

A Call to Arms: How Economic Sanctions Drive Rebels to Recruit Children

Abstract

The widespread recruitment of child soldiers is receiving increased attention from scholars of civil conflict and human rights. This article explains how international economic sanctions inadvertently shape rebel recruitment strategies. We argue that sanctions act as exogenous shocks that simultaneously expand the supply of vulnerable minors by eroding protective social institutions and intensifying rebel demand for low-cost, coercive labor to substitute for constrained financial and military resources. Using 187 rebel groups from 1989 to 2011 and a qualitative case study of UNITA in Angola, we show how economic sanctions systematically drive groups toward child soldier recruitment. The article thereby demonstrates that rebel manpower acquisition is an adaptive response to international coercion, where resource scarcity compels a strategic shift from capital-intensive warfare to labor-intensive predation.

Keywords: Civil wars, Rebel recruitment, Child soldiers, Economic sanctions

1. Introduction

They used razor blades to make small incisions in their faces and rubbed cocaine powder into the wounds. Then they covered the cuts with plasters. These drugs rendered them emotionally numb, making it easier for them to kill and torture (Deen, Butscher and Anthony 2000). Only later would it become clear who “they” were—child soldiers, some as young as fifteen, forcibly recruited by the Revolutionary United Front (RUF) to participate in the attack on Freetown, Sierra Leone, on January 6, 1999. The RUF mobilized child soldiers and fought to control diamond-rich territories.

This phenomenon was not unique to the RUF. During the civil war, conservative estimates suggest that between 5,000 and 7,000 child combatants were employed by both sides, including the government, in Sierra Leone (Brett and McCallin 1998).¹ Moreover, not all child soldiers were forcibly recruited. Some reportedly enlisted voluntarily, although such decisions were typically made under duress or within highly coercive environments (Peters 2004).

The proliferation of child soldiers and the harrowing conditions of their enlistment have spurred a substantial body of scholarship seeking why and under what conditions child soldiers are employed. Existing research has traditionally coalesced around two competing yet complementary frameworks: the supply-side, which highlights how societal breakdown and economic destitution make children available for mobilization (Salehyan, Siroky and Wood 2014; Tynes and Early 2015; Wood 2014), and the demand-side, which posits that rebel groups actively seek children due to their low cost and tactical utility (Haer and Böhmelt 2015). These studies provide critical insights into local recruitment environments. However, they often underexplored the broader international factors, despite their potential to shape multiple dimensions of armed groups’ behavior. geopolitical context in which these conflicts occur. Departing from this domestic focus, this study shifts the analytical

1. Reliable statistics on the number of children involved in the Sierra Leone civil war are unavailable. Estimates vary considerably depending on definitions and data sources. According to Caritas Makeni, over 5,000 children under the age of 18, including some as young as five, served as combatants. The United Nations Assistance Mission in Sierra Leone (UNAMSIL) reported around 10,000 children associated with fighting forces, while UNICEF estimated that more than 6,000 were conscripted over the years. The National Committee for Disarmament, Demobilization, and Reintegration (NCDDR) recorded 6,774 children who entered its DDR program. These variations reflect the different criteria used by each organization in identifying child soldiers. See Truth and Reconciliation Commission for Sierra Leone, Final Report (2004).

lens to the international dimension, investigating how external pressures exerted by the international community—particularly economic sanctions—inadvertently exacerbate the recruitment of child soldiers.

How do economic sanctions influence rebel groups' recruitment of child soldiers? Economic sanctions are frequently deployed in civil conflict settings to coerce rebel groups by disrupting their financial networks and compelling behavioral change. While substantial research has examined sanction effectiveness in altering conflict dynamics—such as encouraging negotiation (Strandow 2006), shortening war duration (Escribà-Folch 2010), and weakening rebel capacity to prolong violence (Radtke and Jo 2018)—scholars have paid less attention to their unintended consequences within sanctioned states, particularly how sanctions influence rebel recruitment of children.

We argue that economic sanctions unintentionally increase child soldier recruitment in civil conflicts through two complementary mechanisms. On the supply side, sanctions exacerbate structural poverty and institutional breakdown, weakening family, educational, and community protections and thereby expanding the pool of children available to armed groups. On the demand side, sanctions impose operational and resource constraints on rebel organizations, increasing the relative appeal of cheaper and more controllable forms of manpower. Under resource scarcity, child soldiers become a cost-effective substitute for adult recruits. Furthermore, sanctions diminish reputational incentives for compliance with humanitarian norms by isolating targeted actors from the international community. Together, these dynamics suggest that sanctions, although intended as a clean instrument of coercion, may inadvertently create conditions under which child soldier use becomes more likely.

To test these arguments empirically, we combine large-N statistical analysis with a focused case study. We estimate logistic regressions on 187 rebel organizations active between 1989 and 2011, merging the Global Sanctions Database (GSDB) with the Child Soldier Dataset (CSDS), to assess whether sanctions are associated with child soldier recruitment. We complement these results with a case study of UNITA in Angola that illustrates key mechanisms: resource loss, institutional collapse, and intensified coercive recruitment.

We find strong support for our theoretical expectations. Sanctions significantly increase the predicted probability of child soldier recruitment, an effect that persists across propensity score matching and multiple robustness checks. Disaggregating by sanction type reveals that arms and military sanctions—which directly constrain fighting capacity—exhibit the strongest association with child recruitment, while economic sanctions show no independent effect. The Angola case demonstrates how sequential UN sanctions between 1993 and 1998 progressively weakened UNITA’s military capacity and financial base, prompting documented surges in forced child abductions. These findings indicate that sanctions reshape rebel recruitment strategies in ways that harm the most vulnerable populations.

This article contributes to scholarship on both the rebel recruitment strategies and the consequence of economic sanctions. By examining how sanctions alter rebel reliance on child soldiers, we extend the child soldier literature beyond its traditional focus on domestic determinants, highlighting the critical role of international coercion. While sanctions are often regarded as a clean, non-military tool, recent studies show that they can trigger adaptive and often violent responses by targeted actors (Cunningham, Fleishman and White 2025; Radtke and Jo 2018; Urtuzuastigui and Koren 2024). When rebels respond to this external pressure by looting, targeting civilians, or conscripting children, sanctions may inadvertently escalate civilian suffering while ostensibly weakening rebel capacity. This concern speaks directly to ongoing debates over whether sanctions mitigate or intensify violence in civil wars (Strandow 2006; Escribà-Folch 2010; Hultman and Peksén 2017). From a humanitarian policy perspective, our findings suggest that sanctions contribute to increased child soldier recruitment, representing a profound moral and legal concern that calls for reassessing sanction regimes and integrating stronger safeguards against unintended harm.

The article proceeds as follows. Section 2 reviews scholarship on child soldier recruitment and identifies how external shocks map onto supply, demand, and organizational constraints. Section 3 develops our theoretical argument linking sanctions to recruitment through two complementary mechanisms: societal disruption and organizational resource scarcity. Section 4 details the research design, data, variables, and estimation strategy.

Section 5 presents main findings and robustness checks. Section 6 provides a case study of UNITA in Angola that traces mechanisms in operation. The conclusion discusses implications for sanction design and child protection policy.

2. Literature Review: Child Soldier Recruitment

Scholars on the determinant of rebel groups' child soldier recruitment have converged around two interrelated explanatory pathways: supply and demand. On the supply side, scholars posit that adverse structural conditions push children toward armed groups by systematically eroding institutional safeguards. Protracted conflict and the resulting breakdown of social fabrics—manifested in school closures, mass displacement, and weakened community oversight—effectively generate a large pool of vulnerable children accessible to recruiters (Achvarina and Reich 2006; Tynes and Early 2015; Lasley and Thyne 2015). Within this destabilized environment, joining a rebellion can emerge as an attractive alternative for survival. Scholars suggest that under conditions of acute poverty (Cohn and Goodwin-Gill 1994; Woods 1993; Sesay and Ismail 2003; Luck 2013) and limited educational opportunities (Cohn and Goodwin-Gill 1994; Machel 1996; Wessells 2006), enlistment is often perceived, by both families and children themselves, as a rational strategy to secure food, protection, or income (Cohn and Goodwin-Gill 1994; Luck 2013). While empirical findings on specific factors like orphanhood remain mixed (Achvarina and Reich 2006; Cohn and Goodwin-Gill 1994; Brett, McCallin and O'Shea 1996; Singer 2005; Wessells 2006), the consensus holds that socio-economic deprivation not only expands the pool of potential recruits but also lowers the opportunity costs of participation, making armed groups a viable, and arguably attractive, option.

