Supporting Information

How Does Armed Conflict Shape Investment? Evidence from the Mining Sector

Following text to be published online.

Contents

A. Systematic Review

Table A.1: Studies in Systematic Review

Author(s) & Year	Effect	Region*	Years	Unit of Analysis	Unit FE?§	Time FE?**	IV?‖
Koechlin (1992)	−	G (23)	1966-1985	country-2 year			
Perotti (1994)	−	G (26)	1960-1985	country			
Alesina and Perotti (1996)	−	G (71)	1960-1985	country			
Resnick (2001)	−	G (19)	1971-1993	country-year			
Globerman and Shapiro (2002)	−	G (144)	1995-1997	country			
Stasavage (2002)	−	G (74)	1971-1994	country-year	✓		
Sun, Tong and Yu (2002)	−	China (1)	1986-1998	province-year	✓		
Abadie and Gardeazabal (2003)	−	Spain (1)	1998-2000	firm-trading sessions†			
Fielding (2003*a*)	−	N. Ireland (1)	1960-1995	sector-year⤸	✓		
Fielding (2003*b*)	−	Israel (1)	1988-1998	firm			
Asiedu (2006)	−	SSA (21)	1984-2000	country-year	✓		
Aysan et al. (2007)	−	MENA (33)	1970-2002	country-year			✓
Busse and Hefeker (2007)	−	G (83)	1984-2003	country-4 year‡	✓		
Daude and Stein (2007)	−	G (152)	1982-2002	country-year	✓		
Gani (2007)	−	G (17)	1996-2002	country-year	✓		
Malefane (2007)	−	Lesotho (1)	1973-2004	year			
Naudé and Krugell (2007)	−	Africa (43)	1970-1990	country-5 year	✓	✓	
Alfaro et al. (2008)⊥	−	G (34)	1984-1997	country-year			✓
Suliman and Mollick (2009)	−	SSA (29)	1980-2003	country-year	✓		
Bussmann (2010)	−	G (154)	1980-2000	country-year	✓		✓
Ramasamy and Yeung (2010)	−	G (23)	1980-2003	country-year	✓		
Baek and Qian (2011)	−	G (116)	1984-2003	country-year	✓		
Daniele and Marani (2011)	−	Italy (1)	2002-2006	province-year			
Mengistu and Adhikary (2011)	−	Asia (15)	1996-2007	country-year	✓		
Oh and Oetzel (2011)	−	G (101)	2001-2006	firm-country-year		✓	
Morrissey et al. (2012)	−	G (46)	1996-2009	country-year			
Powers and Choi (2012)	−	G (123)	1980-2008	country-year	✓		
Ramasamy et al. (2012)	−	G (59)	2006-2008	country-year			
Solomon and Ruiz (2012)	−	G (28)	1985-2004	country-year	✓		
Al-Khouri and Khalik (2013)	−	MENA (16)	1984-2011	country-year	✓		
Bandyopadhyay et al. (2013)	−	G (78)	1984-2008	country-year	✓	✓	
Hayakawa et al. (2013)	−	G (89)	1985-2007	country-3 year	✓	✓	
Singh (2013)	−	India (1)	1981-1990	district-year	✓	✓	
Burger et al. (2015)⊥	−	MENA (17)	2003-2012	country-year; country-quarter	✓		
Ezeoha and Ugwu (2015)	−	Africa (41)	1997-2012	country-year			✓
Mijiyawa (2015)	−	Africa (53)	1970-2009	country-5 year	✓	✓	
Lee (2016)	−	G (50)	1980-2006	country-year	✓	✓	
Lee (2017)	−	G (114)	1987-2006	country-year	✓		
Brown and Hibbert (2017)	−	G (65)	1997-2012	country-year	✓		
Cabral et al. (2019)	−	Mexico (1)	2005-2015	state-quarter	✓		

Studies in Systematic Review (Continued)

Author(s) & Year	Effect	Region*	Years	Unit of Analysis	Unit FE?§	Time FE?**	IV?‖
Brunetti and Weder (1998)	−/∼	G (60)	1974-1989	country			
Tuman and Emmert (1999)	−/∼	LAC (12)	1979-1992	country-year			
Bohn and Deacon (2000)	−/∼	G (125)	1955-1988	country-year			
Enders et al. (2006)	−/∼	G (69)	1989-1999	country-quarter	✓		
Li, Murshed and Tanna (2017)∓	−/∼	G (128)	2003-2012	country-sector-year	✓		
Carter et al. (2018)	−/∼	G (40)	1980-2010	country-year		✓	
Tuman and Emmert (2004)	−/+	LAC (15)	1979-1996	country-year			
Li (2006)⊥	−/∼/+	G (129)	1976-1996	country-year			
Wheeler and Mody (1992)⊥	∼	G (42)	1982-1988	country-year		✓	
Liu et al. (1997)	∼	China (1)	1983-1994	country-year	✓		
Feng (2001)	∼	G (40)	1978-1988	country			
Asiedu (2002)	∼	G (71)	1988-1997	country			
Globerman and Shapiro (2003)	∼	G (143)	1995-1997	country-year			
Bevan and Estrin (2004)	∼	Europe (11)	1994-2000	dyad-year			
Le (2004)	∼	G (25)	1975-1995	country-year	✓		
Biglaiser and DeRouen Jr. (2007)⊥	∼	G (126)	1966-2002	country-year	✓		
Kinda (2010)	∼	G (77)	2000-2006	country-sector-year			
Li and Vashchilko (2010)	∼	G (58)	1980-2000	dyad-year	✓		
Cleeve (2012)	∼	SSA (40)	1988-2008	country-year	✓		
Jadhav (2012)	∼	BRICS (5)	2000-2009	country-year			
Kolstad and Wiig (2012)	∼	G (142)	2003-2006	country			
Vadlamannati (2012)	∼	G (101)	1997-2007	country-year		✓	✓
Ashby and Ramos (2013)	∼	Mexico (1)	2004-2010	country-state-sector-year		✓	
Sissani and Belkacem (2014)	∼	Algeria (1)	1990-2012	year			
Kariuki (2015)	∼	Africa (35)	1984-2010	country-year	✓	✓	
Okafor (2015)	∼	SSA (23)	1996-2010	country-year			
Kim (2016)	∼	G (95)	1980-2000	country-year			
Shahzad et al. (2016)	∼	Pakistan (1)	1988-2010	quarter			
Williams (2017)	∼	G (68)	1975-2005	country-5 year			
Campos and Nugent (2003)	+	G (94)	1960-1985	country-5 year			✓
Biglaiser and DeRouen Jr. (2006)⊥	+	LAC (15)	1980-1996	country-year			✓
Guidolin and La Ferrara (2007)	+	Angola (1)	1998-2002	firm-day	✓		
Asiedu and Lien (2011)⊥	+	G (86)	1982-2007	country-4 year	✓		✓
Jadhav and Katti (2012)	+	BRICS (5)	2001-2010	country-year	✓		
Aziz and Khalid (2017)	+	G (60)	1990-2013	country-year	✓		

* Regional acronyms include: G for global; LAC for Latin America & Caribbean; SSA for sub-Saharan Africa; MENA for Middle East and North Africa; and BRICS for Brazil, Russia, India, China and South Africa. The number of countries is included in parentheses.
− Finds a statistically significant negative relationship between conflict and investment.
∼ Finds no statistically significant relationship between conflict and investment.
+ Finds a statistically significant positive relationship between conflict and investment.
§ Paper includes a unit fixed effects model as the main analysis.
** Paper includes a time fixed effects model as the main analysis.
‖ Paper uses an instrumental variables model as the main analysis.
† "Trading sessions" represents total returns from stock market trading periods for Basque and Non-Basque firm portfolios.
≀ "Sector-year": annual investment by sector in the sample period. In Fielding (2003*a*), sectors include: (1) food, drink and tobacco; (2) engineering; (3) transport equipment; (4) textiles; and (5) other. In Burger, Ianchovichina and Rijkers (2015), sectors include: (1) resources and energy; (2) non-resource manufacturing; (3) tradable services; and (4) non-tradables.
‡ 4- or 5-year reflects temporal resolution of the panel.
⊥ Found through independent search, not systematic review process.
∓ Mixed findings come from separate models with DVs based on FDI in different sectors.

