

Violent Conflict and Cross-Border Lending

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Motivation

- Gradual decline in violent conflict over the long arc of history

Pinker 2011

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- Yet: ongoing armed conflicts, rising geopolitical tensions, and growing authoritarianism seem to challenge the idea that violence is in long-term decline...

Caldara and Iacoviello 2022 AER

Motivation

- Gradual decline in violent conflict over the long arc of history

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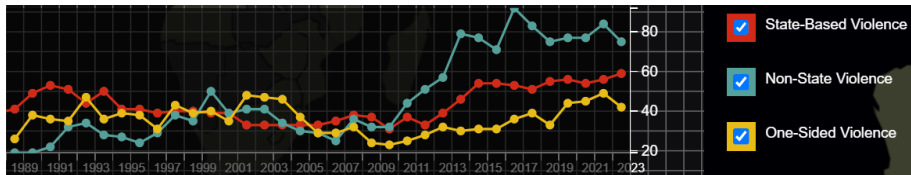
- Yet: ongoing armed conflicts, rising geopolitical tensions, and growing authoritarianism seem to challenge the idea that violence is in long-term decline...

Caldara and Iacoviello 2022 AER

- Data confirm an increase in violent conflicts with high human and economic costs

Armed Conflict Survey 2024, IISS; Armed Conflict Data Project; Uppsala Conflict Data Program

Global trend in violent conflicts



Data source: Uppsala Conflict Data Program.

Motivation

- Violent conflicts are extremely costly, especially to low-income countries, and access to funding can make or break military success
Federle, Rohner, and Schularick 2025
- Role for sovereign bond funding and government-to-government lending
DiGiuseppe 2015; Zielinski 2016; Horn, Reinhart, and Trebesch 2024
- Relationship between private financial markets and violent conflict remains underexplored, despite anecdotal evidence about global banks' role in funding armed conflicts
Longo, Meggiolaro, and Felipe 2024

Bank funding of violent conflicts

- **1988–1989:** Banca Nazionale del Lavoro granted \$0.6 bn to military firms in Iraq
- **2020–2022:**
 - 1 Financial institutions provided \$1 tn to the defense industry globally Longo et al. (2024)
 - 2 Europe's 15 largest banks invested €88 bn in arms companies selling to conflict zones Oudes et al. (2022)

ARTICLE | NEW YORK, 2022 global witness

Fuel to the fire: EU banks and investors tied to violence in South Sudan



FINANCIAL TIMES

Economic impact of war in Ukraine could go from bad to worse



The New York Times

Italian Bank's Unauthorized Credits to Iraq

OpenStax

By Alan Riding, Special To The New York Times
April 1, 2002



This paper

- Examine relationship between private finance and violent conflict through the lens of cross-border bank lending
- Leverage data on 1.3 million syndicated loans by 14k banks to 97k firms in 179 countries (1989-2020)
- How does cross-border credit respond to outbreaks of violent conflict?
 - ① Global banks “run for the exit”, especially in the absence of strong bank-firm relations
 - ② Global banks increase lending to meet growing demand in specific industries (i.e., primary-military and dual-use)

Contribution to the literature

① Shock transmission through cross-border syndicated lending

Cetorelli and Goldberg 2011; Giannetti and Laeven 2012; De Haas and Van Horen 2013

→ We reveal contrasting lending dynamics: cross-border lenders sharply reduce overall lending but redirect credit to sectors benefiting from violent conflicts

② Emerging literature on the funding of military conflict

Federle, Rohner, and Schularick 2025

→ We show that during violent conflicts, when local credit is scarce, cross-border loans can help finance military build-up

③ Financial repercussions of geopolitical fragmentation

Kempf et al. 2023; Chupilkin et al. 2024; Gopinath et al. 2025; Niepmann and Shen 2025

→ We identify a new financial channel through which ideological misalignment can sustain military activities

Data

Main data sources

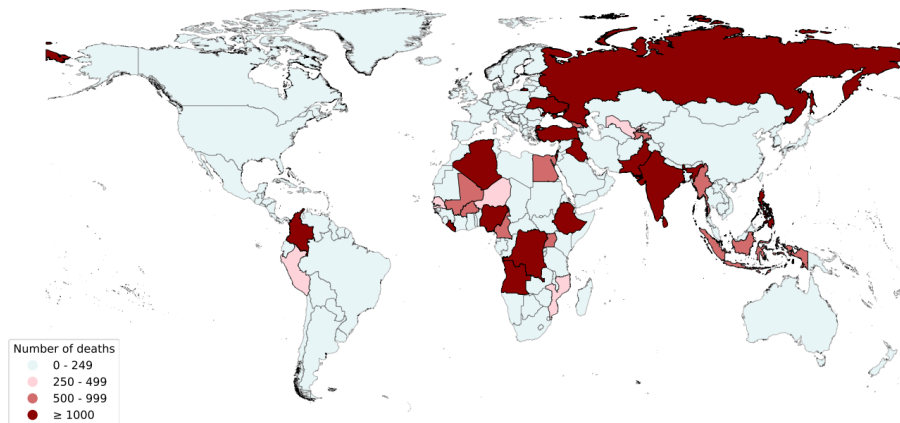
- **Uppsala Conflict Data Program (UCDP)**

- State-based armed conflicts (at least one party is a state) resulting in $\geq 1k$ battle-related fatalities in a year

- **DealScan**

- Data on syndicated loans
- Split each loan into syndicate member shares
- Aggregation of loan amounts to the bank-firm-year level

Violent conflicts



Note: This figure shows countries where annual battle-field related deaths exceeded 250, 500, or 1,000 at least once during 1989-2020 and where at least one firm received a syndicated loan during this period. Data sources: Uppsala Conflict Data Program and DealScan.

