

Double-Edged Sword: The Hidden Civilian Toll of FDI in Conflict Settings*

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May 21, 2024

Abstract

How does FDI flowing into conflict-affected areas shape violence? To secure economic rents associated with FDI, governments seek to control investment sites. Greater territorial competition heightens the use of civilian victimization by all warring parties close to FDI, e.g. to enforce compliance or deter defection. We address endogeneity concerns by comparing civilian casualties in conflict events close to an investment with those in areas that will experience an investment in the future. Using geocoded data on FDI and conflict in African countries from 2003 to 2019, we find a 33% and 37% increase in civilian casualties for conflict events within 5 km of an immobile FDI—i.e., extractive and industry but not in services. Additional analyses show that only rebels conduct deadlier attacks against civilians close to investments, while governments engage in attacks against civilians more frequently. These findings underscore the influence of globalization on political stability, peace, and state-building.

Keywords: FDI; armed conflict; civilian victimization; spatial data

*Authors are listed in alphabetic order. The project was generously funded through a Research grant from the UCL Department of Political Science (Project number 502147). We are thankful to Inken von Borzyskowski, Tolga Sinmazdemir, Abbey Steele, and Alon Yakter for valuable feedback on the project. An earlier draft of this paper was presented at EPSA 2021, MPSA 2022, and at the UCL Conflict and Change 2022 workshop where audiences provided great comments.

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1 Introduction

Foreign direct investment (FDI) is an important driver of economic development, with developing countries acquiring about 70% of the \$1.3 trillion global annual FDI reported in 2022.¹ Yet, among recipients of FDI are also countries currently engaged in civil conflict like Algeria, Colombia, the Philippines, Nigeria, Sudan, Sri Lanka, or Mozambique.

How does inward FDI affect ongoing internal armed conflict? While this question has gained significant attention of human right defenders and journalists—for instance when Nigerian communities sued Shell for complicity in murder²—existing research offers little insight to understand how foreign capital inflows received during armed conflict affect violence. Answering this question has important implications for a critical discussion on how foreign actors such as multinational companies (MNCs) shape peace and state-building.

Previous evidence on the impact of economic integration, specifically FDI, on different forms of political stability is inconclusive. Some studies find that FDI promotes peace, others that it increases the likelihood of conflict (Barbieri and Reuveny 2005; Bussmann and Schneider 2007; Hartzell et al. 2010; Mihalache-O’Keef 2018; Pinto and Zhu 2022; Tomashevskiy 2017). But few acknowledge that countries receive FDI amidst ongoing conflict or employ local-level data on FDI and armed violence to study important micro-dynamics (e.g., Brazys et al. 2023).

We study how and why FDI flowing into conflict-affected areas shapes *local* patterns of violence. We argue that foreign investments generate expectations of economic rents for the government (Zhu 2017) which inform decision-making during war (Mesquita 2020). To secure rents in the long term, the government needs to mitigate investors’ political risk and address security concerns (Jensen et al. 2012; Pinto and Zhu 2022). Yet, military victory or negotiation of a settlement is difficult—especially within a short time frame (Matanock 2020; Pettersson et al.

¹ UNCTAD, *World Investment Report 2023*. <https://unctad.org/publication/world-investment-report-2023>.

² Amnesty International, *Investigate Shell for complicity in murder, rape and torture*. <https://www.amnesty.org/en/latest/press-release/2017/11/investigate-shell-for-complicity-in-murder-rape-and-torture>; David Smith, “Shell accused of fuelling violence in Nigeria by paying rival militant gangs.” *The Guardian*. October 3, 2011. <https://www.theguardian.com/world/2011/oct/03/shell-accused-of-fuelling-nigeria-conflict>.

2019). Simultaneously, only violence directly affecting FDI projects reduces investment (Blair et al. 2022). The government thus prioritizes securing control of investment areas, especially if FDI is immobile—i.e., tied to a location and thus particularly sensitive to violence—as is predominantly the case for extraction or industry but not services. This move causes a shift in the military power balance between warring actors and increases territorial competition.

Greater territorial competition close to FDI prompts warring parties to rely more heavily on violence against civilians. Government forces target civilians more heavily to secure control of investment sites, for instance hoping to destroy or deter civilian support for rebels, especially when they lack other means to enforce compliance and face reduced accountability (e.g., Kalayvas 2006; Lyall 2009; Schwartz and Straus 2018; Stanton 2016; Wood 2010). Meanwhile, rebels are locally weakened, which boosts the relative value of civilian targeting close to investment sites to challenge governmental control, signal strength and resolve, limit civilian defection, or mobilize support (e.g., Asal et al. 2019; Polo and González 2020; Wood 2010, 2014b; Wood and Kathman 2015).

We can see such dynamics play out in practice. Governments often promise foreign investors protection at investment sites in order to sustain foreign capital inflows. In Mozambique, TotalEnergies signed a security pact with the government to protect a \$20 billion liquefied natural gas (LNG) project.³ Similarly, since 2009 the Nigerian government hired thousands of former fighters to protect pipelines owned by multinational companies operating in the Niger Delta and has, at times, even diverted troops from the front lines with Boko Haram.⁴ Consequent upticks in civilian casualties have been reported in both cases.⁵

We test our argument combining geolocated data on FDI projects in Africa from 2003 to 2021 with data on conflict events from the Uppsala Conflict Data Program Georeferenced Event

³ TotalEnergies, *Total signs agreement with the Government of Mozambique regarding the security of Mozambique LNG project*. <https://shar.es/agspGR>.

⁴ Drew Hinshaw, “Niger Delta Avengers’ Sabotage Oil Output.” *The Wall Street Journal*. June 5, 2016. <https://www.wsj.com/articles/niger-delta-avengers-sabotage-oil-output-1465165361>.

⁵ Samuel Tife, “Civilians flee army raids in Nigerian oil delta.” *Reuters*. December 3, 2010. <https://www.reuters.com/article/idUSLDE6B21NB/>; Amnesty International. “*What I saw is death*”: War crimes in Mozambique’s forgotten cape. <https://www.amnesty.org/en/documents/afr41/3545/2021/en/>

Dataset (UCDP GED). Our main empirical strategy removes endogeneity in FDI location by exploiting variation in timing and location of investment projects, following Knutsen et al. (2017). We compare the number of civilian casualties in conflict events close to an existing foreign investment to those in areas that will experience an FDI in the future.

We find that immobile FDI has a sizeable, localized effect on civilian casualties. Conflict events within 5 km of an existing extractive FDI result in over 33% more civilian casualties than those in future extractive FDI sites, on average. The effect is similar (37% increase) for industry FDI but insignificant for FDI in services. In additional analyses, which also use Armed Conflict Location & Events Data (ACLED), we find that warring parties increase civilian victimization in different ways. Whereas rebels conduct *deadlier attacks* against civilians around FDI sites—suggesting that they engage in more brutal forms of terrorism—government forces perpetrate a *higher number of attacks* against civilians—indicating increased repression.

Our study has implications for understanding how foreign actors affect peace and state-building. Previous literature on the effects of FDI for host countries shows links to political, developmental, or institutional outcomes such as the rule of law, property rights, corruption, or labour rights (Brazys and Kotsadam 2020; Christensen 2019; Malesky 2008; Malesky et al. 2015; Malesky and Mosley 2018; Pinto and Zhu 2016; Rommel 2023; Sandholtz and Gray 2003; Zhu 2017). We push this scholarship further, demonstrating that FDI can fuel local violence in ways that negatively affect civilians and run counter development goals. We also expand on an important literature on repertoires of violence, specifically against civilians, adding how global economic integration can prompt localized changes in patterns of violence (e.g., Balcells and Stanton 2021; Kalyvas 2006; Schwartz and Straus 2018; Stanton 2016; Wood 2014a).

Our evidence also informs critical policy debates on the developmental effects of FDI. Foreign capital is a major source of financing and revenue generation in the developing world, affecting economic and political development. We show that FDI into conflict areas amplifies violence against civilians. This finding is worrisome, especially when foreign profit-seeking actors are unlikely to incorporate this “side-effect” of their own investment in their decision-making. Yet,

heightened violence exacerbates humanitarian needs and could reduce social cohesion, hamper statebuilding, and limit prospects for peace.

2 Refocusing the lens: FDI and patterns of violence

A substantial body of literature in political science and economics investigates the causes and consequences of global economic integration, often measured as trade or FDI. Scholars have drawn links to outcomes such as corruption, economic growth, democratization, and political stability—finding both positive and negative effects (e.g., Ahlquist 2006; De Soysa and Oneal 1999; Kosack and Tobin 2006; Malesky 2008; Malesky et al. 2015; Pinto and Zhu 2016).

The premise is that FDI shapes domestic affairs by causing governments to change policies in response to investors' sensitivity to political risk. Foreign investors weigh long-run potential risks against benefits (Jensen et al. 2012). Their ability to move internationally and (threaten) exit if political risk runs too high prompts governments to internalize the costs of possible divestment when making policy decisions. Yet, it remains unclear exactly how governments respond to investors' security concerns during ongoing conflict.

The effect of inward FDI during armed conflict

Proponents of the “race to the top” argument suggest that governments will adopt better governance standards (rule-of-law promotion, property rights protection, or corruption control) to retain or attract investments (e.g., Malesky 2008; Sandholtz and Gray 2003; Vogel 1997). Following such a logic, scholars examining the effect of FDI on violence advance a “capitalist peace theory,” suggesting that states’ dependence on foreign capital contributes to peace as the benefits of economic integration exceed the potential gains of conflict. Economic interdependence (often measured as FDI) is found to promote peace between states, lower the risk of military coups, and reduce the probability of civil war prevalence—as opposed to onset (Barbieri and Reuveny 2005; Bussmann 2010; Bussmann and Schneider 2007; Gartzke et al. 2001; Magee and Massoud 2011; Tomashevskiy 2017).

However, FDI may not hold such sway during conflict. Governments aiming to reduce violence-induced political risk for investors face resource constraints and the complex reality of achieving peace or stability. The costs of peace can exceed its potential economic benefits—for instance if refraining from repression compromises the government’s interests (Sorens and Ruger 2012). Furthermore, military victory is often unlikely or extremely costly, especially when increased defence spending undermines political survival (Mukherjee 2014). Similarly, settlement of hostilities can take years or decades of negotiations and may not hold in the long run (e.g., Matanock 2020). In addition, states are often confronted with multiple armed non-state actors with different goals, making peace even more elusive (Pettersson et al. 2019).

At the same time, FDI offers potential revenues to the host government that could stretch long after the investment starts. Foreign corporations are less likely to be affected by (potentially frail) domestic economic conditions than are local firms (Chen 2011; Gubbi et al. 2010), given that they can mobilize larger capital in a developing economy (Wang and Wang 2015). Moreover, investors are not necessarily sensitive to violence. MNCs can extract significant rents in fragile settings and even benefit from violence itself as it reduces government oversight and undermines local resistance (Barry 2018; Billon 2001; Guidolin and La Ferrara 2007; Maher 2015; Wright and Zhu 2018). In fact, employing fine-grained data Blair et al. (2022) find that divestment only occurs if armed violence is observed directly at investment sites. Away from violence, investment often even increases amidst conflict (Blair et al. 2022; Chen 2017; Dai et al. 2017; Mihalache-O’Keef and Vashchilko 2010).

As an implication, we argue that FDI into conflict areas prompts the government to allocate additional resources to protect investment locations and ease investors’ concerns. It is not unusual to see a foreign firm demanding enhanced and immediate state protection to mitigate the damage represented by attacks against its facilities or employees—even if it decided to invest in an already conflict-affected area (Rexer 2021). Governments often comply, deploying additional troops to secure investment sites and at times even diverting them away from other important fronts. For instance, in Nigeria the army has repeatedly diverted troops from the front against

Boko Haram to secure oil infrastructure amidst militant threats of attacks.⁶ In Mozambique, oil companies like Exxonmobil and TotalEnergies reportedly have explicitly requested troops be deployed to the area of their investment in Cabo Delgado after militant attacks surged in 2018.⁷

Governments are more likely to dedicate more resources to securing investment when FDI is largely immobile—i.e., directly tied to a given location—because its large sunk costs make foreign investors most sensitive to violence (Barry 2018). Activities in the extraction (e.g., oil, gas, or mining) or industry sector (e.g., manufacturing or construction) are more immobile than those in services (e.g., business services, sales, marketing, etc). Immobile FDI is also more capital-intensive. Extractive FDI projects in our data have an average capital investment of \$374 million, industry FDI projects average at \$169 million, and service FDI at just \$16 million (see Figure 1 for averages by activity). The rent-extraction potential from such immobile activities (Zhu 2017) further informs the host government’s willingness to allocate resources to control investment areas (Mesquita 2020).

As we elaborate below, the need to secure FDI sites in conflict areas has important consequences for local patterns of violence as heightened territorial competition motivates all warring parties to engage more heavily in violence against civilians. From this logic, we derive our main empirical expectation that conflict areas in the proximity of an immobile FDI see more intense violence against civilians.

Rebels’ violence against civilians

Increased government’s coercive capacity (e.g. larger deployment of security forces) close to FDI shifts the local power balance. In that sense, FDI inflow boosts the *quality of territorial competition*, effectively reducing the rebels’ capacity relative to the state, which boosts the strategic value of targeting civilians close to investment sites.

⁶ Drew Hinshaw, “Niger Delta Avengers’ Sabotage Oil Output.” *The Wall Street Journal*. June 5, 2016. <https://www.wsj.com/articles/niger-delta-avengers-sabotage-oil-output-1465165361>.

⁷ Kudzai Chimhangwa, “War in Mozambique: A Natural Gas Blessing, Turned Curse.” *Open Democracy*. June 26, 2020. <https://www.opendemocracy.net/en/oureconomy/war-mozambique-natural-gas-blessing-turned-curse/>.

Scholars documents this logic, often portraying civilian targeting as a “weapon of the weak.” But it is not necessarily weak rebel groups (at the conflict level) who engage in violence against civilians—such actions are often strategic and vary geographically (e.g., Asal et al. 2019; Stanton 2016; Welsh 2023). Rebels are more likely to heavily target civilians (or engage in terrorism) when they face increased territorial competition, have lost territory, or incurred substantial battlefield losses (Hultman 2007; Polo and González 2020; Wood 2010). If rebels cannot offer other incentives to induce civilian compliance, civilian targeting increases (Wood 2010; Wood et al. 2012). In addition, increased government presence in investment areas limits “social embeddedness,” amplifying civilian victimization to obtain compliance (Wood 2014b).

An example is offered by the province of Cabo Delgado in Mozambique, which has experienced an insurgency since 2017 but has also been the recipient of substantial foreign investments. Most prominently, in 2019 TotalEnergies started a \$20 billion LNG project. To protect it against attacks by the rebel group Al-Shabaab—previously also known as Ahlu-Sunna Wal-Jama'a (ASWJ) and recently also referred to as the Islamic State Mozambique (ISM)—the government increased military pressures. Initially, the government contracted private military companies (first the Wagner Group, then Dyck), who departed by 2021 after incurring significant battlefield losses. Since then the government has received extensive military assistance, training, and aid from various actors including Rwanda, the Southern African Development Community (SADC), the European Union, and the United States (notably after rising insurgent attacks led to a halt in construction of the LNG project in 2021).⁸ Although military operations have made substantial territorial gains, the insurgency is yet to be defeated and areas close to investment sites have seen an immense surge in civilian casualties (also attributed to the government) and record levels of displacement.⁹

⁸ Sudarsan Raghavan. “ISIS fighters terrorize Mozambique, threaten gas supply amid Ukraine war.” *The Washington Post*. October 20, 2022. <https://www.washingtonpost.com/world/2022/10/18/mozambique-isis-cabo-delgado-gas/>; see also the European Union Training Mission in Mozambique page: https://www.eeas.europa.eu/eutm-mozambique/about-european-union-training-mission-mozambique_en?s=4411.

⁹ For more details, see International Crisis Group. *Winning Peace in Mozambique’s Embattled North*. February 10, 2022. <https://www.crisisgroup.org/africa/southern-africa/mozambique/winning-peace-mozambiques-em-battled-north> and Amnesty International. “What I saw is death”: War crimes in Mozambique’s forgotten cape. March 2, 2021. <https://www.amnesty.org/en/documents/afr41/3545/2021/en/>.

