# Violent Conflict and Cross-Border Lending

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**Abstract**

How do violent conflicts affect cross-border lending? Using data on syndicated loans by over 14,000 creditors to firms in 179 countries between 1989-2020, we find that when violent conflict erupts in a country, cross-border lenders reduce overall lending relative to domestic banks but increase their lending to military firms. This effect is observed for both state and privately-owned foreign banks, and is stronger for banks with higher exposures to the conflict country and those domiciled in high-income countries outside the Western bloc. The relative increase in military lending by cross-border lenders is localized and temporary, neither spilling over to neighboring countries nor persisting after conflicts end. Our findings demonstrate how global banks can serve as conduits for conflict financing by redirecting credit to military sectors.

**JEL classification**: F40, F50, G20

**Keywords**: Military conflict, cross-border lending, syndicated loans, geopolitical alignment, sectoral reallocation

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# 1 Introduction

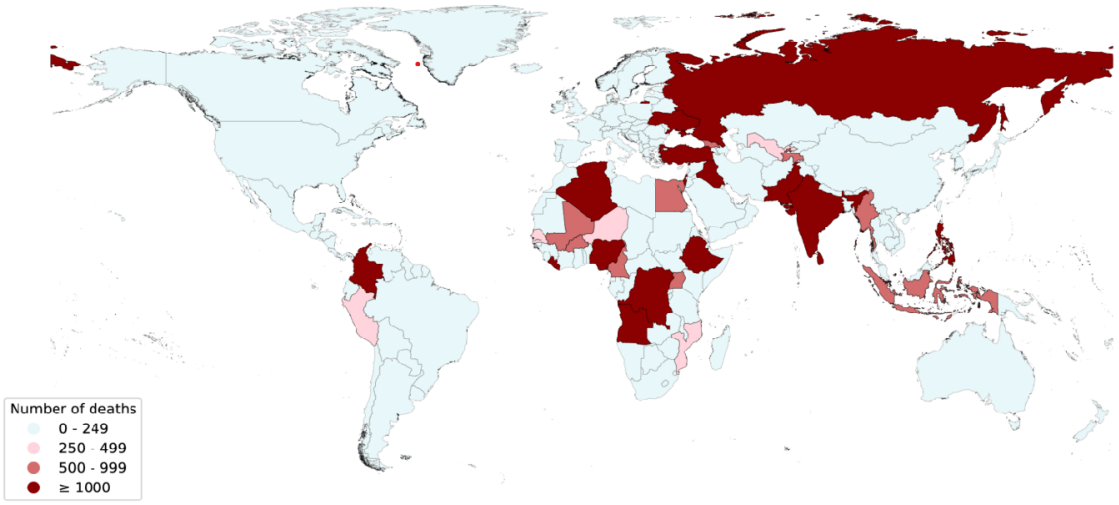
Although the world has enjoyed a relatively peaceful period since the carnage of World War II (Pinker, 2011), peace has been the exception rather than the rule throughout human history. Russia's war on Ukraine, rising tensions in the Middle East, and protracted civil wars in Sudan and Yemen serve as sobering reminders of this reality and have returned geopolitical conflict to the fore. Economists have focused mostly on two aspects of military conflicts: how their costs and benefits are distributed (Fearon, 1995; Poast, 2005) and how sovereign borrowing is used to finance them (Reinhart and Rogoff, 2009; Kremer and Jayachandran, 2006; Zielinski, 2016). Less understood, however, is the impact of military conflicts on international corporate financing. We address this gap by investigating how cross-border lending responds to countries experiencing violent conflict.

Two opposing hypotheses guide our empirical analysis. On one hand, a large literature shows how cross-border lenders tend to "run for the exit" when faced with negative shocks to the local economy, such as systemic banking crises. This is especially true in the absence of strong relationships between creditors and borrowers (Giannetti and Laeven, 2012; De Haas and Van Horen, 2013). Moreover, historical evidence shows banks' aversion to war, given its destabilizing macroeconomic impact (Kirshner, 2007). Consistent with this narrative, we expect cross-border lending to countries experiencing military conflict to decline.

On the other hand, countries at war often experience increased credit demand in defense-related sectors. This rising demand may be accommodated by foreign rather than domestic banks, with the latter being adversely affected by the conflict.Cross-border lenders unaffected by hostilities can thus become vital financing sources for nations experiencing violent conflict, particularly funding firms producing military-related goods. Some anecdotal evidence supports this narrative of foreign banks enabling military conflicts through arms-industry financing. A notorious case involves Italian Banca Nazionale del Lavoro using its US branch to grant $3 billion in unauthorized credits to Iraq (1988-1989), with about $600 million funding military technology (CIA, 1989). More recent and aggregate estimates indicate that

during 2020–2022, financial institutions provided $1 trillion to the defense industry globally (Longo, Meggiolaro and Felipe, 2024), with Europe's 15 largest banks investing almost €88 billion in arms companies selling to conflict zones (Oudes, Slijper and Uiterwaal, 2022).

**Figure 1.** Conflict countries, by annual battle-field deaths

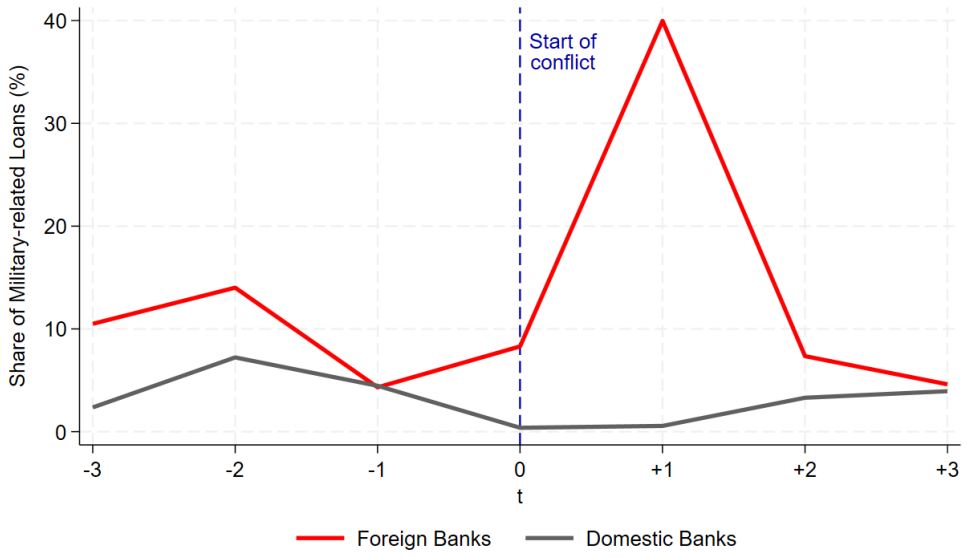



*Note*: This figure shows countries where annual battle-field related deaths exceeded 250, 500, or 1,000 at least once during 1989-2020 and where at least one firm received a syndicated loan during this period. The nature and timing of each conflict is described in Table A.I. Data sources: Uppsala Conflict Data Program, DealScan, BankFocus, and Compustat.

Our aim is to move beyond historical and anecdotal evidence, systematically analyzing how foreign credit flows respond to violent conflicts. We leverage comprehensive syndicated loan data from DealScan, covering 1.3 million loans by 14,327 banks to 97,110 firms across 179 countries during 1989–2020. We merge this information with conflict data from the Uppsala Conflict Data Program (UCDP). The UCDP provides detailed and comprehensive information on armed conflicts and organized violence, including battlefield death counts. In the three decades studied, civil wars and other intrastate hostilities comprise the majority of violent conflicts. Figure 1 shows that within our combined DealScan–UCDP dataset, 25 countries experienced at least one year with over 500 battlefield deaths, and 16 countries saw at least one year exceeding 1,000 battlefield deaths.

Our empirical analysis establishes two main findings. First, foreign lending to the overall economy declines relative to domestic lending when a country experiences a major conflict. Second, cross-border lenders *increase* their lending to firms in the military sector compared to domestic banks. These results indicate that geopolitical conflicts trigger both a contraction in overall credit provision and a reallocation of lending from non-military to military sectors.

**Figure 2.** Share of military-related lending before and during violent conflicts




*Note*: This figure shows the share of military-related lending in all cross-border syndicated lending (red) and in all domestic syndicated lending (black) to conflict countries before and during a violent conflict (1989–2020). Data sources: Uppsala Conflict Data Program, DealScan, BankFocus, and Compustat.

This pattern is remarkably robust across various sample specifications and methodological approaches, persisting even in models with stringent bank and firm fixed effects and home- and host-country trends. Figure 2 illustrates this pattern in the raw data, showing not only an absence of pre-trends but also a sharp increase in relative cross-border lending to military sectors right at the start of a typical conflict. Additional analysis shows that the cross-border lenders most likely increase their cross-border lending to the military sector in times of violent conflict are those with a relatively large exposure to the conflict country and those domiciled in high-income countries outside the global "West" (i.e., G7 and NATO).

## 2 Related literature

Our paper helps to advance four strands of the literature. First, we extend existing research on private international capital flows. Studies have clarified how investors allocate capital abroad (Lane and Milesi-Ferretti, 2007; Coeurdacier and Rey, 2013; Bruno and Shin, 2015), how this allocation affects recipient economies (Calvo, Leiderman and Reinhart, 1993), and how private capital flows co-move as part of a global cycle (Rey, 2015). More recent work studies private capital allocation by exploiting granular data on stocks and bonds (Maggiori, Neiman and Schreger, 2020; Coppola, Maggiori, Neiman and Schreger, 2021). As part of this literature, several papers examine how cross-border credit flows, especially in the form of syndicated lending, can transmit financial and real-economic shocks across borders.[1]

Our analysis of cross-border lending during violent conflicts extends this literature by demonstrating that cross-border lenders reduce overall lending more than domestic banks during such conflicts. This is consistent with existing evidence that geographical distance dampens cross-border loan activity, especially during uncertain times. Yet, we also uncover a novel pattern: cross-border lenders strategically redirect funding toward sectors that benefit from local violent conflict, particularly the military-industrial complex.

Second, we contribute to research on how financial markets respond to and shape military conflict. Most work has focused on sovereign borrowing. DiGiuseppe (2015) finds that better sovereign credit access allows states to finance military and civilian spending simultaneously, avoiding painful budgetary trade-offs. Horn, Reinhart and Trebesch (2024) show that during major wars, private capital flows typically collapse while government-to-government lending surges. Such official lending has been a key driver of international lending over the past 200 years, motivated more by military alliances than economic ties.

Our analysis extends this literature by documenting how private credit markets—specifically cross-border bank lending—facilitate military buildup during conflicts. While Horn et al.

[1] See, among others, Cetorelli and Goldberg (2011); Giannetti and Laeven (2012); Popov and Udell (2012); De Haas and Van Horen (2013); Cerutti, Hale and Minoiu (2015); Hale, Kapan and Minoiu (2020); Doerr and Schaz (2021).

(2024) focus on official bilateral lending between governments, we show that banks—especially those from high-income countries in the Americas and East Asia—systematically increase lending to military-related firms in conflict zones, even as they reduce overall lending to these countries. This creates an alternative financing channel that may enable and prolong hostilities, particularly when domestic credit markets are strained.[2] These findings suggest that both official and private financial flows can support military capabilities during conflicts.

Third, we shed new light on the economic dimensions of war and conflict. While research has examined war's direct costs (Davis and Weinstein, 2002; Tooze, 2006), evidence on broader economic impacts remains mixed. Some studies find no growth effects (Barro and Lee, 1994; Acemoglu, Johnson and Robinson, 2005), possibly due to increased military spending (Braun and McGratten, 1993). However, recent work shows that territorial warfare reduces economic activity in both conflict zones (Chupilkin and Koczan, 2022) and seemingly unaffected areas (Korovkin and Makarin, 2023). Relatedly, Federle, Meier, Müller, Mutschler and Schularick (2024) reveal how conflicts contract growth in warring and adjacent nations while accelerating it in distant economies. We extend this literature by highlighting the role of cross-border lending in creating winners and losers of violent conflicts.

Fourth, our paper relates to work on political ideology shaping investment decisions. Kempf, Luo, Schäfer and Tsoutsoura (2023) find that U.S. institutional investors' ideological alignment with foreign governments affects their cross-border capital allocation. Both banks and mutual funds invest less in countries when they become more ideologically distant from the governing party after elections. We make two contributions. First, by focusing on lending during violent conflicts, we identify a novel mechanism through which ideological views can perpetuate military activity across borders. Second, we show that increased cross-border lending to military sectors in conflict countries is largely driven by banks from high-income countries, more so in the Americas and east Asia than the global "West", suggesting ideological alignment plays a greater role when traditional geopolitical alliances are weaker.

[2] Mamonov, Ongena and Pestova (2024) find that conflicts reduce domestic private credit and raise lending rates, indicating negative supply effects.

# 3 Data

## 3.1 Data sources

Our analysis requires us to merge the Uppsala Conflict Data Program (UCDP), Loan Pricing Corporation's (LPC) DealScan, Moody's Orbis BankFocus, and Standard and Poor's Compustat. We briefly discuss these in turn.

The UCDP provides comprehensive, harmonized data on armed conflicts and organized violence over nearly four decades. We focus on state-based armed conflicts, which cause most battle-related fatalities (Melander, Pettersson and Themnér, 2016). These are conflicts between two parties, of which at least one is a state government, resulting in at least 25 fatalities within a calendar year. We aggregate battle deaths at the country-year level.

Next, we obtain syndicated loan data from DealScan. Our analysis examines loans to corporations worldwide from 1989 to 2020. We split each loan into syndicate member shares to create our unit of observation: a syndicated loan share by an individual bank to an individual borrower in a given year. Since DealScan provides loan share distributions for only 26% of loans, we impute missing shares using each bank's historical average share from loans with known allocations and then re-weigh these shares so that they add up to 100%.[3] We convert amounts to US dollars and date each observation to the loan's origination year. DealScan provides the countries of both lenders and borrowers (we double-check bank headquarters locations using ChatGPT) and classify a loan as foreign when the bank and firm are incorporated in different countries.

Last, we collect bank data from BankFocus. We merge the DealScan data with BankFocus at the bank rather than holding company level. From BankFocus, we gather a rich set of bank-specific variables, including equity, regulatory capital, and profitability. We obtain firm-level information from Compustat, including sales, employment, output, and assets.