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- **UK Strategic Export Control List**

- List of primary military & dual-use items requiring an export authorization (Department for Business and Trade)

Summary statistics

Defining military sectors

- Distinguish between firms in 'primary military' and 'dual-use' sectors
- Primary military: From the UK's Military List, we collect key terms such as 'weapon', 'artillery', 'tank', 'bomb', 'missile', 'explosives', etc.
- We then identify all 4-digit SIC codes on the NAICS/SIC website that mention these goods. This yields 10 primary military SIC codes

Primary military sectors

Panel A: Primary military-related sectors

SIC Code	Description
2892	Explosives
3482	Small Arms Ammunition
3483	Ammunition, Except for Small Arms
3484	Small Arms
3489	Ordnance and Accessories, Not Elsewhere Classified
3761	Guided Missiles and Space Vehicles
3764	Guided Missile & Space Vehicle Propulsion Units and Propulsion Unit Parts
3769	Guided Missile Space Vehicles Parts and Auxiliary Equipment, NEC
3795	Tanks and Tank Components
9711	National Security

Defining dual-use sectors

- Extract keywords from the UK's dual-use category titles (e.g., 'nuclear' and 'aircraft'). Find these terms on the NAICS/SIC website: generates 115 potential dual-use SIC codes
- Ask ChatGPT-4o for probability of military production involvement for all 125 codes (10 primary military plus 115 dual-use sectors)
- 50 iterations, randomly reordering the 125 SIC codes each time, and calculate the average probability for each sector
- Retain 79 dual-use sectors $\geq 50\%$ average military-use probability

Dual-use sectors

SIC Code	Description	AI Likelihood
3674	Semiconductors and Related Devices	80
2836	Biological Products, Except Diagnostic Substances	60
4499	Water Transportation Services, Not Elsewhere Classified	30
3484	Small Arms	100
2899	Chemicals and Chemical Preparations, Not Elsewhere Classified	70
5734	Computer and Computer Software Stores	40
2829	Explosives	100
4822	Telegraph and Other Message Communications	50
3462	Iron and Steel Forgings	50
3482	Small Arms Ammunition	100
...		

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...		

Example

- In 2015, 15 global banks provided a syndicated loan to the telecommunications company INT Towers in Nigeria
- Parent company then donated an Information Communication Technology Center to the 6th Division of the Nigerian Army



Aggregate-level analysis

Empirical setup: Aggregate-level analysis

- Foreign vs. domestic bank lending to military vs. non-military sectors during violent conflicts vs. non-conflict times:

$$\begin{aligned} \text{Loan}_{gsct} = & \beta_0 \cdot \text{Foreign}_{gc} \\ & + \beta_1 \cdot \text{Foreign}_{gc} \times \text{Conflict}_{ct} \\ & + \beta_2 \cdot \text{Foreign}_{gc} \times \text{Military}_s \\ & + \beta_3 \cdot \text{Foreign}_{gc} \times \text{Conflict}_{ct} \times \text{Military}_s \\ & + \alpha_{rt} + \gamma_{vs} + \delta_{gs} + \chi_{st} + \phi_{gt} + \theta_{gc} + \varepsilon_{gsct} \end{aligned} \quad (1)$$

- Poisson Pseudo-ML HD-FE estimator ([Correia, Guimaraes, and Zylkin 2020](#))

Hypotheses:

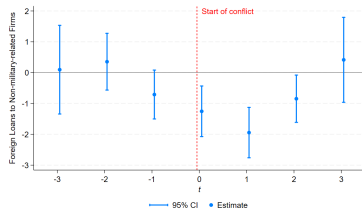
- $\beta_1 < 0$: foreign lenders shrink credit to non-militaries during conflicts
- $\beta_1 + \beta_3 > 0$: foreign lenders strategically expand credit to militaries during conflicts

Aggregate-level baseline results

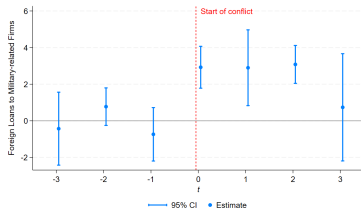
		Dependent variable: $Loan_{gsct}$			
		(1)	(2)	(3)	(4)
Foreign	β_0	0.532*** (0.044)	0.578*** (0.040)		
Foreign $\times$ Conflict	β_1	0.427 (0.356)	0.237 (0.365)	0.217 (0.365)	-0.606** (0.303)
Foreign $\times$ Military	β_2		-0.184*** (0.046)		
Foreign $\times$ Conflict $\times$ Military	β_3		1.679*** (0.389)	1.678*** (0.390)	1.647*** (0.375)
Conflict		✓	✓	✓	✓
Host Region $\times$ Year FE		✓	✓	✓	✓
Conflict $\times$ Military FE			✓	✓	✓
Foreign $\times$ Military FE				✓	✓
Military $\times$ Year FE				✓	✓
Foreign $\times$ Year FE				✓	✓
Foreign $\times$ Host Country					✓
N obs		22,652	22,652	22,652	20,354
N of host region $\times$ year clusters		229	229	229	229
R^2 (adj.)		0.433	0.480	0.483	0.856
<i>Linear test: $\beta_1 + \beta_3 = 0$</i>			1.915*** (0.212)	1.895*** (0.211)	1.041*** (0.234)

- Foreign banks cut **non-military lending** 45% more than domestic banks during conflicts
- Foreign banks expand **military lending** 183% more than domestic banks during conflicts

Event study



(a) β_1 : Foreign Lending to Non-Military Sectors



(b) β_3 : Foreign Lending to Military Sectors

Note: The figure reports the regressions coefficients of β_1 and β_3 from the version of Equation (1) reported in Table 1, column (4), where the variable *Conflict* has been replaced with year dummies for the period between three years before and three years after the conflict. The data is sourced from the Uppsala Conflict Data Program and DealScan.

