Does Peacekeeping by Civilians Work? Reducing Armed Violence without Armed Force

Online Appendices

Rui Asano

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A Data Collection

Three original datasets on United Nations (UN) peace operations and their financial and human resources are constructed for this research project. This Appendix summarizes the data collection process and briefly describes the datasets.

A1 The Basics of UN Peace Operations Dataset

The Basics of UN Peace Operations (BAPO) dataset records field missions organized by the UN Department of Peace Operations (DPO) and the Department of Political and Peacebuilding Affairs (DPPA), that is, peacekeeping operations (PKOs) and special political missions (SPMs), 1948–2019.[1] The BAPO dataset contains information such as mission name, location, establishment/termination dates, Chapter VII authorization, relevant UCDP conflicts, and mission type which was coded in the previous literature (e.g., monitoring, traditional, and multidimensional). Listed are 71 PKOs and 41 SPMs as described on the websites of UN DPO,[2] DPPA,[3] and the Repertoire of Security Council Practice.[4] Figure A1 shows time trends of

[1] This dataset focuses on country-specific missions and regional offices regarding SPMs. It excludes SPMs in the form of personal envoy, special adviser, special envoy, representative, sanctions panel, monitoring group, and other entities and mechanisms, that are so-called good offices, or that are not managed or directed by DPPA. The UN Support for the Cameroon-Nigeria Mixed Commission (CNMC) and the UN Mission to Support the Hudaydah Agreement (UNMHA) are exceptionally excluded because of insufficient data at least as of the data collection. Similarly, supporting missions, such as the UN Peace Forces (UNPF), UN Support Office for AMISOM (UNSOA), and UN Support Office in Somalia (UNSOS) are excluded in this dataset.

[2] Current operations (https://peacekeeping.un.org/en/where-we-operate); past operations (https://peacekeeping.un.org/en/past-peacekeeping-operations).

[3] Current missions (https://dppa.un.org/en/dppa-around-world); past missions (https://dppa.dfs.un.org/en/past-missions).

[4] Peacekeeping operations (https://www.un.org/securitycouncil/content/repertoire/peacekeeping-missions); special political missions (https://www.un.org/securitycouncil/content/repertoire/political-missions-and-offices). The UN Observer Mission in South

established and active missions of UN PKO and SPM between 1948 and 2019, using this dataset.[5] The number of established and active missions increased rapidly in the early 1990s. Since the 2000s, the establishment of new missions, especially PKOs, has declined, while the number of active missions has been maintained. This fact indicates that the duration of mission activities is lengthening.

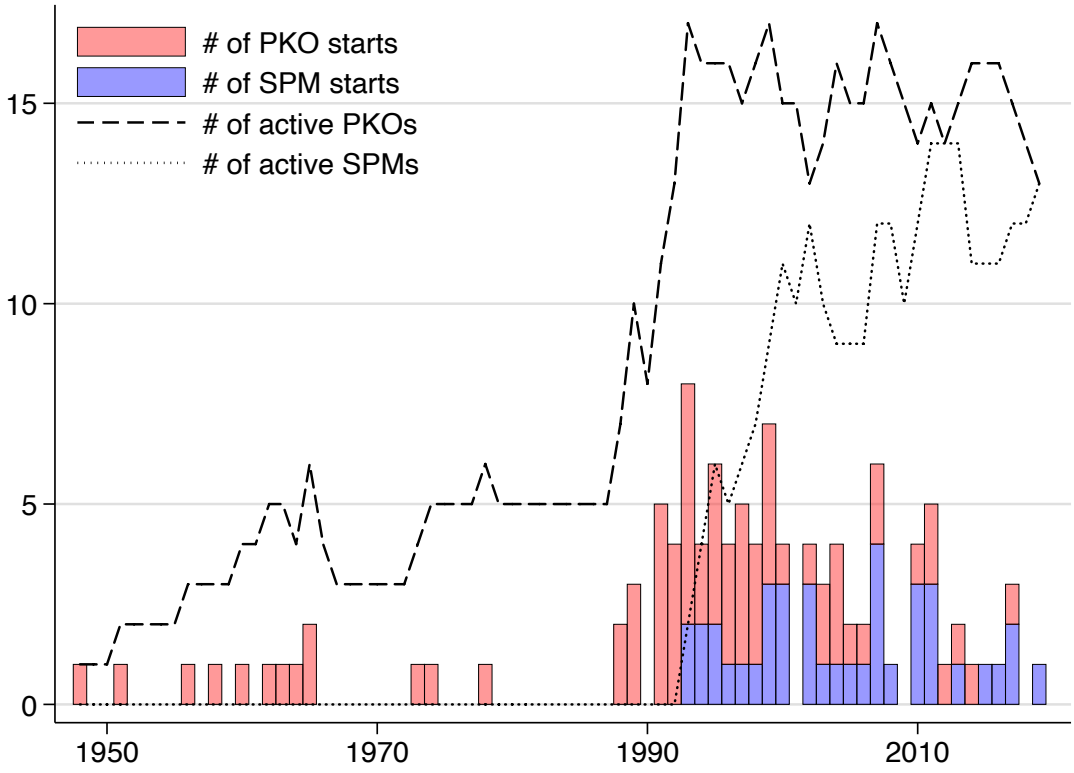

Figure A1: Established and active missions of UN PKO and SPM, 1948–2019

Africa (UNOMSA) and the UN Advance Mission in the Sudan (UNAMIS) are only found in this website of PKOs. They are recorded in the dataset, but not regarded as PKOs nor SPMs; thus, the figures in the main text do not include these two missions.

[5]Two SPMs, the Office of the Special Envoy for the Sahel (OSES) and the UN Special Mission to Afghanistan (UNSMA), are excluded from Figure A1 due to missing data, in addition to UNOMSA and UNAMIS.

A2 UN Peacekeeping Operations Financial Resources Dataset

The UN Peacekeeping Operations Financial Resources (PKOF) dataset records financial resource performance of UN PKO budgets, 1988–2019. The PKOF dataset covers almost all the mission-budgetary periods for UN PKOs established after 1988.[6] The main sources are the Budget Performance Reports published by the UN Secretary-General for each mission-budgetary period. The performance is reported in a table format as shown in Figure A2. This dataset contains variables indicating apportionments, expenditures, and the variances for each (sub)category of peacekeeping costs, mainly on military, police, and civilian components. However, in the dataset, the categories of military, police, civilian, and operational costs do not represent the current classification by the UN as shown in Figure A2, because their components have been changed over time.

Figure A3 shows the frequency of each PKO mission in the PKOF dataset. Because the unit of data is a mission-budgetary period, the frequency means the number of budgetary periods (or Budget Performance Reports published) between 1988 and 2019 for each mission. Long-term missions that have been in existence since the 1990s have a budget period of about 30 terms, while most missions, including ongoing missions established in the 2010s, have a budget period of less than 10 terms.

[6]Two missions: UN Aouzou Strip Observer Group (UNASOG) and UN Good Offices Mission in Afghanistan and Pakistan (UNGOMAP) are excluded because of missing data. Other two missions: UN Military Observer Group in India and Pakistan (UNMOGIP) and UN Truce Supervision Organization (UNTSO) are excluded because UN regular budgets included their budgets. Lastly, the UN Peacekeeping Force in Cyprus (UNFICYP) before June 15, 1993 is not recorded in this dataset because the costs of UNFICYP were funded by the troop-contributing countries, the Government of Cyprus, and voluntary contributions (UNGA, 1993: 5).

III. Resource performance

A. Financial resources

(Thousands of United States dollars; budget year is from 1 July 2018 to 30 June 2019)

			Variance	
	Apportionment	*Expenditure*	*Amount*	*Percentage*
Category	*(1)*	*(2)*	*(3)=(1)-(2)*	*(4)=(3)÷(1)*
Military and police personnel				
Military observers	7 621.1	7 789.0	(167.9)	(2.2)
Military contingents	404 577.2	391 381.8	13 195.4	3.3
United Nations police	17 916.3	18 396.7	(480.4)	(2.7)
Formed police units	57 423.9	56 265.2	1 158.7	2.0
Subtotal	**487 538.5**	**473 832.7**	**13 705.8**	**2.8**
Civilian personnel				
International staff	155 646.9	148 771.1	6 875.8	4.4
National staff	18 776.9	21 456.4	(2 679.5)	(14.3)
United Nations Volunteers	11 039.0	12 789.9	(1 750.9)	(15.9)
General temporary assistance	7 180.3	7 403.4	(223.1)	(3.1)
Government-provided personnel	5 052.3	5 049.6	2.7	0.1
Subtotal	**197 695.4**	**195 470.4**	**2 225.0**	**1.1**
Operational costs				
Civilian electoral observers	–	–	–	–
Consultants and consulting services	774.8	641.1	133.7	17.3
Official travel	3 778.0	4 101.0	(323.0)	(8.5)
Facilities and infrastructure	86 924.3	84 573.0	2 351.3	2.7
Ground transportation	15 320.0	17 755.6	(2 435.6)	(15.9)
Air operations	60 515.4	49 326.2	11 189.2	18.5
Marine operations	250.0	1 566.8	(1 316.8)	(526.7)
Communications and information technology	36 157.3	37 847.4	(1 690.1)	(4.7)
Medical	2 266.0	987.0	1 279.0	56.4
Special equipment	–	–	–	–
Other supplies, services and equipment	35 992.2	31 711.1	4 281.1	11.9
Quick-impact projects	3 000.0	2 831.1	168.9	5.6
Subtotal	**244 978.0**	**231 340.3**	**13 637.7**	**5.6**
Gross requirements	**930 211.9**	**900 643.4**	**29 568.5**	**3.2**
Staff assessment income	14 726.7	13 831.0	895.7	6.1
Net requirements	**915 485.2**	**886 812.4**	**28 672.8**	**3.1**
Voluntary contributions in kind (budgeted)	–	–	–	–
Total requirements	**930 211.9**	**900 643.4**	**29 568.5**	**3.2**

Figure A2: An example of budget performance

Note: Budget performance of the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic for the period from 1 July 2018 to 30 June 2019 (A/74/621): 53.

When the Budget Performance Report represents more than one mission (see below), data is used only once for a representative mission in Figure A3.

- UNMIBH and UNMOP (January 1, 1996–June 30, 2003)
- UNAMIC and UNTAC (November 1, 1991–August 31, 1993)
- UNTAES and UNPSG (July 1, 1997–June 30, 1998)
- MIPONUH, UNSMIH, and UNTMIH (July 1, 1997–June 30, 1998)
- UNAMIR and UNOMUR (October 5, 1993–April 4, 1994)
- UNOMSIL and UNAMSIL (July 1, 1999–June 30, 2001)
- UNPROFOR, UNCRO, and UNPREDEP (April 1, 1995–June 30, 1997)

Next, Figure A4 shows a series of budgetary period length for each host location of UN PKOs. On the left side, host location names are listed in order of the start date of the first budgetary period recorded in this dataset, with the horizontal axis showing the date. The capped range indicates a budgetary period. Currently, the length of a budgetary period is one year, from July 1 to June 30, and is the same for almost all of missions and years. Prior to 1996, however, the length of the budgetary period varied by mission and year and was usually shorter or longer than one year. There are a few locations where the budgetary period overlaps with the next period, mostly due to replacements or the presence of multiple missions.

Finally, Figure A5 shows the distribution of variance as a proportion of total expenditures by UNGA session. This box plot was constructed based on the data on apportionments and expenditures by mission and budgetary period. The median size of the variance has been approaching zero over the years, suggesting that the UN may be planning a more adequate budget to meet its PKO mandate.