This is also indicative of another important dynamic: because controlling FDI sites is important to the government (and international actors), rebels can leverage civilian vulnerability in these areas for their own gain (Wood 2014b). By heightening violence against civilians, rebels impose costs on the government and effectively limit its capacity to control the area. For instance, their ability to perpetrate such violence demonstrates that counter-insurgents cannot or will not credibly protect the population, reducing defection to the state and inducing compliance (Fielding and Shortland 2012; Hirose et al. 2017; Wood and Kathman 2015). Rebels may also use terrorist attacks (often targeting civilians) to incite a violent government response against the population and help stem erosion in support amongst their core constituency, potentially even mobilizing new supporters (Polo and González 2020).

Although rebels still risk political costs—such as alienating targeted communities or civilians elsewhere (e.g., Fortna 2015)—continuing to challenge the state *at investment sites* is important from a reputational perspective. First, by continuing to fight the state rebels can signal strength and resolve, including to the government itself (Asal et al. 2019). Second, FDI projects often do not (immediately) translate into development gains for local communities and in fact can carry negative consequences such as forced relocation, pollution, or corruption (e.g. Malesky et al. 2015; Obi 2014; Zhu 2017). Simultaneously, stronger military efforts add to negative effects (or at least unmet expectations) of FDI for the population. This offers rebels the opportunity to use terrorism to advertise their cause to a larger audience or even mobilize or maintain support from aggrieved communities at the periphery of investment sites and intense conflict (Polo and González 2020; Wood 2014b). Third, if rebels were to retreat, they would stand to lose support amongst population groups which were already supporting their violent campaign against the state *prior* to the start of an FDI project.

The conflict in Mozambique shows these dynamics, too. Historical marginalization was at the root of the emergence of the insurgency (although other factors, such as strong organization and regional support networks, were critical).¹⁰ ISM leverages feelings of injustice among

¹⁰Peter Bofin. “Actor Profiles: Islamic State Mozambique (ISM).” ACLED. October 30, 2023. <https://acleddata.com/2023/10/30/actor-profile-islamic-state-mozambique-ism/>.

parts of the population, amplified by the influx of FDI, to expand their operations to areas where counterinsurgency efforts have been less substantial (Hendricks et al. 2023). Despite significant investments into development projects in the North over recent years, many still feel left behind in terms of economic and political development and analysts suggest that widespread marginalization maintains a critical basis for insurgents to continue to gain support despite substantial counterinsurgency efforts.¹¹

We thus expect rebel groups to rely more heavily on violence against civilians, specifically engaging in more brutal forms of terrorism—deadlier and more indiscriminate attacks against civilians—in the proximity of investments, but not necessarily mass killings or events of ethnic cleansing as such forms of violence follow a different logic and require resources that rebels often lack (Stanton 2016; Valentino et al. 2004).

Governments' violence against civilians

At the same time, government forces will also target civilians more heavily to enforce control and reduce foreign investors' risks associated with violent confrontation. Civilian victimization is a strategic choice. Although lack of intelligence on the rebel group or potential defectors can trigger tremendous civilian victimization, the motivation here is to destroy support for rebels, punish civilians for past collaboration, deter them from future collaboration, or even motivate local backlash against rebels (Fielding and Shortland 2012; Kalyvas 2006; Lyall 2009; Schwartz and Straus 2018).

Researchers also document civilian targeting as a way to clear territory (i.e., trigger forced displacement) and assert territorial control. Existing explanations emphasize ethnic ties to the opponent or a strong ideological/political allegiance as motivation for victimization (Balcells and Steele 2016; Steele 2011; Valentino et al. 2004). In areas of investment, however, civilian victimization may be a tactic to trigger population displacement and allow investment activities,

¹¹“Special Report on Five Years of Conflict in Northern Mozambique.” *Cabo Ligado Monthly*. November 23, 2022. <https://www.caboligado.com/monthly-reports/cabo-ligado-monthly-october-2022>.

such as mining, to take place unabated (as in the Colombian region of Arauca, see Maher 2015)—not to systematically kill a certain (identity) group.

Additionally, we may observe increased violence against civilians because FDI rents make governments more accountable to investors than to domestic constituencies, which reduces the cost of using violence against civilians (Stanton 2016). Impunity heightens when governments lack sufficient capacity to swiftly secure territorial control and engage paramilitary groups or private military contractors (such as the Wagner Group)—which is common when pressure by investors mount. Their involvement usually escalates violence against civilians (Carey et al. 2015; Carey and Mitchell 2017; Koren 2017; Serwat et al. 2022).¹²

FDI influx to conflict-affected areas can also prompt increased military assistance, training, and aid—especially from countries or regions of origin of the investment (Kentor et al. 2023). Although such assistance can restrain violence against civilians, significant foreign support is rare and its effects are likely only felt in the long run (DeMeritt 2015; Stanton 2016). In fact, substantial resources and capacity are required to elicit voluntary cooperation or reduce insurgent support (e.g. Berman et al. 2011; Fielding and Shortland 2012) and even if the government increases development efforts, this could further entice insurgent action (Crost et al. 2014). The government is thus likely to remain reliant on civilian targeting and specifically different forms of repression to enforce control over FDI sites (DeMeritt 2016).

Although governments are more likely to possess the capacity to orchestrate large-scale massacres, reasons to perpetrate such violence (for a review, see Valentino 2014) deviate from those motivating anti-civilian violence in areas of investment—namely to secure control over FDI sites. We thus expect that the government may engage more heavily violence against civilians to secure investment sites but will specifically rely on repression. Yet, because repression does not have to be lethal to be effective—for instance arrests, torture or other forms of human rights abuses rather than actual killings are commonly used to enforce control and discourage dissent (Davenport 2007; DeMeritt 2016)—we are likely to observe an increase in *frequency* of

¹²Only militias emerging out of targeted communities are less likely to victimize civilians due to their access to intelligence and local embeddedness (Lyall 2010; Stanton 2016).

one-sided violence staged by government forces or government-aligned militias close to FDI than elsewhere. This would be indicative of heavier repression of the civilian population to advance interests yet minimize potential backlash from targeting civilians too heavily (Stanton 2016).

3 Empirical analysis

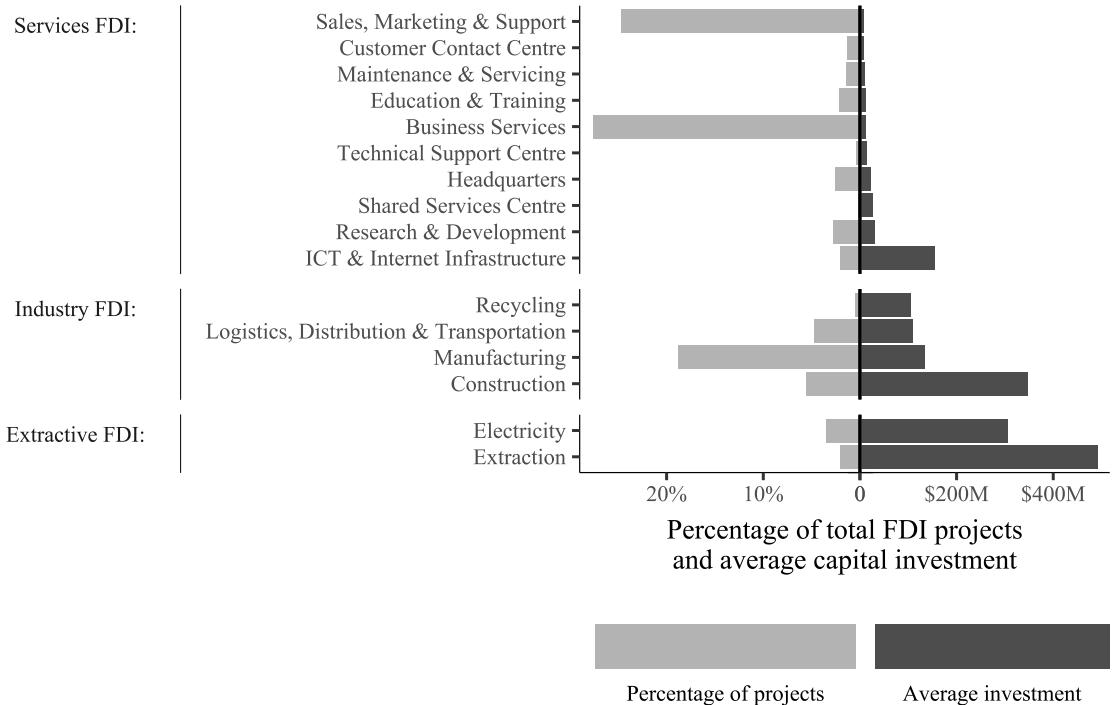
Data

We build a dataset containing geolocated information on inward FDI projects and conflict events. We gather data on 11,689 FDI projects across Africa between 2003 and 2021 from *fDi Markets*, which reports greenfield foreign investment projects. Because our argument estimates the effect of a new FDI project on conflict, we only keep the 10,610 new projects—we exclude closed ones and expansions of existing sites. We use information about the location of projects—country, administrative region, and locality (city, town, or village)—to create a Google Maps API query and geolocate these data points. The majority (7,511, or 71%) of the project reports complete location information and can be geolocated.¹³ This is the final group of FDI projects we consider.¹⁴ Figure 1 breaks down their percentage over the total and average capital investment by activity. Similarly to Mihalache-O’Keef (2018), we distinguish three broad sectors—extraction, industry, and services—corresponding to the primary, secondary, and tertiary macroeconomic sectors. Although we estimate results separately for each sector, we classify extractive and industry FDI as relatively *immobile*. Investments in these sectors are more bound geographically and more capital-intensive, in contrast to FDI in services.

¹³In Supporting Information B we discuss possible selection bias in our estimates derived from not analyzing the remaining 29% of the FDI projects that do not report location information. We use observable covariates for all FDI projects to argue that selection bias likely leads us to *underestimate* the size of our target effect, which reassures us on the validity of the results.

¹⁴We cannot observe FDI projects before 2003, thus our analysis might suffer from left-truncation in treatment status. In Supporting Information A.2 we discuss why this is unlikely to threaten our inferences. We offer empirical tests to back our claim in D.4.

Figure 1: Distribution of FDI projects' activity by number (percentage of total) and average capital investment (millions of current US dollars)



For our main analysis we rely on the UCDP GED version 20.1 (Sundberg and Melander 2013) to collect information on conflict events. UCDP GED records 225,385 geolocated violent events between 1989 and 2019. To match our FDI data availability, we only retain events occurring in Africa after 2003. Further, we exclude from the dataset events of “non-state conflicts” (violence between organized armed groups). We therefore consider only “state-based conflicts” (those where at least one of the two parties is the government of a state) and “one-sided violence” (targeted violence against civilians).¹⁵ These selections leave us with 22,480 violent events between 2003 and 2019 in 37 African countries. We measure, for each conflict event i in year t , *Civilian Deaths*: the logged number of reported civilian casualties (+1).

Different sources of conflict data adopt coding conventions which might impact empirical results differently. Raleigh et al. (2023) compare two popular sources, UCDP and ACLED, and conclude that UCDP tends to precisely code a narrower set of events (see also Eck 2012), allow-

¹⁵Including also “non-state conflicts” does not significantly affect our results.

ing greater internal reliability. Because we study a large set of events across time and countries, internal consistency is crucial to us, making UCDP a favored choice. Moreover, UCDP allows us to test our hypotheses about the effect of FDI on the *number of civilian deaths*, a quantity not coded by ACLED. However, UCDP data can be ill-suited to study complex dynamics of political violence, for instance they do not capture attacks perpetrated by state-aligned militias and are less likely to reflect non-lethal violence against civilians, which we expect to be an important part of governments' repertoires of violence. We thus also conduct additional analyses using ACLED and measuring number of violent attacks against civilians—see Supporting Information (SI) F.

Research design

The non-random location of investment complicates a study of FDI's local effects. Foreign firms might decide (not) to invest in a certain area as a function of prospects of profit or stability. Because these factors likely correlate with conflict dynamics, observational studies risk erroneously attributing differences in conflict patterns to FDI, rather than to unobserved determinants of both. For instance, a negative association between presence of foreign investors and violence against civilians might mask investors' preferences for politically stable environments, which in turn might be associated with low-intensity violence.

Our main identification strategy exploits spatial-temporal variation in the distribution of a “treatment” (an FDI project) to account for such selection bias. The design has been used to study local effects of mining (Knutsen et al. 2017; Kotsadam and Tolonen 2016), FDI (Brazys et al. 2023; Brazys and Kotsadam 2020; Rommel 2023), and foreign aid (Brazys and Jung 2024). In our application, the unit of analysis is a UCDP conflict event¹⁶ i occurring in year t . We define a circular buffer of 5 km radius¹⁷ around each conflict event and use geolocated FDI

¹⁶Readers might be concerned that having conflict events as units selects on the dependent variable and prevents from studying how patterns of violence change as areas receive FDI. We acknowledge this point and, in SI F, we show that our results do not hinge on our unit choice: we obtain similar estimates when studying a global panel of African cell-years. However, we also argue that a precondition for measuring the number of civilian casualties is that a conflict event happens. Thus, conditioning on the occurrence of an event is a logical step given our interest.

¹⁷In SI Figure D.1 we show that our results do not change when extending the radius size.

information to code each conflict event in one of three treatment groups: (1) conflict events within 5 km from at least one existing FDI project (*Treated*); (2) conflict events in no proximity of an existing FDI, but within 5 km of a future investment site (*Not-yet treated*); and (3) conflict events that are not within 5 km of an FDI project at any time point (*Untreated*). We estimate the localized effect of FDI on violence against civilians by comparing *Civilian Deaths* in treated and not-yet treated conflict events. We thus suppress a comparison between treated and untreated units, which is likely biased by factors determining selection into an FDI.

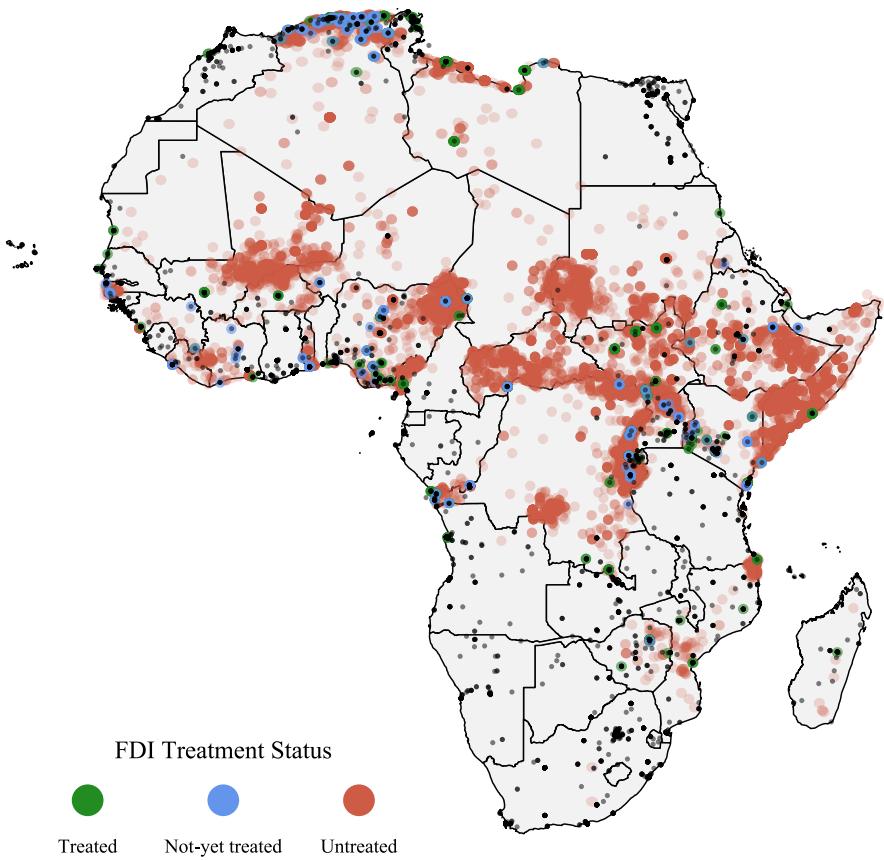
The design retrieves an unbiased estimate of the average treatment effect on the treated (ATT) conflict events under the assumption that, *absent the FDI*, attacks proximate to an investment would have had, on average, a similar number of civilian casualties as those in areas of future investment. We present this assumption formally in SI A, where we also defend its validity in our context. To support this assumption, SI C shows that the design removes significant observable differences in covariates that correlate with FDI and political violence.