B. Descriptives

B.1 Exploration Investment and Mining Projects

Figure A.1: Relationship between Exploration Investment and Net FDI Inflows

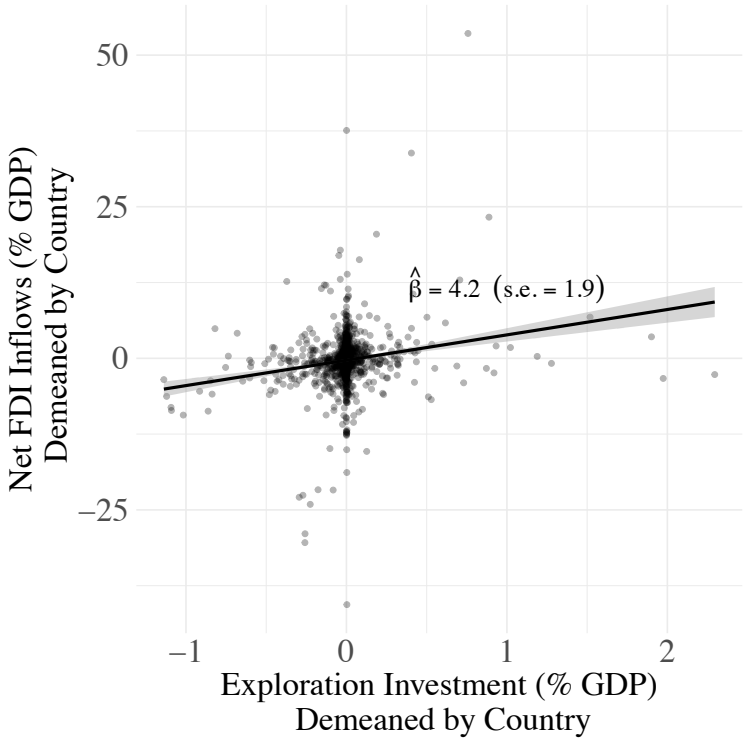


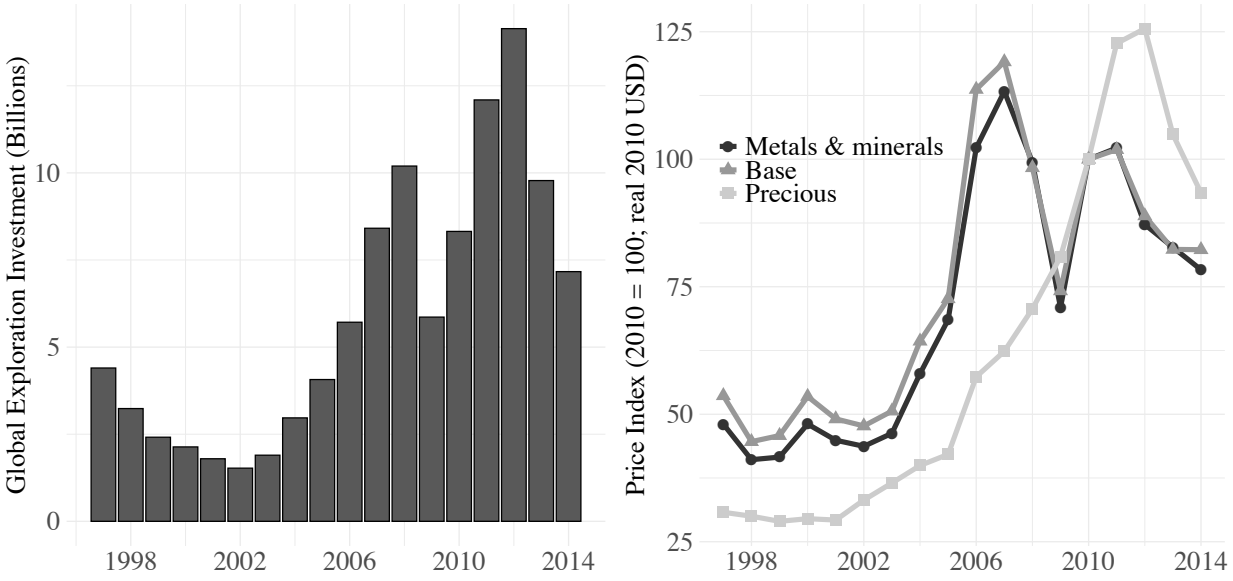
Figure A.1 displays the bivariate correlation between exploration investment and net FDI inflows. We normalize both exploration investment and net foreign direct investment (FDI) by GDP. We then demean both series (i.e., residualizing with country fixed effects) and plot the correlation. The OLS coefficient from regressing net FDI on exploration investment with country fixed effects is 5.28 and statistically significant, with standard errors clustered on country.

Table A.2: Mines and Investment by Region

Continent	Region	# Mines	Proportion of Mines			Investment (USD)	Top countries by investment
			Gold	Copper	Iron ore		
Africa	Central	573	17	26	13	3.0B	D.R. Congo (62%); Angola (27%)
	East	1,145	41	18	3	3.3B	Tanzania (37%); Zambia (29%)
	North	188	35	11	7	0.3B	Morocco (39%); Egypt (30%)
	Southern	1,442	18	6	4	4.4B	South Africa (61%); Namibia (20%)
	West	1,505	71	1	8	5.3B	Ghana (25%); Burkina Faso (20%)
	Total	4,853	40	10	6	16.3B	South Africa (16%); D.R. Congo (11%)
Americas	Central	1,690	54	14	3	6.8B	Mexico (86%); Guatemala (4%)
	North	12,969	48	12	2	27.0B	Canada (68%); USA (31%)
	South	3,985	45	23	8	19.7B	Peru (27%); Chile (26%)
	Total	18,644	48	15	3	53.4B	Canada (34%); USA (16%)
Asia	Central	613	47	13	3	1.5B	Kazakhstan (57%); Kyrgyzstan (22%)
	East	2,643	43	16	12	4.8B	China (68%); Mongolia (29%)
	South	459	9	17	35	0.7B	India (52%); Iran (23%)
	Southeast	1,129	47	17	8	4.1B	Indonesia (54%); Philippines (31%)
	Western	410	49	25	6	1.0B	Turkey (56%); Saudi Arabia (22%)
	Total	5,254	42	17	12	12.2B	China (27%); Indonesia (18%)
Oceania	*Total*	5,111	39	15	12	17.0B	Australia (87%); Papua New Guinea (9%)
Europe	Eastern	1,156	38	13	16	4.7B	Russia (89%); Poland (4%)
	Western	873	28	16	6	2.6B	Finland (26%); Sweden (25%)
	Total	2,029	34	14	12	7.3B	Russia (57%); Finland (9%)
Total	*Total*	35,891	44	14	7	106.1B	Canada (17%); Australia (14%)

Table A.2 displays data on mining projects from the SNL Metals & Mining Group on the total number of mines by region (column 3); the proportion of mines in each region that extract gold (column 4), copper (column 5), and iron ore (column 6) which are the largest three commodities in terms of the number of mines globally; the total amount of investment in U.S. dollars in each region from 1997 to 2014 (column 7); and the top two host countries of investments in each region from 1997 to 2014 (column 8) along with the proportion of regional investment made in that country.

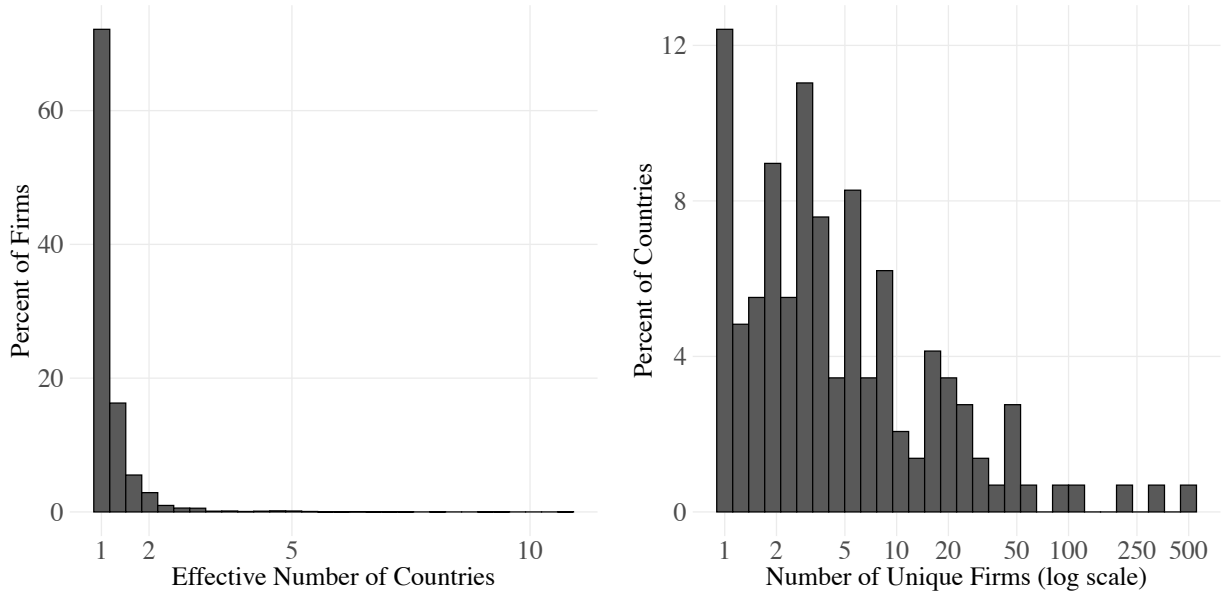
Figure A.2: Trends in Exploration Investment and Mineral Prices



(a) Total Investment, 1997-2014 **(b)** Mineral Prices (indexed), 1997-2014

Figure A.2(a): we plot data on total levels of investment in exploration for minerals globally from SNL Metals & Mining Group. **Figure A.2(b)**: we plot annual price indices from the World Bank Commodity "Pink Sheet" for (a) metals and minerals; (b) base metals ("base"), excluding iron ore; and (c) precious metals ("precious").

Figure A.3: Firms Concentrate Investment in Small Number of Countries



(a) Effective Countries Invested by Firm

(b) Firms Invested by Country

Figure A.3(a): for each firm, we compute the effective number of countries that it invests in ($1/\sum_c s_{ic}^2$) and average this measure across years. The figure plots the distribution of this measure. **Figure A.3(b)**: for each country, we determine the unique number of firms making positive investments and average this number across years. (We exclude country-years with no investment.) The figure plots the distribution of this measure.

Figure A.4: SNL Mining Projects

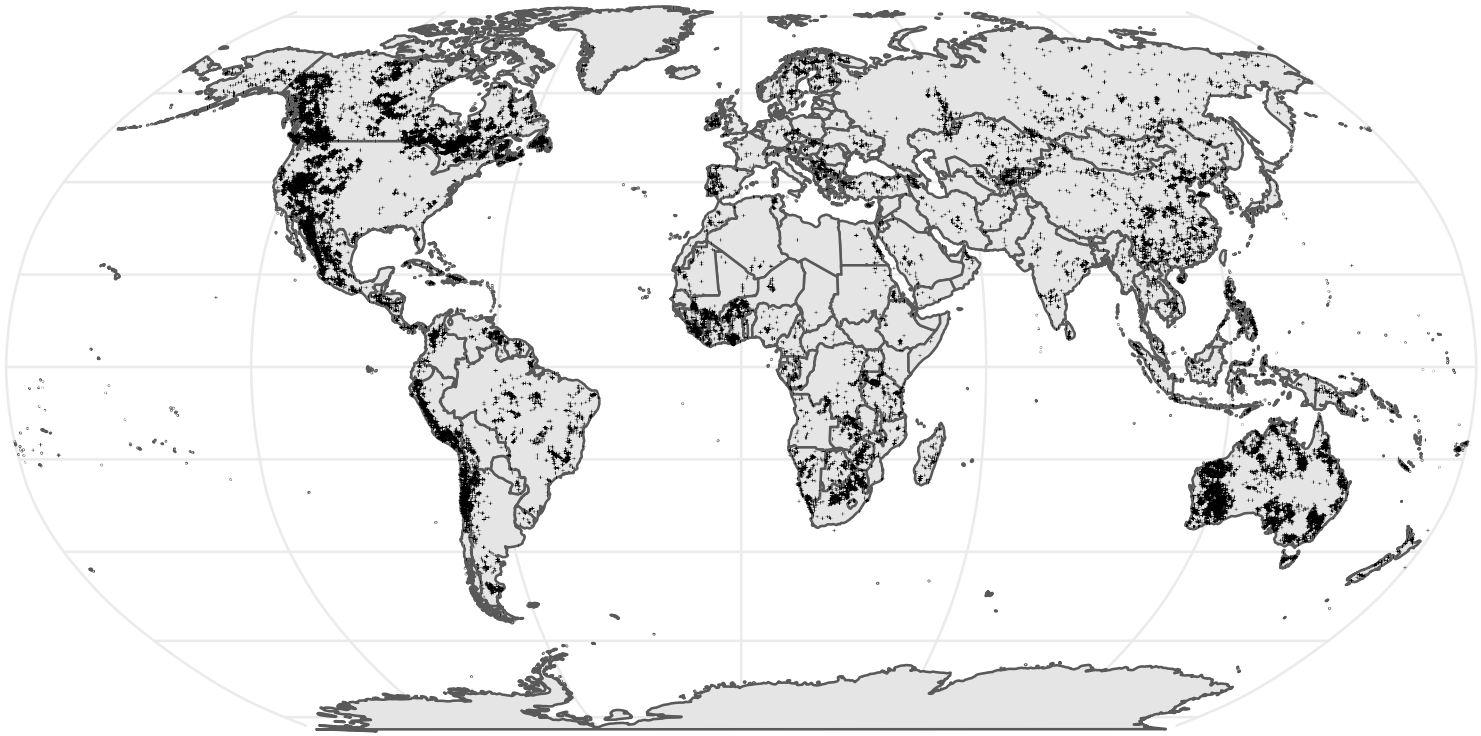


Figure A.4 maps the locations of mining projects in the SNL data.

