Geopolitical Risk and Firm Financing: Evidence from Colombia's Administrative Data*

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Abstract

Exploiting firm-level variation in financing strategies, we study how geopolitical risk exposure affects the evolution of cross-border and domestic credit to non-financial firms. We use granular administrative data on foreign and domestic loans, as well as cross-border interbank credit to construct dynamic firm-level geopolitical risk exposure. We find that firms directly and indirectly exposed to geopolitical risk increase their borrowing, particularly through the intermediation of domestic banks. Our results are consistent with geopolitical shocks reallocating credit to Colombian firms with heterogeneous effects across economic sectors, exporter status, and type of borrower. These findings highlight a new transmission channel linking global geopolitical tensions to firm-level financing in emerging markets, particularly through local credit.

Keywords: Capital flows, geopolitical risk, cross border credit, corporate credit
JEL Codes: G21, F34, F42

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1 Introduction

Geopolitical risk has reemerged as a central concern for policy makers and firms alike, as rising global tensions, political uncertainty, and external shocks increasingly shape financial conditions and investment decisions in emerging markets. Although a growing literature has explored the macroeconomic consequences of geopolitical risk, far less is known about how individual firms experience and respond to such shocks, particularly in developing economies where financial frictions are more pronounced. In this paper, we leverage detailed administrative data from Colombia to examine how firm financing patterns adjust in response to geopolitical risk, providing new micro-level evidence on the transmission mechanisms of geopolitical risk and heterogeneous effects across firms.

Geopolitical risk reflects the likelihood of events such as war, terrorism, and increased tensions between nations.[1] When geopolitical risk increases, the countries involved face greater macroeconomic uncertainty. This uncertainty about government policies negatively affects corporate investment, output, and labor demand (Caldara & Iacoviello 2022). Increased uncertainty exacerbates the information asymmetry between banks and borrowers, reducing banks' willingness to lend and leading to inefficient loan allocation (Beck & Keil 2022, Berg et al. 2021). Geopolitical factors also influence international trade and firm financing. While some studies find a decline in trade due to trade sanctions (Federico et al. 2025), others show that it can create net export opportunities rather than simply shifting trade across destinations (Fajgelbaum et al. 2024, Benguria & Saffie 2024). More broadly, geopolitical factors such as hegemonic powers, have implications on the fragmentation of the global financial and trade systems (Clayton et al. 2024).

[1] Geopolitical risk encompasses the likelihood of these events occurring and existing tensions escalating. This type of uncertainty differs from firm- and country-specific sources. Unlike firm-level uncertainty, it affects a broad range of firms, making it more difficult to diversify, especially in segmented markets. Geopolitical risk differs from policy uncertainty, which focuses on a government's inability to credibly commit to protecting property rights and investments due to a lack of checks and balances or veto points in the country's policymaking process (Baker et al. 2016). Geopolitical risk also differs from economic uncertainty, which implies that the outlook for the national economy is uncertain and suggests a high likelihood of negative economic events (Li & Su 2022).

Most studies typically focus on domestic geopolitical risk, but for small open economies, foreign geopolitical risk can generate spillovers similar to other foreign shocks (Caldara et al. 2025). We construct a firm-level exposure to foreign geopolitical risk based on the cross-border portfolio of firms, as well as an indirect exposure through domestic banks' cross-border interbank loans. We use this firm-level exposure to study how different types of firm-financing (linked to different types of capital flows) change with geopolitical risk, what types of firms are more affected and through which mechanisms (direct versus indirect exposure). This allows for the incorporation of firm heterogeneity in the transmission of foreign shocks with macroeconomic implications (Levchenko & Mejean 2024). Our firm-level exposure measures are dynamic, exploiting variation between firms (different financing portfolios) and within firms over time (changing financing patterns).

We use a unique granular administrative level dataset from Colombia at the transaction level to study how geopolitical risk transmits to firms in the non-financial sector. Colombia is a small open economy with relatively high access to external credit markets, thereby exposed to global financial conditions (Williams 2018, Fabiani et al. 2022, Sarmiento 2024, Ahn & Sarmiento 2019, Correa et al. 2025). Local banks provide credit to firms in both local and foreign currency, and have access to cross-border interbank credit to provide trade financing. Similarly, local non-financial firms can access cross-border credit from banks, non-banks and other non-financial firms (trade credit).

Specifically, we leverage differences in firms and banks cross-border portfolios to construct firm-specific direct and indirect exposures to geopolitical risk. We use these firm-level exposures to study how firm financing responds to geopolitical risk. We employ a unique firm-financing dataset created by merging several administrative datasets from Colombia that span 2002-2022. We combine the universe of loans granted by local banks and foreign banks to non-financial firms, external credit provided by foreign non-financial firms, cross-border interbank lending, firm exports and imports, and balance-sheet data at the firm-level. The

sample consists of 1.28 million bank–firm–quarter observations from 2002Q1 to 2022Q4. These loans were granted by 91 credit institutions, including 42 commercial banks, to 424,421 non-financial corporations. Our specification focuses on the effect through financing networks, and we control for firm-specific foreign trade exposure and sovereign contagion, as well as common shocks (time fixed effects) and stable firm differences (firm fixed effects).

Our results indicate that geopolitical shocks lead to a reallocation of credit toward Colombian firms, primarily through domestic banks. Baseline estimates show that an increase in geopolitical risk exposure is positively associated with all types of credit analyzed. External loans, however, respond to geopolitical risk only through external credit relationships. Specifically, a one-standard-deviation increase in geopolitical risk exposure via external credit corresponds to 4.4%-4.7% rise in external loans. These findings suggest that heightened geopolitical risk does not merely reduce global credit availability but redistributes it toward economies that are politically aligned, reinforcing strategic financial linkages during periods of uncertainty. Firms that were initially more exposed to foreign financing increase their credit balances by more.

We find that domestic credit responds strongly and positively to geopolitical risk. Exposure through domestic banks' foreign funding leads to a 7.4%–7.6% increase in domestic credit. Domestic interest rate spreads decline by approximately 17 basis points, with an additional 5 basis points reduction through government debt exposure when geopolitical risk increases. This pattern indicates that the higher borrowing reflects an expansion in credit supply rather than demand. Furthermore, firms exposed to geopolitical risk through external loans increase their domestic credit by about 2.6%-2.9%. Similarly, greater exposure to geopolitical risk arising from trade activities is positively associated with domestic lending, roughly 1% for exporting firms and 2.6% for importing firms.

We examine how our results vary along different dimensions that help inform the transmission mechanisms: domestic credit reliance, trade exposure, industry, and credit

quality. For external credit, we find our results are mostly consistent across the board, but driven by firms in the manufacturing sector. When it comes to domestic credit, we find that firms that are able to access both domestic and foreign credit tend to expand their borrowing by more when they are more exposed to geopolitical risk, as do exporting firms, and firms in the construction, manufacturing and transportation sectors. Finally, firms with lower credit quality expand their domestic borrowing by more than the rest pointing to a deterioration of domestic credit. Our results are consistent with a financing channel of geopolitical risk, that is more relevant for firms that require more external financing (Rajan & Zingales 1998), and to a potential deterioration of overall domestic credit quality.

Our findings reveal that domestic banks play a central role in transmitting global geopolitical shocks to non-financial firms. This transmission occurs primarily through adjustments in credit supply, facilitated by foreign funding channels and government debt exposure, which amplify domestic lending during periods of heightened geopolitical risk. These findings are consistent with previous evidence showing that greater geopolitical distance between countries tends to reduce cross-border financial flows (IMF 2023, Gopinath et al. 2025, Bianchi et al. 2025). In Colombia's case, most claims originate from countries with which it has historically maintained strong political alignment (i.e. the United States). Therefore, our findings support the interpretation that geopolitical shocks lead to a reallocation of credit toward Colombia, resulting in an expansion of credit supply—particularly for domestic lending.

Related literature This paper is related to the literature on geopolitical risk, capital flows, credit, and firm dynamics. Our paper contributes to the growing literature on the effects of geopolitical risk. Geopolitical factors have implications on the fragmentation of the global financial and trade systems (Clayton et al. 2024). IMF (2023) shows that geopolitical risk is associated with a reallocation of capital flows across politically aligned countries. Geoeconomic fragmentation has immediate effects that are more negative for industries more

connected to global markets (Fernández-Villaverde et al. 2024). An increase in geopolitical distance between a country and its financial partners increases domestic banks' funding costs and contract lending in EMEs (Catalán & Tsuruga 2023). Gopinath et al. (2025) show that after the onset of the war in Ukraine, flows between distant geopolitical blocs have decreased more than during previous events. Using data on bilateral official lending, Bianchi et al. (2025) find that official lending follows geopolitical alignment during times of geopolitical stress. Niepmann & Shen (2025) show that US banks reduce cross-border lending to countries with elevated geopolitical risk and even reduce domestic lending when geopolitical risk increases abroad. Correa et al. (2023) provide evidence for a negative spillover of banks' exposure to US-China trade tensions on domestic lending in the US. Kempf et al. (2023) document that ideological alignment with foreign governments affects the cross-border capital allocation by US institutional investors. Our findings provide evidence consistent with the reallocation of capital across politically aligned countries and highlight the role of domestic banks in the transmission of geopolitical risk.

Regarding cross-border flows and uncertainty, global factors are significantly associated with extreme capital flow episodes (Forbes & Warnock 2012, Fratzscher 2012). Uncertainty can affect investments in financial assets differently, during surges firms choose to issue demandable and short-term debt (Li & Su 2022). Higher economic policy uncertainty is associated with lower "domestic" bank credit, bank liquidity hording, and growth (Bordo et al. 2016, Berger et al. 2022). There is conflicting evidence on the cross-border lending response to higher source-country uncertainty. On the one hand, banks tend to increase cross-border syndicated lending (Biswas & Zhai 2021), but also, banks exhibit lower cross-border lending, and rebalance their portfolio away from foreign lending (Choi & Furceri 2019, Berg et al. 2021). We contribute to this strand by focusing on a specific channel that increases uncertainty, geopolitical risk, and consider the effect on cross-border flows that directly affect firms (cross border bank and nonbank credit) and indirectly (cross border interbank credit).

In relation to capital flows and firm dynamics, our paper extends the literature by using more granular data to examine the effects of capital flows. Firm-level data has been used to investigate the effects of capital flows on the cost of capital, credit risk, and financial constraints (Alfaro et al. 2017, Caglio et al. 2021). Levchenko & Mejean (2024) document that foreign shocks are transmitted primarily through large firms as they are the most likely to trade internationally. Regarding the cost of capital, Keller (2019) shows that capital controls increased the supply of foreign currency credit by domestic banks to domestic firms in Peru. Using transaction level data, di Giovanni et al. (2022) study the transmission of the global financial cycle in Turkey (capital flows push factor), which transmits to domestic credit through local banks more exposed to international capital markets. Our paper contributes to this literature by studying geopolitical risk as another push factor and its impact on credit conditions to non-financial firms in an emerging market economy.