[3]Our results are robust to alternative imputation methods, such as allocating an equal share to all syndicate members (De Haas and Van Horen, 2013) or allocating the average historical share to the lead bank(s) and dividing the remainder of the loan equally among all participants.

## 3.2 Data merging

To merge DealScan with Compustat and BankFocus data, we use matching files from Chava and Roberts (2008) and Schwert (2018), respectively. DealScan provides quarterly data on corporate loans and tranches, with lenders typically reporting multiple loans per quarter, and borrowing companies often receiving either several loans per quarter or a single loan from a group of lenders. We first link this data with Compustat Global Quarterly Fundamentals using two methods: direct matching of loan tranches via tranche identifiers and borrower GVKEYs, and an expanded match using DealScan's borrower company identifier (bcoid) linked to Compustat GVKEYs. This dual approach maximizes successful matches beyond those explicitly listed in Chava and Roberts (2008).

We then merge the company-tranche data with lender information from BankFocus using Schwert (2018)'s matching table, which links DealScan lender identifiers to bank holding company identifiers for major U.S.-based lenders. To improve matching, we incorporate up to three lags and leads around the loan origination quarter, as lender characteristics tend to be stable in the short term and serve as control variables in our study.

## 3.3 Identifying military and dual-use sectors

The UK Department for Business and Trade provides the UK Strategic Export Control List, which details military, dual-use, and other controlled items requiring an export authorization. We use this list to identify military-related terms like "explosives", "weapons", and "defense" and hand-collect the relevant 4-digit SIC codes (used in DealScan) by searching for these terms on the NAICS website. We first identify all dual-use products using the official UK Dual-Use List, which contains products with civilian applications that can also serve military functions, such as electronics, telecommunications, and chemicals (e.g., "3674—Semiconductors"). We then identify all products with primary military purposes from the UK Military List, such as weapons manufacturing or specialized military services (e.g., "3482—Small Arms Ammunition"). Appendix Table B.II provides a list of all identified

military-related SIC Codes, both dual-use and primary use.

### 3.4 Descriptive statistics

Our starting sample spans 1989–2020 and contains 1,322,944 observations at the bank-firm-year level, reflecting 859,764 distinct bank-firm relationships, 14,237 unique creditors,[4] and 97,110 unique borrowers. Table B.III presents summary statistics for the main variables in our analysis. The unit of observation is the bank-firm-year level.

Our dependent variable, the logarithm of the loan amount at this level, has a mean of 16.43 or $46.1 million. The average loan maturity is 3.78 or 54 months, while the average spread on the loan is 211 basis points. Foreign (cross-border) loans, where banks extend credit to firms in a different country, comprise 46% of all loans. Loans to dual-use military-related sectors account for 13% of our sample while another 2% are for primary military applications. Regarding conflict exposure, 2% of loans are extended to firms in countries experiencing a conflict with over 500 battlefield deaths, while 1% go to firms in countries with conflicts exceeding 1,000 battlefield deaths.

In terms of broader sector classifications, the manufacturing and finance sectors represent the largest shares at 22% and 19% of total loan recipients, respectively, while the agriculture sector represents the smallest share at 1% of total loans. The mean distance between the capital of the country where the bank is located and the capital of the country where the firm is located is 2,665 km.

## 4 Empirical strategy

### 4.1 Aggregate-level analysis

We first explore aggregate cross-border lending to military-related sectors during violent conflicts. Our goal is twofold: to explore whether these effects are economically significant

[4]In the analysis, we drop banks that provide only one loan, resulting in a sample of 14,237 banks.

at the level of the aggregate economy, and to understand how these effects compare to those stemming from domestic bank lending. We aggregate all bank-firm-year observations to the bank group-sector-country-year level, where 'bank group' refers to either all foreign or all domestic banks, and 'sector' to all borrowing firms operating in either military- or non-military-related sectors of the economy. We specify the following regression equation:

$$\begin{aligned} Loan_{gsct} = \beta_1 \cdot Conflict_{ct} \times Military_s \\ + \beta_2 \cdot Conflict_{ct} \times Military_s \times Foreign_{gc} \\ + \gamma_c + \gamma_{gs} + \gamma_{gc} + \gamma_{gt} + \gamma_{st} + \varepsilon_{gsct} \end{aligned} \tag{1}$$

where $Loan_{gsct}$ denotes total loans by bank group $g$ (foreign or domestic) to sector $s$ (military-related or not) in country $c$ in year $t$. $Conflict_{ct}$ is a dummy variable equal to one if the country experiences a violent conflict in year $t$. By construction, $\beta_1$ captures changes in aggregate credit by domestic banks to firms in military-related sectors in countries that encounter violent conflicts, while $\beta_2$ measures by how much lending to the military sector by cross-border lenders increases in response to violent conflict, relative to domestic banks.

The specification also includes the following base and high-dimensional fixed effects. First, $\gamma_c$ are host-country fixed effects that net out all time-invariant factors common to a country. Second, $\gamma_{gs}$ and $\gamma_{gc}$ are bank group $\times$ sector fixed effects and bank group $\times$ country fixed effects, respectively. These remove time-invariant differences between foreign and domestic lenders in how they lend to particular sectors and countries. Third, $\gamma_{gt}$ and $\gamma_{st}$ are bank group $\times$ year fixed effects and sector $\times$ year fixed effects that capture differential exposures of bank types and sectors, respectively, to aggregate shocks. Because the data is aggregated over lender types and firms, we cannot hold constant background forces at the level of the borrower and the creditor. We therefore view this specification as suggestive though useful to gauge whether any effects are meaningful in the aggregate.

Consistent with the earlier discussion, two opposing hypotheses emerge. First, prior evi-

dence suggests that cross-border lenders reduce credit to the corporate sector more than domestic banks in response to negative economic shocks (Giannetti and Laeven, 2012; De Haas and Van Horen, 2013). In this scenario, a violent conflict should lead cross-border lenders to "run for the exit" more than domestic ones. Conversely, war may increase credit demand in sectors tied to defense, which domestic banks might struggle to meet, prompting cross-border lenders to step in. Thus, cross-border lending to military-related sectors in conflict zones could rise.

## 4.2 Loan-level analysis

At the bank-firm-year level, we are interested in potential sectoral credit reallocation by cross-border lenders across firms in different sectors during times of violent conflict in a particular country. To that end, we specify the following regression equation:

$$\begin{aligned} Loan_{bfsct} = {} & \beta_1 \cdot Foreign_{bf} \times Conflict_{ct} \\ & + \beta_2 \cdot Foreign_{bf} \times Conflict_{ct} \times Military_s \\ & + \alpha_b + \alpha_f + \alpha_{ht} + \alpha_{ct} + \alpha_{bs} + \alpha_{\widetilde{cs}} + \alpha_{st} + \varepsilon_{bft} \end{aligned} \tag{2}$$

where $Loan_{bfsct}$ denotes total loans by individual bank $b$ to firm $f$ in sector $s$ in country $c$ (the borrowing firm's country of incorporation) in year $t$. As before, $Conflict_{ct}$ is a dummy equal to one if the country experienced a violent conflict in year $t$. $Military$ is a dummy equal to one if firm $f$'s primary, secondary, or tertiary SIC code is part of the list of military sectors in Table B.II. In this specification, $\beta_1$ captures changes in cross-border credit to a firm in a non-military sector in a country that encounters violent conflicts, relative to a domestic bank. $\beta_2$ further measures how much *the same* cross-border lender changes lending to a firm in the military sector in response to violent conflict.

Regression equation (2) is fully saturated with a battery of base and interactive fixed effects. Bank fixed effects $\alpha_b$ control for time-invariant differences across creditors that

may have an independent effect on sectoral credit allocation. Firm fixed effects $\alpha_f$ absorb time-invariant differences in credit demand or creditworthiness across firms which may be unrelated to the military conflict. Both these fixed effects are crucial because variations in loan volumes could otherwise simply reflect persistent differences between banks and firms, rather than meaningful changes over time. Next, we include bank incorporation country $h$ × year fixed effects ($\alpha_{ht}$) and firm incorporation country × year fixed effects ($\alpha_{ct}$). These absorb shocks common to all banks and firms in their country of incorporation. Last, we include three types of sectoral interactive fixed effects. These are, first, bank × sector fixed effects ($\alpha_{bs}$) to remove time-invariant heterogeneity in banks' propensity to lend to various sectors. Second, conflict $\widetilde{c}$ × sector fixed effects ($\alpha_{\widetilde{c}s}$) absorb sectoral lending differences during conflicts that are common to domestic banks and cross-border lenders. Third, sector × year fixed effects capture time-varying sector shocks that are again common to both lender groups. The variables $Conflict$, $Military$, $Foreign$, $Conflict \times Military$, and $Foreign \times Military$ are not included on their own as they would be absorbed by the various fixed effects.

Our prior hypotheses extend to the disaggregated analysis. In line with existing literature on cross-border versus domestic lending during crises, cross-border lenders may reduce their credit exposure to firms more strongly in response to local demand shocks. Alternatively, violent conflict could increase demand for military products, raising military firms' credit demand. Foreign banks, with a greater spare capacity and access to deeper internal capital markets, may be better positioned to increase lending to these firms.

# 5 Baseline results

Subsections 5.1 and 5.2 provide our aggregate and loan-level results, respectively.

## 5.1 Aggregate results

Table 1 reports estimates from Equation (1). We progressively saturate the model, starting with host country and year fixed effects (column 1), then adding the interactions of $Foreign$ with $Military$, $Conflict$, and $Year$ dummies (column 2), and finally adding interacted $Military$ and $Year$ dummies.

**Table 1.** Cross-border lending to firms in military sectors during violent conflicts: Estimates at the aggregate level

| | Dependent variable: $Loan_{gsct}$ | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Conflict × Military | 0.351*** | 0.270** | 0.237* |
| | (0.100) | (0.083) | (0.125) |
| | [*0.484*] | [*0.227*] | [*0.289*] |
| Conflict × Military × Foreign | 0.282*** | 0.331*** | 0.377*** |
| | (0.063) | (0.080) | (0.086) |
| | [*0.023*] | [*0.039*] | [*0.031*] |
| Host Country FE | ✓ | ✓ | ✓ |
| Year FE | ✓ | | |
| Foreign × Military FE | | ✓ | ✓ |
| Foreign × Conflict FE | | ✓ | ✓ |
| Foreign × Year FE | | ✓ | ✓ |
| Military × Year FE | | | ✓ |
| $N$ obs | 7,562 | 7,562 | 7,562 |
| $N$ of clusters | 8 | 8 | 8 |
| $R^2$ (adj.) | 0.708 | 0.662 | 0.667 |

*Note*: This table shows the results from estimating Equation (1). The dependent variable is the natural logarithm of total loans by bank group $g$ to sector $s$ in country $c$ and year $t$. $Foreign_{gc}$ 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 (see Table B.II for the relevant SIC codes). All regressions include fixed effects as specified. Data sourced from UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors are clustered at the sector (military vs non-military), foreign (yes or no), and conflict (yes or no) level, resulting in eight clusters. Clustered standard errors are reported in parentheses. In addition, we use the wild bootstrap-c procedure to produce the distribution of the coefficients (256 replications, Rademacher weights). The corresponding $p$-values of the null hypothesis that an estimated coefficient is zero are reported in italics and between brackets.

In all three specifications, the point estimates on $\beta_1$ are positive. This suggests that lending by domestic banks to the military sector increases during times of violent conflict.

However, in the preferred specification in column (3), the point estimate is only significant at the 10 percent level, indicating that this relation is statistically quite weak. Moreover, in all three cases, the bootstrapped $p$-values, shown in brackets, are larger than 0.05.

In contrast, the point estimates on $\beta_2$ are not just positive but also consistently significant at the 1-percent statistical level (this is also supported by the low bootstrapped $p$-values). This strongly suggests that cross-border lending to military-related firms increases during a violent conflict. The economic magnitude is substantial. Because the dependent variable is in logs and the main explanatory variables are dummies, the interpretation of $\beta_2$ is that during a violent conflict, cross-border lending to the military sector is higher by $e^{\beta_2} - 1$ percent, compared to lending to the military sector by domestic banks. Therefore, the point estimate in the preferred specification in column (3) of 0.377 indicates that cross-border lending to the military sector in a country in conflict increases by 45.8 percent, relative to lending by domestic banks.

## 5.2 Loan-level results

In Table 2, we present the estimates from Equation (2). As in Table 1, we start with a parsimonious model and then gradually add fixed effects. In columns (1) and (2), we only use bank and firm fixed effects. We then include the double interactions of $Military$ with $Foreign$, $Conflict$, and $Year$ dummies (column 3). Finally, we also add interactions of the *Home country* and *Host country* dummies with the $Year$ dummies.

Column (1) reports a specification without the triple interaction term to study the effect of violent conflict on overall lending. The point estimate is negative and significant at the 5 percent statistical level. The point estimate of -0.287 implies that relative to domestic lending, foreign lending to a firm in a conflict country declines by $e^{-0.287} - 1 = 25$ percent when a country experiences an episode of violent conflict.

In column (2), we add the triple interaction of $Conflict$, $Military$, and $Foreign$. This allows us to compare the change in foreign lending to firms in the non-military and the

**Table 2.** Cross-border lending to firms in military sectors during violent conflicts: Loan-level regressions

| Dependent variable | $Loan_{bfsct}$ | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.287** | -0.312*** | -0.353*** | -0.450** |
| | (0.129) | (0.117) | (0.119) | (0.201) |
| Foreign × Conflict × Military | | 0.520*** | 0.459** | 0.668*** |
| | | (0.179) | (0.182) | (0.162) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | | | ✓ | ✓ |
| Conflict × Military FE | | | ✓ | ✓ |
| Year FE × Military FE | | | ✓ | ✓ |
| Home Country × Year FE | | | | ✓ |
| Host Country × Year FE | | | | ✓ |
| $N$ obs | 1,308,599 | 1,308,599 | 1,308,048 | 1,308,048 |
| $N$ of banks | 14,070 | 14,070 | 14,021 | 14,021 |
| $R^2$ (adj.) | 0.751 | 0.751 | 0.758 | 0.765 |

*Note*: This table shows the results from estimating Equation (2). The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). All regressions include fixed effects as specified. Data sourced from UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank are shown in parentheses.

military sector when the country is experiencing violent conflict. We find that relative to domestic lending, foreign lending to a firm in the non-military sector declines by $e^{-0.312} - 1 = 26.8$ percent. At the same time, relative to domestic lending, foreign lending to a firm in the military sector *increases* by $e^{0.520} - 1 = 68.2$ percent. Both effects are significant at the 1 percent statistical level.

