

Do Child Soldiers Influence UN Peacekeeping?

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Abstract:

The use of child soldiers in conflicts has received increasing academic attention in recent years. This article examines post-conflict periods to see whether the use of child soldiers mobilises United Nations peacekeeping operations (UN PKO) in the aftermath of a conflict. Taking into consideration how child soldiers affect conflict and how important their reintegration is to sustainable peace and post-conflict development, we analyse whether the presence of child soldiers in a civil war increases the likelihood of the presence of a PKO. We argue that the UN deems a conflict with child soldiers as a difficult case for conflict resolution, necessitating a response from the international community. This is in line with our empirical results confirming that the use of child soldiers significantly increases the likelihood of peacekeeping.

Keywords:

Child soldiers, United Nations peacekeeping, Civil war

Child Soldiers and UN PKO

1 Introduction

In March 2014 the United Nations (UN) Secretary-General Ban Ki-moon sent a report to the Security Council about the escalating conflict in the Central African Republic (CAR).¹ The intention of the report was to assess whether the Secretary-General recommended the transitioning of the existing African-led International Support Mission into a United Nations peacekeeping operation. Even though the report highlighted the complexity of the ongoing conflict in the country, it also made specific references to the grave human rights violations committed against children- notably their recruitment into armed groups. The estimated increase in the recruitment of children into armed groups in the CAR was alarming; from 3500 to 6000 in a year. The Secretary-General proposed a multidimensional peacekeeping operation to be deployed with a mandate inclusive of: ‘... reintegration of former armed elements, with specific attention to children, and the repatriation of foreign elements, as well as community violence-reduction programmes’.²

UNICEF defines child soldiers as any child under 18 years of age³, who takes part in any kind of irregular or regular armed force or armed group in any capacity.⁴ For example, children recruited to work at checkpoints, as cooks, information collectors, sex slaves and wives are included- a child soldier does not have to necessarily carry a weapon.⁵ Our theoretical mechanisms pertain to any child participating in armed conflict. Therefore, we use a definition of child soldiers in this article that captures all of the above-mentioned categories.⁶

Recruiting child soldiers is against international law and punishable as a war crime in the International Criminal Court (ICC). The UN Security Council has addressed the issue of child soldiers since 1999 and dealing with child soldiers has been included into the peacekeeping mandates since 2001.⁷ In addition to this, the General Assembly introduced a Special Representative of the Secretary-General for Children and Armed Conflict in 1996 and has subsequently

¹United Nations Security Council. *Report of the Secretary-General*.

²Ibid

³The threshold of 18 years has generated some controversy, but this definition of a child soldier is in accordance with international law and the UN convention on the Rights of the Child United Nations General Assembly. *Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict*, 25 May 2000.

⁴UNICEF. *Fact sheet on child soldiers*.

⁵Ibid.

⁶The term child combatant would refer to only those children that fight as part of a armed group, child soldier is a more inclusive definition.

⁷United Nations Peacekeeping. *Children in conflict*.

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prolonged the three year mandate.⁸ These steps by the UN suggest that the issue of child soldiering is taken seriously and that several measures are in place to prevent and punish this illegal practice. Despite these developments, surprisingly little academic work has been done to assess whether the presence of child soldiers influences the UN decisions to deploy peacekeepers to a conflict.

The UN peacekeeping missions (UN PKOs) are often criticized for being biased in their deployment and inefficient in establishing and maintaining peace.⁹ It is indeed the case that the UN PKOs are not deployed at random, but recent academic research suggests that they are in fact deployed to the cases where the conflicts are the hardest to resolve and the likelihood of conflict recurrence is high.¹⁰ If the UN is indeed more motivated to resolve those conflicts that are notoriously hard to solve, then the assessment about the effectiveness of the PKOs in maintaining peace might in fact be unfairly grounded.¹¹ We subscribe to the empirical findings of the UN sending peacekeepers to those cases it deems the most difficult, but we argue that the existing empirical literature has largely ignored another factor influencing the UN assessment of what constitutes a difficult case. That is, we posit that the presence of child soldiers in a conflict influences the classification of a conflict into a 'hard' case by the UN.

We argue that the main reason for considering a conflict with child soldiers a 'hard' case is the fear of post-conflict instability. This instability stems from taught aggression and lack of alternative livelihoods to fighting by former child soldiers. Thus, the use of child soldiers has been argued to increase the likelihood of conflict recurrence,¹² generating the legal pressure to preserve international peace and stability by the UN.¹³ As a consequence, we suggest that the UN is more likely to be present in conflicts with child soldiers.

⁸United Nations. *Office of the Special Representative of the Secretary-General for Children and Armed Conflict*.

⁹Fleitz, "Peacekeeping Fiascoes of the 1990s"; Jett, "Why Peacekeeping Fails".

¹⁰Fortna, "Does peacekeeping keep peace?"

¹¹Howard, "UN peacekeeping in civil wars."

¹²Haer and Böhmelt. "Child soldiers as time bombs?"

¹³We refer to the legal duty of the Security Council to establish a peacekeeping mission when international peace is threatened, see United Nations Peacekeeping. *Mandates and the legal basis for peacekeeping*.

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We test such argument with data on child soldiers from Haer and Böhmelt¹⁴. We find that the presence of UN PKOs is indeed significantly more likely in conflicts with child soldiers. This shows that the international community uses child soldiers as an indication about the difficulty of conflict resolution and invests in post-conflict stability in the ‘right places’.

2 When Does the UN Intervene?

The existing research on UN interventions has concluded that the UN PKO presence is not randomly allocated.¹⁵ Due to the non-random nature of peacekeeping missions, a number of studies have been dedicated to examining where do peacekeepers go.¹⁶ In particular, the focus has been on the difficulty of conflict resolution attracting a response from the UN and how the likelihood of conflict recurrence activates the international community.¹⁷

Two streams in the literature discuss what makes a case hard for the UN; the one refers to country characteristics and the other one refers to conflict characteristics. The country specific attributes making conflict resolution harder are lack of state capacity, higher ethnic fractionalization, low economic development and lower levels of democracy¹⁸ Gilligan

¹⁴Haer and Böhmelt, “Child soldiers as time bombs?”.

¹⁵Gilligan, Sergenti, Callander, Urbatsch, Casella, Palfrey, and Riezman. “Do UN interventions cause peace?”.

¹⁶Fortna, “Does peacekeeping keep peace?”; Gilligan and Stedman, “Where Do the Peacekeepers Go?”.

¹⁷Hartzell, Hoddie, and Rothchild, “Stabilizing the peace after civil war”.

¹⁸Ruggeri Gizelis, and Dorussen, “Managing Mistrust”.

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and Stedman¹⁹ suggest that UN peacekeepers tend to go to weaker states rather than strong states. More specifically, we see more peacekeeping operations in countries with smaller armies than countries with stronger military capabilities.²⁰ Fortna²¹ finds that UN PKOs are more likely to take place in those states with a limited control over their territory and relatively strong rebel groups. Also, the so called identity conflicts i.e., conflicts fought over ethnic or religious identity have been theorised to be more likely to recur given that peaceful coexistence of such inherent identities can be hard in the aftermath of a conflict.²² This is because the religious and ethnic groups have been set against each other in the conflict.²³ Nonetheless, Hartzell, Hoddie, and Rothchild²⁴ do not find that identity conflicts make a difference in the intractability of peace. Previous research has also found that conflict recurrence is more likely when levels of economic development are low (thus reducing opportunity costs of rebelling),²⁵ and availability of lootable natural resources is high (opportunities to finance rebellion).²⁶ For this reason, former combatants are more likely to resume fighting when they lack viable economic alternatives to secure their livelihoods. Similarly, the availability of lootable natural resources provides the opportunities to fund future rebellions, making the likelihood of conflict recurrence higher in areas with lootable natural resource deposits. Finally, Hartzell, Hoddie, and Rothchild²⁷ suggest that the level of democracy also matters in how long the peace is likely to last. Specifically, regimes that have a history of inclusion are more likely to provide faith in the warring parties' ability to stick to the negotiated agreements.²⁸ Authoritarian regimes that have experienced a civil war are less likely to have durable peace in the post-conflict phase.

The second strand of literature has focused on specific conflict characteristics that affect the difficulty of conflict resolution and the increased need for UN intervention. These conflict-related

¹⁹Gilligan and Stedman, "Where Do the Peacekeepers Go?"

²⁰Ibid.

²¹Fortna, "Does peacekeeping keep peace?"

²²Doyle and Sambanis, "International Peacebuilding".

²³Ibid.

²⁴Hartzell, Hoddie, and Rothchild, "Stabilizing the peace after civil war".

²⁵Walter, "Does conflict beget conflict?"

²⁶Collier and Hoeffler, "On the incidence of civil war in Africa".

²⁷Hartzell, Hoddie, and Rothchild, "Stabilizing the peace after civil war".

²⁸Ibid.