Loan-level analysis

Empirical setup: Loan-level analysis

- Military vs. non-military lending by foreign vs. domestic banks during violent conflicts vs. non-conflict times:

$$\begin{aligned} \text{Loan}_{bfsc} = & \beta_0 \cdot \text{Foreign}_{bf} \\ & + \beta_1 \cdot \text{Foreign}_{bf} \times \text{Conflict}_{ct} \\ & + \beta_2 \cdot \text{Foreign}_{bf} \times \text{Military}_s \\ & + \beta_3 \cdot \text{Foreign}_{bf} \times \text{Conflict}_{ct} \times \text{Military}_s \\ & + \alpha_b + \theta_f + \mu_{ht} + \nu_{ct} + \delta_{vs} + \chi_{gs} + \phi_{gt} + \tau_{st} + \varepsilon_{bfsc} \end{aligned} \quad (2)$$

Hypotheses:

- $\beta_1 < 0$: foreign lenders shrink credit to non-militaries during conflicts
- $\beta_1 + \beta_3 > 0$: foreign lenders strategically expand credit to militaries during conflicts

Loan-level baseline results

Dependent variable	<i>Loan_{bfsct}</i>		
	(1)	(2)	(3)
Foreign	-0.085*** (0.010)	-0.090*** (0.010)	
Foreign × Conflict	-0.224* (0.116)	-0.319*** (0.115)	-0.310*** (0.115)
Foreign × Military		0.027*** (0.008)	
Foreign × Conflict × Military		0.509*** (0.105)	0.522*** (0.105)
Bank FE	✓	✓	✓
Firm FE	✓	✓	✓
Home Country × Year FE	✓	✓	✓
Host Country × Year FE	✓	✓	✓
Conflict × Military FE		✓	✓
Foreign × Military FE			✓
Military × Year FE			✓
Foreign × Year FE			✓
<i>N</i> obs	1,308,048	1,308,048	1,308,048
<i>N</i> of banks	14,021	14,021	14,021
R ² (adj.)	0.868	0.868	0.868

- Foreign credit to a non-military firm declines **26.7%** more than domestic credit in conflict
- Foreign credit to a military firm increases **23.6%** more than domestic credit in conflict

Credit supply versus demand forces

Dependent variable	<i>Loan_{bfsct}</i>					
	Baseline	Demand	Supply	Baseline	Demand	Supply
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign × Conflict	-0.310*** (0.115)	-0.248 (0.154)	-0.272** (0.111)	-0.466* (0.248)	-0.297 (0.328)	-0.396* (0.203)
Foreign × Conflict × Military	0.521*** (0.105)	0.590*** (0.105)	0.100 (0.131)	0.551** (0.235)	0.653** (0.259)	0.053 (0.360)
Bank FE, Firm FE	✓	✓	✓	✓	✓	✓
Home Country × Year FE	✓	✓	✓	✓	✓	✓
Host Country × Year FE	✓	✓	✓	✓	✓	✓
Conflict × Military FE	✓	✓	✓	✓	✓	✓
Foreign × Military FE	✓	✓	✓	✓	✓	✓
Military × Year FE	✓	✓	✓	✓	✓	✓
Foreign × Year FE	✓	✓	✓	✓	✓	✓
Bank × Year FE		✓			✓	
Host Country × Military × Year FE			✓			✓
Bank × Firm FE				✓	✓	✓
<i>N</i> obs	1,308,048	1,273,395	1,307,976	690,405	664,711	690,213
<i>N</i> of banks	14,021	10,761	14,021	6,721	2,820	6,719
R ² (adj.)	0.868	0.873	0.869	0.894	0.898	0.896

Heterogeneity

Geopolitical origin and alignment

- Do global banks align lending practices with their home country's geopolitical interests, particularly in military-related financing?

Kempf et al. 2023

- Classify countries according to:
 - Formal bloc memberships (NATO, BRICS, G7)
 - West vs. East geopolitical alignment based on voting patterns in the United Nations General Assembly

Bailey, Strezhnev, and Voeten 2017

1/2 Geopolitical origin

	Dependent variable: $Loan_{bft}$		
	BRICS	BRICS	West UN
Country bloc B_1 :			
Country bloc B_2 :	NATO	G7	East UN
Country bloc B_3 :	Others	Others	Neutral
	(1)	(2)	(3)
Conflict $\times B_1$ Foreign	-0.234** (0.111)	-0.231** (0.113)	-0.333*** (0.122)
Conflict $\times B_2$ Foreign	-0.289** (0.114)	-0.297*** (0.115)	-0.349*** (0.121)
Conflict $\times B_3$ Foreign	-0.264** (0.110)	-0.241** (0.109)	-0.294** (0.128)
Conflict $\times$ Military $\times B_1$ Foreign	0.423*** (0.108)	0.423*** (0.106)	0.494*** (0.110)
Conflict $\times$ Military $\times B_2$ Foreign	0.507*** (0.158)	0.498*** (0.158)	0.578*** (0.140)
Conflict $\times$ Military $\times B_3$ Foreign	0.642*** (0.100)	0.617*** (0.107)	0.585*** (0.125)
N obs	1,308,048	1,308,048	1,308,048
N banks	14,021	14,021	14,021
R^2 (adj.)	0.867	0.868	0.868
N countries in bloc B_1	5	5	52
N countries in bloc B_2	29	7	48
N countries in bloc B_3	122	145	86