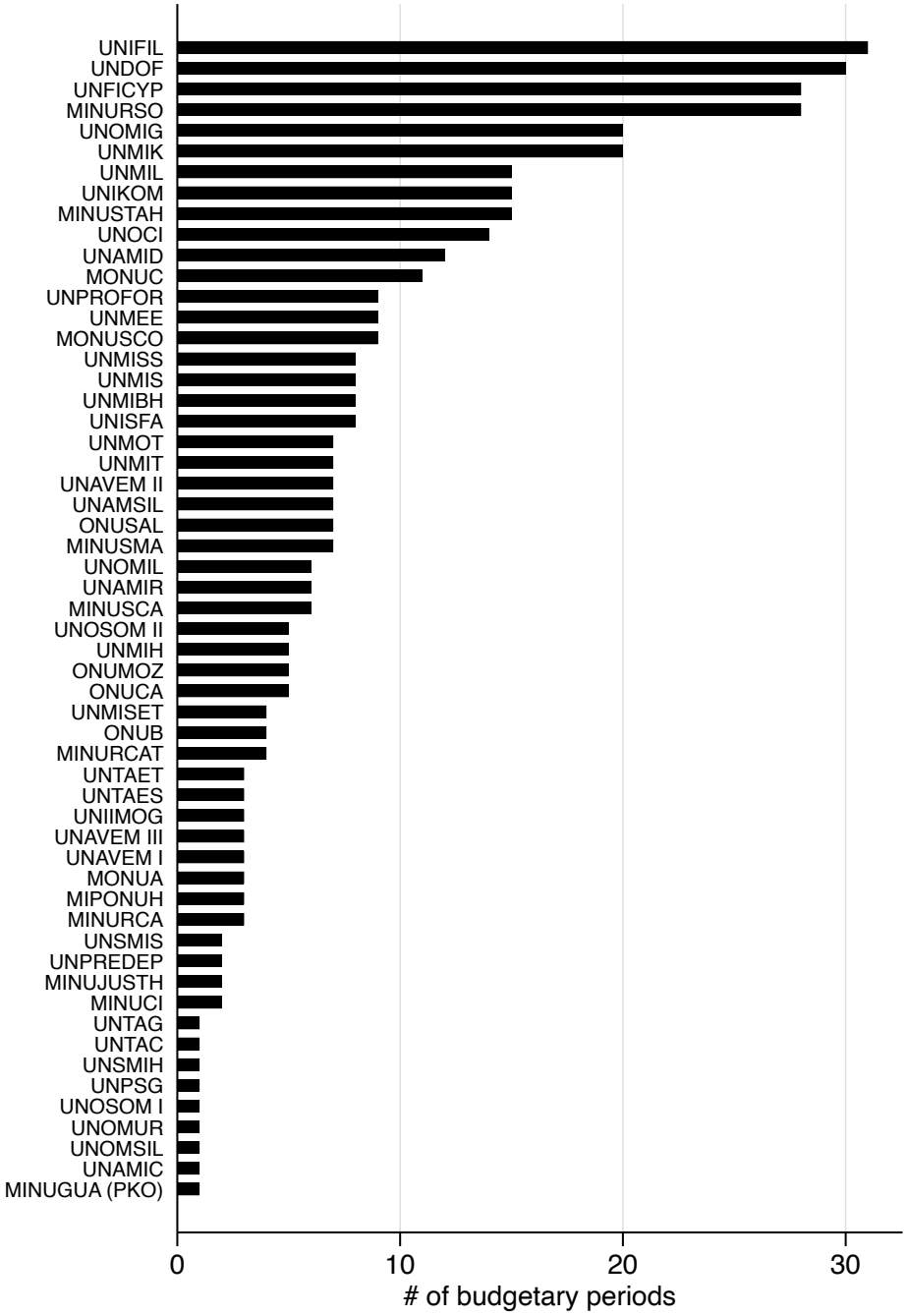

Figure A3: UN PKOs included in the financial resources dataset

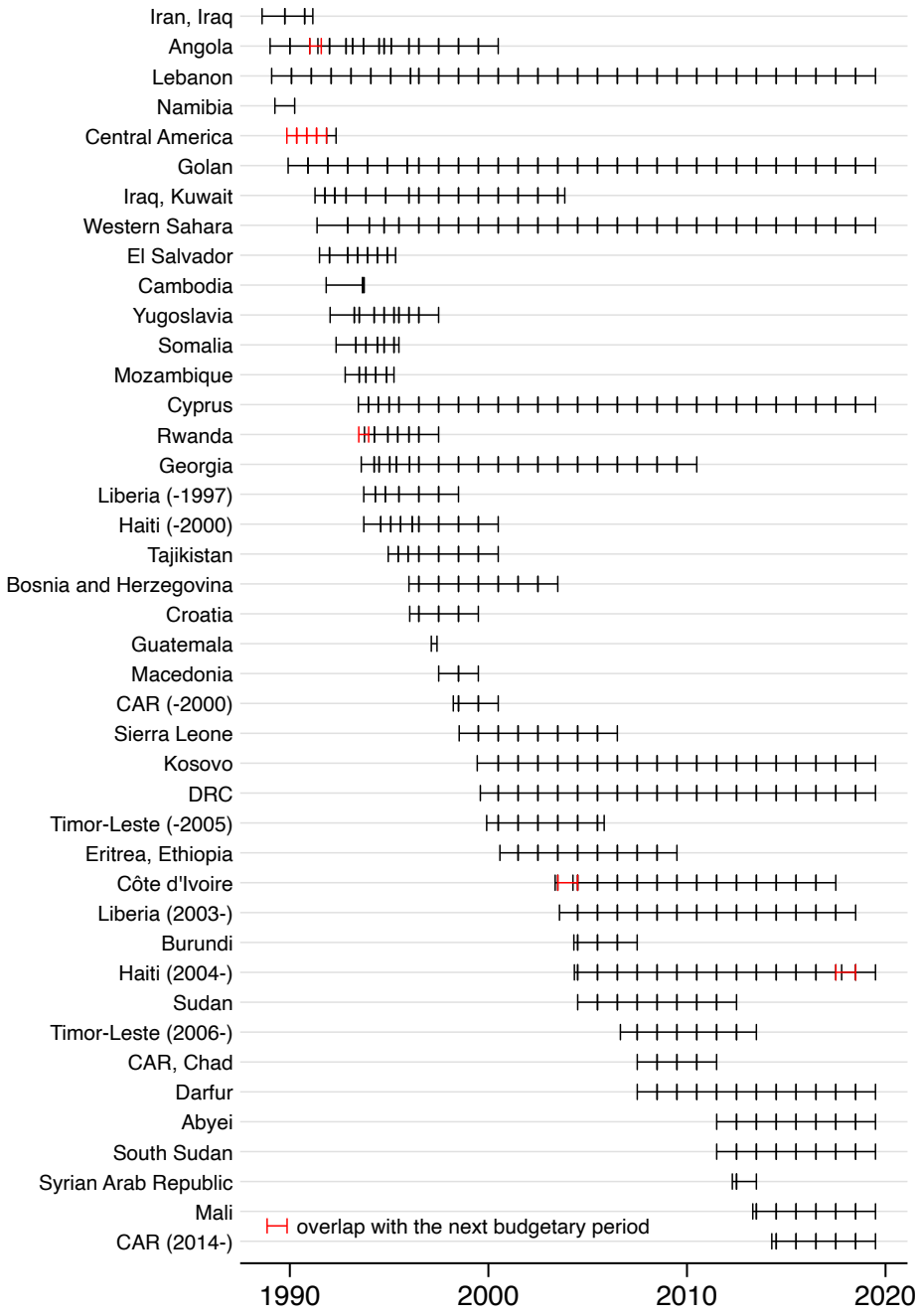

Figure A4: UN PKO budgetary periods by location

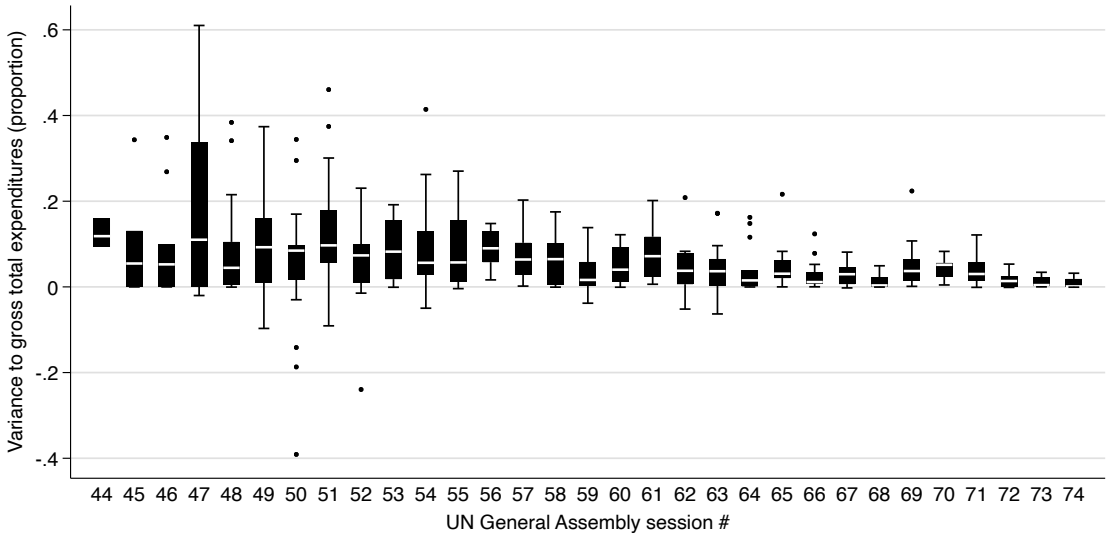

Figure A5: Variance to gross total expenditures by UN General Assembly session

A3 UN Peacekeeping Operations Personnel Dataset

The UN Peacekeeping Operations Personnel (PKOP) dataset records the number of military, police, and civilian peacekeepers working for UN PKOs on a monthly basis, 1989–2019. The military and civilian peacekeepers coded in the PKOP dataset include the following subcategories: military observers, troops, staff officers, international staff, local staff, UN volunteers, OAU observers, and national officers. These data are collected from the UN PKOs Background Notes/Fact Sheets, UN Secretary-General Reports, and Budget Performance Reports for each mission. Figure A6 shows the frequency of each PKO mission in this dataset. Unlike the dataset on financial resources, this dataset has a certain amount of missing values especially for 2001–2005 because of the change in reporting formats. Some observations with non-missing data represent more than one mission as followed.

- UNMIBH and UNMOP (February 1996–December 2002)
- UNAMIR and UNOMUR (April–September 1994)
- UNPROFOR, UNCRO, and UNPREDEP (March 1995–June 1997)

Blair (2021) also collected data on UN civilian deployments, but as shown in Table A1, Blair's dataset differs from my dataset. Because the Blair's dataset covers only annual variation, shorter time periods, and missions in Africa, the number of data points with nonzero and nonmissing civilians is 104, far fewer than in my original dataset, 3,917. Figure A7 shows that time-series changes in civilian personnel by country are nearly identical in the two datasets.[7] Blair's data substitutes for the missing values in my data, albeit on an annual basis, from 2001 to 2005, and also substitutes for the period receiving SPMs.[8] However, as in Mozambique and Somalia, annual data may not capture sharp changes in the numbers.

