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Conflict*

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July 2025

Prepared for the Handbook in Development Economics

Abstract

This handbook chapter provides a synthesis of the literature on armed conflicts, with a special focus on development economics, while covering also other disciplines. The piece starts off with a discussion of the main consequences of conflict before investigating its root causes. First, a series of theoretical approaches and results will be reviewed, before presenting major datasets and methods. As a next step, a structured analysis of key empirical findings follows. The last part of the handbook chapter is devoted to a synthesis of crucial policy lessons.

Keywords: Conflict, Civil War, Peace, Development, Poverty

JEL Codes: D74, F51, H56, H77, N40, O10, Q34.

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1. INTRODUCTION

These days, sadly, writing the motivation for a (survey) article on armed conflict has become easier. If some decades back a recurrent question was "is this economics?", nowadays the sheer scale and devastating consequences of war and armed violence have made it all but obvious that armed conflict is a main factor driving and impacted by economic activity. In what follows the costs and consequences of conflict will be discussed in much more depth, but to make a long story short, currently roughly a quarter of countries worldwide experience an armed conflict (<https://ucdp.uu.se/>) and the costs of a given average civil or interstate war are very substantial, with a painstakingly slow recovery, taking decades (Mueller and Tobias, 2016; Federle et al., 2024), as discussed in detail below. Not only have the numbers of countries in conflict shown a worrying upward trend for over a decade now, but on top of this a series of risk factors are trending in the "wrong direction", leading to –if anything– growing risks in the near future. These include democratic backsliding, climate change and mounting geopolitical tensions, as discussed in much depth further below. Hence, sadly, studying armed conflict seems to be more salient and pressing than ever.

While there exist already some survey pieces on armed conflict, they are all either dated or focus on very specific factors. In particular, one of the arguably last attempts at a general survey of the literature is the influential article by Blattman and Miguel (2010), published over 15 years ago. Since then, a series of reviews have been published, focusing on very specific aspects related to conflicts, including climate change (Burke, Hsiang, and Miguel, 2015a), within- and between-group trust (Bauer et al., 2016), vicious conflict cycles (Rohner and Thoenig, 2021), one-sided massacres (Anderton and Brauer, 2021), foreign interventions (Rohner, 2024a), geoeconomics (Mohr and Trebesch, 2025) and nation-building (Rohner and Zhuravskaya, 2024).¹ The goal of the current article is to provide an integrated state-of-the-art synthesis of cutting-edge work and key results on the economics of conflict, providing an overview over the *whole* field. While it is of course not easy to fit this increasingly vast field into the scope of a single survey, there are great benefits of taking a *systemic*, bird eye view. Various risk factors of armed conflicts and feedback loops are connected and inter-mashed and some factors are complements and others substitutes. By focusing too narrowly on certain very specific aspects of armed conflict, we would run the risk of losing sight of the big picture and "general equilibrium" effects. Hence, fitting together again all puzzle pieces is of paramount importance.

The current survey article is structured as follows: Section 2 defines what is meant by armed conflict and distinguished major conflict types, while Section 3 reviews key costs and consequences of armed conflict. Next, Section 4 discussed the dominant theoretical explanations for armed conflict, and Section 5 is devoted to the overview of the main empirical findings. Last but not least, Section 6 provides a synthesis and conclusion of key policy lessons.

¹There is also exists relevant recent handbook (Dube et al., 2024), most chapters of which have a key theory focus, as well as recent books aimed at popular science audiences (Blattman, 2023; Rohner, 2024b).

2. DEFINITION AND CONFLICT TYPES

A key entity for the scientific study of armed conflict is the Uppsala Conflict Data Program (UCDP) which puts together many of the most frequently used datasets. UCDP defines (State-based) armed conflict as follows: "A state-based armed conflict is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in one calendar year. "Armed conflict" is also referred to as "state-based conflict", as opposed to "non-state conflict", in which none of the warring parties is a government." (<https://www.uu.se/en/departments/peace-and-conflict-research/research/ucdp/ucdp-definitions>) We will focus on this definition, and will only discuss armed conflict in the current survey, leaving non-armed types of conflict (e.g. verbal) outside the scope of the chapter.

Figure 1 plots the main types of armed conflict. To the left we have non-state based conflict that can be one-sided (e.g. when a rebel group attacks civilians) or two-sided (e.g. when two rebel groups fight against each other). Many of the works we review focus instead on state-based conflict, which can again be split in one-side violence (e.g. purges and repression) or two-sided violence. The literature distinguishes a series of types of two-sided state-based violence, ranging from extra-state conflict (colonial wars), to intrastate / civil conflict, internationalized civil conflicts (basically civil conflicts where foreign states participate) and international conflicts between states. In the Figure 1 we just focus on the key distinction between civil and inter-state conflicts. While civil conflicts are the category that is best covered in the existing literature, we will also at times discuss findings for other conflict types.

Related topics that are beyond the scope of the current survey include the literature on protests (see e.g. [Cantoni et al. \(2019\)](#); [Enikolopov, Makarin, and Petrova \(2020\)](#); [Caprettini and Voth \(2020\)](#); [Cantoni et al. \(2024\)](#)), as well as the literature on crime (see e.g. [Becker \(1968\)](#); [Levitt \(2004\)](#); [Draca and Machin \(2015\)](#); [Britto, Pinotti, and Sampaio \(2022\)](#)). A special case is organized crime (see e.g. [Alesina, Piccolo, and Pinotti \(2019\)](#); [Sviatschi \(2022a,b\)](#); [Blattman et al. \(2025\)](#); [Melnikov, Schmidt-Padilla, and Sviatschi \(2025\)](#)), which is at the fringe of the scope of the current article. While our focus lies on the main categories of Figure 1, some aspects of organized crime will be touched upon, especially when gangs gain control over vast chunks of territories and create quasi-states or when rebel groups partly fund their activities through criminal activities.

3. COSTS OF CONFLICT

In what follows, the key dimensions of costs from conflicts are discussed, starting with the obviously most salient type of cost – human death toll.

3.1 The death toll of conflict

As seen above, there are many different types of armed conflicts and for all of them estimates of death tolls have been computed. It is hence difficult to gain a big picture overview. In what follows

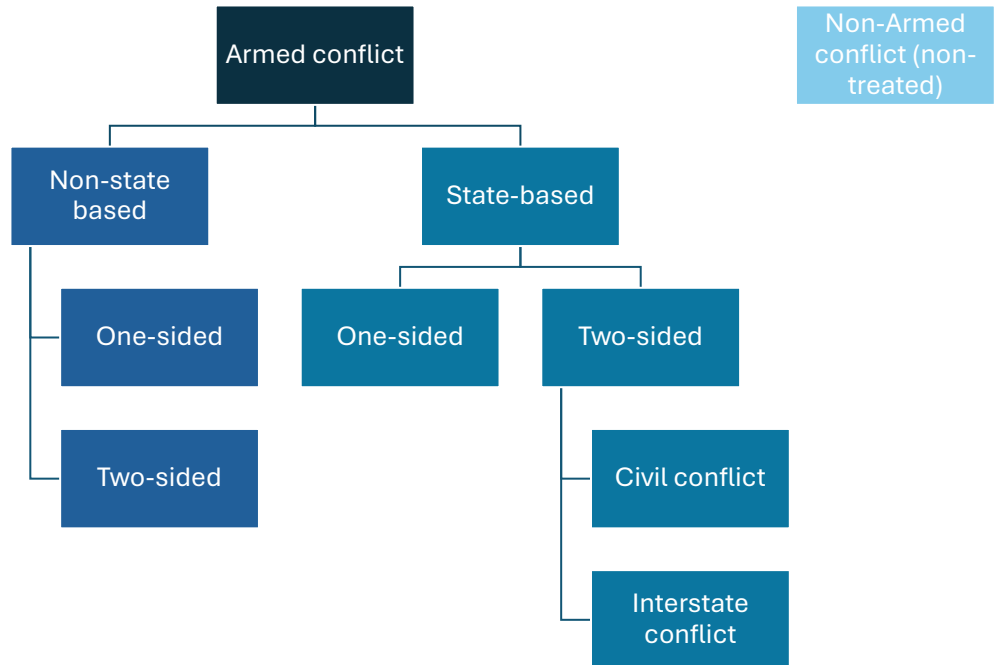


Figure 1: Types of armed conflict.

we shall focus on well-established estimates for key conflict categories. For (state-based) two-sided conflicts, an influential estimate had been put together by [Fearon and Laitin \(2003\)](#), according to which between 1945 and 1999 an estimated 16.2 million people have lost their lives in 127 civil wars, while an estimated 3.3 million people perished in 25 interstate wars.

When looking at one-sided killings of civilians, the estimates of death tolls are also extremely large. According to [Bae and Ott \(2008, p. 107\)](#) “The 20th century is replete with incidents of civilian killings by the state. Conflict-related deaths in that century were put at 109.7 million.” Another number is provided by [Anderton and Brauer \(2021\)](#) who estimate a death count of 100 million mass atrocity-related fatalities since 1900.

Beyond the death toll of war, it is important to note that armed conflict also causes widespread human suffering, ranging, among others, from injuries and sexual violence to torture and forced displacements. Recent work studies what factors increase the risks of wartime rape and sexual violence ([Cohen, 2013](#); [Fourati et al., 2021](#); [Guarnieri and Tur-Prats, 2023](#)).

In terms of human suffering, we of course also need to keep in mind the hardship due to large-scale internal and international displacements ([Braithwaite, Salehyan, and Savun, 2019](#)).

3.2 The economic cost of conflict

The economic costs of conflict depend of course very much on the type and scale of armed conflict, and there is much heterogeneity. To quote some influential global estimates, [Mueller and Tobias \(2016\)](#) estimate that civil war leads on average to a drop in GDP of 18 percent after a civil war. Importantly, they find that the economic recovery is only very slow, taking decades.

For international wars, [Federle et al. \(2024\)](#) cover a long 150 year panel of more than 60 countries. They find that the country on whose territory the war is fought out experiences a drop in economic output of about 30 percent, accompanied by an inflation spike. Neighboring countries are also substantially affected, with an output fall by more than 10 percent over 5 years.

There is also a very relevant literature studying the within-country impact of conflict, contrasting places directly hit by conflict with others. For example, [Abadie and Gardeazabal \(2003\)](#) find for Spain that per capita GDP in the conflict-affected Basque Country declined about 10 percentage points relative to a synthetic Spanish control region without terrorism, while [Pinotti \(2015\)](#) finds for Italy that the presence of mafia lowers GDP per capita by 16 percent. [Besley, Fetzer, and Mueller \(2015\)](#) study Somali piracy and find that the increase in attacks in 2008 led to around an 8 to 12 percent increase in costs. Importantly, not only the exposure to fighting results in harmful economic effects, but also exposure to rebel governance matters: [Bandiera et al. \(2022\)](#) investigate the impact of territorial control by guerrillas during the Salvadoran Civil War, using a spatial regression discontinuity design. They find that areas once under guerrilla control have fared worse economically over the last two decades than adjacent areas controlled by the state.