We continue to obtain similar effects, both in terms of statistical significance and in terms of economic magnitude, once we add the double interactions of the *Military* dummy with the rest of the explanatory variables (column 3). The same applies to the preferred specification in column (4), where we also flexibly control for home country and host country time patterns. In this case, we find that relative to domestic lending, foreign lending to a firm in the non-military sector declines by 36.2 percent, while foreign lending to a firm in

the military sector increases by 95 percent, relative to domestic banks.

We conclude that our results point to two countervailing effects. On one hand, foreign lending on average declines to countries experiencing violent conflict, confirming numerous empirical banking studies that uncovered a "flight home" effect during crises. At the same time, we also find that this overall decline is fully driven by a decline in lending to non-military firms. In contrast, lending to military firms almost doubles, suggesting that rather than fleeing, cross-border lenders accommodate the increasing credit demand of a set of firms that plausibly stand to benefit from local violent conflict.

We note that the explanatory power of the regression is quite high, with the interaction of $Foreign$, $Conflict$, and $Military$, bank and firm fixed effects, and home- and host-country specific time patterns explaining 77% of the variation in lending.

## 5.3 Robustness

We conduct two analyses in this section. First, we verify if our main findings are robust to using different sample selections and data specifications. Second, we examine how violent conflict affects other loan traits, comparing the responses by domestic and foreign banks.

### 5.3.1 Sample and data choices

**Conflict definition.** In Appendix Table C.I, we re-run Equation (2) while defining the variable $Conflict$ using different casualty thresholds. Recall that our baseline definition uses a relatively high cut-off of 1,000 fatalities per year. We now re-construct this variable using different thresholds: 100, 250, 500, and 750 annual deaths. We find no difference in lending to the military sector by foreign and domestic banks when $Conflict$ is defined using a relatively low threshold of 100 violent deaths (column 1). For 250 fatalities, we already find a significant increase in foreign lending to the military sector, relative to domestic lending (column 2), and this effect increases when we define $Conflict$ as at least 500 fatalities (column 3). Numerically, the effect is already in the ballpark of the effect from the preferred

specification in Table 2, column (4), which we replicate in column (5) of Appendix Table C.I. Finally, when we define $Conflict$ as at least 750 fatalities in a single year (column 4), we register both a significant withdrawal (in relative terms) of cross-border lenders from non-military firms and a significant increase of cross-border lending (again, in relative terms) to military firms. The estimates reported in Table C.I thus imply that both the "running for the exit" effect and the propensity to support military firms increase with the severity of the violent conflict.

In Appendix Table C.II, we run a version of the same exercise by replacing the dummy variable $Conflict$ with the continuous measure of fatalities, conditional on fatalities being higher than a pre-defined threshold. We broadly confirm the findings from Appendix Table C.I, namely that foreign lending to military firms increases in the severity of the conflict, with the largest increase observed beyond a threshold of 500 violent deaths.

**Defining military sectors.** In Appendix Table D.I, we check whether our main results are not driven by a particular classification of firms into "military" and "non-military". Recall that in our main test, we classify firms as "military" if their primary, secondary, or tertiary SIC code belongs to the list of 57 military sectors in Table B.II (we replicate these results in column 1). However, many of these sectors produce dual-purpose goods. We therefore now split these sectors into "dual-use" and "primary-use" (47 and 10 sectors, respectively). We find that during violent conflicts, cross-border lenders start to lend relatively more to both the producers of dual-use goods (column 2) and of primary military goods (column 3). The latter column clearly shows that the main effect we document is not an artifact of cross-border lending increasing to a range of firms that produce mostly non-military goods.

**Imputing missing loan shares.** In Appendix Table E.I, we impute missing loan shares in three different ways. In column (1), following Duchin and Sosyura (2014), lead banks are allocated their median loan share of lead banks for loans for which data is available, and the remaining loan share of non-lead (i.e. participant) banks is then split equally across all

participant banks. In column (2), following De Haas and Van Horen (2013), the two groups of lead and participant banks are each allocated 50% of the loan. These halves are then split equally across banks in each group. In column (3), following De Haas and Van Horen (2013) and Dell'Ariccia, Kadyrzhanova, Minoiu and Ratnovski (2021), missing values for the loan share are imputed based on a regression model. The dependent variable of this model is the loan share (when known). As explanatory variables we use the average loan amount (loan amount divided by the number of lenders), a dummy variable equal to one if the bank is a lead bank, an interaction term between this dummy and a variable that measures whether or not the borrower is a repeat borrower, and a set of bank and country fixed effects. We then use the estimated coefficients to predict missing loan portions (we replace negative predicted values with zero and predicted values exceeding the total loan amount with this amount). Our results are very stable regardless of the exact imputation method used.

**Country sample.** In Appendix Table F.I, we address the potential concern that our results might be driven by a handful of source countries. To that end, we exclude from the sample large and important countries, both economically and in terms of overall number of loans: the United States, Japan, Germany, France, and China. This exercise clearly shows that the main results of the paper are not driven by specific countries. We continue finding an economically meaningful and statistically significant increase in foreign lending to the military sector in times of violent conflict when we exclude loans from banks in the United States (33.2% of observations, column 1); Japan (15.6%, column 2); Germany and France (12.6%, column 3); or China (2.8%, column 4).

### 5.3.2 Loan characteristics

Our evidence so far indicates that violent conflict in a country leads cross-border lenders to increase their exposure to the military sector, more so than domestic banks, even though they are reducing their lending to that country overall. In Appendix Table G.I, we examine

two other characteristics of loans: their interest rate and their maturity. These tests allow us to distinguish between credit supply and credit demand explanations of the main effect. Moreover, we are able to study whether banks not only extend more credit to conflict-affected countries, but also make maturity adjustments on those loans.

In column (1), we replicate the estimates from the main test (Table 2, column 4). In column (2), we then re-estimate Equation(2) with the loan spread as the dependent variable.[5] We find that the spread on the average foreign loan to a firm in the military sector declines, by about one-quarter of a sample standard deviation. The effect is significant at the 1 percent statistical level. The implication of the combined evidence in columns (1) and (2) is that during violent conflict, the size of the average loan by a cross-border lender to a military firm increases relatively more than that by domestic banks, and this loan share has on average a lower rate. This points towards a mechanism whereby cross-border lenders increase the supply of credit to military firms in conflict countries.

In column (3), we re-estimate Equation (2) with the natural logarithm of the loan's maturity as a dependent variable. In this case, we find that the maturity of the average foreign loan to a military firm in a conflict-affected country increases. Once again, the effect is significant at the 1 percent statistical level. The interpretation of $\beta_2$ is that after a violent conflict erupts in a country, the loan maturity of the average foreign loan to a military firm, compared to the average domestic one, increases by about 12 percent. We conclude that cross-border lenders increase their credit supply to the military sector in countries in conflict, and the resulting lending is on average longer-term.

[5]There are insufficient observations of the variable "Spread over default base" in DealScan. We therefore first run the following regression on the full loan sample:

$$\begin{aligned} Loan\,Rate_{bft} &= \beta_1 Log(Loan\,Amount)_{bft} + \beta_2 Log(Loan\,Maturity)_{bft} + \beta_3 Foreign\,Loan_{bft} \\ &+\gamma_{bj} + \mu_{it} + \phi_{jt} + \varepsilon_{bft}, \end{aligned}$$

In a second step, we then create a new variable—"Predicted loan rate"—using the coefficients estimated in the first step.

## 5.4 Bank specialization and cross-border conflict lending

This section explores how a bank's lending specialization patterns—both geographic and sectoral—influences its military-sector lending during conflicts. A recent literature documents large differences in lending specialization across banks (Paravisini, Rappoport and Schnabl, 2023; Blickle, Parlatore and Saunders, 2024) and finds that these specialization patterns influence banks' lending decisions, especially in times of instability. The possibility therefore arises that our results partly reflect the tendency of some banks to have lending portfolios tilted towards either particular conflict countries or the military sector. To investigate this, we consider two types of specialization (country and sector) and use both absolute and relative specialization measures. More specifically, for each bank $b$, we compute the share of lending to country $c$ or sector $s$ in year $t$ as a percentage of total lending by bank $b$ across all countries or sectors, respectively, in that year:

$$Country\,Share_{bct} = \frac{\sum_{f=1}^{F_{bct}} Loan_{bct}}{\sum_{c=1}^{C_{bt}} \sum_{f=1}^{F_{bct}} Loan_{bct}}, \quad Sector\,Share_{bst} = \frac{\sum_{f=1}^{F_{bst}} Loan_{bst}}{\sum_{s=1}^{S_{bt}} \sum_{f=1}^{F_{bst}} Loan_{bst}} \tag{3}$$

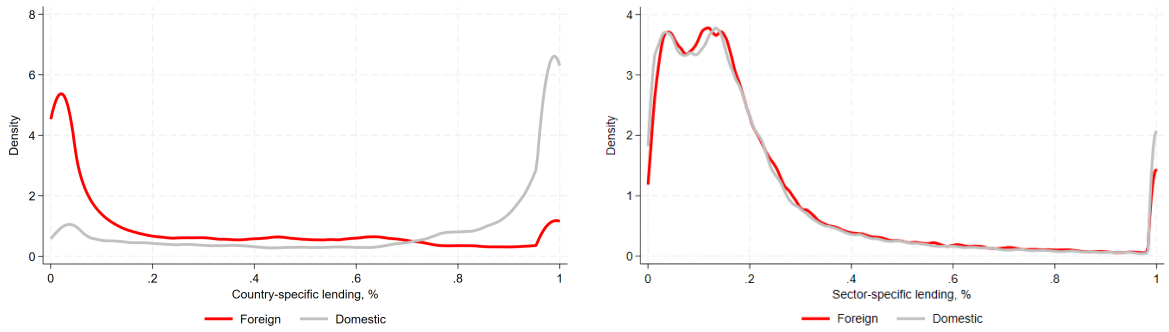
Empirical frequencies of bank-country shares of foreign and domestic lenders appear in Figure 3($a$) and the corresponding frequencies of bank-sector shares in Figure 3($b$). These figures clearly illustrate the home-bias pattern in domestic bank lending. They also reveal a small uptick in the right tail of the distribution for cross-border lenders: around 2% of these banks have country-specific lending shares exceeding 95%. When it comes to bank-sector shares, we again observe a spike in the right tail: roughly 1.5% of cross-border lenders have sector-lending shares close to 100%. We note, however, that the data in both cases show that the left tails of the distributions are much fatter than the right ones, indicating that diversification outweighs specialization in the context of cross-border bank lending.

We then use an absolute threshold to discretize these distributions and split banks according to their absolute specialization:

$$AS_{bct} = \begin{cases} 1, \text{ if } Country\ Share_{bct} \geqslant \alpha_c \\ 0, \text{ if else} \end{cases} \qquad AS_{bst} = \begin{cases} 1, \text{ if } Sector\ Share_{bst} \geqslant \alpha_s \\ 0, \text{ if else} \end{cases} \tag{4}$$

For the baseline estimations, we use $\alpha_c = \alpha_s = 0.2$ when computing these absolute specialization measures $AS_{bct}$ and $AS_{bst}$. We find that 71% (50%) of banks are specialized in a country (sector) in absolute terms. In Appendix H, we augment our analysis by exploring relative specialization measures (Blickle et al., 2024): we compute deviations of bank-country (bank-sector) shares from the corresponding country (sector) share and then discretize those deviations by using either the 50$^{\text{th}}$ or the 75$^{\text{th}}$ percentile of their distribution as thresholds.

**Figure 3.** Bank lending shares to individual countries and sectors




(a) Bank-country lending shares

(b) Bank-sector lending shares

*Note*: This figure reports empirical frequencies of country ($a$) and sector ($b$) shares in banks' syndicated loan portfolios, as implied by expressions (3), averaged across 1989–2020 by foreign and domestic banks. Data sources: Uppsala Conflict Data Program, DealScan, BankFocus, and Compustat.

To test the specialization hypothesis, we estimate Equation (2) on a subsample of specialized cross-border lenders ($AS$=1) and a subsample of non-specialized cross-border lenders ($AS$=0)—using absolute specialization measures. We fix the composition of specialized and non-specialized banks in the last pre-conflict year to prevent any bias from potential 'migration' of banks across the two groups over time. Table 3 reports estimates from sample splits by absolute specialization in either a country (columns 1–2) or sector (columns 3–4).

**Table 3.** Bank specialization and foreign lending during violent conflicts

| Specialization: | Dependent variable: $Loan_{bft}$ | | | |
|---|---|---|---|---|
| | Absolute measure | | | |
| | In country ($AS_{bct} = 1$) | | In sector ($AS_{bst} = 1$) | |
| | Yes | No | Yes | No |
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.600*** | 0.580** | -0.507*** | -0.328 |
| | (0.209) | (0.290) | (0.181) | (0.292) |
| Foreign × Conflict × Military | 0.950*** | 0.055 | 0.774*** | 0.749*** |
| | (0.264) | (0.570) | (0.231) | (0.258) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 875,505 | 410,297 | 404,152 | 871,309 |
| $N$ banks | 13,693 | 3,443 | 13,234 | 6,127 |
| $R^2$ (adj.) | 0.784 | 0.763 | 0.764 | 0.780 |

*Note*: This table shows the results of our baseline specification (2) run on four sub-samples of banks: those specialized in lending to particular countries ($AS_{bct} = 1$) and those that are not ($AS_{bct} = 0$), in the first two columns, and those specialized in lending to specific economic sectors ($AS_{bst} = 1$) and those that are not ($AS_{bst} = 0$), in the last two columns. In all cases, the dependent variable is the natural logarithm of the loan amount. Absolute specialization measures are used, cf. expressions (4). *Foreign* is a dummy equal to one if the bank lends to a firm in another 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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). All regressions include fixed effects as specified. Data sourced from UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank are shown in parentheses.

