

# Protection of Civilians in Partnership Peacekeeping

## Methodological Annex

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### Methodology

**Sample:** Conflict episodes within intrastate conflicts in Africa between 1993 and 2023, taken from the UCDP Armed Conflict Dataset v24.1.<sup>1</sup> A conflict episode is a period of continuous conflict activity, and conflicts can have multiple episodes separated by at least one year of inactivity. Setup as panel time-series dataset (panel = conflict, time = monthly).

**Outcome (Dependent Variable):** Deaths from the intentional targeting of civilians (or one-sided violence) by the government and the rebels active in the conflict, as separate variables. Taken from the UCDP Georeferenced Event Dataset v24.1.<sup>2</sup> For each episode, I list the rebels that are ever active in the episode and sum all the one-sided violence perpetrated by them. This is a count variable, and to deal with extreme outliers that pose problems for the statistical models, I winsorize it at the 99.5<sup>th</sup> percentile (this affects very few observations). Winsorizing is a standard procedure in datasets with extreme values (in this case, for instance, the genocide in Rwanda) and means that the casualty count is “capped” at the value of the 99.5<sup>th</sup> percentile, and casualties higher than that are not possible in the data.

**Independent Variables:** Number of uniformed personnel (troops/observers and police) deployed in UN mission(s) and non-UN mission(s), respectively, in the conflict. This is from the UN and Non-UN Peacekeeping Dataset v4.<sup>3</sup> Measured in thousands, lagged one month (personnel numbers in one month are expected to affect violence in the next, but not the current, month). For governments that fight multiple insurgencies, I have used the location of the conflict to “attribute” government one-sided violence to the conflict in which it likely took place. To assess the impact of parallel peacekeeping, the two variables (UN and non-UN personnel) are interacted.

**Control Variables:** Additional variables included in the models because they are thought to have an influence on the independent and dependent variables, which would yield biased estimates if omitted: Whether a conflict is over government power (rather than territorial autonomy/independence); whether a conflict involves troops from a third country on either side; the number of rebel groups active in the same conflict; how long the conflict has already lasted;<sup>4</sup> the type of regime (closed/electoral autocracies, electoral/liberal democracies);<sup>5</sup> and the population (logged and in thousands).<sup>6</sup>

**Models:** Several different models are estimated. The first is a standard negative binomial regression. The second is a negative binomial regression omitting those conflicts that had no peacekeeping, making the remaining sample more comparable. The third is a negative binomial regression on a matched sample, where observations with peacekeeping were “matched” with observations without peacekeeping that had similarly high battle violence in the months before (I use overall battle violence and casualties on the rebel side specifically, again from UCDP Georeferenced Event Dataset). This again makes the sample

<sup>1</sup> Shawn Davies et al., “Organized Violence 1989–2023, and the Prevalence of Organized Crime Groups,” *Journal of Peace Research* 61, no. 4 (2024); Nils Petter Gleditsch et al., “Armed Conflict 1946–2001: A New Dataset,” *Journal of Peace Research* 39, no. 5 (2002).

<sup>2</sup> Davies et al., “Organized Violence 1989–2023”; Ralph Sundberg and Erik Melander, “Introducing the UCDP Georeferenced Event Dataset,” *Journal of Peace Research* 50, no. 4 (2013).

<sup>3</sup> Corinne Bara and Lisa Hultman, “Just Different Hats? Comparing UN and Non-UN Peacekeeping,” *International Peacekeeping* 27, no. 3 (2020).

<sup>4</sup> Data for the first four variables from the UCDP Armed Conflict Dataset v24.1.

<sup>5</sup> Michael Coppedge et al., “V-Dem Country-Year Dataset v14,” Varieties of Democracy (V-Dem) Project, 2024.

<sup>6</sup> World Bank, “Population, Total,” 2024, available at <https://data.worldbank.org/indicator/SP.POP.TOTL>.

more comparable. For these first three models, standard errors are clustered on the conflict episode. The fourth model is a negative binomial regression with fixed effects on the conflict episode. This refocuses the analysis to over-time differences within conflicts (when personnel numbers increase, do deaths decrease?) rather than differences between conflicts.

