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**More details/abstract**

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## The microeconomics of violent conflict

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## ABSTRACT

In our brief review, we take stock of the emergence, in the last decade, of the “microeconomics of violent conflict” as a new subfield of empirical development economics. We start by de-bunking common misperceptions about the microeconomics of conflict and identify several contributions to economic theory and, in particular, to empirics, methods and data. We also show how the subfield is enriched through cooperation with scholars working in related disciplines. We expect future work to contribute *inter alia* to the evidence base on peacebuilding interventions, the development of post-conflict institutions, the behavior of firms in conflict areas and the role of emotions in decision-making. We note a disconnect between the rapidly evolving academic subfield on the one hand and the relatively limited use of knowledge thus generated by humanitarian and development organisations and policy makers working in and on conflict-affected areas. We conclude by suggesting that teaching in economics and the discipline-specific JEL codes have not yet kept pace with this recent intellectual development.

### 1. The microeconomics of conflict as a new sub-field of development economics

In this short review, we define the subfield of the microeconomics of violent conflict, reviewing its scope, discussing its achievements to date and offering a subjective take on future pathways. We discuss research that has focused at its core on the behavior and welfare of individual agents and groups, disregarding studies of entire countries at war.<sup>1</sup> We define violent conflict as the “systematic breakdown of the social contract resulting from and/or leading to changes in social norms, which involves mass violence instigated through collective action” (Justino et al., 2013: 6).<sup>2</sup> The micro-level analysis of such forms of violent conflict is a new topic in development economics, which has offered new exciting analytical and methodological insights, as well as challenges.

The microeconomics of conflict has multiple intellectual origins. The first studies were originally stimulated by new microeconomics approaches to the study of development during the second half of the 1990s and early 2000s (e.g. Deaton, 1997), by influential cross-country analyses of the economic causes and consequences of armed conflict (e.g. Collier and Hoeffler, 2004) and by new work on the political economy of development (e.g. Acemoglu et al., 2001). At the same time, the growing realization by policymakers that the poorest and most vulnerable households lived under the shadow of wars (World Bank, 2011) and the

focus of policy attention on the stabilization and development of Iraq and Afghanistan induced many development economists to turn their attention to the study of violent conflict. While the first studies focused on the macroeconomic causes and consequences of civil wars, attention soon turned to the ways in which individuals, households and communities behave, adapt, make decisions and live in conflict-affected contexts and how these micro-level dynamics feed into the conflict itself (Justino et al., 2013). The growing practice of development economists to collect and analyze survey data and technological advances in micro data collection and processing methods in turn encouraged scholars to collect new data and use existing data in creative ways to better understand how people live and make decisions in conflict settings (e.g. Brück et al., 2014).

The microeconomics literature on violent conflict has to date followed three strands. Several studies have focused on the analysis of how individuals, households and communities and, more rarely, firms – all largely seen as victims of violence – react to and cope with violent conflict (Brück et al., 2013; Justino, 2012; Martin-Shields and Stojetz, 2018). Another strand of literature has studied how people contribute to conflict, whether by choice or under duress, emphasizing the importance of individual and group agency in conflict contexts (Verwimp, 2005; Krueger, 2007; Humphreys and Weinstein, 2008). A third strand, which originates from a growing interest of economists in randomized control trials, has concentrated on assessing the impact of policy interventions on

<sup>1</sup> For a review of this earlier literature see Blattman and Miguel (2010).

<sup>2</sup> This definition includes violent protests, riots, coups, revolutions, civil wars, genocide, international wars, and terrorism (for the latter, see also Krueger, 2007 and Schneider et al., 2015). It excludes forms of social conflict that do not result in mass violence, such as strikes, criminal activities conducted for self-gain that do not involve mass violence, such as thefts or robberies, and intra-household forms of conflict, such as domestic violence (Justino et al., 2013). In this paper, we use the words ‘violent conflict’, ‘armed conflict’ and ‘conflict’ interchangeably.

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people living during or after civil wars or at building peace and security in such contexts (Justino, 2018a; Puri et al., 2017).