Figure 2 exemplifies our procedure. It plots all our conflict events, coloured based on their treatment status. It also plots FDI projects as black dots.¹⁸ Our comparison between treated (green) and not-yet treated (blue) conflict events removes important geographical differences. Consider Algeria. Here, foreign investment concentrates in the coastal Mediterranean area. This area likely differs from the southern region bordering Mali and Niger, which is affected by conflict but sees fewer FDI projects. Our design removes such differences by only comparing conflict events occurring in the proximity of present or future investments.

To strengthen the credibility of our identifying assumption, we compare only conflict events that are and will be treated by the same investment activity—be it extractive, industry, or services. This prevents us from comparing across investment types and using, say, events in areas of future services FDI as a counterfactual for those close to an existing extractive FDI.

¹⁸Because the treatment status (and buffer color) is defined based on a 5 km radius but circles are represented with a 50 km radius in order to be visible, some buffers appear to be containing an investment (black dot) even though they are untreated (red).

Figure 2: FDI treatment status of UCDP GED violent events



Note: black dots represent geolocated FDI projects from fDi Markets. Circles represent buffer zones of 5 km radius defined around violent events reported from the UCDP GED. Circles are plotted with a 50 km radius in order to be visible, but their treatment status is defined based on a 5 km radius.

We implement this design by estimating the linear model of *Civilian Deaths* in equation 1. In whichever version—extractive, industry, or services—the treatment is a three-level categorical indicator using not-yet treated units as baseline, here represented as two binaries for *Treated* and *Untreated* units.¹⁹ The ATT is estimated by β . We always include country and year fixed effects (FE) to remove time and country-invariant heterogeneity in FDI and political violence (α_c, δ_t). In SI, we show that our results are robust to making comparisons within narrower units

¹⁹We thus depart from typical applications of the design which use *untreated* as a baseline, include dummies for treated and not-yet treated units, and estimate the ATT via an F-test on the difference of their coefficients (see Knutsen et al. 2017: 327). Our ATT estimates are numerically the same when we do that (see Table D.2) but we prefer this modification as it performs the comparison directly (without having to take a difference between coefficients), it estimates effect standard errors, and performs standard t-tests of hypotheses.

with a grid-cell FE (Table D.3). All standard errors are clustered at the country level.

$$\text{Civilian Deaths}_{ict} = \beta \text{Treated}_{it} + \gamma \text{Untreated}_{it} + \alpha_c + \delta_t + \varepsilon_{it} \quad (1)$$

In additional specifications, we control for local-level covariates that may affect decisions to invest and, simultaneously, patterns of violence—especially violence against civilians. Covariates are all drawn from PRIO-GRID data (Tollefsen et al. 2012), defined at the level of the 50×50 km cell each conflict event occurs in. Because PRIO-GRID covariates are not observed consistently over time we take, for each event occurring in cell p and year t , the latest observed value of a covariate in p before t . We control for the average proportion of mountainous terrain in the cell; for the number of politically excluded ethnic groups in a cell; for the percentage of the cell covered by urban area; and for the (logarithm of) population density.²⁰

Although this approach is best suited to study the effect of FDI on the number of civilian casualties at a very fine-grained level, it does not allow us to test expectations about the effect of FDI on *number of events* of civilian victimization. Because our theory suggests potential differences in repertoires of violence between warring parties—i.e. increases in attacks (government) vs. deadlier attacks (rebels)—we also provide an additional analysis studying a panel of yearly PRIO-GRID cells, which allows us to use *number of attacks against civilians* as an alternative outcome. We present the approach in SI F.

4 Results

Table 1 reports our results. Models are divided in three groups depending on which treatment variable is included: extractive, industry, or services FDI. In all models, the first row quantifies the difference in *Civilian Deaths* between *Treated* and *Not-yet treated* conflict events for a given FDI type—our ATT estimate. For each FDI type, we first include only the treatment variable.

²⁰Mountainous terrain is time-invariant. The number of excluded ethnic groups is observed until 2013, so we consider yearly values for events where $t < 2013$ and the 2013 value if $t \geq 2013$. The urban area is observed every decade so we take the 2000 value if $t \leq 2010$ and the 2010 value if $t > 2010$. Population density is measured every five years until 2010. We take the 2000 value if $t \leq 2005$, the 2005 value if $2005 < t \leq 2010$, and the 2010 value if $t > 2010$.

The second model adds the four covariates. The final model adds a linear country-level time trend to account for country-specific temporal dynamics of FDI and conflict intensity.

Table 1: The local effect of FDI on civilian casualties

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.286*** (0.076)	0.238** (0.067)	0.198** (0.063)	0.312** (0.108)	0.271* (0.113)	0.224* (0.097)	0.046 (0.065)	-0.011 (0.075)	-0.030 (0.068)
Untreated vs Not-yet treated	0.054 (0.042)	0.090+ (0.044)	0.066* (0.031)	0.171+ (0.090)	0.179+ (0.102)	0.136 (0.087)	0.066 (0.064)	0.085 (0.073)	0.052 (0.067)
Mountainous terrain	-0.090 (0.089)	-0.093 (0.099)		-0.084 (0.093)	-0.087 (0.103)		-0.099 (0.092)	-0.100 (0.103)	
No. excluded ethnic groups	-0.052 (0.068)	-0.015 (0.069)		-0.050 (0.069)	-0.013 (0.070)		-0.055 (0.070)	-0.018 (0.071)	
Urban area	-0.023 (0.017)	-0.015 (0.017)		-0.024 (0.017)	-0.017 (0.015)		-0.018 (0.016)	-0.011 (0.016)	
Population density (log)	0.051* (0.020)	0.035* (0.016)		0.050* (0.020)	0.034* (0.017)		0.054* (0.020)	0.039* (0.016)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
R2	0.133	0.129	0.152	0.133	0.130	0.153	0.132	0.129	0.152
R2 Adj.	0.131	0.126	0.148	0.131	0.127	0.148	0.130	0.126	0.148

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data.

In line with our expectation, we find that extractive and industry FDI—which is relatively immobile—significantly increases the number of civilian casualties in neighboring conflict events; FDI in services elicits no such effect. Conflict events within 5 km of an extractive FDI experience an estimated²¹ 33% higher number of *Civilian Deaths* than events in future extractive FDI sites (model 1). Estimates are still positive and sizeable when including covariates and time-trends (models 2 and 3). Similarly, FDI in industry increases the number of *Civilian Deaths* by 37% over the not-yet treated baseline (model 4), a result robust to the inclusion of covariates and linear trends (models 5 and 6). All these findings are distinguishable from zero at a 0.05 level of significance. We do not detect any effect for services FDI (models 7–9), whose estimates are small, noisy, and flip sign.

²¹Because these are log-linear models, we compute all percentage changes quantified by a $\hat{\beta}$ as $r = 100 \cdot (e^{\hat{\beta}} - 1)$.

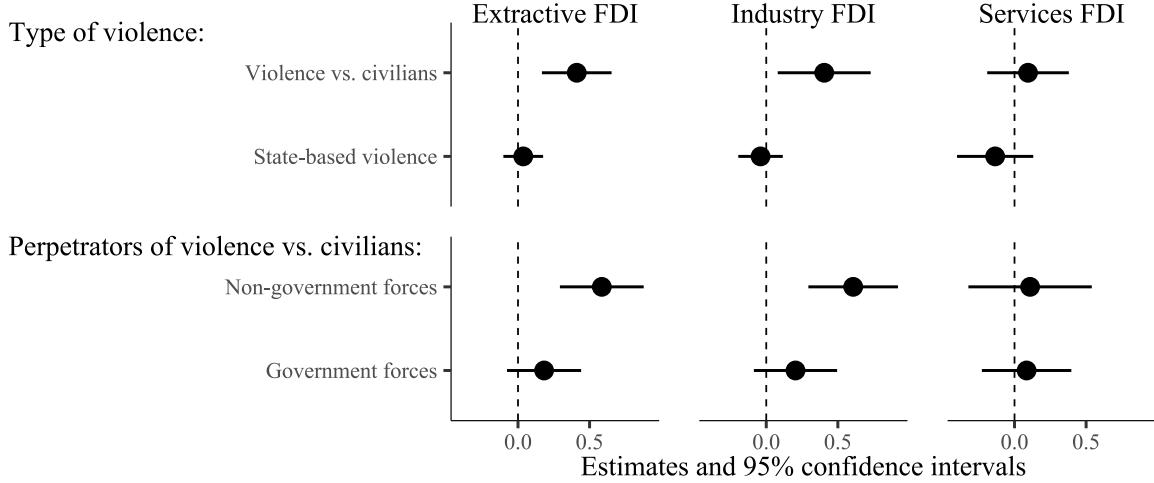
We show robustness of these findings in SI. Results are similar when including all FDI treatment variables simultaneously (Table D.1) and numerically the same when using the original model by Knutsen et al. (2017) (Table D.2). Results are robust to including PRIO-GRID cell FE (Table D.3) and to two tests designed to account for left truncation in the FDI data (Tables D.4 and D.5). Results do not hinge on the arbitrary 5 km distance from an FDI project (Figure D.1) nor on the number of future time-points that define the not-yet treated group (Tables D.6 and D.7). We find similar effects with continuous treatment variables measuring the size and number of investments (Tables D.8 and D.9). Estimates are robust to controlling for the number of jobs created by FDI projects, to account for employment-induced local immigration which might simultaneously increase civilian casualties in violent attacks (Table D.10). Finally, we show that our estimates do not hinge on the chosen research design nor on the choice of UCDP data: we find similar effects on number of civilian casualties and number of deliberate attacks against civilians with various FE models on a panel of yearly PRIO-GRID cells, using UCDP or ACLED data (SI F).

Repertoires of civilian victimization by perpetrator

Our theoretical argument suggests that both rebels and the government will target civilians in the proximity of FDI more heavily but they may intensify violence in different ways. To recall, we expect all warring parties to increase civilian victimization close to investment sites. Rebels will increase violence at the intensive margin, resorting to more brutal forms of terrorism and indiscriminate violence, i.e. *deadlier attacks* against civilians. Meanwhile, government forces will rely more on victimization at the extensive margin, increasing *number of attacks* against civilians, indicative of heightened repression, which is not necessarily lethal. We test these expectations here and report findings in full in SI E and F.

Figure 3 summarizes two subgroup analyses that subset data in models 1, 4, and 7 of Table 1 by type of attack and perpetrator. First, we split the sample among events of deliberate violence against civilians—those where non-combatants are deliberate targets—and state-based ones—

Figure 3: The local effect of FDI on the number of civilian casualties by type of attacks and perpetrators. Sub-group analysis of results from Table 1



Note: the top panel splits the sample between one-sided violence against civilians and state-based violence; the bottom splits the sample of one-sided violence against civilians between attacks staged by rebels and those staged by government forces. The outcome variable is always the reported logged number of civilian casualties in a violent attack (+1). Estimates from models that include country and year FE. Full results in models 1, 4, and 7 of Tables E.1 and E.2—top panel—and of Tables E.3 and E.4—bottom.

where civilian casualties are collateral damage. Second, we further split deliberate attacks against civilians based on whether the perpetrators were state forces or not.²²

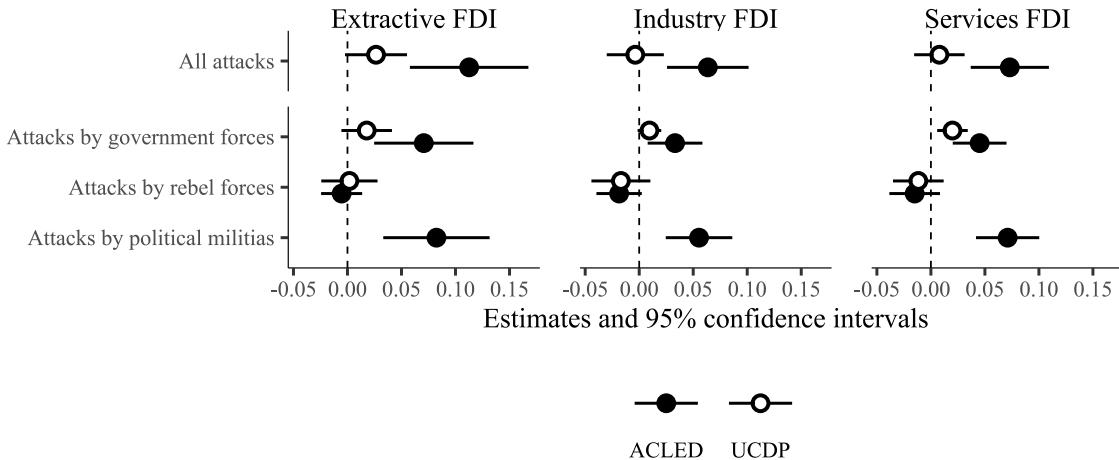
Deliberate attacks against civilians in the proximity of an existing extractive or industry FDI result in about 50% more civilian casualties than those in future investment sites (top results). We find no significant effect for state-based violence, in line with our argument that suggests violence against civilians is *strategic*; that is, civilian deaths do not increase around immobile FDI sites as a collateral. As suggested by our theory we also find that only rebels increase the *intensity* of civilian victimization (bottom results). Meanwhile, the government does not engage in deadlier attacks close to FDI than elsewhere. Yet, null results for violence by government forces at the intensive margin could hide an effect at the extensive margin, in terms of the *number* of attacks against civilians—in line with a logic of increased repression to maintain control.

²²Because UCDP GED does not code types of violent actors, we only distinguish among state and non-state perpetrators and leave it to a test below to differentiate types of non-state actors (rebels and state-aligned militias). However, 86% of the deliberate attacks by non-state forces in UCDP GED were initiated by an actor involved in confrontation with the government, according to UCDP data itself, suggesting that the vast majority of non-state perpetrators in the sample are in fact rebels.

We therefore provide additional analyses studying the *number of attacks against civilians* with a two-way FE model on a panel of yearly 50×50 km PRIO-GRID cells (see SI F). Because here we do not study number of civilian casualties, we can also employ ACLED and thus study violence by pro-government militias, too. This is important because governments often outsource securitization of investment areas and civilian targeting to such actors, potentially creating victimization that should be attributed to government action (Carey et al. 2015; Carey and Mitchell 2017).

We build pairs of outcome variables measuring the (logged) number of deliberate attacks against civilians (+1) reported by UCDP and ACLED, respectively, in a cell-year. Importantly, these counts include many non-lethal events—particularly so those from ACLED²³—a plausible indicator of repression. We also measure the number of such attacks initiated by government forces, rebel groups, and government-aligned political militias (this latter variable exists from ACLED information only).

Figure 4: The local effect of FDI on the number of attacks against civilians by type of perpetrator



Note: Results from two-way fixed effect models including a binary treatment variable and cell and year FE. From top to bottom, full results of UCDP estimates are reported in SI Tables F.2, F.3, and F.4. For ACLED estimates, they are in Tables F.5, F.6, F.7, and F.8.

Figure 4 presents findings from linear models with cell and year FE and binary treatment variables relative to different FDI types. All FDI types increase the global number of deliberate

²³ACLED reports many more non-lethal attacks against civilians: 9% of the deliberate attacks against civilians reported by UCDP in African countries between 2003 and 2019 had no fatality. When looking at ACLED, this percentage increases to 44%.

attacks against civilians in a cell when looking at ACLED data—with the strongest increase recorded for extractive FDI (+12%). Using UCDP data, the result only holds for extractive projects (the most immobile and capital intensive, see Figure 1). This likely reflects the fact that ACLED accounts more heavily for non-lethal attacks, e.g., reports of torture or other human rights abuses, and thus may measure repression more broadly than UCDP. Consistent with our argument, government forces and state-aligned militias drive this effect: they conduct significantly more attacks (including non-lethal ones) against civilians following FDI onset in a given cell. The effect is insignificant when looking at rebel-initiated attacks (for both data sources). Rebels thus engage in deadlier attacks around FDI sites but not more frequently than in other conflict areas. Terrorism is costly and if rebels escalate violence against civilians too often this could create a backlash that will outweigh any strategic benefits anti-civilian violence has close to FDI (e.g., Polo and González 2020; Stanton 2016; Welsh 2023).

5 Conclusion

This article shows that FDI flowing to conflict-affected areas impacts patterns of violence significantly, with dire consequences for civilians. We estimate that extractive and industry FDI increases the number of civilian casualties in nearby attacks by 33% and 37%, respectively, compared to attacks occurring in the same country-year in future investment areas. Investments in these sectors (compared to services FDI) are more sensitive to violence as they are physically less movable and more capital-intensive. This creates an important interdependence between firms and governments that informs government responses to ongoing conflict.