## List of Included Missions

Location	Mission	Included from	Included to
<b>Angola</b>	UN Angola Verification Mission II (UNAVEM II)	Jan-93	Jan-95
	UN Angola Verification Mission III (UNAVEM III)	Feb-95	Jun-97
	UN Observer Mission in Angola (MONUA)	Jul-97	Feb-99
<b>Burkina Faso</b>	G5 Sahel Joint Force	May-18	Dec-23
<b>Burundi</b>	International Observer Mission in Burundi	Feb-94	Aug-96
	South African Protection Support Detachment	Oct-01	May-03
	AU Mission in Burundi (AMIB)	Apr-03	May-04
	UN Operation in Burundi (ONUB)	Jun-04	Dec-06
<b>Cameroon</b>	Multinational Joint Task Force (MNJTF)	Aug-15	Dec-23
<b>Central African Republic (CAR)</b>	Economic and Monetary Community of Central Africa– Multinational Force of the Central African Economic and Monetary Community (CEMAC-FOMUC)	Jan-03	Jun-08
	Economic Community of Central African States (ECCAS) Peace Consolidation Mission in CAR (MICOPAX)	Jul-08	Nov-13
	African-Led International Support Mission in CAR (MISCA)	Dec-13	Aug-14
	Operation Sangaris	Dec-13	Oct-16
	EU Military Operation in CAR (EUFOR RCA)	Apr-14	Mar-15
	UN Multidimensional Integrated Stabilization Mission in CAR (MINUSCA)	Sep-14	Dec-23
	EU Military Advisory Mission in CAR (EUMAM RCA)	Apr-15	Jun-16
	EU Training Mission in CAR (EUTM RCA)	Jul-16	Dec-23
<b>Chad</b>	UN Mission in CAR and Chad (MINURCAT)	Sep-07	Dec-10
	EU Military Operation in Chad and CAR (EUFOR Tchad/RCA)	Jan-08	Mar-09
	Multinational Joint Task Force (MNJTF)	Aug-15	Dec-23
<b>Comoros (Anjouan)</b>	AU Mission for Support to the Elections in the Comoros (AMISEC)	Mar-06	Jun-06
	AU Electoral and Security Assistance Mission to the Comoros (MAES)	May-07	Oct-08
<b>Côte d'Ivoire</b>	ECOWAS Mission in Côte d'Ivoire (ECOMICI)	Jan-03	Apr-04
	Operation Licorne	Jan-03	Dec-15
	UN Mission in Côte d'Ivoire (MINUCI)	Jun-03	Feb-04
	UN Operation in Côte d'Ivoire (ONUCI)	Mar-04	Jun-17
<b>Democratic</b>	UN Organization Mission in the DRC (MONUC)	Sep-99	Jun-10

