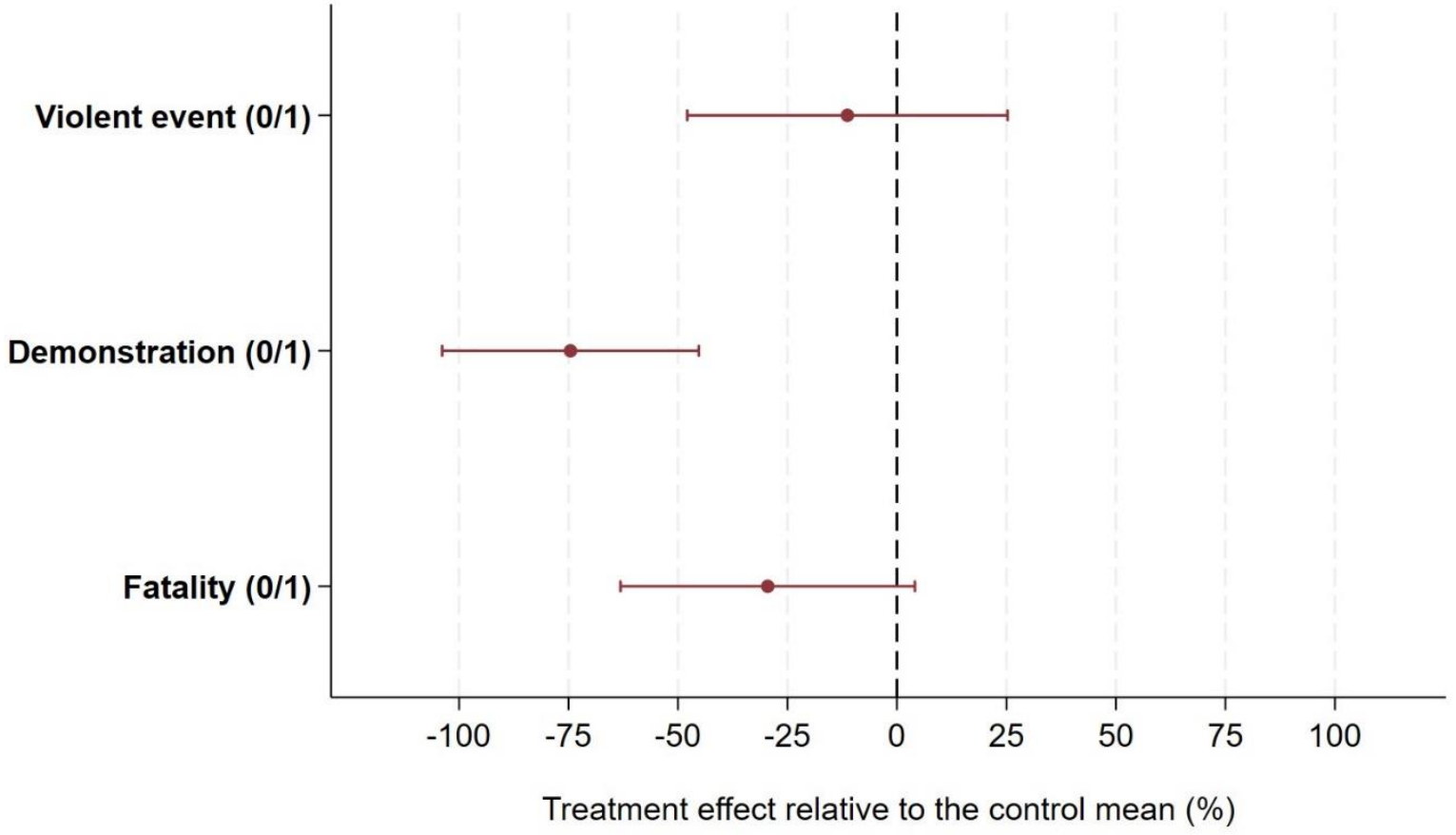
Mechanism

Hypotheses

1) PSNP households too busy to take part in demonstrations:
   - No evidence that impacts are lower or higher during the public works season (next slide)
2) Weather shocks (droughts) increase the risk of conflict and PSNP buffers that risk.
   - No robust evidence (subsequent slide)
3) Ergo: the transfers themselves reduce poverty and food security, lowering conflict risk..?