Importantly, however, conflicts may spread throughout networks ([Amarasinghe et al., 2023](#)), and even regions not directly hit militarily suffer economically, among others due to a drop in trade ([Glick and Taylor, 2010](#); [Federle et al., 2022](#); [Korovkin and Makarin, 2023](#); [Couttenier, Monnet, and Piemontese, 2024](#)). Part of the conflict-induced trade relocation persists even once the conflict is over ([Korn and Stemmler, 2025](#)).

While overall –as discussed above– conflict has very detrimental impacts, the effect is unsurprisingly heterogeneous, and there are indeed particular firms for which conflict can be lucrative, especially when evading sanctions. [Guidolin and La Ferrara \(2007, 2010\)](#) have developed a way to pin this down, drawing on abnormal stock market returns after unanticipated news about a given armed conflict. Studying diamond mining firms in Angola, they find that the sudden end of the conflict, marked by the death of the rebel movement leader in 2002, led to a decline in abnormal returns by 4 percentage points for companies holding concessions in Angola (while having no effect on otherwise similar diamond mining firms).

In terms of channels of transmission of how conflicts harm development, an obvious first mechanism are the many lives lost of young people of working age, as well as the destruction of important infrastructure. Beyond these general channels, conflict exposure also twists economic incentives away from productive investment, due to uncertainty. It has for example been shown that violence exposure leads to supply chain disruptions ([Ksoll, Macchiavello, and Morjaria, 2023](#)) and input misallocation ([Amodio and Di Maio, 2018](#); [Amodio, Baccini, and Di Maio, 2021](#)), and hampers the adoption of mobile money and formal financial systems ([Blumenstock et al., 2024](#)).

In the medium and long-run, conflict may also induce the re-orientation of the economy towards illegal activities, such as coca production ([Lind, Moene, and Willumsen, 2014](#)). Even within legal economic sectors, armed conflict and generalized insecurity and instability may induce a country's economy to shy away from complex, high value added activities that are more sensitive to political instability (think of banking, pharma, high tech etc). Instead, conflict-plagued economies may become

more dependent in natural resource exports ([Brunnschweiler and Bulte, 2008](#)) and start specializing in war-resilient yet low value-added sectors of production ([Collier, 1999](#)). These long-run, "general equilibrium" effects of insecurity on the economic structure are very much understudied and deserve additional future investigations.

3.3 The impact of conflict on education

A great number of studies have shown that armed conflict exposure statistically significantly reduces the years of schooling, including evidence for Rwanda ([Akresh, 2008](#)), for Guatemala ([Chamarbagwala and Morán, 2011](#)), for Tajikistan ([Shemyakina, 2011](#)), for Peru ([Leon, 2012](#)), for Palestine ([Di Maio and Nandi, 2013](#); [Brück, Di Maio, and Miaari, 2019](#)), for World War II ([Akbulut-Yuksel, 2014](#)), for Timor-Leste ([Justino, Leone, and Salardi, 2014](#)), for Cambodia ([Islam et al., 2016](#)), and for Nigeria ([Bertoni et al., 2019](#)). The heterogeneity of effect is of course sizeable, depending on the type and intensity of a given conflict, but the aforementioned studies often find estimates in the ball park of between a third of a year to a full year of education lost, which can be extremely impactful in countries with low average years of education to start with.

In terms of mechanism, school infrastructure destruction plays an important role ([Akbulut-Yuksel, 2014](#); [Brück, Di Maio, and Miaari, 2019](#)), as well as teacher absentism ([Monteiro and Rocha, 2017](#)), and fear reducing enrollment rates ([Alfano and Görlach, 2023](#)).

In terms of open research questions, relevant gaps in knowledge concern the type of teaching. Having made experiences with online teaching under COVID-19, may it be that under some circumstances (e.g. general insecurity due to drone warfare, but still satellite internet working), online teaching could play a temporary role of substituting in-person classroom teaching? And if yes, how should it be most efficiently set up and managed in order to minimize any learning loss?

3.4 The impact of conflict on health

The above death toll numbers of armed conflict are likely to only be the "tip of the iceberg", as on average for every person killed in a civil war, another person dies from war-related indirect causes, including diseases, the disruption of health facilities and sanitation or food insecurity ([Ghobarah, Huth, and Russett, 2003](#)).

Beyond these "big picture" estimates, there is fine-grained work on a series of specific health outcomes and indicators (see the surveys of [Betancourt et al. \(2013\)](#) and [Kadir, Shenoda, and Goldhagen \(2019\)](#)). A very telling global quantification focusing on infant mortality has been put together by [Wagner et al. \(2018\)](#), who matched 15,441 armed conflict events that led to 968,444 combat-related deaths with 1.99 million births and 133,361 infant deaths in Africa, 1995-2015. The increased infant mortality ranged from a 3 percent increase for armed conflicts with one to four deaths to a 26.7 percent increase for armed conflicts with more than 1000 deaths. The cumulative increase in infant mortality is two to four times higher than the contemporaneous increase, implying that for the entire sample, the number of infant deaths related to conflict was between 3.2 to 3.6 times the number of direct deaths from armed conflicts, pointing out a massive indirect effect for infant mortality. This corresponds to

a much larger indirect effect than the one stressed in [Ghobarah, Huth, and Russett \(2003\)](#); yet, one methodological challenge in [Wagner et al. \(2018\)](#) is that of course it is not easy to disentangle which part of this infant mortality increase is *caused* by conflict, as opposed to a part of the estimated indirect effect that may be caused by root causes of conflict (think of poverty, governance, environmental degradation etc).

A series of other studies have documented negative medium- and long-run impacts of armed conflict on health outcomes, in particular child high-per-age, including [Bundervoet, Verwimp, and Akresh \(2009\)](#) for Burundi, [Akresh, Lucchetti, and Thirumurthy \(2012\)](#) for Eritrea, and [Minoiu and Shemyakina \(2012\)](#) for Côte d'Ivoire. Several articles also highlight severe mental health consequences of conflict exposure / participation, including [Singhal \(2019\)](#) for Vietnam, [Kohrt et al. \(2008\)](#) for Nepal, and [Di Maio and Leone Sciabolazza \(2021\)](#) for Gaza. There are also indirect health impacts from political instability and conflict: [Dupas and Robinson \(2012\)](#) document how the political crisis and civil conflict following the December 2007 presidential election in Kenya has led to a dramatic income drop, leading women who supply transactional sex to engage in higher risk sex both during and after the crisis.

There is also a literature focusing specifically on army veterans. For example, [Bruhn et al. \(2024\)](#) study the causal effects of U.S. soldier combat deployments to Iraq or Afghanistan between 2001 and 2021 – compared to non-deployed army veterans. They find that deployments increase injuries, combat deaths, and disability compensation, but find limited effects on suicide, deaths of despair, financial health, incarceration, or education.

One set of open research questions concern the optimal reply to some conflict-induced health conditions, such as e.g. post-traumatic stress disorders. What types of health interventions may be best able to attenuate suffering?

3.5 The impact of conflict on social capital

The literature on the conflict impact on trust and social capital (as surveyed by [Bauer et al. \(2016\)](#); [Verwimp et al. \(2025\)](#)) finds quite contrasting results. First of all there is Charles Tilly's notion that "war makes states", applied to historical conflicts *between* different polities ([Tilly, 1992](#)). There is a series of articles that find that conflict exposure can in some situations increase social cohesion *within-groups*. In particular, conflict exposure has been found to be associated with greater community engagement and voting; see [Bellows and Miguel \(2009\)](#) for Sierra Leone, [Blattman \(2009\)](#) and [Bauer, Fiala, and Levely \(2018\)](#) for Uganda. Lab-in-field experiments also find that within-community war-affected people display more altruistic behavior ([Voors et al., 2012](#); [Gilligan, Pasquale, and Samii, 2014](#)).

Another strand in the literature documents that, by contrast, *inter-group* trust and social capital is depleted by armed conflict. This has been found, among others, by [Cassar, Grosjean, and Whitt \(2013\)](#) for Tajikistan, by [Rohner, Thoenig, and Zilibotti \(2013a\)](#) for Uganda, by [Besley and Reynal-Querol \(2014\)](#) for historical African conflicts, by [Grossman, Manekin, and Miodownik \(2015\)](#); [Shayo and Zussman \(2017\)](#) for Israel, by [Hager, Krakowski, and Schaub \(2019\)](#) for Kyrgyzstan, by [Tur-Prats and Valencia Caicedo \(2020\)](#) for Spain, by [Conzo and Salustri \(2019\)](#); [Vlachos \(2022\)](#) for World War II, and by [Godefroidt \(2023\)](#) for a meta-analysis on the impact of terrorism.

One conceptual framework to make sense of these two types of results is "parochial altruism" (see [Choi and Bowles \(2007\)](#) and [Jennings and Sanchez-Pages \(2017\)](#)). This englobes the notion that from an evolutionary point of view a strategy of within-group altruism and between-group parochialism can be evolutionary stable in the face of inter-group competition.

3.6 Further impacts of conflict in the short and long-run

Beyond political attitudes and civic behavior, it has been found that conflict exposure also affects further personal attributes, such as increased religiosity ([Henrich et al., 2019](#)), higher support for redistribution ([Zakharov and Chapkovski, 2025](#)), altered risk aversion ([Voors et al., 2012](#); [Callen et al., 2014](#); [Jakiela and Ozier, 2019](#)) and higher discount rates ([Voors et al., 2012](#)).

There is also empirical evidence that exogenous conflict exposure makes the affected people on average more violence prone. In particular, exposure to armed conflict has been found to increase a person's propensity for (general) criminal behavior ([Couttenier et al., 2019](#); [Cesur, Sabia, and Tekin, 2022](#)), for domestic violence ([Cesur and Sabia, 2016](#); [La Mattina, 2017](#); [Stojetz and Brück, 2023](#); [Cesur and Kibris, 2023](#)), or for violent behavior on the soccer pitch ([Miguel, Saiegh, and Satyanath, 2011](#)).