Conversely, demand-side theories shift the focus from the availability of recruits to the strategic calculus of rebel leaders. Rather than focusing solely on structural conditions that generate vulnerable children, this literature argues that rebels actively seek child recruits based on a specific set of costs and benefits Lasley and Thyne (2015). From this perspective, utilizing child soldiers is viewed as cost-effective: children are cheaper to train and sustain, more obedient, and easier to retain than adults (Haer and Böhmelt 2015; Woods 1993; Brett, McCallin and O'Shea 1996). Beyond economic efficiency, children offer

distinct tactical advantages. They are often less risk-averse, more easily indoctrinated, and willing to execute extreme acts of violence (Brett, McCallin and O'Shea 1996; Honwana 2006; Singer 2005; Wessells 2006; Tynes 2011). Furthermore, the presence of child soldiers can induce psychological trauma in opposing forces, serving as a battlefield tactic in its own right (Singer 2005). These incentives intensify under deteriorating structural conditions. When rebel groups face battlefield losses, resource scarcity, or the withdrawal of external support, the relative utility of child soldiers increases (Blattman 2007; Wood 2014; Salehyan, Siroky and Wood 2014). That is, as adult recruitment pools diminish and surplus resources dwindle, the low-cost mobilization of children becomes not only a viable option but an increasingly attractive operational strategy.

However, these material incentives are conditioned by both environmental pressures and actor-level constraints. Internally, leadership turnover, command fragmentation, and weak territorial control undermine centralized authority, often forcing groups to adopt opportunistic or coercive recruitment methods—including the enlistment of children—as a pragmatic response to operational deficits (Gates 2002; Weinstein 2007; Beber and Blattman 2013). Similarly, centralized rebel organizations tend to enforce stricter recruitment discipline and are more attentive to reputational risks, while fragmented groups, facing internal competition and reduced oversight, frequently delegate recruitment to local commanders—thereby increasing the likelihood of child soldiering (Faulkner and Doctor 2021). Beyond material constraints, ideational and reputational considerations further influence mobilization behavior. Secessionist rebel groups are generally less likely to recruit children than their non-secessionist counterparts, largely due to concerns over future governance legitimacy and heightened sensitivity to international norms (Lasley 2010; Lasley and Thyne 2015).

While existing scholarship has produced a wealth of knowledge in illuminating the supply- and demand-side determinants of child soldiering, these inquiries have predominantly focused on domestic-level factors ranging from local socioeconomic deprivation to internal organizational structures. Consequently, the literature has largely overlooked the extent to which international policy interventions shape the micro-foundations of rebel behavior. What we have yet to fully understand is how exogenous shocks reshape the

strategic calculus of rebel groups or, relatedly, how external pressures alter recruitment dynamics in active conflict environments. To bridge this gap, this study focuses on economic sanctions, examining how these coercive measures systematically influence rebel recruitment patterns and drive the utilization of child soldiers.

3. Theoretical Argument: How Economic Sanctions Affect Rebel Groups' Child Soldier Recruitment

Building on the broader literature on child soldier recruitment strategies, we argue that one important factor influencing rebels' incentives to forcibly recruit children is the imposition of economic sanctions. A substantial body of work highlights that sanctions are not merely diplomatic signals but potent disruptors of conflict dynamics, particularly with respect to conflict duration and violence intensity. While intended to coerce behavioral compliance, studies indicate that sanctions often generate unintended collateral consequences, ranging from surges in battle-related deaths to temporary spikes in violence (Escribà-Folch 2010; Hultman and Peksen 2017; Lektzian and Regan 2016). However, how this pressure translates into changes in rebel recruitment tactics remains underexplored. To bridge this gap, we posit that the coercive characteristics of sanctions—specifically their ability to restrict material flows and erode institutional capacity—have profound implications for child soldiering. By inducing acute resource scarcity, sanctions create a distinct strategic environment that influences both the availability of vulnerable children (supply-side) and the strategic calculus of rebel leaders (demand-side).

3.1 Societal Disruption and the Supply of Vulnerable Children

First, we argue that economic sanctions create the structural foundation for child soldier recruitment by precipitating a severe deterioration in the target country's socioeconomic landscape. A substantial body of empirical research demonstrates that sanctions impose heavy costs across multiple domains, causing significant declines in GDP growth (Hufbauer et al. 2009; Neuenkirch and Neumeier 2015), international trade (Afesorgbor 2019), and foreign direct investment (Mirkina 2018). For instance, during the 2012–2014

sanctions episode against Iran, unemployment in the manufacturing sector rose by approximately 16.5 percentage points, underscoring the severe domestic repercussions of economic isolation (Moghaddasi Kelishomi and Nisticò 2023).

Crucially, however, the impact extends beyond aggregate contraction; it triggers a strategic reallocation of resources that disproportionately harms the most vulnerable. As targeted governments attempt to offset economic pain, they typically shift the costs onto the population to preserve regime stability. To sustain security spending, sanctioned states frequently cut social expenditures like education and health (McLean and Whang 2019; Peksen 2011). This dynamic is particularly pronounced in authoritarian settings, where leaders shift costs onto the mass public to preserve core ruling coalitions (Escribà-Folch 2010). Consequently, sanctions exacerbate income inequality and poverty (Afesorgbor and Mahadevan 2016), lower educational attainment (Moeeni 2022), and foster corruption (Andreas 2005), illustrating how coercive instruments designed to punish elites often inflict the greatest harm on ordinary citizens.

When sanctions coincide with active civil war, these adverse effects compound. War-time disruptions already erode community-based protection mechanisms, but the added pressure of sanctions accelerates infrastructure deterioration, spikes unemployment, and often fragments humanitarian aid (Lektzian and Regan 2016). In this environment of acute deprivation—marked by school closures and food shortages—participation in armed groups ceases to be merely a matter of coercion; it becomes a rational strategy for survival to children. Parents facing economic desperation may acquiesce to recruitment to secure resources, and children themselves may view enlistment as their only viable option (Achvarina and Reich 2006). This logic is vividly illustrated by the testimony of a former combatant in Sierra Leone:

Before the war I stayed with my mother. My mother was doing business and I helped her sometimes. There was no time to play games. I went to school but I stopped in form one. There was no money left to go to school because the business of my mother was destroyed because of the war. That was the time the war came to Kailahun. At that time the situation became more difficult for us. The RUF came and asked us to join them. Because I was not doing

anything and there was no person looking after me I decided to join them and take up arms to fight. I joined the rebels purposely because of the difficulties we were having. We were suffering too much. The RUF was encouraging us to help them in their fight so that later we could enjoy a proper life (Peters 2004, 14).

As this account demonstrates, sanctions expand the supply of vulnerable children not simply by creating poverty, but by systematically weakening the institutions that would otherwise protect them, such as education and family stability.

3.2 Organizational Constraints and Rebel’s Demand for Child Soldiers

In addition, we argue that economic sanctions systematically alter the demand-side calculus of rebel leaders, driving them to actively seek child recruits. Rebel organizations typically sustain their operations through a triad of external sponsorship, taxation, and natural resource extraction (Hazen 2013). Sanctions disrupt these channels by limiting export routes, tracking financial flows, and deterring third-party supporters (Weinstein 2005; Hultman and Peksen 2017; Urtuzuastigui and Koren 2024). Facing escalating war costs and deteriorating supply lines, rebel leaders are forced to adapt their manpower strategies to survive.

First, sanctions increase the relative utility of child soldiers as a cost-effective substitute for adult combatants. As sanctions tighten resource constraints, the capacity to offer material rewards—wages or loot—diminishes, making it difficult to retain adult fighters. Drawing on Beber and Blattman (2013), who characterize rebel recruitment as a principal-agent problem under scarcity, we posit that child soldiering represents a calculated response to these material deficits. Children are cheaper to sustain, easier to indoctrinate, and less capable of organized defection than adults. The case of Al-Shabaab illustrates this adaptive logic: following the UN charcoal ban, the group shifted from resource reliance to intensified internal extortion and coercion to offset revenue losses (United Nations Security Council 2011, 2012, 2016). Similarly, sanctioned groups generally pivot toward cheaper, more controllable forms of manpower to maintain combat

capacity.