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attributes are the lack of decisive military victories and peace agreements, as well as, more severe, longer conflicts with higher numbers of warring parties and civilian casualties.²⁹ Fortna³⁰ and Hartzell, Hoddie, and Rothchild³¹ find that conflicts that do not end in decisive victories and end without a formal peace agreement are more likely to resume. This is because without a decisive military victory, all parties still have the opportunity of carrying on fighting to try to topple the opponent. In addition, formal peace agreements normally address the main issue/s in the conflict and without the commitment of all parties to sign a formal peace agreement and adhere to its conditions, the conflict is more likely to resume.³²

The severity of a civil war has also been linked to the likelihood of conflict recurrence. First, the more casualties (i.e., the more costly and intense the war is), the harder it is to prevent revenge of the loss of the loved ones.³³ The relationship, however, is less straightforward given that sometimes high losses provide motivation to cooperate with the peacekeepers.³⁴ This would mean that the conflict resolution is less challenging when parties invite the UN intervention and are willing to accept the terms of the peace agreement. Second, Hultman³⁵ finds that UN peacekeepers tend to go to conflicts with large number of civilian casualties. This is particularly the case since 1999 when the UN Security Council introduced a mandate specifically for the protection of civilians.³⁶ Some studies suggest that longer conflicts are in fact less likely to resume³⁷ because they have exhausted the fighting capabilities of the warring parties and support for fighting from the general population. In addition, during a long fight the importance of peace and the costs of war become more evident to the conflict parties, and any possible miscalculations about an easy

²⁹Hartzell, Hoddie, and Rothchild, "Stabilizing the peace after civil war"; Kreutz, "How and when armed conflicts end".

³⁰Fortna, "Does peacekeeping keep peace?"

³¹Hartzell, Hoddie, and Rothchild, "Stabilizing the peace after civil war".

³²Kreutz, "How and when armed conflicts end".

³³Doyle and Sambanis, "International Peacebuilding".

³⁴This assumption is linked to the costs of war hypothesis where longer wars lead to longer peace (Hartzell, Hoddie, and Rothchild, "Stabilizing the peace after civil war").

³⁵Hultman, "UN peace operations and protection of civilians".

³⁶A number of studies also suggest that the UN interventions take place for humanitarian reasons (Brent Beardsley and Romeo Dallaire. "Shake Hands with the Devil"; Vincenzo Bove and Leandro Elia. "Supplying peace").

³⁷Doyle and Sambanis, "International Peacebuilding".

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victory would have been adjusted.³⁸ Finally, Doyle and Sambanis³⁹ argue that durable peace is harder to achieve in conflicts with multiple actors. This is because the number of different preferences of the conflict outcomes increases with the number of parties involved. If several parties are dissatisfied with the negotiated settlement of the conflict, the war is more likely to resume.⁴⁰

Since all of these factors are found to make conflict resolution and durable peace more difficult, the question is whether the UN avoids such scenarios or in fact commits most of its PKO resources into such cases.⁴¹ If the UN indeed deploys to the hardest cases, then the criticism over its peacekeeping failures might be less warranted.⁴² Some studies suggest that it is not only the conflict conditions and escalation potential that influence the deployment of PKO, but also the geopolitical interests of the interveners.⁴³ Geography⁴⁴, national interests of the interveners⁴⁵ and democratization⁴⁶ have been linked to the likelihood of UN interventions. Bove and Elia⁴⁷ find that domestic and international factors affect the calculation of a country's troop supply to the UN PKOs. At the domestic level, the sustainability of multiple missions, tolerance for casualties and the relative value of labour affect the decision to become involved. At the international level, the authors find that the proximity to the conflict, number of displaced people and the threat to peace and stability are likely to correspond to the supply of troops. Moreover, humanitarian and security concerns trigger country specific responses.⁴⁸

³⁸Hartzell, Hoddie, and Rothchild, "Stabilizing the peace after civil war".

³⁹Doyle and Sambanis, "International Peacebuilding: A Theoretical and Quantitative Analysis".

⁴⁰Ibid.

⁴¹Gilligan and Stedman, "Where Do the Peacekeepers Go?".

⁴²Howard, *UN peacekeeping in civil wars*.

⁴³Andersson, "Democracies and UN peacekeeping operations"; Jakobsen, "National interest, humanitarianism or CNN" Neack, "UN Peace-Keeping".

⁴⁴Beardsley and Schmidt, "Following the Flag or Following the Charter?".

⁴⁵Jakobsen, "National interest, humanitarianism or CNN".

⁴⁶Andersson, "Democracies and UN peacekeeping operations".

⁴⁷Bove and Elia, "Supplying peace".

⁴⁸Ibid.

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Fortna⁴⁹ finds that the UN selects the ‘hard’ cases in terms of sending PKOs to conflicts without decisive winners, formal truces and with smaller national armies. In particular, the UN PKOs are sent to places where conflict resolution is difficult and the likelihood of conflict recurrence is high. We build on the findings by Fortna⁵⁰ and argue that the UN does indeed select the ‘hard’ cases, but they use an additional criterion in their PKO deployment process. This additional aspect is the use of child soldiers in the conflict, which has negative consequences for post-conflict stability.

The literature on UN PKO deployment has made a significant contribution to our understanding about the selection processes of peacekeeping operations. Nevertheless, to date none of the prior studies has looked at how the presence of child soldiers influences such calculus. We argue that the need for post-conflict stability has made the presence of child soldiers an important factor when assessing the difficulty of conflict resolution. More specifically, the use of child soldiers in a conflict creates instability in post-conflict societies. This in turn makes the conflict harder in terms of likelihood of recurrence and conflict resolution.⁵¹

3 What Are the Consequences of Using Child Soldiers for the Post-conflict Society?

Although the literature on child soldiers is less extensive than the literature on UN peacekeeping, a number of studies have investigated the impact of child soldiers in a conflict on post-conflict societies.⁵² Here we focus on two main aspects of the impact child soldiers have on post-conflict

⁴⁹Fortna, “Does peacekeeping keep peace?”.

⁵⁰Ibid.

⁵¹Ibid.

⁵²Goodwin-Gill and Cohn, “Child Soldiers”; Honwana. “Child soldiers: Community healing”; Schauer and Elbert. “The psychological impact of child soldiering”; Wessells, Child soldiers”; Haer and Böhmelt, “The impact of child soldiers on rebel groups”.

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instability; aggression and low opportunity costs for rebellion. These destabilising mechanisms in turn feed into the UN decision-making processes in order to prevent future conflicts and secure post-conflict stability.

The first destabilising mechanism of child soldiers in post-conflict societies is related to aggression. The reasons that lead to aggression by former child soldiers in post-conflict societies are normalisation into violence, psychological trauma, exclusion and lack of ‘normal’ social skills. The socialization and normalisation argument is based on the premise that children who grow up surrounded by violence will accept violence as part of normal life.⁵³ Moreover, children can learn the violent and aggressive behaviour from watching how others behave in a conflict situation and in the worst-case scenario, start emulating such behaviour.⁵⁴ This is probably true for many children growing up in conflict zones, not just child soldiers, however, the effect is likely to be greater for children who are trained to fight and expected to be aggressive against their opponents.⁵⁵ The lack of social skills by the former child soldiers has been highlighted by a number of scholars.⁵⁶ Steenkamp⁵⁷ argues that the families, who would normally teach children traditional values and socialization, have broken down in a conflict situation. The lack of family involvement into the socialization of the children is even worse for child soldiers in comparison to children who remain with their families, albeit war affected ones. This is because child soldiers are physically removed from their family environment and exposed to normalization of violence through training. Magambo and Lett⁵⁸ confirm such suggestion by finding that in northern Uganda former child soldiers resort to physical violence whenever trying to solve a disagreement because they do not have the social skills required to think of alternative methods of solving a conflict. Other studies also suggest that former child soldiers have problems in controlling their aggressive impulses,

⁵³Dickson-Gómez, “Growing Up in Guerrilla Camp”; Punamäki, “Childhood under conflict”.

⁵⁴Berkowitz, “Pain and aggression”.

⁵⁵Schauer and Elbert, “The psychological impact of child soldiering”.

⁵⁶Magambo and Lett, “Post-traumatic stress in former Ugandan child soldiers”.

⁵⁷Steenkamp, “The legacy of war”.

⁵⁸Magambo and Lett, “Post-traumatic stress in former Ugandan child soldiers”.

⁵⁹Schauer and Elbert, “The psychological impact of child soldiering”.

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even in a post-conflict situation.⁵⁹ Such aggressive behaviour can manifest itself even when the former child soldiers return home and can lead to a spiral of exclusion and further aggression.⁶⁰ The receiving communities often fear aggressiveness of former child soldiers, and as a consequence the returning children often face social exclusion. They might be stigmatised and blamed for their actions due to the lack of understanding the circumstances of their abductions and forced violence.⁶¹ When reintegration efforts are not successful, exclusion can in turn lead to aggression making former child soldiers more likely to either initiate or partake in future conflicts. This can break the fragile peace and draw the society back into resuming violence.