Episodes of stress in the US have affected capital flows to Colombia, i.e., the Global Financial Crisis of 2008-2009, the 2013 Fed tapering, and the 2018 US-China trade tensions (Ahn & Sarmiento 2019, Sarmiento 2024, Correa et al. 2025). More broadly, financial conditions in the US affect cross-border flows to EMEs in general (Bräuning & Ivashina 2020). Macroprudential measures and capital controls have been imposed to deal with extreme capital inflows in Colombia (Huang et al. 2024, Fabiani et al. 2022), and episodes of high capital inflows have been associated with increased bank lending (Williams 2018) and higher corporate credit for risky borrowers (Cantú et al. 2022). Medellín & Restrepo (2024) use firm-level data from Colombia to study the hedging strategies of non-financial firms. Correa et al. (2025) find that, during the 2018-19 US-China trade tensions, Colombian exporters of tariff-affected products increased both cross-border borrowing from non-financial firms and local bank credit to redirected US demand. We find evidence of credit responses consistent with a reallocation of credit towards Colombian firms during high geopolitical stress, primarily via domestic banks. Firms that were initially more exposed to foreign financing, either directly (external loans) or indirectly (via banks' cross-border interbank credit) increase their credit

balances more than others as foreign GPR increases. Furthermore, firms with lower credit quality receive more credit than high-quality borrowers, indicating a deterioration in domestic credit and procyclical vulnerabilities.

Overall, our paper contributes to the understanding of how domestic and foreign credit respond to geopolitical risk and, more broadly, how firms adjust to supply-driven fluctuations in capital flows. Furthermore, we demonstrate the indirect effect of cross-border interbank credit on domestic credit to non-financial firms. These insights can inform policy-makers on the design of more targeted macroprudential and capital flow management measures and help evaluate their impact on the real economy at a granular level.

2 Data and Sample Construction

We use administrative data on credit, trade, and financial variables for the universe of firms with local credit *or* foreign debt that report financial statements for regulatory purposes (i.e., medium and large firms). Specifically, we combine five administrative datasets. The first is local business credit from the Colombian credit registry, consisting of bank-firm quarterly observations reported by local banks to the Superintendencia Financiera de Colombia (SFC). These data include lender and borrower identification numbers, loan amount, rate, and maturity; firm industry; credit risk rating; and collateral, such as letters of credit. The sample consists of 1.28 million bank-firm-quarter observations from 2002 Q1 to 2022 Q4. These loans were granted by 91 credit institutions, including 42 commercial banks, to 424,421 non-financial corporations.

Second, we use administrative data from the Banco de la República (BdR) on the universe of loans granted by foreign financial institutions (banks and nonbanks) to Colombian non-financial firms. The data include quarterly information on the loan amount, lender, firm ID, lender location, loan purpose (imports, exports, or working capital), loan spread, and loan maturity. The sample consists of 287,658 observations from 14,391 local firms borrowing

from 132 countries between 2002Q1 and 2022Q4.

The third dataset consists of administrative data from the BdR on the universe of cross-border loans granted by non-financial firms to local firms (i.e., trade credit). Data include quarterly information on the amount of the loan, the location of the lender, the purpose of the loan (imports, exports, working capital), the spread, and the maturity of the loan, among others. Reporting foreign trade credit was mandatory until 2010. Afterwards, firms are not required to report this type of loans, which explains the low share of firms engaging in this type of financing in the sample since 2011 (See appendix C).

Fourth, we use cross-border interbank lending between foreign banks and local banks. This is an administrative dataset collected by the BdR on the universe of loans granted by foreign banks to Colombian banks (i.e., credit lines). The information is reported by local banks at a weekly frequency and includes the loan amount, quota (credit limit), lender ID, lender location, loan interest rate, and loan term (short vs. long term). The sample includes 32,031 credit lines at the bank-to-bank level, including 1,352 foreign banks that lent to 48 Colombian banks during the period under study. This financing source is primarily used by local banks to finance firms in the trade sector.

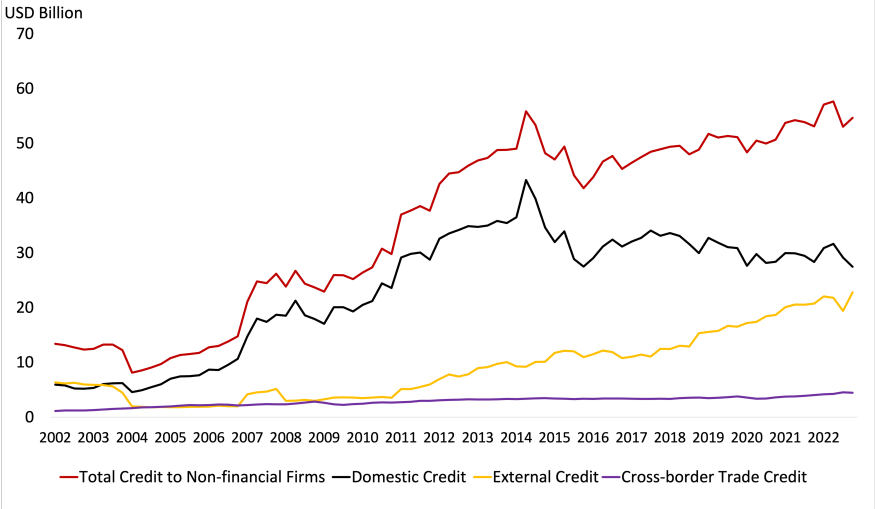
We also use exports and imports at the firm-country level, taken from the National Department of Statistics (DANE). The information includes the destination (or origin) country, the value (FOB and CIF), and the quantity of imports and exports on a monthly basis, at the HS10 product classification. The sample of exports includes 81,751 firms, whereas the imports dataset includes 209,574 firms.

Finally, our dataset can be merged with balance-sheet and financial statements at the firm-level-year from the Superintendencia de Sociedades (SS) (official entity that overseas non-financial corporations in Colombia) for firm-characteristics and outcomes (i.e., assets, total debt, investment, employment, etc.), which we plan to explore in the future.

We collapse the data at the firm-quarter level. The final sample includes quarterly data

at the firm level from 2002Q1-2022Q4, including 1.28 million observations, and 48,007 firms from which 8,671 have access to external funding (18%) and 20,624 engage in external trade (42,9%). Outliers are winsorized at the top 99% of the distribution. The sample of borrowers includes only non-financial corporations that report balance sheet information to the SS. Figure 1 depicts the evolution of total credit by source during our sample (in USD billion). Domestic loans are the main source of funding followed by external loans and trade credit. After a period of prevalence of domestic finance, the share of external financing has been growing systematically, reaching 40% of financing at the end of our sample.

Figure 1: Evolution of credit by source

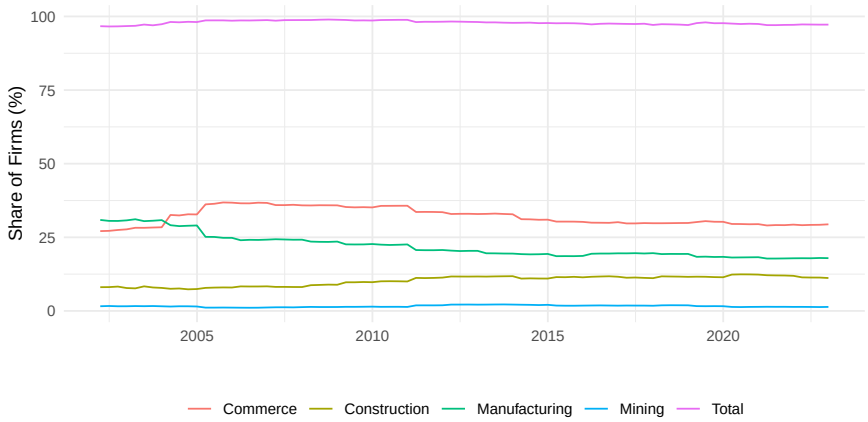


Notes: This figure reports the total credit of non-financial corporations by type of credit in USD billion. The red line corresponds to total credit. The black line is the domestic credit . The yellow line refers to external loans granted by foreign banks to non-financial corporations in Colombia. The purple line is cross border trade credit from the Balance of Payments. The sample period is 2002q1-2022q4. Source: Banco de la República and SFC.

Tables 7 and 8 present descriptive statistics for the period under study, including the number of firms, the type and amount of credit, and trade activity (imports and exports). Most Colombian firms only have access to domestic credit and do not engage in foreign trade activities. Since our dataset is built from credit registry data, most of the firms in our sample have access to domestic credit, as shown in Figure 2. The composition of domestic credit by industry remains relatively stable throughout the sample. Since 2005, the share of firms using

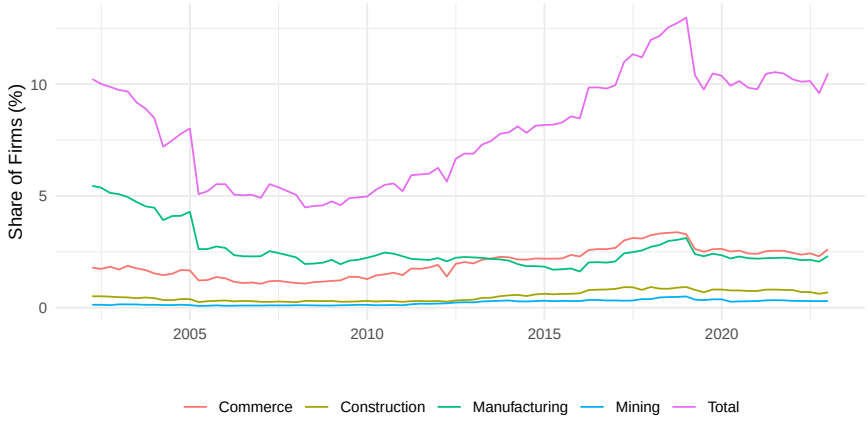
external credit has steadily increased, with a slight increase in the participation of firms in the commerce and mining sectors and a decrease in the share of firms in the manufacturing sector, as shown in Figure 3.

Figure 2: Share of firms using domestic credit by industry



Notes: This figure reports the share of firms using domestic credit by type of industry. The sample period is 2002q1-2022q4. Source: Banco de la República and SFC.

Figure 3: Share of firms using external loans by industry

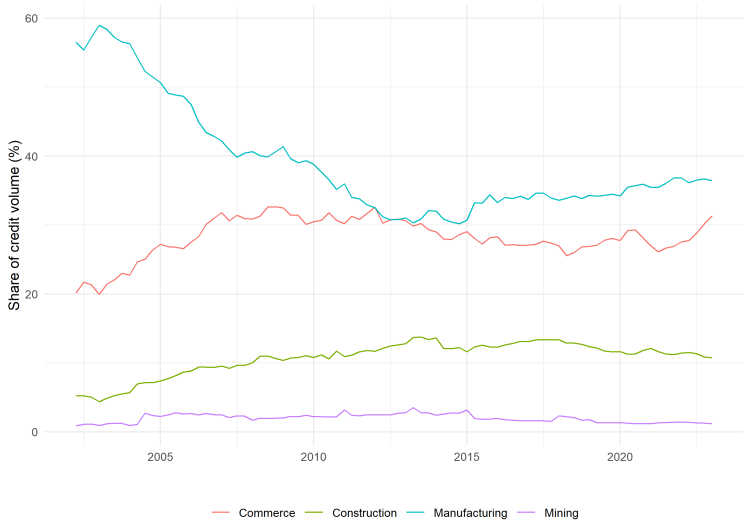


Notes: This figure reports the share of firms using external loans by type of industry. The sample period is 2002q1-2022q4.Source: Banco de la República and SFC.

In terms of credit volumes, while firms in commerce represent a larger share of firms than firms in manufacturing, the latter represent on average a larger share of domestic credit (Figure 4). Similarly in the case of external loans, firms in manufacturing represent on average

more than 30% of external credit, as shown in Figure 5.