The evidence in the first two columns of Table 3 indicates that during violent conflict, cross-border lenders that had at least 20% of their total lending directed to a conflict-affected country (column 1) substantially increase their lending to military firms. In contrast, this increase is not observed for banks that are not specialized in lending to that country (column 2). We also observe a telling contrast when it comes to lending to the non-military sector: "specialized" foreign banks reduce such lending, while "non-specialized" foreign banks increase it. The estimates thus imply that the main result—i.e., a "flight home" effect

accompanied by an increase in foreign lending to the military sector—is driven by banks that have a sufficiently large prior exposure to the country experiencing violent conflict.

In contrast, columns (3) and (4) of Table 3 show that during violent conflict in a country, both specialized and non-specialized cross-border lenders significantly expand lending to military firms. Foreign banks that specialize in military lending also significantly reduce non-military lending, pointing to an overall reallocation of credit across sectors. Non-specialized banks increase military lending without a significant reduction of non-military credit.

Overall, these results indicate that bank specialization in countries is a better predictor of increased support for the country's military firms than prior world-wide specialization in that particular sector, pointing to the importance of preexisting geographical relationships and lending familiarity in global credit markets. Appendix Tables H.I and H.II show that the essence of Table 3 remains virtually unchanged when we account for relative as opposed to absolute specialization and when using different relative specialization thresholds ($50^{\text{th}}$ and $75^{\text{th}}$ percentile, respectively).

## 5.5 Geopolitical alignment and cross-border conflict lending

We now extend our analysis by examining the (geo)political distance between a bank's headquarters country and destination countries experiencing violent conflict. Our aim is to analyze whether banks align lending practices with their home country's geopolitical interests, particularly in military-related financing. While Western banks typically prioritize profit motives, non-Western institutions, often publicly-owned, may emphasize government interests more. We classify countries in two ways: using United Nations (UN) General Assembly voting data from Bailey, Strezhnev and Voeten (2017) to identify geopolitical alignments based on shared values, and through formal bloc membership or income levels.

### 5.5.1 West vs. East political orientation in UN voting

We first split countries into three blocs based on their voting patterns on resolutions in the UN General Assembly. More specifically, we classify countries based on how often they vote with the United States ("West") versus how often they vote with China ("East") during our sample period. We apply two different criteria in terms of vote share. According to the first one, we place countries in blocs West or East if they have voted with the US or with China, respectively, more than 50% of the time. For the second criterion, we rank countries based on their voting alignment with the US or China and classify those above the $50^{\text{th}}$ percentile as West or East respectively. The remaining countries are placed in a reference, "non-aligned" group. By design, we end up with more countries in the two main blocs when we use the second criterion than when we use the first one.

We apply these classification criteria using two different time dimensions. First, we classify countries year by year, allowing their alignment to vary over time. That is, a country might vote with the US camp in some years but align with the non-aligned or China camp in others, similar to the approach in Gopinath, Gourinchas, Presbitero and Topalova (2024). Second, we classify countries based on their average voting patterns across the entire sample period, which assigns each country to a fixed camp throughout the estimation period.

Armed with these data, we run the following model:

$$\begin{aligned} \ln Loan_{bfsct} = {} & \beta_1 \cdot West\,Foreign_{bf} \times Conflict_{ct} \\ & + \beta_2 \cdot East\,Foreign_{bf} \times Conflict_{ct} \\ & + \beta_3 \cdot West\,Foreign_{bf} \times Conflict_{ct} \times Military_s \\ & + \beta_4 \cdot East\,Foreign_{bf} \times Conflict_{ct} \times Military_s \\ & + \alpha_b + \alpha_f + \alpha_{ht} + \alpha_{ct} + \alpha_{bs} + \alpha_{\tilde{cs}} + \alpha_{st} + \varepsilon_{bft}, \end{aligned} \tag{5}$$

This specification modifies Equation (2) by separating foreign lenders into Western and Eastern blocs according to our geopolitical alignment measures, using non-aligned countries

as the reference group.

The estimates in Table 4 show that banks from both geopolitical blocs are equally likely to increase lending to military firms in a foreign country that is experiencing violent conflict, relative to banks from non-aligned countries. While the effect is numerically stronger for banks from the West bloc, the difference between the point estimates of $\beta_2$ for the two triple interaction variables is not significantly different from zero.

**Table 4.** Geopolitical alignment and cross-border lending to firms in military sectors during violent conflicts

| | Dependent variable: $Loan_{bft}$ | | | |
|---|---|---|---|---|
| UN voting pattern: | Time-varying in 1989–2023 | | Average across 1989–2023 | |
| Threshold in UN votings: | $50^{th}$-percentile | 50% of cases | $50^{th}$-percentile | 50% of cases |
| | (1) | (2) | (3) | (4) |
| Conflict × Military × West Foreign | 0.470*** | 0.431*** | 0.514*** | 0.524*** |
| | (0.161) | (0.166) | (0.170) | (0.171) |
| Conflict × Military × East Foreign | 0.383*** | 0.363** | 0.490*** | 0.495*** |
| | (0.144) | (0.153) | (0.154) | (0.155) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| West Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| East Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 1,308,048 | 1,308,048 | 1,308,048 | 1,308,048 |
| $N$ banks | 14,032 | 14,032 | 14,032 | 14,032 |
| $R^2$ (adj.) | 0.765 | 0.765 | 0.765 | 0.765 |
| $N$ pro-West countries | 107 | 96 | 67 | 46 |
| $N$ pro-East countries | 68 | 73 | 52 | 69 |
| Pro-West countries: $p$%-tile | 0.23 | | 0.23 | |
| Pro-East countries: $p$%-tile | 0.72 | | 0.72 | |

*Note*: The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). We use Bailey et al. (2017) to divide countries into a West or East bloc depending on the country's voting behavior on UN Resolutions. *West Foreign* (*East Foreign*) is a dummy variable equal to one if the loan is extended by a bank from a country leaning towards the West (East) bloc to a firm domiciled in a foreign country. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

### 5.5.2 Economic and military country blocs

Another meaningful way in which countries sort themselves on geopolitical grounds is by their membership in various geopolitical structures. These structures may be military or economic, formal or informal, but they do reveal, by means of participation in actual treaties, the geopolitical bend of the participating members.

In Table 5, we run a modified version of Equation (5) where we use two such groupings. The first is BRICS countries vs NATO countries. BRICS is a loose organization of large and important emerging markets representative of the so-called "Global South," namely Brazil, Russia, India, China, and South Africa. NATO, on the other hand, is a western defense alliance encompassing at present 32 countries in Europe and North America (Finland's and Sweden's recent additions are outside of our time period, and for one country, Montenegro, there is no DealScan data). The evidence in column (1) suggests that, relative to countries in the reference category, banks domiciled in BRICS countries are significantly more likely to increase lending to a military firm in a conflict country. In contrast, banks domiciled in NATO member states do not increase military lending to firms in conflict countries, relative to banks domiciled in "non-aligned" countries.

In column (2), we compare the behavior of banks domiciled in BRICS countries to that of banks domiciled in a narrower "western" bloc, that of the G7 countries. The G7 was formed in 1975 to include what was at the time the largest seven economies in the world, all of them liberal democracies: the United States, Japan, Germany, the United Kingdom, France, Canada, and Italy.[6] The evidence indicates that banks domiciled in G7 countries are not more likely to increase lending to military firms during conflict, relative to the reference group. In contrast, banks domiciled in BRICS countries continue to be more likely to do so, and the effect is significant at the 5-percent statistical level.

In column (3), we split foreign countries in terms of their income level. We use the World Bank's income classification to divide countries into low-income, middle-income, and high-

[6]Russia was included in G7 in 1997 and expelled in 2014 following the annexation of Crimea.

**Table 5.** Cross-order lending to firms in military sectors during violent conflicts: The role of economic and military cooperation

| | Dependent variable: $Loan_{bft}$ | | | |
|---|---|---|---|---|
| Country bloc $B_1$: | BRICS | BRICS | Low Inc | Low Inc |
| Country bloc $B_2$: | NATO | G7 | High Inc | High Inc – West |
| Country bloc $B_3$: | | | | High Inc – East |
| | (1) | (2) | (3) | (4) |
| Conflict × Military × $B_1$ Foreign | 0.346* | 0.383** | -0.178 | -0.177 |
| | (0.185) | (0.182) | (0.511) | (0.512) |
| Conflict × Military × $B_2$ Foreign | 0.087 | 0.187 | 0.386*** | 0.386** |
| | (0.143) | (0.137) | (0.146) | (0.152) |
| Conflict × Military × $B_3$ Foreign | | | | 0.537*** |
| | | | | (0.163) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| $B_j$ Foreign × Military FE (for $j = 1, 2, 3$) | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 1,308,048 | 1,308,048 | 1,308,048 | 1,308,048 |
| $N$ banks | 14,021 | 14,021 | 14,021 | 14,021 |
| $R^2$ (adj.) | 0.765 | 0.765 | 0.765 | 0.765 |
| $N$ $B_1$ countries | 5 | 5 | 50 | 50 |
| $N$ $B_2$ countries | 29 | 7 | 61 | 50 |
| $N$ $B_3$ countries | | | | 11 |

*Note*: Dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). In columns (1)–(3), country blocs $B_1$ and $B_2$ are intended to capture opposing economic and military groups and banks headquartered in these country groups: BRICS vs. NATO, BRICS vs. G7, High Income (the upper 33% of countries in terms of GDP per capita, in 2014 US Dollars) vs Low Income (the lower 33%, correspondingly). In column (4), we further split High Income countries into *Western* vs. *Eastern*. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank shown in parentheses.

income categories. There are 50 countries in the first and 61 countries in the second category, making the three groups of roughly equal size (unlike columns (1) and (2) where the reference group was by far the largest one). The estimates show that only banks domiciled in high-income countries increase lending to firms in the the military sector in countries with violent conflicts. In column (4), we further split the high-income countries into 50 "western" and 11

"eastern" ones and find that the effect is largely driven by banks domiciled in high-income countries in the eastern bloc.[7]

The evidence just discussed points to a substantial geographic and geopolitical heterogeneity in the response of cross-border lenders, in terms of lending to the military sector, to the emergence of violent conflict. The countries whose banks are most likely to increase their credit supply are in relatively high-income economies mostly outside the global "West".

# 6 Extensions

## 6.1 Spillover effects to neighboring countries?

In this section, we explore whether banks increase military lending to neighboring countries that are not directly involved in a conflict, aiming to identify potential spillover effects. The existing literature highlights that wars and violent conflicts can impact regional security dynamics and thereby produce spatial spillover effects (Federle et al., 2024). When a country experiences a violent conflict within its borders, it may serve as a signal for neighboring countries to prepare for potential risks. Consequently, a similar mechanism to the one that likely explains our results can arise: domestic demand for military equipment goes up, and cross-border lenders boost their credit to military-related sectors in these neighboring countries.

We take this question to the data by first identifying the neighbors of countries in conflict as identified in Table A.I. We do this manually and we are careful to exclude neighboring countries which are in conflicts themselves (i.e., those above the 1,000 battle-field deaths). For instance, Pakistan cannot serve as a neighboring country for India and vice-versa in 2008, 2009, and 2010 since both countries experience conflicts in these years, even though they can serve as neighboring countries for each other in other, non-conflict, years.

[7] In Appendix Table F.II, we further split foreign countries into geographic zones and find that banks are relatively more likely to increase military lending to conflict countries if they are domiciled in east Asia, followed by banks in the Americas.

In Table 6, we replicate Equation (2) by coding the variable $Conflict$ to be one for countries that share a border with a country currently in violent conflict and are not experiencing conflict themselves. With each column, we gradually constrain the neighboring conflicts to be less severe. That is, in the first column we look at countries whose neighbor is experiencing less than 1,000 battlefield deaths, while in the last column, we only include neighboring countries with zero battle-field deaths. The results are consistent across all specifications. We find that cross-border lenders do not increase military lending in those neighboring non-conflict regions. We interpret these results as an indication that banks are reactive, but not proactive in their military lending decisions.

**Table 6.** Cross-border lending during violent conflicts: Spillover effects

| | Dependent variable: $Loan_{bft}$ | | | |
|---|---|---|---|---|
| Neighboring countries: | Countries with $N$ *deaths* $\leqslant j$: | | | |
| | $j = 1,000$ | $j = 500$ | $j = 100$ | $j = 0$ |
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.058 | -0.127** | -0.120** | |
| | (0.050) | (0.055) | (0.056) | |
| Foreign × Conflict × Military | 0.074 | -0.059 | -0.014 | -0.030 |
| | (0.068) | (0.071) | (0.068) | (0.071) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| Host Country × 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.) | 0.757 | 0.765 | 0.765 | 0.765 |

*Note*: This table shows the results from estimating Equation (2) with a focus on the neighbors of conflict countries. The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

## 6.2 Post-war recovery

Another logical extension is to study how cross-border bank lending to the military sector evolves after a violent conflict comes to an end. Right now, years before and after the conflict are placed in the reference category and treated equally. However, post-conflict years may be special in that banks may have an incentive to keep lending to the military sector. This could take place for a number of reasons. For example, peace may be fragile and banks may expect the conflict to be reignited again. Alternatively, banks may want to continue lending to military firms in order to strengthen the military base after a war to prevent future conflicts. Conversely, banks might reduce military lending following a conflict due to diminished profit opportunities in the defense sector compared to other industries, particularly those vital for post-war reconstruction. Furthermore, peace agreements and ceasefires could negatively impact military lending as new regulatory measures lead both governments to decrease their demand for military equipment and banks to limit their financing of such purchases.

We now define a new dummy variable $Post\ Conflict$ which is equal to 1 in the first, second, or third year after the end of hostilities. In Table 7, we report a version of Equation (2) which involves the variable $Post\ Conflict$ instead of $Conflict$. We find that lending to the military sector in the first year after the end of a violent conflict is still significantly higher for foreign than for domestic banks (column 1). However, this is no longer the case in the second year after the end of the conflict (column 2), in the statistical sense, even though the coefficient is still economically large. During the third post-conflict year, the difference in lending to the military sector between domestic and foreign banks is both statistically and economically close to zero. We conclude that by and large, the difference in military lending between foreign and domestic banks to a conflict country, while large and significant during the conflict itself, dissipates fairly quickly once hostilities subside.