We argue that these responses are focused on protecting investment sites to ensure expected rents in the future. FDI influx thus triggers greater territorial competition in areas of investment and amplifies fighting parties' reliance on civilian targeting as a warring strategy. Government forces increase violence against civilians to gain and maintain control over investment sites and are often supported by government-aligned militias perpetrating additional attacks against civilians—these attacks however are not necessarily more lethal but aimed at repressing the

population. Rebels, instead, are locally weakened and engage in more brutal violence against civilians (often defined as terrorism), to challenge the government and mobilize support.

This argument echoes the literature on conflict dynamics, especially vast scholarship emphasizing the strategic logic of anti-civilian violence, for instance to induce civilian compliance, deter defection, or encourage a backlash against the opponent (e.g., DeMeritt 2016; Polo and González 2020; Schwartz and Straus 2018; Wood 2010, 2014b). Although the available data does not allow us to directly test whether warring parties engage in selective or indiscriminate forms of violence, we detect an important pattern: rebel groups engage in deadlier attacks around FDI sites whereas governments target civilians more frequently (compared to their repertoire of violence in other conflict areas).

These findings contribute to a debate on the effects of FDI on political stability. Although recent work has made important strides in disentangling links between FDI and conflict onset (Brazys et al. 2023; Mihalache-O’Keef 2018), we explicitly study the effect of FDI flowing into currently conflict-affected areas—a dynamic largely ignored by scholars and policy-makers despite being prevalent in today’s conflict arenas.

More broadly, our findings motivate a nuanced take on an established policy view that sees FDI as an important driver of development. Although foreign capital can be a crucial source of finance, we add to growing empirical evidence that FDI is neither a blessing nor a curse (Brazys and Kotsadam 2020; Christensen 2019; Malesky et al. 2015; Pinto and Zhu 2016; Wright and Zhu 2018; Zhu 2017). We do so by studying the effect of FDI during conflict on local dynamics of violence, close to investment sites, following research which has demonstrated the usefulness of studying the political effects of FDI in a disaggregated manner (Malesky 2008; Malesky and Mosley 2018; Rommel 2023; Sorens and Ruger 2012; Tomashevskiy 2017). Our analysis adds to this literature by providing important causal evidence on the effect of FDI on patterns of violence and by addressing endogeneity concerns over when and where FDI occurs.

Lastly, our findings engage an important question in international political economy, conflict research, and comparative politics: what role do foreign actors, such as MNCs, play in peace

and state-building? We provide a glimpse into how FDI shapes prospects for peace in fragile settings by disentangling rationales for both the rebel group and the government to victimize civilians. The mechanisms and effects we present have potential implications for armed conflict and stability beyond areas of investment, as they could drive other dynamics such as conflict diffusion, underdevelopment, or displacement. Our work opens up avenues for future research and invites scholars to theorize and test such related first or second-order effects of FDI. By adopting a similar theoretical framework and research designs future research could investigate the effect of FDI on various outcomes related to state-building or development. Similarly, researchers could also investigate the effects of *closures* of FDI sites (divestment), an important aspect that we have not explicitly addressed here (due to lack of data) but that could have similarly important implications.

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Double-Edged Sword: The Hidden Civilian Toll of FDI in Conflict Settings

Supporting Information

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A Research design validity

A.1 Potential outcomes and identifying assumption

Here we derive and discuss the identifying assumption of our estimator. Let $i = 1, \dots, N$ be our units (conflict events). Each unit can experience three treatment conditions based on its spatial and temporal proximity to an FDI project: $D_i = \{T, N, U\}$. $D_i = T$ indicates a “treated” conflict event, i.e. one that occurs in the proximity of an already existing FDI project. $D_i = N$ indicates a “not-yet treated” conflict event, one that occurs close to a future FDI site. $D_i = U$ indicates an “untreated” unit, one that is not proximate to any present or future FDI. Accordingly, each event i has three potential outcomes (PO) for the number of civilian fatalities: a treated PO, $Y_i(T)$; a not-yet treated PO, $Y_i(N)$; and an untreated PO, $Y_i(U)$. The fundamental problem of causal inference forces us to only observe the single PO realized by i ’s treatment assignment.

Our estimand is the average treatment effect on the treated (ATT) conflict events i.e., the average change in PO as treated conflict events move from the untreated to the treated condition:

$$\begin{aligned}\delta &= E[Y_i(T) - Y_i(U)|D_i = T] \\ &= E[Y_i(T)|D_i = T] - E[Y_i(U)|D_i = T]\end{aligned}\tag{A.1}$$

The first term of equation A.1—average treated PO of the treated—is observable, unlike the second—average untreated PO of the treated—which is the counterfactual. Thus, we can only estimate δ . A naive—and likely biased—estimator of δ is the difference in means:

$$\hat{\delta}_{DM} = E[Y_i(T)|D_i = T] - E[Y_i(U)|D_i = U]\tag{A.2}$$

This estimator returns a biased estimate of δ in case of treatment endogeneity, that is in case the untreated outcomes of untreated units differed from the counterfactual of the treated:

$$\begin{aligned}bias_{DM} &= \hat{\delta}_{DM} - \delta \\ &= E[Y_i(T)|D_i = T] - E[Y_i(U)|D_i = U] - E[Y_i(T)|D_i = T] + E[Y_i(U)|D_i = T] \\ &= E[Y_i(U)|D_i = T] - E[Y_i(U)|D_i = U]\end{aligned}\tag{A.3}$$

The $bias_{DM}$ is unlikely to be zero, here. Foreign investors are likely to self-select into locations with lower political risk to begin with (Jensen 2008; Jensen et al. 2012), as they prefer more stability. Thus, likely $E[Y_i(U)|D_i = U] > E[Y_i(U)|D_i = T]$. That is, conflict events in areas that never experience an FDI are probably more violent against civilians than those in areas that experience an FDI would have been, had the investment not started. The naive difference in means would likely *underestimate* the ATT of FDI on civilian fatalities in conflict events.

We instead adopt estimator $\hat{\delta}_{ST}$ proposed by Knutsen et al. (2017), which leverages the spatial-temporal variation in treatment assignment and compares the observed outcomes of treated units with those of not-yet treated ones:

$$\hat{\delta}_{ST} = E[Y_i(T)|D_i = T] - E[Y_i(N)|D_i = N]\tag{A.4}$$

We can make our identifying assumption explicit by deriving the difference between the estimator and the estimand, which we call $bias_{ST}$, and by imposing that $bias_{ST} = 0$:

$$\begin{aligned} bias_{ST} &= \hat{\delta}_{ST} - \delta \\ &= E[Y_i(T)|D_i = T] - E[Y_i(N)|D_i = N] - E[Y_i(T)|D_i = T] + E[Y_i(U)|D_i = T] \\ &= E[Y_i(U)|D_i = T] - E[Y_i(N)|D_i = N] \\ bias_{ST} &= 0 \\ \Rightarrow E[Y_i(U)|D_i = T] &= E[Y_i(N)|D_i = N] \end{aligned} \tag{A.5}$$

Thus, $\hat{\delta}_{ST}$ is an unbiased estimator of δ under the assumption that, *absent the FDI*, conflict events close to an existing investment would have had the same number of civilian casualties as events in an area of future investment, on average.

Our identifying assumption A.5 has two implications. First, it implies no treatment effect anticipation. If not-yet treated units anticipated the treatment effect, their observed outcomes would not approximate the counterfactual PO for the treated. However, because the direction of the treatment effect would be the same for the treated and (anticipating) not-yet treated units, in case of anticipation estimates from equation A.4 would just be driven towards the null.

Assuming no anticipation, a second implication of A.5 is that the *timing* of an FDI—which makes units in the $D_i = T$ group get the treatment before those in $D_i = N$ —is exogenous to existing levels of violence against civilians in an area. This is a heavy assumption but in this context it is likely to hold in our favor. Because we hypothesize $\delta > 0$, we are concerned of violations of the assumption that cause us to overestimate δ : $\hat{\delta}_{ST} > \delta \Rightarrow bias_{ST} > 0 \Rightarrow E[Y_i(U)|D_i = T] > E[Y_i(N)|D_i = N]$. That is, we would overestimate the effect of FDI on civilian casualties in conflict events only if the earlier-treated events, absent the treatment, would have been more violent against civilians than later-treated ones are. This seems like an implausible scenario that implies that foreign investors would *first* enter more violent areas and only later less violent ones. Self-selection of FDI first into more violent areas runs contrary to established literature on political risk (Jensen 2008; Jensen et al. 2012).

The identifying assumption implies that treated units are comparable to not-yet treated ones, were it not for the treatment. We take four steps to improve the credibility of this assumption. Because violence against civilians and FDI features can differ in time and between countries we employ, in all our analyses, country and year-FEs. Second, we make sure *not to* compare units treated with different types of FDI. We exclusively compare conflict events that are treated and not-yet treated by the same FDI type, be it extractive, industry, or services. Third, a conflict event is (not-yet) treated depending on its spatial distance from a present (future) FDI project. Larger distances include more events in these groups, increasing statistical power but introducing heterogeneity. We adopt a narrow 5 km distance to define treatment status. Finally, to remove heterogeneity between treated events and those that will be treated far in the future, in Tables D.6 and D.7 we look only at the next one and five years for defining a conflict event as not-yet treated. Some estimates are, however, driven towards the null when considering just one time-point in the future, which we interpret as a possible result of anticipation.

In Figures C.1, C.2, and C.3 we show that comparing treated and not-yet treated conflict events removes severe existing differences in covariates between treated and untreated conflict events.

This lends credibility to our identifying assumption that treated conflict events would have looked sufficiently similar to not-yet treated ones, had it not been for the FDI.

A.2 Truncation of FDI data

Here we discuss two ways left truncation of FDI data might affect our estimates. We code units' treatment status using data from fDi Markets which span from 2003 to 2021. A first problem occurs if *not-yet treated* events are in fact occurring in the proximity of an FDI established before 2003, which we do not observe. The second problem occurs if events coded as *untreated* are in fact occurring in the proximity of an FDI established before 2003. Before addressing them, we make two empirical considerations: FDI clusters in nearby areas (Figure 2). Thus, areas of pre-2003 investment are likely also represented in our data, a feature which should mitigate concerns. Moreover, we offer two empirical tests to mitigate concerns of left truncation of the treatment group and find our effects are robust (Tables D.4 and D.5).

Recalling equation A.5, the first case of truncation would bias our estimates if, by accounting for it, $E[Y_i(U)|D_i = T] > E[Y_i(N)|D_i = N]$. That is, if truncated events (treated before 2003) would have been systematically more violent against civilians, absent the treatment, than those treated in later time points. This scenario is as implausible as the one described in the previous section: it implies self-selection of FDI first into more violent areas. Truncation in the opposite direction would, instead, drive our estimates towards the null.

The second case of left truncation would bias our estimates only if, were we to code truncated untreated events as treated, these events would have had more civilian casualties, absent the treatment, than not-yet treated units. Because these truncated units, too, would be treated in previous time points, this again implies a scenario where FDI self selects first into areas that are more violent to begin with. We rule such a violation of our assumption as implausible.

B Descriptive statistics of geolocated and non-geolocated FDI projects

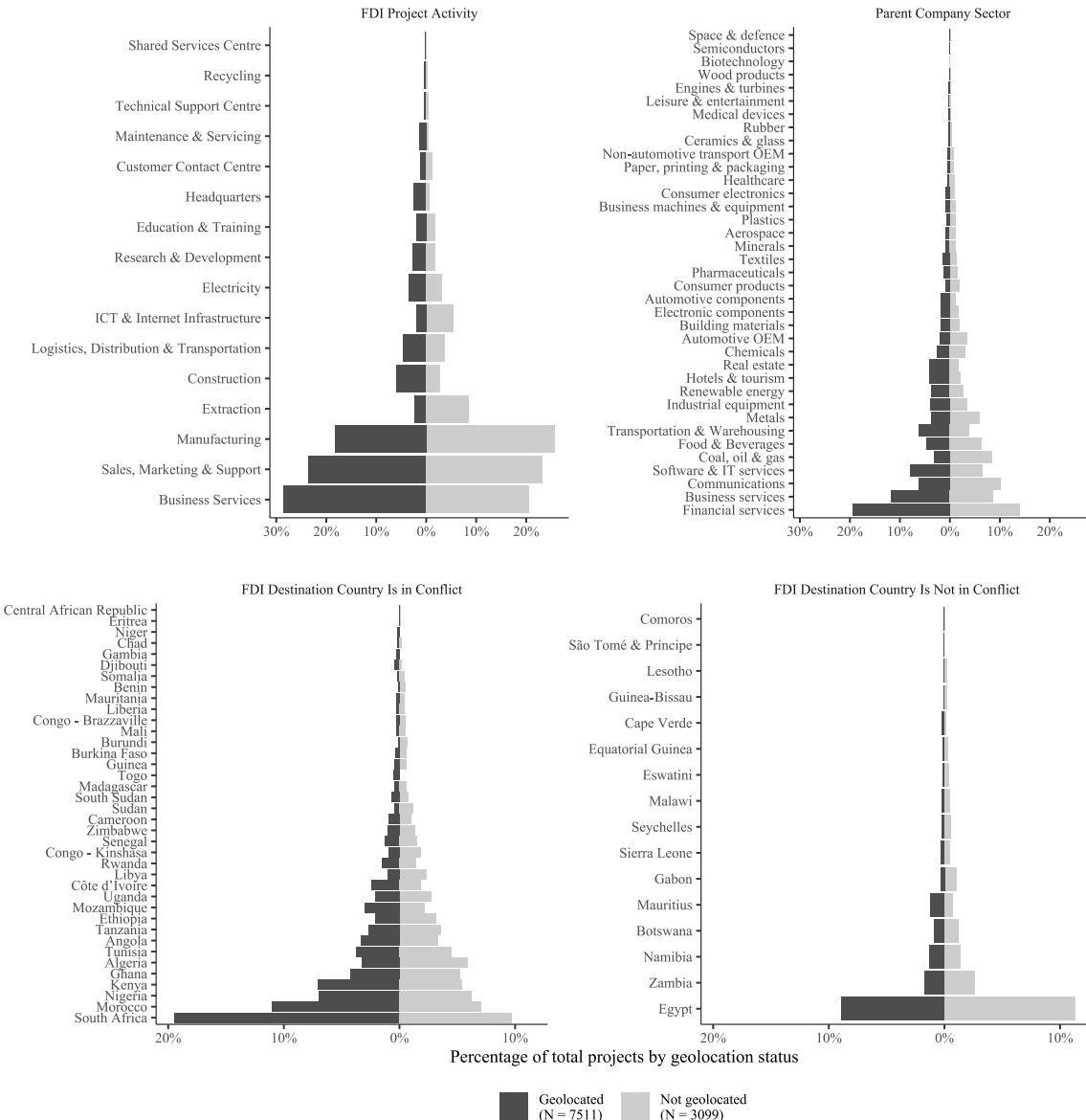
In Table B.1 we present average difference in covariates for FDI projects that report information on their location (7,511, or 71% of 10,610 total projects) and those that do not (3,099, 29%). Geolocated projects create significantly fewer jobs and invest smaller amounts of capital. Moreover, they are significantly less likely to have low-quality information on covariates, at least with respect to whether the “jobs created” figure is estimated. Figure B.1 plots the distribution of FDI activity, MNC sector, and destination country for these projects. The distributions of these variables are generally similar in the geolocated and non-geolocated groups. However, there are relatively more projects in “extraction,” “manufacturing” (activity) and in “Coal, oil & gas” and “Metals” (sector) that are not geolocated.

We can hypothesize how selection into geolocation biases our estimates. Our analyses are based on FDI projects that are smaller and under-represent extractive and manufacturing FDI. These more capital intensive and relatively more “immobile” projects would likely further heighten the conflict intensity in their proximity, were they included in the analysis (see Blair et al. 2022; Maher 2015; Mihalache-O’Keef and Vashchilko 2010; Rexer 2021). Thus we expect that, had non-geolocated FDI projects been provided with location information and included in our analysis, their effect would likely *increase* our observed positive effect.

Table B.1: Comparison of covariates for geolocated and non-geolocated FDI projects

	Geolocated (N=7511)		Not geolocated (N=3099)		Diff. in Means	Std. Error
	Mean	Std. Dev.	Mean	Std. Dev.		
Jobs Created	185.56	464.30	220.24	452.39	34.68***	9.73
Jobs Created Is Estimated	0.88	0.32	0.95	0.23	0.06***	0.01
Capital Investment	93.80	585.97	127.51	544.71	33.71***	11.89
Capital Investment Is Estimated	0.83	0.37	0.84	0.37	0.01	0.01

Figure B.1: Comparison between geolocated and non-geolocated FDI projects by activity, sector, and destination country



C Descriptive statistics of treatment groups

C.1 Distribution of units across groups with different treatment definitions

Table C.1 reports the number of conflict events coded as “treated,” “not-yet treated,” and “untreated” by FDI type. It also illustrates how the size of the “not-yet treated” and “untreated” groups changes depending on the number of future time points considered when coding a conflict event as not-yet treated—which is relevant information for interpreting Tables D.6 and D.7.