The second destabilising mechanism of child soldiers in post-conflict societies is the lack of economic opportunities, and the subsequently lower opportunity costs of resuming fighting. Instead of psychological consequences, Blattman and Annan⁶² suggest that the main issues the abductees struggle with are educational deficit due to absence from schooling and subsequent low earnings. Based on their survey evidence in Uganda, the authors note that though psychological issues can have an impact on the reintegration of child soldiers, the educational, and consequently, economic grievances are more important in explaining the challenges of reintegration. The psychological distress is only normally high for those abductees that have been subjected to war-time violence (i.e., having a violent group leader) and in fact they find that on average abductees are not more aggressive than non-abductees. Former child soldiers in their study seem psychologically resilient and report high levels of acceptance back into their native communities.⁶³ Child soldiers face reintegration problems mostly because of the lack of education leads to lack of opportunities in finding employment. The problem of educational deficit is exasperated⁶⁴, particularly in protracted conflicts that have a higher likelihood of child

⁶⁰Honwana, "Child soldiers: Community healing".

⁶¹Betancourt, Agnew-Blais, Gilman, Williams, and Ellis, "Past horrors, present struggles".

⁶²Blattman and Annan, "The consequences of child soldiering".

⁶³Ibid.

⁶⁴Annan, Blattman, Mazurana, and Carlson, "Civil war, reintegration, and gender."

⁶⁵Lasley and Thyne, "Secession, legitimacy and the use of child soldiers".

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soldier recruitment.⁶⁵ Children who spend several years fighting miss out on education and crucial vocational training, such as carpentry. Missing out on schooling and training skills lead to a situation where these children have no means of supporting themselves or their families.⁶⁶ Such economic hardship, lack of education and consequently low earnings can create motivation for future conflicts.⁶⁷ Former child soldiers without livelihoods have low opportunity costs of starting or joining another episode of fighting due to the lack of any other viable alternatives. This in turn *can* spiral communities back into a violent civil war.

Haer and Böhmelt⁶⁸ find that child soldiers are positively related to conflict recurrence leading to a conflict trap.⁶⁹ They argue that child soldiers affect both the willingness and opportunity to engage in future armed conflicts due to both socialisation and normalisation of violence as well as for economic reasons. We subscribe to these two mechanisms by adding that since child soldiers can have a destabilising effect on the post-conflict societies, the UN has a legal duty to act. Moreover, the UN PKOs are intended to preserve international peace and security and the risk of conflict recurrence threatens such stability.

4 Child Soldiers and the UN Decision-making Process

How are child soldiers linked to the UN decision to deploy peacekeepers to a conflict? The UN makes an assessment about the difficulties post-conflict reconciliation and uses information about the country and the conflict to make such evaluation. Given that the presence of child soldiers affects post-conflict stability, the UN accounts for their presence when evaluating conflict conditions. Post-conflict instability *can* - in worst cases - lead to conflict recurrence⁷⁰, threatening international peace and security. The UN is acutely aware of such risks as suggested by the Special Representative of the Secretary-General for Liberia, Jacques Paul Klein: ‘Liberia’s

⁶⁶Wessells, *Child soldiers: From violence to protection*.

⁶⁷Blattman and Annan, “The consequences of child soldiering”.

⁶⁸Haer and Böhmelt, “Child soldiers as time bombs?”

⁶⁹Blattman, “From violence to voting Uganda”.

⁷⁰Collier, “Bottom billion”.

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long-term security and stability would only come with an economy that could create steady employment for young adult males, supported by a credible, democratic, and accountable government'.⁷¹ In fact, all the UN PKOs that were deployed in conflicts with child soldiers since 2000 have had an explicit mentioning of child soldiers in their mandates.⁷²

The UN makes a decision about PKO deployment through several different steps. Normally when a conflict either escalates or gets closer to a resolution, the UN starts planning the best response by the international community. At the initial planning stage the Secretary-General might request a technical mission to the conflict area in order to have a better assessment of the situation. It is often at this point where we can see evidence of how the presence of child soldiers influences the recommendations about a PKO deployment. In January 2000, the Secretary-General Kofi Annan proposed an expansion of the PKO mandate in the Democratic Republic of Congo (MONUC). He voices his concern about the continuing recruitment of child soldiers and states that: 'To ensure that the lives of children are protected, it will be necessary to act before the fragile Ceasefire Agreement further erodes'.⁷³ Such assessments or reports are then submitted to the Security Council who makes a decision about a PKO mission, its mandate and size.⁷⁴

The primary aim of a UN PKO is to ensure that the post-conflict peace is stable and that the conflict does not recur. In light of such concerns, the successful reintegration of child soldiers is vital in achieving post-conflict stability. The reintegration issues feature in the 2007 UNICEF Paris Principles (Principles and Guidelines on Children Associated with Armed Forces or Armed Groups).⁷⁵ Additionally, the document suggests that stakeholders (such as UN organisations) need to: 'Raise awareness of the problems that may occur when children return, such as aggressive and rebellious behaviour and drug or alcohol use'.⁷⁶ Likewise, The Paris Principles note that former child soldiers need to be

⁷¹United Nations Security Council. *Chairman of transitional government*.

⁷²Our sample has altogether 14 UN PKOs. Child soldiers were present in 12 of those conflicts and the UN mentioned the issue of child soldiers in five of the mandates relating to those conflicts. All of these mandates were post 2000.

⁷³United Nations Secretary-General. *Report of the Secretary-General*.

⁷⁴United Nations Peacekeeping. *Forming a new operation*.

⁷⁵UNICEF. *The Paris Principles: Principles and Guidelines*.

⁷⁶Ibid.

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supported in learning non-violent means of solving disputes and that ‘... an investment in young people will support the long term peace and security of the community, which may otherwise suffer problems if reintegration is not achieved’.⁷⁷ Considering these possible challenges in the reintegration process, the UN is more likely to supply peacekeeping to such fragile post-conflict societies.

Secondly, we suggest that the UN takes into account the low opportunity costs of former child soldiers joining or starting a new rebellion if they do not have adequate means of supporting themselves and/or their families. In a report about the conflict in South Sudan, the UN Secretary-General explicitly states that:

... sufficient alternative livelihoods and education opportunities have not been available, thus increasing vulnerability and risks of recruitment. This has been particularly relevant in the case of children who were formerly associated with armed forces and groups, many of whom had not been provided with reintegration support such as education or livelihood opportunities. Investment in vocational training is needed and support for a reintegration package that addresses the individual needs of children is urgently required.⁷⁸

These economic grievances are a threat to security and stability internally and more likely to attract a UN response. In addition, the instability in a post-conflict country can often lead to conflict contagion to other countries through, for example, refugee flows. Hence, the international community must also factor in how an individual conflict may threaten international peace and security.⁷⁹

Economic grievances and aggression can cause child soldiers to destabilise a post-conflict society. Since post-conflict instability makes conflict more likely to recur, we argue that the UN deems such circumstances necessitating a PKO. Based on the aforementioned destabilising effects of child soldiers in the aftermath of the conflict, we hypothesize that *the presence of child soldiers in a conflict makes the presence of UN peacekeeping operations in a post-conflict society more likely*. In sum, the two arguments developed in this section reinforce each other. We should expect a positive effect on PKOs presence along with the use of child soldiers in the conflict. Although the arguments outlined here are distinct, we do not regard them as disparate mechanisms that require separate and explicit comparison, but rather as

⁷⁷Ibid.

⁷⁸United Nations Secretary-General. *Report of the Secretary-General*

⁷⁹Beardsley, “Peacekeeping and the contagion of armed conflict”.

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a set of related theoretical reasons for expecting an increasing PKO effect at the presence of child soldiers.

5 Research Design

5.1 Data and Variables

The empirical analysis of this paper relies on the UCDP/PRIO Armed Conflict Dataset on Non-State Actors (version 3.3)⁸⁰ and the Conflict Termination Dataset (version 2.0)⁸¹. The unit of analysis in our cross sectional dataset is post- conflict-dyad-societies. For instance, a government is combined with a rebel group in one period of time in which the attributes of this conflict dyad do not change. As soon as there is a change in the conflict dyad, a new period of time is activated and, thus, a new observation is generated in the data. The post-conflicts are operationalised as the first year after the end of a conflict between 1989 and 2005. Note that an armed conflict occurs when there is a dispute that involves at least one government actor and results in 25 battle-related fatalities in a year. Our main modelling choice is a probit estimator, because we examine a binary dependent variable. We also test our hypothesis in a bivariate model setting to control for any potential selection effects in the presence of a PKO.

Dependent Variable

Traditionally the term peacekeeping refers to international personnel deployed to help maintain peace and security.⁸² This maintaining of peace and security definition varies in academic studies from preventing conflict recurrence⁸³ to curbing and eliminating hostilities.⁸⁴ The existing literature on UN PKOs has also adapted to the changing nature of the PKOs in

⁸⁰Cunningham, Gleditsch, and Salehyan, “Non-state actors in civil wars”.