B.2 Armed Conflict

Figure A.5: UCDP Conflict Events

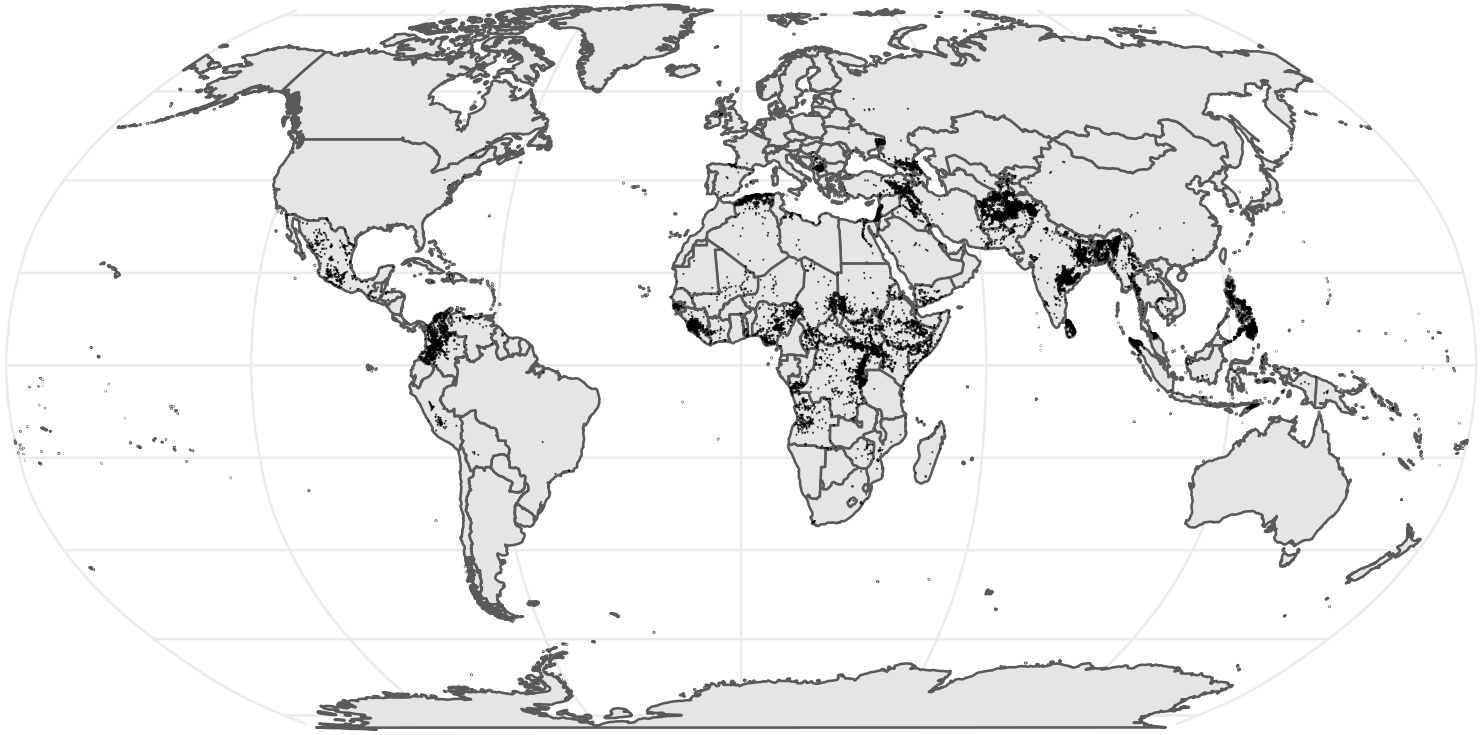


Figure A.5 maps the sites of conflict events in the UCDP data from 1997 to 2014. We only retain events geocoded based on the exact location or within 25 km of a known point.

Table A.3: Conflict by Region

Continent	Region	# Events	% Fatal	# Deaths	Event Type		
					% State	% Nonstate	% One-sided
Africa	Central	4,378	87	99,630	36	9	56
	East	7,962	79	162,471	64	16	21
	North	5,541	92	78,492	71	9	21
	Southern	85	49	236	14	69	16
	West	3,920	88	58,669	36	22	41
	Total	21,886	86	399,498	55	14	31
Americas	Central	1,813	82	16,860	1	95	4
	North	25	100	3,050	8	88	4
	South	4,388	93	21,436	66	7	27
	Total	6,226	90	41,346	47	33	20
Asia	Central	152	88	1,537	84	16	0
	East	29	72	292	38	10	52
	South	42,914	93	224,902	82	3	16
	Southeast	8,250	94	30,808	58	3	39
	Western	9,814	93	74,891	81	3	16
	Total	61,159	93	332,430	78	3	19
Oceania	*Total*	38	97	257	55	42	3
Europe	Eastern	3,401	80	23,459	93	0	7
	Western	139	78	449	86	0	14
	Total	3,540	79	23,908	93	0	7
Total		94,348	90	807,749	72	7	21

Table A.3 presents an overview of the UCDP conflict data by region. For each region, we provide the total number of conflict events, the percentage of those events that were fatal, the total number of deaths, and the percentage of events that were state-based, non-state-based, and one-sided.

Table A.4: Number of Firm-Country-Year Observations and Investment by Exposure to Conflict

	0-5	5-20	20-30	30-40	40-50	50-60	Beyond 60
Num. firm-country-years	18	243	143	178	176	156	2,316,088
Investment (million USD)	79	734	290	685	781	743	32,490

Table A.4 reports the total number of firm-country-years that experience conflict 0–5 km, 5–20 km, 20–30 km, 30–40 km, 40–50 km, 50–60 km, and more than 60 km from a mine. We also report the total exploration investment (in million USD) for firms with projects within these distance thresholds.

C. Defining Exposure to Conflict

D^k_{ict} is an indicator for whether a conflict occurred in bandwidth k for any of firm i's projects in country c and year t. Figure A.6 illustrates how the k^{th} bandwidth is constructed for the estimates displayed in Figure 2.

Figure A.6: How Bandwidths are Constructed around Mining Projects

Figure A.6(a) illustrates how we construct the bandwidths for the estimates in Figure 2(a). **Figure A.6(b)** illustrates how we construct the bandwidths for the estimates in Figure 2(b). In both cases, the centroid of the circle represents a firm's mining project.

C.1 Path Distance between Conflicts and Mining Projects

We use Euclidean distance to construct the bandwidths in Figure A.6. To provide a better sense for the space and time that separates armed conflict events and mining projects, we also calculate the (weighted) path distance (i.e., the distance traveled along roads) between armed conflict events and mining projects that fall in the 5–20 kilometer buffer zone. Mining projects exposed to armed conflict are often located in rugged and rural parts of middle- and low-income countries, where infrastructure is limited. As such, the Euclidean distance understates how long one would have to travel to move between a conflict site and a mining project.

We use the gRoads data, which maps known roads across the world between 1980–2010. (We prefer this more historic data as contemporary maps may include roads that did not exist during our study period.) Let l_c be the location (i.e., coordinates) of a conflict and l_m be the location of a mine. Moreover, let v_c be the vertex (i.e., point) on any road network that is closest to l_c in terms of Euclidean distance; v_m, the vertex on any road network that is closest to l_m.

We first measure $d(l_c, v_c)$ and $d(l_m, v_m)$, where $d(\cdot)$ computes the Euclidean distance between two points. We then measure the shortest path distance (i.e., the shortest route along roads) between v_c and v_m: $pd(v_c, v_m)$. For 26 (of 594) conflict-mine pairs, we cannot compute pd because the roads closest to the conflict do not even connect to the roads closest to the mine. The (unweighted) path distance is from l_c to l_m is then: $d(l_m, v_m) + pd(v_m, v_c) + d(v_c, l_c)$.

We know that road quality affects travel costs. We use the dodgr package in R to assigns weights to different types of roads. These are best thought of as the relative costs of traveling 1 km along different types of roads. The package assigns travel along a motorway (e.g., freeway) a base weight of 1. Travel along a service road, for example, receives a weight of 2.5; unclassified roads receive a weight of 1.67. After weighting the segments of our road networks, we re-compute the shortest weighted path distance: $pd'(v_m, v_c)$. We further weight $d(l_c, v_c)$ and $d(l_m, v_m)$ by 2.5, which is equivalent to assuming that travel from the mine or conflict to the road network follows a perfectly straight service road. (This likely understates the cost of travel from the mine or conflict to the road network). The weighted path distance is then: $d(l_m, v_m) * 2.5 + pd'(v_m, v_c) + d(v_c, l_c) * 2.5$.

The average Euclidean distance between conflicts and mines in the 5–20 km buffer zone is 13.7 km, the average unweighted path distance is 39.2 km, and the average weighted path distance is 71.2 km. (The 26 mine-conflict pairs for which we cannot compute the path distance are dropped, which likely attenuates these averages.) Conflict sites and mining projects are separated by a "travel distance" that is equivalent to getting on a clear freeway and driving just over 71 km, which is five times the average crow-flies distance. These distance measure all positively correlated, the correlation between the Euclidean and unweighted path distance is 0.3; the correlation between the unweighted and weighted path distance measures exceeds 0.99.