To illustrate, consider the treatment condition of extractive FDI (top three rows). Out of 22,480 conflict events, 304 (1.35%) happen in the proximity (5 km) of an existing extractive FDI site. Among the events that do not occur in the proximity of an existing extractive FDI, 452 (2.01%) occur in areas that will see a proximate extractive FDI at any future time point in our data. This group shrinks when restricting it to consider only events that occur in areas that will see an extractive FDI over the next year (90 conflict events, 0.40% of the total) or over the next five years (356 events, 1.58% of the total). The remaining events are coded as untreated. Similar patterns can be observed for industry and services FDI.

Table C.1: Distribution of observations by treatment group and year baseline

FDI treatment	Treated	Treated (%)	Not-yet treated	Not-yet treated (%)	Untreated	Untreated (%)
Extractive	304.00	(1.35%)	452.00	(2.01%)	21724.00	(96.64%)
Extractive (1y)	304.00	(1.35%)	90.00	(0.40%)	22086.00	(98.25%)
Extractive (5y)	304.00	(1.35%)	356.00	(1.58%)	21820.00	(97.06%)
Industry	771.00	(3.43%)	459.00	(2.04%)	21250.00	(94.53%)
Industry (1y)	771.00	(3.43%)	107.00	(0.48%)	21602.00	(96.09%)
Industry (5y)	771.00	(3.43%)	224.00	(1.00%)	21485.00	(95.57%)
Services	836.00	(3.72%)	289.00	(1.29%)	21355.00	(95.00%)
Services (1y)	836.00	(3.72%)	31.00	(0.14%)	21613.00	(96.14%)
Services (5y)	836.00	(3.72%)	207.00	(0.92%)	21437.00	(95.36%)

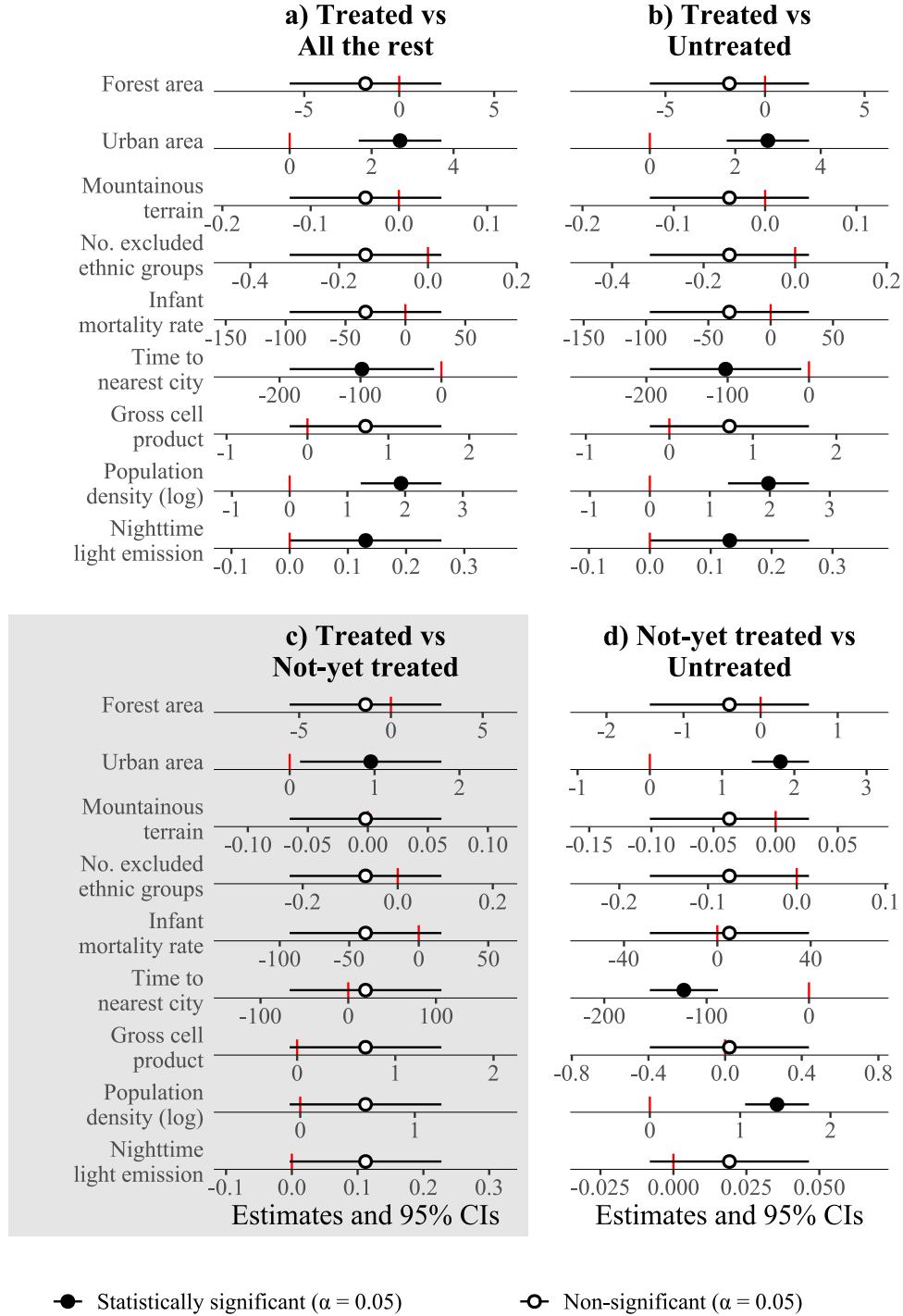
C.2 Distribution of covariates and outcomes by treatment group

Here we show that our research design removes large differences in covariates between conflict events that are treated and the rest. We consider covariates that likely correlate with FDI treatment status and conflict intensity, all drawn from version 2.0 of the PRIO-GRID and defined at the level of the cell where conflict event i occurs, at time t . We take the latest available value of that covariate before time t . We consider: percentage of cell area covered by forest, by urban area, by mountainous terrain; number of discriminated or powerless ethnic groups; infant mortality rate; average travel time to the nearest major city; gross cell product; (log of) population density; and calibrated average nighttime light emission.¹

Figure C.1 reports the difference in mean of the covariates between units in different extractive FDI treatment statuses. Conflict events occurring 5 km from an existing extractive FDI happen, on average, in more urban and densely populated areas, closer to a major city and with

¹ Because our events span across 17 years and 55 countries, we make meaningful comparisons among them by subtracting from each covariate its average value at the country and year level (“entity demeaning”) consistently with our research design that always includes country and year fixed effects.

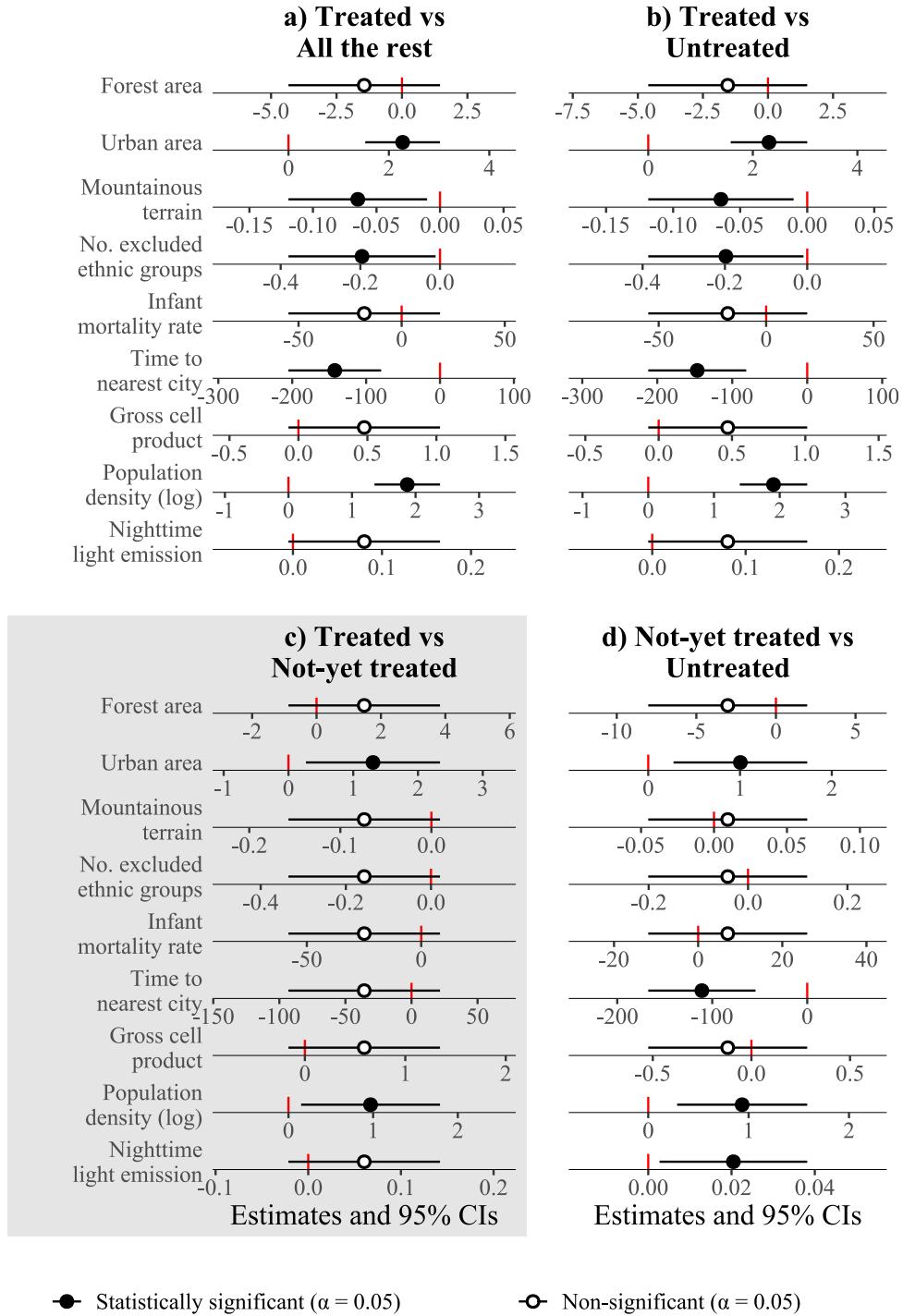
Figure C.1: Extractive FDI: Distribution of covariates for conflict events belonging to different treatment groups.



Note: Shaded panel reports the comparison used in the main analysis. Variables are de-meaned of country and year averages to remove heterogeneity at these levels

stronger nighttime light emission than the others (panel a). These differences are driven by the unbalanced comparison between treated conflict events and untreated ones (panel b). Instead, a comparison between treated and not-yet treated units presents a more balanced distribution of covariates (panel c), the only exception being the percentage of urban area in a cell, which we thus include as a control variable in our models. Panel d concludes by showing differences in covariates between the not-yet treated and the untreated groups. It illustrates the bias from

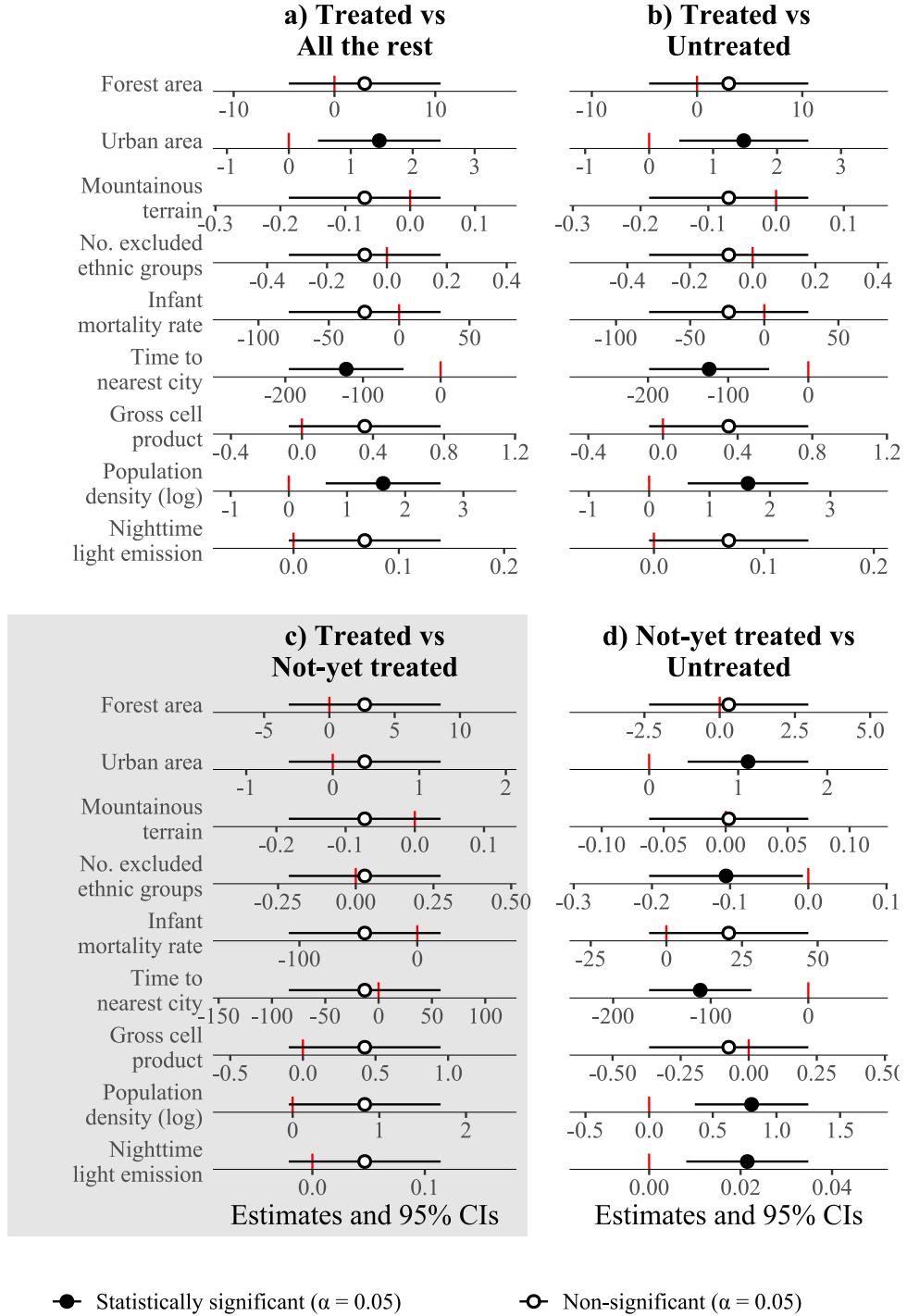
Figure C.2: Industry FDI: Distribution of covariates for conflict events belonging to different treatment groups.



Note: Shaded panel reports the comparison used in the main analysis. Variables are de-meaned of country and year averages to remove heterogeneity at these levels

self-selection of FDI into more densely populated and urbanized areas. We repeat the exercise, with similar conclusions, for industry FDI (Figure C.2) and services (Figure C.3).

Figure C.3: Services FDI: Distribution of covariates for conflict events belonging to different treatment groups.