Furthermore, sanctions fundamentally alter the reputational calculus of rebel groups by lowering the political costs of norm violation. In the absence of sanctions, many rebel groups strategically refrain from child recruitment to signal moral superiority, aiming to secure diplomatic recognition, diaspora funding, or a seat at the negotiating table (Stanton 2020; Lasley and Thyne 2015). However, sanctions effectively sever these potential rewards. Once a group is formally sanctioned and economically isolated, the legitimacy associated with human rights compliance evaporates. Once a group is stigmatized and economically isolated, the incentive to maintain a 'humanitarian image' for the sake of external support diminishes (Fortna 2003; Fearon and Laitin 2003). With little to lose in terms of international reputation, sanctioned actors prioritize short-term survival over long-term legitimacy. Consequently, the barriers to adopting coercive tactics fall, making the forced recruitment of children a viable and attractive operational strategy (Cunningham, Fleishman and White 2025; Hultman and Peksen 2017).

In summary, we argue that economic sanctions unintentionally foster child soldier recruitment through two complementary pathways. Sanctions expand the pool of vulnerable recruits by dismantling the economic and institutional safety nets that protect children (supply), while concurrently forcing rebel leaders to seek cheaper, more controllable manpower to offset resource losses and political isolation (demand). We contend that these dual pressures do not merely coexist but reinforce one another, systematically increasing the likelihood of child recruitment. Based on this logic, we propose the following hypothesis:

Hypothesis 1: Rebel groups operating under economic sanctions are more likely to recruit child soldiers than groups not subject to sanctions.

4. Research Design

Our study builds on the theoretical premise that economic sanctions, as a form of exogenous pressure, significantly correspond with patterns of child soldier recruitment. Specifically, we posit that sanctions increase the likelihood that rebel groups recruit child soldiers relative to rebels operating in non-sanctioned environments. To empirically test

these arguments, we construct a conflict-dyad level dataset by combining the Child Soldier Dataset (CSDS) and the Global Sanctions Database (GSDB) with several important political and economic indicators.² Based on this, our final sample comprises 187 rebel groups active between 1989 and 2011.

4.1 Dependent Variable

The dependent variable, *child soldier recruitment*, is whether a rebel group recruits child soldiers during a given conflict. Accordingly, the variable is coded as a binary indicator: 1 if a rebel group recruited children, and 0 otherwise. We operationalize this variable using the CSDS (Haer and Böhmelt 2016), which adheres to the Paris Principles (UNICEF 2007). This framework defines a child soldier as any person under the age of 18 associated with an armed group in any capacity, encompassing not only combatants but also support roles such as cooks, porters, couriers, and spies. This comprehensive definition is particularly pertinent in the context of sanctions, as resource-depleted groups may increasingly rely on children for combat and auxiliary tasks.

4.2 Independent Variable

Our key independent variable of interest is *sanctions*. The sanction data come from the latest version of the GSDB (Syropoulos et al. 2022), which provides comprehensive coverage of sanctions cases from 1949 to 2022. The GSDB offers distinct advantages over other prominent datasets in terms of both temporal and substantive scope. For instance, the Threat and Imposition of Sanctions (TIES) dataset (Morgan, Bapat and Kobayashi 2014) ends in 2005, failing to capture more recent sanctioning dynamics. Other alternatives, such as the Targeted Sanctions Consortium (TSC) (Graduate Institute Geneva 2020) and EUSANCT (Weber and Schneider 2022), are constrained by their focus on sanctions imposed by the United States or multilateral sanctions, such as the UN and EU, and offer shorter temporal windows that conclude in 2014 and 2015. In contrast, the GSDB encompasses a broad spectrum of sanction types, including trade, financial, travel, and

2. Our unit of analysis is the conflict-dyad-year, not the country-year. For a discussion of the challenges involved in collecting cross-national data that capture within-group variation in child soldier recruitment, see Faulkner and Doctor (2021); Haer, Faulkner and Whitaker (2020).

arms embargoes. We coded the variable as a binary indicator, assigning a value of 1 if economic sanctions were imposed on the target state during the conflict, and 0 otherwise.³

4.3 Control Variables

Following the existing literature, we include a series of control variables at the group, conflict, and country levels to account for alternative explanations that may influence the likelihood of child soldier recruitment.

At the group level, we consider several variables that have influenced the rebel group’s recruitment of children. First, we control for the duration of rebel group activity (*Rebel Group Age*) using the UCDP Conflict Termination Dataset (Kreutz 2010). Longer durations may provide groups with greater opportunities to recruit, making this a critical control. Second, we control for *territorial control*, a binary indicator from the Non-State Actor Dataset (NSA), coded as 1 if the group controls territory in a given year (Cunningham, Gleditsch and Salehyan 2013). Territorial control reflects greater organizational capacity and enhances recruitment infrastructure (De la Calle and Sánchez-Cuenca 2015; Kubota 2011). Third, *centralized command*, capturing internal leadership structure, might have been linked to variation in human rights practices and organizational fragmentation. This data was also drawn from the NSA dataset (Haer 2015; Hoover Green 2016; Asal, Brown and Dalton 2012). Next, we include a measure of *resource extortion* from the Rebel Contraband Dataset (RCD) (Walsh et al. 2018), as groups that exploit natural resources often rely more heavily on coercive strategies (Faulkner, Powell and Lasley 2019; Haer, Faulkner and Whitaker 2020). We also control for *external sponsorship*, a binary variable indicating whether the group receives material support from a foreign actor, which may reduce local accountability and increase the likelihood of child soldier recruitment (Faulkner 2016; Tamm 2016). Lastly, we control for *rebel fighting capacity*, an ordinal measure from the NSA dataset that evaluates a group’s military strength relative to the government (Cunningham, Gleditsch and Salehyan 2013)

At the conflict level, we build on prior empirical findings that identify conflict-level factors that influence rebel groups’ recruitment patterns of child soldiers. First, we ac-

3. In our sample of 187 conflict-dyads, 55 percent of the rebel groups are under sanction. For more detailed information, see Table A1 in the Appendix.

count for *conflict intensity*, as significant battlefield losses can increase the demand for child soldiers when rebel groups seek to replenish their ranks (Haer and Böhmelt 2017). We measure conflict intensity as the average number of battle-related deaths per year within a conflict-dyad, using data from the UCDP Battle-Related Deaths Dataset (Gleditsch 2002). To address the highly skewed distribution, we apply a natural logarithmic transformation to *conflict intensity*. Next, we account for *conflict duration*, also drawn from the UCDP. Longer conflicts can heighten the demand for combatants, prompting organizations to adopt recruitment practices that they may have previously avoided (Tynes and Early 2015). Third, we account for whether government forces recruited children during the conflict, *Child recruits-state*, as rebel groups may seek to leverage moral superiority over the state by distinguishing themselves from government forces (Stanton 2020). This variable is drawn from the dataset compiled by Haer, Faulkner and Whitaker (2020), which codes a value of 1 if the government forcibly recruits children and 0 otherwise.

Finally, at the country level, we include variables reflecting conditions that could shape the supply of potential child soldiers. First, we control for a country's *regime type* using data from the Polity IV project (Marshall, Jaggers and Gurr 2014). The polity score ranges from -10 (full autocracy) to +10 (full democracy). We also include a squared term of this variable to account for potential curvilinear relationships between regime type and child soldier recruitment. Second, we control for *GDP per capita*, (Gleditsch 2002) as a higher level of poverty may make participation in rebel groups appear more rational to children. (Cohn and Goodwin-Gill 1994; Woods 1993; Sesay and Ismail 2003; Luck 2013). Finally, we control for the general supply of children in a country by including the *youth population*, using data from the World Development Indicators (WDI).⁴ *GDP per capita* and *Youth population* are transformed to a natural logarithm to prevent skewing of the distribution and deal with relative scales. Descriptive statistics of all the variables used in our analyses are reported in Table A2.

4. However, as noted in the exiting work, the youth population measure from the WDI does not align with the Paris Principles, which define a child soldier as an individual under the age of 18. The available data capture only the proportion of the population aged 0-14, and therefore do not precisely reflect the size of the population at risk of child soldier recruitment.

4.4 Estimation Strategies

Given the binary nature of our dependent variable, (i.e. whether rebel group recruit child soldier or not), we employ logistic regression models. Furthermore, considering that the CSDS dataset often includes multiple rebel groups operating within the same conflict, observations are not independent across groups. To address this potential within-conflict correlation and prevent the underestimation of standard errors, we cluster all standard errors at the conflict level.

To address the heterogeneity between “treated” (sanction) and “untreated” (no sanction) observations, we also estimate the same results using a matched sample based on propensity score matching (PSM). A key concern in identifying the effect of sanctions is that they are not randomly assigned; countries targeted by sanctions often differ systematically from non-targeted ones in terms of political stability, economic development, and conflict intensity. If these pre-treatment attributes also influence child soldier recruitment, standard regression estimates may be biased. PSM addresses this selection bias by balancing observable covariates between the treated and control groups.⁵ This approach allows us to compare rebel groups operating under sanctions with counterfactual groups in non-sanctioned but otherwise similar environments, thereby strengthening the causal interpretation of our results.