<b>Republic of the Congo (DRC)</b>	EU Operation Artemis	Jun-03	Sep-03
	EU Police Mission in the DRC (EUPOL Kinshasa)	Apr-05	Jul-07
	EU Military Operation in the DRC (EUFOR RD Congo)	Jun-06	Nov-06
	UN Organization Stabilization Mission in the DRC (MONUSCO)	Jul-10	Dec-23
	East African Community (EAC) Regional Force in the DRC (EACRF-DRC)	Jun-22	Dec-23
	Southern African Development Community (SADC) Mission in the DRC (SAMIDRC)	Dec-23	Dec-23
<b>Guinea-Bissau</b>	Economic Community of West African States (ECOWAS) Monitoring Group (ECOMOG)	Dec-98	Jun-99
	ECOWAS Mission in Guinea-Bissau (ECOMIB)	May-12	Sep-20
	ECOWAS Stabilization Support Mission in Guinea Bissau (SSMGB)	Feb-22	Dec-23
<b>Lesotho</b>	SADC Preventative Mission in Lesotho (SAPMIL)	Dec-17	Nov-18
<b>Liberia</b>	ECOWAS Monitoring Group (ECOMOG)	Jan-93	Dec-98
	UN Observer Mission in Liberia (UNOMIL)	Sep-93	Aug-97
	ECOWAS Mission in Liberia (ECOMIL)	Aug-03	Oct-03
	UN Mission in Liberia (UNMIL)	Sep-03	Mar-18
<b>Libya</b>	UN Support Mission in Libya (UNSMIL)	Sep-11	Dec-23
<b>Mali</b>	African-Led International Support Mission to Mali (AFISMA)	Jan-13	Jun-13
	Operation Serval	Jan-13	Jul-14
	EU Training Mission in Mali (EUTM Mali)	Feb-13	Dec-23
	UN Multidimensional Integrated Stabilization Mission in Mali (MINUSMA)	Jul-13	Dec-23
	G5 Sahel Joint Force	Jul-17	Dec-23
<b>Morocco</b>	UN Mission for the Referendum in Western Sahara (MINURSO)	Jan-93	Dec-23
<b>Mozambique</b>	UN Operation in Mozambique (ONUMOZ)	Jan-93	Dec-94
	SADC Mission in Mozambique (SAMIM)	Jul-21	Dec-23
	EU Training Mission in Mozambique (EUTM Mozambique)	Nov-21	Dec-23
<b>Niger</b>	Multinational Joint Task Force (MNJTF)	Aug-15	Dec-23
	G5 Sahel Joint Force	Jul-17	Dec-23
<b>Nigeria</b>	Multinational Joint Task Force (MNJTF)	Aug-15	Dec-23
<b>Rwanda</b>	Neutral Military Observers Group (NMOG)	Jan-93	Oct-93
	UN Observer Mission Uganda–Rwanda (UNOMUR)	Jun-93	Aug-94
	UN Assistance Mission for Rwanda (UNAMIR)	Oct-93	Mar-96
	Operation Turquoise	Jun-94	Aug-94
<b>Sierra Leone</b>	ECOWAS Monitoring Group (ECOMOG)	Jun-97	May-00
	UN Observer Mission in Sierra Leone (UNOMSIL)	Jul-98	Sep-99
	UN Mission in Sierra Leone (UNAMSIL)	Oct-99	Dec-05
	Operation Palliser	May-00	Jun-00

	Operation Basilica	Jul-00	Dec-02
<b>Somalia</b>	Unified Task Force (UNITAF)	Jan-93	May-93
	UN Operation in Somalia (UNOSOM)	Jan-93	Apr-93
	UN Operation in Somalia II (UNOSOM II)	May-93	Jan-95
	AU Mission in Somalia (AMISOM)	Feb-07	Mar-22
	EU Training Mission in Somalia (EUTM Somalia)	Apr-10	Dec-23
	UNSOM (UN Assistance Mission in Somalia)	Jun-13	Dec-23
	AU Transition Mission in Somalia (ATMIS)	Apr-22	Dec-23
<b>South Sudan</b>	UN Mission in South Sudan (UNMISS)	Aug-11	Dec-23
<b>Sudan</b>	AU Mission in Sudan (AMIS)	Jun-04	Dec-07
	UN Mission in Sudan (UNMIS)	Mar-05	Jul-11
	UN-AU Mission in Darfur (UNAMID)	Jan-08	Dec-20
	UN Interim Security Force for Abyei (UNISFA)	Aug-11	Dec-23
<b>Uganda</b>	AU Regional Task Force (AU-RTF)	Nov-11	Sep-18