⁸¹Kreutz, “How and when armed conflicts end”.

⁸²Fortna and Howard, “Pitfalls and Prospects in the Peacekeeping Literature”.

⁸³Virginia Page Fortna. “Does peacekeeping work?”

⁸⁴Greig and Diehl, “The peacekeeping – peacemaking dilemma”.

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practice by incorporating both peace enforcement and peacekeeping missions into their definitions.⁸⁵

In this study we focus on multidimensional peacekeeping.⁸⁶ Even though we are interested in the presence of UN PKOs in the post-conflict societies, we know that many of the PKOs are in fact deployed while the conflict is still ongoing. This is indicative of the changes in the mandates of the UN PKOs from a narrow monitoring of ceasefires to more inclusive civilian and humanitarian elements. These peacebuilding elements can range from demobilisation, reintegration to building institutions and providing humanitarian assistance.⁸⁷ We focus on the post-conflict phase for two reasons. First, UN interventions into active conflicts are usually peace-enforcement missions, which are theoretically distinct from peacekeeping missions we focus on.⁸⁸ Second, an empirical focus on the period once a conflict is over allows us to circumvent one source of endogeneity to a large extent. Specifically, in anticipation of a UN intervention in an active conflict, rebel groups might increasingly recruit children, thus reversing the relationship we argue for. Exclusively analysing the post-conflict phase allows us to avoid the problems associated with this.⁸⁹

Our dependent variable captures the presence of a UN PKO in the post-conflict period and is time invariant. The information is taken from the online descriptions of UN peacekeeping operations. According to the UN definition of PKO deployment is:

A peacekeeping operation is led by the department of peacekeeping operations (DPKO) and works to create the conditions for lasting peace in a country torn by conflict. A peacekeeping operation consists of military, police and civilians personnel who work to deliver security, political and early peace building support.⁹⁰

⁸⁵Findlay, *The use of force in UN peace operations*; Hultman, Kathman, and Shannon, "United Nations peacekeeping dynamics."

⁸⁶Dorussen and Gizelis, "Into the Lion's Den".

⁸⁷Fortna and Howard, "Pitfalls and Prospects in the Peacekeeping Literature".

⁸⁸Fortna, "Does peacekeeping keep peace?".

⁸⁹When we include conflict years into our analysis and distinguishing between UN and non-UN involvement years, the results we present below remain largely unchanged: child soldiers increase the likelihood of UN peacekeeping involvement.

⁹⁰United Nations Peacekeeping. *Peacekeeping operations*.

⁹¹Rustad and Binningsbø. "A price worth fighting for?".

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We have adopted the measure for UN PKO from previous research by Rustad and Binningsbø⁹¹. Their data describe whether there was UN presence in the post-conflict period or not, resulting to a binary variable that takes the value of 1 for PKO presence in post-conflicts (0 otherwise).

Main Independent Variable

We examine whether the use of child soldiers in conflicts affects the presence of a UN PKO in a post-conflict society. The core explanatory variable concerns the use of child soldiers by rebel groups. While rebel groups are not the only organizations that recruit child soldiers,⁹² we focus on these groups, since – as highlighted by Tynes and Early⁹³– rebel groups have stronger incentives than governments to use child soldiers: the former have ‘fewer constraints’ and ‘more to gain’ than the latter.⁹⁴

The information on child soldiers comes from the recent dataset by Haer and Böhmelt⁹⁵. Their child soldier measure is based on information provided by independent reports from, inter alia, Child Soldiers International, Human Rights Watch, Amnesty International, Global March against Child Labour, and various independent news and academic sources.⁹⁶ Haer and Böhmelt⁹⁷ discuss the differences between their data and other existing data sources on child soldiers.⁹⁸ For instance, Beber and Blattman⁹⁹ code information about child soldiers, but focus only on rebel groups that operated in sub-Saharan Africa. Tynes and Early¹⁰⁰ record a dichotomous indicator on child soldiers by several armed groups worldwide between 1987 and 2007. Haer and Böhmelt¹⁰¹ seem to offer the most comprehensive coverage of rebel groups worldwide since 1989. Therefore, we employ their measure of child soldiers, which is coded 1 in the presence of child soldiers recruited by rebels and 0 otherwise.

Haer and Böhmelt¹⁰² also code an ordinal variable, but we rely on their binary variable in our

⁹²Tynes and Early. “Governments, Rebels, and the Use of Child Soldiers”.

⁹³Ibid.

⁹⁴Tynes and Early (ibid.) indicate that rebel groups employed child soldiers in 78.8% of the conflict dyads in their sample, while governments used them in only 60.1% of the cases.

⁹⁵Haer and Böhmelt, “The impact of child soldiers on rebel groups”.

⁹⁶Ibid.

⁹⁷Ibid.

⁹⁸Ibid. (p. 8).

⁹⁹Beber and Blattman. “The logic of child soldiering and coercion”.

¹⁰⁰Tynes and Early, “Governments, Rebels, and the Use of Child Soldiers”.

¹⁰¹Haer and Böhmelt, “The impact of child soldiers on rebel groups”.

¹⁰²Ibid.

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analysis. The reason for this is given in Haer and Böhmelt¹⁰³ (p. 8):

The ordinal variable [...] contains more information than the dichotomous item, employing this variable though makes averaging across conflict problematic [...] Hence, by using the dichotomous child soldier variable, we discard information, but avoid the risk of making wrong assumptions about the actual size of child soldiering.¹⁰⁴

The aggregated dichotomous measurement for child soldiers is coded by calculating the mean value across conflict episodes. Child soldiering may vary across rebel groups and conflict episodes, it is however, held constant across conflict episodes after aggregation.¹⁰⁵ The armed forces in this dataset refer to all the rebel groups identified in the Non-State Actor Dataset (NSA).¹⁰⁶

Control Variables

Given that our analysis focuses on the determinants of a UN PKO, we control for other factors that classify a conflict as hard to resolve and more likely to experience a PKO.¹⁰⁷ For the convenience of this analysis, we separate the control variables into two categories. The first set of covariates concerns the nature of the conflict. Previous studies have suggested that we usually see UN PKOs in natural resources conflicts. These conflicts are harder to solve because there are more opportunities to finance a rebellion. We include a variable, using data from Rustad and Binningsbø¹⁰⁸, capturing whether a conflict was about natural resources or not. Along these lines, using data from Kreutz¹⁰⁹, we also add a variable on the type of issue incompatibility, i.e., whether a conflict

¹⁰³Haer and Böhmelt, “The impact of child soldiers on rebel groups”.

¹⁰⁴Ibid.

¹⁰⁵Ibid.

¹⁰⁶Cunningham, Gleditsch, and Salehyan. “It Takes Two A Dyadic Analysis of Civil War Duration and Outcome”.;
Cunningham, Gleditsch, and Salehyan, “Non-state actors in civil wars”.

¹⁰⁷Gilligan and Stedman, “Where Do the Peacekeepers Go?”.

¹⁰⁸Rustad and Binningsbø, “A price worth fighting for?”.

¹⁰⁹Kreutz, “How and when armed conflicts end”.

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has been fought over government or territory. Conflicts over territory usually constitute the harder cases for the UN as they challenge the sovereignty of the disputants.¹¹⁰ Moreover, we consider a measure for battle-related deaths, which controls for the severity of a conflict. The data come from the UCDP/PRIO Armed Conflict Dataset.¹¹¹

The duration of a conflict is often linked with severity, given that the longer fighting goes on, the more casualties (including civilian) the conflict is likely to have. In addition, longer conflicts often become more complicated in terms of settlement efforts and therefore should be prioritised by the UN. Moreover, the entry time of a child soldier into a conflict and the conflict duration naturally influence the length of stay for child soldiers in conflicts. This can also influence the difficulty of reintegration efforts.¹¹² We incorporate the natural logarithm of conflict duration in days in order to control for whether UN PKOs are more likely after longer conflicts. The start and end dates used for calculating conflict durations are based on the UCDP Conflict Termination data from Kreutz¹¹³.

The way a conflict ends can influence the likelihood of a PKO presence and this is why we include two variables capturing the type of conflict termination. The first one is military victory, a binary variable coded as 1 for a military victory and 0 otherwise.¹¹⁴ Peacekeeping may be perceived less vital after a military victory due to the conflict having a decisive end, and a strong winning party that may be able to stabilise the post-conflict setting. The second type of termination we control for is peace agreements since they might influence the likelihood of peacekeeping. For instance, peacekeeping is less likely when a peace agreement has been reached.¹¹⁵ In our analysis, the peace agreement refers to either resolution or regulation (preliminary agreements) of the conflict¹¹⁶ that is different from formal agreements.

The second category of determinants that classify the ‘hard cases’ for the UN includes several country-related covariates in order to test whether peacekeepers prefer to be present in countries

¹¹⁰Hensel, Mitchell, Sowers, and Thyne, “Bones of Contention”.