5. Results

5.1 Main Results

Table 1 reports the main results linking economic sanctions to child soldier recruitment. The reported coefficients represent the expected change in the log-odds of child soldier recruitment in a rebel-year for a one-unit change in the corresponding explanatory variable. Standard errors are clustered at the conflict level. Across all model specifications, sanctions are positively and significantly associated with the likelihood that a rebel or-

5. We implemented the matching utilizing a logistic regression model to estimate propensity scores. The matching algorithm used was 1-to-1 nearest neighbor with a caliper of 0.05, enforcing the common support condition. Post-matching diagnostics indicate a substantial reduction in bias across all covariates. The full results of the covariate balance tests are presented in Appendix Table A3.

ganization employs child soldiers.

We first present a baseline model that excludes our main variable of interest and only includes control variables related to the supply and demand sides of forced recruitment of children by rebel groups. Using the same dyad-year observations as the baseline, Model 2 then adds the variable for rebel natural resource exploitation to assess its influence on forced recruitment. In this model, the coefficient for sanctions was estimated at 1.035 ($p < 0.05$), indicating that the odds of child soldier recruitment increase by a factor of approximately 2.82 when sanctions are imposed ($\exp(1.035) \approx 2.82$). Model 3 includes the same variables but limits the PSM sample, thus allowing us to more rigorously address endogeneity concerns arising from selection bias. In Model 3, the coefficient rises to 1.568 ($p < 0.01$), implying that even after balancing sanctioned and non-sanctioned conflicts on observable characteristics, the odds of recruitment are roughly 4.8 times higher in sanctioned conflicts ($\exp(1.568) \approx 4.80$). In sum, across all results, we find robust support for our Hypothesis 1.

To better understand the substantive effects of sanctions on the pattern of child soldier recruitment, we plot the marginal effects based on the coefficient from Model 2 in Table 1. Figure 1 presents the predicted probability of child soldier recruitment under the conditional imposition of economic sanctions. The predicted values are shown with 0.95 confidence intervals. We find that the imposition of economic sanctions is associated with a 0.074 discrete increase ($p < .05$) in the probability of child soldier recruitment, raising the predicted probability from 0.880 to 0.954. These results indicate that variation in sanction imposition strongly predicts rebel recruitment strategies. Although data limitations prevent us from fully exploiting within-group temporal dynamics, the evidence consistently supports our argument that economic sanctions shape how rebel organizations approach recruitment.

Regarding the control variables, our results are consistent with previous studies. The coefficients align with established patterns in the child soldier literature, offering several noteworthy insights. At the group level, rebel organizations with longer durations of activity and those engaged in resource exploitation were more likely to recruit child soldiers. Consistent with prior research, both the length of rebel activity and resource

Table 1: Main Results: Economic Sanctions and Child Soldier Recruitment

	(1) Baseline	(2) All sample	(3) PSM sample
Sanction		1.035** (0.477)	1.568*** (0.507)
Rebel group age	0.183*** (0.051)	0.194*** (0.054)	0.128*** (0.049)
Territorial control	0.024 (0.584)	-0.014 (0.534)	-0.025 (0.489)
Centralized command	1.487 (1.205)	1.435 (1.917)	2.266** (1.095)
Resource extortion	1.872*** (0.720)	1.946** (0.828)	1.699 (1.323)
External sponsor	0.023 (0.537)	0.023 (0.823)	0.663 (0.663)
Rebel fighting capacity	-0.046 (0.369)	0.127 (0.407)	0.063 (0.382)
Conflict intensity (log)	0.077 (0.208)	-0.023 (0.244)	0.028 (0.244)
Conflict duration	-0.005 (0.017)	-0.008 (0.016)	-0.008 (0.017)
Child recruits—state	1.494** (0.674)	1.802** (0.746)	1.785** (0.702)
Regime type	0.249 (0.215)	0.244 (0.224)	0.244 (0.240)
Regime type square	-0.009 (0.010)	-0.008 (0.010)	-0.009 (0.011)
GDP per capita (log)	0.148 (0.351)	0.156 (0.352)	0.160 (0.361)
Youth population (log)	3.332** (1.620)	4.147** (1.746)	2.028 (2.028)
Constant	-17.427** (8.642)	-20.955** (9.065)	-14.501 (10.695)
Pseudo- R^2	0.340	0.360	0.309
Log likelihood	-64.102	-62.901	-81.439
AIC	156.202	154.183	192.899
N	187	187	145

Note: Standard errors clustered at the conflict level in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$.

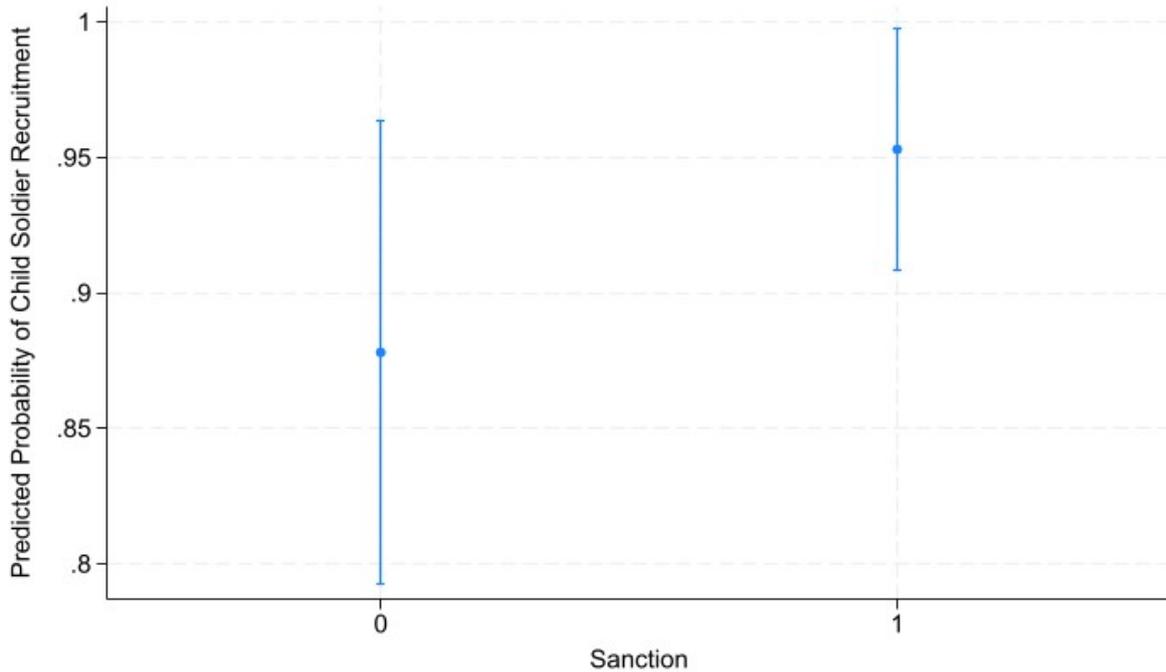


Figure 1: The predicted probability of child soldier recruitment

exploitation show a positive and statistically significant association with recruitment, a relationship that persists even after controlling for sanctions, suggesting that these factors function as independent and robust predictors under sanction conditions. In contrast, group-capacity variables—such as external sponsorship, relative combat strength, and territorial control—do not appear to have an independent association with child soldier recruitment.

At the conflict level, the use of child soldiers by government forces increases the likelihood that rebel groups engage in similar practices, aligning with prior research on reciprocal and mimetic dynamics in civil wars (Tynes and Early 2015; Haer and Böhmelt 2016). Rebels may interpret state violations of humanitarian norms as legitimizing their own actions or simply mirror them under comparable material constraints. By contrast, the hypothesis that rebels recruit children strategically to gain diplomatic leverage or signal moral differentiation is both theoretically implausible and empirically unsupported in this analysis.

At the country level, GDP per capita shows no statistically significant relationship with child soldier recruitment, consistent with prior findings that national wealth does not directly constrain rebel manpower strategies (Faulkner and Doctor 2021). The share

of the youth population is positive and significant in some specifications, suggesting that demographic structure may shape the supply of potential recruits.

5.2 Robustness Checks

To ensure the robustness of our findings, we conducted a comprehensive series of additional analyses that addressed alternative model specifications, sample restrictions, temporal dependence, and alternative outcome measures. All results for robustness checks are reported in the Appendix. Across all tests, the sanction coefficients remain positive and statistically significant in both magnitude and direction, indicating that the observed relationships are not artifacts of model choice or sample composition.