Table A1: Comparison of the original personnel dataset with Blair (2021)

	Blair's dataset	PKOP dataset
Time unit	Year	Month
Time periods	1993–2014	Feb 1989–Sep 2019
# of missions	26 (est.)	56
# of countries	14	36
Spatial coverage	Africa only	All regions
# of data points	104	3,917
SPM inclusion	YES	NO

[7]The number of civilian peacekeepers coded in the Blair's annual data is regarded as deployed in January of each year. To correspond with the Blair's data, civilian peacekeepers working for UNMIS, UNAMID, and UNISFA are aggregated for the Sudan panel.

[8]The UN missions covered in the Blair's dataset are accounted for about 30% by SPMs: UNOB, BINUB (Burundi), BONUCA (Central African Republic), UNOGBIS (Guinea-Bissau), UNOL (Liberia), UNIOSIL (Sierra Leone), UNPOS, and UNSOM (Somalia) are thought to be included.

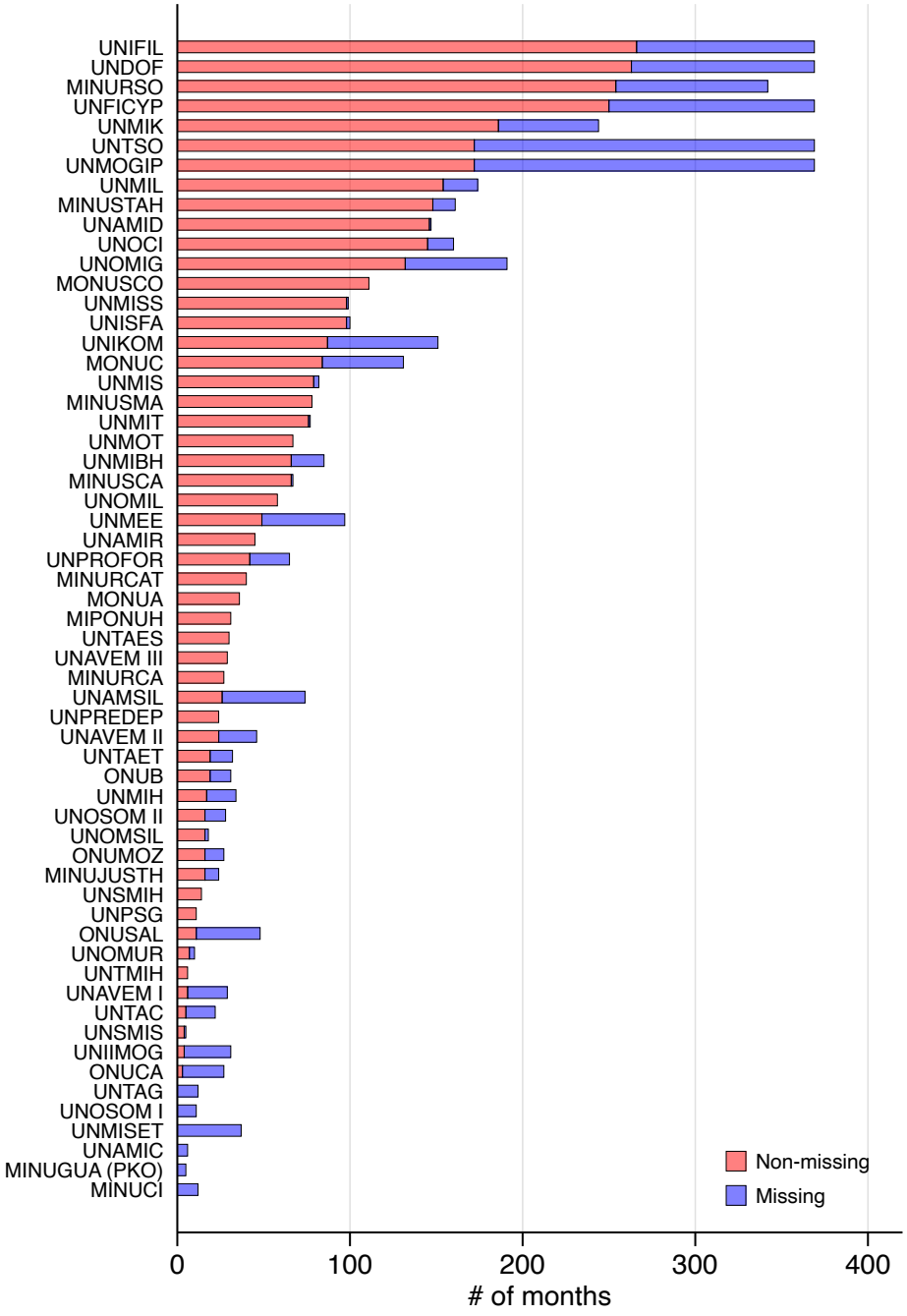

Figure A6: UN PKOs included in the personnel dataset

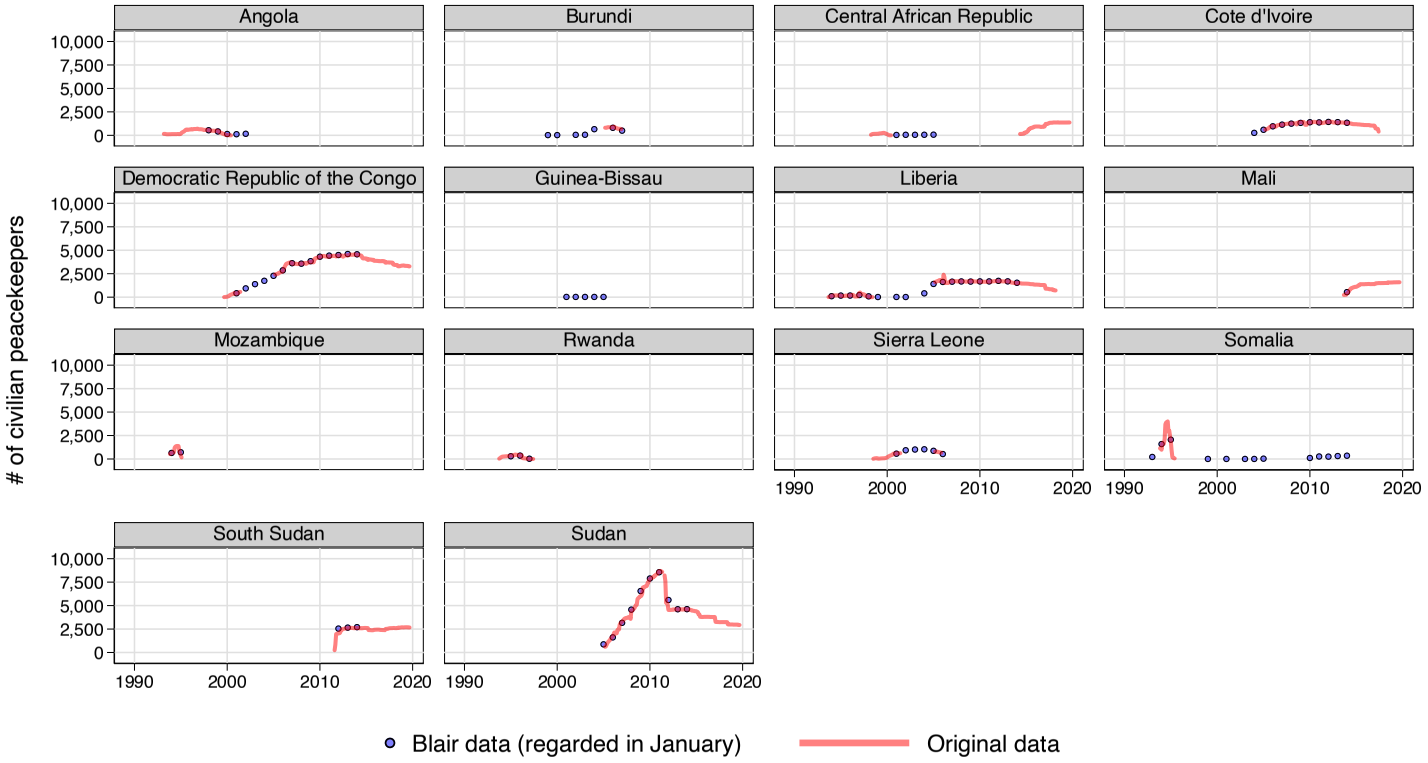

Figure A7: Comparison of the original personnel dataset with Blair (2021)

B Research Design

B1 Sample

`Missions` The 59 UN PKOs recorded in the financial resources dataset are listed in Table B1, along with their host locations and notes on operating areas. Of these, 11 missions are not used in the (at least main) analysis for one of the following five reasons: deployed to an extrasystemic/interstate war (UNFICYP, UNMEE, UNDOF, UNIIMOG, UNIKOM), deployed before the war started (MINURCA, UNPREDEP), deployed where no conflicts occurred (UNMIT), no data on battle-related deaths (UNSMIS), or missing data on control variables from the World Bank Open Data (UNMIK, UNTAG). Furthermore, because the UNCRO and UNMOP expenditures are reported with UNPROFOR and UNMIBH over the entire period, respectively, it is not possible to estimate their impact separately from other missions, or the impact on their original host locations.

Table B1 also explains whether the missions are deployed in only part of the domestic territories or in a multi-country region. For the purpose of analysis, the expenditures for these missions are divided by the surface area of domestic territories or multi-country regions as follows. There are other missions that operated in parts of domestic territories or multi-country regions, but it is difficult to identify the actual areas where these missions were in charge. Therefore, I use the area of non-country territories only for the missions that include a territory or region in their name, and the missions that succeeded them.

· MINURCAT: Ouaddai, Salamat, Sila, Wadi Fira (regions in Chad), Vakaga

(prefecture in Central African Republic)

- UNTAES, UNPSG: Eastern Slavonia, Baranja (counties in Croatia)
- UNOMUR: Kabale, Kisoro (districts in Uganda)
- ONUCA: Costa Rica, El Salvador, Honduras, Guatemala, Nicaragua
- UNPROFOR: Bosnia and Herzegovina, Croatia, North Macedonia

`Wars` Table B2 lists intrastate conflicts that have hosted UN PKOs between 1989 and 2019. The host conflicts are identified using the UCDP/PRIO Armed Conflict Dataset (ACD) version 19.1. There are six notes on the (potential) hosts.

`Note 1: Conflicts starting after PKO withdrawal` Some conflicts started only after a UN PKO withdrew from the countries: the conflicts in the Central African Republic (MINURCA) and in Macedonia (UNPREDEP). These conflicts are not considered to benefit from the missions.

`Note 2: Non-host conflicts in host locations` Not all conflicts that occurred in a host country were host to UN PKOs. According to the UCDP/PRIO ACD definition of intrastate conflict, there may exist only one intrastate conflict concerning the government of a country and one or more conflicts concerning territory. Several low-scale conflicts, especially such territorial conflicts, are not considered as UN PKO hosts for one of the following three reasons: the conflicts were active only before the 1980s (DRC: South Kasai, Sudan: Southern Sudan), the conflicts did not involve UN PKOs (Georgia: Government, South Ossetia, Lebanon: Islamic State, Yugoslavia: Slovenia), or UN PKOs appear to have been involved in the conflicts albeit on a small scale, but they are so small in scale of battle-related

deaths that the PKO effect would become easily confirmed in the analysis if I regarded them as host conflicts of UN PKOs (Angola: Cabinda, DRC: Katanga, Kongo Kingdom, Mali: Macina Empire, Islamic State).[9] These selections of host conflicts corresponds with those by Hultman et al. (2019: 193–6). The one difference from Hultman et al. (2019) is that only they regarded UNMIBH as having not been deployed to Bosnia and Herzegovina: Croat. However, it does not indicate that there is a substantial difference between the codings, because Hultman et al. (2019) regarded the former entity, the UN International Police Task Force (IPTF), as having been deployed to the conflict.