D. Firm-Country-Year Results

Table A.5: Drop Observations with Excluded (Imprecisely Geocoded) Conflicts

	Dependent variable:			
	Log(Exploration Investment + 1)			
	(1)	(2)	(3)	(4)
0-5 km	-2.43^{*}	-2.80^{**}	-2.39^{*}	-2.75^{**}
	(1.26)	(1.24)	(1.25)	(1.24)
5-20 km	1.54^{***}	1.56^{***}		
	(0.45)	(0.47)		
20-30 km	1.16^{**}	1.18^{**}		
	(0.49)	(0.52)		
30-40 km	2.87^{***}	2.93^{***}		
	(0.43)	(0.46)		
40-50 km	1.65^{***}	1.36^{***}		
	(0.43)	(0.45)		
50-60 km	0.83^{*}	0.61		
	(0.46)	(0.50)		
5-60 km			1.64^{***}	1.56^{***}
			(0.24)	(0.26)
Firm-Country FE	768,888	768,888	768,888	768,888
Firm-Year FE	42,544	42,544	42,544	42,544
Observations	7,530,288	7,529,117	7,530,288	7,529,117

Table A.5 reports results from OLS models estimated using Equation 2. We cluster standard errors at the firm-year level, shown in parentheses. The dependent variable is exploration investment (logged plus one). The independent variable in models (1) and (2) codes whether a fatal conflict occurred in a given year (t) or in the year prior (t-1) between 0–5 km, 5–20 km, 20–30 km, 30–40 km, 40–50 km, or 50–60 km from a mining project (see Figure A.6). In models (3) and (4), we employ only two bandwidths: 0–5 km or 5–60 km. In Models (2) and (3), we drop all firm-country-years where a firm operated in a project in an ADM2 (and year) with an event that can only be geocoded to the second-order administrative district (e.g., counties in the US). Significance: *p<0.1; **p<0.05; ***p<0.01.

Table A.6: Effect of Armed Conflict on Investment at the Firm-Country Level with Firm-Country and Year Fixed Effects

	Dependent variable:	
	Log(Exploration Investment + 1)	
	(1)	(2)
0-5 km	-2.49^{*}	-2.45^{*}
	(1.32)	(1.32)
5-20 km	1.54^{***}	
	(0.48)	
20-30 km	1.17^{**}	
	(0.52)	
30-40 km	2.88^{***}	
	(0.45)	
40-50 km	1.67^{***}	
	(0.46)	
50-60 km	0.82^{*}	
	(0.49)	
5-60 km		1.65^{***}
		(0.26)
Beyond 60 km	-0.002^{*}	-0.002^{*}
	(0.001)	(0.001)
Firm-Country FE	768,888	768,888
Year FE	18	18
Observations	7,530,288	7,530,288

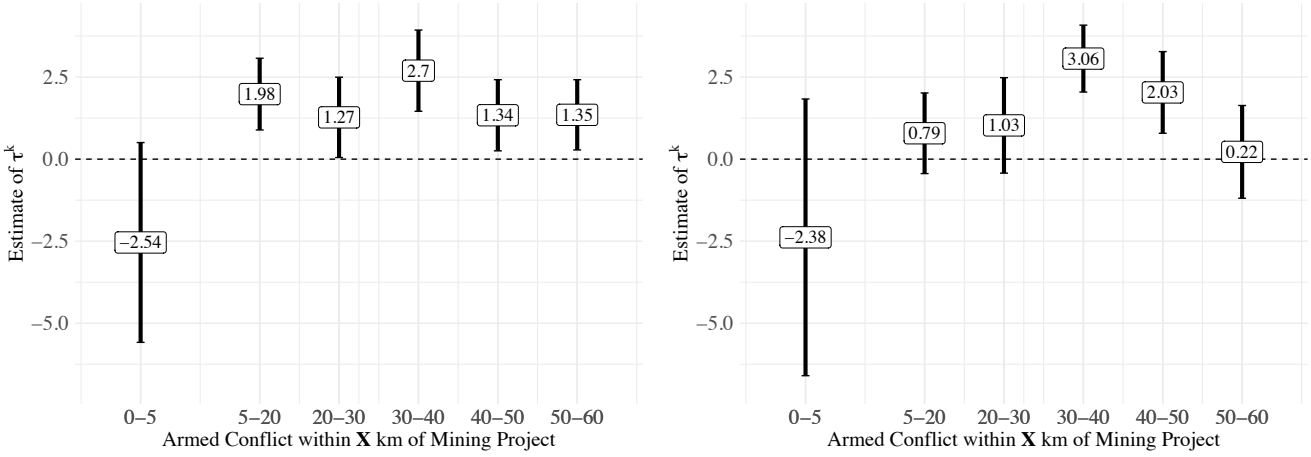
Table A.6 reports results from OLS models estimated using a modified version of Equation 2, which differs from Equation 2 in that year fixed effects are estimated instead of firm-year fixed effects. We cluster standard errors at the firm-year level, shown in parentheses. The dependent variable is exploration investment (logged plus one). The independent variable in model (1) codes whether a fatal conflict occurred in a given year (t) or in the year prior (t-1) between 0–5 km, 5–20 km, 20–30 km, 30–40 km, 40–50 km, 50–60 km, or beyond 60 km from a mining project (see Figure A.6). In model (2), we employ two bandwidths: 0–5 km, 5–60 km, or beyond 60 km. Significance: *p<0.1; **p<0.05; ***p<0.01.

Table A.7: Effects of Conflict Exposure on Investment by Intensity of Conflict

	Dependent variable:			
	Log(Exploration Investment + 1)			
	(1)	(2)	(3)	(4)
0-5 km	-2.39^{*}	-2.51	-2.43^{*}	-2.50
	(1.25)	(1.55)	(1.25)	(1.55)
0-5 km x Conflict intensity		0.31		0.18
		(2.65)		(2.64)
5-60 km	1.64^{***}	1.76^{***}	1.63^{***}	1.78^{***}
	(0.24)	(0.30)	(0.24)	(0.30)
5-60 km x Conflict intensity		-0.27		-0.34
		(0.38)		(0.38)
Beyond 60 km			-0.002^{*}	0.0001
			(0.001)	(0.001)
Beyond 60 x Conflict intensity				-0.02^{***}
				(0.002)
Firm-Country FE	768,888	768,888	768,888	768,888
Firm-Year FE	42,544	42,544	42,544	42,544
Country-Year FE	3,186	3,186	0	0
Observations	7,530,288	7,530,288	7,530,288	7,530,288

Table A.7 reports results from OLS models estimated using Equation 2. We cluster standard errors at the firm-year level, shown in parentheses. The dependent variable is exploration investment (logged plus one). The independent variable codes whether a conflict occurred in a given year (t) or in the year prior (t-1) between 0–5 km or 5–60 km. Models (1) and (3) replicate our results in Table 3. In models (2) and (4), we fully interact conflict with the intensity of the conflict in the country-year. High intensity is defined as more than 1,000 fatalities in a country-year using our GED conflict outcome data. Models (1) and (2) include country-year fixed effects, which absorbs the "Beyond 60 km" term included in models (3) and (4) (see Figure A.7). Significance: *p<0.1; **p<0.05; ***p<0.01.

Figure A.7: Effects of Conflict Exposure on Investment by Intensity of Conflict



(a) Low Intensity **(b)** High Intensity

Figure A.7 displays effects from Equation 2 fully interacted with the intensity of the conflict in the country-year. High intensity is defined as more than 1,000 fatalities in a country-year using our GED conflict outcome data (see Table A.7).

Figure A.8: Coefficient Stability when Excluding Multi-Country Firms

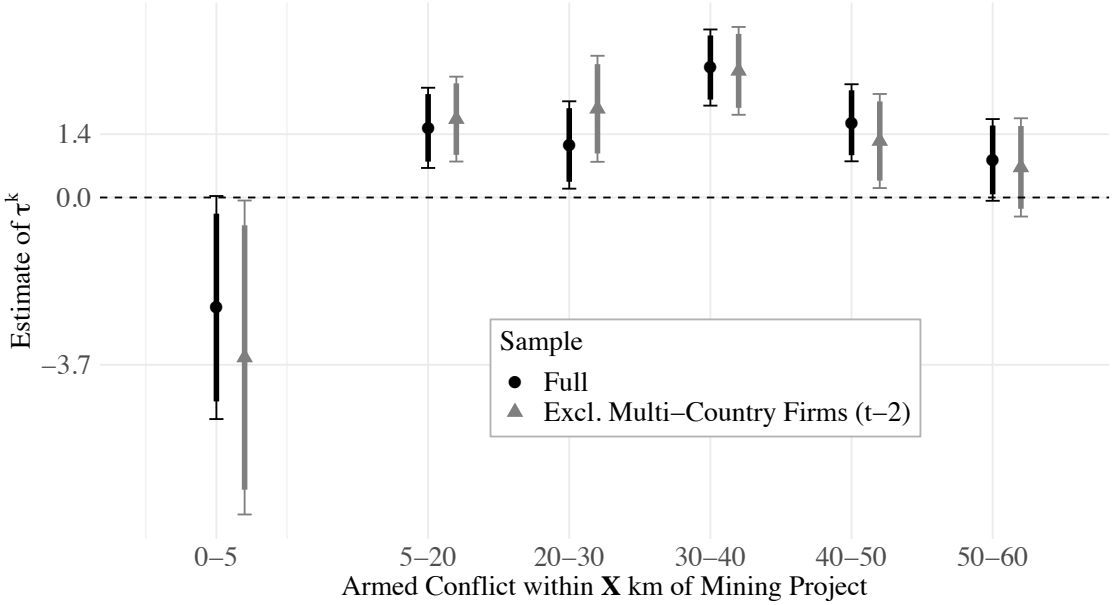


Figure A.8 displays effects from Equation 4, excluding firms that invest in multiple countries. In one specification, we include the full sample. In another specification, we drop firms with investments in multiple countries in $t-2$.

Figure A.9: Coefficient Stability when Excluding Multi-Project Firm-Countries

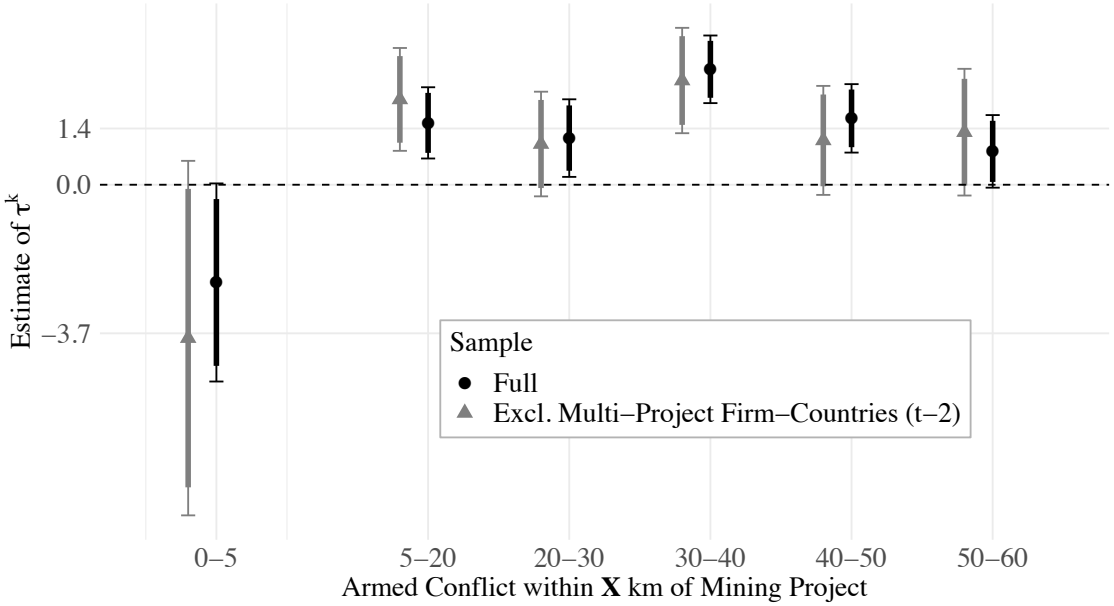


Figure A.9 displays effects from Equation 2, excluding firms that invest in multiple projects in the same country. In one specification, we include the full sample. In another specification, we drop observations when the firm had multiple projects in that country in $t-2$.