Interestingly, many of the advances in all of these areas of research have been made possible due to close collaboration with related disciplines, including political science, international relations, peace research, conflict and security studies, development studies, sociology, and social psychology. While the microeconomics of conflict literature is characterized by the use of rigorous methods common in economics, its topics and theoretical frameworks are often shared with these disciplines, an advance that has enriched development economics more broadly.

Many of the studies in this subfield were conducted by scholars affiliated to the Households in Conflict Network (HiCN).<sup>3</sup> This special issue draws on research presented at the 13th Annual Workshop of the Households in Conflict Network, held in Brussels in November 2017. Based on these and selected related papers, we discuss some achievements and future directions in theory, empirics, data and methods. We proceed by highlighting the contribution of this emerging subfield to debunking a number of myths in conventional wisdom that have not survived scientific scrutiny.

## 2. Five myths about microeconomics research on conflict

**Myth 1: “It is impossible to do rigorous and ethical research in conflict zones.”** One of the reasons why economists traditionally did not study war economies or people in war zones was the misconception that conflict-affected areas were out of reach for researchers, for security and ethical reasons. The community of scholars populating the subfield has by now amply demonstrated that this is not the case. In fact, as we will document below, innovative data collection methods are a key characteristic of the subfield. Civil wars in developing countries are often low-tech, spatially concentrated conflicts, where even ‘hot’ zones can be visited during pauses in the fighting, especially with the right partners on the ground. In reality, the closer one gets to a war zone, the easier it is to judge credibly and safely what kind of work is (not) possible. Furthermore, with the advent of mobile phone technology and remote sensing, obtaining information from within active war zones has become easier and safer.

**Myth 2: “Violent behavior is irrational.”** The notion that (many) acts of violence are irrational is a deep-seated human belief, leading earlier generations of economists (and others) to dismiss violence as irrelevant for (economic) theorising. Today, we know that there are actors who have a comparative advantage in using violence – and that it may be rational or optimal to act violently (North et al., 2009). Drawing on a large literature in political science and sociology (Kalyvas, 2006), one important intellectual contribution of the microeconomics of conflict has been to make sense of war, and the fact that the choice set of “normal” human behavior also includes violent actions, in line with related efforts in other disciplines.

**Myth 3: “War stops markets and governance.”** Most aspects of life, such as farming, trading, schooling and others activities, continue in conflict zones. Economic activity is likely to become more informal, with fewer formal taxes paid or collected but with informal markets and informal revenue raising thriving (Arias et al., 2018; Sánchez de la Sierra, 2018). Households may move into safer areas or activities (for example, by growing food crops rather than cash crops) and may invest more in social networks as a coping strategy (Bozzoli and Brück, 2009; Bauer et al., 2016). At the same time that social and economic life carries on, so does governance, as shown in emerging studies (Sánchez de la Sierra, 2018; Justino, 2018b). Although state institutions may weaken as

violence spreads, a number of political (often armed) actors occupy these governance spaces, either by capturing existing or by creating new institutions - with important implications for economic development in the short and long term (Justino and Stojetz, 2018).

**Myth 4: “Conflict is a problem of poverty and of the poor.”** While it is true that an increasing share of the world's most destitute people live in conflict-affected countries (OECD, 2016), it does not necessarily hold that the poor have the most to lose from war. Given the distributional implications of war (Bircan et al., 2017; Justino and Verwimp, 2013; Scheidel, 2017), sometimes the wealthier have relatively more to lose from war destruction, particularly when they, their families and their assets are direct targets of violence. Wealthier and better-connected individuals and households may, however, also be better able to shield themselves from conflict while the poor may suffer more directly (Ibáñez and Velez, 2008). Similarly, there is little evidence to support the common assertion that ‘poverty breeds violence’. While there is an association between violent conflict and low-income countries, largely for reasons to do with weak institutions, there is almost no evidence of a concentration of perpetrators of violence among the poor (Verwimp, 2005; Krueger, 2007).