¹¹¹Gleditsch, “Expanded trade and GDP data”.

¹¹²Annan, Blattman, Mazurana, and Carlson, “Civil war, reintegration, and gender in Northern Uganda”.

¹¹³Kreutz, “How and when armed conflicts end”.

¹¹⁴Ibid.

¹¹⁵Fortna, “Does peacekeeping keep peace?”.

¹¹⁶Kreutz, “How and when armed conflicts end”.

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with specific characteristics. This assumption is linked with the interests of the intervening countries. These interests may be economic and ideological and therefore we include controls for such considerations. For measuring the regime type of a country, we use the modified polity indicator for democracy.¹¹⁷ The UN is more likely to be present in autocracies since the peace is less likely to last in politically non-inclusive regimes. Also, the international community might be motivated by democratization and thus, encourages peacekeeping in autocratic regimes. This variable ranges between -5 and +7 in our sample, where negative values approach a purely autocratic regime and positive values pertain to more democratic systems. Conflict in countries with low levels of economic development is also more challenging for reintegration efforts and should be more likely to attract a UN response. We capture economic development by GDP per capita (natural logarithm) to control for state capacity.¹¹⁸

Additionally, we include infant mortality as an alternative indicator of economic development. Unlike other variables for development, infant mortality has a stronger focus on the ‘human element,’ i.e., it ‘captures the welfare levels of children within the country in which the conflict broke out’.¹¹⁹ The variable refers to infant mortality levels after the end of a conflict in order to capture the presence of a UN PKO after the end of a conflict and it describes mortality of children under five years old. The data for this variable come from UNICEF.¹²⁰ Finally, we include a variable that measures ethnic fractionalization¹²¹ because ethnically heterogeneous countries are argued to be more conflict prone. High levels of ethnic fractionalization exasperate ethnic differences that make peaceful coexistence harder in post-conflict situations.

Table 1 summarizes the descriptive statistics of all variables as well as the variation inflation factors (VIFs) of the explanatory variables. According to the VIFs, multicollinearity is unlikely to be a major issue, since all VIFs are below the common threshold value of 5. Variables with a value over 5 would indicate high multicollinearity.¹²² We also tested the correlation among our independent variables and include a table of the correlation matrix in the appendix (Table 1 in the appendix).

¹¹⁷Vreeland, “The effect of political regime

¹¹⁸Gleditsch, “Expanded trade and GDP data”.

¹¹⁹Tynes and Early, “Governments, Rebels, and the Use of Child Soldiers”.

¹²⁰UNICEF Statistics, *Under five mortality rates*.

¹²¹Fearon and Laitin, “Ethnicity, insurgency, and civil war”.

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Table 1: Descriptive Statistics and Variation Inflation Factors

	(Obs.)	(Mean	(Std. Dev.)	(Min)	(Max)	(VIF)
UN PKO	91	0.15	0.36	0	1	
Child soldiers (recruited by rebels)	91	0.62	0.48	0	1	1.66
Natural resource conflict	91	0.56	0.50	0	1	1.89
Conflict duration	91	5.57	2.13	0	8.39	1.55
Severity	86	232.55	418.54	25	2,721	1.28
Victory	91	0.20	0.40	0	1	1.79
Incompatibility	91	1.44	0.50	0	1	1.64
Peace agreements	91	0.18	0.38	0	1	1.31
Development	91	7.82	1.05	4.89	10.38	2.86
Democracy	91	1.56	4.33	-5	7	1.43
Infant mortality	90	65.87	36.74	5.8	153	2.88
Ethnic fractionalization	90	0.57	0.23	0.04	0.90	2.10
Child Soldiers (recruited by Governments)	91	0.41	0.49	0	1	1.63

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5.2 Empirical Analysis

We include a baseline model (Table 2: Model 1) for two reasons; first, sometimes introducing control variables increases bias instead of diminishing it¹²³ and second, our analysis has a small decrease of observations after adding more control variables in the subsequent models. Model 2 incorporates all the control covariates discussed above and tests whether child soldiers increase the likelihood of peacekeeping. Model 3 introduces control variables that previous literature associates as important drivers of UN PKOs and concern the conflict as such.¹²⁴ Therefore, in this model we exclude the country characteristic covariates. The standard errors are clustered at a country level in all models of the analysis.

Probit regressions (Models 1, 2 and 3) show that the use of child soldiers in a conflict increases the probability of UN PKO presence in post-conflict societies. The relationship between child-soldiers usage and UN PKOs is statistically significant and positive. This result confirms our hypothesis that child soldiers influence UN PKOs deployment by making PKOs more likely in those cases with former child soldiers. When the UN sends a technical mission for the assessment of the conflict, they take into account the issue of child soldiers and consider that in order to secure post-conflict stability, a PKO is required.

¹²²O'brien, "A caution regarding rules of thumb".

¹²³Clarke, "The phantom menace".

¹²⁴Fortna, "Does peacekeeping keep peace?".

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The probability for seeing a UN PKO after the end of a conflict increases by 3 percentage points, when child soldiers are employed in a conflict (the confidence interval ranging from 0.001% to 19%). This is illustrated graphically in our first differences estimation, based on Model 2 (Figure 1). The first difference indicates the change in the probability of the dependent variable =1 (UN PKO =1) when changing a respective explanatory variable from its minimum to its maximum, while holding all other variables at their median values.¹²⁵ The measure of child-soldier usage is significant, since the confidence interval does not include zero. The horizontal bars pertain to 95% confidence intervals. The rest of the control covariates drive the likelihood of peacekeeping presence in post-conflicts similarly to results presented earlier in Table 2 (Model 2).

Along with our expectations, the duration of a conflict increases the probability of a UN PKO. Conflict severity too, in accordance to prior research, positively predicts UN PKOs. Unlike Fortna¹²⁶, we find support for the peace agreement variable in relation to a PKO. Fortna¹²⁷ suggests that the UN does not deem a PKO necessary when a peace agreement is signed. However, a regulation alone does not secure peace and peacekeepers may still consider it important to be present in such cases.¹²⁸

Although a military victory highly predicts the durability of peace¹²⁹, in our model a military victory is not a significant predictor of the presence of a UN PKO in post conflicts. The UN also does not cherry pick on the issues of the conflict that they are more likely to intervene in, given that both covariates for types of conflicts, natural resource and incompatibility, are not statistically significant predictors.¹³⁰

¹²⁵King, Tomz, and Wittenberg, "Making the most of statistical analyses".

¹²⁶Fortna, "Does peacekeeping keep peace?".

¹²⁷Ibid.

¹²⁸Kreutz, "How and when armed conflicts end".

¹²⁹Fortna, "Does peacekeeping keep peace?".

¹³⁰Note that previous literature presents mixed results for these predictors, see Fortna, "Does peacekeeping keep peace?";

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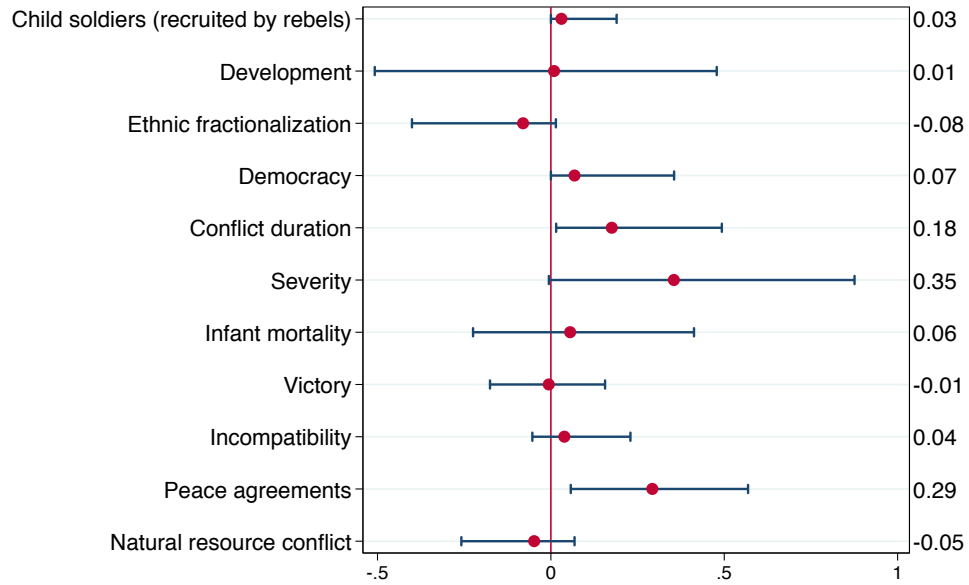
Table 2: UN PKO and Child Soldiers