Table A.8: Dynamic Panel Estimates of Effects of Conflict Exposure in Buffer Zone on Investment

	Dependent variable:
	Log(Exploration Investment + 1)
0-5 km, lead 3	-1.49^{*}
	(0.86)
0-5 km, lead 2	-5.10^{*}
	(3.06)
0-5 km, lead 1	-0.03
	(0.84)
0-5 km, contemporaneous	-2.82
	(2.02)
0-5 km, lag 1	-2.69
	(2.07)
0-5 km, lag 2	-3.42
	(2.36)
0-5 km, lag 3	0.89
	(1.34)
5-60 km, lead 3	-0.37
	(0.40)
5-60 km, lead 2	-0.07
	(0.39)
5-60 km, lead 1	0.61
	(0.40)
5-60 km, contemporaneous	1.23^{***}
	(0.39)
5-60 km, lag 1	1.44^{***}
	(0.42)
5-60 km, lag 2	0.95^{**}
	(0.39)
5-60 km, lag 3	1.47^{***}
	(0.41)
Firm-Country FE	526,221
Firm-Year FE	19,214
Country-Year FE	2,124
Observations	3,400,878

Table A.8 reports results from OLS models estimated using a version of Equation 2 modified to include leads and lags. We cluster standard errors at the firm-year level, shown in parentheses. The dependent variable is exploration investment (logged plus one). The independent variable codes whether conflict occurred in a given year, in one of the three years prior, or in one of the three years after within a given distance of a firm's mining projects. We report the effects between 0–5 km and 5–60 km (see Figure A.10). Significance: *p<0.1; **p<0.05; ***p<0.01.

Figure A.10: Dynamic Panel: Effect of Exposure to Armed Conflict in Buffer Zone on Investment

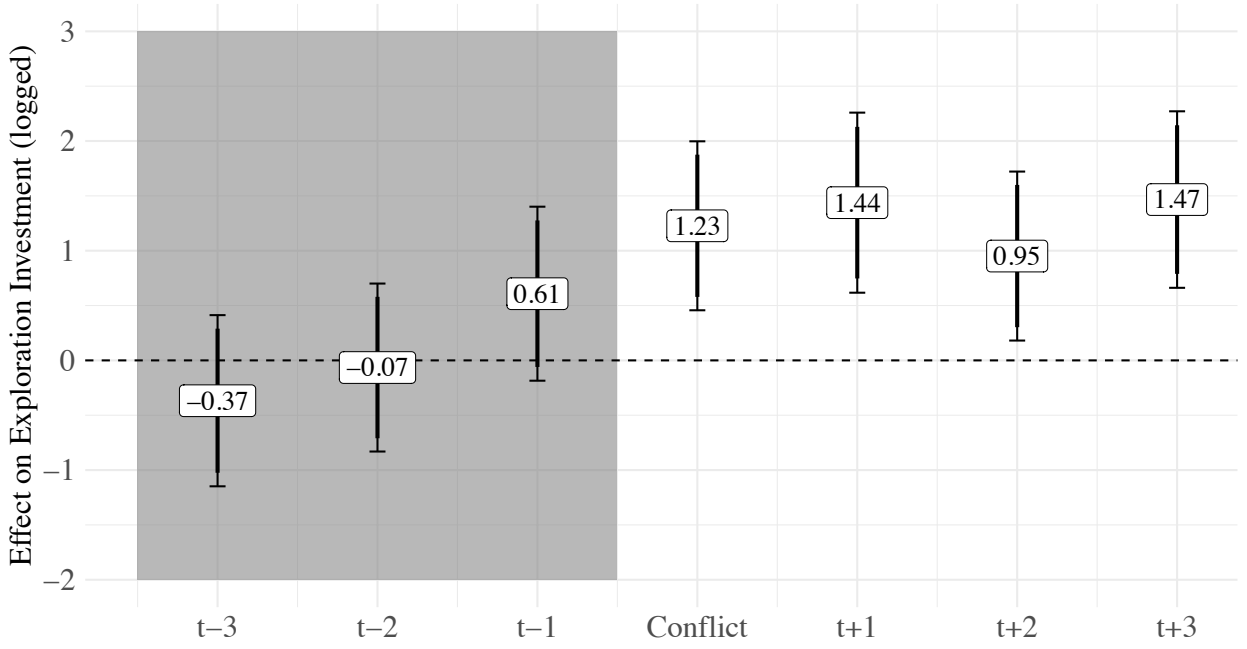


Figure A.10 displays dynamic panel estimates for the effects of exposure to conflict in the buffer zone around violence, defining the buffer zone as 5–60 km from conflict. We display contemporaneous effects and effects three years prior to and three years following conflict (see Table A.8).

E. Sector-Country-Year Results

In this section, we report on analyses of the effect of armed conflict on investment in sectors beyond mining. We construct data at the sector-country-year level using the fDi Markets (2019) dataset. The fDi Markets data records data about investment projects, including the total value and number of jobs anticipated to be created, initial year of investment, sector, owner firm, and location. We collapse the data to the sector-country-year level, calculating total investment value and number of projects.[38]

We conduct two analyses. First, we fit the following sector-country-year model:

$$y_{sct} = \omega_s + A_c + \Delta_t + \beta C_{ct} + \sum^{s} \zeta_s C_{ct} + \varepsilon_{sct} \tag{5}$$

where Y_{sct} is aggregate investment (logged) at the sector-country-year level, ω_s represents sector fixed effects, A_c represents country fixed effects, Δ_t year fixed effects, C_{ct} is an indicator for whether an armed conflict occurred in country c in year t or in the previous year $t-1$, and ζ_s is a sector-specific estimate of the effect of armed conflict (i.e., an interaction between the sector and armed conflict indicators). We cluster our standard errors on country.

In Figure A.11, we display a histogram of ζ_s, highlighting natural resource sectors. This analysis suggests that, while there is variation across sectors, the resource sectors (metals; minerals; coal, oil, and natural gas; and wood products) are not anomalous. Second, we fit the same model but combine the mining and metals sectors into a single sector. Table A.9 displays the regression coefficients for ω_s for mining and metals, β, and ζ_s for mining and metals. We, again, do not find evidence that the mining and metals sectors that we study differ significantly in their investment response to armed conflict.

[38] Given that investments in the fDi Markets data are lumpy and not presented as yearly flows, we cannot construct data comparable to our exploration investment outcome. This is an important difference — after a project has been launched, we cannot observe firms curtailing investments in response to armed conflict.

Figure A.11: Histogram of Sector-Armed Conflict Interactions

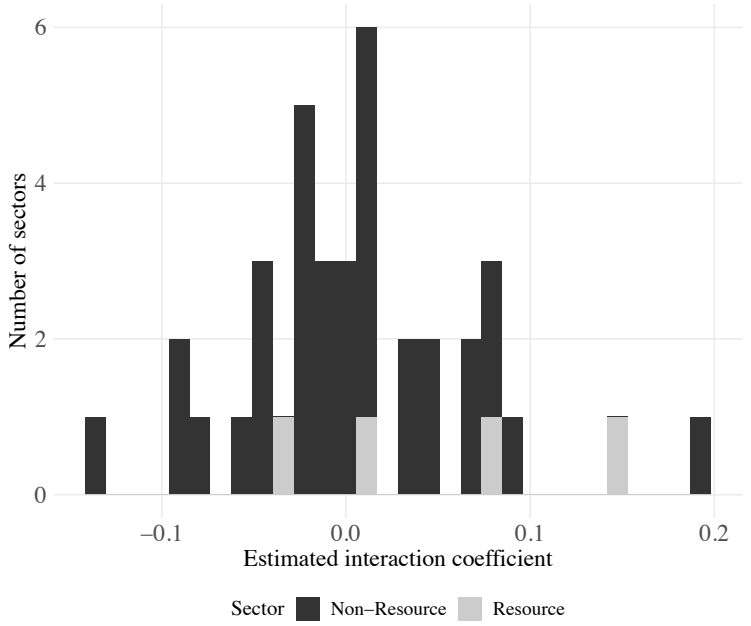


Figure A.11 displays coefficient estimates of the interaction between an armed conflict indicator and the sector of investment in a model fit on sector-country-year data. Natural resource sectors are highlighted, including metals; minerals; coal, oil, and natural gas; and wood products.

Table A.9: Differential Effects of Conflict on Aggregate Investment by Sector

	Dependent variable:		
	Log(N Investments + 1)	Log(Total Investment + 1)	Log(N Firms + 1)
	(1)	(2)	(3)
$\mathbb{1}(\text{Conflicts} > 0)$ (C_{ct})	-0.002	-0.03	-0.004
	(0.01)	(0.03)	(0.01)
Minerals sector	0.14^{***}	0.61^{***}	0.14^{***}
	(0.02)	(0.09)	(0.02)
Minerals sector $\cdot$ C_{ct}	0.04	0.16	0.04
	(0.03)	(0.12)	(0.03)
F-stat	13.4	18.28	13.88
p-value	0.00	0.00	0.00
$\overline{y_{sct}}$	0.41	1.22	0.39
Sector FE	37	37	37
Country FE	160	160	160
Year FE	12	12	12
Observations	74,880	74,880	74,880

Table A.9 reports results from OLS models estimated using Equation 5. We cluster standard errors at the country level, shown in parentheses. The three models report on three dependent variables: the number of foreign direct investments (logged plus one) in a sector-country year; the total value of those investments (logged plus one); and the number of firms making investments (logged plus one). The independent variables code whether conflict occurred in a given year or the preceding year, whether the sector is metals and minerals (i.e., reporting one of the sector fixed effects), and the interaction. The model includes sector, country, and year fixed effects. Significance: *p<0.1; **p<0.05; ***p<0.01.

