Geopolitical Risk and Global Banking

Friederike Niepmann and Leslie Sheng Shen

Federal Reserve Board Federal Reserve Bank of Boston

May 20, 2025

ABFER Annual Conference

Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the Federal Reserve Board, Federal Reserve Bank of Boston or anyone affiliated with the Federal Reserve System.

Motivation

The most important [risk] is the geopolitics around Russia and Ukraine, America and China, relationships of the Western world. That to me would be far more concerning than whether there is a mild or slightly severe recession.

— Jamie Dimon (2022)

Geopolitical risk (GPR): threats or events tied to tensions among states and political actors that disrupt international stability.

• Involves catastrophic scenarios: expropriation, breakdown of legal order, and extreme uncertainty.

Motivation

The most important [risk] is the geopolitics around Russia and Ukraine, America and China, relationships of the Western world. That to me would be far more concerning than whether there is a mild or slightly severe recession.

— Jamie Dimon (2022)

Geopolitical risk (GPR): threats or events tied to tensions among states and political actors that disrupt international stability.

• Involves catastrophic scenarios: expropriation, breakdown of legal order, and extreme uncertainty.

Global banks are exposed to GPR through foreign operations.

- Example: The Ukraine invasion created uncertainty for Western banks in Russia.
- Credit supply decisions have material effects on firm investment and employment (e.g., Peek and Rosengren 2000; Khwaja and Mian 2008; Schnabl 2012; Kalemli-Ozcan et al. 2013; Huber 2018)

Banks That Stuck With Russia Face Their Biggest Test of Nerve

Italian and Austrian firms have increased Russia loans since 2015, and France has a big presence too. SocGen, UniCredit and Ralffeisen are in the spotlight.



By Nicholas Comfort, Harrah Lavit, and Sonia Sinkiti February 23, 2022 at 7:00 AM EST Updated on February 23, 2022 at 9:53 AM EST

This Paper

Research Questions:

- How do banks respond to GPR? Is this response distinct from other macro risks?
- What are the implications for domestic credit supply are there spillover effects?

This Paper

Research Questions:

- How do banks respond to GPR? Is this response distinct from other macro risks?
- What are the implications for domestic credit supply are there spillover effects?

Analysis:

- **③** Focusing on U.S. internationally active banks, how does GPR shape their foreign operations?
 - Use established and newly constructed country-specific GPR index (CGPR)
 - ▶ FFIEC 009: Bank-country-level foreign exposures of U.S. banks, by mode of operation
- (2) Introduce a simple model to explain the findings and generate predictions on spillover effects
- Test the model predictions
 - Use newly constructed bank-specific GPR indices (BGPR)
 - FRY-14Q: Loan-level origination and riskiness by borrower/country.
 - SLOOS: Bank-level lending standards.

Main Findings

GPR and U.S. banks' foreign operations:

- An increase in GPR increases credit risk of exposed banks.
- O.S. banks reduce cross-border lending to high GPR countries, but their lending through local operations in those countries continues, despite rising credit risk.
- Sank do not adjust foreign exposure similarly in response to other macro risks.

Main Findings

GPR and U.S. banks' foreign operations:

- An increase in GPR increases credit risk of exposed banks.
- O.S. banks reduce cross-border lending to high GPR countries, but their lending through local operations in those countries continues, despite rising credit risk.
- Sank do not adjust foreign exposure similarly in response to other macro risks.

Model:

- Differences in funding structures and expropriation risk/profit repatriation frictions can rationalize.
 - Foreign funding through affiliates limits downside losses
- GPR abroad can spill over to domestic lending, especially for banks with foreign affiliates and external funding reliance.

Main Findings

GPR and U.S. banks' foreign operations:

- An increase in GPR increases credit risk of exposed banks.
- O.S. banks reduce cross-border lending to high GPR countries, but their lending through local operations in those countries continues, despite rising credit risk.
- Sank do not adjust foreign exposure similarly in response to other macro risks.