Note 3: Hosting multiple missions Several conflicts hosted more than one mission as follows. Bosnia and Herzegovina (Bihaca Krajina, Croat, Serb) hosted UNMIBH and UNPROFOR; the Central African Republic (Government) hosted MINURCAT and MINUSCA; Croatia (Serb) hosted UNCRO, UNTAES, UNPSG, UNMOP, and UNPROFOR; Rwanda (Government) hosted UNAMIR and UNOMUR; and Sudan (Government) hosted UNMIS and UNAMID. With the exception of the Central African Republic, these conflicts hosted multiple missions deployed at the same time, resulting in the aggregation of their expenditures.

Note 4: Reported with other missions Because the expenditures for UNCRO and UNMOP are reported along with the expenditures for UNPROFOR and UNMIBH, they cannot be assigned separately to the original host conflict

[9] In the analysis, the same amount of expenditures are considered to have been spent on the conflict over the government and the conflicts over territories when they occurred at the same time, although perhaps much less was actually spent on the territorial conflicts due to their relatively small scale.

data, but only to the host conflicts of UNPROFOR and UNMIBH, respectively. It indicates that, on the data, the conflict over Serb in Croatia received less expenditures than it actually did.

Note 5: GED cases added Because the conflicts Somalia: Somaliland (ID 14074) and Israel: Islamic State (ID 14308) are recorded only in the UCDP Georeferenced Event Dataset version 19.1, they are additionally included in the sample created from the UCDP ACD version 19.1 (although these 'conflicts' do not meet the conditions to be a war in the UCDP ACD as of the version 19.1).

Note 6: Territorial conflicts after independence Lastly, the months of territorial conflicts after a disputed territory (i.e., side B) gains independence from a country (side A) are excluded from the sample. In the country to which the new independent country originally belonged, domestic conflicts over the former territory no longer take place, because both sides become countries and, according to the UCDP definition, only interstate conflicts can take place between the countries. For example, regarding Timor-Leste (–2005), expenditures for UNMISET are not reflected in the analysis because Timor-Leste became independent at the time UNMISET was initiated.

Table B1: UN PKOs listed in the financial resources dataset, 1988–2019

Location	Missions in chronological order				Domestic	Multi-country
Abyei	UNISFA				✓	
Angola	UNAVEM I	UNAVEM II	UNAVEM III	MONUA		
Bosnia and Herzegovina	UNMIBH					
Burundi	ONUB					
Cambodia	UNAMIC	UNTAC				
Central African Republic: CAR (–2000)	MINURCA				?	
Central African Republic: CAR (2014–)	MINUSCA					
Central African Republic: CAR, Chad	MINURCAT				✓	
Central America	ONUCA					✓
Côte d'Ivoire	MINUCI	UNOCI				
Croatia	UNCRO					
Eastern Slavonia, Baranja, and Western Sirmium (Croatia)	UNTAES	UNPSG			✓	
Cyprus	UNFICYP				?	
Darfur	UNAMID				✓	
Democratic Republic of the Congo: DRC	MONUC	MONUSCO				
El Salvador	ONUSAL					
Eritrea, Ethiopia	UNMEE				-	-
Georgia	UNOMIG				?	
Golan	UNDOF				-	-
Guatemala	MINUGUA					
Haiti (–2000)	UNMIH	UNSMIH	UNTMIH	MIPONUH		
Haiti (2004–)	MINUSTAH	MINUJUSTH				
Iran, Iraq	UNIIMOG				-	-
Iraq, Kuwait	UNIKOM				-	-
Kosovo	UNMIK				*	
Lebanon	UNIFIL				?	
Liberia (–1997)	UNOMIL					
Liberia (2003–)	UNMIL					
Mali	MINUSMA					
Macedonia	UNPREDEP				?	
Mozambique	ONUMOZ					
Namibia	UNTAG					
Prevlaka	UNMOP				?	
Rwanda	UNAMIR					
Uganda-Rwanda (Rwanda)	UNOMUR				✓	
Sierra Leone	UNOMSIL	UNAMSIL				
Somalia	UNOSOM I	UNOSOM II			?	
South Sudan	UNMISS					
Sudan	UNMIS					✓
Syrian Arab Republic	UNSMIS					
Tajikistan	UNMOT					
Timor-Leste (–2005)	UNTAET	UNMISET			*	
Timor-Leste (2006–)	UNMIT					
Western Sahara	MINURSO				✓	
Yugoslavia	UNPROFOR					✓

*: UNMIK (Kosovo) and UNTAET (Timor-Leste) were active in their former ruling countries before independence.
?: It is possible that the mission was deployed only in certain domestic areas, but their expenditures are not adjusted by area size in the analysis.
-: It is unclear where exactly the missions for interstate conflicts were deployed.
Note 1: In the figures, Eastern Slavonia, Baranja, and Western Sirmium is listed as Croatia, and Uganda-Rwanda as Rwanda.
Note 2: UNMIS was deployed to the multi-country regions of present-day Sudan and South Sudan before South Sudan gained independence.
Note 3: Gray color means that the missions are not used in the (at least main) analysis.
Note 4: Light gray color means that expenditures for the missions were reported along with expenditures for other missions over the entire period.

Table B2: Intrastate conflicts that hosted UN PKOs, 1989–2018

Location	Intrastate conflicts (incompatibility: government or disputed territory)			
Abyei	Abyei (Sudan)			
Angola	Government	*Cabinda*		
Bosnia and Herzegovina	Bihaca Krajina	Croat	Serb	
Burundi	Government			
Cambodia	Government			
Central African Republic: CAR (–2000)	*CAR has an intrastate conflict only after May 2001.			
Central African Republic: CAR (2014–)	Government			
Central African Republic: CAR, Chad	Government (CAR)	Government (Chad)		
Central America	Government (Nicaragua)			
Côte d'Ivoire	Government			
Croatia	Serb			
Eastern Slavonia, Baranja, and Western Sirmium (Croatia)	Serb			
Darfur	Government (Sudan)			
Democratic Republic of the Congo: DRC	Government	*Katanga*	*South Kasai*	*Kongo Kingdom*
El Salvador	Government			
Georgia	*Government*	Abkhazia	*South Ossetia*	
Guatemala	Government			
Haiti (–2000)	Government			
Haiti (2004–)	Government			
Kosovo	Kosovo (Yugoslavia)			
Lebanon	Government	*Islamic State*		
Liberia (–1997)	Government			
Liberia (2003–)	Government			
Mali	Government	Azawad	*Macina Empire*	*Islamic State*
Macedonia	*Macedonia has an intrastate conflict only after January 2000.			
Mozambique	Government			
Namibia	Namibia (South Africa)			
Prevlaka	Serb (Croatia)			
Rwanda	Government			
Uganda-Rwanda (Rwanda)	Government (Rwanda)			
Sierra Leone	Government			
Somalia	Government			
South Sudan	Government			
Sudan	Government	*Southern Sudan*		
Syrian Arab Republic	Government			
Tajikistan	Government			
Timor-Leste (–2005)	East Timor (Indonesia)			
Timor-Leste (2006–)	*After independence on May 20, 2002, Timor-Leste has not experienced conflict.			
Western Sahara	Sahrawi Arab Democratic Republic (Western Sahara) (Morocco)			
Yugoslavia	Bihaca Krajina (BiH)	Croat (BiH)	Serb (BiH)	
	Serb (Croatia)	Croatia (Yugoslavia)	*Slovenia (Yugoslavia)*	

Note 1: The conflict over Abyei in Sudan has turned into an interstate conflict over the Common Border with South Sudan after its independence.
Note 2: *Cross-out conflicts* did not host UN PKOs even though they occurred in the host locations.
Note 3: Non-gray colored conflicts (red is an example) received more than one mission, as indicated by cells of the same color.
Note 4: Gray color means that the missions are not used in the (at least main) analysis.
Note 5: Light gray color means that expenditures for the missions were reported along with expenditures for other missions over the entire period.

B2 Peacekeeping Variables

The unit of the main analysis is a conflict-month, but the budgetary period for UN PKOs is not necessarily one-year long, nor does it range from January to December calendar year, as shown in Section A2. Thus, the financial resources data, at the unit of mission-budgetary period, are converted into the data at conflict-month through the following three steps.

`Step 1: Budgetary period to day` To consider the different length of budgetary periods among missions and years, the size of expenditures (for each component of UN PKOs) are divided by the number of days of the budgetary period, and thus, the time unit is converted from a budgetary period to a day.

`Step 2: Day to month (daily average)` The daily expenditures are summed to produce the total expenditures spent on the mission for the month. The monthly expenditures are then divided by the length of the month to convert to daily average expenditures.[10]

`Step 3: Mission to conflict (adjusted by area of operations)` The daily average expenditures per month are divided by the logarithmic area of operations. The spatial unit is then converted from a mission to a conflict: the daily average expenditures are summed if a conflict hosts multiple missions.

Figure B1 shows the procedure to make conflict-month data of UN PKO expenditures from the mission-budgetary-period data, using an example of the UN

[10]The process assumes that the mission uses the same amount of financial resources on average for each day of the budgetary period.

Operation in Mozambique (ONUMOZ). The original dataset on financial resources records five budgetary periods for ONUMOZ. The expenditures spent for the budgetary periods are converted to the daily unit through `Step 1`, and then to the daily average per month through `Step 2`. The mission-month values and conflict-month values are same in this ONUMOZ example because Mozambique received the only one mission. ONUMOZ finished the operation on December 15, 1994, while the last budgetary period for ONUMOZ finished on March 31, 1995. Such expenditures for the liquidation period, after a mission completes its mandate, are also accounted for in the analysis, because it is not possible to separate expenditures into the operational phase and the liquidation phase.[11]

[11] On a smaller note, the redeployment of expenditures among different peacekeeping components is ignored in the analysis.

Figure B1: An example of converting data unit for expenditures (ONUMOZ)

C Robustness Checks and Additional Analyses

Section C explains the details about robustness checks and additional analyses. Regression tables are shown after the explanations.

C1 Other Time Unit of Analysis

Monthly data analyses hold two concerns in the estimation. The one problem concerns the right-skewed distribution and zero inflation of battle-related deaths and peacekeeping expenditures, which may result in a poor fit of linear regression models on these variables. The other problem concerns time-series invariance of peacekeeping variables and most of other control variables; these values do not change over months in a budgetary/calendar year.[12] The annual data reduce observations with zero deaths/peacekeeping expenditures and observations with the same values of the expenditures/control variables as in previous months, by aggregating the months into a year. Table C1 presents the regression results using the annual data, showing the similar results to the main analysis. For this robustness check, the number of battle-related deaths as dependent variables are summed by year, while binary control variables measured on a monthly basis are measured as their maximum values (i.e., 0 or 1). Peacekeeping expenditures are recalculated to measure the daily average per year, resulting in larger coefficients. Peacekeeping expenditures and *SPM* are lagged by one year similarly to the main analysis.

[12] In terms of autocorrelation of battle-related deaths, the annual data show a stronger correlation between t and $t-1$ values than in the monthly data, probably because, in the monthly data, battle-related deaths occur only from time to time even in war spells and increase and decrease steeply.

C2 Other Measures of UN Peacekeeping Size

In the main analysis, the size of peacekeeping components is measured by the size of expenditures divided by the logarithmic surface area size where the missions were deployed. To confirm that the results are not dependent on this measure, I use two other measures of peacekeeping variables (i.e., civilian, military, and police component size) for this robustness check, as followed.