At the same time, the positive effect during the first post-conflict year is worth noting and it can be driven by several factors. First, the peace may be understood to be simply a temporary lull in hostilities. Alternatively, the conflict may still be raging, albeit with a

lower intensity (e.g., battlefield deaths are now permanently below 1000 or 500). Regardless of what explains this effect exactly, it is quite short-lived.

**Table 7.** Cross-border lending after violent conflicts

| Post-conflict period: | Dependent variable: $Loan_{bft}$ | | |
|---|---|---|---|
| | One year | Two years | Three years |
| | (1) | (2) | (3) |
| Foreign × Post-Conflict | 0.037 | 0.209 | 0.272* |
| | (0.234) | (0.233) | (0.156) |
| Foreign × Post-Conflict × Military | 0.845*** | 0.382 | 0.023 |
| | (0.230) | (0.282) | (0.262) |
| Bank FE | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ |
| Post-Conflict × Military FE | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ |
| $N$ obs | 1,308,048 | 1,308,048 | 1,308,048 |
| $N$ banks | 14,021 | 14,021 | 14,021 |
| $R^2$ (adj.) | 0.765 | 0.765 | 0.765 |

*Note*: This table shows the results from estimating Equation (2) with a focus on the post-conflict period. The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

## 6.3 Geographical distance to violent conflicts

While countries proximate to conflict zones may suffer economic hardship, those at a greater distance may experience some economic gains (Federle et al., 2024). Such distant countries can potentially exploit the increased returns from military-related activities without bearing the direct costs of conflict. This geographic dynamic creates two competing hypotheses regarding military lending: banks from distant countries may be better positioned to capitalize on increased military credit demand due to their insulation from conflict risks, while banks from neighboring countries may have an advantage due to superior information about

potential borrowers.

In Table 8, we examine these competing hypotheses by replacing the *Foreign* dummy with a continuous variable: the log distance between capital cities (set to zero for domestic banks). Column (1), which excludes the triple interaction, tests whether the "flight home" effect strengthens with geographical distance. Our results confirm this relationship: cross-border lending to the conflict country declines more as the distance from the conflict zone increases. Yet, columns (2)–(4) reveal an inverse pattern for military lending, where the effect strengthens with greater geographical distance between bank and borrower.

**Table 8.** Geographical distance and foreign lending during violent conflicts

| Dependent variable | $Loan_{bft}$ | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Distance × Conflict | -0.027* | -0.030** | -0.036** | -0.042* |
| | (0.015) | (0.014) | (0.014) | (0.023) |
| Distance × Conflict × Military | | 0.057*** | 0.051** | 0.074*** |
| | | (0.021) | (0.021) | (0.019) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | | | ✓ | ✓ |
| Year FE × Military FE | | | ✓ | ✓ |
| Home Country × Year FE | | | | ✓ |
| Host Country × Year FE | | | | ✓ |
| $N$ obs | 1,307,024 | 1,307,024 | 1,307,024 | 1,306,499 |
| $N$ of banks | 14,026 | 14,026 | 14,026 | 13,981 |
| $R^2$ (adj.) | 0.751 | 0.751 | 0.758 | 0.765 |

*Note*: This table shows the results from estimating Equation (2) with a focus on the geographical distance between the domicile country of the bank and the firm. The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, Compustat, and CEPII GeoDist. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

The effect is robust across specifications, as we progressively saturate the regression model with fixed effects. In fact, in the preferred specification in column (4), the difference between the lending behavior of foreign and domestic banks is the largest. The coefficient of 0.074 in

that column means that lending to a military firm in a conflict country increases by about 7.4 percent more for a bank domiciled in a country whose capital is 2,000 kilometers from the capital of the conflict country, relative to a bank that is just 1,000 kilometers away. We conclude that our results provide tentative support to the idea that while conflict is costly to the country experiencing it, distant countries may stand to benefit from it.

## 6.4 The role of bank ownership and lender type

A natural extension of our analysis concerns creditor type, particularly the distinction between bank and non-bank institutions, though the expected differences are theoretically ambiguous. Banks—especially large multinational ones—typically have access to deeper internal capital markets, enabling rapid reallocation of financial resources to areas of peak demand. However, banks face stricter capital regulations than non-bank institutions, and regulators may be reluctant to permit bank lending to military firms in conflict countries given the substantial risks involved.

Bank ownership represents another important dimension of comparative analysis. An extensive literature demonstrates that public and private banks exhibit distinct lending patterns, often due to political influences—a phenomenon documented in both developed and emerging economies (e.g., Claessens, Feijen and Laeven, 2008; Koetter and Popov, 2021). If political incentives drive military sector lending, state-owned banks may be more responsive to these pressures than their private counterparts. This raises the possibility that our findings on foreign bank behavior might be primarily explained by their degree of government ownership. This could also help shed light on the different effects for western and eastern countries that we document in Section 5.5.

In Table 9, we analyze lending patterns across these two dimensions. Column (1) contrasts the behavior of bank versus non-bank cross-border lenders. Both groups increase military sector lending in conflict countries relative to domestic creditors, with non-banks showing a somewhat larger effect—suggesting potential regulatory constraints on banks.

**Table 9.** Foreign lending during violent conflicts:
The role of bank ownership and lender type

| Dependent variable | $Loan_{bft}$ | |
|---|---|---|
| $\mathbb{X}_{1,bft}$<br>$\mathbb{X}_{2,bft}$ | Bank vs. Non-bank | Private vs. Public |
| | (1) | (2) |
| $\mathbb{X}_{1,bft}$ × Conflict | -0.460*** | -0.422** |
| | (0.201) | (0.198) |
| $\mathbb{X}_{2,bft}$ × Conflict | -0.344 | -0.443** |
| | (0.219) | (0.211) |
| $\mathbb{X}_{1,bft}$ × Conflict × Military | 0.644*** | 0.660*** |
| | (0.164) | (0.167) |
| $\mathbb{X}_{2,bft}$ × Conflict × Military | 0.876*** | 0.779*** |
| | (0.238) | (0.194) |
| Bank FE | ✓ | ✓ |
| Firm FE | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ |
| $N$ obs | 1,308,048 | 1,308,048 |
| $N$ lenders | 14,021 | 14,021 |
| $R^2$ (adj.) | 0.765 | 0.765 |
| Share of $\mathbb{X}_{2,b,f,t}$ in the full sample | 13% | 8% |

*Note*: The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the SIC codes). In column (1), we distinguish between banks and non-banks lending to a firm in a foreign country. In column (2), we distinguish between privately-owned and publicly-owned banks. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

Moreover, while banks exhibit a "flight home" effect, non-banks appear immune to this general pattern of lending withdrawal.

In column (2), we observe that both private and state-owned banks reduce their lending to the non-military sector in conflict countries, while simultaneously increasing their military sector lending. The effect is more pronounced for publicly owned banks, suggesting stronger responsiveness to political factors—possibly reflecting how governments channel support to conflict countries through the banking sector.

### 6.5 Cross-border lending to other sectors during violent conflict

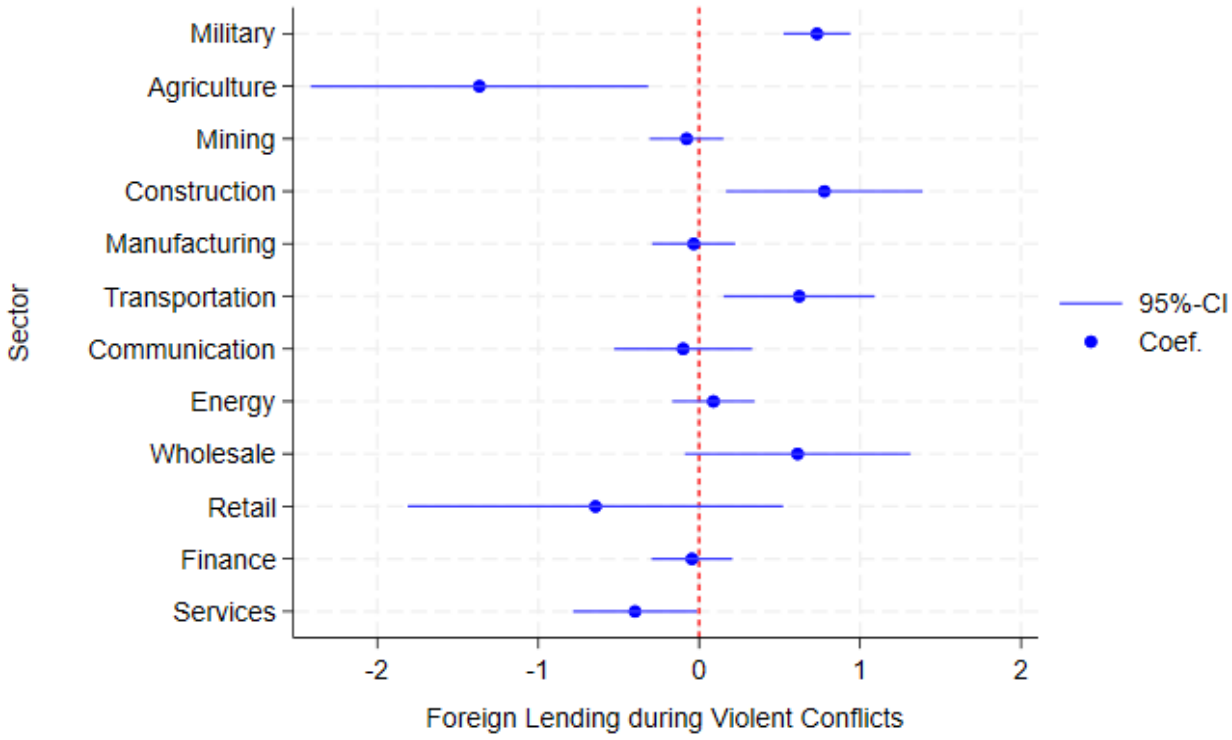
To determine whether the military sector's increased foreign credit supply during conflicts is unique, we test the same effect across other sectors. We modify Equation (2) by replacing the *Military* dummy with indicators for eleven SIC 1-digit sectors: Agriculture, Mining, Construction, Manufacturing, Transportation, Communication, Energy, Wholesale, Retail, Finance, and Services, excluding firms appearing in our military sector classification (Table B.II).

Figure 4 plots the triple interaction coefficients with 95-percent confidence intervals for each sector. While Construction and Transportation—sectors with tangible assets vulnerable to conflict damage—show modest increases in foreign lending, these effects are barely statistically significant. Most other sectors show negligible changes in relative foreign lending, except for Agriculture and, to a lesser extent, Services, which experience relative declines. These findings underscore the military sector's distinctive role during conflicts.

## 7 Conclusions

We have investigated how violent conflicts impact cross-border lending, particularly credit allocation to military-related sectors. Leveraging comprehensive data on syndicated loans from 14,021 banks to 97,535 firms across 179 countries over 1989-2020, we establish two key findings. First, the onset of violent conflict in a country leads cross-border lenders to reduce overall credit to that country, relative to domestic banks. This aligns with a "flight home" effect, whereby cross-border lenders are more likely to withdraw from markets experiencing negative shocks. Second, despite this aggregate pullback, cross-border lenders simultaneously increase credit to firms in the conflict country's military sector, compared to domestic banks. This reallocation effect towards military-related industries is economically sizable and robust to varying conflict intensity thresholds, alternative classifications of military sectors, different loan share calculations, and the exclusion of major economies.

**Figure 4.** Cross-border lending to various sectors during violent conflicts




*Note*: This figure shows the regression coefficients and 95% confidence bands for cross-border lending to various sectors during conflicts. We use the same baseline specification (2), where the "sector" is a different one in each regression. The relevant SIC codes for the various sectors are listed in Table B.II. All regressions include fixed effects as specified and standard errors clustered by bank. Data sourced from UCDP, DealScan, BankFocus, and Compustat.

We identify several factors that amplify this military lending effect. It is more pronounced for cross-border lenders with greater ex-ante exposure to the conflict country and those domiciled in high-income countries outside the "Western" bloc. In particular, exploiting data on UN voting alignment, formal alliances, and bank ownership, we show the effect is driven by banks in countries exhibiting lower voting affinity with the U.S., with non-NATO states, and that are in the BRICS group.

Importantly, we find no evidence of lending spillovers to neighboring countries and the military lending increase dissipates within two years post-conflict, suggesting cross-border lenders take a reactive rather than proactive approach. Further, the effect is unique to the military sector, with much more muted responses in other industries.

Our results highlight how global banks act as key capital providers during violent conflicts, significantly shifting credit from civil to military uses. Geopolitical tensions thus emerge as important drivers of international credit reallocation, particularly for high-income economies beyond the "West". More broadly, this underscores the role of financial sector linkages in propagating the economic consequences of conflict and facilitating the war economy.

Our findings also suggest several promising directions for future research. First, analyzing firm-level data during conflicts could reveal how foreign credit access affects corporate performance and, ultimately, the intensity and duration of hostilities. Second, the interplay between cross-border lending and local banking systems—both domestic banks and foreign subsidiaries—warrants deeper investigation. Third, examining whether banks with strong government ties serve as key nodes in military financing networks could more shed light on the political economy of conflict financing.