Figure 4: Share of domestic credit by industry



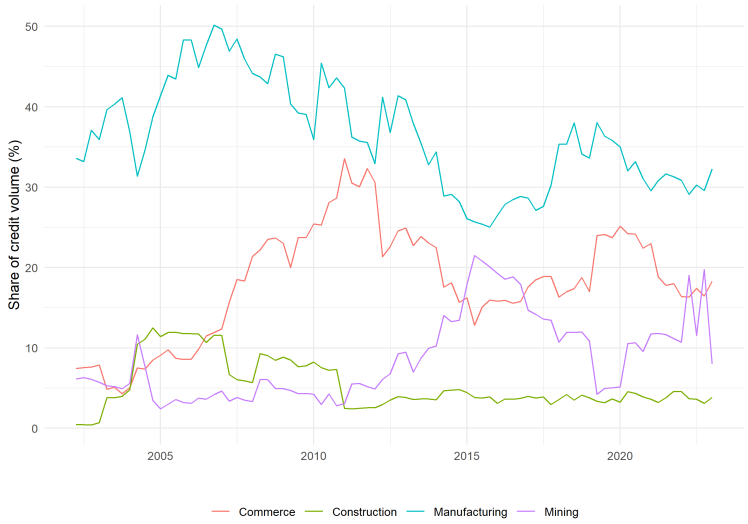
Notes: This figure reports the share of domestic credit by type of industry. The sample period is 2002q1-2022q4. Source: Banco de la República and SFC.

Our identification strategy takes advantage of the varying exposure of domestic banks to foreign banks that provide cross-border interbank credit. Local banks mainly use this credit to support trade finance and are heavily dependent on external financial conditions (Sarmiento 2024). Figure 6 shows that US banks are the main providers of cross-border interbank credit to local banks in Colombia. On average, US banks account for 60% of total credit. Banks in Panama and Canada have increased their participation in cross-border interbank lending to Colombian banks. About 22% of interbank credit is provided by banks in the remaining 24 countries (RoW).

Figure 7 shows the countries that lend to non-financial corporations in Colombia. Financial institutions in the United States, the United Kingdom, Spain, and Panama primarily provide external credit to Colombian firms, accounting for nearly 70% of the total. During our sample period, US-based banks and non-banks provided approximately 35% of external credit to Colombian firms.

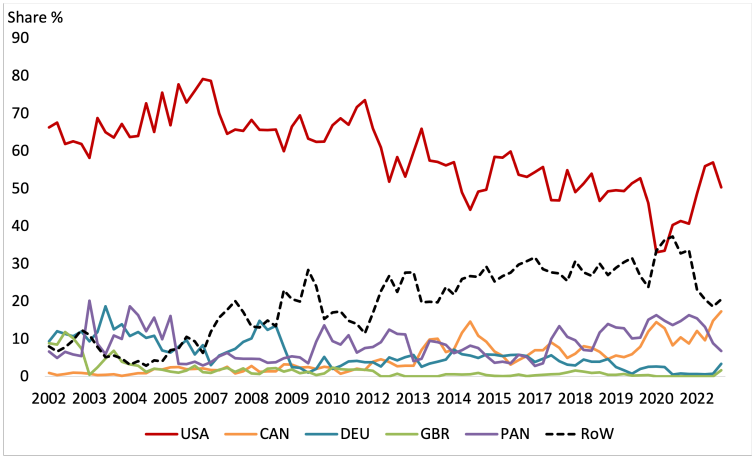
We are interested in understanding how geopolitical risk in the source country affects the

Figure 5: Share of external credit by industry



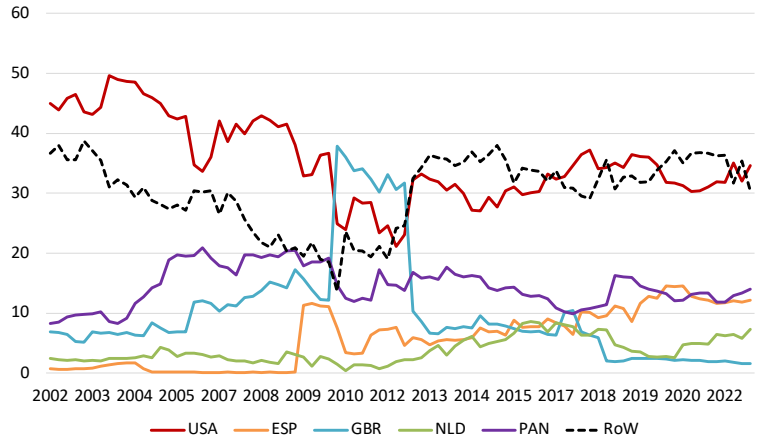
Notes: This figure reports the share of external credit by type of industry. The sample period is 2002q1-2022q4.Source: Banco de la República and SFC.

Figure 6: Cross-border interbank credit by source country



Notes: This figure reports the share of cross-border interbank credit by source country. The sample period is 2002q1-2022q4. Source: Banco de la República and SFC.

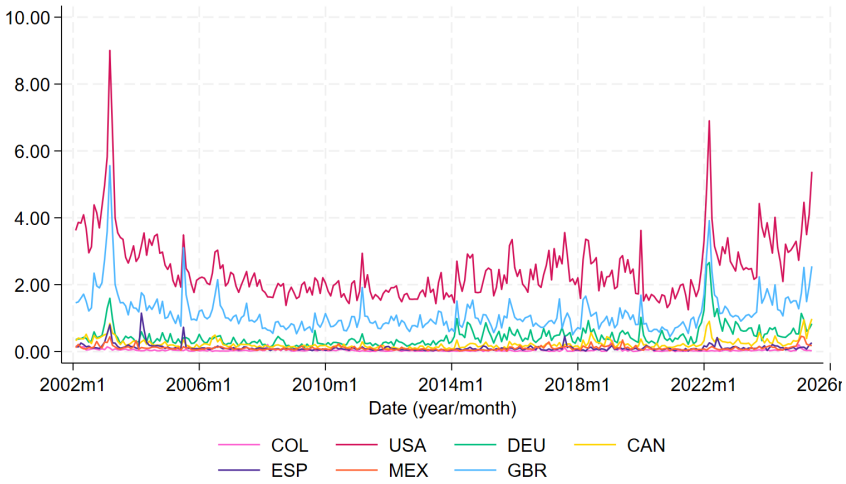
Figure 7: Cross-border corporate credit by source country



Notes: This figure reports the share of Cross-border corporate credit by source country. The sample period is 2002q1-2022q4. Source: Banco de la República and SFC.

supply of credit to both banks and corporations located in Colombia. To measure geopolitical risk we use the GPR index constructed by Caldara & Iacoviello (2022). Higher values of the index indicate a higher current intensity of adverse events like wars, a higher probability of such events in the future, or a higher expected intensity of future events. Figure 8 shows the country-level GPR index for the main countries that provide credit to Colombian banks and firms. We observe that geopolitical tensions increased in 2001 and 2007 and then remained relatively stable until 2017. Then the GPR reached historically high levels, especially for the US, UK and Germany, along the trade tensions between the US and China in 2018-2019, showing that trade tensions exacerbate geopolitical risk in advanced economies. An increase in the US GPR was also observed during the Russia-Ukraine war in 2022. Importantly, the GPR for Colombia remains relatively low and stable during the period considered.

Figure 8: Geopolitical risk indicator by country



Notes: This figure reports the Geopolitical risk indicator (GPR) of Caldara and Iacoviello (2022) at the country level during 2002-2022 for the main lender countries of Colombian banks and non-financial firms.

3 Empirical strategy

We want to study the effect of geopolitical risk on firm financing. We focus on the firm's domestic borrowing and external loans.[2] For each type of foreign financing we have, by definition:

$$K_{it} = \sum_j K_{jit} \Rightarrow K_{it} = \sum_j \alpha^K_{jit} K_{it} \tag{1}$$

where j indexes the financing country and α^K_{jit} is the share of flow K received by firm i from country j in period t. We focus on exposure to foreign geopolitical risk and use the country shares (α) in each type of liability K to build a firm-specific index of geopolitical risk, exploiting differences in the source country of flows K across firms. Using the GPR from Caldara & Iacoviello (2022) we have that:

$$\mathrm{Z}^{GPR}_{K,it} = \sum_j \alpha^K_{jit-1} \mathrm{GPR}_{jt} \tag{2}$$

[2]Granular external trade credit is available only until 2011 from BdR due to a change in reporting regulation. We are in the process of completing the external trade credit data using customs data from DIAN and will add external trade credit then. However, Figure 1 shows that the proportion of foreign trade credit in total firm financing is relatively low compared to external and domestic credit.

where the values of α^K are lagged one period to address additional potential sources of endogeneity. This firm-level geopolitical risk represents how exposed is the firm to foreign geopolitical risk through its portfolio of external loans. Our measure of firm-level exposure captures heterogeneous exposure across firms based on their specific financing portfolio, reflecting observed financing patterns. This measure is dynamic, providing variation between firms (different financing portfolios) and within firms over time (changing financing patterns).

As mentioned in the previous section, Colombian banks receive cross-border interbank funds, so we can expect domestic credit to also be affected by foreign geopolitical risk. To tackle this issue, we construct the additional geopolitical risk exposure for *domestic* bank credit:

$$\mathrm{Z}_{D,it}^{GPR} = \sum_{b} \sum_{j} \gamma_{bit-1} \cdot \alpha_{bjt-1}^{D} \cdot \mathrm{GPR}_{jt} \tag{3}$$

where now b indexes the banks providing credit to firm i, γ_{bi} is the share of financing provided by bank b and α_{bj}^{D} are the banks' shares of foreign liability from origin countries j. As before, the shares are lagged one period to address additional potential sources of endogeneity.

Finally, for total credit, we compute the exposure based on the shares of each type of financing received as:

$$\mathrm{Z}_{total,it}^{GPR} = \sum_{K} \alpha_{i,t-1}^{K} \mathrm{Z}_{K,it}^{GPR} \tag{4}$$

where $\alpha_{i,t-1}^{K}$ represents the share of financing K (external loans and domestic loans) in total credit received by firm i at time $t-1$.

The specification of interest is given by:

$$\log K_{it} = \gamma \log K_{it-1} + \alpha_i + \delta_t + \pi^{K} \mathrm{Z}_{K,it}^{GPR} + \sum_{-K} \pi^{-K} \mathbb{I}_{-K} \cdot \mathrm{Z}_{-K,it}^{GPR} + \kappa^{-K} \mathbb{I}_{-K} + \nu_{it} \tag{5}$$

where $\mathbb{I}_{-K}$ is a dummy variable that assumes the value zero when firm i has no loans of type $-K$ and one otherwise. Our specification focuses on the effect through financing networks,

and we control for common shocks (time fixed effects) and stable firm differences (firm fixed effects). To further control for demand-side drivers, we also run a specification with sector-time fixed effects.

We compute the firm-level exposures for the full period 2002q1-2022q4 following equations (2) for external loans and trade credit and (3) for domestic loans. If the GPR index is not available for country j, we use the average GPR from country j's geographic region.[3] Given the rise in geopolitical tensions during 2018-2022, we present the GPR exposures for two sub-periods 2002-2017 and 2018-2022. Figures 15 and 16 summarize the distribution of the firm-level exposure based on domestic loans, while Figures 17 and 18 correspond to the ones based on external loans. As displayed in these figures, we exploit the firm-level variation in exposure to geopolitical risk arising from their different financing portfolios. For ease of interpretation, in the regressions all instruments are standardized.