- Main analysis: civilian expenditures / log(surface area size)
- Table C2: civilian peacekeepers / log(surface area size)
- Table C3: civilian expenditures

The number of peacekeepers in each component are sourced from the original dataset on UN peacekeeping personnel (see Section A3). Military peacekeepers include staff officers whereas civilian peacekeepers exclude the Organization of African Unity (OAU) observers and national officers, in order to measure the number of these types of peacekeepers in a consistent manner across time. Figure C1 shows the correlations between the different measures of civilian component size. The size of expenditures and the number of peacekeepers are clearly correlated when both are adjusted by logarithmic area size.

Tables C2 and C3 present the regression results using the number of peacekeepers and the unadjusted size of expenditures to measure the key explanatory variable, respectively. In Table C2, civilian peacekeepers significantly reduce the number of battle-related deaths not only on the government side, as indicated by the main analysis, but also in total. I also confirm that the effect of civilian peacekeepers on the

government battle-related deaths is statistically significant even if the expenditures are unadjusted by area size.

C3 Other Combinations of Control Variables

The peacekeeping variables are strongly correlated with each other: the correlation coefficients are 0.81 for civilian and military, 0.84 for civilian and police, and 0.55 for military and police, all statistically significant at the 0.1% level.[13] Because these strong correlations could lead to unstable parameter estimates, it might be difficult to properly assess the effect of civilians based on the models including all three types of peacekeeping expenditures.

Other control variables than non-civilian peacekeeping expenditures suffer from the issues of missing values and potential treatment bias. Three variables sourced from the World Bank Open Data, *Official Development Assistance*, *Army Size*, and *Gross Domestic Product*, in logarithmic forms, have 5–16% of missing values in the entire dataset, and 6–14% of missing values in the cases with some UN PKO expenditures.[14] These missing values unnecessarily restrict the sample but may determine the main analysis results. Moreover, five control variables have been considered as peacekeeping outcomes in the literature and may cause post-treatment bias on the estimates of the main analysis: *Peace Agreement* (Elliott et al., 2021; Greig and Diehl, 2005; Kathman and Benson, 2019); *Government/Rebel One-sided*

[13] In the cases where there were some peacekeeping expenditures, the correlation coefficients become smaller: 0.67 for civilian and military, 0.75 for civilian and police, and 0.30 for military and police.

[14] Because *Official Development Assistance* is measured in net terms, it can take negative values, resulting in missing values when log-transformed (about 15% among the missing values in the entire dataset are due to the negative values).

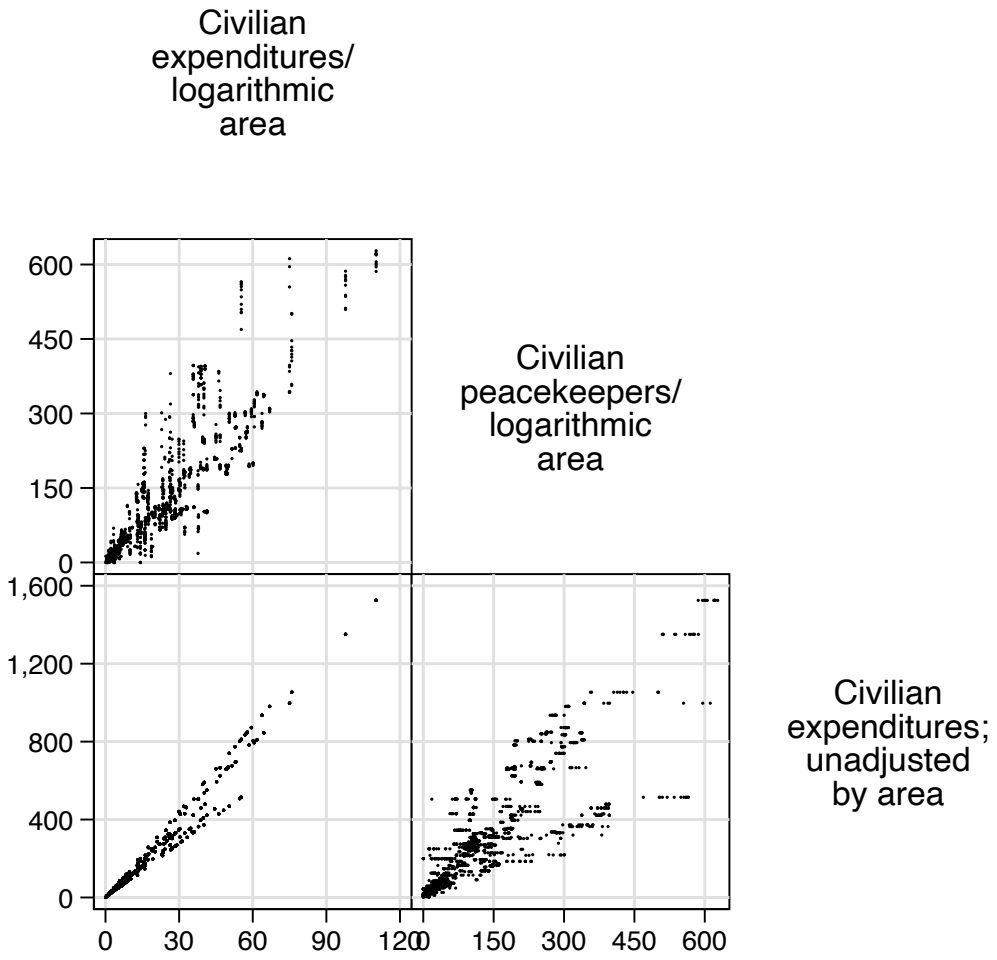

Figure C1: Correlations between different measures of civilian component size

Violence (Carnegie and Mikulaschek, 2020; Hultman et al., 2013; Fjelde et al., 2019); *Gross Domestic Product* (Beber et al., 2019; Bove and Elia, 2018; Di Salvatore and Ruggeri, 2020); and *Democracy* (Fortna and Huang, 2012; Joshi, 2013; Steinert and Grimm, 2015).

Table C4 presents the results of the regressions without military and police expenditures. Tables C5 and C6 present results of the regressions excluding control variables with a number of missing values and potential mediator variables, respectively. The effect of civilian expenditures on reducing battle-related deaths are mostly supported, regardless of the type of the dependent variables.

C4 Other Estimation Strategies

I employ two types of non-linear regressions to address the concern with the right-skewed distributions, with many zeros, of the dependent variables: First, I employ conditional logistic regressions on the binary dependent variables indicating the presence/absence of more than one battle-related deaths, with the results shown in Table C7. Second, I employ zero-inflated negative binomial (ZINB) regressions on the number of battle-related deaths; Table C8 shows the results of the two estimation parts, that is, logistic regressions of the zero-inflation part and negative binomial regressions of the count part. In the context of this analysis, the first part sorts zeros into two types: zero deaths (when nonzero deaths can happen) and zero battles (when deaths cannot happen due to battles), and estimates the latter zero occurrence as inflated zeros. This is the reason why a positive coefficient in this part indicates that civilian expenditures, for example, reduce (i.e., increase zero) intrastate conflict

battles. These two regression models do not consider year-month-specific effects nor time-varying conflict fixed effects; ZINB models do not consider also conflict-specific fixed effects. The results do not show any significant effect of civilian expenditures, other than in Model C8-3.

C5 Other Sample Selections in terms of PKO Expenditures

First, I limit the sample to the only cases with nonzero expenditures for at least one component among the military, police, and civilian. The size of peacekeeping expenditures is constantly zero in the cases where the UN did not deploy PKOs; thus, it may not be possible to compare the non-PKO cases with the PKO cases in terms of the mission size (i.e., the PKO and non-PKO cases may be only comparable in terms of the mission presence). As summarized in the main text, Table C9 shows that civilian expenditures do not have statistically significant effect in any models on the sample including only PKO cases.

Second, I employ a series of regressions on the government battle-related deaths using the sample leaving each host conflict, with some UN PKO expenditures, out of the sample, in order to check whether a specific case(s) strongly influences on the main results about the civilian effect.[15] Figure C2 shows the point estimates and 95% confidence intervals of the coefficients for *Civilian Expenditures* estimated in the series of regressions. The names of the conflicts excluded in each regression are listed on the horizontal axis, in an order corresponding to the size of point estimates. While most of the conflicts do not change the main results, only the conflicts in the

[15]The entire period from the month when the first battle-related death occurred over the conflict is excluded.

Democratic Republic of the Congo (DRC) and Sudan have a significant impact on the results. Figure C3 shows the monthly trends of government battle-related deaths and UN PKO expenditures in the two conflicts. It is clear that these conflicts have the similar pattern of deaths and expenditures: deaths become less likely to occur after the expenditures were spent. However, this pattern may be due to the UN's choice of mission deployment timing.

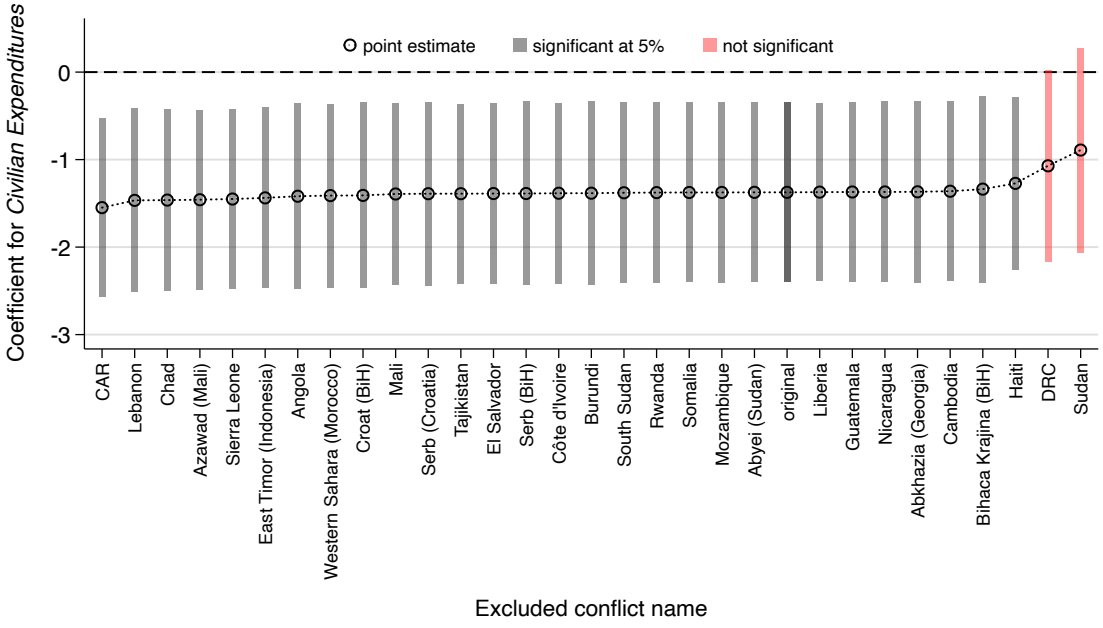

Figure C2: FE OLS on the government battle-related deaths using limited samples without each conflict receiving UN PKO expenditures