## Results

### Effects for UN and Non-UN Personnel (Without Parallel Partner)

Figure 1. Coefficients for one-sided rebel violence

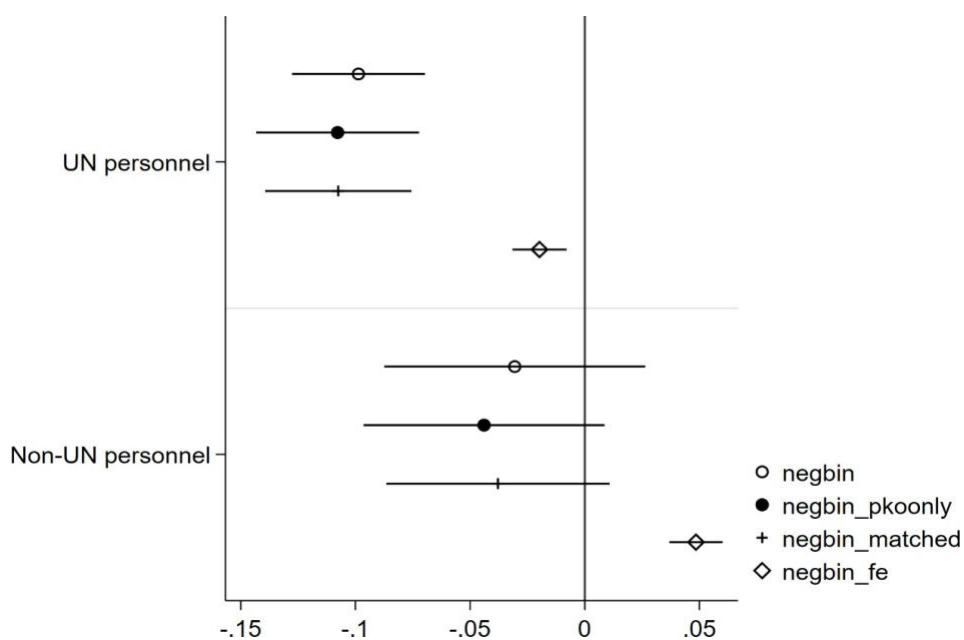
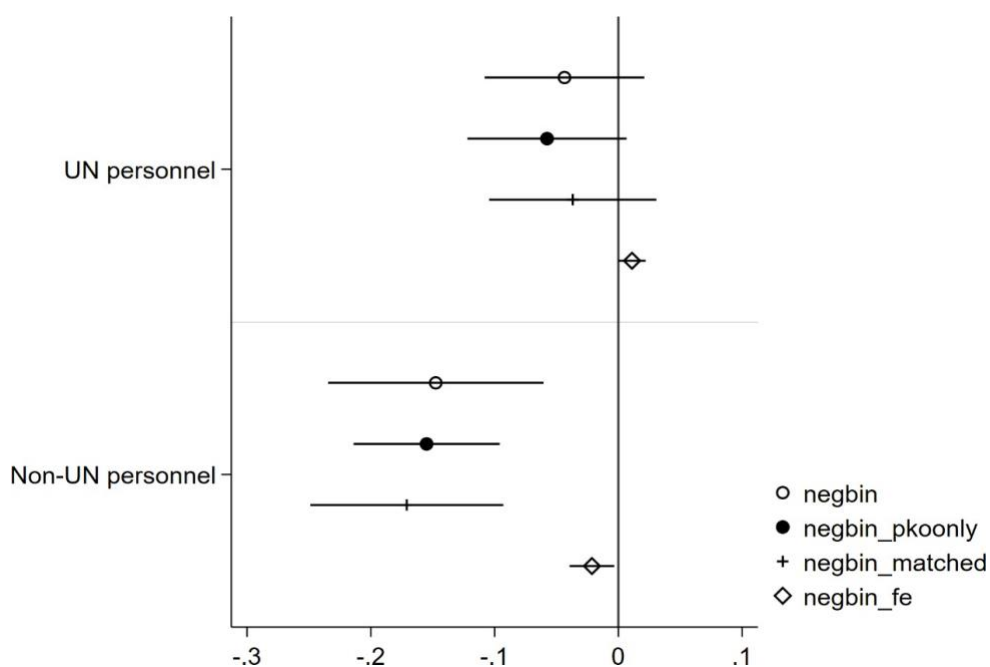
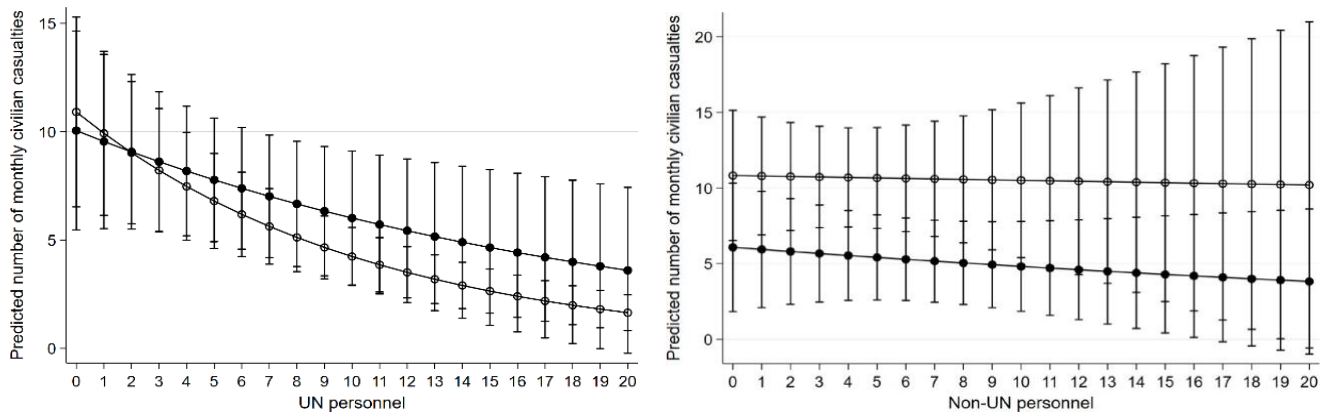