We first evaluate whether the results are sensitive to unobserved regional or temporal shocks that could bias cross-sectional estimates. To address this, we include regional fixed effects (Africa, Asia, Latin America, and Europe) and polynomial annual time trends. These additions do not alter either the substantive or statistical significance of the sanction coefficients (Table A4), indicating that neither cross-regional heterogeneity nor period-specific dynamics drives the main findings. This alleviates concerns that the cross-sectional design might obscure latent regional clustering or temporal dependence, a common issue in conflict-level analyses.

Next, we examine whether the effects depend on the economic structure of conflicts. Restricting the sample to cases involving lootable natural resources, where resource rents could theoretically offset sanction-induced losses, yields nearly identical results (Table A5). The sanction coefficients remain positive and statistically significant, indicating that sanctions increase the likelihood of child soldier recruitment even in conflicts where lootable resources are present. This finding is particularly noteworthy because prior work (Faulkner, Powell and Lasley 2019) shows that access to natural resources independently elevates child soldier use; our results demonstrate that sanctions exert an additional and distinct effect rather than one mediated by resource scarcity.

We further incorporate a broad set of organizational and ideological covariates to test whether group identity or goals confound the main relationship. (Table A6) adds indicators for ethnic and religious affiliation as well as autonomy and independence objectives.

Sanction coefficients remain positive and significant, indicating that the effect is not an artifact of the underlying character of the movement. (Table A7) expands controls to include organizational power and structure—splintering, political wings, estimated size, and armament capacity. Even under this most demanding specification, sanctions continue to exhibit a strong and statistically significant association with child soldiering, suggesting that explicitly controlling for organizational capability strengthens the estimated impact of sanctions.

In addition, we use alternative measurements of the dependent variable. (Table A8) re-estimates models using both binary and ordinal measures of forced and voluntary child recruitment from the CSDS extension (Haer, Faulkner and Whitaker 2020). The ordinal specification distinguishes groups that do not recruit children (0), those for which children comprise $\leq 50\%$ of forces (1), and those for which children constitute $> 50\%$ (2). Across all ordered-logit models, sanction coefficients remain positive and statistically significant, confirming that results are not driven by dichotomous coding. Importantly, the effect holds when focusing on forced recruitment alone, reinforcing the interpretation that sanctions exacerbate coercive mobilization rather than coinciding with voluntary enlistment.

Lastly, we disaggregate our independent variable, sanctions to examine mechanism specificity. Based on the GSDB, we classify sanctions into three analytically distinct categories based on their operational channels: (1) Arms and Military Sanctions, which directly target fighting capacity by prohibiting weapon transfers and military assistance; (2) Trade and Financial Sanctions, which impose broader economic constraints through asset freezes and trade restrictions; and (3) Other Sanctions, including travel ban (Table A9). While trade/financial and other sanction fail to show a significant relationship with child soldier recruitment, arms/military sanctions exhibit a positive effect. It is worth noting that while this result is less robust in the propensity score matched sample the consistent positive association in the full sample points to a critical demand-side mechanism. As noted by Erickson (2020) and Fruchart et al. (2007), arms embargoes significantly increase transaction costs and disrupt weapon flows. Facing such exogenous constraints on military capital, rebel groups are compelled to substitute labor for capital (Wood 2014). Child soldiers, in this context, serve as a low-cost alternative to maintain operational

capacity when advanced weaponry is inaccessible. This finding aligns with Radtke and Jo (2018)'s argument that arms sanctions are harder for rebels to offset compared to economic sanctions, thereby exerting more direct pressure on recruitment tactics.

6. Case Analysis: Angola and Sanctions on UNITA

Beyond quantitative analysis, the trajectory of UNITA in Angola serves as a crucial illustrative case, allowing us to unpack the specific processes through which sanctions reshape the pattern of child soldier recruitment. UNITA faced sequential and increasing UN sanctions (1993–1998) targeting different organizational resources such as arms and oil (1993), diplomatic networks (1997), and diamond revenues (1998). This variation permits analysis of how different sanction types activated distinct mechanisms. In addition, Angola experienced severe economic disruption in conjunction with sanctions, allowing observation of both supply-side mechanisms (societal collapse) and demand-side mechanisms (organizational resource constraints). Finally, extensive documentation from the United Nations, Human Rights Watch, and Amnesty International permits detailed process tracing of causal pathways. Together, these features make Angola a critical case for tracing the mechanism through which sanctions increase child recruitment.

Amid intense fighting during Angola's civil war, the 1991 Bicesse Accords established a UN-supervised ceasefire, troop reductions, and multiparty elections. However, following the disputed 1992 general elections, UNITA rejected the results, resumed hostilities, and rebuilt its military capacity through illicit diamond sales (United Nations 2000). In response, the UN Security Council progressively escalated sanctions: Resolution 864 (1993) imposed arms and oil embargoes; Resolution 1127 (1997) added travel restrictions, ordered the closure of UNITA's foreign offices, and banned aviation-related services; and Resolution 1173 (1998) imposed asset freezes and prohibited the import of uncertified Angolan diamonds. Over time, these sanctions evolved from restricting UNITA's logistical resupply to targeting its financial and diplomatic networks. They were eventually lifted in 2002 following the death of Jonas Savimbi and the official end of the war.

6.1 The Supply-Side Shock: the Expansion of Vulnerable Recruits

Economic losses from international sanctions compounded the civil war's devastating impact on Angola's social fabric. Before large-scale fighting resumed, Angola's annual GDP growth was -2.3 percent in 1991. After war resumption, it declined to -8.9 percent, and following sanction imposition, it collapsed to -26.4 percent in 1993.⁶ Inflation figures are even more striking: based on the GDP deflator, cumulative price increases over the first half of the 1990s indicate that by 1996 the price level was roughly 2.6 million times higher than in 1990.

This economic collapse directly undermined institutions protecting children from recruitment. As government revenues evaporated and households lost livelihood sources, educational infrastructure disintegrated. According to UNICEF, more than 1,500 schools were destroyed between 1996 and 1999 alone (Blanco Allais 2007). School closures not only removed children from protective environments but also eliminated one of the few alternatives to armed group participation. Simultaneously, hyperinflation and displacement severely eroded household purchasing power and coping capacity. Human Rights Watch documents that during the late 1990s, economic collapse and displacement in Angola severely undermined households' capacity to protect children, leaving many families unable to prevent their recruitment into armed groups amid extreme survival pressures (Human Rights Watch 2003). Community-based protection mechanisms—kinship networks, religious institutions, and local governance structures—similarly deteriorated under combined economic and conflict pressures, further eroding households' capacity to shield children from armed groups. Together, these disruptions expanded the supply of children vulnerable to recruitment, consistent with the supply-side mechanism outlined in our theoretical framework. As protective institutions collapsed, UNITA faced an increasingly available pool of potential child recruits at precisely the moment when sanctions constrained its access to conventional military resources.

6. World Bank, World Development Indicators, Angola.

6.2 The Arms Embargo and Coercive Mobilization (1993-1994)

While economic collapse expanded the supply of vulnerable children, sanctions simultaneously constrained UNITA's military capacity, intensifying demand for low-cost, coercive recruitment strategies. Following the arms embargo imposed on 15 September 1993 under Resolution 864, UNITA's territorial control declined sharply from approximately 70 percent in 1993 to about 40 percent in 1994 (Vines 1995). The sanctions prohibited weapon and fuel sales (including refined petroleum products) to UNITA, directly restricting its supply lines, mobility, and aviation/vehicle operations.

Concurrent events amplified these constraints. South Africa's political transition reduced arms procurement via private channels after mid-1993, increasing UNITA's reliance on routes through Zaire (now the Democratic Republic of the Congo). Operating with limited fuel and ammunition, UNITA struggled to sustain prolonged sieges or offensives and became more vulnerable to government airstrikes. UNITA's declaration of a unilateral ceasefire on 20 September—immediately after the sanction announcement—attests to the magnitude of costs imposed.

Meanwhile, the government reorganized forces and undertook large-scale rearmament around 1994, with Executive Outcomes (EO) augmenting government capabilities through special operations, airpower, and training. Beginning with N'dalatando in May 1994, EO helped retake Cafunfo—a diamond hub generating roughly US\$250 million annually for UNITA—in July 1994. Loss of this area precipitated a sharp cash flow contraction and, combined with the fuel embargo, markedly degraded UNITA's military capacity. During October–November 1994, government offensives led to the sequential fall of key economic centers: Soyo (1 November), Huambo (5–6 November), Mbanza Congo, and Uíge (mid-November).