One understudied dimension is the vicious cycles / war traps caused by armed conflict. As discussed in [Rohner and Thoenig \(2021\)](#), wars fuel poverty and jeopardize education and social capital, which in turn plants the seeds for the next conflict. The very sizeable conflict persistence and recurrence may not just be explained by persistent risk factors, but may also be fuelled by feedback loops ([Rohner, Thoenig, and Zilibotti, 2013b](#)), and we still know far too little about how one can prevent these feedback loops and turn vicious cycles into virtuous ones. Below we will discuss a set of post-conflict reconstruction policies that combat some key elements of war traps (poverty, low trust etc). What we still lack is a comprehensive, systemic understanding of how these various specific policies fit best together, deploying peace-promoting complementarities.

4. THEORY

In what follows, we shall discuss various strands of the theoretical literature on armed conflicts, bridging several disciplinary modelling traditions and providing a big-picture synthesis of cutting-edge theoretical work.

4.1 Static models of conflict as bargaining failure

One important strand of the theoretical literature on conflict studies the so-called "war inefficiency" puzzle. Conflict is a costly lottery and destroys some part of disputed wealth. In such an environment one would typically expect a peaceful bargaining solution to arise, avoiding armed conflict and representing a Pareto Improvement for all parties involved. Due to the deadweight loss of conflict, there must –under some conditions– exist a bargaining range with a "peace dividend" preferred by all players to conflict. While this argument is conceptually straightforward, the harder question is why in reality sometimes the peaceful bargaining fails and "inefficient" war takes place. We can represent

the simplest possible bargaining space, as depicted in Figure 2 (drawing on Fearon, 1995). Given that conflict is costly, the shares of the "pie" appropriated by parties A and B in conflict sum up to less than 1, creating thereby a win-win bargaining range that assures a peace dividend (making both players better off under peace than under conflict).

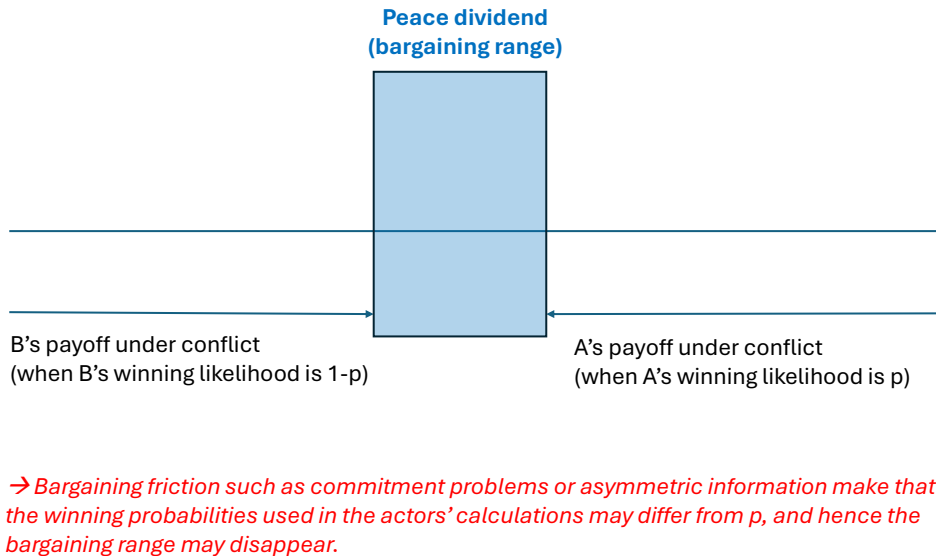


Figure 2: Bargaining models investigating conflict.

Particular bargaining frictions may reduce this space, by altering actual or perceived winning chances. The pioneering contribution by Fearon (1995) formalizes a set of major bargaining frictions being able to account for bargaining breakdown jeopardizing peaceful settlements. One first culprit is *asymmetric information*: When conflict parties disagree on the winning probabilities, such discrepancies can make the whole peaceful bargaining range disappear. Consider, for example, a situation where the actual objective winning chances are 50-50, but there is asymmetric information and both factions believe that they are bound to win with near certainty. In that case, even if war is quite destructive, the conflict parties will not be able to agree on a peaceful bargaining solution.

Other factors accounting for bargaining breakdown include e.g. issue *indivisibilities*, *risk acceptance* and *commitment problems* (which include pre-emptive wars, preventive wars and strategic territory). Commitment problems boil down to situations where factions have some strategic advantage from attacking at a particular moment in time, but cannot credibly promise to not exploit this advantage when it arises.² For example, consider a very sizeable first mover advantage: If the first mover wins with a probability close to 1 while the winning likelihood of the second mover is close to 0, the peaceful bargaining range would typically disappear.

²Powell (2006) argues that asymmetric information and commitment problems are de facto the major bargaining frictions driving the "war inefficiency puzzle", as other bargaining frictions can be seen as special cases of these fundamental frictions.

Further, [Jackson and Morelli \(2007\)](#) highlight a particularly relevant reason for bargaining failure and inefficient wars occurring: *Political bias*. This specific type of bias is defined as a leader's relative ratio of personal gains over losses from drawing her/his country or group into a war. The leader's individual trade-off may be more pro-war than for the average citizens, as often leaders may grab disproportionate shares of lucrative spoils from wars (such as resource rents, extraction contracts etc), and typically bear lower personal costs (as often the children of the governing elite are less likely to be drafted into war than children of an average citizen). This imbalance of benefits versus costs of war can account for the fact that some leaders may be willing to push for entering armed conflict even if for the rest of the country the war's losses substantially dominate any potential gains. As discussed in more depth below, there are good reasons to think that on average political bias is particularly severe in autocratic regimes.

One understudied question is how bargaining works out in the presence of several possible threat points / conflict types, such as e.g. centrist versus secessionist conflicts ([Morelli and Rohner, 2015](#)), or battle-field fighting versus guerrilla / terrorist warfare.

4.2 Static models of conflict as rent-seeking

One very active and influential strand of the theoretical literature on conflict are the static models of contest and rent-seeking (for an excellent survey, see [Konrad, 2009](#)). These frameworks typically feature a contest success function, which is a mapping from fighting efforts to conflict outcomes, as well as a time constraint, where players can allocate a time budget between appropriation versus productive activities. Their trade-off then becomes as follows: The more they fight, the bigger share of the disputed "pie" they capture, but the lower their productive work income. Hence, the deadweight loss of conflict in these settings corresponds to the foregone wages / the waste of productive time for appropriative activities. Similarly, in the models that feature arms investments ("guns versus butter" models), the deadweight loss of armament consists in the opportunity cost of foregone consumption.

We shall now briefly sketch the simplest possible contest workhorse model, allowing us below to point out precisely what effects particular shocks and policies can have in terms of mechanisms. Consider two risk-neutral players, i and j , fighting to appropriate a prize R . For simplicity we can think for now of R as exogenous (e.g. natural resource or political rents), but one could in an extended setting have a part or the rents depend on productive activities. Each faction faces a time constraint: $f + l = 1$, where f =fighting, l =labor. Fighting increases the winning chances, while producing results in linear wages w . Given the time constraint, the payoff function for a given player i can be written as follows (it is analogous for the opponent j).

$$\pi_i = p_i(f_i^*, f_j^*)R + w_i(1 - f_i^*) \quad (4.1)$$

We can focus on a very simple "contest success function" amounting to $p_i = \frac{\rho_i f_i^*}{\rho_i f_i^* + \rho_j f_j^*}$, where $\rho_{i,j}$ captures the fighting technology and $*$ refers to equilibrium values.

When taking the first order conditions of the two payoff functions with respect to the only choice variables, i.e. $\partial \pi_i / \partial f_i$ and $\partial \pi_j / \partial f_j$, we obtain a system of two equations and two unknowns (f_i, f_j).

The Nash Equilibrium is given by the intersection of these two best reply functions and corresponds for a given player i to the following expression (it is analogous for j):

$$f_i^* = \frac{\rho_i \rho_j w_j R}{(\rho_j w_i + \rho_i w_j)^2} \quad (4.2)$$

One can easily see that fighting efforts increase in the available "pie" of appropriation R and decrease in the general wage levels.

The winning probability of i becomes

$$p_i = \frac{\rho_i f_i^*}{\rho_i f_i^* + \rho_j f_j^*} = \frac{\rho_i w_j}{\rho_i w_j + \rho_j w_i} \quad (4.3)$$

One classic result in the literature is that when fighting technologies are similar (put $\rho_i = \rho_j$), maybe surprisingly the poorer player has better winning odds. Put differently, take $w_i < w_j$. Then, $f_i^* > f_j^*$ and $p_i = \frac{w_j}{w_i + w_j} > 0.5$. This is known in the literature as the famous "paradox of power" (Hirshleifer, 2001), which is intuitively driven by the fact that the poorer player has a lower opportunity cost of fighting and will hence fight harder. This framework has sometimes been invoked to account for "surprise victories", such as of the Bolsheviks 1917 in Russia or Fidel Castro's Cuban Revolution of 1959.

Classic work pioneering such static contest models include Hirshleifer (1989, 1991, 2001); Grossman and Kim (1995); Skaperdas (1996, 1992). More recent research by Dal Bó and Dal Bó (2011) has focused on the role of capital- vs labor-intensity in an open economy model, predicting that price spikes in capital-intensive sectors (and price drops in labor-intensive industries) fuel conflict.

Some models also specifically focus on features that are particularly salient for ethnic conflict. Esteban and Ray (1994, 1999, 2011) have built collective action models of contest where the ethnic population distribution affects fighting incentives. They have built a micro-founded ethnic polarization measure and show that in ethnically polarized environments the risks of war are greatest. They also find that the complementarity of capital and labor makes that ethnic conflict is for many parameter constellations more salient than class conflict (Esteban and Ray, 2008). Further, Rohner (2011) shows how the ethnic structure of society (fractionalization, polarization, segregation) affects information flows and reputation building, and thereby the scope for conflict. Related to this, Caselli and Coleman (2013) build a theory where ethnic markers help enforce group membership: in homogeneous societies members of the losing group can more easily pass themselves as members of the winning group, and this reduces the conflict risk compared to an ethnically divided society.

Another specific strand of static contest theory papers focuses on the nexus between conflicts and networks (Goyal and Vigier, 2014; Franke and Öztürk, 2015; Larson, 2021; Dziubiński, Goyal, and Zhou, 2024).

4.3 Dynamic conflict models and settings with incomplete information

If the classic static conflict models have been developed several decades ago, many multi-stage / dynamic conflict settings are more recent. There exists a vibrant literature on multi-battle contests

and tournaments (Konrad and Kovenock, 2009; Fu, Lu, and Pan, 2015; Klumpp, Konrad, and Solomon, 2019), which has generated a series of experimentally testable predictions (Dechenaux, Kovenock, and Sheremeta, 2015).