Figure 2. Coefficients for one-sided government violence

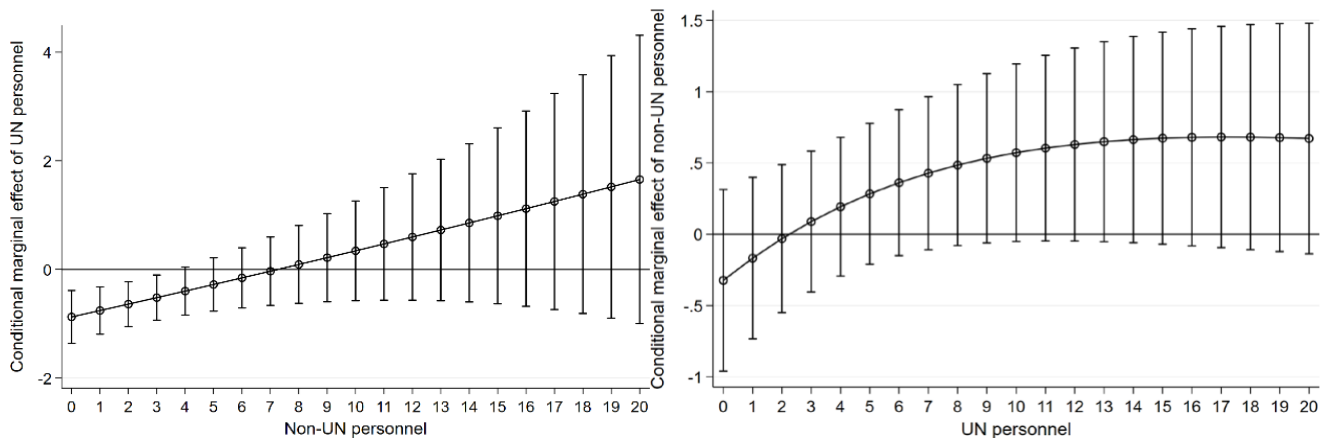


## Partnership (Parallel) Peacekeeping Effects on Rebel Violence

**Figure 3. Predicted civilian deaths from rebel violence at increasing UN (left) or non-UN (right) personnel in the presence (black dot) or absence (white dot) of a parallel mission<sup>7</sup>**