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# Appendix A Brief descriptions of violent conflicts

**Table A.I.** Description of violent conflicts, by countries with ⩾ 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. |
| Angola | 1998, 1999, 2001 | 327; 387 | The Cabindan Insurgency in Angola's Cabinda Province, driven by aspirations for greater autonomy or independence, has been a long-standing conflict, with separatist groups like the Front for the Liberation of the Enclave of Cabinda (FLEC) clashing with the government over the region's substantial oil resources. This insurgency has occurred alongside the Angolan Civil War (1975-2002), a protracted conflict between the People's Movement for the Liberation of Angola (MPLA), which took power after Angola's independence, and opposition groups like the National Union for the Total Independence of Angola (UNITA), supported by the U.S. and apartheid-era South Africa. Rooted in ideological, ethnic, and political tensions, the civil war caused significant loss of life and displacement. It concluded after the death of UNITA leader Jonas Savimbi in 2002, leading to peace and a shift toward national reconciliation. |
| 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. |
| Congo, DR | 2013, 2014 | 265; 283; 314 | The conflict in the Democratic Republic of Congo (DRC) involves a complex mix of internal and external actors, including the Government of the DRC and various rebel groups like Kata Katanga, M23, and the Allied Democratic Forces (ADF). Kata Katanga, a separatist group in the Katanga region, seeks greater autonomy from the DRC, while M23, a Tutsi-led rebel group, accuses the government of failing to implement peace agreements, with some regional backing from Uganda and Rwanda. The ADF, an Islamist militant group from Uganda, has carried out deadly attacks in eastern DRC. Uganda's involvement, sometimes supporting armed groups or intervening directly, has contributed to regional instability. |
| Ethiopia | 2020 | 267 | The Ethiopia-Tigray conflict, which began in November 2020, erupted between the Tigray People's Liberation Front (TPLF) and the Ethiopian government. The TPLF, once part of Ethiopia's ruling coalition, fell out of favor after Prime Minister Abiy Ahmed's rise to power in 2018 and his reforms, which sidelined the TPLF. The conflict escalated when the Ethiopian military launched an offensive in Tigray in response to TPLF attacks on federal military bases. A peace agreement in November 2022 brought a halt to major fighting, but the region remains unstable. |
| India | 1989, 1990, 1991, 1993, 1994, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 | 218; 227; 251; 335; 347; 351; 364; 365; 421; 434; 11342; 11475 | India became independent in 1947 and a republic in 1950. The country hosts various religions, ethnicities, and tribal groups and this has triggered a variety of armed conflicts over the years. It has especially been the case in India's northeast, where rebel groups based mainly on tribal communities have fought the government in Assam, Tripura, Nagaland, and Manipur. The Indian government has also fought Sikh insurgents over Punjab/Khalistan and various insurgent groups over Kashmir, which is also claimed by Pakistan. Concerning government power, the Indian government has been confronted by several communist groups, such as the MCC, PWG, and CPI-Maoist. The country has also suffered from one interstate conflict with Pakistan over Kashmir. |

**Table A.I.** Description of violent conflicts, by countries with ⩾ 1,000 deaths (*continuing*)

| | | | |
|---|---|---|---|
| Iraq | 2005, 2006, 2007, 2008, 2009, 2011, 2015, 2017 | 259; 338 | The conflict between the Iraqi government and the Islamic State (IS) escalated in 2014 when IS rapidly captured large swathes of territory in Iraq, including major cities like Mosul, declaring a caliphate. This insurgency sought to establish strict Islamist rule. The Iraqi government, supported by a coalition of international forces, regional militias, and Kurdish Peshmerga, launched a prolonged military campaign to regain control. By late 2017, most of the territory had been recaptured, significantly weakening IS's presence, though sporadic attacks and insurgent activities persist. |
| Israel | 2014 | 234 | The Israel-Palestine conflict is a long-standing conflict with territorial claims over the same land, primarily between Jewish Israelis and Palestinian Arabs. It dates back to the early 20th century and intensified following the establishment of Israel in 1948. Despite numerous peace efforts, the conflict remains unresolved, marked by cycles of violence, occupation of the West Bank, and a blocade of Gaza, as both sides assert rights to self-determination and statehood. In 2014, the conflict between the Government of Israel and Hamas intensified during the Gaza War, also known as Operation Protective Edge. The seven-week military conflict was initiated by escalating tensions and rocket fire from Gaza. The operation involved extensive airstrikes and a ground invasion by Israel aimed at neutralizing Hamas' capabilities. |
| Liberia | 2003 | 341 | From 1999 to 2003, Liberia's government fought against rebel groups, primarily LURD (Liberians United for Reconciliation and Democracy) and MODEL (Movement for Democracy in Liberia), who sought to overthrow President Charles Taylor during the Second Liberian Civil War (1999–2003). The war, which was fueled by political and ethnic divisions, also saw significant regional involvement. The conflict concluded with Taylor's resignation, the signing of the Accra Peace Agreement, and the deployment of a United Nations peacekeeping mission to stabilize the country and facilitate transitional governance. |
| Nigeria | 2013, 2014, 2015, 2016, 2017, 201, 2019, 2020 | 297; 13641 | Nigeria has been dealing with two major Islamist insurgencies led by the Islamic State West Africa Province (ISWAP) and Jama'atu Ahlis Sunna Lidda'awati wal-Jihad (commonly known as Boko Haram). ISWAP, a faction that split from Boko Haram, operates across Nigeria's northeast and the Lake Chad Basin, seeking to control territory under the banner of the Islamic State's "Greater Sahara Province." Its focus has been on attacking military and civilian targets to establish Islamic governance. Meanwhile, Boko Haram (JAS) has fought to overthrow the Nigerian government since 2009, using terrorism, mass abductions, and violence to enforce its vision of an Islamic state governed by Sharia law. |
| Pakistan | 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 | 218; 325; 404; 418 | The conflict involving the Government of Pakistan and al-Qaida, the Balochistan Republican Army (BRA), and Tehrik-i-Taliban Pakistan (TTP) reflects a complex security struggle marked by terrorism, insurgency, and regional instability. Al-Qaida operated within Pakistan following the U.S. invasion of Afghanistan, leading to military actions by both Pakistani and U.S. forces targeting militant strongholds. The TTP, or Pakistani Taliban, has conducted numerous attacks against Pakistani military and civilian targets, seeking to impose strict Islamist rule and undermine the state. Meanwhile, the BRA is a separatist group in Balochistan, engaged in a nationalist insurgency for greater autonomy or independence, often clashing with Pakistani security forces over issues of resource control, human rights, and regional grievances. |
| Philippines | 1990, 1991, 2000, 2003, 2017 | 209; 308; 14275 | The Philippine government has faced long-standing conflicts with the Communist Party of the Philippines-New People's Army (CPP-NPA) and the Moro Islamic Liberation Front (MILF). The CPP-NPA has sought to overthrow the government since the late 1960s through guerilla warfare and political resistance. Meanwhile, the MILF, fighting for autonomy for the Muslim-majority Moro people in the southern Philippines, pursued armed conflict for decades, leading to the 2014 peace deal that established the Bangsamoro Autonomous Region. While the MILF conflict has seen progress through peace agreements, the CPP-NPA insurgency remains a challenge. In addition to conflicts with the CPP-NPA and MILF, the Philippine government has been engaged in fighting against Islamic State (IS)-affiliated groups in the southern Philippines. The conflict intensified in 2017 with the siege of Marawi City, where militants attempted to establish an IS caliphate. Although the siege was ended with government victory, the threat of extremist violence persists through periodic attacks and ongoing insurgency efforts by IS-linked militants. |

**Table A.I.** Description of violent conflicts, by countries with ⩾ 1,000 deaths (*ending*)

| | | | |
|---|---|---|---|
| Russia | 1995, 1996, 1999, 2000, 2002, 2004 | 401; 414 | The conflict between the Russian government and the Chechen Republic of Ichkeria encompasses two wars and ongoing tensions rooted in Chechnya's attempts to gain independence following the Soviet Union's dissolution. The First Chechen War (1994-1996) saw Chechen forces resisting Russian control, eventually achieving a ceasefire and de facto independence. However, the Second Chechen War began in 1999 when Russia reasserted control after a Chechen incursion into Dagestan and a series of bombings attributed to Chechen militants. This conflict led to a large-scale Russian military intervention. By the early 2000s, Moscow had re-established authority, integrating Chechnya more firmly within the Russian Federation under a pro-Russian government, though insurgency and tensions persisted. |
| Sri Lanka | 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2006, 2007, 2008, 2009 | 352 | The conflict between the Sri Lankan government and the Liberation Tigers of Tamil Eelam (LTTE) spanned from 1983 to 2009 and centered on the LTTE's pursuit of an independent Tamil state in the country's north and east. Characterized by intense fighting, bombings, and military offensives, the war concluded in 2009 with the military's victory over the LTTE. |
| Türkiye | 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2016 | 338; 354; 383; 13902 | The conflict in Türkiye involves the government battling insurgent groups like the PKK (Kurdistan Workers' Party) and DHKP-C (Revolutionary People's Liberation Party/Front), both of which challenge Türkiye 's authority through violent means. The PKK, fighting for Kurdish autonomy since the 1980s, engages in insurgency and is considered a terrorist group by Türkiye , the EU, and the US, while the DHKP-C targets government institutions with terrorism. Both groups have led to significant security responses from Turkey, including military operations and counterterrorism efforts. Additionally, in 2016, ISIS carried out several major attacks in Türkiye , including the deadly Sultanahmet Square bombing in January and the Ataturk Airport bombing in June. These attacks were part of ISIS's broader strategy to destabilize Türkiye , which was actively involved in the fight against the group in Syria and Iraq. |
| Ukraine | 2014, 2015 | 13219; 13236; 13243; 13247; 13306 | The Maidan protests (2013-2014) led to the ousting of Ukrainian President Yanukovych, resulting in political unrest and a shift toward pro-European governance, which was opposed by parts of the population, especially in the eastern regions. In response, Russian-backed separatists in the Donetsk People's Republic (DPR) and Luhansk People's Republic (LPR) declared independence, sparking armed conflict with the Ukrainian government. Russia provided significant military and logistical support to the separatists, while also deploying its own forces in Crimea, which it annexed in 2014. |

*Note*: This table provides an overview of all conflict-affected countries in our dataset, the year(s) in which the death toll exceeded 1,000, the conflict ID(s) from the UCDP dataset, and a short description of the conflict(s) in those particular year(s). The main data source is UCDP, supplemented by background information from Wikipedia and Britannica.

# Appendix B Variables definition and sources

**Table B.I.** Definitions of variables in the regression analysis

| Variable | Definition | Source | Unit |
|---|---|---|---|
| Main Variables | | | |
| Loan Amount | Loan amount aggregated to the bank-firm-year level | DealScan | Log $US |
| Foreign | *Dummy* = 1 if country of the bank ≠ the country of the firm | Authors' calculations | 0/1 |
| Military | *Dummy* = 1 if the firm's Primary, Secondary, or Tertiary SIC code equals the SIC code in Table B.II. | DealScan, NAICS /SIC website & Authors' calculations | 0/1 |
| Battlefield Deaths | Battle-field related deaths per country and year. Sum of the 'best' estimate | Uppsala conflict database (UCD) | Persons |
| Conflict (500) | *Dummy* = 1 if battle-field related deaths per country and year are greater or equal to 500. | UCD & Authors' calculations | 0/1 |
| Conflict (1,000) | *Dummy* = 1 if battle-field related deaths per country and year are greater or equal to 1000. | UCD & Authors' calculations | 0/1 |
| Interest rate spread | Spread over default base on the loan | DealScan | Log bps |
| Loan maturity | Maturity on the loan | DealScan | Log months |
| Absolute specialization on country | Share of a given country in a bank's loan portfolio exceeding 50%-tile of the bank-country distribution | DealScan & Authors' calculations | 0/1 |
| Absolute specialization on sector | Share of a given sector in a bank's loan portfolio exceeding 50%-tile of the bank-sector distribution | DealScan & Authors' calculations | 0/1 |
| Relative specialization on country | Either the ratio of bank-country share to country-world share (Paravisini et al., 2023) or the difference between the two (Blickle et al., 2024) exceeding 50%-tile of the corresponding 'ratio' or 'difference' distribution | DealScan & Authors' calculations | 0/1 |
| Relative specialization on sector | Either the ratio of bank-sector share to sector-world share (Paravisini et al., 2023) or the difference between the two (Blickle et al., 2024) exceeding 50%-tile of the corresponding 'ratio' or 'difference' distribution | DealScan & Authors' calculations | 0/1 |
| West | Countries that vote in the UN assembly similar to cthe US in at least 50% of cases in a given year | Bailey et al. (2017) & Authors' calculations | 0/1 |
| East | Countries that vote in the UN assembly similar to China in at least 50% of cases in a given year | Bailey et al. (2017) & Authors' calculations | 0/1 |
| NATO | *Dummy* = 1 if a country enters NATO in a given year and on | www.nato.int | 0/1 |
| G7 | *Dummy* = 1 if a country enters G7 in a given year and on | Wikipedia | 0/1 |
| BRICS | *Dummy* = 1 if a country enters BRICS in a given year and on | Wikipedia | 0/1 |
| High-income | *Dummy* = 1 if a country is in the upper tercile of the distribution by GDP per capital (in constant US Dollars) | World Bank | 0/1 |
| Low-income | *Dummy* = 1 if a country is in the lower tercile of the distribution by GDP per capital (in constant US Dollars) | World Bank | 0/1 |
| Post-conflict | Dummy = 1 for the year(s) after a conflict and where deaths were lower than 1,000 deaths | UCD & Authors' calculations | 0/1 |
| Capital distance | Distance between the capital of the bank country and capital of the firm country | CEPII GeoDist | log km |
| Agriculture | *Dummy* = 1 if the loan is to a firm with SIC codes 0100 - 0999 | DealScan, NAICS, | 0/1 |
| Mining | *Dummy* = 1 if the loan is to a firm with SIC codes 1,000 - 1,499 | SIC website | 0/1 |
| Construction | *Dummy* = 1 if the loan is to a firm with SIC codes 1,500 - 1,799 | & Authors' calculations | 0/1 |
| Manufacturing | *Dummy* = 1 if the loan is to a firm with SIC codes 2,000 - 3,999 | | 0/1 |
| Transportation | *Dummy* = 1 if the loan is to a firm with SIC codes 4,000 - 4,799 | | 0/1 |
| Communication | *Dummy* = 1 if the loan is to a firm with SIC codes 4,800 - 4,899 | | 0/1 |
| Energy | *Dummy* = 1 if the loan is to a firm with SIC codes 4,900 - 4,999 | | 0/1 |
| Wholesale | *Dummy* = 1 if the loan is to a firm with SIC codes 5,000 - 5,199 | | 0/1 |
| Retail | *Dummy* = 1 if the loan is to a firm with SIC codes 5,200 - 5,999 | | 0/1 |
| Finance | *Dummy* = 1 if the loan is to a firm with SIC codes 6,000 - 6,699 | | 0/1 |
| Services | *Dummy* = 1 if the loan is to a firm with SIC codes 7,000 - 8,999 | | 0/1 |