Further, repeated game-theoretic models with private information have been e.g. developed by Yared (2010); Rohner, Thoenig, and Zilibotti (2013b); Acemoglu and Wolitzky (2014). These settings typically feature the learning of fundamentals of the opponent, as well as a series of shocks, which can give birth to either cycles of temporary wars (Yared, 2010; Acemoglu and Wolitzky, 2014) or conflict traps where learning stops (Rohner, Thoenig, and Zilibotti, 2013b). In Rohner, Thoenig, and Zilibotti (2013b) endogenous dynamics of inter-ethnic trust and trade play a key role. During peace, agents belonging to two groups are randomly matched to trade bilaterally, which hinges on trust and cooperation. Aggression signals a low propensity to cooperate, harming future trust and trade due to more "pessimistic" beliefs. Accidental conflicts erode trust, which can plunge a society into a vicious cycle of recurrent conflicts (a war trap). This setting can provide micro foundations for the famous "contact hypothesis" (Allport, Clark, and Pettigrew, 1954) and in particular for the potential of free and fair contact building trust and peace. There are also dynamic models on related topics, namely the politics of fear and kleptocracy (Padró i Miquel, 2007) and strategic mass killings (Esteban, Morelli, and Rohner, 2015).

Last but not least, there exist also a series of static games with private information, for example capturing the risk of arms races triggered by mutual fear (Baliga and Sjöström, 2004) and for studying the impact of democracy on reducing private information and thereby fostering peace (Laurent-Lucchetti, Rohner, and Thoenig, 2024).

4.4 Structural models of conflict

While most of the above models cannot easily be estimated empirically, there is a growing number of theoretical frameworks designed to be structurally estimated. One category of structural conflict models takes as starting point the aforementioned contest success setting and extends the contest success function to allow for a series of parameters impacting fighting strength, efforts and winning chances. This approach has for example been applied in König et al. (2017) where the network of allies and enemies affects a group's fighting strength.³ The model is estimated empirically for the Second Congo war, where exogenous meteorological shocks are exploited to estimate network externalities. This allows for a rich set of policy counterfactual experiments, including (i) dismantling specific fighting groups involved in the conflict; (ii) weapon embargoes; and (iii) interventions aimed at pacifying animosity among groups. Another, more recent structural model extends the contest success function framework by enabling remittances to foster fighting capacity, allowing to estimate the role of remittances for Sri Lanka and perform counterfactual simulations of the impact of remittance-related policies (Bonadio et al., 2024).

One strand of structural models focuses on the spatial spread of conflict. Novta (2016) sets up a model that captures the spread of fighting throughout space for the Bosnian civil war, depending on local ethnic diversity and conflict momentum in neighboring regions, while Mueller, Rohner, and

³For methodologies for the detection of unobserved coalitions of militants in conflict areas see Trebbi and Weese (2019).

Schönholzer (2022) build a model that allows them to estimate for two dozen countries the decay of inter-group fighting depending on geographical distance. Finally, Couttenier et al. (2024) build a quantitative spatial model of trade and conflict featuring a gravity equation of violence, applied to continental Africa.

4.5 Synthesis of key empirically testable model predictions

In what follows, we discuss how the above theoretical models fit into empirically testable predictions. The contest models surveyed above feature two very general key insights. First of all, a greater appropriable "pie" (i.e. R in the above workhorse model) increases the incentives for appropriative activities, which is sometimes referred to as *rapacity effect*. And second, a higher *opportunity cost* of fighting leads to lower conflict efforts. These two robust features are present in literally all variants of contest models. There are of course situations where a given shock may increase the value of the "pie" and at the same lead to a greater opportunity cost of fighting. Think e.g. of a price increase in timber, which may at the same time increase the returns to production and to appropriation, leading to countervailing forces and a potentially ambiguous effect (McGuirk and Burke, 2020). For very valuable, easily transportable and capital-intensive commodities (say, oil or diamonds), the rapacity effect may dominate, and conflict overall increase. In contrast, for commodities that are bulky, hard to steal, and intense in local labor (say, coffee or cacao), the opportunity cost effect may dominate. This is in line with the prediction of Dal Bó and Dal Bó (2011) that price increases of capital-intensive goods increase conflict, while higher prices of labor-intensive goods reduce the scope for fighting. To spell out these two major testable predictions of contest models:

Prediction 1: Natural resource rents increase the risk of conflict. *This relates to high rents accruing to the production of major fossil fuels and minerals. The production of these very valuable goods is often capital-intensive, involves foreign specialists and centralized rents, with sometimes only limited benefits for the local population. Thus, in many circumstances one can expect the rapacity effect of price spikes to dominate, implying that higher prices and rents of natural commodities in many cases fuel conflict. In the coming section we shall discuss the empirical evidence on this, also presenting various interactions and heterogeneities.*⁴

Prediction 2: Averse economic shocks and lower general wage levels reduce the conflict risk. *To the extent that at least some part of appropriable rents are distinct from wage incomes, lower general wage levels (i.e. lower $w_{i,j}$ in the above workhorse model) increase in contest models the scope for appropriation, due to a lower opportunity cost of engaging in appropriative rather than productive activities. Adverse economic shocks, e.g. due to climate change, are expected to exacerbate conflict risks.*

A substantial number of the aforementioned contest models also study specifically ethnic conflict. The general conclusion drawn is that greater ethnic diversity (and in particular ethnic polarization) has been in many of these models related to a higher conflict risk (Esteban and Ray, 1994, 1999, 2008, 2011; Rohner, 2011; Caselli and Coleman, 2013; Esteban, Morelli, and Rohner, 2015), which can be summarized in the following prediction:

⁴Beyond this simple "greater pie" effect in contest models, there are a series of further mechanisms that can account for a conflict-fuelling impact of natural resource rents (Rohner, 2018), including the financing of fighting, resource inequalities, capital-intensiveness of resource extraction and local grievances, among others.

Prediction 3: Ethnic polarization increases the risk of conflict. *In line with the predictions in the aforementioned models, we expect ethnic polarization to increase the risk of armed conflict.*

The three aforementioned factors refer to either exogenously given parameters and shocks. A further set of relevant factors refer rather to endogenously selected choice variables. These policy dimensions will be discussed in what follows. The three key dimensions of prediction 4 (democracy), prediction 5 (economic policies) and prediction 6 (state capacity) have been referred to as essential dimensions of a "peace formula" (Rohner, 2024b).

Beyond the aforementioned contest models of conflict we have above also discussed bargaining models studying the "war inefficiency puzzle". Major bargaining frictions impeding peaceful conflict resolution include commitment problems, asymmetric information and political bias. All three of them point to key role of democracy. Indeed, Acemoglu and Robinson (2006) define democracy as a "commitment device" for future redistribution, providing the population with *de jure* political power which still lasts once *de facto* power is gone. Put differently, democracy can be seen as one major way to address commitment problems in bargaining models of conflict. Further, the recent contribution of Laurent-Lucchetti, Rohner, and Thoenig (2024) builds a model of private information where democracy reduces information asymmetries and thereby fosters peace. Last but not least, it is natural to think that political bias (Jackson and Morelli, 2007) is typically smaller in democracies, which feature a larger "selectorate" (De Mesquita et al., 2005), and are hence expected to be more accountable to the needs of the many rather than of the few. In turn, lower political bias results in a larger parameter space for which peaceful bargaining solutions can be sustained. When it comes to contest models, democracy would typically lead to lower stakes of controlling power (i.e. a smaller pie to appropriate), as minority rights are typically better guaranteed. Greater accountability may also mean that democracy may foster economic development (Acemoglu et al., 2019), thereby increasing the opportunity of conflict.

Note that there is also at least one countervailing force, as democracy may involuntarily provide its foes with the tools for its demise. In particular, freedom of expression and assembly make it easier to pull off a military challenge of the state (Collier and Rohner, 2008), which in contest models could be thought of as a more powerful fighting technology, translating a given fighting time investment into a greater operational performance. It has also been argued that leaders may trigger war for electoral motives (i.e. divert from poor economic performance) (Hess and Orphanides, 2001). While the net effect may be ambiguous, the multitude of pro-peace channels makes it natural to expect that for a wide range of parameters democracy promotes peace.

Prediction 4: Democracy may in many cases foster peace. *There are countervailing forces, with on the one hand democracy acting as commitment device, reducing asymmetric information and political bias, potentially rising the opportunity cost and decreasing the stakes of appropriation, while on the other hand it eases coordination for potential rebel "entrepreneurs" and warlords. Given the multitude of pro-peace channels, one may expect democracy to be in many circumstances peace promoting.*

If the above prediction 2 focused on adverse economic shocks, the reverse side of the medal is that productivity-enhancing economic policies could achieve the inverse. If in the spirit of "reverse engineering", a series of well-designed economic and other public policies raise wages w , they increase

the opportunity cost of conflict. Take for example public education and health expenditures. They have the potential to foster human capital and enhance economic productivity, reducing thereby incentives for fighting.⁵

Prediction 5: Productivity-enhancing public policies foster peace. *To the extent that some given public policy raises the economic productivity (and hence opportunity costs of appropriative activities) of the population, the scope for armed conflict is reduced.*

An important role is also played by security guarantees and state capacity. To the extent that the state holds the Weberian "monopoly of legitimate violence" (Weber, 2010) and enjoys enough legal and fiscal capacity (Besley and Persson, 2011b) to assure an efficient provision of public services and its core functions, it is able to guarantee the security on the national territory. A strong enough state capacity implies that rebel movements have a hard time combatting state authorities (i.e. in the above workhorse model this can be represented as a very low ρ for rebel factions, reducing their incentives for fighting).

Prediction 6: State capacity and security guarantees reduce the risk of conflict. *In line with the predictions of the aforementioned contest model, a stronger state capacity (and consequently a weaker fighting technology ρ of rebel factions) results in a reduced scope for rebellion.*

After having treated these three fundamental "pillars" of sustainable peace, we will below discuss further, more specific policy dimensions related to the burgeoning field of geoeconomics. Note that the models discussed in the last Section also have implications on the role of trade. An obvious effect of trade would be through the opportunity cost channel, highlighted in contest models. If trade makes the world overall richer, then greater economic integration would –via higher wage levels– boost the perspectives for peace. Another major mechanism is that moving from autocracy to bilateral trade leads to greater interdependence and hence a greater opportunity cost of armed conflict (Martin, Mayer, and Thoenig, 2008; Rohner, Thoenig, and Zilibotti, 2013b). Note that when studying the move to multilateral trade, countervailing forces emerge, leading to a more complex picture (Martin, Mayer, and Thoenig, 2008; Thoenig, 2024).

Prediction 7: Moving from autarky to bilateral trade reduces the bilateral conflict risk. *As discussed earlier, higher opportunity costs account for this bilateral effect, while multilateral trade leads to countervailing forces and trade-offs.*

In what follows we shall discuss the empirical evidence related to these (and further) predictions.