**Myth 5: “The post-war economy should be reconstructed.”** A popular notion, especially in the international policy community, is that, once a particular war has ended, the economy should be “reconstructed” (Addison and Brück, 2009). In most cases, this belief is misguided and should be replaced by the notion that war induces structural change in the economy which should then be seized upon to build a better economy, using appropriate technologies and innovations. On the one hand, it seems foolish to re-construct the economy (and presumably with it a social model) that yielded war as its outcome. Be it Europe pre-World War I or pre-World War II, be it Syria, DRC or Colombia today, it seems preferable to build post-war economies which reward pro-social, peaceful behaviour. On the other hand, war induces a massive structural transformation of any economy. It is entirely unclear if re-building a bombed out infrastructure will yield the same social and economic benefits as that infrastructure provided pre-war. Local population density, demand and trade patterns may have changed irreversibly, requiring a new and unique blueprint for each post-war settlement.

## 3. Recent achievements

In this section, we review briefly how the microeconomic analysis of violent conflict has contributed to development economics as a discipline. We are less interested in documenting exhaustively what has been published so far,<sup>4</sup> but rather focus on insights from this subfield that are of larger relevance to development economists.

**Theory.** Research on the microeconomics of violent conflict has been largely empirical to date. The empirical richness it has generated has in turn led to new theoretical contributions. We highlight here three theoretical areas of development economics where work in conflict-affected contexts has led to particularly relevant insights: the political economy of development, household decision-making and social preferences and behavior.

The main theoretical premise in most models of economic development is the existence of a state with the monopoly of violence, able to enforce contracts and guarantee property rights. Work on conflict areas in political science has shown that markets and social interactions continue to operate in the absence of such state institutions and the fragmentation of political authority (Kalyvas, 2006; Arjona et al., 2015). These insights have filtered into new economics research showing how taxation and political authority contribute to quasi-states in conflict areas (Sánchez de la Sierra, 2018), how forms of wartime governance affect collective action in the aftermath of wars (Justino and Stojetz, 2018), the

<sup>3</sup> HiCN was founded in 2004 and convenes researchers who work on the causes, functioning and consequences of violent conflict at the micro-level using empirical methods. HiCN hosts the largest collection of working papers on the microeconomics of conflict worldwide. See [www.hicn.org](http://www.hicn.org) for further information about the network, its publications and its annual workshops.

<sup>4</sup> This has been done, inter alia, by Verwimp et al. (2009), Justino (2009, 2012) and Blattman and Miguel (2010).

role of information by different armed actors in counterinsurgency interventions (Berman et al., 2011), and how different actors control economic resources (Dube and Vargas, 2013).

The second theoretical contribution is on household-decision making. The impact of shocks on household welfare in developing countries has traditionally been analyzed within household farm models, with a maximizing utility function at its core (Singh et al., 1986). Empirical research on household decision-making in conflict zones has shown that households often make decisions – such as selling cattle when prices are low or removing children from schools – that appear at first sight to minimize rather than maximize their expected utility. This is largely because violent shocks often lead to a trade-off between maximizing welfare and maximizing physical security (Justino, 2009). The two rarely go hand in hand because, for instance, households that may want to keep their assets in conflict areas may be at greater risk of being targets of violence (Justino and Verwimp, 2013) or because returns to formal education are so low in a war-setting (Bozzoli and Brück, 2009). In addition, studies from countries affected by armed conflict for a very long time (such as Colombia, Angola, DRC, Somalia or Afghanistan) reveal that households, firms and entire economies undergo structural change whereby agents adapt to the war economy, sometimes for decades or permanently. While initially economists treated conflict as a short-term shock and made use of workhorse household utility maximization models to advance our understanding of the economic effects of violent conflict, later research has realized that the shock is only the entry point of a very long period of change and more dynamic models are needed to capture such changes. These long effects of wars are reviewed and documented in this special issue by Saurabh Singhal.

