Supplemental Appendix for “Beyond Keeping Peace: United Nations Effectiveness in the Midst of Fighting”

In the following pages, we report additional information for readers interested in more description of the data and robustness checks reported in the article.

First, Table S1 is a descriptive case table that includes information on the conflict states to which the UN PKOs were deployed, the timeframe of each conflict, and the rebel groups that were active participants in the conflict in the years under consideration.

Table S1

Civil Conflicts and Peacekeeping Operations in Africa, Post-Cold War

|  |  |  |  |
| --- | --- | --- | --- |
| **Civil Conflict** | **Years** | **Rebel Groups** | **UN Mission** |
| Algeria | 1991-2011 | Takfir wa’l Hijra, AIS, GIA, AQIM | None |
| Angola | 1989-2002 | UNITA | UNAVEM (1990-1997), MONUA (1997-2000), UNOA (2000), UNMA (2002-2003) |
| Angola | 1991, 1994, 1996-1998, 2002, 2004, 2007, 2009 | FLEC-R, FLEC-FAC | UNAVEM (1990-1997), MONUA (1997-2000), UNOA (2000), UNMA (2002-2003) |
| Burundi | 1991-1992, 1994-2006, 2008 | Palipehutu, Palipehutu-FNL, CNDD, CNDD-FDD, Frolina | ONUB (2004-2006), BINUB (2007-2011) |
| Central African Republic | 2001-2002, 2006, 2009-2011 | Forces of Andre Kolingba, Forces of Francois Bozize, UFDR, CPJP | MINURCA (1998-2000), BONUCA (2000), MINURCAT (2007-2010) |
| Chad | 1989-1994, 1997-2002, 2005-2010 | MDD, Revolutionary Forces of 1 April, MOSANAT, Islamic Legion, MPS, Forces of Maldoum Bada Abbas, CSNPD, CNR, FNT, FARF, MDJT, FUCD, RAFD, UFDD, AN, UFR, PFNR | MINURCAT (2007-2010) |
| Comoros | 1989 | Presidential Guard | None |
| Comoros | 1997 | MPA/ Republic of Anjouan | None |
| Congo | 1993, 1997-1999, 2002 | Ninjas, Cocoyes, Cobras, Ntsiloulous, | None |
| Djibouti | 1991-1994, 1999 | FRUD, FRUD-AD | None |
| DR Congo (Zaire) | 1996-2001, 2006-2008 | AFDL, RCD, MLC, CNDP | MONUC (1999-2011) |
| DR Congo (Zaire) | 2007-2008 | BDK |  |
| Eritrea | 1997, 1999, 2003 | EIJM-AS | None |
| Ethiopia | 1989-1991 | EPRDF, Forces of Amsha Desta and Merid Neguise | None |
| Ethiopia | 1989-1991 | EPLF | None |
| Ethiopia | 1993-1994, 1996, 1998-2011 | AIAI, ONLF | None |
| Ethiopia | 1996 | ARDUF | None |
| Ethiopia | 1989-1992, 1994-1995, 1998-2011 | OLF | None |
| Ethiopia | 1991 | IGLF | None |
| Guinea | 2000-2001 | RFDG | None |
| Guinea-Bissau | 1998-1999 | Military Junta for Consolidation of Democracy, Peace, Justice | None |
| Ivory Coast | 2002-2004, 2011 | FDSI-CI, MPCI, MPIGO, MJP, FRCI | MINUCI (2003-2004), UNOCI (2004-2011) |
| Lesotho | 1998 | Military faction | None |
| Liberia | 1989-1990, 2000-2003 | NPFL, INPFL, LURD, MODEL | UNOMIL (1993-1997), UNMIL (2003-2011) |
| Libya | 2011 | NTC, Forces of Muammar Gaddafi | None |
| Mali | 1990, 1994, 2007-2009 | MPA, FIAA, ATNMC | None |
| Mauritania | 2010-2011 | AQIM | None |
| Morocco | 1989 | POLISARIO | MINURSO (1991-2012) |
| Mozambique | 1989-1992 | Renamo | ONUMOZ (1993-1994) |
| Niger | 1994 | CRA | None |
| Niger | 1995 | FDR | None |
| Niger | 1991-1992, 1997, 2007-2008 | FLAA, UFRA, MNJ | None |
| Nigeria | 2009, 2011 | Jama’atu Ahlis Sunna Lidda’awati wal-Jihad | None |
| Nigeria | 2004 | Ahlul Sunnah Jamaa | None |
| Nigeria | 2004 | NDPVF | None |
| Rwanda | 1990-1994, 1996-2002, 2009-2011 | FPR, ALiR, FDLR | UNOMUR (1993), UNAMIR (1993-1996) |
| Senegal | 1990, 1992-1993, 1995, 1997-1998, 2000-2001, 2003, 2011 | MFDC | None |
| Sierra Leone | 1991-2001 | RUF, AFRC, Kamajors, WSB | UNOMSIL (1998-1999), UNAMSIL (1999-2005) |
| Somalia | 1989-1996, 2001-2002, 2006-2011 | SNM, SPM, USC/SSA, USC/SNA, SRRC, ARS/UIC, Al-Shabaab, Harakat Ras Kamboni, Hizbul-Islam | UNOSOM (1992-1994), UNOSOM II (1994-1995) |
| South Sudan | 2011 | SSDM/A, SSLM/A | UNMISS (2011) |
| Sudan | 1989-2011 | JEM, SLM/A, NRF, SLM/A-MM, SLM/A-Unity | UNAMID (2007-2012) |
| Sudan | 1989-2011 | SPLM/A, NDA, SSDM/A, SPLM/A-North, SSLM/A | UNMIS (2005-2011) |
| Sudan | 2011 | Republic of South Sudan | UNISFA (2011) |
| Uganda | 1989-1992, 1994-1999, 2000-2011 | LRA, UPA, ADF, WNBF, UNRF II | No |