	(Model 1)	(Model 2)	(Model 3)	(Model 4)
	Probit regression model	Probit regression model	Probit regression model	Bivariate probit regression model
<i>Outcome equation</i>				
Child soldiers (recruited by rebels)	0.76* (0.39)	0.81** (0.38)	0.74* (0.43)	1.81** (0.83)
Natural resource conflict		-0.59 (0.57)	-0.82 (0.51)	-0.54 (0.63)
Conflict duration		0.50** (0.23)	0.51** (0.23)	0.33 (0.39)
Severity		0.01* (0.00)	0.01** (0.00)	0.01 (0.00)
Victory		-0.27 (0.74)	0.41 (0.59)	-0.31 (0.64)
Incompatibility		0.53 (0.43)	0.30 (0.42)	0.37 (0.57)
Peace agreements		1.79** (0.74)	1.85*** (0.63)	1.46 (1.01)
Infant mortality		0.01 (0.00)		
Development		0.06 (0.33)		-0.23 (0.24)
Democracy		0.11** (0.05)		0.08 (0.05)
Ethnic fractionalization		-1.30 (0.80)		-1.72** (0.85)
Constant	-1.56*** (0.34)	-5.98 (4.31)	-5.41*** (1.60)	-2.09 (3.88)
<i>Selection equation</i>				
Child soldiers (recruited by rebels)				
Conflict duration				0.20*** (0.07)
Severity				0.01 (0.00)
Incompatibility				0.04 (0.35)
Infant mortality (beginning of conflict)				-0.01 (0.00)
Ethnic fractionalization				1.75** (0.80)
Constant				-1.46*** (0.50)
ρ				-0.71 (0.57)
<i>N</i>	91	84	86	82
pseudo R^2	0.05	0.49	0.46	
Wald Chi2	3.42*	20.64*	21.98***	

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Models 2 and 4 have fewer observations due to perfect prediction caused by some additional explanatory variables.

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Figure 1: First difference estimates (Model 2)



Note: The first difference indicates the change in the probability of the dependent variable = 1 (UN PKO=1) when changing a respective explanatory variable from its minimum to its maximum, while holding all other variables at their median values. The horizontal bars pertain to 95 percent confidence intervals.

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In addition, the country-related variables we included show that economic development of the recipient country does not significantly influence peacekeeping, however, more democratic regimes are significantly more likely to experience a UN PKO. Although Collier and Hoeffler¹³¹ found that ethnicity is an important indicator for civil war onsets, our results suggest that ethnic heterogeneity of the conflict country is not a significant contributor for the presence of a PKO in post-conflict periods. Infant mortality lacks statistical significance meaning that other covariates measuring either the development or the severity of the conflict might be more important determinants of a PKO.

While the results of some of these predictors do not match the expectations expressed in earlier studies¹³², our findings do mirror other studies that make use of the same data structure (i.e., Kreutz¹³³ and Haer and Böhmelt¹³⁴). Kreutz¹³⁵ (p. 247) explains the difference between his (and our) insignificant findings on the controls and significant results in earlier studies.¹³⁶ First, Walter¹³⁷ and Quinn, Mason, and Gurses¹³⁸ employ data that focus only on conflicts with at least 1,000 battle-deaths within a given year. The UCDP Conflict Termination Dataset follows the 25 annual battle-related deaths threshold of the UCDP PRIO Dataset. Also, Walter¹³⁹ and Quinn, Mason, and Gurses¹⁴⁰ use a country-year format dataset, while the UCDP Conflict Termination Dataset is designed in a conflict-year format. Hence, it is possible to obtain several different conflicts in the same country at the same time. Finally, the datasets employed by Walter¹⁴¹ and Quinn, Mason, and Gurses¹⁴² (p. 182) have a less precise coding of the type of outcome than the UCDP Conflict Termination dataset. For instance, if a civil war fails to reach the

¹³¹Collier and Hoeffler, "Greed and grievance in civil war".

¹³²Quinn, Mason, and Gurses, "Sustaining the peace".

¹³³Kreutz, "How and when armed conflicts end".

¹³⁴Haer and Böhmelt, "Child soldiers as time bombs?"

¹³⁵Kreutz, "How and when armed conflicts end".

¹³⁶Quinn, Mason, and Gurses, "Sustaining the peace".

¹³⁷Walter, "Does conflict beget conflict?"

¹³⁸Quinn, Mason, and Gurses, "Sustaining the peace".

¹³⁹Walter, "Does conflict beget conflict?"

¹⁴⁰Quinn, Mason, and Gurses, "Sustaining the peace".

¹⁴¹Walter, "Does conflict beget conflict?"

¹⁴²Quinn, Mason, and Gurses, "Sustaining the peace".

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threshold of battle-deaths, it is considered terminated by either victory or negotiated settlement, without accounting for other outcomes. As described in depth by Kreutz¹⁴³ (p. 247), our data seem more accurate than data used in previous studies.

The traditional approach to examining explanatory variables in the context of UN peacekeeping operations, so far, has mainly been limited to the analysis of their statistical significance. Nevertheless, statistical significance alone often leads to modest improvements in our ability to *predict* the outcome of events such as UN PKO deployment. Therefore, Figure 1 (in the appendix) focuses on the *predictive power* of the full model (Model 2, Table 2). We do so by deleting one key explanatory variable from the full model at a time and then measuring the effect that the deletion has on the resulting model's ability to make in-sample predictions, i.e., to correctly classify cases as onsets (or non-onsets) of UN PKOs.^{144 145}

Model 3 in our analysis also confirms that child soldiers should be one of the commonly used covariates in the literature that examines the presence of PKOs. Excluding the country-related factors (i.e., development, democracy), the results for child soldiers -among the other determinants- are robust, increasing the likelihood of peacekeeping. The last model in our analysis (Model 4) is a bivariate probit model, which addresses a potential source of endogeneity due to the likely non-random assignment of child soldiers. Third-party interventions are likely to be chosen with respect to their outcomes, e.g., cases that can easily be addressed¹⁴⁶ – or perhaps the more difficult ones¹⁴⁷ – may attract peacekeeping more than others. While this is precisely the process we seek to assess with our main models, the factors that affect peacekeeping could have also influenced the use of child soldiers during the conflict in the first place. Not controlling for this two-stage process may either over- or underestimate our findings. Based on the specifications outlined in Maddala¹⁴⁸ and Greene¹⁴⁹, we use a bivariate probit model that employs two separate equations with correlated disturbances (Model 4). For these estimations, we define two different dependent variables: one for the outcome equation and one for the selection equation.

¹⁴³Kreutz, "How and when armed conflicts end?".

¹⁴⁴Ward, Greenhill, and Bakke, "The perils of policy by p-value".

¹⁴⁵The procedure for in-sample predictions is described in detail in Ward, Greenhill, and Bakke (ibid.).

¹⁴⁶Beardsley, "The UN at the peacemaking–peacebuilding nexus"; Bercovitch and Gartner, "Is there method in the madness of mediation?"

¹⁴⁷Fortna, "Does peacekeeping keep peace?"

¹⁴⁸Maddala, *Limited-dependent and qualitative variable*.

¹⁴⁹Greene, *Econometric analysis*.

¹⁵⁰Greene, *Econometric analysis*; Maddala, *Limited-dependent and qualitative variables*.

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The dependent variable for the outcome equation is the presence of a PKO. The second equation relies on the presence of a PKO as the outcome variable, which is then estimated at the same time as the first equation, while taking into consideration the correlation in the equations' error processes.¹⁵⁰ The dependent variable in the selection equation is the use of child soldiers in the preceding conflict. A bivariate model specification relies on the exclusion of at least one variable from the selection equation, but also on the use of instrumental variables.¹⁵¹ We exclude the variables that are related to a post-conflict period from the selection equation; peace agreement and victory. To put it differently, we only see a peace agreement and the type of victory at the aftermath of a conflict. In addition, we exclude the development and democracy variables, as they should not directly affect the recruitment of child soldiers by rebels (dependent variable in the selection equation). We then use a modified version of infant mortality (that we used above as a control for the probit model) as an instrumental variable in the selection equation. That is, we employ infant mortality at the beginning of the conflict. We use increased rates of infant mortality as a proxy for fewer opportunities for rebel groups to recruit child soldiers. The rate of infant mortality at the beginning of the conflict is unlikely to be endogenous to a UN PKO after the end of it, since infant mortality generally increases during a conflict.¹⁵² Given that the two equations in our analysis refer to different units of analysis (outcome: post-conflict; selection: conflict), we employ the variable of infant mortality with the values at the beginning of a conflict for the selection equation. We also include a reduced form model to rule out a direct impact of the instrument on the dependent variable (Table 2 in the appendix).

The rho (ρ) parameter is statistically insignificant, which emphasizes that it is unlikely that the model's two equations are correlated and that our model is not affected by selection into child soldiering as one source of endogeneity bias. A statistically insignificant ρ indicates that common unmeasured factors do not affect the outcomes of the two equations. Since the results of the main independent variable and the control covariates are in line with the results of the probit models (Models 1-3), our claim that the existence of child soldiers in a conflict increases the likelihood of a PKO in a post-conflict society remains unchallenged. While there is probably more than one way to demonstrate that our estimate of this parameter is not affected by

¹⁵¹Bercovitch and Gartner, "Is there method in the madness of mediation".