As UNITA increasingly relied on dwindling internal resources, it expanded taxation, requisitioning, and forced civilian mobilization. Child soldiers became a critical component of this adaptation. Contemporaneous evidence documents UNITA's forced abductions—including approximately 80 children aged 12–18 in M'banza Congo (Amnesty International 2000)—and the demobilization of about 8,500 children from both sides' armed forces following the 1994 Lusaka Accord, indicating widespread reliance on child

combatants during this period. The temporal sequence—sanctions (September 1993), territorial losses (1993-1994), documented child abductions (1994)—is consistent with a causal mechanism linking sanctions to recruitment. Sanctions-induced military degradation directly prompted intensified child soldier recruitment as UNITA sought cost-effective substitutes for conventional forces.

6.3 The Diamond Bans and Surge in Recruitment as Survival Tactics (1997-2002)

Subsequent efforts under the November 1994 Lusaka Protocol aimed to promote integration and political participation under UN monitoring (UNAVEM III/MONUA). However, UNITA's noncompliance and ceasefire collapse led to a major resumption of hostilities in 1998. In response, the UN introduced additional sanctions targeting UNITA's primary remaining revenue source: diamonds. Resolution 1173 (1998) implemented a certification regime for Angolan diamonds, directly threatening UNITA's financial lifeline. The impact was severe because UNITA had become heavily dependent on illicit diamond sales following the loss of Cafunfo. At the time, UNITA maintained links to De Beers, which commanded 66 percent of global diamond sales (Malaquias 2001). This connection provided UNITA with access to legitimate markets and price stability—critical for converting rough diamonds into fungible resources. Following the 1998 sanctions and sustained UN pressure, De Beers pledged in 1999 to cease purchasing UNITA-linked diamonds (Saunders 2000; U.S. Department of State 1999).

This withdrawal proved consequential. Without access to established buyers, UNITA faced both reduced revenues and increased transaction costs in illicit markets. Diamond revenues plummeted, and exports were severely curtailed (Hoekstra 2019; Saunders 2000). Unable to offset revenue losses through alternative sources, UNITA intensified predatory extraction from local populations—including forced recruitment of children as low-cost combatants and laborers. Simultaneously, deepening international isolation diminished reputational constraints on norm violation. As sanctions severed UNITA's diplomatic networks and extinguished prospects for political reintegration, the leadership faced reduced incentives to maintain humanitarian restraint. The combination of acute resource scarcity

and reputational isolation enabled more overt coercive strategies. Evidence of intensified child recruitment during this period is substantial. Human Rights Watch (2003) documents that between 1998 and 2002, UNITA forcibly conscripted thousands of children. The timing—immediately following diamond certification and De Beers’ exit—reinforces the causal link between financial pressure and recruitment strategies. This second phase demonstrates that sanctions targeting financial networks, like those restricting military capacity, prompt adaptive responses that increase reliance on child soldiers.

6.4 Beyond Angola: Generalizability and Temporal Dynamics

The Angola pattern is not unique. In Sierra Leone, UN diamond embargoes similarly coincided with intensified RUF child recruitment, including the abduction of over 3,000 children following the 1999 Freetown attacks. As with UNITA, resource constraints prompted reliance on coercive child mobilization. Even cases initially coded as negative observations in our quantitative analysis ultimately support our theoretical framework. Rebel groups in Mon State, Myanmar (1996); post-2001 Iraq; early-1990s Georgia; the 1991–1993 Nagorno-Karabakh conflict; and the 2002 Sharia-related conflict in Nigeria all eventually resorted to child soldier recruitment within approximately five years of sanction imposition (Human Rights Watch 2000, 2007; Anadolu Agency 2020; Human Rights Watch 1995; Child Soldiers International 2001; Achilli 2024). Rather than contradicting our theory, these cases reinforce it by revealing temporal dynamics that cross-sectional analysis cannot fully capture. Sanction effects on recruitment accumulate over time as groups progressively exhaust alternative strategies. This pattern aligns with broader scholarship demonstrating that sanction impacts intensify with duration (Hufbauer et al. 2009; Peksen 2009). Groups facing sustained pressure first attempt to maintain conventional recruitment; only as organizational capacity erodes do they shift toward coercive child mobilization.

This temporal lag has important implications for research design. Our cross-sectional estimates may underestimate the true effect of sanctions on child recruitment, as temporal lags prevent immediate observation of all sanction-induced recruitment. Groups eventually turn to child soldiers not despite sanctions but because of them—as cumu-

lative resource depletion makes alternative manpower strategies unsustainable. These trajectories are consistent with our demand-side mechanism: sanctions create pressures that intensify gradually, ultimately forcing reliance on the cheapest, most controllable labor source available. The consistency of this pattern across diverse contexts—Angola’s diamond-dependent insurgency, Sierra Leone’s agrarian rebellion, Myanmar’s ethnic separatists, Iraq’s sectarian militias—suggests the mechanism generalizes beyond specific conflict types. Sanctions targeting either military capacity or financial resources produce similar recruitment responses, mediated by organizational resource constraints and reputational isolation.

7. Conclusion

This study investigated the under-explored international determinants of child soldier recruitment, moving beyond traditional explanations focused on domestic constraints. Specifically, we examined the unintended humanitarian consequences of economic sanctions, positioning them as a critical exogenous shock that reshapes the micro-dynamics of civil conflict. To test this relationship, we analyzed a comprehensive dataset of 187 rebel groups between 1989 and 2011, employing a rigorous methodological framework that includes fixed-effects models and propensity score matching to ensure causal validity. The results provide strong evidence that sanctions significantly increase the likelihood of child soldier recruitment, suggesting that coercive measures designed to weaken rebels can inadvertently incentivize the mobilization of the most vulnerable.

Two complementary mechanisms drive this relationship. On the supply side, sanctions compound wartime economic disruption, eroding family structures, educational access, and community protections that shield children from recruitment. On the demand side, sanctions constrain rebel military and financial capacity, making coercive recruitment of children a substitute for adult combatants—children require minimal compensation, are easier to control, and remain available when other resources disappear. The Angola case illustrates these dynamics: as UN sanctions progressively restricted UNITA’s arms access and diamond revenues between 1993 and 1998, the group escalated forced child recruitment to offset capability losses. Process-tracing evidence indicates temporal cor-

responsiveness between sanction intensification and documented surges in child abductions.

We realize that several limitations of our work shape interpretation. Our cross-sectional design cannot fully exploit temporal variation or identify the precise lag structure between sanction imposition and recruitment shifts. The Angola case suggests cumulative effects over multiple years, but systematic panel analysis would strengthen causal claims. We cannot directly measure sanction enforcement intensity or the role of black knight supporters who help targeted groups evade restrictions. Rebel adaptive capacity—likely a key moderator—remains difficult to operationalize across cases. Future research should employ event history analysis with monthly data to identify critical periods, integrate geospatial tracking of resource flows to test substitution mechanisms, and develop measures of enforcement rigor that vary across sanction episodes.

Notwithstanding the possible limitations, our findings make three distinct contributions to the scholarship on sanctions and rebel group behavior. First, and perhaps most fundamentally, this study challenges the prevailing domestic-centric bias in the child soldier literature. Existing scholarship has predominantly treated recruitment as a function of local socioeconomic deprivation or internal organizational culture. By identifying economic sanctions as a robust predictor of recruitment, we demonstrate that these micro-level conflict dynamics are profoundly permeable to international interventions. This integration bridges the gap between International Relations and Comparative Politics, establishing that the "internal" organization of rebellion is endogenous to "external" policy shocks.

Second, we extend the research on sanction consequences beyond the traditional metrics of conflict duration and civilian victimization to include recruitment externalities. While prior work documents that sanctions can provoke retaliatory violence (Hultman and Peksen 2017) or prolong wars (Lektzian and Regan 2016), we show that they fundamentally reshape who fights. By inducing resource scarcity, sanctions unintentionally push armed groups to mobilize the most vulnerable segments of the population. This identifies a new dimension of humanitarian harm: sanctions do not merely weaken rebel capacity but may displace the burden of warfare onto children, creating a perverse feedback loop where international pressure fuels human rights abuses.

Lastly, for policy, the analysis yields sobering conclusions. Sanctions designed to weaken rebel groups may simultaneously increase their exploitation of children, creating a humanitarian-security trade-off that policymakers have largely ignored. Three design principles emerge from our findings. First, arms and military sanctions should trigger automatic monitoring for child recruitment spikes, with enforcement mechanisms tied to documented violations. Second, sanction regimes must include humanitarian carve-outs that protect education, health services, and livelihood support—infrastructure that prevents children from becoming available recruits. Third, enforcement must be symmetric: because government use of child soldiers predicts rebel adoption (as our control variable results confirm), targeting only rebel groups creates moral hazard and undermines normative pressure.