5. EMPIRICS

In what follows, we shall first provide a very brief overview on the methods and data used in many empirical papers and then discuss key covariates of conflict and peace investigated in the current literature. As above, we first focus rather on socio-demographic parameters, and natural endowments and shocks, before focusing on endogenously selected policy variables.

⁵For education spending, additional channels that have been highlighted are that learning may foster tolerance and that human capital can be less easily appropriated than physical capital. Hence, transforming physical into human capital leads to a drop in appropriation incentives (De la Brière et al., 2017).

5.1 Available datasets on conflicts and main methods used

Traditionally, much of the empirical literature has focused on very aggregate country level data on war and peace. In particular, a few key sources of conflict data at the country-year level have been particularly widely used, as listed below.

UCDP/PRIO Armed Conflict Dataset: This very widely used data set is described in [Gleditsch et al. \(2002\)](#) and contains indicator variables at the country-year level of various types of armed conflict, including "extrasystemic" (colonial) wars, civil conflicts, internationalized civil conflicts and interstate wars. The data also contains information on the location, actors involved, and the reason for the conflict. The newest version 25.1 of the data covers the period 1946-2024. It can be downloaded on <https://ucdp.uu.se/downloads/> (last accessed: 14 June 2025). Note that on the same website <https://ucdp.uu.se/downloads/> a great number of more specific conflict-related datasets are available, including, among many others, on one-sided conflict, non-state conflict, peace agreements etc.

COW War Data: This dataset from the "Correlates of War" project is described in [Sarkees and Wayman \(2010\)](#) and covers the much longer time period of 1816-2007. It includes various war types at the country-year level, such as intrastate wars, interstate wars, extra-state wars and non-state wars. The version v4.0 of this data can be downloaded on <https://correlatesofwar.org/data-sets/cow-war/> (last accessed: 14 June 2025).

Militarized Interstate Disputes (MID): This dataset, described in [Jones, Bremer, and Singer \(1996\)](#), focuses on disputes between states of varying intensity. It has also been put together by the "Correlates of War" project, and is available at the monadic (country-year), as well as dyadic (country pair-year) level. These data are most widely used for papers studying inter-state conflict. Version v5.0 of the data is available under <https://correlatesofwar.org/data-sets/mids/> (last accessed: 14 June 2025). Please note that the "Correlates of war" project website <https://correlatesofwar.org/data-sets/> contains a substantial number of further dataset related to conflict and key covariates, including for example national capabilities.

Over the last decade, there has also been an increasing number of articles using disaggregate data at the longitude-latitude level. The primary data source used for creating these data sets are typically media and NGO reports. The logic of these data sets is very different from the aforementioned country-level data, as here the unit of analysis is not a whole war, but an individual *event*, such as e.g. a battle or attack on civilians. Note that for large wars there can be several thousand distinct events. Below I list some particularly widely used options:

UCDP Georeferenced Event Dataset (GED): This dataset is from the UCDP research institute, is described in [Sundberg and Melander \(2013\)](#), and contains conflict event data that is very finegrained, including for every event information on its longitude-latitude, date, groups involved, type of event, description etc. The newest global version 25.1 covers the period 1989-2024. It is available for download under <https://ucdp.uu.se/downloads/> (last accessed on 14 June 2025).

Armed Conflict Location Event Data (ACLED): This is another variant of a high-quality data set, described in [Raleigh et al. \(2010\)](#), with fine-grained disaggregate data at the longitude-latitude-day level, containing also information on the actors and event types. While Africa has been covered since 1997, the coverage for other areas has been shorter and variable. The data can be downloaded on <https://acleddata.com/> (last accessed: 14 June 2025).

Social Conflict Analysis Database (SCAD): This dataset ([Salehyan et al., 2012](#)) includes protests, riots, strikes, inter-communal conflict, government violence against civilians, and other forms of social conflict at the day and longitude-latitude level. It ranges over the years 1990-2017 and covers all of Africa and now also Mexico, Central America, and the Caribbean. It can be downloaded on <https://www.strausscenter.org/ccaps-research-areas/social-conflict/database/> (last accessed: 17 June 2025)

Ethnic Power Relations (EPR): This dataset family ([Vogt et al., 2015](#)) contains panel data at the ethnic group and year level, covering conflict, ethnic groups' access to state power, their settlement patterns, links to rebel organizations, transborder ethnic kin relations, and intraethnic cleavages. It can be downloaded on <https://icr.ethz.ch/data/epr/> (last accessed: 17 June 2025)

Other datasets containing conflict data include GDELT (<https://gdelt.github.io/>), which is algorithm-based and contains very large numbers of events of various size, as well as the Global Terrorism Database (GTD) (<https://www.start.umd.edu/data-tools/GTD>) which focuses on terrorist attacks. There are also several off-the-shelf interactive datasets containing key conflict variables and coverates. They include among others GROWUp (<https://growup.ethz.ch/about>) or PRIO-GRID (<https://grid.prio.org>).

In terms of methods, the range of approaches followed in the economics of conflict literature are comparable to approaches used in development economics in general, or in labor economics or public economics, for example. While many recent papers focus on applied econometric (reduced form) studies aiming at exploiting exogenous variation for causal identification ([McGuirk and Burke, 2020](#); [McGuirk and Nunn, 2025](#); [Eberle, Rohner, and Thoenig, 2025](#)), there are also e.g. theoretical papers ([Jackson and Morelli, 2007](#); [Laurent-Lucchetti, Rohner, and Thoenig, 2024](#)) or structural estimations ([König et al., 2017](#); [Mueller, Rohner, and Schönholzer, 2022](#); [Couttenier et al., 2024](#)). Exogenous variation stems, among others, from natural experiments and exogenous shocks ([Berman et al., 2017](#); [Vanden Eynde, 2018](#); [Harari and La Ferrara, 2018](#)), allowing for shift-share approaches ([Berlanda et al., 2024](#)), instrumental variables ([Marcucci, Rohner, and Saia, 2023](#)), regression discontinuity design (RDD) ([Lax-Martinez, Rohner, and Saia, 2022](#)), or lab-in-field experiments ([Voors et al., 2012](#)), to just name a few.

Beyond these standard methods for investigating the causes and consequences of conflict, there is also work focusing on forecasting future conflict, which is of great salience for protecting civilian lives ([Muchlinski et al., 2016](#); [Hegre et al., 2017](#); [Mueller and Rauh, 2018, 2022](#); [Bazzi et al., 2022](#)).

5.2 Natural Resources and Armed Conflict

A great number of empirical papers have shown that natural resource abundance is associated with armed conflict (Fearon and Laitin, 2003; Collier and Hoeffler, 2004; Collier, Hoeffler, and Rohner, 2009), with key resources including among others oil (Humphreys, 2005; Ross, 2006, 2012; Dube and Vargas, 2013; Lei and Michaels, 2014), diamonds (Ross, 2006; Lujala, Gleditsch, and Gilmore, 2005), minerals (Berman et al., 2017; Rigterink et al., 2025), timber (Chimeli and Soares, 2017), and narcotics (Angrist and Kugler, 2008; Mejia and Restrepo, 2013). Sonno (2025) shows also that land-intensive activities by multinationals increase local grievances, escalating to violent actions.

Regressing armed conflict on resource abundance would entail a series of identification challenges, including the fact that badly run country may become more dependent on natural resource exports than other countries (Brunnschweiler and Bulte, 2008) and that resource exploration is endogenous (Cust and Harding, 2020).

One way to tackle this is to focus on world price shocks affecting resource-rich versus resource-poor countries differentially (while still only focusing on price takers and not price makers – excluding the largest producer countries).⁶ Papers exploiting natural resource shocks have shown that higher oil prices fuel conflict (Dube and Vargas, 2013), and mineral price booms can account for a fifth of armed conflict in Africa (Berman et al., 2017) and attract "stationary bandits" (De La Sierra et al., 2020). Higher mining royalties have also been found to fuel conflict in India (Shapiro and Vanden Eynde, 2023).

While in many papers the most emphasized mechanism is the aforementioned effect of greater natural resource rents increasing the "pie" (R) to be appropriated, a series of studies stress the fact that natural resource rents allow to fund fighting efforts (Collier, Hoeffler, and Rohner, 2009), which can result in spatial spillovers and escalation of fighting once a group has captured a source of resource rents (Berman et al., 2017) and to lead to longer-lasting wars (Fearon, 2004).⁷

Another interesting angle is the *distribution* of natural resources. Not just the total amount of natural resources matters, but also resource inequality is a key factor (Morelli and Rohner, 2024). It has been found that geographical asymmetries in resource holdings and mismatches between group-level resource abundance and political power lead to an increased risk of civil conflict (Morelli and Rohner, 2015), inter-state disputes (Caselli, Morelli, and Rohner, 2015) and one-sided mass killings (Esteban, Morelli, and Rohner, 2015).

As treated in more depth below in the discussion of policy recommendations, moderating factors of the natural resource conflict curse include sound institutions at the time of oil discoveries (Mehlum, Moene, and Torvik, 2006) and international transparency and traceability (Berman et al., 2017; Binzel, Fehr, and Link, 2023).⁸

⁶Another approach is to leverage oil discoveries as exogenous sources of variation, which has led to contradictory results (Cotet and Tsui, 2013; Lei and Michaels, 2014), and has been criticized for being subject to endogenous exploration choices (Cust and Harding, 2020).

⁷Further sources of funding include foreign support, e.g. in proxy wars, as discussed below.

⁸The devil is in the detail: If some certification schemes have found to work well, others have a more mixed record. Parker and Vadheim (2017), for example, finds for the U.S. 2010 Dodd-Frank Act, targeting the eastern Democratic Republic of the Congo, that it increased looting of civilians and shifted militia battles toward unregulated gold-mining territories.

5.3 Poverty, Averse Economic Shocks and Armed Conflict

One of the key points in pioneering contributions ([Fearon and Laitin, 2003](#); [Collier and Hoeffler, 2004](#)) has been that armed conflicts take predominantly place in poor countries. As discussed, one key theoretical rationale for this is that lower wages imply lower economic opportunity costs of contest, and hence typically easier and cheaper recruitment of a rebel army ([Collier, Hoeffler, and Rohner, 2009](#)).

Of course, there are good reasons to think that the relationship between poverty and conflict is bi-directional and that there are various confounders influencing this nexus. One common approach for estimating a causal effect, is to estimate economic growth using adverse weather shocks, as championed by [Miguel, Satyanath, and Sergenti \(2004\)](#). Following this pioneering contribution, a series of more recent papers have found that adverse economic / weather shocks fuel armed fighting, among many others [Hidalgo et al. \(2010\)](#); [Jia \(2014\)](#); [König et al. \(2017\)](#); [Vanden Eynde \(2018\)](#); [Harari and La Ferrara \(2018\)](#); [Waldinger \(2024\)](#).