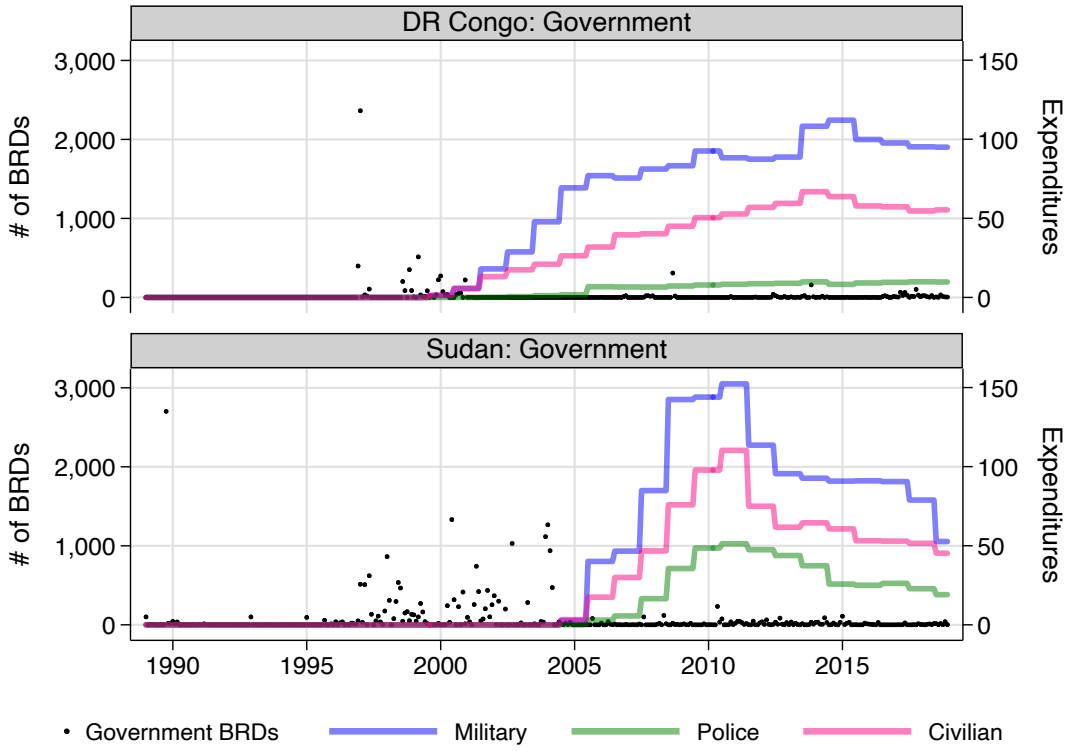

Figure C3: Government battle-related deaths and UN PKO expenditures in DRC and Sudan conflicts

C6 Other Sample Selections in terms of Peace/War Month Duration

The main analysis sample contains not only war spells but also peace spells, that is, all the months after the first fatality in a conflict. This research design addresses the sample selection based on the dependent variable, and thus, the sample includes all the cases where the UN missions were present, unlike the previous literature. However, this design might lead to a stronger correlation between unobservable peace expectation and the size of civilian expenditures, because the current sample includes many months of long-lasting peace. In those peace months, unobservable peace expectation is supposed to be negatively correlated with the likelihood of battle-related deaths but positively correlated with the civilian expenditure size, assuming that civilian peacekeepers are likely to work in safe time and location. Consequently, the main analysis may face omitted variables bias, which is extraordinarily generated due to this sample specification.

I employ a series of sensitivity analysis regressions to test the effect of civilian expenditures on the government battle-related deaths. A sample is defined by two rules. First, PKO cases with some expenditures are all included. Second, I exclude the non-PKO cases if the month follows a certain length of consecutive peace months, where a peace month is defined as a month in which the number of battle-related deaths on the government side is 1 or 0.[16] This robustness check is conducted by changing the threshold for the length of consecutive peace months from 0 to 360; for

[16]Because UCDP defines that an intrastate war inflicted at least 25 battle-related deaths in a calendar year (Pettersson, 2019), a war should have less than [(25 ÷ 12 months) ÷ 2 sides =] 1.04 battle-related deaths on each side per month.

example, if the threshold is set at 12, a conflict-month is excluded from the sample if it follows at least 12 consecutive peace months.[17]

Figure C4 shows point estimates and 95% confidence intervals of the coefficients for *Civilian Expenditures* on government battle-related deaths, focusing on the results using the threshold from 0 to 24 consecutive peace months. When the threshold is set as smaller than 13 (i.e., when the months subsequent to more than one year of consecutive peace are excluded), the coefficients are no longer statistically significant. Similarly, Figure C5 shows the results of sensitivity analysis regressions using the threshold for consecutive war months. When the months in the very midst of wars or the months of long-lasting wars (after more than two months of war spells) are excluded from the sample, the coefficient for *Civilian Expenditures* becomes statistically insignificant. These results indicate that civilian expenditures have a statistically significant effect especially in the sample with prolonged duration of peace and war.

C7 Local Ownership Effect of the Civilian Component

Table C10 presents the results of fixed effects OLS regressions using the expenditures for civilian subcategories (international staff, local staff, and UN volunteers) instead. Note that, in these models, other subcategories such as general temporary assistance, government-provided personnel, civilian electoral observers, international contractual personnel, and consultants, are not covered in any variables. The number of

[17] When the threshold is set to 0, the sample includes only war months regarding the cases without UN PKO expenditures. When the threshold is set to 360, the sample is same as the original sample because the dataset spans 360 months from January 1989 to December 2018.

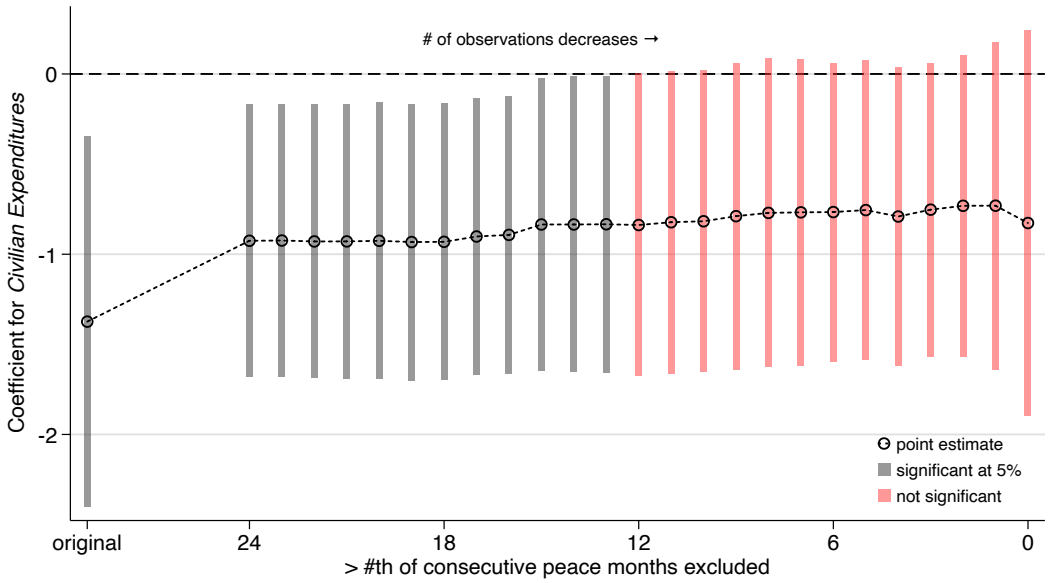

Figure C4: FE OLS on the government battle-related deaths using selected samples by consecutive peace months

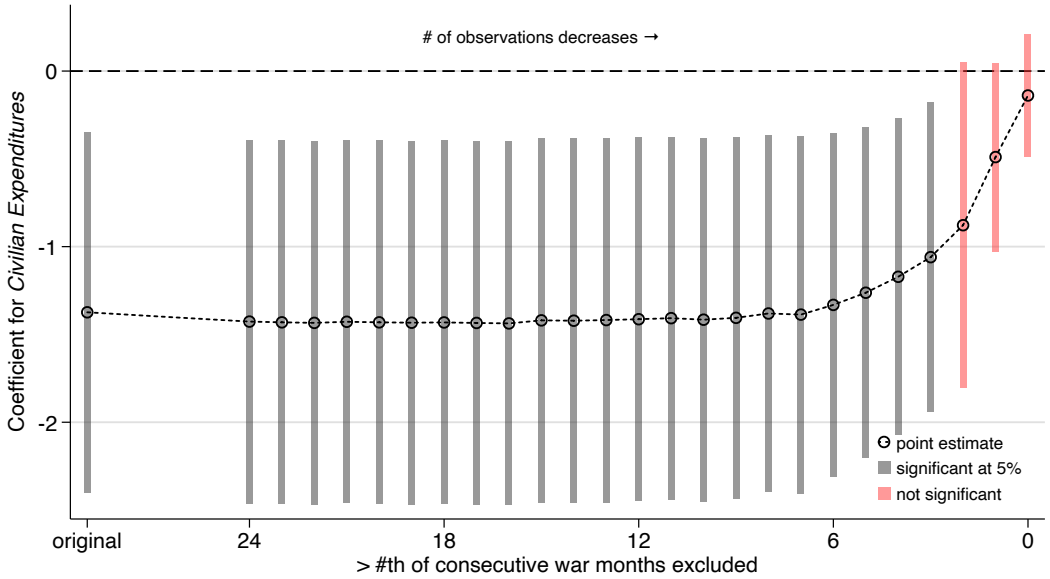

Figure C5: FE OLS on the government battle-related deaths using selected samples by consecutive war months

observations used for these estimations are slightly smaller than that for the main analysis because of data availability. Model C10-2 shows that the coefficient for *Local Civilian Expenditures* is negative and statistically significant at the 5% level, suggesting that local ownership may contribute to the reduction of battle-related deaths inflicted by the rebels.

C8 Interaction Effect of Civilian and Military Components

Table C11 presents the results of fixed effects of OLS regressions using an interaction term between military and civilian expenditures for UN PKOs. In the three models, the interaction term is not significantly different from zero, while *Civilian Expenditures* is negative and statistically significant in Model C11-2, as with in the main analysis. In addition, focusing on Model C11-2 on the government battle-related deaths, the linear combination of coefficients for *Military Expenditures* and the interaction term is positive, and the marginal effect of *Military Expenditures* is also consistently positive as shown in Figure C6. In contrast, the marginal effect of *Civilian Expenditures* is consistently negative along the size of military expenditures.