To control for additional factors affecting capital flows to Colombian firms, we run three additional specifications that control for other channels of exposure to geopolitical risk. Given the evidence on the effect of changes in bank credit depending on the banks' government debt exposure in Colombia (Williams 2018), we control for the implicit firm-level government debt exposure through the holdings of government debt by domestic banks they receive credit from. Portfolio flows that flow into the country would trigger domestic banks to trade government bonds and contract or expand domestic credit. Since such flows can also be affected by geopolitical risk, we include both the share of government debt holdings of the bank as well as the share interacted with average global geopolitical risk. We compute the firm-level measure of implicit government debt exposure given by:

$$sh_{it}^{TES} = \sum_{B} \gamma_{Bit-1} \cdot sh_{Bt}^{TES} \tag{6}$$

[3]Alternatively, if the GPR for country j is missing, we impute it with the global quarterly GPR average. The results obtained are similar and are available upon request.

where sh_{Bt}^{TES} are the government treasury bond holdings (TES) of bank B at time t as a share of their total assets and γ_{Bit-1} is the share of financing provided by bank B to firm i, lagged to address other endogeneity concerns. The corresponding specification in this case is given by:

$$\begin{aligned}\log K_{it} =& \gamma \log K_{it-1} + \alpha_i + \delta_t + \pi^K \mathrm{Z}_{K,it}^{GPR} + \sum_{-K} \pi^{-K} \mathbb{I}_{-K} \cdot \mathrm{Z}_{-K,it}^{GPR} + \kappa^{-K} \mathbb{I}_{-K} \\ &+ \pi^{tes} sh_{it-1}^{TES} + \pi^{tes,GPR} sh_{it-1}^{TES} \cdot \overline{GPR}_t + \nu_{it}\end{aligned} \tag{7}$$

which controls for exposure to government debt as well as geopolitical risk exposure through government debt.

To control for demand-side conditions correlated with foreign conditions, we build two additional exposures based on external trade activities. We build the geopolitical risk exposure from export activities as follows:

$$\mathrm{Z}_{X,it}^{GPR} = \begin{cases} \sum_j \alpha_{jit-1}^{X} \mathrm{GPR}_{jt}, & \text{if } X_{it} \neq 0 \\ 0, & \text{otherwise} \end{cases} \tag{8}$$

in which X_{it} represents the total exports of firm i during period t and α_{jit-1}^{X} represents the share of exports of firm i to country j in period $t-1$. Similarly, we construct $\mathrm{Z}_{M,it}^{GPR}$ based on importing activities. The specification of interest in this case is given by:

$$\begin{aligned}\log K_{it} =& \gamma \log K_{it-1} + \alpha_i + \delta_t + \pi^K \mathrm{Z}_{K,it}^{GPR} + \sum_{-K} \pi^{-K} \mathbb{I}_{-K} \cdot \mathrm{Z}_{-K,it}^{GPR} + \kappa^{-K} \mathbb{I}_{-K} \\ &+ \pi^X \mathrm{Z}_{X,it}^{GPR} + \pi^M \mathrm{Z}_{M,it}^{GPR} + \nu_{it}\end{aligned} \tag{9}$$

which controls for the geopolitical risk exposure through trade.

Finally, we also run a specification including both additional factors affecting capital

flows to Colombian firms:

$$\begin{aligned}\log K_{it} =& \gamma \log K_{it-1} + \alpha_i + \delta_t + \pi^K \mathrm{Z}^{GPR}_{K,it} + \sum_{-K} \pi^{-K} \mathbb{I}_{-K} \cdot \mathrm{Z}^{GPR}_{-K,it} + \kappa^{-K} \mathbb{I}_{-K} + \pi^X \mathrm{Z}^{GPR}_{X,it} \\ &+ \pi^X \mathrm{Z}^{GPR}_{M,it} + \pi^{tes} sh^{TES}_{it} + \pi^{tes,GPR} sh^{TES}_{it} * \overline{GPR}_t + \nu_{it}\end{aligned} \tag{10}$$

which controls for the geopolitical risk exposure through trade activities, as well as sovereign contagion. For all cases, we also run a version with sector-time fixed effects, to further control for demand-side factors.

4 Geopolitical risk and firm financing

We first examine how credit conditions vary with geopolitical risk. Our main results are presented in Tables 1 and 2 for credit volumes and interest rate spreads (prices). These results indicate that firms expand their total borrowing when geopolitical risk increases, even if only indirectly exposed to geopolitical risk, and this is consistent with an increase in the supply of domestic credit.

4.1 Main results

Our main results are presented in Table 1, for each type of credit separately. Column (1) represents the estimates from (5), while Columns (2) to (4) additionally control for exposure to government debt, geopolitical risk exposure from trade activities, and for both factors at the same time. Overall, we find that an increase in geopolitical risk exposure has a positive relation with all types of credit examined.

External loans are only affected by geopolitical risk through external credit relationships. An increase of one standard deviation in geopolitical risk exposure through external credit is associated with about a 4.4-4.7% increase in external loans.

Domestic credit is also positively associated with geopolitical risk exposure. An increase

Table 1: Credit response to geopolitical risk

	External loans				Domestic loans			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Z^{GPR}_{dom}	-0.00856	-0.0108*	-0.00863	-0.0112	0.0741***	0.0765***	0.0740***	0.0763***
	(0.00550)	(0.00646)	(0.00596)	(0.00712)	(0.00234)	(0.00242)	(0.00242)	(0.00251)
Z^{GPR}_{ext}	0.0444***	0.0468***	0.0459***	0.0476***	0.0264***	0.0254***	0.0293***	0.0287***
	(0.00827)	(0.00898)	(0.00894)	(0.00980)	(0.00668)	(0.00652)	(0.00690)	(0.00672)
$Z^{GPR}_{exports}$			-0.00124	-0.00191			0.0114***	0.0104***
			(0.00434)	(0.00495)			(0.00206)	(0.00199)
$Z^{GPR}_{imports}$			0.00319	0.00366			0.0260***	0.0244***
			(0.00555)	(0.00599)			(0.00196)	(0.00196)
Gov debt exposure		0.0119		0.0145		-0.0253***		-0.0218***
		(0.00867)		(0.00979)		(0.00554)		(0.00592)
Gov debt exposure * GPR		-0.0114		-0.0118		0.00357		0.00200
		(0.00873)		(0.00970)		(0.00539)		(0.00581)
Observations	73,246	59,737	64,219	52,030	1,095,700	1,020,521	991,591	922,623
R-squared	0.92	0.916	0.918	0.913	0.870	0.875	0.871	0.876
Lagged dep. var.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Time FE	No	No	No	No	No	No	No	No
Cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Within adj. R-sq.	0.691	0.685	0.692	0.688	0.563	0.566	0.561	0.565

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: This table presents the OLS estimates for different types of credit. Each column presents the results from a regression of $\log K_{it}$ as in (5), (7), (9) and (10) respectively, that include one lag of the dependent variable, the GPR exposures coming from external loans and domestic credit, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks and geopolitical risk. The exposures are interacted with a dummy variable when K is different than the flow in the dependent variable. The regression includes firm and time fixed effects, the $-K$ dummy variable, and robust standard errors are clustered at the firm level.

of one standard deviation in the geopolitical risk exposure intermediated by domestic banks is associated with an increase in domestic financing of 7.4% in the baseline specification and 7.6% when controlling for trade exposure and government debt exposure. Additionally, firms that are exposed to geopolitical risk through external loans increase their domestic credit by an additional 2.6-2.8%. An increase in the exposure to geopolitical risk arising from trade activities also has a positive relationship with domestic loans, an increase of 1.1% for exporting activities and an increase of 2.6% for importing activities. Regarding exposure to government debt, firms with different exposure to government debt don't have access to differentiated financing during periods of increased geopolitical risk.

The correlation between geopolitical risk exposure and credit can reflect demand factors, supply factors, or both. To tackle this, we analyze the effect of geopolitical risk exposure on spreads. Table 2 presents the results for a specification similar to 5, but with spreads in levels instead of logs as the dependent variable, and we add the firm's credit rating as a control. We find no change for the spreads of external loans. For domestic credit, we find that geopolitical risk is associated with a decrease in spreads of about 17 basis points, through the cross-border financing of domestic banks, and of an additional 5 basis points through government debt exposure when geopolitical risk increases. Geopolitical risk exposure through importing activities reduces spreads by 5 basis points.

Interpreting our results is nuanced, as the effect of geopolitical risk on cross-border flows is ambiguous and depends on the geopolitical alignment of the source and destination countries. IMF (2023) and Gopinath et al. (2025) find that an increase in the geopolitical distance between the source and destination countries reduces cross-border flows. In the case of Colombia, since most claims are sourced from countries that Colombia has been historically aligned with, our results are consistent with a reallocation of credit towards Colombia and an increase in the supply of credit, particularly for domestic credit. For foreign bank lending, for which we find no effect on the spreads, there are both demand and supply factors at play

Table 2: Spreads response to geopolitical risk

	Spread external loans	Spread domestic loans
Z^{GPR}_{dom}	-0.00914	-0.173***
	(0.00684)	(0.0103)
Z^{GPR}_{ext}	-0.00951	-0.0270
	(0.00805)	(0.0296)
$Z^{GPR}_{exports}$	-0.00103	-0.0122
	(0.00544)	(0.00956)
$Z^{GPR}_{imports}$	0.000744	-0.0527***
	(0.00510)	(0.00853)
Govt debt exposure	-0.00418	0.0899***
	(0.0138)	(0.0229)
Govt debt exposure * GPR	0.0141	-0.0555**
	(0.0112)	(0.0236)
Observations	52,030	899,747
R-squared	0.951	0.701
Lagged dependent variable	Yes	Yes
Credit rating control	Yes	Yes
Firm FE	Yes	Yes
Time FE	Yes	Yes
Sector-Time FE	No	No
Cluster	Firm	Firm
Within adj. R-squared	0.766	0.397
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Notes: this table presents the OLS estimates for a regression like (10) for the spreads for different types of loans. Each column presents the results from a regression of y_{it} in levels on one lag of the dependent variable, the credit rating of the firm, the GPR exposures coming from external loans and domestic credit, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks. The exposures are interacted with a dummy variable when K is different than the flow corresponding to the spread in the dependent variable. The regression includes firm and time fixed effects, the $-K$ dummy variable, and standard errors are clustered at the firm level.

that explain the increase in Colombian firms' borrowing.

Finally, we analyze the effect on total credit available to firms. Table 3 presents the results for total firm borrowing for the four specifications considered. One standard deviation increase in geopolitical risk is associated with a 4.6% increase in total borrowing. Geopolitical risk exposure from exporting activities also has a positive relation with total borrowing, although smaller than credit-related exposure. As in the case of domestic credit, exposure to government debt does not systematically affect how much firms borrow when there is geopolitical risk.