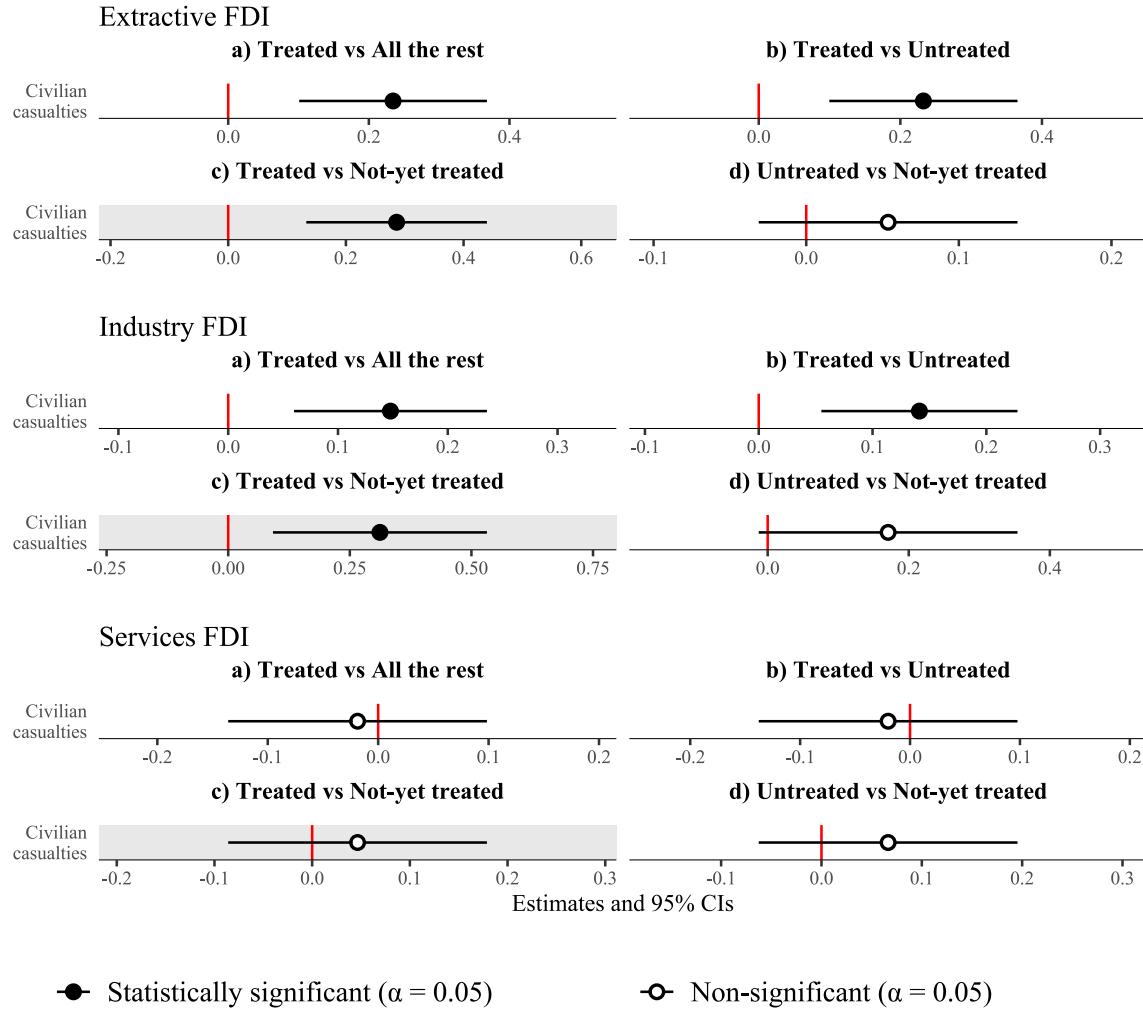
Note: Shaded panel reports the comparison used in the main analysis. Variables are de-meaned of country and year averages to remove heterogeneity at these levels

In Figure C.4 we present differences in the outcome variable across treatment groups.² Consider extractive FDI. Treated conflict events—i.e., those occurring within 5 km of an existing extractive FDI—tend to be more violent for civilians than all the rest, as suggested by our argument. However, these differences can be confounded by the imbalances in covariates illustrated

² As in the previous test, we de-mean the dependent variable by its own average by country and year.

in Figure C.1. To remove such selection bias, we compare treated and not-yet treated conflict events. A comparison between these groups still shows that events happening in the proximity of existing investments are more violent for civilians. The second and third panels replicate the exercise for FDI in the industry sector and services.

Figure C.4: Differences in casualties by treatment group and FDI type



Note: Shaded panel reports the comparison used in the main analysis. Variables are de-meaned of country and year averages to remove heterogeneity at these levels

D Robustness tests of main analysis

D.1 Simultaneous inclusion of all FDI treatment dummies

Table D.1 re-estimates the three specifications from Table 1 but includes all FDI treatment variables simultaneously. Extractive FDI and FDI in the industry sector do retain a positive and statistically significant effect on the number of civilian casualties. FDI in services has no detectable effect.

Table D.1: Results when including all FDI binaries simultaneously

	All binaries		
	(1)	(2)	(3)
Treated vs Not-yet treated (Extractive)	0.252*** (0.067)	0.235*** (0.050)	0.203* (0.083)
Untreated vs Not-yet treated (Extractive)	0.087 (0.080)	0.116 (0.074)	0.105 (0.082)
Treated vs Not-yet treated (Industry)	0.291* (0.112)	0.264* (0.123)	0.225+ (0.119)
Untreated vs Not-yet treated (Industry)	0.130 (0.088)	0.120 (0.086)	0.090 (0.075)
Treated vs Not-yet treated (Services)	-0.121 (0.091)	-0.158 (0.094)	-0.149 (0.110)
Untreated vs Not-yet treated (Services)	-0.007 (0.067)	0.000 (0.075)	-0.012 (0.078)
Mountainous terrain		-0.097 (0.095)	-0.098 (0.105)
No. excluded ethnic groups		-0.050 (0.070)	-0.013 (0.071)
Urban area		-0.024 (0.017)	-0.017 (0.016)
Population density (log)		0.054* (0.020)	0.037* (0.016)
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Country time-trend			Yes
Mean of outcome	0.648	0.648	0.648
Num.Obs.	22480	15503	15503
R2	0.134	0.131	0.154
R2 Adj.	0.132	0.128	0.149

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data.

D.2 Using untreated conflict events as baseline

Table D.2 changes the baseline category of our treatment variable to the untreated group. We estimate our effect of interest by performing an F-test on the difference between the coefficients of “Treated vs Untreated” and that of “Treated vs Not-yet treated,” as originally done by Knutsen et al. (2017)—first row of Table D.2. This achieves two goals. First, we present all comparisons implied by Table 1—including that with untreated ones which is suppressed by design. Second, we prove that our main estimates are the same as those obtained by employing the original design implementation by Knutsen et al. (2017). Results of the F-test returns numerically the same estimates of our models in Table 1.³ This is because the two binary

³ The only difference is represented by the p-value of the test which is systematically lower when using an F-test as opposed to the t-test in our main Table 1. We take this as evidence that the test we adopt in our main analysis is comparatively more stringent and conservative.

variables introduced in the original application of the design are effectively two dummy fixed effects relative to treated and not-yet treated units, using untreated ones as a baseline.

Table D.2: Results when using untreated events as treatment baseline

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.286***	0.238***	0.198**	0.312**	0.271*	0.224*	0.046	-0.011	-0.030
Treated vs Untreated	0.233**	0.148*	0.132+	0.141**	0.092	0.088	-0.020	-0.096	-0.082
	(0.066)	(0.070)	(0.074)	(0.042)	(0.059)	(0.057)	(0.058)	(0.068)	(0.062)
Not-yet treated vs Untreated	-0.054	-0.090+	-0.066*	-0.171+	-0.179+	-0.136	-0.066	-0.085	-0.052
	(0.042)	(0.044)	(0.031)	(0.090)	(0.102)	(0.087)	(0.064)	(0.073)	(0.067)
Mountainous terrain	-0.090	-0.093		-0.084	-0.087			-0.099	-0.100
	(0.089)	(0.099)		(0.093)	(0.103)			(0.092)	(0.103)
No. excluded ethnic groups	-0.052	-0.015		-0.050	-0.013			-0.055	-0.018
	(0.068)	(0.069)		(0.069)	(0.070)			(0.070)	(0.071)
Urban area	-0.023	-0.015		-0.024	-0.017			-0.018	-0.011
	(0.017)	(0.017)		(0.017)	(0.015)			(0.016)	(0.016)
Population density (log)	0.051*	0.035*		0.050*	0.034*			0.054*	0.039*
	(0.020)	(0.016)		(0.020)	(0.017)			(0.020)	(0.016)
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
R2	0.133	0.129	0.152	0.133	0.130	0.153	0.132	0.129	0.152
R2 Adj.	0.131	0.126	0.148	0.131	0.127	0.148	0.130	0.126	0.148

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Top row reports results of an F-test comparing treated and not-yet treated units

D.3 PRIO-GRID cell fixed effects

Table D.3: Results obtained with PRIO-GRID 50km cell fixed effects

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.280**	0.212*	0.212*	0.265+	0.250+	0.250+	0.025	-0.007	-0.008
	(0.090)	(0.088)	(0.089)	(0.147)	(0.141)	(0.141)	(0.091)	(0.100)	(0.102)
Untreated vs Not-yet treated	0.252***	0.193***	0.193***	0.207	0.196	0.196	0.050	0.044	0.043
	(0.058)	(0.050)	(0.050)	(0.165)	(0.145)	(0.145)	(0.086)	(0.098)	(0.098)
No. excluded ethnic groups	-0.053	-0.053		-0.053	-0.053			-0.054	-0.053
	(0.123)	(0.123)		(0.122)	(0.123)			(0.123)	(0.123)
Urban area	0.293*	0.293*		0.287*	0.287*			0.331*	0.331*
	(0.119)	(0.119)		(0.112)	(0.111)			(0.127)	(0.127)
Population density (log)	-1.293+	-1.308+		-1.318+	-1.327+			-1.289	-1.332+
	(0.762)	(0.704)		(0.751)	(0.686)			(0.770)	(0.696)
Cell FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cell time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
R2	0.279	0.282	0.282	0.279	0.282	0.282	0.278	0.282	0.282
R2 Adj.	0.219	0.216	0.216	0.219	0.216	0.216	0.218	0.216	0.216

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data.

We re-estimate Table 1 and substitute country FE with PRIO-GRID cell FE (and cell-specific linear time trend) to completely remove all unobservable time-invariant confounders in conflict dynamics and FDI at the cell level. We do not include the mountainous terrain covariate in these models because it does not vary within-cell. Results, reported in Table D.3, confirm the positive and statistically significant effect of extractive FDI on the number of civilian casualties in conflict events, similar in magnitude to that found earlier. Although estimates are similar when looking at industry FDI, their standard errors are here larger, resulting in noisier estimates (albeit consistently positive and sizeable). We find no effect for services FDI.

D.4 Account for left-truncation

Table D.4: Results when studying only post-2011 events

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.205*	0.128+	0.237***	0.434***	0.334***	0.390***	-0.106	-0.167+	-0.156
	(0.093)	(0.069)	(0.057)	(0.067)	(0.077)	(0.084)	(0.102)	(0.095)	(0.093)
Untreated vs Not-yet treated	0.032	0.090*	0.157**	0.311***	0.305***	0.355***	-0.068	-0.034	-0.043
	(0.041)	(0.036)	(0.046)	(0.061)	(0.062)	(0.065)	(0.100)	(0.094)	(0.092)
Mountainous terrain	-0.067	-0.029		-0.063	-0.023		-0.080	-0.039	
	(0.120)	(0.120)		(0.123)	(0.123)		(0.127)	(0.128)	
No. excluded ethnic groups	-0.104*	-0.085+		-0.102*	-0.082+		-0.108*	-0.089+	
	(0.049)	(0.047)		(0.049)	(0.048)		(0.050)	(0.049)	
Urban area	-0.006	0.001		-0.006	0.000		-0.004	0.003	
	(0.019)	(0.019)		(0.018)	(0.018)		(0.020)	(0.020)	
Population density (log)	0.047*	0.032		0.048*	0.033		0.053*	0.037+	
	(0.022)	(0.021)		(0.022)	(0.022)		(0.022)	(0.020)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627	0.627
Num.Obs.	15588	10072	10072	15588	10072	10072	15588	10072	10072
R2	0.120	0.096	0.109	0.122	0.097	0.110	0.120	0.097	0.109
R2 Adj.	0.118	0.092	0.103	0.119	0.093	0.104	0.117	0.093	0.103

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. Only events after 2011 considered. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data.

In Table D.4 we offer a test to mitigate concerns about how left truncation of FDI data could bias our estimates (the issue is discussed in section A.2). We replicate our analysis after limiting our sample to post-2011 events (the median year in our 2003–2019 time series of conflict events), with the idea that left truncation should impact this analysis less than the one using the full data. We find consistent estimates to those presented earlier.

Next, we reconstruct our treatment variables by including in the “treated” group also “untreated” and “not-yet treated” conflict events that occur in the proximity of at least one FDI site coded as “expansions” or “co-locations” by fDi Markets, which indicates an FDI existed there previously—we distinguish extractive, industry, or services. Table D.5 reports results using these new treatment variables. The effects of extractive and industry FDI are still positive and sizeable, similar to those estimated in our main analysis.

Table D.5: Results when considering areas of FDI expansion as treated

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.296*** (0.067)	0.262*** (0.062)	0.198** (0.064)	0.306* (0.119)	0.269* (0.117)	0.216* (0.102)	0.042 (0.067)	-0.012 (0.076)	-0.032 (0.069)
Untreated vs Not-yet treated	0.056 (0.040)	0.092* (0.043)	0.071* (0.028)	0.186+ (0.099)	0.193+ (0.105)	0.143 (0.090)	0.065 (0.067)	0.085 (0.073)	0.052 (0.067)
Mountainous terrain	-0.090 (0.090)	-0.092 (0.100)		-0.084 (0.092)	-0.088 (0.103)		-0.099 (0.092)	-0.100 (0.103)	
No. excluded ethnic groups	-0.051 (0.068)	-0.014 (0.069)		-0.051 (0.069)	-0.014 (0.070)		-0.055 (0.070)	-0.018 (0.071)	
Urban area	-0.024 (0.017)	-0.015 (0.017)		-0.024 (0.017)	-0.017 (0.015)		-0.018 (0.016)	-0.011 (0.016)	
Population density (log)	0.050* (0.020)	0.035* (0.016)		0.050* (0.020)	0.035* (0.017)		0.054* (0.020)	0.039* (0.016)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
R2	0.133	0.129	0.153	0.133	0.130	0.153	0.132	0.129	0.152
R2 Adj.	0.131	0.126	0.148	0.131	0.127	0.148	0.130	0.126	0.148

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data.

Table D.6: Results when coding not-yet treated group based on FDI sites one year in the future

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated (1y)	-0.316 (0.279)	-0.341 (0.275)	-0.357 (0.278)	0.506*** (0.093)	0.470*** (0.101)	0.443*** (0.101)	0.033 (0.158)	-0.048 (0.147)	-0.035 (0.144)
Untreated vs Not-yet treated (1y)	-0.553+ (0.297)	-0.513+ (0.283)	-0.509+ (0.278)	0.363*** (0.068)	0.376*** (0.066)	0.357*** (0.068)	0.052 (0.162)	0.045 (0.151)	0.045 (0.144)
Mountainous terrain	-0.084 (0.092)	-0.088 (0.102)		-0.087 (0.092)	-0.089 (0.102)		-0.099 (0.092)	-0.100 (0.103)	
No. excluded ethnic groups	-0.051 (0.068)	-0.014 (0.069)		-0.049 (0.069)	-0.012 (0.070)		-0.054 (0.070)	-0.017 (0.071)	
Urban area	-0.029+ (0.016)	-0.021 (0.014)		-0.024 (0.017)	-0.017 (0.015)		-0.019 (0.016)	-0.012 (0.016)	
Population density (log)	0.050* (0.020)	0.034* (0.016)		0.050* (0.020)	0.034* (0.017)		0.054* (0.020)	0.039* (0.016)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
R2	0.134	0.130	0.154	0.134	0.130	0.153	0.132	0.129	0.152
R2 Adj.	0.132	0.127	0.149	0.131	0.127	0.148	0.130	0.126	0.148

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened over the next year.

D.5 Alternative definitions of treatment groups in time and space

In Tables D.6 and D.7 we restrict the number of future time points used to code an event as not-yet treated, respectively to one and five years. The effect of existing extractive FDI on civilian

casualties is not significant when compared to events in areas that will see an extractive investment over the next year. This might be driven by anticipation of incoming investment, which should drive the estimate towards the null (see Section A.1). However, the null might simply be due to the extremely small number of not-yet treated units in this model (see Table C.1). We find significant positive effects when considering the next five years, instead. The effect of industry FDI is consistently positive and significant. No effect is found for services.