The third theoretical contribution is to the understanding of social preferences and social capital. A new body of literature has documented how shocks, institutions and other life experiences affect individual preferences and other-regarding behaviors, challenging a longstanding premise in neoclassical economic theory that individual preferences are exogenous and fixed (Bowles, 1998; Bozzoli et al., 2011). Recent studies have shown that exposure to violence may result in higher levels of pro-social behavior (Voors et al., 2012; Bauer et al., 2016). On the other hand, a line of work in collective action research has also challenged the connotation of social capital as a force of “good” and focuses instead on its dark side. Recent papers show that group cooperation and social cohesion are in fact key to successful rebellion (Petersen, 2001; Wood, 2003) and that it can be successfully employed in a campaign of genocidal violence (Verwimp, 2013).

**Empirics.** The empirical analysis of violent conflict has thrived in the last ten years, with a focus on understanding the causes and consequences of conflict at the micro-level. Influential studies have documented the large impacts of civil wars on education, health, labor market outcomes and social relations. One key finding is the long lasting and persistent legacies of conflict on human capital outcomes, including when conflict is experienced during formative childhood years (Bundervoet et al., 2009; Akresh et al., 2011; Brück et al. forthcoming). While a large literature in development economics has shown the long term impact of shocks experienced during childhood (e.g. Almond and Currie, 2011), the literature on conflict has emphasized how such effects may persist despite efforts to rebuild countries and communities, and independently on whether the country overall manages to recover to pre-war economic development levels (Miguel and Roland, 2011). The contributions by Eleonora Bertoni and colleagues and Saurabh Singhal in this special issue are examples of such research. Bertoni et al. assess the negative impact of the Boko Haram conflict on enrolment and school attainment, whilst Singhal demonstrates that early-life exposure to bombing in Vietnam has long-term consequences into adulthood in terms of adverse mental health, an outcome that has to date not been much researched.

A number of studies have also focused on identifying the causes of violent conflict. Micro-level work by development economists has focused on the role of poverty, inequality, unemployment, the presence

of natural resources and the political economy of development, sometimes with mixed effects as discussed above.<sup>5</sup> For instance, in this special issue, the paper by Suleiman Abu-Bader and Elena Ianchovichina discuss the puzzle of the Middle East, where conflict thrives despite low levels of poverty and institutional weakness.

More recent research, still in its infancy, has attempted to document not only the micro-level causes and consequences of conflict, but also how internal conflict dynamics may result in different development outcomes. The literature on conflict dynamics has been dominated by empirical studies in political science on group mobilization (Weinstein, 2007), types of violence (Kalyvas, 2006), rebel governance (Arjona et al., 2015) and peace-building (Autesserre, 2010). Work by development economists on how different conflict dynamics may affect development outcomes is only emerging and has to date focused on the role of information asymmetries (Berman et al., 2011), and on forced displacement as a war strategy (Ibanez and Vélez, 2008). The paper by Bertoni et al. in this special issue advances this literature by showing how conflict dynamics – in this case, specific targets of violence (schools), distance of households to violent events and the actions of different violent actors (rebel group, government forces or the police) – may result in different welfare outcomes.

One area with large influence in recent years has been the role of international third parties in conflict processes, including the role of external aid (Crost et al., 2014, 2016). Two papers in this special issue, by Travers Barclay Child and by Suleiman Abu-Bader and Elena Ianchovichina contribute significantly to this literature. Child tests the long-standing question on the impact of aid on conflict by disaggregating its effects across sectors – a new question in this line of research. The paper finds that the effect of aid projects on conflict in Afghanistan is heterogeneous across sectors, with health projects promoting stability, and education projects provoking further conflict. This is because education interventions are perceived as an imposition of Western values and ideology. Abu-Bader and Ianchovichina, concentrating on the Middle East, find that third party actions, in the form of non-neutral and non-humanitarian foreign military interventions, exacerbate social conflict and intra-group tensions by strengthening religious polarization. Despite these important advances, much still remains to be done in terms of understanding how different armed groups, types of violence, patterns of recruitment, civilian behavior and other conflict dynamics may affect economic development, an issue we return to below.