F. Country-Year Results

Table A.10: Effect of Armed Conflict on the Number of Firms Investing at the Country Level

	Dependent variable:						
	Log(N Firms + 1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\mathbb{1}$(Conflicts >0)	-0.13^{**}	-0.11^{**}					
	(0.05)	(0.05)					
$\mathbb{1}$(Conflicts = 1)			-0.12^{**}				
			(0.05)				
$\mathbb{1}$(Conflicts >1)			-0.13^{**}				
			(0.06)				
$\mathbb{1}$(State-Based >0)				-0.08			-0.05
				(0.05)			(0.05)
$\mathbb{1}$(One-Sided >0)					-0.12^{**}		-0.10^{*}
					(0.06)		(0.06)
$\mathbb{1}$(Non-State >0)						-0.09	-0.08
						(0.07)	(0.07)
F-stat	5.90	4.41	3.75	2.26	4.14	1.82	1.99
p-value	0.02	0.04	0.02	0.13	0.04	0.18	0.11
$\overline{y_{ct}}$	1.26	1.54	1.26	1.26	1.26	1.26	1.26
Country-Year Sample	All	Recipients	All	All	All	All	All
Country FE	177	145	177	177	177	177	177
Year FE	18	18	18	18	18	18	18
Observations	3,186	2,610	3,186	3,186	3,186	3,186	3,186

Table A.10 reports results from OLS models estimated using Equation 4. We cluster standard errors at the country level, shown in parentheses. The dependent variable is the total number of firms (logged plus one). The main independent variable codes whether conflict occurred in a given year (t) or in the year prior (t-1). Models (2)-(7) report estimates from Equation 4 using different samples or measures of conflict. Significance: *p<0.1; **p<0.05; ***p<0.01.

Figure A.12: Dynamic Panel Estimates: Country-level Effect of Conflict on Investment

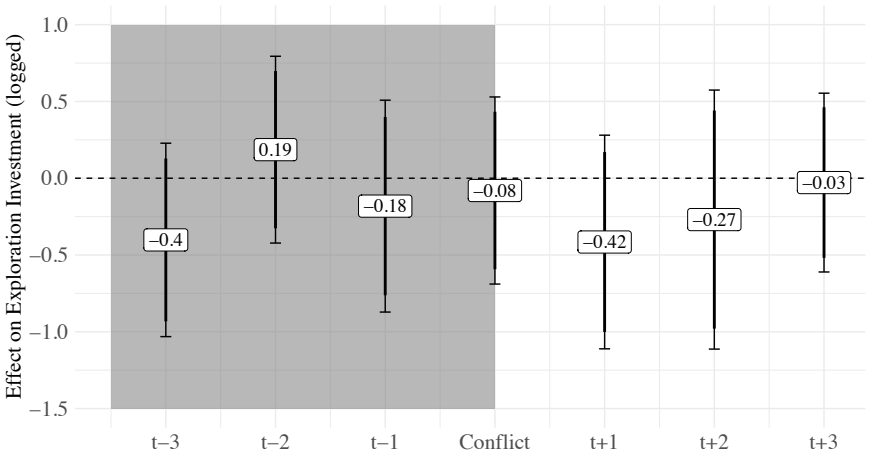


Figure A.12 displays point estimates and 95% confidence intervals (thicker bars: 90% CIs) on the leads and lags of armed conflict incidence. Equation 4 is only amended to include these leads and lags and then estimated using OLS. The independent variable codes whether conflict occurred in a given year, in one of the three years prior, or in one of the three years after within a given distance of a firm's mining projects. Standard errors are clustered on country (see Table A.11).

Table A.11: Dynamic Panel Estimates of Effect of Armed Conflict on Investment at the Country Level

	Dependent variable:
	Log(Exploration Investment + 1)
Lead 3	−0.40
	(0.32)
Lead 2	0.19
	(0.31)
Lead 1	−0.18
	(0.35)
Contemporaneous	−0.08
	(0.31)
Lag 1	−0.42
	(0.35)
Lag 2	−0.27
	(0.43)
Lag 3	−0.03
	(0.30)
F-stat	0.91
p-value	0.5
$\overline{y_{ct}}$	9.75
Country FE	177
Year FE	12
Observations	2,124

Table A.11 reports results from OLS models estimated using Equation 4. We cluster standard errors at the country level, shown in parentheses. The dependent variable is exploration investment (logged plus one). The independent variable codes whether conflict occurred in a country in a given year, in one of the three years prior, or in one of the three years after (see Figure A.12). Significance: *p<0.1; **p<0.05; ***p<0.01.

F.1 Heterogeneous Effects by Type of Firm

We have limited information on the characteristics of firms in our sample. To assess whether reputational risks explain the investment response of firms operating in conflict-affected countries, we identify two types of firms that we expect to be more concerned about their reputations. First, we code firms as mining "majors" or "juniors" based on market capitalization using data from 2014, at the end of our sample period, from `mineweb`'s list of firms which we match by hand to our firm names. While there is no consensus definition of mining majors, we code the top 100 by market capitalization as majors. Second, we code firms with investments in more than three countries as multinationals.

We separately aggregate investment to the country-year by firm type. We then fit a version of Equation 4, where we interact our conflict variable with our indicator for firm type. This allows us to assess whether the effects of armed conflict on exploration investment differ by firm type.

We present the results in Table A.12. We do not detect significant differences in how different types of firms respond to armed conflict (see models 1 and 3). While our estimates are not significant, our point estimates suggest (model 2) that major firms pull back more sharply in response to state-based conflicts (while junior firms react more strongly to one-sided and non-state conflicts). If association with a repressive state poses a larger reputational risk for major firms (as suggested in Henisz 2017), then these results are consistent with those firms acting to more aggressively limit that risk.

Table A.12: Differential Effects of Conflict on Aggregate Investment by Firm Type

	Dependent variable:			
	Log(Exploration Investment + 1)			
	Majors		Multinationals	
	(1)	(2)	(3)	(4)
$\mathbb{1}$(Conflicts > 0)	-0.54^{*}		-0.56	
	(0.32)		(0.53)	
$\mathbb{1}$(State-Based > 0)		-0.03		-0.19
		(0.44)		(0.56)
$\mathbb{1}$(One-Sided > 0)		-0.73^{**}		-1.03^{*}
		(0.30)		(0.57)
$\mathbb{1}$(Non-State > 0)		-0.61		-0.30
		(0.44)		(0.49)
Large firm $\cdot$ $\mathbb{1}$(Conflicts > 0)	0.003		-0.09	
	(0.52)		(0.51)	
Large firm $\cdot$ $\mathbb{1}$(State-Based > 0)		-0.37		-0.01
		(0.49)		(0.60)
Large firm $\cdot$ $\mathbb{1}$(One-Sided > 0)		0.50		0.29
		(0.51)		(0.67)
Large firm $\cdot$ $\mathbb{1}$(Non-State > 0)		0.56		0.16
		(0.66)		(0.64)
F-stat	0.52	8.5	1.13	5.03
p-value	1.00	0.00	0.04	0.00
$\overline{y_{ct}}$	7.5	7.5	8.06	8.06
Country FE	177	177	177	177
Year FE	18	18	18	18
Observations	6,372	6,372	6,372	6,372

Table A.12 reports the results from OLS models estimated using Equation 4, fit on identical stacked data with two different outcomes and an indicator for which outcome was used in order to test the hypothesis that effects differ between the two outcomes. In Model 1, the two outcomes are exploration investment of mining major firms (top 100 firms by market capitalization) and exploration investment of junior mining firms. In Model 3, by multinational firms (investment in > 3 countries) and non-multinational firms. Models 2 and 4 are identical except with different predictors. We cluster standard errors at the country level, shown in parentheses. The dependent variable is exploration investment (logged plus one). The main independent variable codes whether conflict occurred in a given year (t) or in the year prior (t-1), in Models 1 and 3. Models 2 and 4 report estimates from Equation 4 using alternative measures of conflict by conflict type. Significance: *p<0.1; **p<0.05; ***p<0.01.

G. Evidence on Mechanisms

G.1 Disrupted Production

Table A.13: Effect of Armed Conflict on Production at the Project-Level (Africa Only)

	Dependent variable:			
	$\mathbb{1}$(Production > 0)	Log(Production + 1)	$\mathbb{1}$(Production > 0)	Log(Production + 1)
	(1)	(2)	(3)	(4)
0-5 km	-0.19^{*}	-2.12	-0.20^{*}	-2.13
	(0.11)	(1.31)	(0.11)	(1.32)
5-60 km	-0.03	-0.05		
	(0.03)	(0.33)		
5-20 km			-0.04	-0.10
			(0.05)	(0.54)
20-30 km			-0.04	-0.09
			(0.06)	(0.67)
30-40 km			0.02	0.51
			(0.04)	(0.45)
40-50 km			-0.06	-0.41
			(0.06)	(0.79)
50-60 km			-0.01	-0.23
			(0.06)	(0.64)
F-stat	2.01	1.32	0.88	0.75
p-value	0.13	0.27	0.51	0.61
$\overline{y_{ict}}$	0.88	9.9	0.88	9.9
Project FE	605	605	605	605
Mineral FE	35	35	35	35
Year FE	23	23	23	23
Observations	7,926	7,926	7,926	7,926

Table A.13 reports results from OLS models with project, year, and mineral fixed effects. We cluster standard errors on project, shown in parentheses. The dependent variable is annual mineral production, measured as both a dummy variable for positive production and the total production (logged plus one). In models (1) and (2) the independent variable codes whether conflict occurred in the one of the three years prior (t-1, t-2, and/or t-3) within 0–5 km or 5–60 km from firm's mine. Models (3) and (4) further subdivide these geographic bandwidths (see Figure A.6). Data availability is limited to mining projects in Africa. Significance: *p<0.1; **p<0.05; ***p<0.01.

Figure A.13: Dynamic Panel: Effect of Armed Conflict within 5 km of a Mine on Production

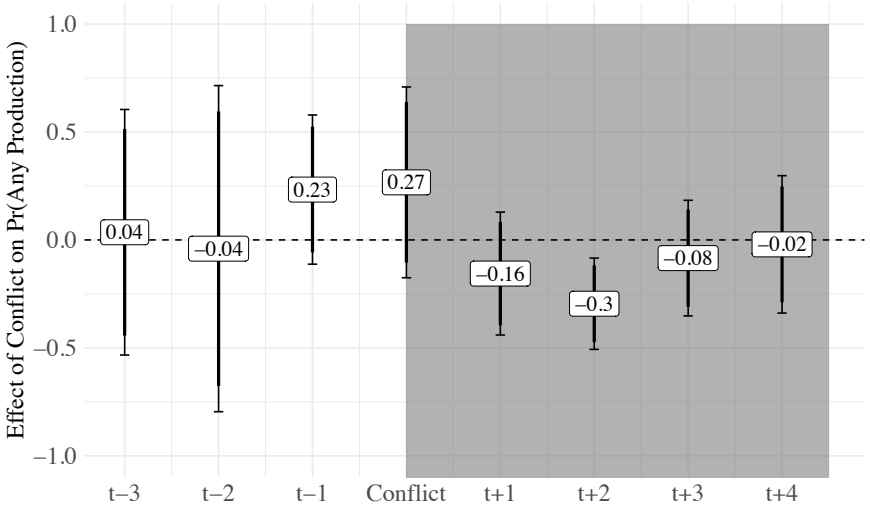


Figure A.13 reports point estimates and 95% confidence intervals (thicker bars: 90% CIs) on the leads and lags of armed conflict incidence within 5 km of a mining site. Estimates based on a linear probability model with project, year, and mineral fixed effects. We cluster standard errors on project. Data availability is limited to mining projects in Africa.