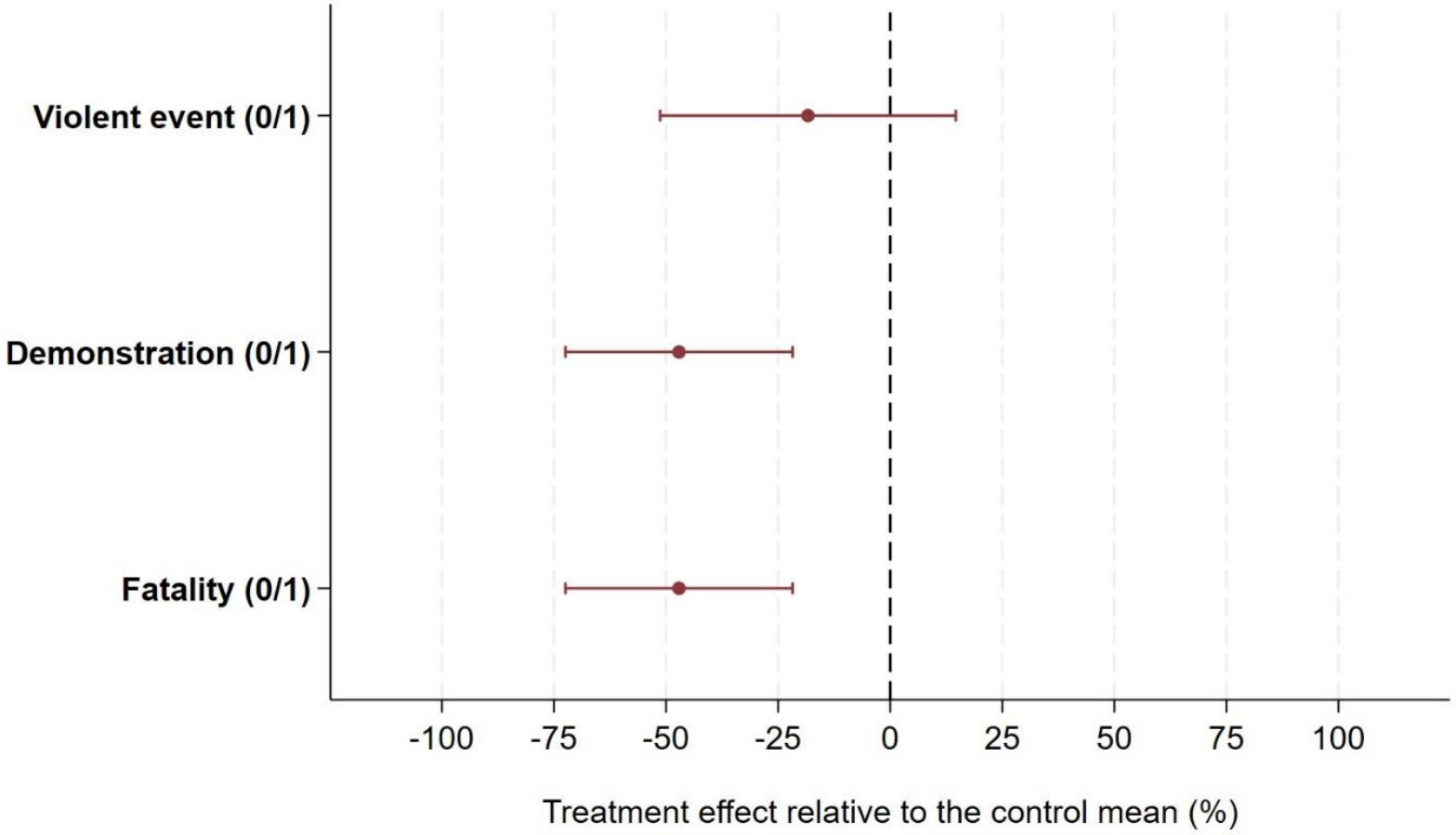
Robustness checks -->

Results based on IPTW



Note: 442 districts in common support, 175 outside common support

Results if including events involving Eritrean forces



Results if only considering geo-precision = 1