In conclusion, this study reveals a profound paradox in the architecture of international coercion: the very instruments designed to uphold global norms may inadvertently incentivize the conscription of the innocent. This creates a stark policy dilemma. Abandoning sanctions would mean forfeiting a vital non-military tool for constraining aggressors, yet maintaining the status quo risks fueling the precise humanitarian abuses—child soldiering—that the international community seeks to eliminate. The path forward, therefore, lies not in disengagement but in adaptive sanction design. The path forward requires adaptive sanction design: policymakers must pair economic pressure with real-time monitoring of recruitment externalities and robust protective investments. Only by treating child recruitment as an endogenous response to external pressure—rather than an immutable conflict characteristic—can the international community wield sanctions without inadvertently conscripting children into war.

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Appendix

Table A1: Conditional distribution of main variables

	No sanction	Sanction	Total
No child recruits	19	21	40
Child recruits	65	82	147
Total	84	103	187

Table A2: Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Child recruits	187	0.786	0.411	0	1
Forced recruits (dummy)	187	0.444	0.497	0	1
Forced recruits (ordinal)	187	0.599	0.744	0	2
Child recruits (ordinal)	187	0.941	0.606	0	2
Sanction	187	0.551	0.499	0	1
Arms/military sanction	187	0.444	0.498	0	1
Economic sanction	187	0.492	0.501	0	1
Others sanction	187	0.155	0.363	0	1
Rebel group age	187	9.353	10.889	1	51
Territorial control	187	0.364	0.482	0	1
Centralized command	187	0.952	0.215	0	1
Resource extortion	187	0.380	0.487	0	1
External sponsor	187	0.556	0.498	0	1
Rebel fighting capacity	187	1.401	0.572	1	3
Conflict intensity (log)	187	6.959	1.326	3.367	9.210
Conflict duration	187	28.443	16.790	1	66
Child recruits—state	187	0.818	0.387	0	1
Regime type	187	10.267	5.751	1	20
Regime type square	187	138.321	129.078	1	400
GDP per capita (log)	187	7.592	1.027	5.424	10.198
Youth population (log)	187	3.637	0.246	2.862	3.904
Lootable1	187	0.289	0.454	0	1
Ethnic group	187	0.551	0.499	0	1
Religious group	187	0.251	0.415	0	1
Goal—autonomy	187	0.096	0.296	0	1
Goal—independence	187	0.273	0.447	0	1
Rebel splinter group	187	0.380	0.487	0	1
Political wing	187	0.364	0.482	0	1
Arms procurement	187	1.352	0.534	1	3
Rebel group size (log)	161	8.099	1.560	4.605	11.661

Table A3: Balance of Covariates (Matched Sample)

	Means / Treatment	Means / Control	Std Dev / Control	Differences in Means
Rebel group age	7.515	7.022	8.614	0.493
Territorial control	0.323	0.326	0.474	-0.003
Centralized command	0.949	0.935	0.250	0.015
Resource extortion	0.414	0.326	0.474	0.088
External sponsor	0.576	0.543	0.504	0.032
Rebel fighting capacity	1.354	1.435	0.544	-0.081
Conflict intensity (log)	6.177	5.942	1.523	0.235
Conflict duration	27.576	25.783	16.859	1.793
Child recruits—state	0.808	0.804	0.401	0.004
Regime type	10.740	10.828	5.670	-0.088
Regime type square	150.724	148.690	127.805	2.034
GDP per capita (log)	7.698	7.618	1.102	0.080
Youth population (log)	3.603	3.671	0.255	-0.068

Table A4: Robustness Check: Global Region Unit Effects & Temporal Dependency

	(1) All sample	(2) PSM sample	(3) All sample	(4) PSM sample	(5) All sample	(6) PSM sample
Sanction	1.279** (0.542)	1.611*** (0.525)	0.991** (0.481)	1.439*** (0.518)	1.308** (0.569)	1-525*** (0-552)
Rebel group age	0.279*** (0.084)	0.165** (0.067)	0.236*** (0.078)	0.200** (0.099)	0.333** (0.138)	0-247 (0-156)
Territorial control	0.622 (0.568)	0.033 (0.682)	-0.065 (0.546)	-0.260 (0.681)	0.280 (0.592)	-0-032 (0-709)
Centralized command	2.217*** (0.862)	1.794** (0.840)	2.002** (1.582)	2.198** (1.210)	2.379** (0.997)	1-710** (0-965)
Resource extortion	2.192** (0.720)	1.704 (1.462)	1.848** (0.826)	1.486 (1.480)	2.128** (1.251)	1-469 (1-467)
External sponsor	0.647 (0.543)	0.783 (0.765)	0.134 (0.530)	0.407 (0.651)	0.565 (0.595)	0-521 (0-602)
Rebel fighting capacity	0.348 (0.451)	0.917 (0.758)	0.075 (0.675)	0.595 (0.839)	0.277 (0.545)	0-785 (0-783)
Conflict intensity (log)	0.022 (0.225)	-0.478* (0.243)	0.020 (0.206)	-0.251 (0.243)	0.044 (0.235)	-0-355 (0-239)
Conflict duration	0.011 (0.017)	-0.013 (0.018)	-0.003 (0.019)	-0.009 (0.020)	0.009 (0.023)	0-008 (0-019)
Child recruits—state	1.472* (0.763)	1.376 (0.872)	1.733** (0.746)	1.641** (0.832)	1.462* (0.761)	1-233 (0-928)
Regime type	0.254 (0.369)	0.332 (0.254)	0.165 (0.259)	0.139 (0.283)	0.193 (0.285)	0-291 (0-293)
Regime type square	-0.016 (0.011)	-0.011 (0.011)	-0.004 (0.009)	0.000 (0.010)	0.005 (0.008)	-0-004 (0-009)
GDP per capita (log)	0.324 (0.479)	-0.207 (0.518)	0.075 (0.383)	0.285 (0.511)	0.013 (0.505)	0-015 (0-578)
Youth population (log)	-2.314 (2.508)	-2.964 (3.223)	-1.397* (1.691)	3.006 (2.045)	-2.446 (2.706)	-2-602 (3-488)
Europe	-2.447 (1.684)	-2.844 (1.919)				
Africa	4.402*** (1.457)	2.823*** (1.892)			4.657*** (1.606)	3-822** (1-334)
Latin America	3.143** (1.412)	0.599 (1.096)			3.453** (1.556)	1-490 (1-440)
Asia	3.356*** (1.172)	1.563 (1.099)			3.497*** (1.205)	2-070* (1-250)
foundyear			1.031 (5.655)	-0.864 (6.924)	5.191 (5.287)	0-135 (6-929)
foundyear ²			0.000 (0.001)	0.000 (0.002)	0.001 (0.001)	0-000 (0-002)
foundyear ³			0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0-000 (0-000)
Constant	-3.468 (11.239)	6.432 (14.945)	-1080.759 (5624.902)	785.809 (6888.910)	-5183.786 (5261.737)	-181-008 (6900-384)
Pseudo- R^2	0.466	0.370	0.367	0.328	0.473	0.379
Log likelihood	-51.788	-74.257	-61.397	-79.276	-51.190	-73.224
AIC	141.575	186.514	156.794	192.552	142.380	188.449
N	187	145	187	145	187	145

Note: Standard errors clustered at the conflict level in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$.

Table A5: Robustness Check: Lootable Natural Resources

	(1) All sample	(2) PSM sample
Sanction	1.033** (0.474)	1.534*** (0.519)
Lootable1	0.048 (1.898)	1.301 (1.905)
Rebel group age	0.194*** (0.054)	0.119** (0.049)
Territorial control	-0.014 (0.535)	-0.297 (0.676)
Centralized command	1.433 (1.915)	2.369** (0.965)
Resource extortion	1.908 (1.819)	1.169 (1.802)
External sponsor	-0.023 (0.557)	0.663 (0.598)
Rebel fighting capacity	0.127 (0.406)	0.727 (0.818)
Conflict intensity (log)	-0.024 (0.197)	-0.349 (0.234)
Conflict duration	-0.003 (0.016)	0.020 (0.020)
Child recruits—state	1.803** (0.722)	1.955** (0.868)
Regime type	0.244 (0.232)	0.190 (0.245)
Regime type square	-0.008 (0.011)	-0.005 (0.013)
GDP per capita (log)	0.156 (0.531)	-0.147 (0.449)
Youth population (log)	4.176** (1.750)	3.303 (2.045)
Constant	-20.961** (9.056)	-15.788 (10.384)
Pseudo- R^2	0.360	0.317
Log likelihood	-62.091	-80.604
AIC	156.182	193.209
N	187	145

Note: Standard errors clustered at the conflict level in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$.