A specific form of averse economic shocks concerns the impact of climate change, which contrary to the literature on short-lived *weather* shocks, investigates longer-run *climate* trends. In particular, there is a growing literature finding that global warming severely fuels armed conflict ([Hsiang, Burke, and Miguel, 2013](#); [Burke, Hsiang, and Miguel, 2015b](#); [Mach et al., 2019](#)). Beyond the general, harmful effect of climate change, particularly strong detrimental impacts on peace are found in specific contexts, such as rising temperatures fuelling the economic competition between herder and settler ethnic groups ([McGuirk and Nunn, 2025](#); [Eberle, Rohner, and Thoenig, 2025](#)).

A further specific type of shock that is related to weather conditions are epidemic shocks, which have been found to increase the risk of civil conflict ([Cervellati, Sunde, and Valmori, 2017](#); [Cervellati, Esposito, and Sunde, 2022](#)).

Beyond weather shocks, also general commodity price shocks (covering various goods, beyond specific fossil fuels and minerals) could affect economic prospects and the incidence of conflict ([Brückner and Ciccone, 2010](#)). This being said, the nexus between overall commodity price shocks and general armed conflict is not straightforward, as overall export prices will affect not only opportunity costs, but also other factors, such as state capacities.⁹ In contrast, a more clear-cut pattern emerges when zooming in on particular conflict types. In particular, recent work has aimed at distinguishing specific price shocks in various contexts, to gain a better understanding of underlying mechanisms. [McGuirk and Burke \(2020\)](#) show that higher prices (and hence lower real wages) have the expected conflict-inducing effect in non-producer areas. In contrast, they find that in food-producing areas, higher prices result in two counter-vailing forces, i.e. higher opportunity costs for producers and higher appropriable rents for everybody. The relative strength of these opposing forces is such that "factor conflict" on territorial control decreases, while "output conflict" on appropriating surplus surges.

If averse economic shocks fuel conflict, we would typically hope for "reverse engineering" to work: Well-designed economic policies may foster prosperity and peace. This will be discussed below.

⁹[Bazzi and Blattman \(2014\)](#) find that commodity price shocks have no effect on new conflict, yet weakly lead to shorter, less deadly wars, which may be related to better counter-insurgency capacities.

5.4 Ethnic Diversity, Inequalities and Armed Conflict

As discussed above, several theoretical frameworks predict ethnic diversity, and specifically ethnic polarization to increase the risk of armed conflict. Various studies have established empirically an association between ethnic polarization or fractionalization and armed conflict ([Montalvo and Reynal-Querol, 2005](#); [Field et al., 2008](#); [Esteban, Mayoral, and Ray, 2012](#)). Finding causal evidence on this nexus is tricky, as typically the ethnic diversity data used is time invariant or slowly moving, making it challenging to find exogenous variation. [Bazzi et al. \(2019\)](#); [Bazzi and Gudgeon \(2021\)](#) exploit a resettlement program and political boundaries redrawing in Indonesia to obtain exogenous variation in ethnic diversity indices, finding that if ethnic fractionalization—if anything—reduces the scope for conflict, ethnic polarization leads to greater conflict. Relatedly, [Amodio and Chiovelli \(2018\)](#) draw on migration flows following the implementation and repeal of apartheid segregation laws, inducing cross-sectional and time variation in the ethnic composition of South African districts. They find that ethnic polarization and inequality are associated with armed conflict. Also cultural distance matters: [Guarnieri \(2025\)](#) finds that an increase in cultural distance with respect to the government, proxied by linguistic distance, increases an ethnicity's propensity to fight over government power. Also the content of ethnic social norms matters: [Moscona, Nunn, and Robinson \(2020\)](#) find that segmentary lineage societies experience a greater number of conflicts, especially ones that are retaliatory, long-lasting, and large-scaled, and [Heldring \(2021\)](#) stress the role of culturally transmitted norms of obedience in the Rwandan genocide.

While the findings on the nexus between general inequality and conflict are contradictory ([Cramer, 2003](#)), recent work has focused on the impact of "horizontal" between-group inequality ([Stewart, 2016](#)). Drawing on satellite-based measures such as nightlight luminosity or on survey-based variables, this literature generally finds that horizontal equality is associated with a greater risk of armed conflict ([Østby, 2008](#); [Cederman, Weidmann, and Gleditsch, 2011](#); [Cederman, Weidmann, and Bormann, 2015](#)). [Huber and Mayoral \(2019\)](#) show that also within-ethnicity inequality can fuel a group's capacity for fighting, by exploiting the complementarity of labor and capital, in line with the theoretical framework of [Esteban and Ray \(2008\)](#).

One specific salient factor is the impact of artificial colonial borders which have led to split ethnic groups. [Michalopoulos and Papaioannou \(2016\)](#) have found that the incidence, severity, and duration of political violence are higher for partitioned homelands. They have also shown that split ethnic groups suffer from a greater risk of military interventions of neighboring countries and are more often entangled in a vicious circle of government-led discrimination and ethnic wars.

5.5 Democracy, Institutions and Governance

The first associations between democracy scores and conflict incidence are now several decades old. They have typically focused on conditional, non-monotonic correlations between these two variables. [Hegre \(2001\)](#) find that very democratic or very autocratic regimes have few civil wars, while intermediate regimes are most conflict prone, while [Collier and Rohner \(2008\)](#) find that democracy reduces conflict in rich countries, while having less pacifying effects in poor countries. In the literature

there has also been the notion that early democratization is often a dangerous, sometimes violent process, while mature democracies benefit from peace (Mann, 2005; Esteban, Morelli, and Rohner, 2015). One weakness of the aforementioned studies is that often their unit of analysis is quite aggregate and they lack exogenous variation.

Hence, there is a benefit of zooming in at a spatially and/or temporally more disaggregate level. Several micro-level studies have found pacifying effects of various aspects of democracy (see e.g. Fetzer and Kyburz (2024)).¹⁰

A first feature of inclusive and pluralistic politics is power-sharing, allowing various political factions to be politically represented. Cederman, Wimmer, and Min (2010) have shown –for global data at the ethnic group level– that political exclusion of a given group is associated with a higher conflict-proneness. An event-study analysis has also found a similar pacifying effect of power-sharing (Mueller and Rauh, 2024). Zooming in on Northern Ireland, Mueller and Rohner (2018) exploit close elections to draw on exogenous variation in power-sharing, finding a substantial conflict-reducing impact.

Another important dimension is the composition of the electorate. (Marcucci, Rohner, and Saia, 2023) exploit exogenous variation in enfranchisement rules for Britain’s Second Reform Act of 1867. They find that the franchise extension has resulted in a substantial reduction in political violence. Relatedly, Lacroix (2023) finds that the enfranchisement championed by the U.S. Voting Rights Act has led to a sharp violence reduction. There is also evidence for decentralization / federalism to promote peace (Cederman et al., 2015).

Last but not least, there is strong evidence on "Democratic Peace" for interstate disputes (Maoz and Russett, 1993; Oneal and Russett, 1999). This voluminous literature, which is mostly rooted in political science, finds substantial evidence that democracies are very unlikely to attack each other, one of the key reasons being electoral accountability (Conconi, Sahuguet, and Zanardi, 2014). These results are among others consistent with the aforementioned theoretical work on political bias (Jackson and Morelli, 2007). Direct evidence on this channel of transmission is provided by McGuirk, Hilger, and Miller (2023) who study voting patterns in the U.S. Congress for 20th century wars. They find that having a draft age son reduces proconscription voting by 7–11 percentage points, which recovers as soon as a legislator’s son ages out of eligibility.

While several dimensions of democracy have already been studied (enfranchisement, power-sharing), many more are still severely understudied. We don’t know in enough depth how federalism, direct democracy, bicameralism, proportional representation, civic rights, freedom of expression, pluralistic politician selection etc matter for peace.

5.6 Public Policies

A series of public policy levers have been investigated. Public employment programs and labor market access have e.g. been found to reduce the scope for conflict and violent crime in Liberia (Blattman and Annan, 2016), in India (Fetzer, 2020), and in Switzerland (Couttenier et al., 2019). Blattman,

¹⁰There is also a literature investigating specifically electoral violence, studying its drivers and potential remedies (Dercon and Gutiérrez-Romero, 2012; Collier and Vicente, 2014; Fjelde and Höglund, 2016).

Jamison, and Sheridan (2017) also found that cognitive behavioral therapy followed by cash transfers have a powerful conflict reducing effect. In contrast, childhood exposure to illegal labor markets (coca farming) increases the risk of criminal behavior as adult (Sviatschi, 2022a).

Beyond labor markets, education spending has been associated with peace promotion (Thyne, 2006; Agarwal et al., 2023), and it has been found that better access to medical drugs reduces the conflict risk (Berlanda et al., 2024).

What about foreign aid and cash transfers?¹¹ While initial cross-country evidence has found that foreign aid is associated with peace (De Ree and Nillesen, 2009), recent within-country evidence is more nuanced and contradictory. One theory-based argument for which foreign aid and cash transfers may potentially increase appropriation is that they are valuable "pies" (R in the above model). In line with this logic, a series of papers find indeed that transfers sometimes –if anything– increase fighting: See Nunn and Qian (2014) for in-kind U.S. food aid, Crost, Felter, and Johnston (2014) for a community development program in the Philippines, and Premand and Rohner (2024) for a cash transfer in Niger. In these settings it has been argued that a combination of appropriation and sabotage have harmed the programs.

In contrast, to the extent that programs successfully help households to escape poverty and carry out productive activities, the aforementioned workhorse model may predict lower conflict (due to higher wages w boosting opportunity costs of contest). A series of empirical findings are in line with this. Crost, Felter, and Johnston (2016) investigate for the Philippines a conditional cash transfer program, with transfer disbursements depending on child vaccination and school attendance. They find that this program reduces the scope for armed conflict. Further, better service provision, combined with improved public security, have been found to reduce conflict risks (Berman, Shapiro, and Felter, 2011; Berman et al., 2013; Sexton, 2016).

Further, one specific financial intervention is the distribution of financial assets. Jha and Shayo (2019) randomly assigned Palestinian and Israeli financial assets to likely voters. The treatment systematically shifted vote choices toward parties more supportive of the peace process, highlighting how personal stakes may affect attitudes.