\**Note*: All post–Cold War African conflicts are included in the table. UN mission dates correspond with data used in the analyses, where 1992–2011 are years with observations of UN personnel. Conflict-years listed are those with active fighting. All UN missions listed include at least one of the three personnel types: observers, police, and military troops.

We test the robustness of our inclusion of a 24-month post-conflict period following each conflict dyad. We consider various 12-month periods to test both longer post-conflict periods (48 months; 36 months) and shorter post-conflict periods (12 months, 0 months, i.e., only active conflict months). The effect of *UN Troops* is consistently negative and significant throughout.

Table S2

Considering Various Post-Conflict Periods

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | 48 months | 36 Months | 12 months | Active Conflict Months |
|  |  |  |  |  |
| UN Troops(*t*−1) | −0.135\* | −0.137\*\* | −0.119\* | −0.115\*\* |
| (0.054) | (0.053) | (0.048) | (0.040) |
| UN Police(*t*−1) | 0.193 | 0.218 | 0.181 | 0.090 |
| (0.226) | (0.215) | (0.173) | (0.150) |
| UN Observers(*t*−1) | 2.688 | 2.726 | 3.104\* | 3.490\* |
| (1.526) | (1.428) | (1.345) | (1.397) |
| Ceasefire | −0.290 | −0.183 | 0.006 | 0.011 |
| (0.405) | (0.399) | (0.377) | (0.370) |
| Rebel Strength | 0.319 | 0.360 | 0.354 | 0.316 |
| (0.306) | (0.305) | (0.292) | (0.282) |
| No. of Rebel Groups | −0.004 | 0.001 | 0.017 | 0.029 |
| (0.063) | (0.063) | (0.063) | (0.065) |
| Population | 0.133 | 0.112 | −0.016 | −0.130 |
| (0.210) | (0.200) | (0.178) | (0.184) |
| Biased Intervention | 1.800\*\* | 1.637\*\* | 1.097\*\* | 0.654 |
| (0.461) | (0.446) | (0.379) | (0.336) |
| Battle Deaths(*t*−1) | 0.012\*\* | 0.011\*\* | 0.007\*\* | 0.005\*\* |
| (0.003) | (0.003) | (0.002) | (0.001) |
| Constant | 0.309 | 0.558 | 2.235 | 3.809 |
| (2.307) | (2.234) | (2.014) | (1.977) |
| Observations | 8,058 | 7,003 | 4,612 | 3,400 |
| Wald *X*2 | 65.61\*\* | 64.05\*\* | 65.64\*\* | 72.74\*\* |

*Notes*: Estimated with robust standard errors clustered on conflict dyad.