Model:

- Differences in funding structures and expropriation risk/profit repatriation frictions can rationalize.
 - Foreign funding through affiliates limits downside losses
- GPR abroad can spill over to domestic lending, especially for banks with foreign affiliates and external funding reliance.

Spillover effects:

- In response to higher GPR, U.S. banks
 - reduce C&I lending to domestic firms;
 - tighten lending standards.
- Effects mostly stem from GPR in countries where banks have local operations, in line with the model.

Outline

U.S. Banks' Exposure to Geopolitical Risk

2 Geopolitical Risk and U.S. Banks' Foreign Operations

3 Simple Model of Global Banking under Geopolitical Risk

4 Spillover Effects: Geopolitical Risk and U.S. Banks' Domestic Operations

U.S. Banks' Foreign Operations: Size and Mode



- Around 20 percent of U.S. banks' assets are foreign assets (foreign claims).
 - The most internationally active banks are the largest banks.
- Around half of banks' foreign exposures stem from assets in foreign branches and subsidiaries—local claims (as opposed to cross-border claims).

U.S. Banks' Foreign Operations: Distribution by Country



- Banks differ with respect to the geography and magnitude of their exposure.
- These variations change over time within each bank.

Constructing Bank-specific GPR Index (BGPR)

$$BGPR_{bt} = \sum_{c} \omega_{bct} CGPR_{ct},$$

where

$$\omega_{bct} = \frac{1}{4} \left(\sum_{i=1}^{4} \frac{exp_{bct-i}}{asset_{bt-i}} \right)$$

- Country-level GPR (CGPR) index weighted by exposure (exp_{bct}) of each bank b to country c.
 - Weights: exposure / total assets of bank b ($asset_{bt}$).

Country-specific GPR Index (CGPR)

- Scaldara and lacoviello (2022): $CGPR^N$, newspaper text-based method.
- **②** Niepman and Shen (2024): $CGPR^{T}$, firms' earnings call transcripts à la Hassan et al. (2023).
 - Captures firms' perceptions of GPR, can be decomposed into threats vs. acts.

Country-specific GPR Index (CGPR)

- **(**) Caldara and Iacoviello (2022): $CGPR^N$, newspaper text-based method.
- **(2023)** Niepman and Shen (2024): $CGPR^{T}$, firms' earnings call transcripts à la Hassan et al. (2023).
 - Captures firms' perceptions of GPR, can be decomposed into threats vs. acts.



- Country Risk Index (CRI) by Hassan et al. (2023): corr(CGPR, CRI) = -0.43
- World Uncertainty Index (WUI) by Ahir, Bloom, and Furceri (2022): corr(CGPR, WUI) = 0.03



Country-specific GPR (CGPR)

Poland: CGPR and Other Risk Measures



9 / 24

Outline

1 U.S. Banks' Exposure to Geopolitical Risk

2 Geopolitical Risk and U.S. Banks' Foreign Operations

3 Simple Model of Global Banking under Geopolitical Risk

4 Spillover Effects: Geopolitical Risk and U.S. Banks' Domestic Operations

Geopolitical Risk and Credit Risk

Credit risk: Weighted probability of default (PD) from FR Y-14.

	Bank-cou	Bank-country Level		Level
$ln(PD_{bct/bt})$	(1)	(2)	(3)	(4)
$CGPR_{ct}^N$	0.100 ^{**} (0.040)			
$CGPR_{ct}^T$. ,	0.076 ^{**} (0.032)		
$BGPR_{bt}^N$		· · ·	0.134 ^{***} (0.024)	
$BGPR_{bt}^T$				0.215 ^{***} (0.042)
Bank-country FE	Yes	Yes	No	No
Bank-time FE	Yes	Yes	No	No
Bank FE	No	No	Yes	Yes
Time FE	No	No	Yes	Yes
Observations	9588	8890	411	411
R^2	0.680	0.679	0.871	0.871

Finding 1: GPR increases U.S. banks' credit risk.