**Data and methods.** In the last fifteen years or so, significant advances have been made in the design, implementation and analysis of household surveys, lab-in-the-field experiments and impact evaluations in conflict-affected countries. These advances span issues of measurement, identification, practical implementation and research ethics. For example, we have learnt how to ask detailed and sometimes sensitive questions about how individuals, households and communities are affected by and respond to their exposure to conflict in surveys, or how to combine different data sources to better understand the interaction between conflict and development (Brück et al., 2016b). The papers in this special issue are excellent examples of how survey data can be used to understand the impact of conflict when combined either with historical conflict data to estimate the long term effect of early age exposure to violence (Singhal) or with geo-coded conflict event data on different types and use of violence (Bertoni et al.). There have also been notable advances in the use of impact evaluations in conflict-affected areas (Brown et al., 2015; Puri et al., 2017).

More recently, international organizations and NGOs have also risen to the challenge by, for instance, considering how to adapt programs and interventions to conflict settings and studying the peacebuilding implications of otherwise standard programs (Brück et al., 2016a, b). The subfield has also become a testing ground for new technologies for data

<sup>5</sup> For reviews see Bircan et al. (2017), Blattman and Miguel (2010) and Justino (2012).

collection and analysis. Efforts have included the use of remote sensing data to understand economic activity (Shortland et al., 2013) and war-time crop production (Jaafar and Woertz, 2016) and the development of crowd-seeding techniques using cell phones to track conflict dynamics (Van der Windt and Humphreys, 2014). Many of these techniques are also being used in peaceful settings – but their use has been particularly pertinent where safe physical access is a critical concern.

#### 4. Future directions

Looking ahead, we offer a short discussion of what our personal assessment is of what journals like the *Journal of Development Economics* may publish in the microeconomics of conflict say five years hence. This is not meant to be normative or prescriptive – but rather what we think may stand the test of time (and of peer review).

**Theory.** One upcoming area of theoretical research in the microeconomics of violent conflict concerns the understanding of the political economy of war zones and implications for economic development. One particular important question, discussed throughout this paper, is how economic decisions are made in the absence of a state that holds the monopoly of violence and is able to enforce social contracts and protect property rights. Evidence from conflict zones shows that markets and social relations continue to operate under these contexts, sometimes with favorable outcomes. What is lacking is a framework that may account for how economic development processes operate under fragmented authority and the threat of (different forms of) violence. Models of non-contractual social interactions, such as those proposed in Bowles (2004), combined with more detailed understanding of how different conflict and violence dynamics play on the ground (Kalyvas, 2006), may become useful as this area of research progresses.

Second, social psychology has had a major influence on economics over the last decade. We expect that this trend will also shape future research on the microeconomics of conflict. If past research in the sub-field was characterized by studying what people did and how well they fared doing so, in the future the subjective and the psycho-social may gain in weight as a topic. The way decision-making is affected by emotions and non-cognitive factors during conflict, for example, is almost virgin territory and yet critical for economic recovery and peacebuilding. This includes better modeling of how emotions such as hatred, revenge, envy, shame and fear, among others, may interact with each other and with institutions to produce behavioral responses that may shape substantially political and social decisions, including the use of violence, and economic development processes in conflict-affected areas. Research in political science has shown how emotions shape violence outcomes (Petersen, 2001; Wood, 2003). Research in economics has produced new insights into the importance of emotions for economic theory (Loewenstein, 2000). In the near future, we predict to see more applications of the role of emotions, as developed in social psychology and cognitive science, to the microeconomics of conflict. One particular future area of fruitful inquiry is the question of how endogenous social preferences (shaped by emotions) may interact with forms of institutional change that take place during the conflict to shape future conflict risks (Justino, 2018a).

Finally, we expect to see a growth in research on the microeconomic analysis of peacebuilding. Recent advances in political science have emphasized the importance of micro-level processes and dynamics to understand the sustainability of peace in the aftermath of violent conflicts (Autesserre, 2010). These insights have led to new work in development economics on the role of aid and development interventions in post-conflict settings (Esenaliev et al., 2018). We expect these insights will encourage more interest from development economists on issues around the political economy of the transition from war to peace, the delineation of how pro-social behavior during conflict may (or not) foreshadow an emerging peace, the question of whether peace can be taught or indeed learnt, and the design of institutions and state-building processes that may facilitate peace.