G.2 State Capacity

Figure A.14: Elasticity of Resource Production and Taxes amid Conflict

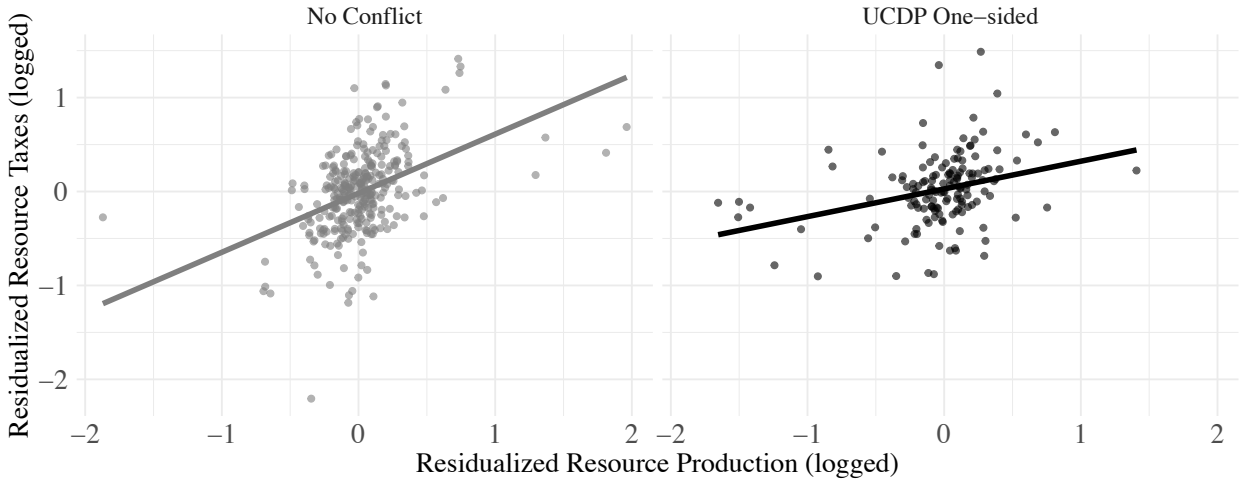


Figure A.14 displays the elasticity between natural resource production and resource tax revenues in countries without conflict (left) and with a one-sided conflict (right). Both series are logged to compute the elasticity; we also residualize using country fixed effects (see Table A.14).

Table A.14: Elasticity of Resource Production and Taxes as a Function of Conflict

	Dependent variable:			
	Log(Resource Tax Revenues + 1)			
	(1)	(2)	(3)	(4)
P_{t-1}	0.562^{***}	0.485^{***}	0.534^{***}	0.453^{***}
	(0.112)	(0.127)	(0.117)	(0.123)
$P_{t-1} \times \mathbb{1}(\text{One-sided} > 0)$	-0.088^{**}			
	(0.037)			
$P_{t-1} \times \mathbb{1}(\text{State-based} > 0)$		-0.045		
		(0.036)		
$P_{t-1} \times \mathbb{1}(\text{State-based} \mid \text{One-sided} > 0)$			-0.062^{*}	
			(0.033)	
$P_{t-1} \times \mathbb{1}(\text{Non-state} > 0)$				0.089
				(0.064)
F-stat	8.63	5.39	7.73	6.41
p-value	0.00	0.00	0.00	0.00
$\overline{y_{ct}}$	21.98	21.98	21.98	21.98
Country FE	32	32	32	32
Region-Year FE	75	75	75	75
Observations	441	441	441	441

Table A.14 reports results from OLS models with country and region-by-year fixed effects. We use log-log specifications to estimate the elasticity, in which resource tax revenues are the dependent variable, and mineral production value interacted with conflict incidence is the independent variable. We cluster standard errors on country, shown in parentheses (see Figure A.14). Significance: *p<0.1; **p<0.05; ***p<0.01.

G.3 Policy Change

Table A.15: Country-level Effect of Armed Conflict on Government Stability

	Dependent variable:					
	Internal Conflict Index			Government Stability Index		
	(1)	(2)	(3)	(4)	(5)	(6)
$\mathbb{1}$(Conflicts > 0)	-0.49^{***}			-0.20^{*}		
	(0.15)			(0.11)		
$\mathbb{1}$(Conflicts = 1)		-0.19			-0.23^{*}	
		(0.15)			(0.12)	
$\mathbb{1}$(Conflicts > 1)		-0.62^{***}			-0.18	
		(0.16)			(0.13)	
$\mathbb{1}$(State-Based > 0)			-0.54^{***}			0.20
			(0.15)			(0.13)
$\mathbb{1}$(One-Sided > 0)			-0.41^{***}			-0.24^{*}
			(0.13)			(0.13)
$\mathbb{1}$(Non-State > 0)			-0.37^{**}			-0.45^{***}
			(0.17)			(0.13)
F-stat	11.21	7.81	9.41	3.1	2.18	6.67
p-value	0.00	0.00	0.00	0.08	0.11	0.00
$\overline{y_{ct}}$	9.2	9.2	9.2	8.56	8.56	8.56
Country FE	134	134	134	134	134	134
Year FE	18	18	18	18	18	18
Observations	2,394	2,394	2,394	2,394	2,394	2,394

Table A.15 reports the results from OLS models estimated using Equation 4. We cluster standard errors at the country level, shown in parentheses. The dependent variables come from ICRG: models (1)–(3), Internal Conflict Index; models (4)–(6), Government Stability Index. The main independent variable codes whether conflict occurred in a given year (t) or in the year prior (t-1). Significance: *p<0.1; **p<0.05; ***p<0.01.

Table A.16: Effect of Armed Conflict on Investment by New Entrants

	Dependent variable:				
	Log(Exploration Investment + 1) by New Entrants				
	(1)	(2)	(3)	(4)	(5)
$\mathbb{1}$(Conflicts > 0)	-0.86^{**}				
	(0.42)				
$\mathbb{1}$(State-Based > 0)		-0.77^{**}			-0.55
		(0.39)			(0.40)
$\mathbb{1}$(One-Sided > 0)			-0.90^{*}		-0.73
			(0.48)		(0.49)
$\mathbb{1}$(Non-State > 0)				-0.82^{*}	-0.69
				(0.45)	(0.44)
F-stat	4.30	4.00	3.51	3.35	2.81
p-value	0.04	0.05	0.06	0.07	0.04
$\overline{y_{ct}}$	6.48	6.48	6.48	6.48	6.48
Country FE	177	177	177	177	177
Year FE	18	18	18	18	18
Observations	3,186	3,186	3,186	3,186	3,186

Table A.16 reports results from OLS models estimated using Equation 4. We cluster standard errors on country, shown in parentheses. We restrict the dependent variable to exploration investment (logged plus one) by new entrants, firms that had not previously invested in a given country. In model (1) the independent variable codes whether conflict occurred in a given year (t) or in the year prior (t-1). Models (2)-(4) evaluate different types of conflict, as classified by UCDP. Model (5) includes indicators for all the different types of conflict. Significance: *p<0.1; **p<0.05; ***p<0.01.

H. Details of Systematic Review

The aim of a systematic review is to "identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question" (Higgins and Green 2011). In this appendix, we present additional details on how we conducted the systematic review as well as our PRISMA systematic review reporting statement.

H.1 Coding Rules for Systematic Review

Measure of Violent Events We exclusively measure counts or incidences of violent events. Where papers measure additional factors related to conflict, we consider this an aggregate risk measure.

Model Selection In order to characterize this literature, we first determine which model we will evaluate from the papers that met our filtering criteria. Based on the table the author(s) highlight as their main empirical results, we select the model that uses unit fixed effects at the same level as their cross-sectional unit of analysis. If unit fixed effects (FE) are not used in the paper, or are not at the same level as the paper's cross-sectional unit of analysis, we select the model that uses an instrumental variable (IV) to instrument for conflict/instability.

In situations where the author(s) neither use FE nor an IV approach, we use their preferred model specification as the main model, if it is favored for reasons that enhance the credibility of the causal inference (i.e., they justify why they have to control for an important confounder). In the absence of author preference, we select the simplest model that relates conflict to investment. When analyses use both an aggregated and a disaggregated measure of conflict/risk, we select the aggregate measure.

We consider this model the main model of the paper. We use this model to characterize the studies in our systematic review.

Study Characteristics Following the selection of the main model, we code a range of characteristics from each paper, which we include in Table A.1. These include: (1) effect; (2) region/countries; (3) years; (4) geographic and time unit of analysis; (5) fixed effects; and (6) instrumental variable. The rationale behind these coding choices is included below:

(A) Effect

$+$, $-$, $\sim$ (null), or mixed (includes at least two of the three above)

We code the effect of conflict on investment based on both the sign and statistical significance (at any level) of the point estimate of the main model (detailed above). Based on the relevant model, we identify the effect variable in three different ways: (1) from a single main model with a single measure of conflict (e.g., the International Country Risk Guide (ICRG) political

instability index); (2) from a single main model with multiple measures of conflict (e.g., revolutions and assassinations); and (3) from multiple main models, with different dependent variables, and a single measure of conflict (e.g., investment by sectors). The latter two strategies may lead to a "mixed" effect of conflict on investment, as some coefficients may be significantly positive or significantly negative while others may have no effect. By contrast, the first strategy will only lead to an effect of conflict on investment that is significantly positive, significantly negative, or null.

All eight "mixed" studies report significantly negative results alongside null and/or significantly positive correlations between instability or conflict and investment. Results from one study, Li, Murshed and Tanna (2017), rely on separate models due to the use of FDI from different sectors as dependent variables.