2/2 Geopolitical (mis)alignment: dyadic analysis

	Dependent variable: $Loan_{bft}$		
	<i>West to West</i>	<i>Neutral to West</i>	<i>East to West</i>
	<i>West to Neutral</i>	<i>Neutral to Neutral</i>	<i>East to Neutral</i>
	<i>West to East</i>	<i>Neutral to East</i>	<i>East to East</i>
	$i = 1$	$i = 2$	$i = 3$
Conflict $\times B_{i1}$ Foreign	-0.538*** (0.135)	-0.034 (0.149)	-0.238 (0.175)
Conflict $\times B_{i2}$ Foreign	-0.348*** (0.126)	-0.312** (0.130)	-0.367*** (0.121)
Conflict $\times B_{i3}$ Foreign	-0.361** (0.150)	-0.259 (0.161)	-0.315** (0.155)
Conflict $\times$ Military $\times B_{i1}$ Foreign	-0.389*** (0.137)	n/a	n/a
Conflict $\times$ Military $\times B_{i2}$ Foreign	0.541*** (0.120)	0.564*** (0.134)	0.695*** (0.158)
Conflict $\times$ Military $\times B_{i3}$ Foreign	0.708*** (0.241)	0.482** (0.215)	-0.028 (0.282)
N obs	1,308,048	1,308,045	1,308,047
N banks	14,021	14,021	14,021
R^2 (adj.)	0.868	0.868	0.868
N home/(conflict) host countries in dyad bloc B_{i1}	30/4	17/4	8/4
N home/(conflict) host countries in dyad bloc B_{i1}	36/10	40/10	24/10
N home/(conflict) host countries in dyad bloc B_{i2}	19/10	17/10	18/10

Bank specialization in countries or military sectors

Specialization:	Dependent variable: $Loan_{bft}$					
	Relative measure (Paravisini, Rappoport, and Schnabl 2023)					
	In country ($RSFC_{bct} = 1$)		P -value $diff=0$	In sector ($RSMS_{bst} = 1$)		P -value: $diff=0$
	Yes	No		Yes	No	
	(1)	(2)		(3)	(4)	
Foreign $\times$ Conflict	-0.515*** (0.178)	-0.414*** (0.137)	0.653	-0.288** (0.119)	-0.257** (0.112)	0.850
Foreign $\times$ Conflict $\times$ Military	0.124 (0.128)	0.404*** (0.123)	0.115	0.399*** (0.108)	-0.042 (0.162)	0.024
Bank FE	✓	✓		✓	✓	
Firm FE	✓	✓		✓	✓	
Home Country $\times$ Year FE	✓	✓		✓	✓	
Host Country $\times$ Year FE	✓	✓		✓	✓	
Conflict $\times$ Military FE	✓	✓		✓	✓	
Foreign $\times$ Military FE	✓	✓		✓	✓	
Military $\times$ Year FE	✓	✓		✓	✓	
Foreign $\times$ Year FE	✓	✓		✓	✓	
N obs	718,347	1,277,623		1,279,107	1,085,294	
N banks	10,605	13,767		13,885	13,165	
R^2 (adj.)	0.911	0.869		0.868	0.866	

Extensions

Spillovers to neighboring countries during conflicts?

Neighboring countries:	Dependent variable: $Loan_{bft}$			
	Countries with $N\ deaths \leq j$:			
	$j = 1,000$	$j = 500$	$j = 100$	$j = 0$
	(1)	(2)	(3)	(4)
Neighbor $\times$ Foreign	-0.026 (0.037)	-0.050 (0.033)	-0.097*** (0.036)	-0.101*** (0.038)
Neighbor $\times$ Foreign $\times$ Military	0.065 (0.043)	-0.043 (0.041)	-0.020 (0.038)	-0.024 (0.040)
Bank FE	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓
Home Country $\times$ Year FE	✓	✓	✓	✓
Host Country $\times$ Year FE	✓	✓	✓	✓
Conflict $\times$ Military FE	✓	✓	✓	✓
Foreign $\times$ Military FE	✓	✓	✓	✓
Military $\times$ Year FE	✓	✓	✓	✓
Foreign $\times$ Year FE	✓	✓	✓	✓
N obs	1,308,048	1,308,048	1,308,048	1,308,048
N of banks	14,021	14,021	14,021	14,021
R^2 (adj.)	0.868	0.868	0.868	0.868

Post-conflict dynamics

Post-conflict period:	Dependent variable: $Loan_{bft}$		
	One year	Two years	Three years
	(1)	(2)	(3)
Post-Conflict $\times$ Foreign	0.036 (0.147)	0.157 (0.135)	0.258** (0.114)
Post-Conflict $\times$ Foreign $\times$ Military	0.724*** (0.169)	0.423** (0.190)	-0.012 (0.172)
Bank FE	✓	✓	✓
Firm FE	✓	✓	✓
Home Country $\times$ Year FE	✓	✓	✓
Host Country $\times$ Year FE	✓	✓	✓
Conflict $\times$ Military FE	✓	✓	✓
Foreign $\times$ Military FE	✓	✓	✓
Military $\times$ Year FE	✓	✓	✓
Foreign $\times$ Year FE	✓	✓	✓
N obs	1,308,048	1,308,048	1,308,048
N banks	14,021	14,021	14,021
R^2 (adj.)	0.868	0.868	0.868