To further control for demand-side conditions, we run the same specifications presented but with sector-time fixed effects. Table 17 in the appendix presents these results, which are essentially identical to the ones obtained using only time fixed effects, showing that

Table 3: Credit response to geopolitical risk - Total credit

	Total borrowing			
	(1)	(2)	(3)	(4)
Z^{GPR}_{total}	0.0514***	0.0582***	0.0529***	0.0591***
	(0.00249)	(0.00253)	(0.00257)	(0.00262)
$Z^{GPR}_{exports}$			0.0118***	0.0107***
			(0.00209)	(0.00199)
$Z^{GPR}_{imports}$			0.0259***	0.0242***
			(0.00200)	(0.00200)
Gov debt exposure		-0.0236***		-0.0217***
		(0.00542)		(0.00584)
Gov debt exposure * GPR		0.00547		0.00514
		(0.00527)		(0.00571)
Observations	1,117,069	1,025,587	1,010,700	927,234
R-squared	0.868	0.874	0.868	0.875
Lagged dependent variable	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Sector-Time FE	No	No	No	No
Cluster	Firm	Firm	Firm	Firm
Within adj. R-squared	0.556	0.561	0.554	0.559

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: this table presents the OLS estimates for total credit. Each column presents the results from a regression of $\log K_{it}$ as in (5), (7), (9) and (10) respectively, that include one lag of the dependent variable, the GPR exposures from financing sources, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks and geopolitical risk. The regression includes firm and time fixed effects, and robust standard errors are clustered at the firm level.

demand-side factors that vary at the time-industry level are less of a concern.

4.2 Robustness and extensions

We explore the robustness of our results to alternative sample selections that inform the main drivers of how geopolitical risk affects credit to firms in Colombia. We consider how our results vary with the degree of reliance on domestic credit, trade exposure, effects at the industry level, credit quality, and periods of US stress.[4]

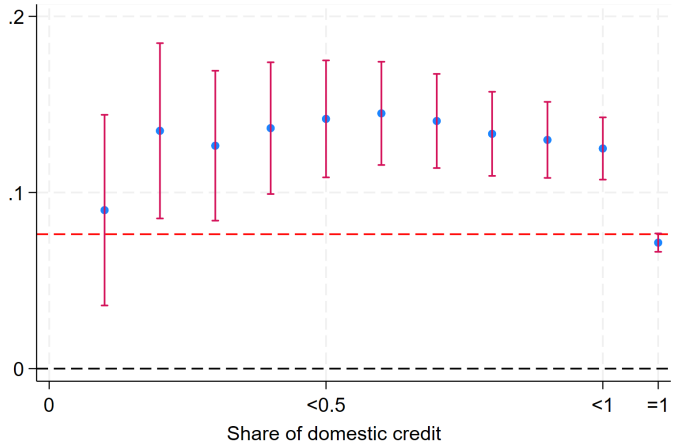
4.2.1 Reliance on domestic credit

We examine how the response of firm borrowing varies according to the firm reliance on domestic credit. We repeat specification (10), but restricted to firms with a lagged share of domestic loans less than x for $x \in (0, 1)$ in 0.1 increments. We also compute the same specification for firms that exclusively rely on domestic credit, that is, they have a lagged share of domestic credit equal to 1. Figure 9 displays the relevant coefficients for Z_{dom}^{GPR} in the domestic credit regression. At the two extremes, firms exclusively reliant on domestic credit or on foreign credit, the effects are not statistically different than our baseline result that includes all firms. In the middle cases, on the other hand, the effect is larger than in the baseline. A potential explanation is that when firms are not entirely dependent on domestic credit (share of domestic credit smaller than 1), they are able to use foreign financing as a negotiating tool to expand their borrowing by more than firms that are entirely dependent on domestic credit. However, as firms become more reliant on foreign credit (shares of domestic credit smaller than 0.1), this advantage is no longer present and the effect is similar to the one for domestic-credit-dependent firms.

We repeat this analysis for external loans and find that the effect is relatively independent

[4]We are extending the analysis in two additional areas. First, to explore the expansion of domestic credit, we examine bank-level balance sheets to identify the banks propagating geopolitical risk. Second, by analyzing firm-level balance sheets, we investigate how increased credit balances impact other firm outcomes, such as investment.

Figure 9: Domestic loans response to geopolitical risk, by domestic credit dependence



Note: This figure displays the coefficient on Z_{dom}^{GPR} for a specification as in column (4) for domestic loans in Table 1 in the y axis and its 95th confidence interval, restricting the sample by the firms' lagged share of financing from domestic loans given by the amount in the x axis. For example, the coefficient corresponding to a lagged share of domestic financing of 0.5 comes from a regression as in (10) restricted to firms with a lagged share of domestic financing less than 0.5. The red dashed line represents the coefficient in column (4) for domestic loans in Table 1, when considering all firms, those that use exclusively domestic credit and those that don't.

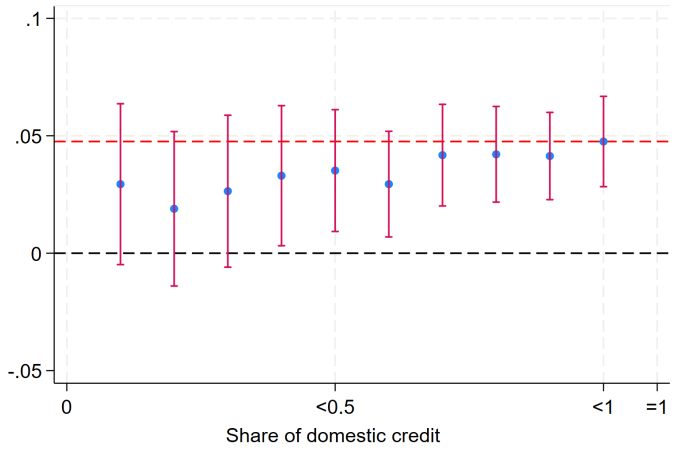
of the share of dependence on domestic financing, as shown in Figure 10, with the effects not statistically different than the baseline. Following with our previous story, access to domestic credit is not used as leverage with foreign borrowers.

4.2.2 Trade exposure

Since trade activities can also proxy for other demand factors not controlled for, we also split our sample based on the trade activities of firms and repeat the estimation of (10). First, we consider firms that do not have exporting activities, firms that export to any destination, and firms that export exclusively to the US. Alternatively, we focus on the intensive margin of exporting activities and separate our sample using the 25th, 50th, and 75th percentiles of the exports distribution.

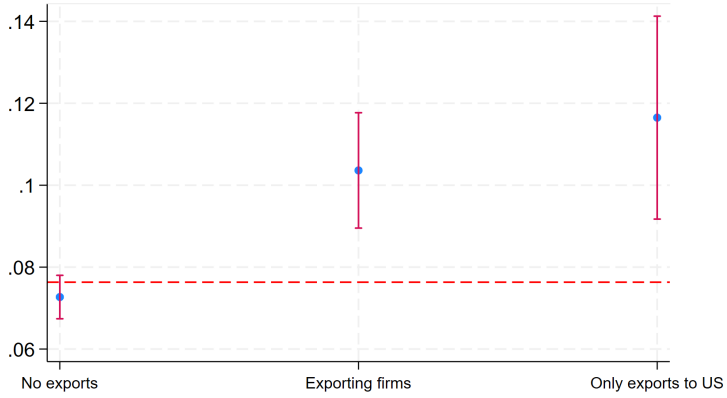
Focusing on the extensive margin, Figure 11 shows that, when it comes to domestic credit, exporting firms and in particular firms that only export to the US increase their borrowing by more than non-exporting firms. Exporting firms increase their borrowing from domestic banks by 10.4%, while non-exporting firms only increase it by 7.3%. Exporting

Figure 10: External loans response to geopolitical risk, by domestic credit dependence



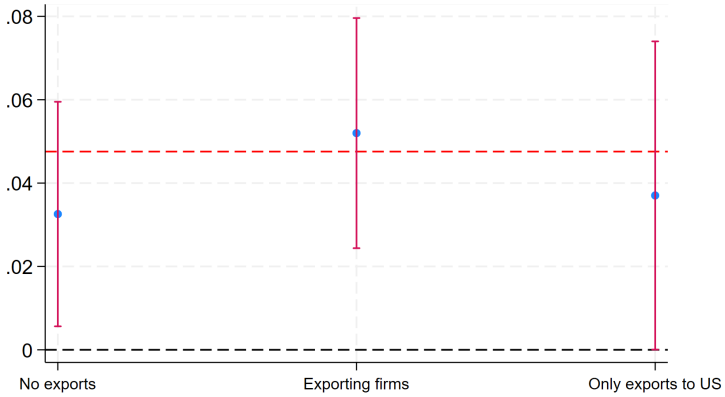
Note: This figure displays the coefficient on Z_{ext}^{GPR} for a specification as in column (4) for external loans in Table 1 in the y axis and its 95th confidence interval, restricting the sample by the firms' lagged share of financing from domestic loans given by the amount in the x axis. For example, the coefficient corresponding to a lagged share of domestic financing of 0.5 comes from a regression as in (10) restricted to firms with a lagged share of domestic financing less than 0.5. The red dashed line represents the coefficient in column (4) for external loans in Table 1, when considering all firms.

Figure 11: Domestic loans response to geopolitical risk, by exporting status



Note: This figure displays the coefficient on Z_{dom}^{GPR} for a specification as in column (4) for domestic loans in Table 1 in the y axis and its 95th confidence interval, restricting the sample by the firms' lagged share of financing from domestic loans given by the amount in the x axis. For example, the coefficient corresponding to "No exports" comes from a regression as in (10) restricted to firms with no exports. The red dashed line represents the coefficient in column (4) for domestic loans in Table 1, when considering all firms, those that use exclusively domestic credit and those that don't.

Figure 12: External loans response to geopolitical risk, by exporting status



Note: This figure displays the coefficient on Z_{ext}^{GPR} for a specification as in column (4) for external loans in Table 1 in the y axis and its 95th confidence interval, restricting the sample by the firms' lagged share of financing from domestic loans given by the amount in the x axis. For example, the coefficient corresponding to "No exports" comes from a regression as in (10) restricted to firms with no exports. The red dashed line represents the coefficient in column (4) for external loans in Table 1, when considering all firms.

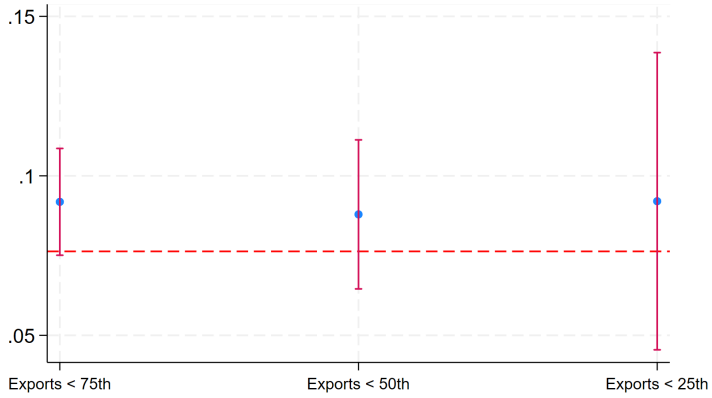
firms drive up the estimated response of domestic loans to geopolitical risk. Firms that only export to the US increase their borrowing by even more, by 11.6%, which might be related to friend-shoring factors when geopolitical risk increases. For external loans, Figures 12 show that there is no statistically significant difference according to the firm exporting status. This can be due to selection, since firms that have direct access to foreign lending already tend to participate more in trade activities (see Tables 9 to 16).

Regarding exports intensity, we estimate (10) for firms with exports smaller than the 75th percentile of exports, the 50th percentile, and the 25th percentile. Figures 13 and 14 summarize the results, showing that within exporting firms, there is no difference in the response depending on the firm's exports intensity.