**Figure 4. Effect of UN personnel (left) or non-UN personnel (right) on rebel violence as personnel from the partner mission increase<sup>8</sup>**

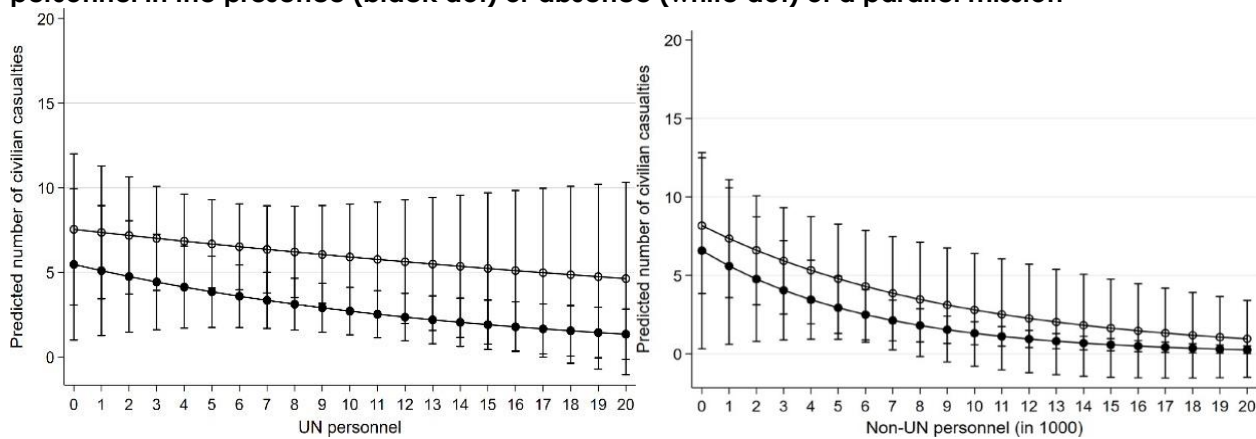


<sup>7</sup> Model: Standard negative binomial but results similar in peacekeeping-only and matched samples. One exception: For the graph on the right, the peacekeeping-only model suggests that there are indeed fewer civilian casualties from rebel violence when certain non-UN missions (between 1,000- and 6,000-person strong) has a UN partner.

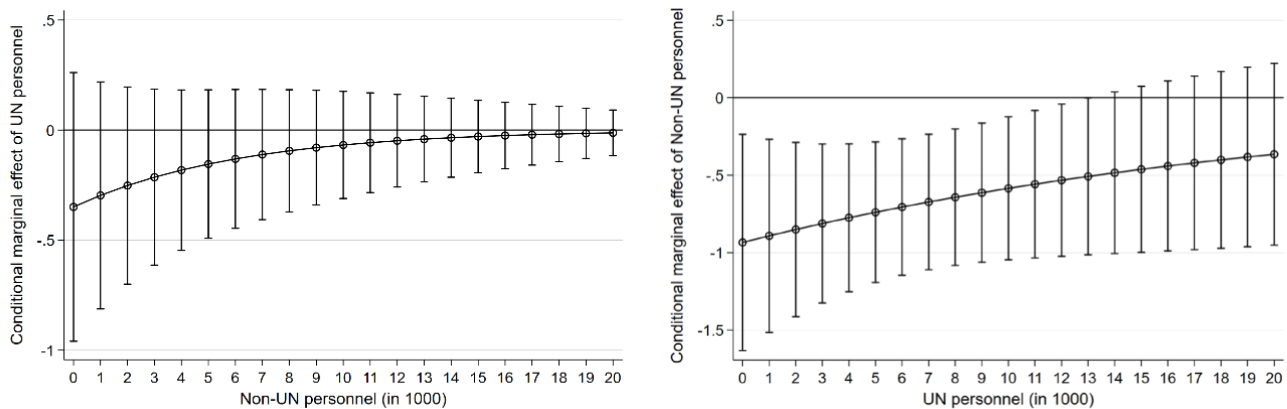
<sup>8</sup> Model: Standard negative binomial but results similar in peacekeeping-only and matched samples.