Geographical distance

Dependent variable	<i>Loan_{bft}</i>		
	(1)	(2)	(3)
Distance	-0.010*** (0.001)	-0.011*** (0.001)	-0.005 (0.005)
Distance × Conflict	-0.018 (0.013)	-0.029** (0.013)	-0.028** (0.013)
Distance × Military		0.003*** (0.001)	0.005 (0.004)
Distance × Conflict × Military		0.056*** (0.012)	0.057*** (0.012)
Bank FE	✓	✓	✓
Firm FE	✓	✓	✓
Home Country × Year FE	✓	✓	✓
Host Country × Year FE	✓	✓	✓
Conflict × Military FE		✓	✓
Foreign × Military FE			✓
Military × Year FE			✓
Foreign × Year FE			✓
<i>N</i> obs	1,306,499	1,306,499	1,306,499
<i>N</i> of banks	13,981	13,981	13,981
<i>R</i> ² (adj.)	0.868	0.868	0.868

Private banks, state banks, and non-banks

Dependent variable		<i>Loan_{bft}</i>	
	$\mathbb{X}_{1,bft}$ $\mathbb{X}_{2,bft}$	Foreign bank Foreign nonbank	Foreign private Foreign public
		(1)	(2)
Conflict $\times \mathbb{X}_{1,bft}$	β_{11}	-0.305*** (0.115)	-0.225** (0.091)
Conflict $\times \mathbb{X}_{2,bft}$	β_{12}	-0.057 (0.144)	-0.205** (0.094)
Conflict $\times$ Military $\times \mathbb{X}_{1,bft}$	β_{21}	0.322*** (0.088)	0.332*** (0.092)
Conflict $\times$ Military $\times \mathbb{X}_{2,bft}$	β_{22}	0.414* (0.223)	0.252** (0.111)
Bank FE, Firm FE		✓	✓
Home Country $\times$ Year FE		✓	✓
Host Country $\times$ Year FE		✓	✓
Conflict $\times$ Military FE		✓	✓
Foreign $\times$ Military FE		✓	✓
Military $\times$ Year FE		✓	✓
Foreign $\times$ Year FE		✓	✓
<i>N</i> obs		1,308,048	1,172,768
<i>N</i> lenders		14,021	8,936
R ² (adj.)		0.868	0.877
Share of $\mathbb{X}_{2,b,f,t}$ in the full sample		10%	8%
<i>P</i> -value of the linear test: $\beta_{11} = \beta_{12}$		0.012	0.673
<i>P</i> -value of the linear test: $\beta_{21} = \beta_{22}$		0.660	0.338

Robustness

Robustness tests

- Regression of loan shares ✓
- IHS-transformed dependent variable ✓
- Different AI dual-use thresholds ✓
- Clustering of standard errors ✓
- Conflict definition: discrete (✓) and continuous (✓)
- Loan share imputation ✓
- Excluding individual source countries ✓
- Excluding individual (small) lenders ✓

Conclusions

- Growing focus on private financing of violent conflicts amid rising geopolitical uncertainty
- We show how global banks act as key capital providers during violent conflicts, significantly shifting credit from civil to military uses
 - 👉 This reallocation is strongest for banks that are not specialized in conflict countries but specialized in military-related lending...
 - 👉 ... as well as for politically non-aligned banks
 - 👉 The effect fades shortly after conflicts end, without spillovers to neighboring countries

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Back-up slides

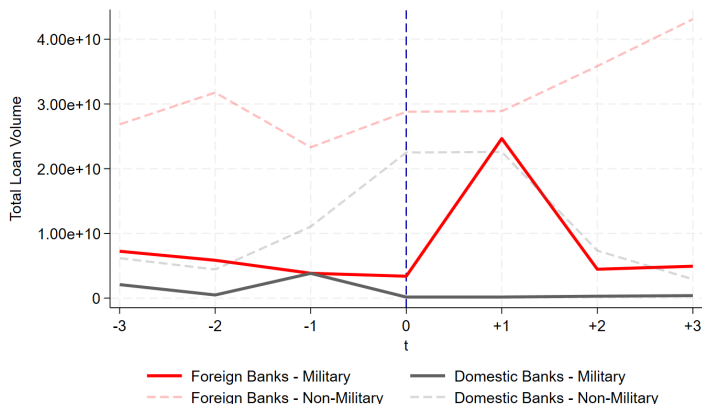
Summary statistics [Back](#)

	N	Mean	SD	Min	25th	Median	75th	Max
Main variables								
Loan amount (log)	1,324,617	16.48	2.43	9.16	15.86	17.09	18.02	20.64
Foreign	1,324,617	0.46	0.50	0	0	0	1	1
Military (primary & dual)	1,324,617	0.17	0.38	0	0	0	0	1
Military (primary)	1,324,617	0.003	0.06	0	0	0	0	1
Military (dual)	1,324,617	0.17	0.06	0	0	0	0	1
Deaths	1,324,617	36.38	216.64	0	0	0	0	10,211
Conflict dummy (500)	1,324,617	0.02	0.15	0	0	0	0	1
Conflict dummy (1,000)	1,324,617	0.01	0.10	0	0	0	0	1
Home-Country blocs								
NATO	1,324,617	0.66	0.47	0	0	1	1	1
G7	1,324,617	0.74	0.44	0	0	1	1	1
BRICS	1,324,617	0.05	0.21	0	0	0	0	1
UN West	1,324,617	0.82	0.38	0	1	1	1	1
UN East	1,324,617	0.03	0.17	0	0	0	0	1
UN Neutral	1,324,617	0.11	0.31	0	0	0	0	1
Bank specialization								
Bank-(conflict) country abs. (AS_{bc})	1,324,617	0.19	0.39	0	0	0	0	1
Bank-(military) sector abs. (AS_{bs})	1,324,617	0.22	0.41	0	0	0	0	1
Others								
Post-war	1,324,617	0.01	0.01	0	0	0	0	1
Capital distance	1,323,023	3.81	4.16	0	0	0	8.68	9.90
Maturity	1,271,325	3.78	0.69	0	3.58	4.01	4.11	7.10
Sectors								
Primary Industries	1,324,617	0.08	0.27	0	0	0	0	1
Industry & Manufacturing	1,324,617	0.24	0.42	0	0	0	0	1
Utilities & Infrastructure	1,324,617	0.15	0.35	0	0	0	0	1
Wholesale	1,324,617	0.04	0.20	0	0	0	0	1
Retail	1,324,617	0.06	0.24	0	0	0	0	1
Services	1,324,617	0.34	0.47	0	0	0	1	1