4.2.3 Industry-level variation

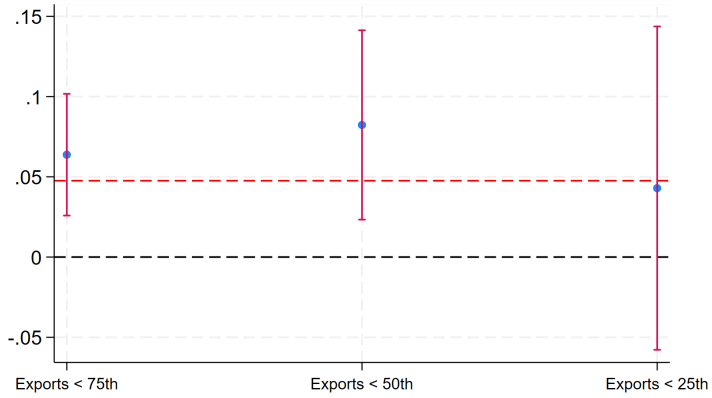
To further consider demand-side factors, we interact Z_K^{GPR} in (10) with a dummy variable that indicates the industry of economy activity, at the one digit level. Table 4 presents our results. In the case of external credit, our result is driven by the manufacturing sector, which represent about 50% of firms borrowing externally at the beginning of our sample, but about

Figure 13: Domestic loans response to geopolitical risk, by exports intensity



Note: This figure displays the coefficient on Z_{dom}^{GPR} for a specification as in column (4) for domestic loans in Table 1 in the y axis and its 95th confidence interval, restricting the sample by the firms' exports level being smaller than the value in the x axis. For example, the coefficient corresponding to "Exports $<$ 50th" comes from a regression as in (10) restricted to firms with a exports smaller than the 50th percentile of exports. The red dashed line represents the coefficient in column (4) for domestic loans in Table 1, when considering all firms, those that use exclusively domestic credit and those that don't.

Figure 14: External loans response to geopolitical risk, by exports intensity



Note: This figure displays the coefficient on Z_{ext}^{GPR} for a specification as in column (4) for external loans in Table 1 in the y axis and its 95th confidence interval, restricting the sample by the firms' exports level being smaller than the value in the x axis. For example, the coefficient corresponding to "Exports $<$ 50th" comes from a regression as in (10) restricted to firms with a exports smaller than the 50th percentile of exports. The red dashed line represents the coefficient in column (4) for external loans in Table 1, when considering all firms.

25% towards the second half (see Appendix C).

In terms of domestic credit, there is an average increase of 6.6% across sectors, with construction, manufacturing, and transportation showing positive and significant differential effects of 1.6%, 1.8%, and 2.2% respectively, meaning their total effect is on the 8.2%-8.8%. These results suggest that industries that are typically more reliant on external finance, as in Rajan & Zingales (1998), benefit more from the expansion during periods with increased geopolitical risk. Within these industries, firms that are initially more exposed to geopolitical risk, either directly or indirectly increase their borrowing by more.

4.2.4 Credit quality

The expansion of domestic credit for medium and large enterprises brings about financial stability concerns. If credit expands tilted towards lower quality borrowers, the reversal of GPR cycles could deteriorate banks' portfolios. To examine this issue, we interact Z_K^{GPR} in (10) with a dummy variable that indicates the credit rating of the firm. Domestic credit rating varies from A to E, with A being highest credit rating quality and E the lowest. Table 5 presents our results for external and domestic loans. For external credit, there is no difference across firms with different domestic credit rating. The vulnerability profile of firms that borrow externally doesn't change when geopolitical risk increases.

For domestic loans, there is an average effect of 7.3%, but firms with lower credit quality expand their credit by more, with the effect being almost double for firms with the lowest credit quality. These differential effects are statistically significant and on the range of 4.2% to 7.2%, pointing to a deterioration of credit quality when exposure to geopolitical risk increases.

4.2.5 Periods of US stress

Episodes of stress in the US typically affect capital flows to Colombia, i.e., the Global Financial Crisis of 2008-2009, the 2013 Fed tapering, and the 2018 US-China trade tensions

Table 4: Credit response to geopolitical risk - industry level

	External loans		Domestic loans	
	(1)	(2)	(1)	(2)
Z_{dom}^{GPR}	-0.0112	-0.0115	0.0763***	0.0661***
	(0.00712)	(0.00708)	(0.00251)	(0.00626)
Z_{ext}^{GPR}	0.0476***	0.0185	0.0287***	0.0286***
	(0.00980)	(0.0248)	(0.00672)	(0.00670)
Z_K^{GPR} *Commerce		0.0150		0.00877
		(0.0273)		(0.00694)
Z_K^{GPR} * Construction		0.0125		0.0160*
		(0.0542)		(0.00870)
Z_K^{GPR} * Electricity		0.110		-0.0219
		(0.483)		(0.0460)
Z_K^{GPR} * Hospitality		0.0551		-0.0122
		(0.0696)		(0.0143)
Z_K^{GPR} * Real Estate		-0.0148		0.00443
		(0.0385)		(0.00799)
Z_K^{GPR} * Manufacturing		0.0459*		0.0181**
		(0.0271)		(0.00718)
Z_K^{GPR} * Mining		0.0606		0.0320
		(0.0530)		(0.0232)
Z_K^{GPR} * Others		-0.0309		-0.00705
		(0.0393)		(0.0143)
Z_K^{GPR} * Health		0.0156		0.0126
		(0.0361)		(0.0332)
Z_K^{GPR} * Transportation		0.0630		0.0217*
		(0.0410)		(0.0117)
$Z_{exports}^{GPR}$	-0.00191	-0.00225	0.0104***	0.0101***
	(0.00495)	(0.00500)	(0.00199)	(0.00199)
$Z_{imports}^{GPR}$	0.00366	0.00269	0.0244***	0.0238***
	(0.00599)	(0.00602)	(0.00196)	(0.00196)
Gov debt exposure	0.0145	0.0150	-0.0218***	-0.0218***
	(0.00979)	(0.00978)	(0.00592)	(0.00592)
Gov debt exposure * GPR	-0.0118	-0.0122	0.00200	0.00197
	(0.00970)	(0.00970)	(0.00581)	(0.00581)
Observations	52,030	52,030	922,623	922,263
R-squared	0.913	0.914	0.876	0.876
Lagged dependent variable	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Sector-Time FE	No	No	No	No
Cluster	Firm	Firm	Firm	Firm
Within adj. R-squared	0.688	0.688	0.565	0.565

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: This table presents the OLS estimates for different types of credit. Column (1) repeats the baseline results from column (4) in Table 1, while column (2) corresponds to (10) with Z_K^{GPR} interacted with an industry dummy in the regression for K. The regressions include one lag of the dependent variable, the GPR exposures coming from $-K$ credit, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks and geopolitical risk. The regression includes firm and time fixed effects, and robust standard errors are clustered at the firm level.

Table 5: Credit response to geopolitical risk - credit quality

	External loans		Domestic loans	
	(1)	(2)	(1)	(2)
Z_{dom}^{GPR}	-0.0112	-0.0100	0.0763***	0.0731***
	(0.00712)	(0.00728)	(0.00251)	(0.00259)
Z_{ext}^{GPR}	0.0476***	0.0463***	0.0287***	0.0276***
	(0.00980)	(0.00992)	(0.00672)	(0.00671)
Z_K^{GPR} * B credit		-0.00394		0.000358
		(0.0154)		(0.00387)
Z_K^{GPR} * C credit		-0.0173		0.0429***
		(0.0181)		(0.00862)
Z_K^{GPR} * D credit		-0.0238		0.0416***
		(0.0264)		(0.00979)
Z_K^{GPR} * E credit		0.0152		0.0723***
		(0.0237)		(0.00977)
$Z_{exports}^{GPR}$	-0.00191	-0.00172	0.0104***	0.0103***
	(0.00495)	(0.00497)	(0.00199)	(0.00198)
$Z_{imports}^{GPR}$	0.00366	0.00374	0.0244***	0.0234***
	(0.00599)	(0.00604)	(0.00196)	(0.00196)
Gov debt exposure	0.0145	0.0141	-0.0218***	-0.0225***
	(0.00979)	(0.00989)	(0.00592)	(0.00593)
Gov debt exposure * GPR	-0.0118	-0.0113	0.00200	0.00270
	(0.00970)	(0.00978)	(0.00581)	(0.00581)
Observations	52,030	51,514	922,623	922,263
R-squared	0.913	0.914	0.876	0.876
Lagged dependent variable	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Sector-Time FE	No	No	No	No
Cluster	Firm	Firm	Firm	Firm
Within adj. R-squared	0.688	0.689	0.565	0.565

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: This table presents the OLS estimates for different types of credit. Column (1) repeats the baseline results from column (4) in Table 1, while column (2) corresponds to (10) with Z_K^{GPR} interacted with a credit rating dummy in the regression for K. Domestic credit rating varies from A to E, with A being highest credit rating quality and E the lowest. The regressions include one lag of the dependent variable, the GPR exposures coming from $-K$ credit, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks and geopolitical risk. The regression includes firm and time fixed effects, and robust standard errors are clustered at the firm level.

(Ahn & Sarmiento 2019, Sarmiento 2024, Correa et al. 2025). In this section we analyze the robustness of our results to such episodes. First, Colombia imposed capital controls during the GFC, so we add a specification interacting Z_K^{GPR} with a dummy with value one during the period of capital controls. Second, we consider whether there was a permanent change on the elasticity of firm borrowing for the whole GFC and post-GFC period by interacting Z_K^{GPR} with a dummy with value one for the whole period during the GFC until the end of our sample. For the 2018 trade wars we also consider two specifications. First, we only consider as different the period during the trade war, so we interact Z_K^{GPR} with a dummy with value one during the 2018 trade war and zero otherwise. Second, we test whether the whole period since the trade wars has a different elasticity by interacting Z_K^{GPR} with a dummy with value one for the whole period starting at the 2018 US-Chine trade war until the end of our sample. Table 6 presents our results.

For external loans, there is no differential effect during the capital controls period or the period post-GFC (columns 1 and 2), noting that there is no break in the elasticity to geopolitical risk exposure due to the GFC. Our results is reasonable since the capital controls were not targeted to direct foreign borrowing from firms. There is also no differential effect for external loans during the 2018 trade wars, but there is a negative and statistically significant differential effect for the post-2018 trade war period, which corresponds to the more recent period of increased geopolitical uncertainty. While Colombian firms continue to increase their external borrowing during this period, the effect is 3 percentage points smaller than the average of 6% (column 4).

For domestic credit, during capital controls there is a negative and statistically significant differential effect on domestic credit (column 1) of 1.7%, but not big enough to compensate the average effect of 7.7%. When considering the post-GFC period as a whole, there is an average effect of 5.9% and the differential effect is positive and equal to 3%. Since capital controls were lifted after the end of 2008, this two results together point to capital controls

being effective to dampen the transmission of geopolitical risk through domestic credit.

During the 2018 trade war and beyond (columns 3 and 4), domestic credit expanded by even more than the average response of about 7%. The effect is positive and statistically significant in both cases, at 4.4% and 4.6%. Showing that during the more recent period of stress, the transmission of geopolitical risk to domestic credit has been even larger.