**Empirics.** While the empirical literature in conflict economics is large and growing, we still expect to see significant bursts of work in five areas. First, we believe we will see a large growth in studies testing if there are ‘cross-partial derivatives’, for example on effects of economic interventions, such as job interventions or aid projects, on peacebuilding and state-building outcomes. Many donor projects claim to contribute to stabilization but fail to test this rigorously (Brück et al., 2016a; Brück and Ferguson, 2018). We expect such claims to be tested much more extensively in the future.

Second, we see a lot of mileage from extending the microeconomic analysis of conflict to study other forms of political violence, such as riots and violent protests, and other forms of violence, such as organized crime, urban violence or domestic violence. Some methods and identification strategies can be transferred across these topics, providing potential for cross-fertilization.

Third, we believe that the role of firms in conflict economies has been underappreciated in recent years, despite efforts to draw attention to this topic (Brück et al., 2013). In the private sphere, households are the smallest institutional unit. In the market economy, firms serve this purpose. It is hence surprising that households receive so much more attention than firms, especially where market recovery is a policy priority.

Fourth, as discussed above, we see the role of formal and informal institutions as key to understanding conflict-affected economies and how people and firms operate in them. We thus expect to see more studies exploring the interactions between informality and conflict at the micro level.

Lastly, the linkages between violent conflict and other ‘public bads’, including climate change and domestic violence, remain to be rigorously analyzed at the micro-level, using both survey data and behavioral experiments. These are grand global challenges – but based on past experience (and, for example, the work of Nobel laureate Nordhaus) there is no reason to believe that economists cannot make rigorous contributions to these topics, too.

**Data and methods.** The rapid ascent of mobile technologies, remote sensing capacities, digitalization of previously analogue processes, big data and machine learning techniques offers ample opportunities for measuring and studying the causes, consequences and dynamics of conflict at the micro level. We do not dare to predict where these journeys will lead, but expect that these methods will be used to collect more and better data about conflict dynamics, its causes and its impact on peoples’ lives and on firms. It is important, however, to issue a word of caution that new technologies and more data should not substitute for thinking about what conflict is and does to people and what the causal relations between the key variables there may be. But it is likely that technological advances may help provide better conflict forecasts and better forecasts of related crises that conflict can induce, be they about food insecurity or displacement. At the same time, we hope that the collection of more and better survey data in conflict settings will not stop. We still do not enumerate people in war as comprehensively as we do people in peace, which entails costs in terms of individual and aggregate welfare. There still are no demographic and health surveillance systems in conflict-affected areas – and woefully few panel data studies in conflict-affected, early post-conflict or fragile economies. All these are sorely needed.

#### 5. Implications for future research and policy

The discussion above illustrated how the new emerging subfield on the microeconomics of conflict has fruitfully contributed to development economics in recent years. It has also led, over the last twenty years, to a strong inclusion of political science and peace research insights into development economics, which has made the discipline more interesting, realistic and relevant. What are the implications of these observations for the future of development economics?

First, we anticipate further strengthening of the impact of

development economics on policy. Over 60 percent of the world's poor will be concentrated by 2030 in fragile and conflict-affected countries, with some international agencies spending more than half of their budget on these countries (OECD, 2016). The main contribution by the micro-economics of conflict literature to such policy contexts has been the development of rigorous data and methods to support international development actors overcoming violent conflict as a development challenge. However, we continue to observe that development and humanitarian organizations have not yet caught up to the large increase in knowledge in the field of conflict economics. The key challenge in the next five years will be to bring development economics to bear fruitfully on institutional learning about what works and what does not work to the field of complex humanitarian emergencies, which are often shaped by war.

We note also two key academic implications of the new subfield on the microeconomics of conflict. First, the teaching of development economics has not kept pace with the recent rapid growth on conflict economics research, and university curricula will require updating to account for this important intellectual and policy-relevant trend. Second, we note with surprise that despite the rapid growth of top-quality research papers being published in leading economics journals, the subfield of the microeconomics of conflict still does not have a proper keyword to describe this important new research. It is about time the American Economic Association created the new JEL Code S for the “economics of conflict”.

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