## Partnership (Parallel) Peacekeeping Effects on Government Violence

**Figure 5. Predicted civilian deaths from government violence at increasing UN (left) or non-UN (right) personnel in the presence (black dot) or absence (white dot) of a parallel mission<sup>9</sup>**



**Figure 6. Effect of UN personnel (left) or non-UN personnel (right) on government violence as personnel from the partner mission increase<sup>10</sup>**



<sup>9</sup> Model: Standard negative binomial but results similar in peacekeeping-only and matched samples.

<sup>10</sup> Model: Standard negative binomial but results similar in peacekeeping-only and matched samples.

## Distinguishing between AU/EU vs. Other Non-UN Personnel

Figure 7. Separating off AU/EU: Coefficients for one-sided rebel violence

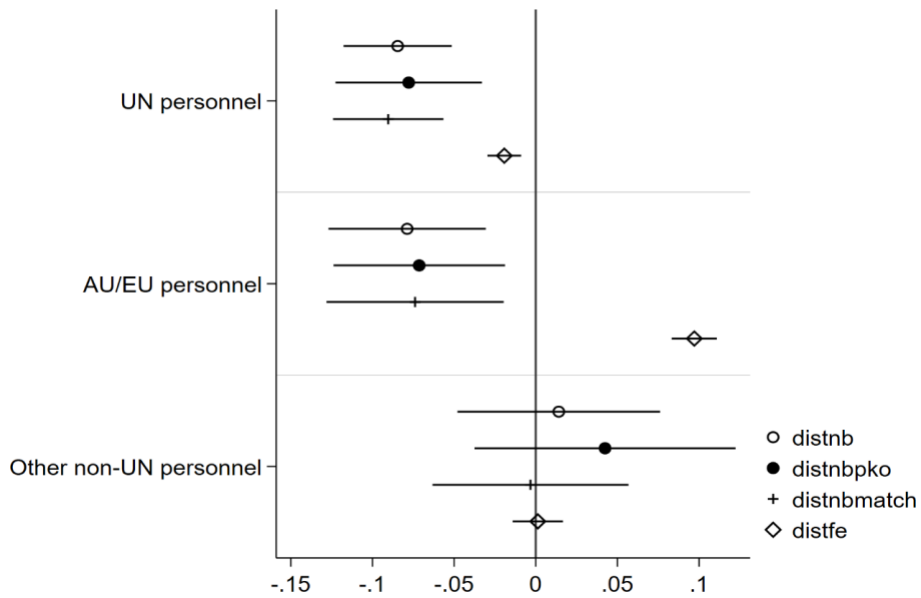
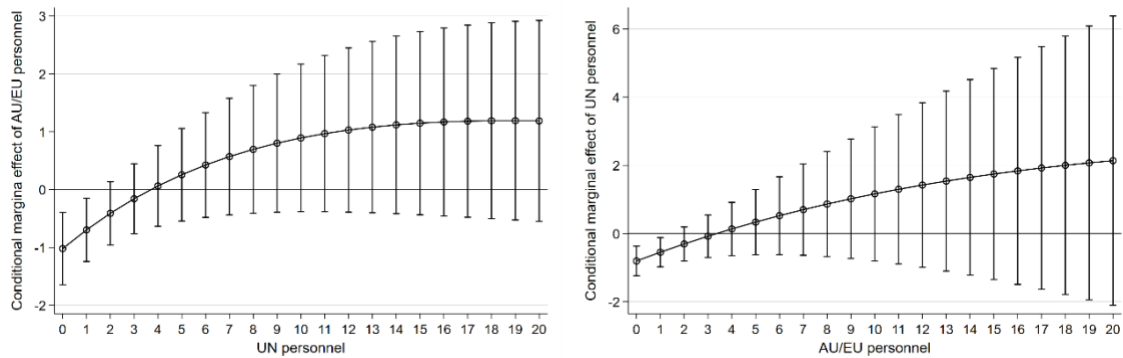
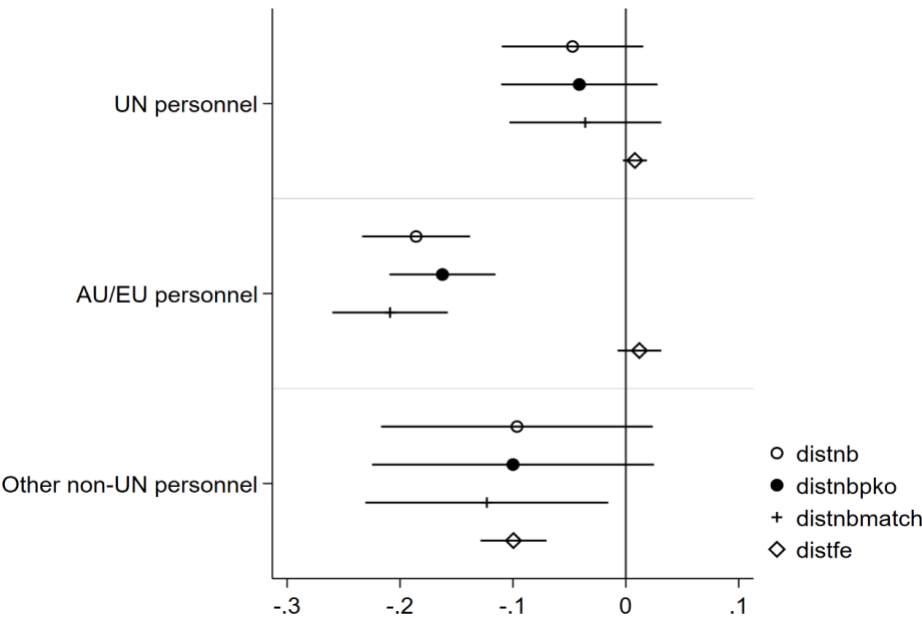