Aggregate amounts of military cross-border lending

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Absolute amounts of military- and non-military-related lending before and during violent conflicts



Primary vs. dual-use military sectors [Back](#)

	Dependent variable: $Loan_{bft}$		
	Primary & Dual-use	Dual-use only	Primary-use only
	(1)	(2)	(3)
Conflict $\times$ Foreign	-0.310*** (0.115)	-0.304*** (0.114)	-0.219* (0.116)
Conflict $\times$ Military $\times$ Foreign	0.522*** (0.105)	0.483*** (0.105)	0.486** (0.210)
Bank FE	✓	✓	✓
Firm FE	✓	✓	✓
Home Country $\times$ Year FE	✓	✓	✓
Host Country $\times$ Year FE	✓	✓	✓
Conflict $\times$ Military FE	✓	✓	✓
Foreign $\times$ Military FE	✓	✓	✓
Military $\times$ Year FE	✓	✓	✓
Foreign $\times$ Year FE	✓	✓	✓
N obs	1,308,048	1,308,048	1,308,048
N of banks	14,021	14,021	14,021
R^2 (adj.)	0.868	0.868	0.868

Table A.I. Description of violent conflicts, by countries with $\geq 1,000$ deaths (*beginning*)

Country	Conflict Years	Conflict ID	Conflict Description
Algeria	1998, 1999	386	Since the early 1990s, Algeria has experienced an armed conflict over governmental power, primarily involving various Islamic groups seeking to establish an Islamic state by force. The Algerian Civil War (1992–2002) was marked by intense violence, particularly after the government's decision to cancel the 1991 elections, which an Islamist party was poised to win. The violence peaked in 1993 with widespread massacres and brutality. By 2002, some groups began to disarm and hostilities declined.
Colombia	1994, 1996, 1999, 2000, 2001, 2002, 2003, 2004, 2005	289	Colombia's conflict with the Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN) spanned decades and centers on issues of land reform, inequality, and government control. The FARC, a Marxist guerrilla group, waged a violent insurgency beginning in the 1960s, leading to widespread violence, drug trafficking, and displacement. A landmark peace agreement in 2016 led to FARC's demobilization and transformation into a political party. The ELN, Colombia's last active guerrilla group, continues armed resistance despite periodic peace talks, focusing on ideological goals of social justice and economic reform.

Regression of loan shares [Back](#)

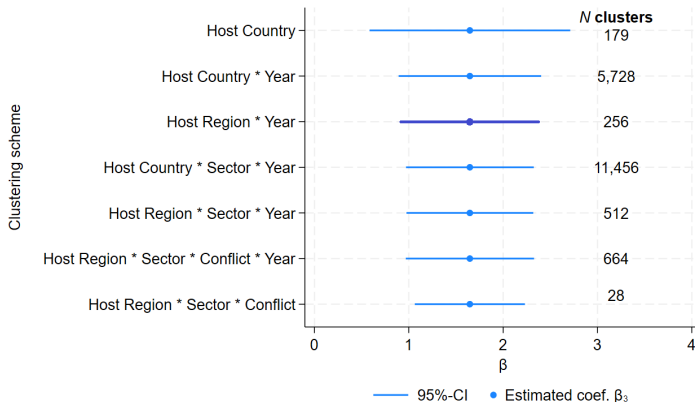
Dependent variable:	<i>Military Loans_{gct}, % of Total Loans_{ct}</i>			
	(1)	(2)	(3)	(4)
Foreign	1.482*** (0.057)	1.466*** (0.057)		
Foreign × Conflict		1.048** (0.533)	1.014* (0.530)	0.956* (0.573)
Conflict	✓	✓	✓	✓
Host Region × Year FE		✓	✓	✓
Foreign × Year FE			✓	✓
Foreign × Host Country FE				✓
<i>N</i> obs	10,596	10,596	10,596	6,503
<i>N</i> of Home Country × Year clusters	211	211	211	211
R ² (adj.)	0.105	0.105	0.106	0.166

Note: This table shows the results from estimating Equation (1) using the Poisson Pseudo-Maximum Likelihood approach with high-dimensional fixed effects Correia2020. The dependent variable is the share of military-related loans by bank group g in country c and year t in the total loans in that country in that year. The dependent variable is winsorized at the 99.5 percentile to reduce potential contamination from outliers in the right tail. *Foreign_{gc}* is a dummy equal to one (zero) when indicating aggregate cross-border (domestic) lending to country c . *Conflict* is a dummy variable equal to one if the country in which the firm is domiciled, experienced more than 1,000 battle-field related deaths in a calendar year. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector which is either primary or dual (see Table 13 for the relevant SIC codes). All regressions include fixed effects as specified. *Foreign Region FE* capture the following source regions of foreign credit: East Asia and Pacific; North America, Latin America, and the Caribbean; Middle East and North Africa; South Asia; and Sub-Saharan Africa. Data sourced from UCDP and DealScan. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered at the destination country level and reported in parentheses.