Table 6: Credit response to geopolitical risk - Periods of US stress

	External loans				Domestic loans			
	Capital controls	Post-GFC	2018 Trade war		Capital controls	Post-GFC	2018 Trade war	
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Z_{dom}^{GPR}	-0.0112	-0.0114	-0.0113	-0.0114	0.0775***	0.0592***	0.0749***	0.0706***
	(0.00712)	(0.00715)	(0.00712)	(0.00714)	(0.00252)	(0.00354)	(0.00252)	(0.00264)
Z_{ext}^{GPR}	0.0469***	0.0636***	0.0493***	0.0610***	0.0286***	0.0291***	0.0286***	0.0289***
	(0.00979)	(0.0145)	(0.0100)	(0.0120)	(0.00672)	(0.00673)	(0.00672)	(0.00673)
$Z_K^{GPR} * \mathbb{I}_{stress}$	0.0507	-0.0214	-0.0156	-0.0333**	-0.0169***	0.0306***	0.0445***	0.0464***
	(0.0312)	(0.0160)	(0.0142)	(0.0132)	(0.00609)	(0.00423)	(0.00825)	(0.00625)
$Z_{exports}^{GPR}$	-0.00185	-0.00202	-0.00192	-0.00197	0.0104***	0.0106***	0.0105***	0.0105***
	(0.00496)	(0.00493)	(0.00495)	(0.00493)	(0.00199)	(0.00199)	(0.00199)	(0.00199)
$Z_{imports}^{GPR}$	0.00358	0.00382	0.00366	0.00378	0.0244***	0.0245***	0.0244***	0.0244***
	(0.00600)	(0.00600)	(0.00599)	(0.00599)	(0.00196)	(0.00196)	(0.00196)	(0.00196)
Gov debt exposure	0.0146	0.0143	0.0145	0.0142	-0.0215***	-0.0231***	-0.0218***	-0.0221***
	(0.00979)	(0.00979)	(0.00980)	(0.00981)	(0.00593)	(0.00593)	(0.00592)	(0.00593)
Gov debt exposure * GPR	-0.0119	-0.0116	-0.0119	-0.0113	0.00168	0.00449	0.00218	0.00314
	(0.00970)	(0.00968)	(0.00971)	(0.00968)	(0.00582)	(0.00582)	(0.00580)	(0.00584)
Observations	52,030	52,030	52,030	52,030	922,623	922,623	922,623	922,623
R-squared	0.913	0.913	0.913	0.913	0.876	0.876	0.876	0.876
Lagged dep. var.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector-Time FE	No	No	No	No	No	No	No	No
Cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Within adj. R-sq.	0.688	0.688	0.688	0.688	0.565	0.565	0.565	0.565

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: This table presents the OLS estimates for different types of credit. Each column presents the results from a regression of $\log K_{it}$ as in (10) with Z_K^{GPR} interacted with a dummy variable $\mathbb{I}_{stress}$. For column (1) $\mathbb{I}_{stress}$ asummes the value one for the period 2007:2-2008:4; for column (2) it assumes the value one for 2008:1-2022:4; for column (3) it assumes the value one for 2018:1-2019:4; finally for column (4) it assumes the value one for 2018:1-2022:4. The regressions include one lag of the dependent variable, the GPR exposures coming from external loans and domestic credit, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks and geopolitical risk. The exposures are interacted with a dummy variable when K is different than the flow in the dependent variable. The regression includes firm and time fixed effects, the $-K$ dummy variable, and robust standard errors are clustered at the firm level.

5 Conclusion

Using a unique administrative dataset and a novel identification approach, we find that geopolitical shocks abroad lead to a reallocation of capital toward Colombia, increasing both foreign and domestic credit available to firms. Domestic banks amplify this effect through their intermediation of foreign funding. Our findings highlight a new transmission channel

linking global geopolitical tensions to firm-level financing in emerging markets. Our results are consistent with heightened geopolitical risk redistributing credit toward economies that are politically aligned, reinforcing strategic financial linkages during periods of uncertainty. More specifically, firms that were initially more exposed to foreign financing, either directly or indirectly, increase their credit balances by more when geopolitical risk increases abroad. The observed domestic credit expansion and lower loan rates are consistent with a financing channel of geopolitical risk, which is more relevant for firms requiring external financing (Rajan & Zingales 1998). However, the results also point to a potential deterioration in overall domestic credit quality leading to pro-cyclical vulnerabilities. Heterogeneous effects are observed across economic sectors, exporter status, and type of borrowers.

Our results reveal that geopolitical risk is a key "push" factor in the allocation of international capital, with macro-financial implications. The pro-cyclical expansion of credit during geopolitical shocks can create vulnerabilities when conditions reverse. To prevent this, the monitoring and stress testing of banks' foreign funding and sovereign debt exposure should be incorporated into the macroprudential toolkit. In addition, higher countercyclical capital and liquidity buffers can be implemented during periods of geopolitically driven inflows, so that banks can continue lending if external conditions or political alignment change, and partially retract the reallocated credit.

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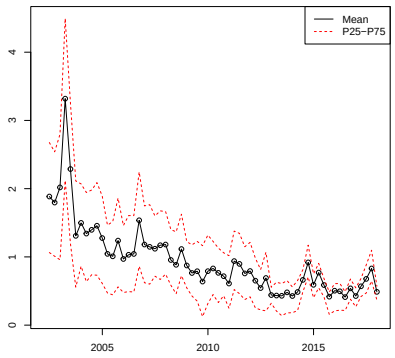
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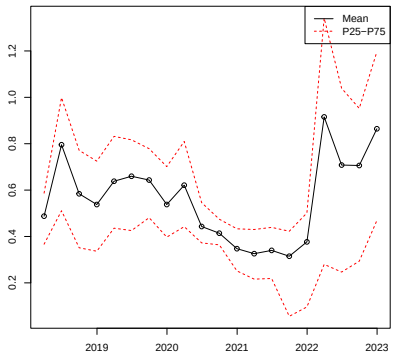
A Firm-level geopolitical risk exposures

Figure 15: Firm-level GPR Exposure: Domestic loans (2002-2017)



Notes: This figure reports the GPR exposure instrument for domestic loans, constructed based on (3). We employ the Geopolitical risk indicator (GPR) of Caldara and Iacoviello (2022) at the country level between 2002 and 2017.

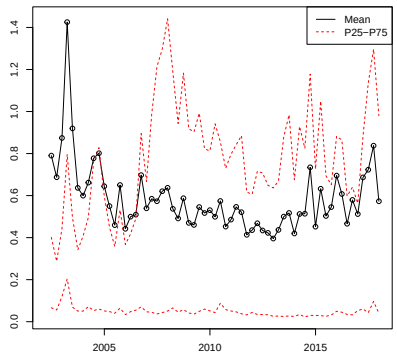
Figure 16: Firm-level GPR Exposure: Domestic loans (2018-2022)



Notes: This figure reports the GPR exposure instrument for domestic loans, constructed based on (3). We employ the Geopolitical risk indicator (GPR) of Caldara and Iacoviello (2022) at the country level between 2018 and 2022 (i.e., during increased geopolitical tensions).

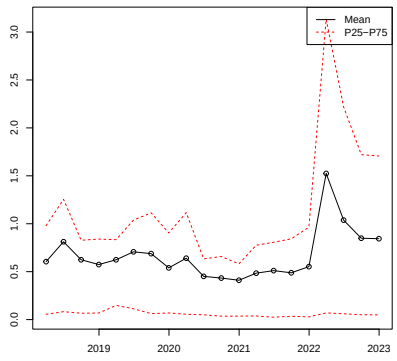
B Descriptive statistics

Figure 17: Firm-level GPR Exposure: External loans (2002-2017)



Notes: This figure reports the GPR exposure instrument for external loans, constructed based on (2). We employ the Geopolitical risk indicator (GPR) of Caldara and Iacoviello (2022) at the country level between 2002 and 2017.

Figure 18: Firm-level GPR Exposure: External loans (2018-2022)



Notes: This figure reports the GPR exposure instrument for external loans, constructed based on (2). We employ the Geopolitical risk indicator (GPR) of Caldara and Iacoviello (2022) at the country level between 2018 and 2022.

Table 7: Descriptive statistics, unconditional

Variable	p10	p25	p50	mean	p75	p90	SD
Domestic loans	30580	41905	345367	3133514	1783154	6938787	910269
External loans	0,00	0,00	0,00	434.818	0,00	0,00	4.940.726
External trade credit	0,00	0,00	0,00	16.122	0,00	0,00	221.782
Log domestic loans	14,93	17,55	19,66	18,92	21,30	22,66	4,03
Log external loans	0,00	0,00	0,00	1,05	0,00	0,00	3,66
Log external trade credit	0,00	0,00	0,00	0,45	0,00	0,00	2,22
Log exports (USD)	0,00	0,00	0,00	1,59	0,00	10,13	4,10
Log imports (USD)	0,00	0,00	0,00	3,84	10,40	13,09	5,74
Spread domestic loans	1,53	4,83	8,10	9,59	12,95	22,49	7,39
Spread external loans	0,00	0,00	0,00	0,25	0,00	0,00	1,25
Spread external trade credit	0,00	0,00	0,00	0,01	0,00	0,00	0,23
Domestic loans maturity	0,26	0,88	2,02	3,41	3,76	6,02	6,75
External loans maturity	0,00	0,00	0,00	0,30	0,00	0,00	1,41
External trade credit maturity	0,00	0,00	0,00	0,14	0,00	0,00	0,99
Observations	1285372						
Firms	48007						

Notes: This table reports summary statistics for the full sample used in the regression analysis including 1,285,372 observations and 48,007 firms for the 2002q1-2022q4 period. Data is winsorized at the top 1%. Local credit in COP thousand and external credit in USD.
Source: Banco de la República and SFC.

Table 8: Descriptive statistics, conditional

Variable	p10	p25	p50	mean	p75	p90	SD	Observations
Domestic loans	46550	59000	370000	319504	1851084	7109503	9191764	1285372
External loans	36930	166000	737000	550009	2924981	10500000	167664	48007
External trade credit	5858	19486	65277	396156	254464	927537	102863	52311
Log domestic loans	15,35	17,73	19,73	19,32	21,34	22,68	2,98	
Log external loans	10,52	12,02	13,51	13,32	14,89	16,17	2,53	
Log external trade credit	8,68	9,88	11,09	10,97	12,45	13,74	2,48	
Log exports (USD)	8,58	9,99	11,61	11,63	13,29	14,81	2,45	1258861
Log imports (USD)	9,23	10,65	12,11	12,04	13,48	14,76	2,14	101617
Spread domestic loans	3,42	5,58	8,62	10,52	13,60	22,95	6,83	
Spread externalloans	1,00	1,73	3,08	4,01	5,33	8,13	3,11	
Spread external trade credit	0,09	0,67	1,97	3,35	5,62	8,00	3,41	
Domestic loans maturity	0,41	0,99	2,12	3,54	3,85	6,16	6,84	
External loans maturity	0,58	1,00	3,00	3,83	5,08	8,83	3,39	
External trade credit maturity	0,83	1,11	2,01	3,41	4,27	7,74	3,58	

Notes: This table reports summary statistics of the sample used in the regression analysis including 1,285,372 observations and 48,007 firms for the 2002q1-2022q4 period. For each type of credit, the summary statistics are computed conditional on the observations being non-zero. Data is winsorized at the top 1%. Local credit in COP and external credit in USD.
Source: Banco de la República and SFC.