## B.1 The composition of military-related sectors

**Table B.II.** Four-digit industry classification of the military-related sectors

| SIC Code | Description | Primary |
|---|---|---|
| 2819 | Industrial Inorganic Chemicals, Not Elsewhere Classified | |
| 2836 | Biological Products, Except Diagnostic Substances | |
| 2869 | Industrial Organic Chemicals, Not Elsewhere Classified | |
| 2892 | Explosives | ✓ |
| 2899 | Chemicals and Chemical Preparations, Not Elsewhere Classified | |
| 3312 | Steel Works, Blast Furnaces (including Coke Ovens), and Rolling Mills | |
| 3315 | Steel Wiredrawing and Steel Nails and Spikes | |
| 3357 | Drawing and Insulating of Nonferrous Wire | |
| 3429 | Hardware, Not Elsewhere Classified | |
| 3443 | Fabricated Plate Work (Boiler Shops) | |
| 3462 | Iron and Steel Forgings | |
| 3482 | Small Arms Ammunition | ✓ |
| 3483 | Ammunition, Except for Small Arms | ✓ |
| 3484 | Small Arms | ✓ |
| 3489 | Ordnance and Accessories, Not Elsewhere Classified | ✓ |
| 3499 | Fabricated Metal Products, Not Elsewhere Classified | |
| 3519 | Internal Combustion Engines, Not Elsewhere Classified | |
| 3571 | Electronic Computers | |
| 3577 | Computer Peripheral Equipment, Not Elsewhere Classified | |
| 3621 | Motors and Generators | |
| 3625 | Relays and Industrial Controls | |
| 3661 | Telephone and Telegraph Apparatus | |
| 3663 | Radio and TV Communications Equipment | |
| 3669 | Communications Equipment, Not Elsewhere Classified | |
| 3671 | Electron Tubes | |
| 3672 | Printed Circuit Boards | |
| 3674 | Semiconductors and Related Devices | |
| 3679 | Electronic Components, Not Elsewhere Classified | |
| 3694 | Electrical Equipment for Internal Combustion Engines | |
| 3711 | Motor Vehicles and Passenger Car Bodies | |
| 3721 | Aircraft | |
| 3724 | Aircraft Engines and Engine Parts | |
| 3728 | Aircraft Parts and Auxiliary Equipment, Not Elsewhere Classified | |
| 3731 | Ship Building and Repairing | |
| 3761 | Guided Missiles and Space Vehicles | ✓ |
| 3764 | Guided Missile and Space Vehicle Propulsion Units and Propulsion Unit Parts | ✓ |
| 3769 | Guided Missile Space Vehicles Parts and Auxiliary Equipment, Not Elsewhere Classified | ✓ |
| 3795 | Tanks and Tank Components | ✓ |
| 3799 | Transportation Equipment, Not Elsewhere Classified | |
| 3812 | Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments | |
| 3823 | Industrial Instruments for Measurement, Display, and Control of Process Variables; and Related Products | |
| 3825 | Instruments for Measuring and Testing of Electricity and Electrical Signals | |
| 3826 | Laboratory Analytical Instruments | |
| 3827 | Optical Instruments and Lenses | |
| 3829 | Measuring and Controlling Devices, Not Elsewhere Classified | |
| 4899 | Communication Services, Not Elsewhere Classified | |
| 5088 | Transportation Equipment and Supplies, Except Motor Vehicles | |
| 5099 | Durable Goods, Not Elsewhere Classified | |

| | | |
|---|---|---|
| 7371 | Computer Programming Services | |
| 7372 | Prepackaged Software | |
| 7373 | Computer Integrated Systems Design | |
| 7374 | Computer Processing and Data Preparation and Processing Services | |
| 7381 | Detective, Guard, and Armored Car Services | |
| 7382 | Security Systems Services | |
| 7694 | Armature Rewinding Shops | |
| 7699 | Repair Shops and Related Services, Not Elsewhere Classified | |
| 8711 | Engineering Services | |
| 9229 | Public Order and Safety, Not Elsewhere Classified | |
| 9661 | Space Research and Technology | |
| 9711 | National Security | ✓ |
| 9721 | International Affairs | |

*Note*: We refer to the UK Military List and the UK Dual-Use List from the UK Strategic Export Control List provided by the UK Department for Business and Trade for military-related (e.g., "explosives," "weapons," "defense") and dual-use (e.g. "telecommunications", "electronics") terms and hand-collect 4-digit SIC codes searching for those terms on the NAICS website. The listed SIC codes are dual-use (civilian and military purpose). Those with primary military use only are indicated with a check mark in the right column.

## B.2 Descriptive statistics

**Table B.III.** Descriptive statistics

| | N | Mean | SD | Min | 25th | Median | 75th | Max |
|---|---|---|---|---|---|---|---|---|
| **Main variables** | | | | | | | | |
| Loan amount(log) | 1,329,877 | 16.43 | 2.68 | 0 | 15.84 | 17.09 | 18.01 | 25.83 |
| Foreign | 1,329,877 | 0.46 | 0.50 | 0 | 0 | 0 | 1 | 1 |
| Military (dual + primary) | 1,329,877 | 0.13 | 0.33 | 0 | 0 | 0 | 0 | 1 |
| Military (primary) | 1,329,877 | 0.003 | 0.06 | 0 | 0 | 0 | 0 | 1 |
| Deaths | 1,329,877 | 36 | 217 | 0 | 0 | 0 | 0 | 10,211 |
| Conflict dummy (500) | 1,329,877 | 0.02 | 0.15 | 0 | 0 | 0 | 0 | 1 |
| Conflict dummy (1,000) | 1,329,877 | 0.01 | 0.10 | 0 | 0 | 0 | 0 | 1 |
| **Specialization** | | | | | | | | |
| Bank-country absolute ($AS_{bct}$) | 1,329,877 | 0.71 | 0.46 | 0 | 0 | 1 | 1 | 1 |
| Bank-sector absolute ($AS_{bst}$) | 1,329,877 | 0.50 | 0.50 | 0 | 0 | 0 | 1 | 1 |
| Bank-country relative ($RS_{bct}$) | 1,329,877 | 0.74 | 0.44 | 0 | 0 | 1 | 1 | 1 |
| Bank-sector relative ($RS_{bst}$) | 1,329,877 | 0.50 | 0.50 | 0 | 0 | 1 | 1 | 1 |
| **Country blocs** | | | | | | | | |
| West (time-var mean) | 1,272,527 | 0.91 | 0.28 | 0 | 1 | 1 | 1 | 1 |
| West (time-var p50) | 1,272,527 | 0.93 | 0.26 | 0 | 1 | 1 | 1 | 1 |
| East (time-var mean) | 1,272,527 | 0.09 | 0.28 | 0 | 0 | 0 | 0 | 1 |
| East (time-var p50) | 1,272,527 | 0.07 | 0.26 | 0 | 0 | 0 | 0 | 1 |
| West (constant mean) | 1,272,527 | 0.91 | 0.29 | 0 | 1 | 1 | 1 | 1 |
| West (constant p50) | 1,272,527 | 0.92 | 0.28 | 0 | 1 | 1 | 1 | 1 |
| East (constant mean) | 1,272,527 | 0.09 | 0.28 | 0 | 0 | 0 | 0 | 1 |
| East (constant p50) | 1,272,527 | 0.08 | 0.28 | 0 | 0 | 0 | 0 | 1 |
| NATO | 1,329,877 | 0.66 | 0.47 | 0 | 0 | 1 | 1 | 1 |
| G7 | 1,329,877 | 0.74 | 0.44 | 0 | 0 | 1 | 1 | 1 |
| BRICS | 1,329,877 | 0.05 | 0.21 | 0 | 0 | 0 | 0 | 1 |
| High-income | 1,329,748 | 0.94 | 0.25 | 0 | 1 | 1 | 1 | 1 |
| Low-income | 1,329,748 | 0 | 0.01 | 0 | 0 | 0 | 0 | 1 |
| **Others** | | | | | | | | |
| Post-war | 950,087 | 0.01 | 0.10 | 0 | 0 | 0 | 0 | 1 |
| Capital distance | 1,328,274 | 3.80 | 4.16 | 0 | 0 | 0 | 8.68 | 9.90 |
| Interest rate spread | 1,264,586 | 210.96 | 14.12 | 160.03 | 201.96 | 207.55 | 215.24 | 340.42 |
| Maturity | 1,276,028 | 3.78 | 0.69 | 0 | 3.58 | 4.01 | 4.11 | 7.10 |
| **Sectors** | | | | | | | | |
| Agriculture | 1,329,877 | 0.01 | 0.10 | 0 | 0 | 0 | 0 | 1 |
| Mining | 1,329,877 | 0.07 | 0.25 | 0 | 0 | 0 | 0 | 1 |
| Manufacturing | 1,329,877 | 0.22 | 0.41 | 0 | 0 | 0 | 0 | 1 |
| Transportation | 1,329,877 | 0.06 | 0.23 | 0 | 0 | 0 | 0 | 1 |
| Energy | 1,329,877 | 0.08 | 0.27 | 0 | 0 | 0 | 0 | 1 |
| Construction | 1,329,877 | 0.03 | 0.18 | 0 | 0 | 0 | 0 | 1 |
| Wholesale | 1,329,877 | 0.04 | 0.20 | 0 | 0 | 0 | 0 | 1 |
| Retail | 1,329,877 | 0.05 | 0.22 | 0 | 0 | 0 | 0 | 1 |
| Finance | 1,329,877 | 0.19 | 0.39 | 0 | 0 | 0 | 0 | 1 |
| Communication | 1,329,877 | 0.03 | 0.18 | 0 | 0 | 0 | 0 | 1 |
| Services | 1,329,877 | 0.12 | 0.33 | 0 | 0 | 0 | 0 | 1 |

*Note*: This table shows descriptive statistics for all variables used in the empirical analyses. For the variable definitions, refer to Table B.I. The sample period is 1989-2020. Data sourced from UCDP, DealScan, BankFocus, Compustat, Bailey et al. (2017), CEPII GeoDist, and the World Bank.

# Appendix C Robustness to other measures of violent conflict

**Table C.I.** Cross-border lending during violent conflicts: Different indicator thresholds

| | Dependent variable: $Loan_{bft}$ | | | | |
|---|---|---|---|---|---|
| $\mathbb{1}_{\{deaths \geqslant j\}}$ | $j = 100$ | $j = 250$ | $j = 500$ | $j = 750$ | $j = 1,000$ |
| | (1) | (2) | (3) | (4) | (5) |
| Foreign × Conflict | 0.089 | 0.132 | 0.015 | -0.381** | -0.450** |
| | (0.071) | (0.157) | (0.160) | (0.170) | (0.201) |
| Foreign × Conflict × Military | 0.056 | 0.528*** | 0.709*** | 0.534*** | 0.669*** |
| | (0.067) | (0.131) | (0.127) | (0.159) | (0.162) |
| Bank FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year × Military FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 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 |
| $R^2$ (adj.) | 0.765 | 0.757 | 0.765 | 0.765 | 0.765 |

*Note*: This table shows the results from estimating Equation (2). The dependent variable is the natural logarithm of the loan amount. *Foreign* is a dummy equal to one if the bank lends to a firm in a foreign country. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). We vary the *Conflict* dummy with different death thresholds and make it equal to one if the country, in which the firm is domiciled, experienced more than 100, 250, 500, 750, and 1,000 battle-field related deaths in a calendar year, respectively. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

**Table C.II.** Cross-border lending during violent conflicts: Different continuous thresholds

| | Dependent variable: $Loan_{bft}$ | | | | | |
|---|---|---|---|---|---|---|
| | Conflict: *deaths*, conditional on *deaths* $\geqslant j$: | | | | | |
| | $j = 0$ | $j = 100$ | $j = 250$ | $j = 500$ | $j = 750$ | $j = 1,000$ |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Foreign × Conflict | 0.005 | 0.011 | 0.014 | 0.016 | -0.085 | -0.096 |
| | (0.042) | (0.044) | (0.052) | (0.060) | (0.066) | (0.067) |
| Foreign × Conflict × Military | 0.083 | 0.115 | 0.330*** | 0.386*** | 0.253** | 0.234* |
| | (0.068) | (0.071) | (0.107) | (0.127) | (0.127) | (0.142) |
| Bank FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year × Military FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 1,273,261 | 1,308,048 | 1,308,048 | 1,308,048 | 1,308,048 | 1,308,048 |
| $N$ of banks | 13,879 | 14,021 | 14,021 | 14,021 | 14,021 | 14,021 |
| $R^2$ (adj.) | 0.765 | 0.765 | 0.757 | 0.765 | 0.765 | 0.765 |

*Note*: This table shows the results from estimating Equation (2). The dependent variable is the natural logarithm of the loan amount. *Foreign* is a dummy equal to one if the bank lends to a firm in a foreign country. *Military* is a dummy variable equal to one if the loan is extended to a firm operating in military-related SIC sectors (see Table B.II for the relevant SIC codes). In all columns, we use deaths as a continuous threshold to measure the intensity of the *Conflict*. Threshold j represents a point where values below j are coded as zero, while values above j maintain their continuity. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

# Appendix D Robustness: Military sector classifications

**Table D.I.** Robustness: Primary vs. Dual Use Military Sectors

| | Dependent variable: $\ln Loan_{bft}$ | | |
|---|---|---|---|
| | Primary & Dual-use | Dual-use only | Primary-use only |
| | (1) | (2) | (3) |
| Foreign × Conflict | -0.450** | -0.440** | -0.373* |
| | (0.201) | (0.201) | (0.208) |
| Foreign × Conflict × Military | 0.668*** | 0.600*** | 0.775*** |
| | (0.162) | (0.164) | (0.263) |
| Bank FE | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ |
| Host Country × 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.) | 0.765 | 0.765 | 0.765 |

*Note*: This table shows the results from estimating Equation (2). The dependent variable is the natural logarithm of the loan amount. *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. In column (1), *Military* is a dummy equal to one if the loan is extended to a firm operating in both primary and dual-use military-related SIC sectors (see Table B.II for the relevant SIC codes). In column (2), *Military* is a dummy equal to one if the loan is extended to a firm operating in dual-use SIC sectors only. In column (3), *Military* is a dummy equal to one if the loan is extended to a firm operating in primary military-related SIC sectors only. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

# Appendix E Robustness: Loan share allocation

**Table E.I.** Robustness: Different loan shares

| Dependent variable | $Loan_{bft}$ | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.450** | -0.595** | -0.610 | -0.604** |
| | (0.201) | (0.026) | (0.381) | (0.273) |
| Foreign × Conflict × Military | 0.669*** | 0.562*** | 1.436*** | 0.584*** |
| | (0.162) | (0.212) | (0.450) | (0.216) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 1,308,599 | 1,308,599 | 1,308,048 | 1,308,048 |
| $N$ of banks | 14,070 | 14,070 | 14,021 | 14,021 |
| $R^2$ (adj.) | 0.765 | 0.640 | 0.539 | 0.637 |