Table D.7: Results when coding not-yet treated group based on FDI sites five years in the future

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated (5y)	0.266** (0.075)	0.226** (0.070)	0.193* (0.080)	0.357** (0.127)	0.330** (0.120)	0.290* (0.114)	-0.006 (0.083)	-0.068 (0.097)	-0.082 (0.085)
Untreated vs Not-yet treated (5y)	0.033 (0.031)	0.074* (0.028)	0.060+ (0.034)	0.215* (0.105)	0.237* (0.107)	0.204* (0.098)	0.013 (0.086)	0.025 (0.091)	-0.002 (0.082)
Mountainous terrain		-0.090 (0.089)	-0.093 (0.100)		-0.085 (0.092)	-0.088 (0.102)		-0.099 (0.092)	-0.100 (0.103)
No. excluded ethnic groups		-0.051 (0.068)	-0.014 (0.069)		-0.050 (0.069)	-0.013 (0.070)		-0.054 (0.070)	-0.017 (0.071)
Urban area		-0.024 (0.017)	-0.016 (0.016)		-0.024 (0.017)	-0.017 (0.015)		-0.018 (0.016)	-0.012 (0.016)
Population density (log)		0.051* (0.020)	0.035* (0.016)		0.050* (0.020)	0.035* (0.017)		0.054* (0.020)	0.039* (0.016)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
R2	0.133	0.129	0.152	0.133	0.130	0.153	0.132	0.129	0.152
R2 Adj.	0.131	0.126	0.148	0.131	0.127	0.148	0.130	0.126	0.148

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

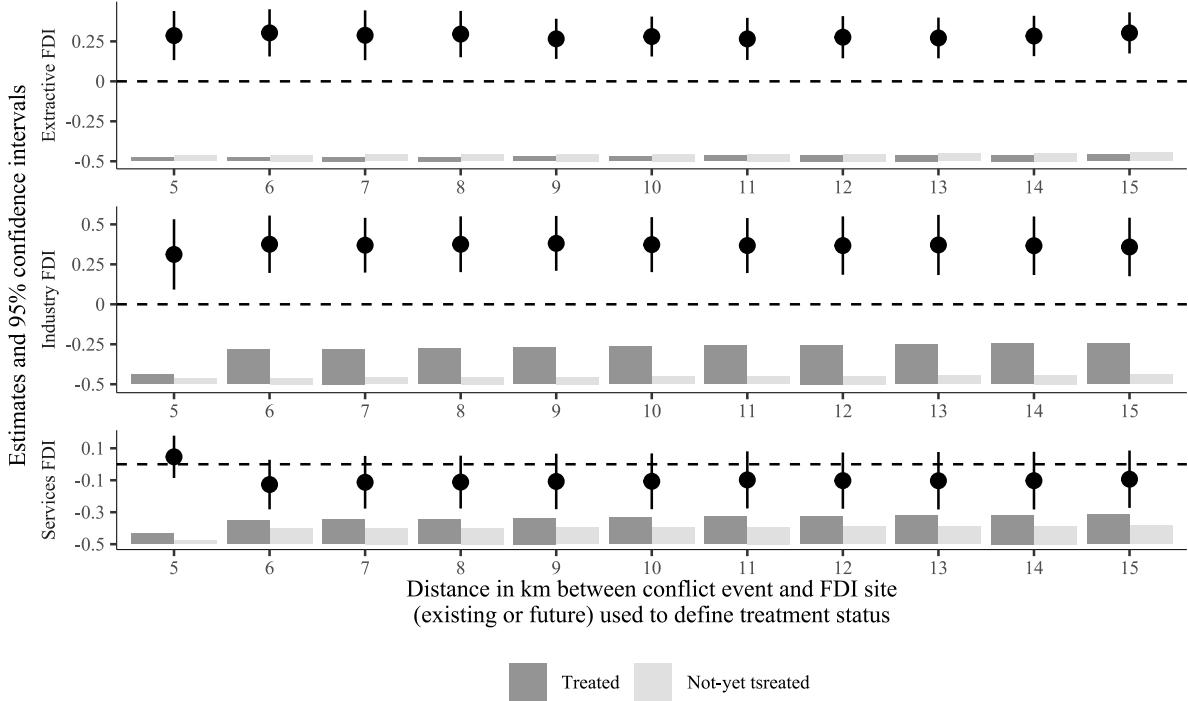
All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened over the next five years.

In Figure D.1 we vary the distance from FDI sites used to defined treatment groups to show that our main findings are not driven by the arbitrary choice of 5 km, nor that they are biased by measurement error in our geolocation of FDI projects. We consider distances from 5 to 15 km, at intervals of 1 km. The effect is positive and significant for extractive and industry-sector FDI across the board. No significant effect is found for FDI in services.

D.6 Alternative treatment definition based on FDI value and number

We substitute our treatment variables with two pairs of *continuous* variables measuring: 1) the sum of capital investment generated by present and future FDI in the proximity (5 km) of a conflict event (Table D.8); and 2) the number of present and future FDI projects in the proximity (5 km) of a conflict event (Table D.9). For both pairs of variables, we take the logarithm of the sum +1. We discount the value (and number) of future FDI projects that are further away in time by dividing each future FDI project's contribution to the total by its distance in years from the conflict event. We include these variables in our models and estimate the effect of the value (or number) of present FDI on the number of civilian casualties by accounting for selection of capital (and number) of investment into areas with different features. As above, we do so by computing the difference between estimated coefficients relative to present and future FDI. An F-test at the top of the table tests for significance.

Figure D.1: Estimates obtained when varying sizes of buffer radii around conflict events



Note: estimates are relative to the comparison between *Treated* and *Not-yet treated* buffers using country and year fixed effects. Top panel reports results when defining treatment status based on extractive FDI; middle panel focuses on industry FDI; bottom panel on services. Histograms report distribution of Treated and Not-yet treated units per specification.

Results in the top row of Table D.8 indicate that, when considering extractive FDI, a 100 percent increase in the capital value of present FDI (corresponding, for instance, to doubling capital value from \$100,000 to \$200,000) results in an increase in the number of civilian casualties by about 2% or 3% over the effect of capital investment in *future* FDI. A similar, positive and significant result is found for industry FDI. We find, again, no effect for FDI in services. This indicates that conflict intensity increases in areas of higher capital value. However the effect is detected only for industry FDI when considering the number of projects (Table D.9).

D.7 Control for number of jobs created by FDI

We show that our results are robust to controlling for the total number of jobs created by existing FDI in the proximity of a conflict event. This control rules out an alternative explanation: that a foreign investment offers jobs which make an area more populous (as workers and their families relocate there), thus increasing the number of civilian casualties in nearby violent attacks—*vis-à-vis* areas that are yet-to see an investment—purely because of this influx of non-combatants. We control for the number of jobs created by the investment—a quantity which is typically decided at the planning stage of an investment, therefore pre-treatment. We replicate Table 1 after including, respectively, the number of jobs created by existing extractive, industry, and services FDI within 5 km of the event. Even after holding constant the size of population influx attracted by foreign jobs, we find that extractive and industry FDI increase

Table D.8: Results when using a continuous treatment variable: FDI value

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Present vs Future investment (cap.)	0.033**	0.030**	0.023**	0.051*	0.041+	0.032	0.021	0.014	-0.006
FDI capital investment (present)	0.028**	0.017+	0.016	0.027**	0.020+	0.018+	0.007	-0.004	-0.008
	(0.009)	(0.010)	(0.010)	(0.008)	(0.010)	(0.009)	(0.009)	(0.011)	(0.008)
FDI capital investment (future)	-0.005	-0.013	-0.007	-0.024	-0.022	-0.014	-0.014	-0.017	-0.002
	(0.009)	(0.012)	(0.008)	(0.016)	(0.017)	(0.017)	(0.021)	(0.024)	(0.022)
Mountainous terrain	-0.089	-0.092		-0.083	-0.087		-0.092	-0.095	
	(0.090)	(0.100)		(0.092)	(0.102)		(0.091)	(0.102)	
No. excluded ethnic groups	-0.051	-0.014		-0.050	-0.013		-0.054	-0.017	
	(0.069)	(0.069)		(0.069)	(0.070)		(0.069)	(0.071)	
Urban area	-0.024	-0.016		-0.026	-0.019		-0.018	-0.012	
	(0.017)	(0.016)		(0.017)	(0.015)		(0.016)	(0.017)	
Population density (log)	0.050*	0.035*		0.049*	0.034*		0.053*	0.037*	
	(0.020)	(0.016)		(0.020)	(0.017)		(0.020)	(0.016)	
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
R2	0.133	0.129	0.152	0.133	0.129	0.153	0.132	0.129	0.152
R2 Adj.	0.131	0.126	0.148	0.131	0.126	0.148	0.130	0.126	0.147

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Top row reports results of an F-test comparing the value of FDI proximate to treated and not-yet treated units

Table D.9: Results when using a continuous treatment variable: number of FDI projects

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Present vs Future investment (no.)	-0.151	-0.132	-0.209	0.305*	0.255+	0.228+	0.046	0.011	-0.035
FDI number (present)	0.175*	0.110	0.091	0.139*	0.110+	0.108+	0.031	0.001	-0.011
	(0.076)	(0.077)	(0.075)	(0.056)	(0.061)	(0.059)	(0.027)	(0.035)	(0.028)
FDI number (future)	0.325+	0.242	0.300+	-0.165+	-0.144	-0.120	-0.014	-0.010	0.024
	(0.162)	(0.165)	(0.162)	(0.088)	(0.088)	(0.087)	(0.035)	(0.033)	(0.027)
Mountainous terrain	-0.085	-0.089		-0.085	-0.088		-0.090	-0.093	
	(0.091)	(0.101)		(0.091)	(0.100)		(0.090)	(0.101)	
No. excluded ethnic groups	-0.051	-0.013		-0.050	-0.012		-0.053	-0.016	
	(0.068)	(0.069)		(0.069)	(0.070)		(0.069)	(0.070)	
Urban area	-0.027+	-0.019		-0.027	-0.020		-0.021	-0.014	
	(0.016)	(0.014)		(0.017)	(0.016)		(0.017)	(0.017)	
Population density (log)	0.050*	0.034*		0.049*	0.033*		0.051*	0.036*	
	(0.020)	(0.016)		(0.020)	(0.016)		(0.020)	(0.016)	
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
R2	0.133	0.129	0.153	0.133	0.129	0.153	0.132	0.129	0.152
R2 Adj.	0.131	0.126	0.148	0.131	0.126	0.148	0.130	0.125	0.147

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Top row reports results of an F-test comparing the number of FDI proximate to treated and not-yet treated units

the number of civilian casualties, with effects comparable to our previous analysis in size and significance.

Table D.10: Results when controlling for the number of jobs created

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.423*** (0.065)	0.370*** (0.083)	0.345*** (0.046)	0.288* (0.119)	0.262* (0.124)	0.205+ (0.117)	0.009 (0.074)	-0.037 (0.078)	-0.065 (0.075)
Untreated vs Not-yet treated	0.051 (0.042)	0.087+ (0.044)	0.066* (0.031)	0.172+ (0.090)	0.179+ (0.102)	0.136 (0.087)	0.065 (0.064)	0.081 (0.073)	0.048 (0.068)
FDI jobs created	-0.304*** (0.033)	-0.291*** (0.046)	-0.312*** (0.046)	0.010+ (0.006)	0.004 (0.009)	0.009 (0.012)	0.046*** (0.011)	0.032** (0.011)	0.046*** (0.011)
Mountainous terrain	-0.094 (0.092)	-0.097 (0.102)		-0.084 (0.093)	-0.088 (0.103)		-0.101 (0.092)	-0.103 (0.102)	
No. excluded ethnic groups	-0.052 (0.069)	-0.015 (0.070)		-0.049 (0.069)	-0.012 (0.069)		-0.053 (0.070)	-0.013 (0.070)	
Urban area	-0.023 (0.018)	-0.015 (0.017)		-0.024 (0.017)	-0.018 (0.016)		-0.020 (0.016)	-0.014 (0.017)	
Population density (log)	0.051* (0.020)	0.035* (0.016)		0.050* (0.020)	0.034* (0.017)		0.053* (0.020)	0.037* (0.016)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648	0.648
Num.Obs.	22480	15503	15503	22480	15503	15503	22480	15503	15503
R2	0.133	0.130	0.153	0.134	0.130	0.153	0.133	0.129	0.153
R2 Adj.	0.131	0.127	0.148	0.131	0.127	0.148	0.131	0.126	0.148

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data.

E Subgroup analysis: type of attacks and perpetrators

Table E.1: Subgroup analysis: one-sided violent events (civilian targeting) only

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.410** (0.120)	0.397** (0.116)	0.169+ (0.090)	0.405* (0.160)	0.470** (0.172)	0.250* (0.107)	0.094 (0.140)	0.147 (0.132)	0.091 (0.132)
Untreated vs Not-yet treated	0.318*** (0.064)	0.182** (0.057)	0.088* (0.039)	0.455* (0.168)	0.353* (0.164)	0.200+ (0.111)	0.227* (0.100)	0.164 (0.111)	0.154 (0.107)
Mountainous terrain	-0.044 (0.089)	-0.020 (0.106)		-0.033 (0.093)	-0.015 (0.108)		-0.041 (0.091)	-0.025 (0.107)	
No. excluded ethnic groups	-0.062 (0.081)	-0.051 (0.084)		-0.058 (0.081)	-0.049 (0.083)		-0.064 (0.081)	-0.052 (0.084)	
Urban area	-0.029 (0.020)	-0.022 (0.019)		-0.029 (0.020)	-0.022 (0.019)		-0.028 (0.019)	-0.021 (0.019)	
Population density (log)	-0.048 (0.033)	-0.055+ (0.029)		-0.049 (0.033)	-0.055+ (0.030)		-0.048 (0.034)	-0.051+ (0.029)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	1.332	1.332	1.332	1.332	1.332	1.332	1.332	1.332	1.332
Num.Obs.	8756	6826	6826	8756	6826	6826	8756	6826	6826
R2	0.103	0.105	0.134	0.104	0.106	0.134	0.102	0.103	0.134
R2 Adj.	0.098	0.098	0.123	0.099	0.099	0.124	0.097	0.096	0.123

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Data limited to one-sided violence against civilians.

Table E.2: Subgroup analysis: state-based violent events only

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.037 (0.068)	-0.049 (0.041)	-0.006 (0.027)	-0.040 (0.076)	-0.074 (0.073)	-0.039 (0.079)	-0.135 (0.130)	-0.127 (0.109)	-0.149 (0.097)
Untreated vs Not-yet treated	-0.099* (0.037)	-0.105** (0.035)	-0.054 (0.038)	-0.121+ (0.067)	-0.092* (0.043)	-0.060 (0.055)	-0.191+ (0.101)	-0.116 (0.088)	-0.131+ (0.073)
Mountainous terrain	0.004 (0.036)	0.001 (0.036)		0.002 (0.037)	0.000 (0.038)		0.001 (0.036)	-0.002 (0.036)	
No. excluded ethnic groups	0.004 (0.010)	0.001 (0.008)		0.004 (0.011)	0.002 (0.009)		0.003 (0.011)	0.001 (0.009)	
Urban area	0.004 (0.011)	-0.002 (0.008)		0.007 (0.014)	-0.001 (0.009)		0.009 (0.013)	0.001 (0.008)	
Population density (log)	0.016* (0.008)	0.017* (0.008)		0.015+ (0.008)	0.017* (0.008)		0.016+ (0.008)	0.018* (0.008)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211
Num.Obs.	13724	8677	8677	13724	8677	8677	13724	8677	8677
R2	0.081	0.100	0.109	0.082	0.100	0.109	0.082	0.100	0.110
R2 Adj.	0.078	0.095	0.102	0.079	0.095	0.102	0.079	0.095	0.102

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Data limited to state-based violence.

Table E.3: Subgroup analysis: one-sided violent events initiated by non-state forces

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.585*** (0.143)	0.571** (0.172)	0.350* (0.159)	0.607*** (0.153)	0.613*** (0.098)	0.468*** (0.078)	0.109 (0.210)	0.099 (0.158)	0.111 (0.195)
Untreated vs Not-yet treated	0.405*** (0.046)	0.295*** (0.056)	0.168** (0.046)	0.613** (0.202)	0.481* (0.174)	0.319* (0.136)	0.168 (0.112)	0.130 (0.110)	0.160 (0.122)
Mountainous terrain	-0.193 (0.113)	-0.193 (0.123)		-0.172 (0.118)	-0.178 (0.128)		-0.184 (0.108)	-0.197 (0.116)	
No. excluded ethnic groups	-0.101 (0.123)	-0.090 (0.127)		-0.093 (0.122)	-0.082 (0.126)		-0.103 (0.121)	-0.091 (0.125)	
Urban area	-0.043 (0.056)	-0.055 (0.058)		-0.063 (0.053)	-0.075 (0.056)		-0.049 (0.047)	-0.057 (0.051)	
Population density (log)	-0.008 (0.047)	-0.007 (0.048)		-0.007 (0.045)	-0.006 (0.047)		-0.009 (0.044)	-0.005 (0.045)	
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	1.427	1.427	1.427	1.427	1.427	1.427	1.427	1.427	1.427
Num.Obs.	5452	3903	3903	5452	3903	3903	5452	3903	3903
R2	0.122	0.116	0.135	0.123	0.117	0.136	0.118	0.113	0.134
R2 Adj.	0.114	0.105	0.119	0.115	0.106	0.120	0.111	0.102	0.118

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Data limited to one-sided violence against civilians initiated by non-state forces.