One still open question in the literature is the role of general infrastructure. While one would expect better infrastructure to improve the productivity of the economy and increase the opportunity cost of conflict, there could be counter-veiling effects both during construction and afterwards. While the construction helps peace by creating jobs (Verpoorten and Stoop, 2024), at the same time there are disruptions that create both winners and losers. Eberle (2020), for example, detects an increase in intrastate conflict in the immediate vicinity of newly-built dams, and transport infrastructure does not only foster development, but can also facilitate repression and state-led massacres (Rogall, 2021; González et al., 2025). More work on the complex impact of infrastructure on peace is encouraged.

5.7 State capacity and Security Guarantees

Weak states suffer from an increased risk of armed violence (Rohner, VandenEynde, and Verhille, 2025). A classic example to illustrate how weak states can favor violence is the rise of the mafia

¹¹See the literature survey of Findley (2018).

(Buonanno et al., 2015; Acemoglu, De Feo, and De Luca, 2020). A series of work have studied both theoretically and empirically the bi-directional relationship between state capacity and peace, showcasing powerful feedback loops. As shown in Besley and Persson (2009, 2010, 2011a,b), legal and fiscal capacity, peace and prosperity co-move, not only because they have some joint determinants, but also because they mutually reinforce each other in "virtuous cycles".

Transforming a weak state into a strong state with substantial state capacity can sometimes be achieved in a "home-grown" fashion, such as e.g. with the "New Deal" in the United States, shown to have had political / civic implications (Caprettini and Voth, 2023).

In many cases, when a state suffers from severe fragility and weakness, outside help may be warranted. A quite vast literature has found that UN peace keepers have, overall, pacifying effects during conflict and during the post-conflict period (Doyle and Sambanis, 2000, 2006; Gilligan, Sergenti et al., 2008; Hultman, Kathman, and Shannon, 2013; Walter, Howard, and Fortna, 2021). While most early contributions have emphasized cross-national pooled panel correlations, more recent papers focus increasingly on causal inference. Hultman, Kathman, and Shannon (2014) combine fixed effects and matching techniques and show that UN military troop strength reduces battle deaths during civil wars (while police and observers do not have this effect). Relatedly, following a similar methodological approach, Haass and Ansorg (2018) find that UN peacekeeping troops composed of large share of troops from countries with high-quality militaries are better able to deter armed violence. Ruggeri, Dorussen, and Gizelis (2017) and Fjelde, Hultman, and Nilsson (2019) follow an instrumental variable approach and find that UN peacekeeping troops shorten conflict episodes and protect civilians against rebel but not government abuse.

5.8 Trade and Geoeconomics

Pioneering correlational evidence on trade and open markets being associated with peace ranges back more than four decades (Polachek, 1980; Oneal and Russett, 1997; Gartzke, 2007). While moving from complete autarky to some trade clearly increases interdependency and hence the opportunity cost of conflict, distinct forms of trade openness can have distinct effects. In particular, the follow-up work by Martin, Mayer, and Thoenig (2008) shows theoretically and empirically that bilateral and multilateral trade have contrasting effects on the conflict likelihood within a particular dyad. While bilateral trade increases inter-dependency and reduces conflict risks, multilateral trade openness makes a given country pair less interdependent, resulting in higher dyadic conflict risk.

Related to this, Amodio, Baccini, and Di Maio (2021) analyse the impact of security-motivated trade restrictions on economic activity in the West Bank, finding a marked increase in episodes of political violence in the most concerned municipalities.

Trade and globalization can have differential effects in different places. Gallea and Rohner (2021) study how strategically important locations are relatively likely or unlikely to experience conflict, focusing on natural choke points, canals and straights. While on average these places are over-proportionally dangerous, in periods of high globalisation they become comparatively safe.

In recent years, the emerging field of geoeconomics has become increasingly popular (Mohr and Trebesch, 2025). It studies research questions that link (international) economic factors and geopol-

itics/conflict, with a particular interest in power rivalries and trade (for quantitative frameworks / toolkits see [Clayton, Maggiori, and Schreger \(2023\)](#); [Thoenig \(2023\)](#)). Recent contributions in this field study for example the link between money and military strength ([Gennaioli and Voth, 2015](#); [Federle, Rohner, and Schularick, 2024](#)), hegemonic globalization and financial integration ([Eichengreen, Mehl, and Chitu, 2018](#); [Pflueger and Yared, 2024](#); [Broner et al., 2025](#)), the nexus between political alliances, strategic trade relations and conflict ([Jackson and Nei, 2015](#); [Chen, 2021](#); [Kleinman, Liu, and Redding, 2024](#)), the measurement of geopolitical risk ([Caldara and Iacoviello, 2022](#)), and the economic effects of sanctions ([Itskhoki and Mukhin, 2022](#); [Draca et al., 2023](#); [Morgan, Syropoulos, and Yotov, 2023](#)).

5.9 Nation Building and Reconciliation

There is a growing literature on nation building (surveyed in [Rohner and Zhuravskaya \(2024, 2023\)](#)). One underlying premise of this literature is that by fostering (inclusive) national cohesion and inter-group trust, national building policies may be able to reduce the risk of armed conflicts. One angle of nation building that has attracted much cutting-edge work are empirical tests of the so-called "contact hypothesis", according to which greater inter-group contact may foster trust under a number of conditions, such as equal status among groups and common goals ([Allport, Clark, and Pettigrew, 1954](#)). Exploiting exogenous variation in inter-group contact (e.g. from random allocation), recent articles have found that greater interaction between different ethnic, religious or linguistic groups does on average result in a surge in inter-group trust and national cohesion (see [Cáceres-Delpiano et al. \(2021\)](#); [Bagues and Roth \(2023\)](#) for Spain, [Samii \(2013\)](#) for Burundi, and [Grady et al. \(2023\)](#); [Okunogbe \(2024\)](#) for Nigeria). Focusing on historical and contemporary communal relationships in India, [Jha \(2013\)](#) shows that inter-ethnic complementarities and repeated business contacts between Hindus and Muslims in medieval trading ports have led to a legacy of ethnic tolerance and inter-ethnic gains sharing. He documents that (ethnically mixed) medieval ports were five times less prone to Hindu-Muslim riots between 1850 and 1950 and remained half as prone between 1950 and 1995.

Specific forms of contact and reconciliation efforts in post-conflict settings have also been increasingly investigated. [Cilliers, Dube, and Siddiqi \(2016\)](#) have set up a randomized control trial (RCT) in post-conflict Sierra Leone, studying the impact of random exposure to reconciliation ceremonies. While they find that these ceremonies help fostering social capital and forgiveness, this comes at the cost of deteriorated psychological health. Relatedly, the RCT of [Mousa \(2020\)](#) in Iraq has randomized Christian Iraqi refugees to soccer teams that were composed of either all Christian players or a mixture of Christian and Muslim players. She has found that have Muslim team mates fostered pro-social inter-group behavior on the soccer pitch, but these effects did not extend to non-soccer contexts.

Note that there are some caveats concerning the contact hypothesis. First of all, it is important to keep in mind that the beneficial pro-social virtues of contact only apply to settings where contacts are fair, horizontal and non-discriminatory ([Allport, Clark, and Pettigrew, 1954](#)). If one group is at the mercy of the other and cannot flee, negative economic and political shocks can fuel inter-ethnic violence, as found for anti-Jewish pogroms in the Russian Empire ([Grosfeld, Sakalli, and Zhuravskaya, 2020](#)). Further, the ethnic population composition matters: [Bazzi et al. \(2019\)](#) document that inter-group contact strengthens national identity foremost in the presence of large ethnic fractionalization

(i.e. when there are many small groups), while in ethnically polarized societies (with few very large groups), contact may even backfire.

Beyond policies fostering contact, a series of further policies have been shown to matter for nation building. Namely education has been found to be able to foster national identity and cohesion (see [Blanc and Kubo \(2024\)](#) for France and [Carlitz et al. \(2024\)](#) for Tanzania), yet the devil is in the detail. Ill-designed and forced education initiatives can fuel pro-nationalist attitudes ([Cinnirella and Schueler, 2018](#)) and lead to minority group backlash ([Fouka, 2020](#); [Bazzi, Hilmy, and Marx, 2023](#)), and the educational curriculum may reflect ideological stands of the government ([Clots-Figueras and Masella, 2013](#); [Cantoni et al., 2017](#); [Chen, Lin, and Yang, 2023](#)). Beyond education, various regimes have used propaganda / information campaigns, through radio and other media, not just inciting hatred ([Yanagizawa-Drott, 2014](#); [Caesmann et al., 2021](#)), but also for counter-insurgency ([Armand, Atwell, and Gomes, 2020](#); [Sonin and Wright, 2022](#)), for resistance activities ([Gagliarducci et al., 2020](#)), as well as for nation building and fostering inter-group reconciliation ([Paluck, 2009](#); [Blouin and Mukand, 2019](#)), displaying often substantial persuasion.¹²

Also shared experiences, such as national soccer victories, have been found to foster national identity and attenuate inter-group conflict ([Depetris-Chauvin, Durante, and Campante, 2020](#)). In contrast, it has been found for the U.S. that citizens who have suffered from exclusion and discrimination are less keen to support the government and volunteer for army enlistment ([Qian and Tabellini, 2025](#)).

5.10 International interventions and externalities

The bandwidth of international interventions affecting the prospect of peace and conflict is enormous, as surveyed in [Regan \(2010\)](#); [Rohner \(2024a\)](#). The "least militarized" type of intervention is *mediation*, where a third-party mediator aims at establishing a ceasefire or peace settlement between rival factions in civil wars or between countries in inter-state conflict. One theoretical channel through which mediation may operate in terms of the aforementioned theoretical frameworks is the reduction of *asymmetric information*. Myerson's revelation principle ([Myerson, 1979](#)) applies, and one can restrict attention to equilibria where disputants file truthful reports to the mediator ([Hörner, Morelli, and Squintani, 2015](#)). Given that literally hundreds of articles have been written on the nexus between mediation and conflict, mostly in political science, providing an in-depth synthesis of this literature is beyond the scope of the current contribution (for surveys see [Wall and Dunne \(2012\)](#); [Wallenstein and Svensson \(2014\)](#); [Duursma \(2014\)](#); [Beardsley and Danneman \(2015\)](#)). One challenge encountered by the large body of empirical work on mediation and conflict is that mediation efforts are by definition an endogenous choice variable. Given that it has often proven difficult to exploit exogenous variation, the often found association between mediation and peace should be interpreted rather as a correlation than as a causal relationship. Given the great potential promise of well-designed mediation, it would be of foremost importance to gain causal evidence on its working, its effectiveness and its optimal design. Future work on this is encouraged.