*Note*: The table shows the results after imputing the missing loan shares in different ways. Column (1) shows our baseline specification. In column (2), following Duchin and Sosyura (2014), lead banks are allocated the median loan share of lead banks in the sample when data is available, and the remaining loan share of non lead banks is then split equally across the rest of banks. In column (3), following De Haas and Van Horen (2013), lead banks and non-lead banks are each allocated 50% of the loan share and then shares are split equally across banks with the same role in the syndicate. In column (4), following De Haas and Van Horen (2013) and Dell'Ariccia et al. (2021), missing values for the loan share are filled in based on a regression of the loan share when data is avail-able. The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

# Appendix F Other robustness checks

**Table F.I.** Cross-border lending during violent conflicts: Excluding foreign banks from major economies

| Dependent variable | $Loan_{bft}$ | | | |
|---|---|---|---|---|
| Excl. banks from | US | Japan | DE & FR | China |
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.476** | -0.423** | -0.452** | -0.460** |
| | (0.206) | (0.204) | (0.206) | (0.202) |
| Foreign × Conflict × Military | 0.610*** | 0.596*** | 0.694*** | 0.653*** |
| | (0.172) | (0.167) | (0.172) | (0.167) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 872,876 | 1,104,600 | 1,143,205 | 1,271,768 |
| $N$ of banks | 9,399 | 12,681 | 12,799 | 13,105 |
| $R^2$ (adj.) | 0.798 | 0.629 | 0.778 | 0.767 |

*Note*: The table shows the results after excluding major economies in our dataset. We exclude banks from the US, Japan, Germany & France, and China in column 1, 2, 3, and 4, respectively. The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

**Table F.II.** Cross-border lending to military firms in conflict countries: Regional variation in the sources of cross-border credit

| Dependent variable | $Loan_{bft}$ |
|---|---|
| | (1) |
| Conflict × Military × Foreign *EAP* | 0.451*** |
| | (0.117) |
| Conflict × Military × Foreign *Americas* | 0.324* |
| | (0.182) |
| Conflict × Military × Foreign *MENA* | 0.134 |
| | (0.202) |
| Conflict × Military × Foreign *SAR* | 0.087 |
| | (0.450) |
| Conflict × Military × Foreign *SSA* | 0.140 |
| | (0.444) |
| Bank FE | ✓ |
| Firm FE | ✓ |
| Foreign *Region* × Military FE | ✓ |
| Conflict × Military FE | ✓ |
| Year FE × Military FE | ✓ |
| Home Country × Year FE | ✓ |
| Host Country × Year FE | ✓ |
| $N$ obs | 1,308,048 |
| $N$ of banks | 14,021 |
| $R^2$ (adj.) | 0.765 |

*Note*: The table shows the results from our baseline regression. The dependent variable is the natural logarithm of the loan amount. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). *EAP* is East Asia and Pacific. *Americas* includes North America, Latin America, and the Caribbean. *MENA* is Middle East and North Africa. *SAR* is South Asia. *SSA* is Sub-Saharan Africa. Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

# Appendix G Additional results

**Table G.I.** Cross-border lending to military firms in conflict countries: Lending volumes, interest rates, maturities

| Dependent variable | $Loan_{bft}$ | $\%\,Rate_{bft}$ | $Maturity_{bft}$ |
|---|---|---|---|
| | (1) | (2) | (3) |
| Foreign × Conflict | -0.450** | 1.654*** | -0.015 |
| | (0.201) | (0.618) | (0.023) |
| Foreign × Conflict × Military | 0.668*** | -4.777*** | 0.111*** |
| | (0.162) | (0.602) | (0.027) |
| Bank FE | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ |
| Year FE × Military FE | ✓ | ✓ | ✓ |
| Home Country × Year FE | ✓ | ✓ | ✓ |
| Host Country × Year FE | ✓ | ✓ | ✓ |
| $N$ obs | 1,308,599 | 1,251,833 | 1,258,184 |
| $N$ of banks | 14,070 | 13,573 | 13,681 |
| $R^2$ (adj.) | 0.765 | 0.898 | 0.703 |

*Note*: The table shows the results from the regression of our baseline specification. In column (1), the dependent variable is the natural logarithm of the loan amount. In column (2), the dependent variable is the interest rate spread. In column (3), the dependent variable is the logarithm of the loan maturity. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

# Appendix H Bank specialization: robustness checks

Given the country- and sector shares in bank lending, we then compute a country's $c$ and sector's $s$ shares in the 'world' lending:

$$Country\,Share_{ct} = \frac{\sum_{b=1}^{B_t}\sum_{f=1}^{F_{bct}} Loan_{bct}}{\sum_{b=1}^{B_t}\sum_{c=1}^{C_{bt}}\sum_{f=1}^{F_{bct}} Loan_{bct}}, \quad Sector\,Share_{st} = \frac{\sum_{b=1}^{B_t}\sum_{f=1}^{F_{bst}} Loan_{bst}}{\sum_{b=1}^{B_t}\sum_{s=1}^{S_{bt}}\sum_{f=1}^{F_{bst}} Loan_{bst}}$$

Further, we take into account the revealed comparative advantage concept in bank lending (Paravisini et al., 2023). Following Blickle et al. (2024), we compute deviations of a country $c$ (sector $s$) share in a bank's $b$ total lending in year $t$ from the country's $c$ (sector's $s$) share in 'world' total lending in that year:

$$Deviation\,Country\,Share_{bct} = Country\,Share_{bct} - Country\,Share_{ct}, \tag{6}$$

$$Deviation\,Sector\,Share_{bst} = Sector\,Share_{bst} - Sector\,Share_{st} \tag{7}$$

Finally, using certain thresholds, we discretize the constructed variables to split all banks according to their *relative* specialization:

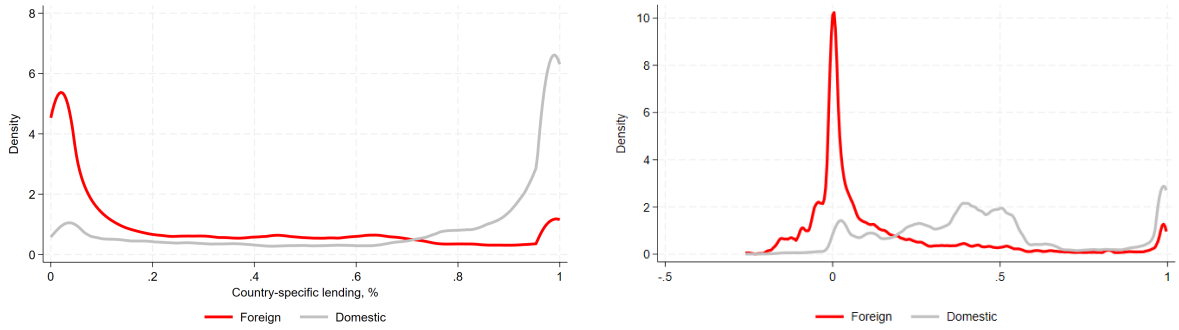
$$RS_{bct} = \begin{cases} 1, \text{ if } Deviation\,Country\,Share_{bct} \geqslant \alpha_c \\ 0, \text{ if else} \end{cases} \tag{8}$$

$$RS_{bst} = \begin{cases} 1, \text{ if } Deviation\,Sector\,Share_{bst} \geqslant \alpha_s \\ 0, \text{ if else} \end{cases} \tag{9}$$

For the baseline estimations, we use $\alpha_c = 0.2$ and $\alpha_s = 0.2$ when computing the absolute specializations, and $\alpha_c = 50\%\text{-}tile$ and $\alpha_s = 50\%\text{-}tile$ when computing the relative specializations. Empirical frequencies of bank-country shares and their deviations from the 'world' appear in Figures H.I.($a$) and H.I.($b$), and analogous frequencies of bank-sector shares and their deviations from the 'world'– in Figures H.II.($a$) and H.II.($b$).

To test for the specialization hypothesis, we run regression model (2) on a subsample of specialized cross-border lenders ($RS_{bct} = 1$) and a subsample of non-specialized lenders (or $RS_{bct} = 0$).

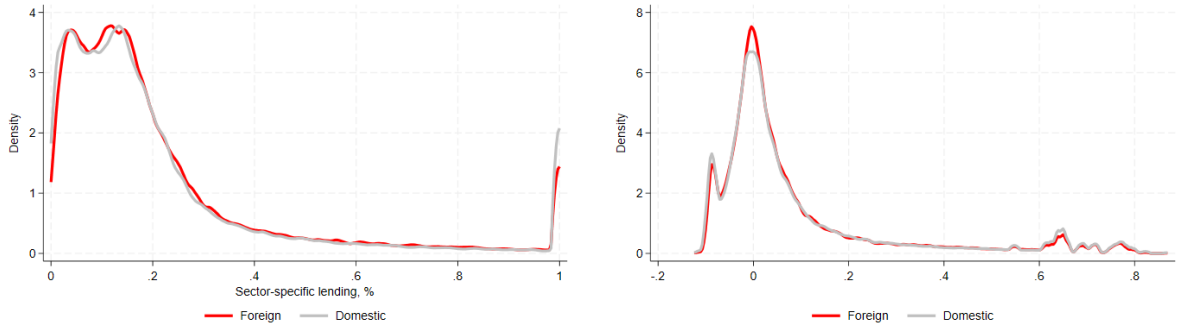
**Figure H.I.** Bank-country lending shares and their deviations from country shares




(a) Bank-country lending shares (b) Deviations from country shares

*Note*: The figure reports empirical frequencies of bank-country lending shares ($a$) and their deviations from the corresponding country shares in the 'world' lending portfolio, as implied by Expression (6), averaged across 1989–2020 by foreign and domestic banks. The data is sourced from the Uppsala Conflict Data Program, DealScan, BankFocus, and Compustat.

**Figure H.II.** Bank-sector lending shares in the full sample




(a) Bank-sector lending shares (b) Deviations from sector shares

*Note*: The figure reports empirical frequencies of bank-country lending shares ($a$) and their deviations from the corresponding country shares in the 'world' lending portfolio, as implied by Expression (7), averaged across 1989–2020 by foreign and domestic banks. The data is sourced from the Uppsala Conflict Data Program, DealScan, BankFocus, and Compustat.

**Table H.I.** Bank *relative* specialization in foreign lending during violent conflicts

| Specialization: | Dependent variable: $Loan_{bft}$ | | | |
|---|---|---|---|---|
| | Relative | | | |
| | On country ($RS_{bct} = 1$) | | On sector ($RS_{bst} = 1$) | |
| | Yes | No | Yes | No |
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.373* | 0.789 | -0.398** | -0.340 |
| | (0.192) | (1.024) | (0.156) | (0.324) |
| Foreign × Conflict × Military | 0.689*** | 1.442 | 0.489** | 0.837*** |
| | (0.214) | (1.049) | (0.213) | (0.279) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 963,471 | 321,618 | 638,237 | 635,444 |
| $N$ banks | 13,802 | 2,434 | 13,536 | 5,273 |
| $R^2$ (adj.) | 0.804 | 0.689 | 0.769 | 0.784 |

*Note*: The table shows the results from the regression of our baseline specification (2) run separately on the following four sub-samples of banks: those that are specialized in lending to particular countries ($RS_{bct} = 1$) and those that are not ($RS_{bct} = 0$), in the first two columns, and those that are specialized in lending to specific economic sectors ($RS_{bst} = 1$) and those that are not ($RS_{bst} = 0$), in the last two columns. In all cases, the dependent variable is the natural logarithm of the loan amount and the concept of relative specialization of Blickle et al. (2024) is used, as implied by Expressions (8) and (9) with the cutoff thresholds $\alpha_c = \alpha_s = 50\%$-*tile*. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.

**Table H.II.** Bank specialization in foreign lending during violent conflicts: Sensitivity checks

| Specialization: | Dependent variable: $Loan_{bft}$ | | | |
|---|---|---|---|---|
| | Relative | | | |
| | On country ($RS_{bct} = 1$) | | On sector ($RS_{bst} = 1$) | |
| | Yes | No | Yes | No |
| | (1) | (2) | (3) | (4) |
| Foreign × Conflict | -0.504*** | 0.807*** | -0.552*** | -0.309 |
| | (0.191) | (0.274) | (0.189) | (0.254) |
| Foreign × Conflict × Military | 0.884*** | 0.589 | 0.666** | 0.741*** |
| | (0.230) | (0.447) | (0.282) | (0.272) |
| Bank FE | ✓ | ✓ | ✓ | ✓ |
| Firm FE | ✓ | ✓ | ✓ | ✓ |
| Foreign × Military FE | ✓ | ✓ | ✓ | ✓ |
| Conflict × Military FE | ✓ | ✓ | ✓ | ✓ |
| Year × Military FE | ✓ | ✓ | ✓ | ✓ |
| Home Country × Year | ✓ | ✓ | ✓ | ✓ |
| Host Country × Year | ✓ | ✓ | ✓ | ✓ |
| $N$ obs | 720,287 | 559,943 | 307,996 | 966,457 |
| $N$ banks | 13,604 | 3,802 | 13,198 | 6,194 |
| $R^2$ (adj.) | 0.803 | 0.739 | 0.758 | 0.779 |

*Note*: The table shows the results from the regression of our baseline specification (2) run separately on the following four sub-samples of banks: those that are specialized in lending to particular countries ($RS_{bct} = 1$) and those that are not ($RS_{bct} = 0$), in the first two columns, and those that are specialized in lending to specific economic sectors ($RS_{bst} = 1$) and those that are not ($RS_{bst} = 0$), in the last two columns. In all cases, the dependent variable is the natural logarithm of the loan amount and the concept of relative specialization of Blickle et al. (2024) is used, as implied by Expressions (8) and (9) with the cutoff thresholds $\alpha_c = \alpha_s = 75\%\text{-}tile$. *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. *Military* is a dummy equal to one if the loan is to a firm in a military-related SIC sector (see Table B.II for the relevant SIC codes). Fixed effects as specified. Data sources: UCDP, DealScan, BankFocus, and Compustat. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors clustered by bank in parentheses.