¹⁵²Tynes and Early, "Governments, Rebels, and the Use of Child Soldiers".

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particularities of the model specification, we opted for an additional bivariate probit model (Table 3 in the appendix).

For additional robustness checks, we have also included a model illustrating regional fixed effects controlling for different propensity of PKO presence in different areas (Table 4 in the appendix). We also take into consideration the usage of child soldiers by governments. We provide a complementary model to our analysis that examines the likelihood of a PKO presence when governments recruit child soldiers using the data on child soldier recruitment by governments from Tynes and Early (Table 5 in the appendix). It is also likely that peace enforcement in the preceding conflict increases the likelihood of UN presence after the end of the conflict. For this reason, we have included a model in the appendix (Table 6 in the appendix) that takes into account the presence of UN peace-enforcement missions.

In addition, the presence of child soldiers might influence the type of response the UN deploys to a conflict. Specifically, securing post-conflict stability in the long term often requires a more tailored civilian response element by the UN.¹⁵³ We test such argument by looking at the number of troops, police or military observers that a UN mission employs in post-conflict periods in the presence of child soldiers, using data from Kathman¹⁵⁴. The results in a baseline model highlight that the number of police (civilian element) deployed into a conflict is indeed significantly higher in the presence of child soldiers in comparison to troops and military observers. We would, however, exercise caution in interpreting these results as we only have data for 21 missions. Note that the information provided by Kathman¹⁵⁵ covers UN PKO missions from 1990 to 2011, thus slightly different from the years covered in our main analysis.

¹⁵³Hultman, Kathman, and Shannon, “United Nations peacekeeping”.

¹⁵⁴Kathman, “United Nations peacekeeping personnel commitments”.

¹⁵⁵Ibid.

6 Conclusion

The existing academic literature on peacekeeping has primarily produced findings about the determinants of peacekeeping onset¹⁵⁶ and effectiveness.¹⁵⁷ Somewhat surprisingly, although a few recent studies have given important insights regarding child soldiering¹⁵⁸, they have not connected the issue with UN peacekeeping. Empirical findings suggest that peacekeepers tend to be sent to the difficult cases that are problematic in terms of conflict resolution and durable peace.¹⁵⁹ We argue that child soldiers create one of those hard cases and therefore we need to connect the issue of child soldiers to the presence of UN PKOs in post-conflicts.

We tried to fill the gap in the existing literature by explaining why child soldiers increase the likelihood of peacekeeping missions by the UN. The empirical results based on post-conflict periods since 1989 confirm our theoretical expectation: child soldiers do influence the probability of a PKO presence in a post-conflict society. When rebel groups recruit children as soldiers, we are more likely to see a PKO in the post-conflict period. This finding is driven by the estimated risk of post-conflict instability by the UN. In the presence of child soldiers in a post-conflict society, such risk prompts the UN peacekeepers. A potential relapse of violence is a great concern for peacekeepers and for the international community as a whole.

Our theoretical framework highlights two primary reasons why child soldiers exasperate the concern of post-conflict instability. Firstly, in accordance with recent survey results from Uganda, we argue that economic and educational grievances hamper the establishment of viable

¹⁵⁶Andersson, "Democracies and UN peacekeeping operations"; Bove, "A theoretical approach to the demand and supply for peacekeeping"; Neack, "UN Peace-Keeping".

¹⁵⁷Beardsley, "Peacekeeping and the contagion of armed conflict"; Hultman, "UN peace operations and protection of civilians".

¹⁵⁸Gates, *Child soldiers in the age of fractured states*. Lasley and Thyne, "Secession, legitimacy and the use of child soldiers".

¹⁵⁹Fortna, "Does peacekeeping keep peace?".

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livelihoods and therefore future alternatives to fighting for child soldiers.¹⁶⁰ In addition, possible aggression by former child soldiers complicates the acceptance of these child soldiers into their native communities. Both of these mechanisms create unstable post-conflict conditions where the barriers for resuming violence are lower and peace might be threatened. For these aforementioned reasons, the UN is more likely to be present in the post-conflict societies with former child soldiers. Granted that our research only focuses on PKOs employed by the UN, we suggest that future academic research should examine the impact of child soldiers in missions employed by other institutions too (i.e., NATO or African Union led peacekeeping missions). Generally, academic research should incorporate the use of child soldiers into their theoretical and empirical models for more rigorous results.

Child soldier usage might be a signal of changes in the micro dynamics of a conflict and this could be incorporated into the predictive models of conflict behaviour. Finally, in the context of post-conflict behaviour, more emphasis should be given on the mediation settlement attempts and their effectiveness when child soldiers are involved in a conflict. UN peacekeeping and mediation might both lead to peace but under different processes. Is the use of child soldiers a significant factor for mediators to intervene? These are only a few of the questions that could be addressed in relation to the study of child soldiering.

¹⁶⁰Blattman and Annan, “The consequences of child soldiering”.

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Appendix

For additional robustness checks, we present here a table of the correlation matrix of the independent variables employed in our analysis (Table 1). Generally, the results indicate that correlation among explanatory variables is not significantly high, excluding the indicators of development and infant mortality (-0.80***). We ultimately employ infant mortality as an additional predictor of development, to employ it at a later stage as an instrumental variable in the analysis. Nevertheless, excluding infant mortality from our model, the results hold the same.

The ability to make predictions across the full range of possible thresholds can be inferred from the size of the area between the x-axis and the ROC curve, the area under the ROC curve (AUC), which ranges from a minimum of 0 (in the case of random guess) to a maximum of 1 (in the case of a perfect model with no false negatives and no false positives). Figure 1 demonstrates that our full model has a predictive power (in terms of the AUC) of 0.932. To see the marginal contribution that one of the key indicators, i.e., conflict duration, makes to the original model's overall predictive power, we look at the difference between the area under the ROC curve calculated for the full model and the corresponding area calculated for a model that drops this item on the duration of a conflict. The model's predictive power falls from 0.932 to 0.893 when doing so, thus demonstrating that the conflict-duration variable makes a contribution of roughly 0.039 units to the overall predictive power of the model. We repeat this approach by putting the duration variable back into the model, but excluding the severity of the conflict that is also a significant determinant of UN PKOs. The exclusion of this variable decreases the predictive power by only 0.007 units. Also, we exclude the peace-agreements variable, which has an individual predictive power of 0.040 units. When omitting the democracy covariate, the predictive power decreases by 0.016 units. Finally, when we exclude our indicator of child soldiers, the predictive power of the model falls from 0.932 to 0.917, which mirrors the predictive power of the other key explanatory variables. This shows that, among other explanatory variables from the previous literature, the child-soldiers variable has a substantive predictive power in relation to the UN PKO deployment- and not only statistical significance.

Table 2 illustrates a reduced form model that aims to rule out a direct impact of the instrument (infant mortality at the beginning of the conflict) on the dependent variable (UN PKO).

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That is, we replace the endogenous variable (child soldiers) with the instrumental variable (infant mortality at the beginning of the conflict) and examine whether the latter is significant to the UN PKO variable. The results mirror a non-significant relationship between infant mortality at the beginning of the conflict and a UN PKO. Therefore, we can claim that infant mortality at the beginning of the conflict is an exogenous indicator of the outcome variable.

In Table 3 we opted for an additional bivariate probit model that excludes country-related variables (Democracy and Development) from the outcome equation. Nevertheless, the results are virtually identical to the bivariate probit model presented in the main article.

We have also included a model illustrating regional fixed effects controlling for different propensity of PKO presence in different areas. We added four regional dummy variables; Middle East, Africa, Asia and Europe. The baseline of this model is America and the results of all the variables are consistent with the models in the main analysis (Table 4).

Furthermore, we take into consideration the usage of child soldiers by governments. Thus, we provide a complementary model to our analysis that examines the likelihood of a PKO presence when governments recruit child soldiers using the data on child soldier recruitment by governments from Tynes and Early (Table 5). The results indicate that the use of child soldiers by governments also prompts the presence of UN PKOs after the end of a conflict. That is, the likelihood of a UN response increases as long as there are child soldiers – regardless from the actor employing them. The overall results are similar to those of our main analysis examining the use of child soldiers by rebels. An overview of the governments and rebel groups' child soldier usage is already given in Tynes and Early¹ (p. 82) and Haer and Böhmelt² (p. 4).

It is also likely that peace enforcement in the preceding conflict increases the likelihood of UN presence after the end of the conflict. For this reason, we have included a model (Table 6) that takes into account the presence of UN peace-enforcement missions. The data for peace enforcement are taken from Fortna³, who codes enforcement as any substantial military force mandated to use force for purposes other than self-defense.³ Table 6, which includes this binary variable for peace enforcement by the UN, next to our other controls, shows that peace enforcement is unlikely to be related significantly to (post-conflict) peacekeeping operations. That being said, in this hard test, the significance of our key independent variable (child soldiers) is unaltered.