(B) Region/countries

G (global), LAC, SSA, MENA, BRICS, or country name

We identify the regional focus of the research from the main text of the paper. In addition, we include a variable for the number of countries evaluated in the paper. We code the region(s) and the number of countries used in the analyses based on the countries that receive investments in the data, rather than the number where investment originates (for example, if the data represent FDI from 37 OECD countries in China we would code that as a single country in Asia). Where possible, we use the number of countries listed in the main model. When this information is unavailable, we code the number of countries the author(s) reference in the main text of the paper.

(C) Years

We code years based on the year range provided in main text of the paper. On rare occasions, a paper may subset further down for analysis purposes. If this is the case, we code the more restricted year range if it is used in the main model and available in the main text of the paper.

(D) Geographic and Time Unit of Analysis

We code the geographic and time unit of analysis based on the most disaggregated level of data used in the model (e.g., country-year, sector-month). We identify the unit of analysis based on the subscript in the model equation, when available. Otherwise, we infer this information from the main text of the paper.

(E) Fixed Effects

We identify if a paper uses both unit and/or time fixed effects. We code unit fixed effects if

the paper utilizes unit fixed effects at their cross-sectional unit of analysis (e.g., country for country-year panels). We code time fixed effects if the author(s) use time fixed effects at the temporal level of the panel data (e.g., year for country-year panels). As such, we do not code fixed effects if those used in the paper are based on aggregated time periods (i.e. five-year periods rather than years) or geographic units (i.e. continents rather than countries). We identify whether the author(s) use unit and/or time fixed effects based on the model equation (when available) or from the table of the main model.

(F) Instrumental Variables

We code a study as having used instrumental variables if the author(s) specify that they are instrumenting for conflict/instability. We identify whether the author(s) use an instrumental variable from the table of the main model, when possible, or from the main text of the paper.

H.2 PRISMA Checklist for Systematic Reviews

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) is a standard checklist for reporting on systematic reviews (Liberati et al. 2009). We document our response to each item on the checklist below.

(1) Title (p. 4)

Identify the report as a systematic review, meta-analysis, or both.

- See text.

(2) Structured Summary (p. 4-5)

Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.

- See text. We do not provide information about participants, interventions, or a systematic review registration number.

(3) Rationale (p. 4)

Describe the rationale for the review in the context of what is already known.

- See text.

(4) Objectives (p. 4)

Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).

- See text.

(5) Protocol and registration (p. 4, Appendix H.1)

Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.

- See text for review protocol. We do not register our systematic review.

(6) Eligibility criteria (pg. 4 and Table A.1)
Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.

- Study characteristics are provided in Table A.1. The rationale for our eligibility criteria is as follows: (1) *published in 1990 or later* – given advances made in quantitative social science, we restrict our analysis to post-1990; (2) *published in a peer-reviewed social science or business journal or by a university press* – the peer review filter serves as a quality control; (3) *examines the relationship between conflict and foreign investment* – this filter ensures that the papers in our review focus on the same IV and DV we evaluate; and (4) *includes a point estimate* – a point estimate restricts the papers to quantitative social science research and serves as the basis on which we code the effect direction.

(7) Information source (p. 4)
Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.

- We use Google Scholar to compile a database of articles. Our Google Scholar search occurred on September 11, 2018, where we pulled 950 articles that met our keyword criteria. We also included three additional relevant articles. We then conduct a "spider" search in Google Scholar of the articles that made it through all pre-specified inclusion filters. This means that we compiled and assessed all studies that cite any of the articles from the first search (42 total). We conducted the "spider" search from February 9 to February 11, 2019 and on January 17, 2020.

(8) Search (p. 4)
Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.

- Our search takes the form: (conflict OR violence OR coups OR revolutions OR assassinations OR political risk OR war OR political instability) AND (investment OR firms).

(9) Study selection (p. 4)
State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).

- Prior to evaluating the full list of articles from Google Scholar, we specify eligibility criteria for inclusion in the systematic review (see item #6). We then employ a combination of automated review (e.g., the correct years) and manual review to implement the remainder of the filtering process.

(10) Data collection process (p. 4)
Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.

- We extract the sign and statistical significance of the coefficient on conflict/instability in regressions where investment is the dependent variable. When a study reports more than one relevant model, we favor the instrumental variable or fixed effects model results if available, given stronger claims of causal identification. However, for one article, we report results from multiple models due to slightly different dependent variables. These are noted in Table A.1. We then review each article to identify other relevant characteristics of the studies, which we present in Table A.1. We do not collect original data from these papers.

(11) Data items (Table A.1)

List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.

- We code the following features of each article: effect direction and significance, use of fixed effects, use of instrumental variables, unit of analysis, year range, use of composite risk score, number of countries, region of focus, authors, journal, and year of publication.

(12) Risk of bias in individual studies (Table A.1)

Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.

- Where applicable, we note which studies utilize a fixed effects or an instrumental variable research design. In these cases, we report the effect directions with statistical significance presented in those models. If a study does not employ FE or IV, then we focus on their primary/preferred specification. We also exclude non-peer reviewed working papers from our review. In our summary Table 1, we provide details on how many studies use either fixed effects or instrumental variables, organized by effect direction.

(13) Summary measures (p. 4-5 and Table A.1)

State the principal summary measures (e.g., risk ratio, difference in means).

- The principle summary measure is the coefficient sign and statistical significance (significantly positive, unable to reject the null, and significantly negative) for variables that measure conflict or instability in regressions where the dependent variable is investment. We only extract coefficients that evaluate the effect of conflict/instability on investment.

(14) Synthesis of results (N/A)

Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.

(15) Risk of bias across studies (N/A)

Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).

(16) Additional analyses (N/A)

Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.

(17) Study selection (pg. 4 and Figure A.15)

Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.

- See the Flow Diagram presented in Figure A.15. We exclude studies at each stage because they fail to satisfy the inclusion criteria outlined in advance of the systematic review.

(18) Study characteristics (Table A.1)

For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.

- We provide select study characteristics to demonstrate the geographic scope and temporal focus of this body of research.

(19) Risk of bias within studies (Table A.1)
Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).

- We note which studies we consider less prone to bias based on their use of a fixed effects or an instrumental variable design (Table A.1).

(20) Results of individual studies (Table A.1)
For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.

- We report three types of effect directions (significantly positive, unable to reject the null, significantly negative) from the main models in each individual study.

(21) Synthesis of results (N/A)
Present results of each meta-analysis done, including confidence intervals and measures of consistency.

(22) Risk of bias across studies (N/A)
Present results of any assessment of risk of bias across studies (see Item 15).

(23) Additional analyses (N/A)
Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16])

(24) Summary of evidence (Table 1)
Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).

- See Table 1.

(25) Limitations (pg. 5)
Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).

- See text. Google Scholar restricts our first search to the top 950 articles. As a result, we did a second Google Scholar search to collect all the papers that cited articles from the first search that met our filter requirements.

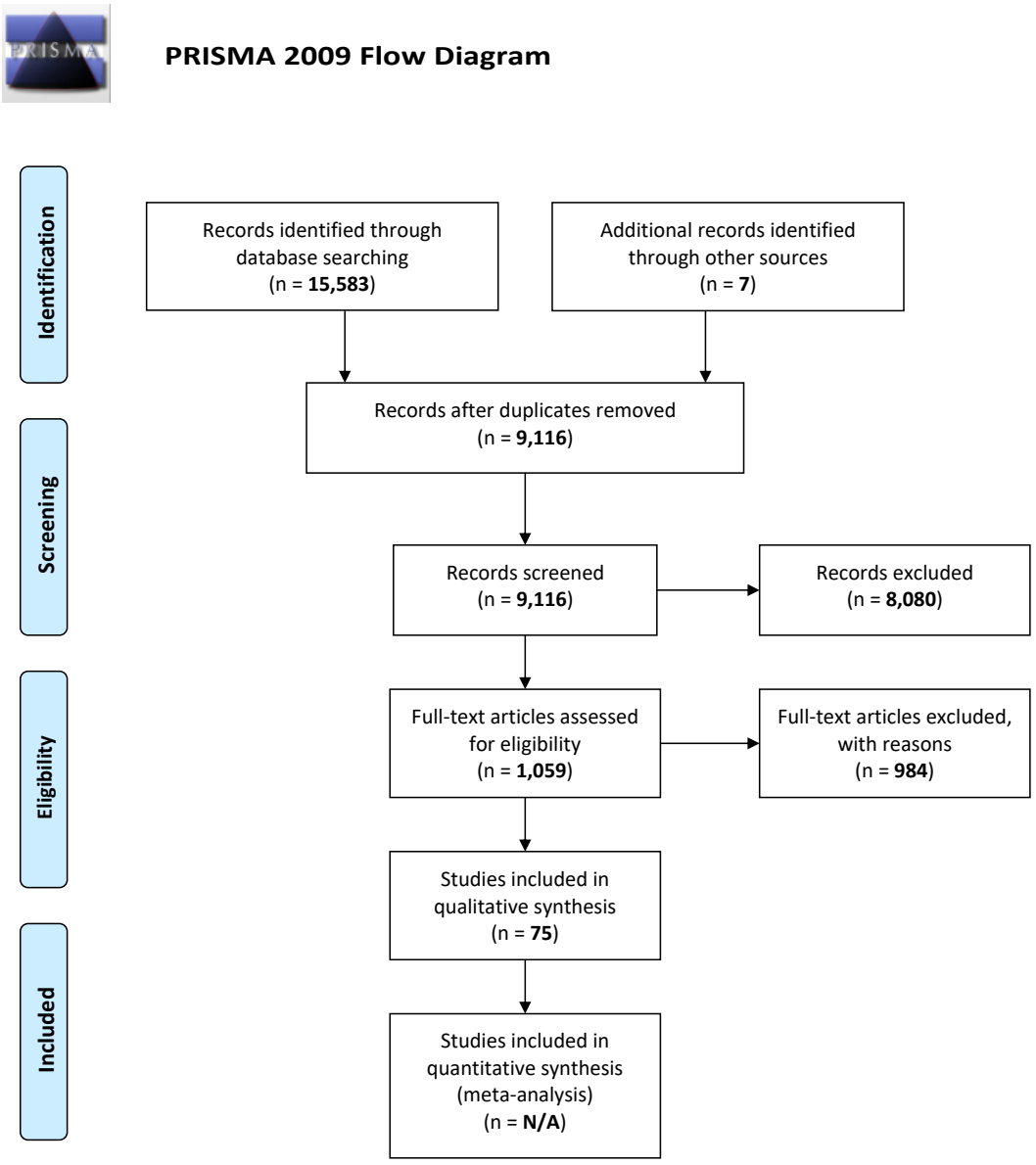
(26) Conclusions (pg. 5)
Provide a general interpretation of the results in the context of other evidence, and implications for future research.

- Results form this country-level research motivate our focus on the firm-level.

(27) Funding (N/A)
Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.

- We did not receive any funding to conduct this systematic review.

Figure A.15: PRISMA Flow Diagram



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