\*\* Significant at *p* < .01; \* = *p* < .05, two-tailed.

As an additional robustness check, we include all of the variables from Table 1 into a single model. Again, the result for *UN Troops* is consistent with those reported in the text of the article.

Table S3

Including All Covariates from Models 1, 5, 7, and 8 Into a Single Model

|  |  |
| --- | --- |
| Variables | All Covariates |
|  |  |
| UN Troops(*t*−1) | −0.132\*\* |
| (0.051) |
| UN Police(*t*−1) | 0.352 |
| (0.199) |
| UN Observers(*t*−1) | 3.011\* |
| (1.384) |
| Ceasefire | −0.133 |
| (0.355) |
| Rebel Strength | 0.465 |
| (.310) |
| No. of Rebel Groups | 0.016 |
| (0.062) |
| Population | 0.067 |
| (0.189) |
| Biased Intervention | 1.411\*\* |
| (0.410) |
| Battle Deaths(*t*−1) | 0.009\*\* |
| (0.003) |
| Battle Violence ∆ | −0.001\*\* |
|  | (0.0002) |
| Regional PKO(*t*−1) | −0.596\* |
|  | (0.290) |
| UNSC Resolution(*t*−1) | 0.369 |
|  | (0.429) |
| Constant | 1.004 |
| (2.172) |
| Observations | 5,725 |
| Wald *X*2 | 146.25\*\* |

*Notes*: Estimated with robust standard errors clustered on conflict dyad.

\*\* Significant at *p* < .01; \* = *p* < .05, two-tailed.

The dependent variable used in the article includes the deaths of government soldiers and rebel fighters as well as civilians and unknown victims killed in the crossfire by battle-related violence. Here, we restrict the dependent variable to only rebel and government combatant deaths, excluding the noncombatants killed as a result of battle hostilities. Table S4 reports these results. As mentioned in the article, the results for *UN Troops* are consistent with those reported in the paper.

Table S4

Replicating Models 1 and 5–8 Using Only Rebel and Government Forces Deaths DV

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | Model 1:  Base | Model 5:  Violence Trend | Model 6:  PKOs Only | Model 7:  Regional PKOs | Model 8:  Resolution Timing |
|  |  |  |  |  |  |
| UN Troops(*t*−1) | −0.214\*\* | −0.209\*\* | −0.316\*\* | −0.224\*\* | −0.214\*\* |
|  | (0.067) | (0.064) | (0.104) | (0.068) | (0.067) |
| UN Police(*t*−1) | 0.436 | 0.427 | 0.922\*\* | 0.530\* | 0.435 |
|  | (0.262) | (0.255) | (0.307) | (0.267) | (0.261) |
| UN Observers(*t*−1) | 3.542 | 3.462 | 6.956\* | 3.976 | 3.542 |
|  | (2.091) | (2.024) | (3.036) | (2.127) | (2.083) |
| Ceasefire | −0.782\* | −0.847\* | −1.449 | −0.749\* | −0.778\* |
|  | (0.339) | (0.332) | (0.751) | (0.339) | (0.339) |
| Rebel Strength | 0.453 | 0.436 | −0.931\* | 0.485 | 0.451 |
|  | (0.295) | (0.292) | (0.450) | (0.310) | (0.295) |
| No. of Rebel Groups | 0.045 | 0.048 | −0.136\* | 0.045 | 0.045 |
|  | (0.054) | (0.053) | (0.066) | (0.054) | (0.054) |
| Population(ln) | 0.212 | 0.208 | −0.712 | 0.206 | 0.222 |
|  | (0.208) | (.208) | (0.413) | (0.205) | (0.216) |
| Biased Intervention | 0.831\*\* | 0.857\*\* | 1.902\* | 0.843\*\* | 0.826\*\* |
|  | (0.265) | (0.269) | (0.840) | (0.258) | (0.266) |
| Battle Deaths(*t*−1) | 0.018\*\* | 0.019\*\* | 0.012\*\* | 0.018\*\* | 0.018\*\* |
|  | (0.004) | (0.004) | (0.006) | (0.004) | (0.004) |
| Battle Violence ∆ |  | −0.001\*\* |  |  |  |
|  |  | (0.0002) |  |  |  |
| Regional PKO |  |  |  | −0.325 |  |
|  |  |  |  | (0.294) |  |
| UNSC Resolution(*t*−1) |  |  |  |  | 0.294 |
|  |  |  |  |  | (0.381) |
| Constant | −0.970 | −0.903 | 11.409\* | −0.943 | −1.064 |
|  | (2.324) | (2.348) | (4.604) | (2.328) | (2.419) |
| Observations | 5,861 | 5,725 | 1,113 | 5,827 | 5,827 |
| Wald *X*2 | 85.48\*\* | 78.55\*\* | 80.28\*\* | 81.21\*\* | 117.98 |