- Banks assign a significantly higher PD to existing loans to countries experiencing increasing GPR.
- A 1 std. increase in *CGPR* increases the average weighted PD of loans by 8-10%.
- Aggregate credit risk in banks' loan portfolio increases.



GPR and Foreign Operations: Cross-border vs. Local Claims

- Cross-border claims: credit extended to foreign borrowers from an office outside of the country of the borrower.
- Local claims: foreign credit extended from branch or subsidiary in the country of residence of the borrower.

	То	otal	Cross-	border	Local		
	(1)	(2)	(3)	(4)	(5)	(6)	
$ln(exp_{bct})$	Baseline	Controls	Baseline	Controls	Baseline	Controls	
$CGPR_{ct}^N$	-0.018**	-0.022***	-0.026***	-0.031***	0.011	-0.010	
	(0.008)	(0.008)	(0.008)	(0.008)	(0.015)	(0.015)	
$CGPR_{ct-1}^N$	-0.010	-0.010	-0.014	-0.013	0.012	0.009	
	(0.008)	(0.008)	(0.009)	(0.009)	(0.014)	(0.014)	
Macro Controls	No	Yes	No	Yes	No	Yes	
Bank-country	Yes	Yes	Yes	Yes	Yes	Yes	
Bank-time FE	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	137312	108303	135803	106891	34801	31039	
R^2	0.894	0.906	0.875	0.887	0.878	0.885	

• Controls: Log stock price index, log exchange rate, sanction indicator

Finding 2: Banks continue to hold local claims to countries experiencing increasing GPR, despite increasing credit risk, while reducing cross-border claims.

Other Risks and Foreign Operations: Are banks' responses to GPR distinct?

	(1)	(2)	(3)	(4)	(5)	(6)
$ln(exp_{bct})$	Cross-border	Local	Cross-border	Local	Cross-border	Local
CRI_{ct}	-0.004	0.021				
	(0.017)	(0.017)				
CRI_{ct-1}	0.008	0.036**				
	(0.016)	(0.018)				
WUI_{ct}			0.004	0.003		
			(0.005)	(0.007)		
WUI_{ct-1}			-0.007	0.004		
			(0.005)	(0.007)		
CDS_{ct}					-0.013	-0.028*
					(0.009)	(0.016)
CDS_{ct-1}					-0.004	-0.022
					(0.012)	(0.014)
Bank-country FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank-time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	53655	18940	127821	33810	60464	19961
R^2	0.917	0.904	0.876	0.877	0.914	0.902

Finding 3: Stronger response of cross-border claims relative to local claims not found for other risks.

One Unique Feature of Geopolitical Risk: Expropriation Risk

• Geopolitical conflicts often trigger expropriation of foreign bank assets.

- Historical examples:
 - ▶ 1917: Bolshevik Revolution—all foreign banks nationalized.
 - WWII: Germany and Japan expropriated foreign-owned banks.
 - ▶ 1957: Egypt nationalized British/French banks after Suez Crisis.
 - ▶ 1960: Cuba seized U.S. bank assets post-revolution.
 - > 2008-10: Venezuela nationalized Banco de Venezuela (Santander).
 - ▶ 2023–25: Russia seized U.S. and European bank assets.
 - * Seizure of JPMorgan Chase assets after VTB lawsuit (April 2024)
 - * Seizure of UniCredit, Deutsche Bank, and Commerzbank assets (May 2024)
 - * Freezing of JPMorgan and BNY Mellon funds (October 2024)
 - * Raiffeisen Bank €2B penalty (January 2025)