Table E.4: Subgroup analysis: one-sided violent events initiated by state forces

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated vs Not-yet treated	0.182 (0.126)	0.192 (0.126)	0.059 (0.081)	0.204 (0.142)	0.283+ (0.148)	0.071 (0.070)	0.084 (0.153)	0.123 (0.153)	-0.056 (0.111)
Untreated vs Not-yet treated	0.085 (0.064)	0.026 (0.068)	-0.004 (0.063)	0.097 (0.121)	0.050 (0.131)	-0.030 (0.124)	0.150 (0.124)	0.102 (0.118)	0.025 (0.095)
Mountainous terrain		0.052 (0.091)	0.105 (0.113)		0.058 (0.092)	0.107 (0.113)		0.056 (0.094)	0.105 (0.115)
No. excluded ethnic groups		0.011 (0.027)	0.021 (0.029)		0.012 (0.026)	0.021 (0.028)		0.009 (0.027)	0.021 (0.029)
Urban area		-0.018 (0.016)	0.001 (0.012)		-0.020 (0.017)	0.000 (0.013)		-0.016 (0.015)	0.002 (0.012)
Population density (log)		-0.024 (0.032)	-0.057* (0.026)		-0.027 (0.031)	-0.059* (0.025)		-0.025 (0.030)	-0.053* (0.024)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country time-trend			Yes			Yes			Yes
Mean of outcome	1.123	1.123	1.123	1.123	1.123	1.123	1.123	1.123	1.123
Num.Obs.	3304	2923	2923	3304	2923	2923	3304	2923	2923
R2	0.119	0.122	0.163	0.120	0.123	0.164	0.120	0.121	0.164
R2 Adj.	0.107	0.106	0.141	0.107	0.108	0.141	0.107	0.106	0.141

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

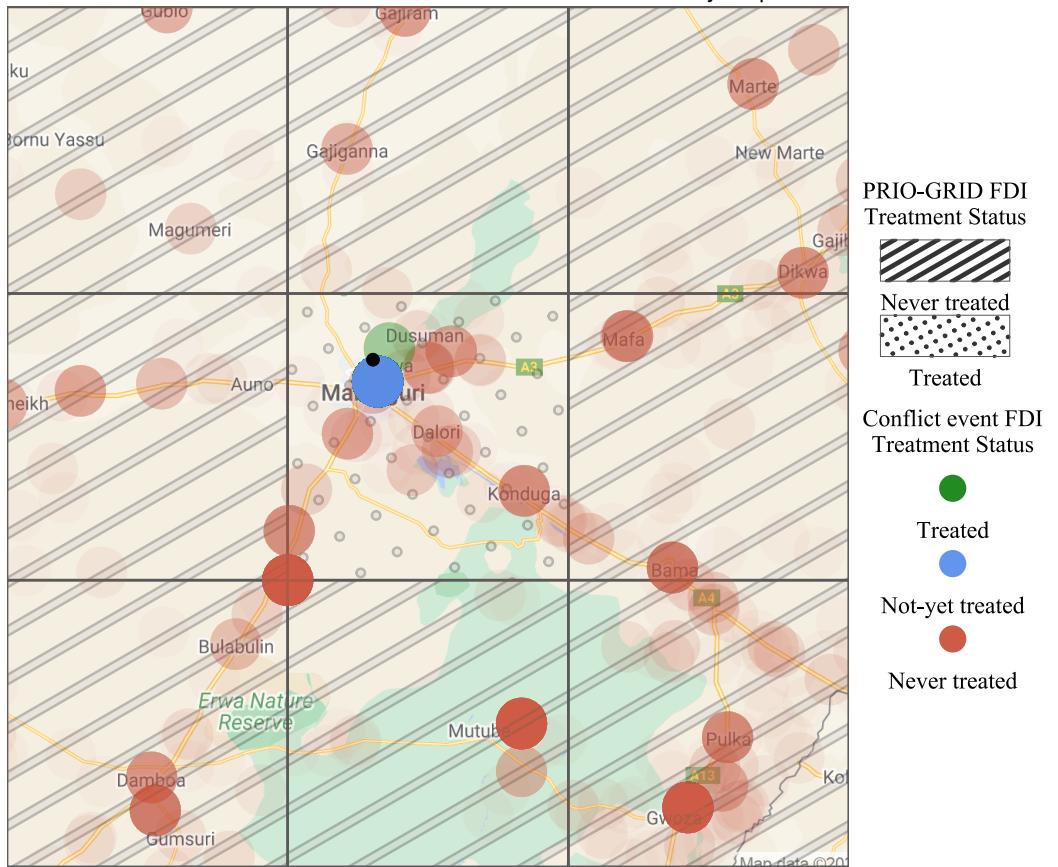
All models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Unit of analysis is a geolocated conflict event in a given year. All standard errors are clustered at the country level. A unit is defined as treated under a given FDI type if there is an FDI of that type within 5 km of it, at present. Not-yet treated units are defined considering the same distance in space but look at whether an FDI of that type will be opened at any point in the future in our data. Data limited to one-sided violence against civilians initiated by state forces.

We perform subgroup analyses by limiting data in Table 1 models to one-sided violence against civilians (Table E.1) and state-based violence (Table E.2). The positive effect of extractive and industry FDI on civilian casualties is detected only for events of deliberate violence against civilians. Finally, we further split deliberate attacks against civilian by perpetrator, distinguishing cases initiated by government forces (Table E.4) and by non-government forces (Table E.3). The positive and significant effect of extractive and industry FDI is detected only for cases of one-sided violence against civilians initiated by non-governmental forces.

F Alternative research design and data source: panel of PRIO-GRID cells

We show that we can obtain similar estimates for the effects of FDI on violence against civilians even if we aggregate information in a different data structure, modelled in a different research design, at a different (lower) level of resolution, and even by using alternative data sources. We construct a panel of PRIO-GRID 50×50 km cells observed yearly between 2003 and 2019. We leverage this analysis for making three points. First, that our findings do not hinge on the data structure, research design, level of resolution, and data source (including their coding conventions) that we adopt in our main analysis. Second we note that, by using cells as statistical units, we observe how receiving an FDI changes patterns of violence in places that did not experience any violence in previous time points. Finally we note that, from the point of view of spatial precision, this dataset is defined at a much more highly aggregated unit than that used by our main analysis—which looks at a 5 km radius around a conflict event. Thus, this analysis allows us to reduce measurement error introduced when geolocating FDI projects, if that procedure had a lower resolution than 5 km (akin to the test in Figure D.1 for larger radii).

Figure F.1: City of Maiduguri, North-East Nigeria. Comparison of resolutions of our main analysis at the level of 5 km buffers around conflict events and of the 50×50 km PRIO-GRID cell-year panel data.



Note: Colored bubbles are the 5 km radius buffers around conflict events used in our main analysis. They are colored by FDI treatment status. Black dots report geolocated FDI projects. Overlayed are 50×50 km PRIO-GRID cells, with filling patterns based on whether they are treated with an FDI project.

Source: authors' compilation.

Figure F.1 exemplifies the difference in resolution for the two designs by representing both in the case of the Nigerian city of Maiduguri, capital of the north-eastern Borno State. We overlay the map of the area with: the 5 km radius buffers around conflict events, colored as in Figure 2; the FDI project in the area from fDi Markets data—black dot; and the PRIO-GRID cells, with filling patterns defined based on whether the cell is ever treated in this new design. The research design in our main analysis considers a much more fine-grained set of geographical units as treated and not-yet treated: many conflict events in the “treated” cell are in fact untreated when we consider buffers of 5 km radius.

We build a cell-year panel comprising the universe of 10,671 African PRIO-GRID cells observed yearly between 2003 and 2019 (observations: 181,407). We merge these cells with our geolocated data on FDI projects. We code three binary treatment variables (distinguishing extractive, industry, and services FDI) taking value 1 if and after a cell experiences at least one FDI of a given type, 0 otherwise.

Next, we build a series of dependent variables measuring violence against civilians. All variables are sums and we take the logarithm of the sum +1, consistently with our main analysis. Our first dependent variable is the sum of civilian casualties in conflict events reported by

UCDP GED in a given cell-year. We include this variable for showing that we can obtain similar estimates as those in our main analysis if we aggregate data differently and model them in a different design.

We also build several dependent variables that measure *number of deliberate attacks* against civilians. To this end, we also draw on a different conflict data source—the Armed Conflict Location & Event Data (ACLED)—to show that our findings do not hinge on our main source of conflict data—UCDP GED.⁴ ACLED data, moreover, conveniently offer a nuanced characterization of who initiates attacks—unlike UCDP GED—which we exploit below. We draw from ACLED information on conflict events happening in Africa between 2003 and 2019. We keep only cases of political violence (we exclude protests), in particular deliberate attacks targeting civilians. Finally, we keep only events coded by ACLED as having the most precise information on time and geolocation. Drawing on spatial and temporal information, we assign the remaining 24,239 ACLED data points to a specific PRIO-GRID cell-year.

We aggregate UCDP and ACLED data at the cell-year level and measure four pairs of dependent variables counting number of deliberate attacks against civilians (all logarithms of counts + 1), using UCDP and ACLED respectively:

1. The number of attacks initiated by any group.
2. The number of attacks initiated by government forces.
3. The number of attacks initiated by rebel forces.
4. The number of attacks initiated by political militias⁵ (ACLED only).

We study these dependent variables in a series of fixed-effect (FE) models. We present three models for each type of FDI and each dependent variable. First, we remove all between-country and between-year variation by fitting FE models at these levels. Next, we remove all between-cell variation and study over-time changes within a cell as a function of receiving an FDI. Finally, we fit a cell and year FE model, to also remove between-year confounders. All estimates report standard errors clustered at the cell-level, as this is the geographical unit where the “treatment” (an FDI project) occurs.

In Table F.1 we find that extractive FDI has a positive and significant effect on the number of civilian casualties (measured from UCDP data). In Table F.2 we replicate the analysis studying the number of deliberate attacks against civilians using UCDP data, where we find similar estimates. Next, we study the number of attacks against civilians recorded by UCDP and initiated by government forces (Table F.3) and rebels (Table F.4). We find that FDI of any type increases significantly the number of attacks staged by government forces but not by rebels.

Table F.5 shows similar results when studying ACLED data. Extractive, industry, and services FDI have positive and sizeable effects on the number of deliberate attacks targeting civilians.

⁴ ACLED data are not suited to the study of number of civilian fatalities in violent attacks because, unlike UCDP data, they do not distinguish between fatalities belonging to different groups. Thus, we cannot use them in the research design we presented in the main text.

⁵ These are generally considered to be violent actors that are supported and armed by state forces.

Table F.1: The effect of FDI on civilian casualties, panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.060** (0.020)	0.058* (0.024)	0.043+ (0.024)	0.066** (0.023)	-0.006 (0.025)	-0.022 (0.025)	0.095*** (0.020)	0.015 (0.022)	-0.001 (0.022)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.028	0.257	0.258	0.029	0.257	0.258	0.030	0.257	0.258
R2 Adj.	0.028	0.210	0.212	0.029	0.210	0.212	0.029	0.210	0.212

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Number of civilian casualties data are drawn from UCDP GED. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

Table F.2: The effect of FDI on number of attacks against civilians (UCDP DATA), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.034** (0.012)	0.036* (0.015)	0.026+ (0.015)	0.040** (0.014)	0.006 (0.014)	-0.004 (0.013)	0.061*** (0.013)	0.018 (0.012)	0.008 (0.012)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.035	0.290	0.292	0.036	0.290	0.292	0.038	0.290	0.292
R2 Adj.	0.035	0.246	0.247	0.036	0.245	0.247	0.037	0.245	0.247

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from UCDP. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

Table F.3: The effect of FDI on number of attacks against civilians staged by government forces (UCDP data), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.027** (0.009)	0.021+ (0.012)	0.018 (0.012)	0.031*** (0.009)	0.012* (0.006)	0.009+ (0.006)	0.050*** (0.009)	0.022** (0.007)	0.020** (0.007)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.030	0.240	0.241	0.032	0.240	0.241	0.035	0.241	0.241
R2 Adj.	0.030	0.193	0.194	0.031	0.193	0.194	0.034	0.193	0.194

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from UCDP. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

Table F.4: The effect of FDI on number of attacks against civilians staged by rebel forces (UCDP data), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.006 (0.008)	0.008 (0.013)	0.002 (0.013)	0.013 (0.010)	-0.010 (0.014)	-0.017 (0.014)	0.018* (0.008)	-0.004 (0.012)	-0.012 (0.012)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.024	0.260	0.261	0.024	0.260	0.261	0.025	0.260	0.261
R2 Adj.	0.024	0.213	0.215	0.024	0.213	0.215	0.024	0.213	0.215

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from UCDP. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

In Tables F.6 and F.8 we find that these effects are confirmed (for all types of FDI) when studying, respectively, the number of attacks initiated by government forces and political militias. Instead, we do not find strong evidence that FDI increases number of attacks initiated by rebel forces (Table F.7).

Table F.5: The effect of FDI on number of attacks against civilians (ACLED DATA), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.209*** (0.035)	0.145*** (0.028)	0.113*** (0.028)	0.252*** (0.030)	0.095*** (0.019)	0.064*** (0.019)	0.309*** (0.030)	0.105*** (0.019)	0.073*** (0.018)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.101	0.445	0.451	0.115	0.445	0.451	0.124	0.445	0.451
R2 Adj.	0.100	0.410	0.417	0.114	0.410	0.417	0.124	0.410	0.417

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from ACLED. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

Table F.6: The effect of FDI on number of attacks against civilians staged by government forces (ACLED data), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.109*** (0.021)	0.080*** (0.023)	0.071** (0.023)	0.122*** (0.018)	0.043** (0.013)	0.033* (0.013)	0.154*** (0.019)	0.054*** (0.013)	0.045*** (0.013)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.051	0.355	0.358	0.064	0.354	0.357	0.075	0.355	0.358
R2 Adj.	0.051	0.315	0.317	0.063	0.314	0.317	0.074	0.315	0.317

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from ACLED. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

Table F.7: The effect of FDI on number of attacks against civilians staged by rebel forces (ACLED data), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.004 (0.005)	0.000 (0.010)	-0.005 (0.010)	0.017+ (0.010)	-0.013 (0.011)	-0.019+ (0.011)	0.016* (0.008)	-0.009 (0.012)	-0.015 (0.012)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.028	0.275	0.276	0.029	0.275	0.277	0.029	0.275	0.277
R2 Adj.	0.028	0.230	0.231	0.028	0.230	0.231	0.028	0.230	0.231

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from ACLED. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.

Table F.8: The effect of FDI on number of attacks against civilians staged by political militias (ACLED data), panel of PRIO-GRID cells

	Extractive FDI			Industry FDI			Services FDI		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
FDI project	0.143*** (0.026)	0.098*** (0.025)	0.082** (0.025)	0.173*** (0.024)	0.071*** (0.016)	0.055*** (0.016)	0.211*** (0.023)	0.087*** (0.015)	0.071*** (0.015)
Country FE	Yes			Yes			Yes		
Cell FE		Yes	Yes		Yes	Yes		Yes	Yes
Year FE	Yes		Yes	Yes		Yes	Yes		Yes
Mean of outcome	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
Num.Obs.	181407	181407	181407	181407	181407	181407	181407	181407	181407
R2	0.089	0.420	0.424	0.102	0.420	0.424	0.110	0.421	0.424
R2 Adj.	0.089	0.384	0.388	0.101	0.384	0.387	0.109	0.385	0.388

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Notes:

Models are linear regressions estimated using OLS. Fixed effects are fitted by de-meaning the dependent variable. Dependent variable is a logged version of the count + 1. Dependent variable data are drawn from ACLED. Unit of analysis is a 50km x 50km PRIO-GRID cell observed in a given year. Standard errors are clustered at the cell level.