Beyond mediation, third-party outside interventions include a series of military actions, pursuing

¹²Related literatures study the impact of social media / mobile phone access on hate crimes ([Müller and Schwarz, 2021, 2023](#)) and on protests ([Larson et al., 2019](#); [Enikolopov, Makarin, and Petrova, 2020](#); [Manacorda and Tesei, 2020](#)).

diverse goals ranging from supporting a given country or regime against rivals to regime change or proxy wars. The track-record is mixed at best. Military aid has been found to—if anything—backfire. [Dimant, Krieger, and Meierrieks \(2024\)](#) find for a sample of 174 countries that more U.S. military aid is associated with a higher likelihood of anti-American terrorism in aid-receiving countries, which is partially explained by a rise in corruption. Zooming in on U.S. military aid on Colombia, [Dube and Naidu \(2015\)](#) have found that it increases paramilitary attacks and homicides but has no effect on guerilla attacks, and conclude that the selective strengthening of specific nonstate actors may undermine domestic political institutions.

Also direct battlefield involvement has been found to backfire: [Dell and Querubin \(2018\)](#) show that U.S. bombing in the Vietnam War increased the military and political activities of the communist insurgency, weakened local governance, reduced noncommunist civic engagement, and fuelled anti-Americanism. Related, [Riano and Valencia Caicedo \(2024\)](#) study the US ‘Secret War’ in Laos (1964–73), finding that a one-standard-deviation increase in bombing intensity is associated with a 7.1 percent decrease in GDP per capita.

Another international dimension of conflict concerns its financing. If fighting is partly domestically funded through natural resource rents (as discussed above), or domestic donations ([Limodio, 2022](#)), often international funding matters heavily, for example in the context of proxy wars ([Berman and Lake, 2019](#)) or through remittances. [Bonadio et al. \(2024\)](#) show that remittances to the Tamil Tigers may have prolonged the Sri Lankan civil war by as much as 14 years.

There are series of further international / transnational spillovers and externalities – sometimes unintended. [DellaVigna et al. \(2014\)](#) find that extreme nationalist vote and ethnically offensive graffiti are more common in Croatian villages with Serbian radio reception. International borders are also often violence-prone, among others as providing hiding groups for insurgent groups that operate transnationally ([Martinez, 2017](#); [Malik, Ali Mirza, and Rehman, 2023](#)). Several studies also found that international inattention and distraction affects the timing of military attacks and protests ([Durante and Zhuravskaya, 2018](#); [Anderson et al., 2023](#)).

One under-studied question is the multi-dimensional causal impact of private security companies (often linked to specific governments, such as e.g. the Wagner group linked to the Russian government). It would be useful to quantify their effects on the prospects of conflict versus peace, as well as on wider development outcomes.

5.11 Gender

There is also a growing literature studying gender dimensions in conflict (see the excellent survey of [Anderson and Sviatschi \(2025\)](#)). One strand studies the drivers of gender-based / domestic / intimate partner violence ([Cesur and Sabia, 2016](#); [La Mattina, 2017](#); [González and Rodríguez-Planas, 2020](#); [Stojetz and Brück, 2023](#); [Cesur and Kibris, 2023](#); [Agarwal et al., 2023](#); [Kavanaugh, Sviatschi, and Trako, 2024](#); [Bhalotra et al., 2025](#)). Key findings include that these forms of violence are fuelled by conflict / combat exposure ([Cesur and Sabia, 2016](#); [La Mattina, 2017](#); [Cesur and Kibris, 2023](#); [Stojetz and Brück, 2023](#)), by unemployment ([Bhalotra et al., 2025](#)), and by unequal gender norms ([González and Rodríguez-Planas, 2020](#)), among other factors. Promising approaches to reduce such types of

violence include, among others, the creation of all-women's justice centers (Kavanaugh, Sviatschi, and Trako, 2024) or education initiatives (Agarwal et al., 2023).

Another strand studies conflict-related sexual violence (Cohen, 2013; Nordås and Cohen, 2021; Fourati et al., 2021). The recent article of Guarnieri and Tur-Prats (2023) demonstrates for example the importance of ethnic-based gender norms, finding that male-dominant armed actors are more likely to be perpetrators of sexual violence, especially when clashing with groups having different gender norms.

Beyond the role of gender in victimization, a strand of the literature studies the role of women as armed actors in conflict (Haer and Böhmelt, 2018; Loken and Matfess, 2024), as well as the impact of conflict exposure on future female political involvement (Rogall and Zárate-Barrera, 2020). Eslava (2020) finds for Colombia that female FARC leadership leads to a 60 percent reduction in conflict violence and even larger reductions in violence when both a female mayor and a female guerrilla commander are present. In contrast, Dube and Harish (2020) study Europe over the fifteenth to twentieth centuries and find that polities led by queens engaged in war more than polities led by kings.

As highlighted in the survey of Anderson and Sviatschi (2025) a very relevant understudied question is the impact of female representation on the scope for peace and conflict. What will be the impact on peace of having a better female representation in governments, parliaments, peace negotiations, to a name a few dimensions?

6. SYNTHESIS OF KEY POLICY RECOMMENDATIONS – HOW TO SIMULTANEOUSLY FOSTER PEACE AND DEVELOPMENT

Below are listed key policies that foster peace (several of which have also been discussed in the recent book of Rohner (2024b)). Strikingly, we shall see that these policies in general also foster development. Hence, we are not facing a trade-off between pursuing peace versus development, but –if anything– these are complements and promoting one of these capital goals typically helps achieving the other.

Democratic / Inclusive Politics: As discussed above, various aspects of democracy have been found theoretically and empirically to reduce the risk of civil conflict. Conceptually, having a democratic voice and political representation reduces the relative payoff of seizing power by force, and greater accountability reduces grievances. Democracy also attenuates commitment problems and information asymmetries, as discussed above. Empirically, power-sharing, enfranchisement and civic rights have been found to foster peace. Also for inter-state conflict, the so-called Democratic Peace result highlights that democracies are much less likely to attack other democracies (which may be due to lower political bias). Hence, having more democracies in the international system should typically foster peace. To the extent that sound institutions and democracy also foster economic development (Acemoglu, Johnson, and Robinson, 2001; Goldstein and Udry, 2008; Acemoglu et al., 2019; Abeberese et al., 2023; Marcucci, Rohner, and Saia, 2023), making politics more democratic / inclusive helps to both promote peace and development.

Strengthening the Economy: Conceptually, public policies that boost productivity (including education, health, labor-market policies, and well-designed infrastructure investment) increase the opportunity cost of conflict. Further, human capital is –in contrast to physical capital– not appropriable, which further reduces conflict incentives. The empirical evidence is consistent with these theoretical conjectures, highlighting the peace promoting impact of the aforementioned categories of public policies. If poverty is a major risk factor facilitating rebel recruitment, development and economic perspectives have the opposite effect of making rebellion less feasible. As discussed above, while the track record of cash transfers is mixed (as they combat poverty but at the same time constitute a valuable "prize" to capture), non-appropriable investments (e.g. in human capital) and some specific, well-designed conditional cash transfer programs have a clear-cut conflict reducing effect. In a nutshell, the aforementioned productivity-boosting policies entail the double dividend to foster development and peace.

Strengthening State Capacity: A state with enough administrative, fiscal and legal capacity is better able to guarantee the security of its citizens and avoid fragility and warlordism. Conceptually, in the above workhorse model greater state capacity would be reflected by a more powerful fighting technology of the state, thereby reducing the winning chances (and incentives for rebellion) of any challengers. As discussed above, an increase in state capacity can be home-grown or can be helped by international support, for example through UN peacekeepers. The aforementioned empirical evidence shows how fostering state capacity boosts the prospects of peace. At the same time, there is solid evidence for various forms of state capacity to foster development (Besley and Persson, 2010, 2011b; Acemoglu, García-Jimeno, and Robinson, 2015; Dincecco and Katz, 2016; Page and Pande, 2018). Thus, there is again a double dividend of investing in state capacity, which promotes both peace and development.

Moving Out of Fossil Fuels: Valuable resource rents provide an attractive "prize" to appropriate and help funding rebellion, hence unsurprisingly there is a large literature (discussed above) showing that fossil fuel extraction boosts conflict risks. By moving out of fossil fuels one can reduce these risks and weaken aggressive petro-states. Further, this obviously helps combat climate change, which is another major conflict risk multiplier. The tricky part is to avoid replacing an oil curse by a mineral curse, but this can be achieved by the right mix of decentralization, labor-intensive and locally-rooted energy production (Rohner et al., 2023). Given that faster climate action is also economically cheaper (Stern, 2015), dropping fossil fuels again entails the double benefits of fostering peace and development.

Strengthening International Coordination and a Rule-Based Multilateral Order: As discussed, international cooperation and coordination plays a key role in fostering peace, starting with the overall peace-promoting effect of (bilateral) trade, which increases interdependency and hence leads to a greater opportunity cost of fighting. International coordination also fosters sustainable peace through multilateral mineral trading (Berman et al., 2017), refugee admissions (to tackle aforementioned vicious cycles and war traps), cattle insurance to attenuate herder-settler conflicts exacerbated by climate

change (Gehring and Schaudt, 2024), and protecting international shipping routes (Gallea and Rohner, 2021), to name just a few dimensions. At the same time, international cooperation and collaboration also entails economic benefits, such as the economic gains from trade (Melitz and Trefler, 2012; Costinot and Rodríguez-Clare, 2014; Feenstra, 2018). At the same time a rule-based international order reigned by multilateralism and international law does not only promote peace, but also eases predictability and planning for firms, boosting productive investment (Maskus, 2000; Navaretti, Venables, and Barry, 2004; Branstetter, Fisman, and Foley, 2006; Dunning and Lundan, 2008). As for the other policy dimensions mentioned above, a vast array of policies related to international coordination both support peace and development.

Contact and Reconciliation Policies: Fair and non-discriminatory inter-group contact and reconciliation initiatives can foster inter-group trust, which is key to sustain peace in settings with private information (Rohner, Thoenig, and Zilibotti, 2013b). As discussed above, there is growing empirical evidence on the peace-promoting effects of such policies. At the same time, there is also solid evidence that trust is key for the development of markets and for economic development in general (Temple and Johnson, 1998; Zak and Knack, 2001; Dearmon and Grier, 2009; Algan and Cahuc, 2010). Again, as before, fostering contact and reconciliation policies have the potential to both promote peace and development.

To sum up, a series of concrete policies have been shown theoretically and empirically to promote incentives for peace. At the same time, there is solid evidence that these policies support economic development, which highlights a general complementarity between peace and development. Putting in place the aforementioned mix of promising policies entails the double dividend of tackling at the same time two of humanity's greatest challenges: poverty and armed conflict.

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