Table A6: Robustness Check: Group Identity and Goals

	(1) All sample	(2) PSM sample
Sanction	1.015* (0.525)	1.482*** (0.509)
Ethnic group	1.499** (0.621)	0.770 (0.557)
Religious group	-0.159 (0.918)	0.224 (0.942)
Goal—autonomy	-1.248 (0.790)	-0.513 (0.951)
Goal—independence	-0.162 (0.962)	0.589 (0.589)
Rebel group age	0.189*** (0.054)	0.117** (0.046)
Territorial control	-0.136 (0.563)	-0.172 (0.665)
Centralized command	1.202 (1.411)	2.080* (1.081)
Resource extortion	2.226** (1.019)	1.793 (1.420)
External sponsor	-0.066 (0.600)	0.484 (0.599)
Rebel fighting capacity	-0.053 (0.411)	0.704 (0.766)
Conflict intensity (log)	-0.148 (0.196)	-0.435** (0.218)
Conflict duration	-0.004 (0.016)	0.009 (0.016)
Child recruits—state	1.869*** (0.702)	1.823** (0.811)
Regime type	0.442* (0.255)	0.397 (0.284)
Regime type square	-0.018 (0.013)	-0.015 (0.013)
GDP per capita (log)	0.259 (0.380)	0.010 (0.458)
Youth population (log)	4.965*** (1.795)	4.000** (2.036)
Constant	-24.698*** (9.448)	-19.862* (11.223)
Pseudo- R^2	0.408	0.327
Log likelihood	-57.437	-79.338
AIC	152.873	196.677
N	187	145

Note: Standard errors clustered at the conflict level in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$.

Table A7: Robustness Check: Group Power

	(1) All sample	(2) PSM sample
Sanction	1.033* (0.562)	2.785*** (0.946)
Rebel splinter group	1.213* (0.652)	3.757*** (1.288)
Political wing	-1.006 (0.745)	1.944** (0.967)
Arms procurement	-2.511** (1.006)	0.084 (1.151)
Rebel group size (log)	0.040 (0.211)	-0.571** (0.285)
Rebel group age	0.279*** (0.082)	0.331*** (0.081)
Territorial control	-0.036 (0.771)	-0.188 (0.408)
Centralized command	2.114 (1.675)	7.037*** (1.874)
Resource extortion	2.716*** (0.897)	7.678*** (1.687)
External sponsor	-1.113 (0.697)	-0.892 (0.946)
Rebel fighting capacity	2.216*** (0.719)	1.494 (1.083)
Conflict intensity (log)	-0.099 (0.210)	0.539 (0.373)
Conflict duration	-0.031 (0.024)	-0.060** (0.027)
Child recruits—state	1.465 (0.954)	3.118*** (1.134)
Regime type	0.425 (0.697)	0.064 (0.269)
Regime type square	-0.018 (0.013)	-0.001 (0.018)
GDP per capita (log)	0.077 (0.610)	1.454 (1.099)
Youth population (log)	4.892** (2.189)	13.689*** (3.845)
Constant	-22.128* (12.362)	-73.508*** (23.761)
Pseudo- R^2	0.448	0.625
Log likelihood	-39.815	-34.106
AIC	117.629	106.211
N	157	119

Note: Standard errors clustered at the conflict level in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$.

Table A8: Robustness Check: Alternative DV

	(1) forced recruits (dummy) All sample	(2) forced recruits (dummy) PSM sample	(3) forced recruits (ordinal) All sample	(4) forced recruits (ordinal) PSM sample	(5) Child recruits (ordinal) All sample	(6) Child recruits (ordinal) PSM sample
Sanction	0.445 (0.541)	0.957* (0.530)	0.435 (0.438)	0.886* (0.482)	0.569* (0.330)	0.657* (0.360)
Rebel group age	0.028 (0.021)	-0.008 (0.034)	0.023 (0.018)	0.028 (0.029)	0.054** (0.017)	0.081** (0.031)
Territorial control	1.510*** (0.532)	1.549** (0.684)	0.959** (0.439)	1.092* (0.570)	0.192 (0.365)	0.451 (0.421)
Centralized command	0.332 (1.098)	0.533 (1.410)	0.374 (0.654)	0.645 (0.814)	0.953 (0.943)	1.100 (1.100)
Resource extortion	1.530*** (0.536)	1.569** (0.536)	1.265*** (0.345)	1.345** (0.351)	1.589** (0.433)	1.688* (0.798)
External sponsor	0.882* (0.480)	1.554** (0.629)	0.261 (0.517)	0.655 (0.601)	0.178 (0.366)	0.368 (0.368)
Rebel fighting capacity	0.243 (0.451)	-1.833*** (0.631)	-0.236 (0.423)	-1.407** (0.557)	-0.054 (0.452)	0.099 (0.699)
Conflict intensity (log)	0.022 (0.191)	0.164 (0.173)	0.196 (0.170)	0.218 (0.159)	0.152 (0.122)	0.111 (0.210)
Conflict duration	0.010 (0.017)	0.005 (0.018)	0.009 (0.021)	0.007 (0.023)	-0.010 (0.013)	-0.001 (0.016)
Child recruits—state	1.543* (0.857)	2.510** (1.147)	1.511** (0.744)	2.222** (0.912)	1.693** (0.636)	1.420* (0.742)
Regime type	0.457** (0.191)	1.033*** (0.270)	0.366* (0.187)	0.291** (0.295)	0.251 (0.168)	0.331* (0.181)
Regime type square	-0.016* (0.009)	-0.040*** (0.012)	-0.014* (0.008)	-0.036*** (0.011)	-0.020** (0.008)	-0.012 (0.010)
GDP per capita (log)	-0.148 (0.351)	-0.348 (0.343)	-0.271 (0.298)	-0.266 (0.369)	-0.083 (0.263)	-0.512 (0.402)
Youth population (log)	3.270** (1.756)	3.293* (1.847)	1.864 (1.180)	2.014 (1.512)	3.122** (1.333)	1.374 (1.580)
Constant	-18.638*** (7.164)	-19.114** (9.407)				
cut1			11.042* (5.989)	14.046* (7.857)	14.320** (6.407)	4.371 (8.377)
cut2			13.123** (6.043)	16.461** (7.970)	18.597** (6.527)	8.426 (8.488)
Pseudo-R ²	0.349	0.457	0.224	0.320	0.252	0.252
Log likelihood	-83.640	-71.022	-141.405	-119.545	-131.036	-141.993
AIC	197.280	172.043	314.810	271.090	294.072	315.986
N	187	145	187	145	187	145

Note: Standard errors clustered at the conflict level in parenthesis. *** $p < .01$, ** $p < .05$, * $p < .10$.

Table A9: Robustness Check: Disaggregate type of sanction

	(1) All sample	(2) PSM sample
Arms/military sanction	1.938*** (0.720)	1.246 (0.811)
Trade/Financial sanction	-0.127 (0.788)	0.937 (0.898)
Other sanctions	-0.530 (0.803)	-0.518 (0.942)
Rebel group age	0.206*** (0.049)	0.138** (0.052)
Territorial control	0.511 (0.559)	0.067 (0.697)
Centralized command	1.158 (1.854)	2.279** (1.019)
Resource extortion	1.883** (0.749)	1.651 (1.369)
External sponsor	0.051 (0.520)	0.815 (0.598)
Rebel fighting capacity	0.176 (0.445)	0.695 (0.863)
Conflict intensity (log)	-0.040 (0.195)	-0.356 (0.239)
Conflict duration	-0.003 (0.017)	0.003 (0.019)
Child recruits—state	1.984** (0.799)	1.912** (0.788)
Regime type	0.167 (0.369)	0.203 (0.474)
Regime type square	-0.004 (0.011)	-0.006 (0.013)
GDP per capita (log)	0.351 (0.369)	-0.047 (0.447)
Youth population (log)	4.819*** (1.719)	3.354* (1.956)
Constant	-24.743*** (9.040)	-16.890 (10.285)
Pseudo- R^2	0.391	0.325
Log likelihood	-59.106	-79.553
AIC	152.213	193.107
N	187	145

Note: Standard errors clustered at the conflict level in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$.