IHS Transformation of the Dependent Variable [Back](#)

		Dependent variable: $IHS(Loan_{gsct})$		
		(1)	(2)	(3)
Foreign	β_0	0.403*** (0.018)	0.436*** (0.020)	
Foreign $\times$ Conflict	β_1	0.016 (0.058)	-0.129** (0.056)	-0.115** (0.056)
Foreign $\times$ Military	β_2		-0.091*** (0.017)	
Foreign $\times$ Conflict $\times$ Military	β_3		0.465*** (0.144)	0.464*** (0.144)
Conflict		✓	✓	✓
Host Country $\times$ Year FE		✓	✓	✓
Conflict $\times$ Military FE			✓	✓
Foreign $\times$ Military FE				✓
Military $\times$ Year FE				✓
Foreign $\times$ Year FE				✓
N obs		22,652	22,652	22,652
N of host region $\times$ year clusters		229	229	229
R^2 (adj.)		0.188	0.223	0.225
Linear test: $\beta_1 + \beta_3 = 0$			0.336** (0.140)	0.349** (0.139)

Clustering of standard errors [Back](#)



$$\begin{aligned} Loan_{gst} = & \beta_0 \cdot Foreign_{gc} + \beta_1 \cdot Foreign_{gc} \times Conflict_{ct} \\ & + \beta_2 \cdot Foreign_{gc} \times Military_s \\ & + \beta_3 \cdot Foreign_{gc} \times Conflict_{ct} \times Military_s \\ & + \alpha_c + \gamma_r + \delta_{gs} + \theta_{vs} + \phi_{gt} + \chi_{st} + \varepsilon_{gst} \end{aligned}$$

Conflict definition: discrete thresholds

[Back](#)

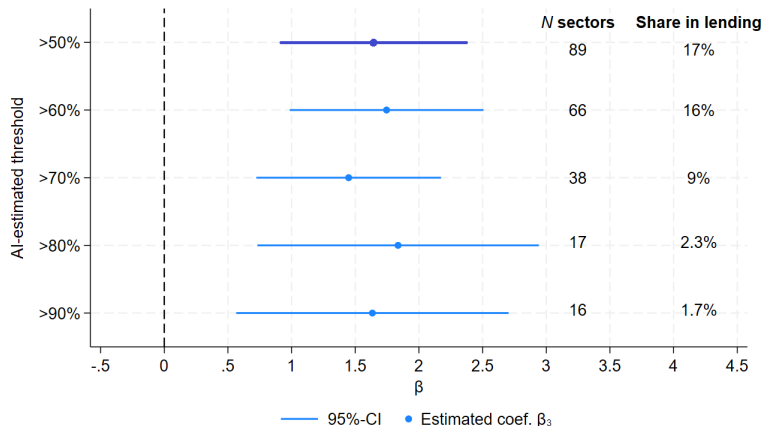
$\mathbb{1}_{\{deaths \geq j\}}$	Dependent variable: $Loan_{bft}$					
	$j = 0$	$j = 100$	$j = 250$	$j = 500$	$j = 750$	$j = 1,000$
	(1)	(2)	(3)	(4)	(5)	(6)
Conflict $\times$ Foreign	0.024 (0.026)	0.098 (0.075)	0.132 (0.142)	0.028 (0.134)	-0.259** (0.103)	-0.310*** (0.115)
Conflict $\times$ Military $\times$ Foreign	0.070** (0.027)	0.113*** (0.040)	0.418*** (0.092)	0.554*** (0.092)	0.424*** (0.094)	0.521*** (0.105)
Bank FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Home Country $\times$ Year FE	✓	✓	✓	✓	✓	✓
Host Country $\times$ Year FE	✓	✓	✓	✓	✓	✓
Conflict $\times$ Military FE	✓	✓	✓	✓	✓	✓
Foreign $\times$ Military FE	✓	✓	✓	✓	✓	✓
Military $\times$ Year FE	✓	✓	✓	✓	✓	✓
Foreign $\times$ Year FE	✓	✓	✓	✓	✓	✓
N obs	1,308,048	1,308,048	1,308,048	1,308,048	1,308,048	1,308,048
N of banks	14,021	14,021	14,021	14,021	14,021	14,021
R^2 (adj.)	0.868	0.868	0.868	0.868	0.868	0.868

Conflict definition: continuous thresholds

[Back](#)

	Dependent variable: $Loan_{bft}$					
	Conflict: $deaths$, conditional on $deaths \geq j$:					
	$j = 0$	$j = 100$	$j = 250$	$j = 500$	$j = 750$	$j = 1,000$
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign $\times$ Conflict	-0.000 (0.000)	0.014 (0.013)	0.015 (0.021)	0.000 (0.019)	-0.037*** (0.014)	-0.042*** (0.015)
Foreign $\times$ Conflict $\times$ Military	0.000*** (0.000)	0.023*** (0.007)	0.065*** (0.013)	0.080*** (0.013)	0.059*** (0.013)	0.067*** (0.015)
Bank FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Home Country $\times$ Year FE	✓	✓	✓	✓	✓	✓
Host Country $\times$ Year FE	✓	✓	✓	✓	✓	✓
Conflict $\times$ Military FE	✓	✓	✓	✓	✓	✓
Foreign $\times$ Military FE	✓	✓	✓	✓	✓	✓
Military $\times$ Year FE	✓	✓	✓	✓	✓	✓
Foreign $\times$ Year FE	✓	✓	✓	✓	✓	✓
N obs	1,308,048	1,308,048	1,308,048	1,308,048	1,308,048	1,308,048
N of banks	14,021	14,021	14,021	14,021	14,021	14,021
R^2 (adj.)	0.868	0.868	0.868	0.868	0.868	0.868