Table 1: Correlation coefficients of the covariates

	Child Soldiers (recruited by rebels)	Natural resource conflict	Conflict duration	Severity	Victory	Incompatibility	Peace agreements	Development	Democracy	Ethnic fractionalization	Infant mortality
Child Soldiers (recruited by rebels)	1.0										
Natural resource conflict	0.23** (0.02)	1.0									
Conflict duration	0.34*** (0.01)	0.23 (0.02)	1.0								
Severity	0.09 (0.38)	0.08 (0.44)	0.15 (0.16)	1.0							
Victory	-0.30** (0.01)	-0.44*** (0.01)	-0.39*** (0.01)	-0.08 (0.43)	1.0						
Incompatibility	-0.01 (0.98)	-0.42*** (0.01)	0.01 (0.85)	-0.08 (0.41)	0.34*** (0.01)	1.0					
Peace agreements	0.11 (0.26)	0.17* (0.09)	0.07 (0.45)	0.23* (0.02)	-0.22** (0.02)	0.05 (0.59)	1.0				
Development	-0.01 (0.94)	-0.29*** (0.01)	-0.31*** (0.00)	0.01 (0.90)	0.21** (0.04)	-0.04 (0.64)	-0.16 (0.12)	1.0			
Democracy	-0.17* (0.09)	-0.18* (0.07)	-0.21** (0.04)	-0.05 (0.61)	0.12 (0.25)	-0.13 (0.21)	0.16 (0.12)	0.15 (0.14)	1.0		
Ethnic fractionalization	0.23** (0.02)	0.36*** (0.01)	0.27** (0.01)	-0.18* (0.09)	-0.38*** (0.01)	-0.23** (0.02)	0.21** (0.04)	-0.50*** (0.01)	0.08 (0.43)	1.0	
Infant mortality	0.06 (0.53)	0.33*** (0.01)	0.29** (0.01)	-0.07 (0.50)	-0.19* (0.06)	0.02 (0.81)	0.11 (0.30)	-0.80*** (0.01)	-0.19* (0.06)	0.53*** (0.01)	1.0

Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: UN PKO and Infant Mortality (beginning of conflict): Reduced form model

	(Model 1) Probit regression model
Infant mortality (beginning of conflict)	-0.00 (0.01)
Natural resource conflict	-0.38 (0.57)
Conflict duration	0.49** (0.23)
Severity	0.00** (0.00)
Victory	-0.49 (0.72)
Incompatibility	0.87* (0.48)
Peace agreements	1.68** (0.72)
Development	-0.26 (0.33)
Democracy	0.11** (0.05)
Ethnic fractionalization	-0.77 (0.85)
_Constant	-2.57 (3.71)
<i>N</i>	82
pseudo <i>R</i> ²	0.47
Wald Chi2	15.90*

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: In-sample predictions: ROC curves

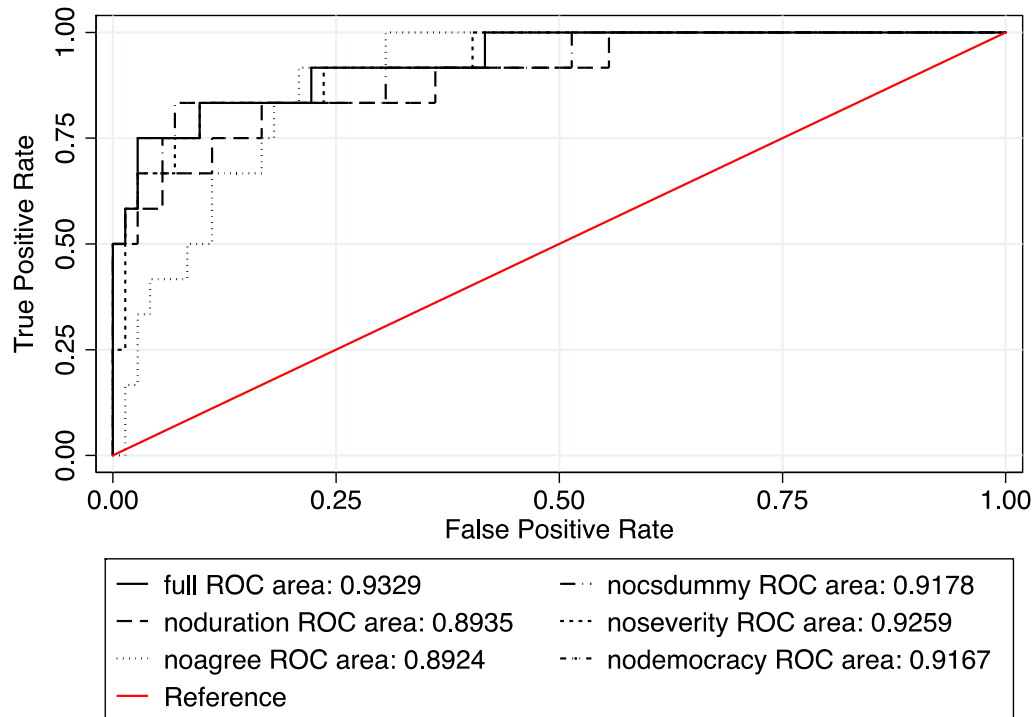


Table 3: UN PKO and Child Soldiers (Bivariate probit: Robustness test)

(Model 1)	
Bivariate probit regression model	
<i>Outcome equation</i>	
Child soldiers (recruited by rebels)	1.75** (0.72)
Natural resource conflict	-0.58 (0.62)
Conflict duration	0.33 (0.30)
Severity	0.01 (0.01)
Victory	0.02 (0.55)
Incompatibility	0.21 (0.41)
Peace agreements	1.61* (0.97)
Ethnic fractionalization	-1.13 (0.96)
Constant	-3.96* (2.05)
<i>Selection equation</i>	
Child soldiers (recruited by rebels)	
Conflict duration	0.21*** (0.07)
Severity	0.01 (0.01)
Incompatibility	0.06 (0.35)
Ethnic fractionalization	1.73** (0.87)
Infant mortality (beginning of conflict)	-0.01 (0.01)
Constant	-1.47*** (0.51)
ρ	-0.66 (0.56)
N	82

Standard errors in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: UN PKO and Child Soldiers (Regional fixed effects)

Probit regression model	
Child soldiers	1.57** (0.56)
Natural resource conflict	-0.22 (0.58)
Conflict duration	0.39** (0.20)
Severity	0.01 (0.00)
Victory	-0.23 (0.86)
Incompatibility	0.36 (0.40)
Peace agreements	1.64** (0.73)
Development	-0.01 (0.34)
Democracy	0.21** (0.07)
Infant mortality	0.01 (0.01)
Ethnic fractionalization	-1.45* (0.82)
Middle East	5.50*** (0.88)
Africa	4.62*** (1.22)
Asia	3.28** (1.30)
Europe	4.52*** (0.77)
Constant	-9.66** (4.08)
<i>N</i>	84
pseudo <i>R</i> ²	0.54
Wald Chi2	431.00***

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: UN PKO and Child Soldiers (Recruited by Governments)

	(Model 1) Probit regression model
Child soldiers (recruited by Governments)	2.01*** (0.70)
Natural resource conflict	-1.43 (0.95)
Conflict duration	0.83** (0.35)
Severity	0.01 (0.00)
Victory	-0.78 (0.94)
Incompatibility	0.64 (0.60)
Peace agreements	2.27** (0.92)
Infant mortality	-0.10 (0.01)
Ethnic fractionalization	-1.87 (0.97)
Constant	-1.18 (4.91)
<i>N</i>	82
pseudo R^2	0.56
Wald Chi2	28.19***

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: UN PKO and Child Soldiers (Controlling for UN peace enforcement)

	Probit regression model
Child soldiers (recruited by	0.81** (0.38)
Natural resource conflict	-0.62 (0.54)
Conflict duration	0.53** (0.23)
Severity	0.01** (0.01)
Victory	-0.28 (0.76)
Incompatibility	0.55 (0.44)
Peace agreements	1.87** (0.68)
Infant mortality	0.01 (0.01)
Development	0.03 (0.34)
Democracy	0.12** (0.06)
Ethnic fractionalization	-1.31* (0.80)
UN peace enforcement	-0.22 (0.75)
Constant	-5.86 (4.45)
<i>N</i>	84
pseudo <i>R</i> ²	0.49
Wald Chi2	22.37*
Standard errors in parentheses	
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$	

Notes

1. Robert Tynes and Bryan R Early. "Governments, Rebels, and the Use of Child Soldiers in Internal Armed Conflicts: A Global Analysis, 1987–2007". *Peace Economics, Peace Science and Public Policy* 21.1 (2015), pp. 79–110.
2. Roos Haer and Tobias Böhmelt. "The impact of child soldiers on rebel groups' fighting capacities". *Conflict Management and Peace Science* (2015).
3. Virginia Page Fortna. *Does peacekeeping work?: shaping belligerents' choices after civil war*. Princeton University Press, 2008.