*Notes*: Estimated with robust standard errors clustered on conflict dyad.

\*\* Significant at *p* < .01; \* = *p* < .05, two-tailed.

For the sake of comparison, we replicate models 1, 5, 7, and 8 by replacing the three UN PKO personnel types with a simple dichotomous indicator of the presence of a UN peacekeeping operation in a given month that was deployed to the conflict state. Table S5 reports the results below. The dichotomous measure does not show a significant effect of peacekeeping presence in reducing battle-related violence. This underscores the importance of considering the capacity and composition of peacekeeping operations when assessing their effectiveness in managing violence.

Table S5: Replicating Models 1, 5, 7, and 8 Dichotomous Measure of PKO Presence

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Model 1:  Base | Model 5:  Violence Trend | Model 7:  Regional PKOs | Model 8:  Resolution Timing |
|  |  |  |  |  |
| UN PKO Dummy(*t*−1) | −0.059 | −0.014 | 0.151 | −0.034 |
|  | (0.459) | (0.458) | (0.452) | (0.468) |
| Ceasefire | −0.083 | −0.119 | −0.142 | −0.106 |
|  | (0.375) | (0.370) | (0.359) | (0.378) |
| Rebel Strength | 0.336 | −0.290 | 0.456 | 0.334 |
|  | (0.221) | (0.218) | (0.222) | (0.221) |
| No. of Rebel Groups | −0.052 | −0.047 | −0.032 | −0.050 |
|  | (0.055) | (0.054) | (0.056) | (0.055) |
| Population(ln) | 0.221 | 0.179 | 0.224 | 0.230 |
|  | (0.176) | (0.168) | (0.170) | (0.180) |
| Biased Intervention | 1.273\*\* | 1.295\*\* | 1.296\*\* | 1.274\*\* |
|  | (0.398) | (0.390) | (0.379) | (0.406) |
| Battle Deaths(*t*−1) | 0.005\*\* | 0.005\*\* | 0.005\*\* | 0.005\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) |
| Battle Violence ∆ |  | −0.0001 |  |  |
|  |  | (0.0002) |  |  |
| Regional PKO |  |  | −0.803\* |  |
|  |  |  | (0.317) |  |
| UNSC Resolution(*t*−1) |  |  |  | 0.314 |
|  |  |  |  | (0.412) |
| Constant | 0.313 | 0.774 | 0.066 | 0.233 |
|  | (1.801) | (1.746) | (1.769) | (1.855) |
| Observations | 6,741 | 6,557 | 6,706 | 6,707 |
| Wald *X*2 | 75.12\*\* | 63.37\*\* | 83.48\*\* | 73.22\*\* |

*Notes*: Estimated with robust standard errors clustered on conflict dyad.

\*\* Significant at *p* < .01; \* = *p* < .05, two-tailed.