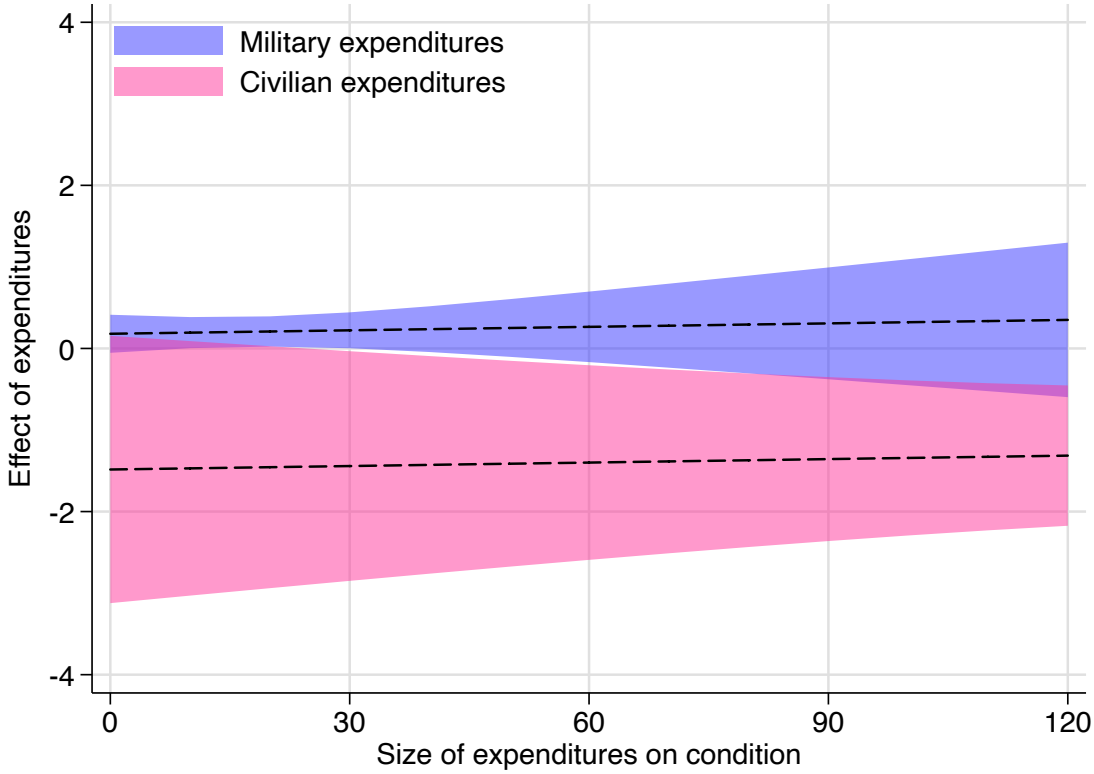

Figure C6: Marginal effects of military and civilian expenditures conditioned on each other component of expenditures

Note: The horizontal axis indicates the size of peacekeeping expenditures, measured in thousand USD, on a daily average, per logarithmic squared kilometer.

Table C1: FE OLS using annual data

	Model C1-1 Total	Model C1-2 Government	Model C1-3 Rebel
Civilian Expenditures$_{t-1}$	-14.847	-17.883**	-0.744
	(13.331)	(6.542)	(4.041)
Military Expenditures$_{t-1}$	0.550	1.778*	-0.525
	(2.544)	(0.866)	(0.820)
Police Expenditures$_{t-1}$	9.145	5.349	-2.122
	(17.631)	(6.071)	(5.033)
Peace Agreement	-216.940	0.586	-6.094
	(210.247)	(49.233)	(71.606)
Government OSV	138.125^{+}	66.945	32.949
	(70.376)	(46.974)	(29.096)
Rebel OSV	381.444***	52.548***	174.756***
	(92.901)	(15.152)	(43.876)
Non-State Violence	632.236**	133.931***	395.491**
	(202.720)	(38.775)	(120.626)
log(ODA)	-48.111^{+}	-11.648	-29.981*
	(25.367)	(11.922)	(12.998)
log(Army Size)	-52.051	44.537	-72.928
	(117.828)	(69.224)	(48.018)
log(GDP)	-31.875	75.715	-55.122
	(136.834)	(119.083)	(34.477)
log(Population)	605.119	-222.017	783.071
	(1440.787)	(425.836)	(723.207)
Democracy	-306.707	-86.477	-159.457^{+}
	(208.246)	(69.803)	(91.069)
SPM$_{t-1}$	-137.263	-36.712	-48.035
	(138.890)	(33.105)	(70.909)
Regional PKO	-340.067	30.752	-394.093
	(413.180)	(61.179)	(280.599)
State PKO	-337.341	23.200	-334.995
	(238.150)	(74.905)	(209.218)
Conflict FEs	YES	YES	YES
Year FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	3,585	3,585	3,585
R-squared (within)	0.509	0.540	0.552

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C2: FE OLS using the number of peacekeepers

	Model C2-1 Total	Model C2-2 Government	Model C2-3 Rebel
Civilian Peacekeepers$_{t-1}$	-0.203^{+}	-0.167**	0.019
	(0.121)	(0.060)	(0.039)
Military Peacekeepers$_{t-1}$	0.019	0.013*	-0.003
	(0.014)	(0.007)	(0.005)
Police Peacekeepers$_{t-1}$	-0.010	-0.048	-0.055
	(0.086)	(0.065)	(0.045)
Peace Agreement	-28.065*	-4.622	-6.193
	(11.876)	(3.146)	(5.304)
Government OSV	21.350*	14.144	1.503
	(10.378)	(9.624)	(1.136)
Rebel OSV	61.455***	9.463***	30.831***
	(15.149)	(2.415)	(7.991)
Non-State Violence	54.410**	15.843*	24.304*
	(16.365)	(6.454)	(9.981)
log(ODA)	-3.264	-0.152	-2.320^{+}
	(2.379)	(1.109)	(1.323)
log(Army Size)	-1.435	6.552	-4.433
	(11.164)	(7.751)	(4.231)
log(GDP)	4.419	13.086	-6.978*
	(16.324)	(14.979)	(2.978)
log(Population)	31.115	-22.839	61.231
	(112.331)	(33.023)	(60.190)
Democracy	-21.500	-10.494	-10.873
	(17.854)	(6.838)	(8.310)
SPM$_{t-1}$	-3.256	0.299	-4.091
	(10.912)	(3.962)	(6.423)
Regional PKO	-28.972	6.450	-33.252
	(34.886)	(5.203)	(23.589)
State PKO	-20.188	5.515	-25.034
	(18.153)	(8.559)	(16.089)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	43,785	43,785	43,785
R-squared (within)	0.125	0.068	0.258

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C3: FE OLS using PKO expenditures unadjusted by area

	Model C3-1 Total	Model C3-2 Government	Model C3-3 Rebel
Civilian Expenditures$_{t-1}$ (unadjusted by area)	-0.100	-0.109**	0.002
	(0.087)	(0.035)	(0.024)
Military Expenditures$_{t-1}$ (unadjusted by area)	0.015	0.017*	-0.002
	(0.019)	(0.007)	(0.006)
Police Expenditures$_{t-1}$ (unadjusted by area)	0.041	0.027	-0.032
	(0.119)	(0.043)	(0.036)
Peace Agreement	-37.526*	-4.724	-8.536
	(16.272)	(3.544)	(5.699)
Government OSV	21.327*	14.095	1.437
	(10.313)	(9.582)	(1.126)
Rebel OSV	57.720***	9.176***	30.012***
	(14.787)	(2.224)	(7.815)
Non-State Violence	50.655**	13.528*	22.874*
	(15.543)	(5.745)	(9.767)
log(ODA)	-3.673	-0.227	-2.453^{+}
	(2.409)	(1.150)	(1.313)
log(Army Size)	-1.483	5.773	-4.246
	(10.667)	(7.328)	(3.950)
log(GDP)	3.685	13.025	-5.919*
	(15.735)	(14.419)	(2.843)
log(Population)	51.107	-17.589	71.038
	(113.123)	(33.562)	(58.677)
Democracy	-16.837	-8.686	-10.602
	(18.238)	(6.560)	(8.459)
SPM$_{t-1}$	-3.874	1.577	-4.063
	(11.460)	(4.249)	(5.906)
Regional PKO	-28.471	4.529	-30.601
	(32.382)	(4.686)	(21.998)
State PKO	-21.446	2.855	-24.228
	(17.259)	(6.679)	(15.615)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	44,441	44,441	44,441
R-squared (within)	0.122	0.068	0.256

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C4: FE OLS without military and police expenditures

	ModelC4-1 Total	Model C4-2 Government	Model C4-3 Rebel
Civilian Expenditures$_{t-1}$	-0.643**	-0.757*	-0.201
	(0.245)	(0.346)	(0.122)
Peace Agreement	-37.714*	-4.859	-8.438
	(16.125)	(3.481)	(5.730)
Government OSV	21.379*	14.169	1.450
	(10.331)	(9.597)	(1.128)
Rebel OSV	57.748***	9.168***	29.965***
	(14.810)	(2.283)	(7.812)
Non-State Violence	50.672**	13.559*	22.905*
	(15.526)	(5.718)	(9.773)
log(ODA)	-3.745	-0.321	-2.460^{+}
	(2.404)	(1.143)	(1.311)
log(Army Size)	-1.607	5.623	-4.272
	(10.638)	(7.314)	(3.962)
log(GDP)	2.774	11.902	-5.883*
	(15.376)	(14.106)	(2.767)
log(Population)	48.129	-20.480	71.322
	(114.865)	(34.303)	(58.940)
Democracy	-19.201	-11.781	-10.541
	(18.727)	(7.371)	(8.107)
SPM$_{t-1}$	-4.258	1.164	-3.981
	(11.269)	(4.315)	(5.799)
Regional PKO	-28.708	4.407	-30.371
	(32.143)	(4.670)	(21.837)
State PKO	-20.842	3.582	-24.262
	(17.319)	(6.921)	(15.617)
War FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
War FEs * t	YES	YES	YES
N	44,441	44,441	44,441
R-squared (within)	0.122	0.068	0.256

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C5: FE OLS excluding control variables with many missing values

	Model C5-1 Total	Model C5-2 Government	Model C5-3 Rebel
Civilian Expenditures$_{t-1}$	-1.690*	-1.136*	-0.323
	(0.796)	(0.445)	(0.296)
Military Expenditures$_{t-1}$	0.148	0.094^{+}	0.054
	(0.134)	(0.052)	(0.053)
Police Expenditures$_{t-1}$	0.540	0.452	-0.178
	(1.082)	(0.404)	(0.354)
Peace Agreement	-25.146^{+}	-3.090	-12.279*
	(13.331)	(3.825)	(6.110)
Government OSV	21.756*	11.245	1.880
	(8.708)	(7.647)	(1.373)
Rebel OSV	50.655***	5.901^{+}	25.982***
	(13.480)	(3.376)	(6.764)
Non-State Violence	36.507*	8.297^{+}	23.833*
	(14.821)	(4.579)	(11.932)
log(Population)	-0.260	0.229	-9.722
	(26.784)	(13.074)	(12.400)
Democracy	-19.800	-8.400	-8.278
	(16.200)	(5.354)	(7.268)
SPM$_{t-1}$	-24.255	-4.365	-7.984
	(20.720)	(4.261)	(7.597)
Regional PKO	-5.137	5.232^{+}	-16.708
	(15.790)	(2.721)	(11.637)
State PKO	-72.715	-6.040	-50.176
	(59.623)	(8.282)	(39.287)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	56,056	56,056	56,056
R-squared (within)	0.106	0.064	0.254

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C6: FE OLS excluding potential mediator variables

	Model C6-1 Total	Model C6-2 Government	Model C6-3 Rebel
Civilian Expenditures$_{t-1}$	-2.404^{+}	-1.464**	-0.637
	(1.219)	(0.494)	(0.430)
Military Expenditures$_{t-1}$	0.277	0.172**	0.061
	(0.184)	(0.059)	(0.073)
Police Expenditures$_{t-1}$	1.023	0.372	0.037
	(1.588)	(0.610)	(0.520)
Non-State Violence	50.878***	10.838*	28.079**
	(13.901)	(4.994)	(9.400)
log(ODA)	-5.572*	-0.701	-2.941*
	(2.707)	(0.837)	(1.246)
log(Army Size)	9.188	6.937	1.474
	(10.538)	(6.001)	(3.025)
log(Population)	-17.939	-1.638	-80.984
	(159.782)	(37.128)	(150.157)
SPM$_{t-1}$	-20.866	-5.013	-8.041
	(17.623)	(3.758)	(6.577)
Regional PKO	-6.789	6.891	-15.592
	(25.963)	(4.941)	(17.058)
State PKO	-56.922	-4.805	-40.516
	(47.029)	(6.824)	(31.077)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	46,914	46,914	46,914
R-squared (within)	0.087	0.063	0.204