Figure 8. Effect of AU/EU (left) and UN (right) on rebel violence as the parallel partner mission gets larger





**Figure 9. Separating off AU/EU: Coefficients for one-sided government violence**



**Figure 10. Effect of AU/EU (left) and UN (right) personnel on government violence as parallel partner mission gets larger**

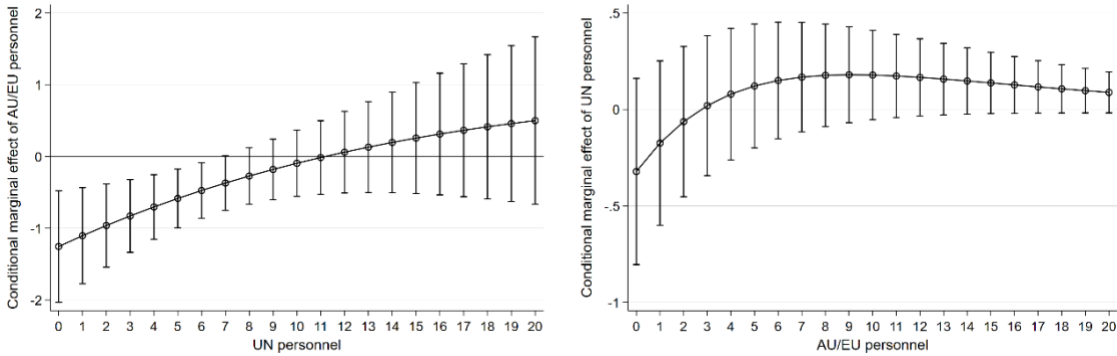


Figure 11. Separating off ASIs: Coefficients for one-sided rebel violence