C Distribution of loans over time

Table 9: Firms distribution, Domestic loans, 2002-2006

	Number of firms	Share	Mean out-standing loans (millions COP)	Mean spread	Mean maturity	Share of credit in local currency	Share of firms using foreign trade credit	Share of firms using foreign loans
Total	19463	1.00	1797.49	18.71	2.52	0.95	0.10	0.07
Export	4361	0.22	4576.75	20.07	2.45	0.90	0.06	0.05
Export only US	872	0.04	2615.74	19.36	2.97	0.93	0.01	0.01
Import	7933	0.41	3540.90	19.71	2.47	0.89	0.09	0.06
Import only US	2350	0.12	1371.26	18.85	2.55	0.94	0.01	0.01
Retail	6928	0.36	1334.71	18.64	2.16	0.94	0.05	0.02
Manufacturing	4673	0.24	3156.70	19.42	2.19	0.93	0.04	0.04
Construction	1824	0.09	1581.93	18.71	2.56	0.99	0.00	0.00
Mining	280	0.01	2338.81	18.37	3.99	0.98	0.00	0.00
Large firms	5536	0.28	4398.13	20.27	2.84	0.92	0.06	0.05
Medium-sized firms	14980	0.77	245.92	17.78	2.32	0.97	0.04	0.02

Table 10: Firms distribution, External loans, 2002-2006

	Number of firms	Share	Mean out-standing loans (thou-sands of USD)	Mean spread	Mean maturity	Share of firms using foreign trade credit	Share of firms using domestic loans
Total	1487	1	4065.33	2.79	4.05	0.35	0.92
Export	949	0.64	3785.37	2.24	3.46	0.28	0.60
Export only US	125	0.08	6388.02	2.47	4.06	0.03	0.07
Import	1125	0.76	4111.12	2.47	3.75	0.33	0.72
Import only US	175	0.12	3376.45	2.57	3.69	0.03	0.11
Retail	358	0.24	2062.68	2.68	3.94	0.09	0.22
Manufacturing	714	0.48	3184.29	2.20	3.59	0.21	0.47
Construction	91	0.06	4542.81	4.51	4.73	0.01	0.05
Mining	22	0.01	10745.31	3.31	5.52	0.00	0.01
Large firms	1109	0.75	5104.24	2.74	4.03	0.30	0.71
Medium-sized firms	441	0.00	2321.94	2.96	4.14	0.05	0.25

Table 11: Firms distribution, Domestic loans, 2007-2011

	Number of firms	Share	Mean out-standing loans (millions COP)	Mean spread	Mean maturity	Share of credit in local currency	Share of firms using foreign trade credit	Share of firms using foreign loans
Total	27181	1.00	2080.46	10.40	4.14	0.96	0.09	0.07
Export	5488	0.20	5623.52	8.56	4.14	0.88	0.23	0.20
Export only US	1107	0.04	2752.09	9.24	4.26	0.94	0.18	0.12
Import	11092	0.41	4132.36	9.25	4.14	0.91	0.20	0.12
Import only US	3589	0.13	2040.97	10.33	4.12	0.96	0.09	0.06
Retail	9687	0.36	1751.09	10.59	4.19	0.95	0.14	0.06
Manufacturing	5748	0.21	3233.44	9.64	3.91	0.93	0.14	0.14
Construction	3371	0.12	2439.31	10.33	3.57	0.99	0.01	0.03
Mining	571	0.02	3241.16	11.75	4.43	0.98	0.06	0.08
Large firms	7945	0.29	6231.60	8.00	4.53	0.93	0.16	0.17
Medium-sized firms	21428	0.79	369.50	11.40	3.97	0.98	0.06	0.03

Table 12: Firms distribution, External loans, 2007-2011

	Number of firms	Share	Mean out-standing loans (thou-sands of USD)	Mean spread	Mean maturity	Share of firms using foreign trade credit	Share of firms using domestic loans
Total	2053	1.00	3733.87	2.80	4.26	0.30	0.91
Export	1145	0.56	4007.43	1.96	3.62	0.39	0.96
Export only US	148	0.07	2312.71	2.28	4.30	0.31	0.88
Import	1428	0.70	3967.83	2.39	4.08	0.41	0.96
Import only US	243	0.12	1500.93	2.75	3.64	0.27	0.94
Retail	596	0.29	2391.73	2.69	4.52	0.39	0.92
Manufacturing	812	0.40	3534.26	1.98	3.66	0.37	0.98
Construction	129	0.06	3654.89	4.01	4.29	0.07	0.89
Mining	56	0.03	8865.53	3.01	4.39	0.25	0.86
Large firms	1404	0.68	5207.68	2.85	4.27	0.32	0.95
Medium-sized firms	756	0.00	3472.04	2.69	4.26	0.25	0.84

Table 13: Firms distribution, Domestic loans, 2012-2016

	Number of firms	Share	Mean out-standing loans (millions COP)	Mean spread	Mean maturity	Share of credit in local currency	Share of firms using foreign trade credit	Share of firms using foreign loans
Total	27732	1.00	3293.38	10.63	3.42	0.93	0.04	0.09
Export	5336	0.19	7550.35	9.12	3.08	0.83	0.11	0.21
Export only US	994	0.04	5151.48	10.16	3.83	0.86	0.07	0.14
Import	11446	0.41	5654.13	9.48	3.15	0.86	0.09	0.15
Import only US	3296	0.12	3327.89	10.59	3.33	0.93	0.04	0.08
Retail	9281	0.33	2955.07	10.42	2.99	0.90	0.07	0.09
Manufacturing	5481	0.20	4665.19	9.60	3.21	0.90	0.07	0.13
Construction	4098	0.15	3733.27	10.13	3.11	0.98	0.01	0.05
Mining	733	0.03	3522.72	13.59	3.78	0.95	0.02	0.11
Large firms	10738	0.39	7829.24	8.58	3.35	0.91	0.06	0.17
Medium-sized firms	20005	0.72	553.34	11.87	3.47	0.95	0.03	0.04

Table 14: Firms distribution, External loans, 2012-2016

	Number of firms	Share	Mean out-standing loans (thou-sands of USD)	Mean spread	Mean maturity	Share of firms using foreign trade credit	Share of firms using domestic loans
Total	3101	1.00	5428.23	3.38	3.78	0.11	0.82
Export	1197	0.39	7888.28	2.76	3.57	0.18	0.92
Export only US	153	0.05	9834.13	3.74	3.57	0.10	0.88
Import	1921	0.62	6495.89	3.02	3.63	0.16	0.90
Import only US	309	0.10	4001.71	3.50	3.54	0.09	0.85
Retail	971	0.31	3342.20	2.95	3.64	0.17	0.87
Manufacturing	779	0.25	6541.43	2.72	3.56	0.19	0.94
Construction	267	0.09	3475.52	3.71	3.32	0.04	0.78
Mining	114	0.04	2035.20	4.50	3.90	0.08	0.72
Large firms	2054	0.66	7800.72	3.34	3.75	0.12	0.89
Medium-sized firms	1277	0.41	5239.91	3.46	3.83	0.09	0.70

Table 15: Firms distribution, Domestic loans, 2017-2022

	Number of firms	Share	Mean out-standing loans (millions COP)	Mean spread	Mean maturity	Share of credit in local currency	Share of firms using foreign trade credit	Share of firms using foreign loans
Total	26474	1.00	4720.75	8.65	3.37	0.94	0.003	0.12
Export	4865	0.18	10219.14	7.22	3.04	0.85	0.010	0.26
Export only US	993	0.04	6276.48	8.23	3.40	0.89	0.006	0.18
Import	9934	0.38	7965.39	7.61	3.08	0.86	0.007	0.20
Import only US	2168	0.08	4776.14	8.45	3.36	0.93	0.003	0.11
Retail	7840	0.30	4434.47	8.12	3.00	0.90	0.004	0.12
Manufacturing	4635	0.18	7358.46	6.92	3.29	0.90	0.007	0.17
Construction	3677	0.14	4717.42	8.84	3.06	0.98	0.001	0.06
Mining	479	0.02	4262.11	11.21	3.48	0.96	0.004	0.16
Large firms	12015	0.45	8901.39	7.65	3.38	0.93	0.005	0.20
Medium-sized firms	17459	0.66	829.08	9.58	3.36	0.95	0.002	0.05

Table 16: Firms distribution, External loans, 2017-2022

	Number of firms	Share	Mean out-standing loans (thou-sands of USD)	Mean spread	Mean maturity	Share of firms using foreign trade credit	Share of firms using domestic loans
Total	3864	1.00	6708.48	3.42	3.62	0.008	0.79
Export	1384	0.36	8803.82	3.05	3.30	0.014	0.91
Export only US	210	0.05	12579.87	3.73	3.46	0.005	0.84
Import	2178	0.56	7644.40	3.01	3.20	0.011	0.90
Import only US	277	0.07	6760.84	3.50	3.69	0.007	0.83
Retail	1075	0.28	4909.77	3.09	3.17	0.011	0.88
Manufacturing	841	0.22	7680.42	2.84	3.32	0.013	0.94
Construction	317	0.08	6064.70	4.03	3.54	0.000	0.74
Mining	119	0.03	19607.95	3.95	3.42	0.008	0.65
Large firms	2828	0.73	8610.54	3.45	3.60	0.009	0.85
Medium-sized firms	1355	0.35	6714.93	3.32	3.67	0.004	0.65

D More robustness

Table 17: Credit response to geopolitical risk - Time-Industry fixed effects

	Total borrowing				External loans				Domestic loans			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Z^{GPR}_{total}	0.0518***	0.0588***	0.0534***	0.0597***								
	(0.00249)	(0.00253)	(0.00258)	(0.00262)								
Z^{GPR}_{dom}					-0.00896	-0.0109*	-0.00885	-0.0111	0.0745***	0.0771***	0.0745***	0.0770***
					(0.00569)	(0.00651)	(0.00620)	(0.00715)	(0.00234)	(0.00242)	(0.00243)	(0.00252)
Z^{GPR}_{ext}					0.0409***	0.0436***	0.0428***	0.0447***	0.0254***	0.0242***	0.0287***	0.0277***
					(0.00819)	(0.00895)	(0.00893)	(0.00984)	(0.00660)	(0.00646)	(0.00683)	(0.00667)
$Z^{GPR}_{exports}$			0.0112***	0.0101***			-0.00441	-0.00481			0.0109***	0.0100***
			(0.00214)	(0.00204)			(0.00456)	(0.00526)			(0.00209)	(0.00202)
$Z^{GPR}_{imports}$			0.0244***	0.0227***			-0.000206	0.000733			0.0247***	0.0231***
			(0.00202)	(0.00202)			(0.00569)	(0.00615)			(0.00198)	(0.00198)
Gov debt exposure		-0.0246***		-0.0231***		0.0113		0.0146		-0.0265***		-0.0232***
		(0.00543)		(0.00584)		(0.00858)		(0.00960)		(0.00554)		(0.00592)
Gov debt exposure * GPR		0.00620		0.00622		-0.0124		-0.0136		0.00430		0.00300
		(0.00527)		(0.00570)		(0.00867)		(0.00955)		(0.00539)		(0.00580)
Observations	1,117,069	1,025,587	1,010,700	927,234	73,218	59,680	64,182	51,970	1,095,700	1,020,521	991,591	922,623
R-squared	0.868	0.875	0.869	0.875	0.921	0.917	0.919	0.915	0.870	0.876	0.871	0.876
Lagged dependent variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No	No	No	No	No	No	No	No
Sector-Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Within adj. R-squared	0.554	0.560	0.552	0.557	0.690	0.685	0.690	0.687	0.561	0.565	0.560	0.563

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notes: this table presents the OLS estimates for the first stage regressions. Each column presents the results from a regression of $\log K_{it}$ as in (5), (7), (9) and (10) respectively, that include one lag of the dependent variable, the GPR exposures coming from external loans, foreign trade credit and domestic credit, as well as the GPR exposure from exports and imports activities and the indirect exposure to government debt through the exposure of domestic banks and geopolitical risk. The exposures are interacted with a dummy variable when K is different than the flow in the dependent variable. The regression includes firm and time-industry fixed effects, and robust standard errors are clustered at the firm level.