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C7: Conditional logistic regression on death occurrence

	Model C7-1 Total	Model C7-2 Government	Model C7-3 Rebel
Civilian Expenditures$_{t-1}$	-0.00909	-0.00771	0.0116
	(0.037)	(0.026)	(0.030)
Military Expenditures$_{t-1}$	0.0194*	0.0169*	0.0104
	(0.009)	(0.007)	(0.009)
Police Expenditures$_{t-1}$	0.00949	0.0109	0.00580
	(0.050)	(0.036)	(0.040)
Peace Agreement	-1.493***	-1.437***	-1.381***
	(0.316)	(0.312)	(0.311)
Government OSV	0.537***	0.491***	0.443**
	(0.156)	(0.142)	(0.162)
Rebel OSV	2.548***	2.047***	2.129***
	(0.193)	(0.191)	(0.180)
Non-State Violence	0.603	0.476	0.642*
	(0.408)	(0.299)	(0.326)
log(ODA)	-0.108	-0.0612	-0.125
	(0.136)	(0.129)	(0.123)
log(Army Size)	0.130	-0.107	0.169
	(0.265)	(0.256)	(0.253)
log(GDP)	-0.316	-0.382	-0.396^{+}
	(0.227)	(0.232)	(0.229)
log(Population)	1.914^{+}	2.553*	3.071**
	(1.030)	(1.095)	(1.046)
Democracy	-0.969	-0.572	-1.454
	(1.121)	(1.018)	(1.081)
SPM$_{t-1}$	-0.0826	0.00234	0.0390
	(0.570)	(0.485)	(0.489)
Regional PKO	1.080***	0.744*	0.791***
	(0.259)	(0.308)	(0.187)
State PKO	0.343	0.259	0.353
	(0.432)	(0.360)	(0.487)
Conflict FEs	YES	YES	YES
Year-month FEs	NO	NO	NO
Conflict FEs * t	NO	NO	NO
N	31,686	29,205	30,097
Pseudo R-squared	0.154	0.129	0.134

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C8: ZINB regression on the number of battle-related deaths

	Model C8-1		Model C8-2		Model C8-3	
	Total		Government		Rebel	
Civilian Expenditures$_{t-1}$	0.013	0.013	-0.006	-0.014	0.021	0.034**
	(0.012)	(0.018)	(0.020)	(0.013)	(0.018)	(0.013)
Military Expenditures$_{t-1}$	-0.008^{+}	-0.014^{+}	-0.007	-0.004	-0.012^{+}	-0.007^{+}
	(0.004)	(0.008)	(0.006)	(0.004)	(0.006)	(0.004)
Police Expenditures$_{t-1}$	0.018	-0.035	-0.017	0.034^{+}	-0.042	-0.037*
	(0.016)	(0.040)	(0.041)	(0.018)	(0.035)	(0.017)
Peace Agreement	-0.805***	-0.575^{+}	-0.527	-0.636*	-0.730*	-0.684**
	(0.228)	(0.324)	(0.354)	(0.306)	(0.349)	(0.260)
Government OSV	0.374	-0.419^{+}	-0.342^{+}	0.679*	-0.450^{+}	-0.261^{+}
	(0.230)	(0.215)	(0.195)	(0.270)	(0.260)	(0.146)
Rebel OSV	1.073***	-26.300***	-21.855***	0.454**	-5.188***	1.175***
	(0.163)	(0.659)	(1.943)	(0.168)	(0.878)	(0.167)
Non-State Violence	0.868***	-2.695*	-2.410*	0.771***	-2.336*	0.865***
	(0.192)	(1.083)	(1.072)	(0.234)	(1.120)	(0.165)
log(ODA)	0.035	-0.072	-0.035	0.055	-0.060	0.069
	(0.098)	(0.109)	(0.114)	(0.106)	(0.118)	(0.106)
log(Army Size)	0.317*	-0.447***	-0.345*	0.519***	-0.463**	0.170
	(0.144)	(0.130)	(0.137)	(0.152)	(0.147)	(0.149)
log(GDP)	-0.224^{+}	0.044	-0.012	-0.362*	-0.076	-0.116
	(0.121)	(0.108)	(0.121)	(0.150)	(0.119)	(0.104)
log(Population)	-0.264	0.052	0.108	-0.051	0.090	-0.488^{+}
	(0.202)	(0.189)	(0.190)	(0.185)	(0.213)	(0.257)
Democracy	-1.770	-1.020	-1.232^{+}	-3.045*	-0.625	1.160
	(1.173)	(0.660)	(0.662)	(1.333)	(0.706)	(1.354)
SPM$_{t-1}$	0.546	-0.072	-0.092	0.374	-0.274	0.866*
	(0.477)	(0.658)	(0.695)	(0.563)	(0.708)	(0.401)
Regional PKO	0.322	-0.314	-0.465	0.209	-0.366	-0.056
	(0.305)	(0.432)	(0.473)	(0.288)	(0.418)	(0.285)
State PKO	0.464*	-1.431**	-1.287*	0.407	-1.243*	0.450*
	(0.219)	(0.484)	(0.529)	(0.305)	(0.567)	(0.196)
Constant	10.013***	7.160***	5.906**	6.326*	9.547***	10.544***
	(2.296)	(1.991)	(2.273)	(3.074)	(2.271)	(2.658)
Conflict FEs	NO		NO		NO	
Year-month FEs	NO		NO		NO	
Conflict FEs * t	NO		NO		NO	
N	44,441		44,441		44,441	
Log pseudo likelihood	-53,081.241		-35,579.307		-39,305.755	

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C9: FE OLS using only cases with PKO expenditures

	Model C9-1 Total	Model C9-2 Government	Model C9-3 Rebel
Civilian Expenditures$_{t-1}$	1.894	0.115	0.493^{+}
	(1.170)	(0.283)	(0.282)
Military Expenditures$_{t-1}$	-0.481^{+}	-0.007	-0.122
	(0.265)	(0.090)	(0.078)
Police Expenditures$_{t-1}$	-1.012	0.224	-0.308
	(1.611)	(0.274)	(0.358)
Peace Agreement	-186.076**	-27.391*	-37.807**
	(65.383)	(12.467)	(12.382)
Government OSV	50.240**	17.292*	13.364*
	(16.242)	(7.689)	(5.211)
Rebel OSV	21.611	7.080*	10.734
	(30.755)	(3.387)	(6.527)
Non-State Violence	25.483	-1.304	-0.357
	(14.995)	(3.826)	(4.003)
log(ODA)	-9.644	-3.954	-2.793^{+}
	(6.719)	(2.370)	(1.412)
log(Army Size)	3.772	1.903	1.121
	(9.697)	(2.986)	(2.186)
log(GDP)	-131.411*	-3.980	-9.499^{+}
	(56.992)	(6.980)	(5.238)
log(Population)	270.595	67.885	71.617
	(241.787)	(58.532)	(47.494)
Democracy	-21.043	-1.572	-13.384
	(46.165)	(10.131)	(8.452)
SPM$_{t-1}$	-5.279	2.849	2.065
	(22.730)	(5.219)	(5.006)
Regional PKO	-23.973	-1.181	-5.948^{+}
	(14.597)	(3.945)	(3.413)
State PKO	-1.015	4.055	0.766
	(16.486)	(2.972)	(3.799)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	2,846	2,846	2,846
R-squared (within)	0.275	0.192	0.326

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C10: FE OLS using civilian subcategories

	Model C10-1 Total	Model C10-2 Government	Model C10-3 Rebel
International Civilian Expenditures$_{t-1}$	-1.000	-1.745	-0.412
	(1.893)	(1.475)	(0.721)
Local Civilian Expenditures$_{t-1}$	-1.179	-1.882*	-0.471
	(1.773)	(0.926)	(1.165)
UN Volunteers Expenditures$_{t-1}$	-2.151	5.213	6.153
	(11.201)	(10.023)	(4.728)
Military Expenditures$_{t-1}$	0.074	0.109^{+}	-0.016
	(0.141)	(0.061)	(0.053)
Police Expenditures$_{t-1}$	0.420	0.091	-0.680
	(1.434)	(0.702)	(0.489)
Peace Agreement	-34.606*	-3.291	-8.389
	(17.011)	(3.326)	(5.921)
Government OSV	20.841*	14.008	1.111
	(10.356)	(9.667)	(1.059)
Rebel OSV	57.586***	8.791***	30.578***
	(15.108)	(2.257)	(7.961)
Non-State Violence	51.875**	13.826*	23.679*
	(15.903)	(5.852)	(9.743)
log(ODA)	-3.241	-0.156	-2.406^{+}
	(2.388)	(1.169)	(1.307)
log(Army Size)	0.338	6.193	-3.739
	(10.739)	(7.632)	(3.856)
log(GDP)	3.667	13.769	-5.981*
	(16.354)	(14.893)	(2.812)
log(Population)	83.715	-9.781	85.069
	(109.767)	(31.960)	(59.648)
Democracy	-14.643	-7.518	-11.339
	(18.640)	(6.387)	(8.728)
SPM$_{t-1}$	-2.180	1.661	-1.548
	(11.168)	(4.426)	(5.564)
Regional PKO	-34.629	1.217	-34.420
	(34.552)	(4.701)	(23.788)
State PKO	-21.752	2.871	-24.720
	(17.446)	(6.496)	(15.825)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	43,943	43,943	43,943
R-squared (within)	0.122	0.068	0.258

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table C11: FE OLS using an interaction term of civilian and military expenditures

	Model C11-1 Total	Model C11-2 Government	Model C11-3 Rebel
Civilian Expenditures$_{t-1}$	-1.723	-1.484^{+}	-0.181
	(1.400)	(0.836)	(0.427)
Military Expenditures$_{t-1}$	0.045	0.180	-0.063
	(0.203)	(0.119)	(0.061)
Civilian$_{t-1}$ * Military$_{t-1}$	0.006	0.001	0.002
	(0.005)	(0.005)	(0.002)
Police Expenditures$_{t-1}$	0.432	0.393	-0.308
	(1.406)	(0.570)	(0.445)
Peace Agreement	-36.601*	-4.626	-8.204
	(16.113)	(3.246)	(5.557)
Government OSV	21.313*	14.116	1.430
	(10.317)	(9.589)	(1.125)
Rebel OSV	57.685***	9.181***	29.981***
	(14.804)	(2.260)	(7.816)
Non-State Violence	50.891**	13.639*	22.941*
	(15.544)	(5.768)	(9.758)
log(ODA)	-3.643	-0.256	-2.435^{+}
	(2.392)	(1.130)	(1.317)
log(Army Size)	-1.596	5.663	-4.285
	(10.665)	(7.344)	(3.953)
log(GDP)	3.484	12.922	-5.982*
	(15.763)	(14.451)	(2.836)
log(Population)	37.174	-22.111	67.149
	(116.622)	(33.405)	(60.336)
Democracy	-15.177	-8.171	-10.161
	(18.625)	(6.860)	(8.617)
SPM$_{t-1}$	-5.201	1.247	-4.445
	(11.362)	(4.701)	(5.809)
Regional PKO	-27.771	4.763	-30.331
	(32.589)	(4.738)	(22.131)
State PKO	-20.882	3.131	-24.082
	(17.342)	(6.872)	(15.649)
Conflict FEs	YES	YES	YES
Year-month FEs	YES	YES	YES
Conflict FEs * t	YES	YES	YES
N	44,441	44,441	44,441
R-squared (within)	0.122	0.068	0.256

Robust standard errors clustered at conflict in parentheses.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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