Different AI dual-use thresholds [Back](#)



$$\begin{aligned}
 Loan_{gsct} = & \beta_0 \cdot Foreign_{gc} + \beta_1 \cdot Foreign_{gc} \times Conflict_{ct} \\
 & + \beta_2 \cdot Foreign_{gc} \times Military_s \\
 & + \beta_3 \cdot Foreign_{gc} \times Conflict_{ct} \times Military_s \\
 & + \alpha_c + \gamma_r + \delta_{gs} + \theta_{vs} + \phi_{gt} + \chi_{st} + \varepsilon_{gsct}
 \end{aligned}$$

Loan composition and definition

[Back](#)

Dependent variable	<i>Loan_{bft}</i>					
	<i>Baseline</i>	Equal shares	Lead ≤ 5	Lead ≤ 10	Loan type	Loan purpose
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign $\times$ Conflict	-0.310*** (0.115)	-0.145** (0.069)	-0.384*** (0.122)	-0.283** (0.115)	-0.333*** (0.114)	-0.312*** (0.117)
Foreign $\times$ Conflict $\times$ Military	0.521*** (0.105)	0.346*** (0.075)	0.312*** (0.107)	0.307*** (0.093)	0.311*** (0.100)	0.365*** (0.092)
Bank FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Home Country $\times$ Year FE	✓	✓	✓	✓	✓	✓
Host Country $\times$ Year FE	✓	✓	✓	✓	✓	✓
Conflict $\times$ Military FE	✓	✓	✓	✓	✓	✓
Foreign $\times$ Military FE	✓	✓	✓	✓	✓	✓
Military $\times$ Year FE	✓	✓	✓	✓	✓	✓
Foreign $\times$ Year FE	✓	✓	✓	✓	✓	✓
<i>N</i> obs	1,308,048	1,307,028	1,176,846	1,266,805	900,315	1,201,878
<i>N</i> of banks	14,021	14,013	13,718	13,957	10,909	13,638
R ² (adj.)	0.868	0.886	0.872	0.869	0.894	0.877

Note: The table shows the results from estimating Equation (2) after imputing the missing loan shares in different ways. The dependent variable is the natural logarithm of the loan amount. Column (1) shows our baseline specification. In column (2), we split the loan amount equally among all banks in the syndicate. In columns (3) and (4), we exclude facilities with more than 5 and 10 lead banks, respectively. Column (5) keeps only common loan types, i.e., Revolver/line ≥ 1 year and Term Loans. Column (6) finally removes takeovers and acquisition lines. *Foreign* is a dummy equal to one if the bank lends to a firm in a foreign country. *Conflict* is a dummy equal to one if the firm's country experienced more than 1,000 battle-field related deaths in a calendar year.

Excluding individual source countries [Back](#)

Dependent variable	<i>Loan_{bft}</i>					
	Excl. banks from					
	US	Japan	DE	FR	China	UK
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign × Conflict	-0.316*** (0.117)	-0.301*** (0.116)	-0.302*** (0.115)	-0.312*** (0.117)	-0.319*** (0.116)	-0.335*** (0.119)
Foreign × Conflict × Military	0.551*** (0.112)	0.529*** (0.107)	0.492*** (0.110)	0.518*** (0.108)	0.540*** (0.108)	0.373*** (0.089)
Bank FE	✓	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓	✓
Home Country × Year FE	✓	✓	✓	✓	✓	✓
Host Country × Year FE	✓	✓	✓	✓	✓	✓
Conflict × Military FE	✓	✓	✓	✓	✓	✓
Foreign × Military FE	✓	✓	✓	✓	✓	✓
Military × Year FE	✓	✓	✓	✓	✓	✓
Foreign × Year FE	✓	✓	✓	✓	✓	✓
<i>N</i> obs	872,880	1,104,600	1,224,094	1,227,106	1,271,769	1,229,756
<i>N</i> of banks	9,399	12,681	13,361	13,459	13,106	13,574
R ² (adj.)	0.890	0.765	0.872	0.871	0.869	0.872

Excluding individual (small) lenders [Back](#)

Dependent variable	<i>Loan_{bfscf}</i>		
	(1)	(2)	(3)
Foreign	-0.101*** (0.011)	-0.104*** (0.011)	
Foreign × Conflict	-0.449** (0.190)	-0.539*** (0.187)	-0.525*** (0.188)
Foreign × Military		0.013 (0.009)	
Foreign × Conflict × Military		0.405** (0.159)	0.410** (0.159)
Bank FE	✓	✓	✓
Firm FE	✓	✓	✓
Home Country × Year FE	✓	✓	✓
Host Country × Year FE	✓	✓	✓
Conflict × Military FE		✓	✓
Foreign × Military FE			✓
Military × Year FE			✓
Foreign × Year FE			✓
<i>N</i> obs	980,396	980,396	980,396
<i>N</i> of banks	575	575	575
R ² (adj.)	0.879	0.879	0.879

Note: The sample is limited to only the 575 largest global syndicated lenders.