Outline

U.S. Banks' Exposure to Geopolitical Risk

2 Geopolitical Risk and U.S. Banks' Foreign Operations

Simple Model of Global Banking under Geopolitical Risk

9 Spillover Effects: Geopolitical Risk and U.S. Banks' Domestic Operations

Model Setup

- 3 periods, 1 bank
- Bank allocates funds to domestic and foreign lending:
 - ▶ Domestic lending (L) is one-period and risk-free
 - Foreign lending (L^*) is two-period and uncertain, through one of two modes:
 - * Cross-border—funded by domestic deposits (D)
 - * Foreign local affiliate—funded by foreign (D^*) and domestic $(D-D^*)$ deposits

Model Setup

- 3 periods, 1 bank
- Bank allocates funds to domestic and foreign lending:
 - ▶ Domestic lending (L) is one-period and risk-free
 - Foreign lending (L^*) is two-period and uncertain, through one of two modes:
 - ★ Cross-border—funded by domestic deposits (D)
 - * Foreign local affiliate—funded by foreign (D^*) and domestic $(D-D^*)$ deposits

UniCredit and RBI emphasized the strategic importance of local self-funding in managing geopolitical risk

Naturally, we did not foresee a military conflict such as the one we are currently witnessing. We have however ... ensured that RBI's subsidiaries are self-financing, allowing only a restricted amount of cross-border financing.

— UniCredit 2022:Q1 financial report

Model Setup

- 3 periods, 1 bank
- Bank allocates funds to domestic and foreign lending:
 - ▶ Domestic lending (*L*) is one-period and risk-free
 - Foreign lending (L^*) is two-period and uncertain, through one of two modes:
 - * Cross-border—funded by domestic deposits (D)
 - * Foreign local affiliate—funded by foreign (D^*) and domestic $(D-D^*)$ deposits Earnings Call
- Foreign investments are exposed to geopolitical risk:
 - Risk of expropriation if a geopolitical event occurs.
 - * If materializes, foreign government seizes local affiliate; bank no longer obligated to repay foreign depositors
 - * Mechanism holds with costly profit repatriation
 - Bank may liquidate foreign investment early at a cost
- Bank is subject to a leverage constraint (Basel III-style):

$$\frac{E_1}{L_1+L^*\alpha(\phi,p^G,p^B)} \geq \mu,$$

where $\alpha(\phi,p^G,p^B)>1$ is the risk weight

Timeline



t=0

- Geopolitical risk is expected to be low with probability 1-φ and high with probability φ
- Bank decides how much to invest at home (L₁) and abroad (L^{*}) and, for foreign investment, whether to operate crossborder or through local affiliate
- Bank raises (D₁- D₁^{*}) funding at home and (D₁^{*}) abroad if operating through local affiliate

t=1

- Geopolitical risk turns out to be high (p^B) or low (p^G)
- Bank decides whether to liquidate (recover δL) or continue with foreign investment
- Bank decides how much to invest domestically (L₂)
- Bank pays back deposits and raises new funding (D₂- D₂^{*} and D₂^{*})

t=2

- Geopolitical risk event materializes or not
- If not, bank collects domestic and foreign returns (R and R*) and pay back depositors
- If so, bank expropriated and does not pay back foreign depositors

Liquidation Decisions

Bank compares profits from liquidation $\pi_2^{X,L} = \pi_2^{A,L} = RL_2^L - iD_2^L$ with profits from continuing.

$$\begin{split} \pi_2^{X,C} &= pR^*L^* + L_2^CR - D_2^Ci.\\ \pi_2^{A,C} &= pR^*L^* + L_2^CR - D_2^Ci + (1-p)D_2^*i > \pi_2^{X,C}. \end{split}$$

Proposition 1:

- **()** The threshold δ required for liquidation is higher when the bank operates through a foreign affiliate than when it invests cross-border.
- The lower the probability of success p (GPR increases), the larger is the difference between the liquidation thresholds for local affiliate and cross-border lending.
- The more funding the bank raises in the foreign market, the larger is the difference between the liquidation thresholds for local affiliate and cross-border lending.

 \Rightarrow

- Propositions 1.1 and 1.2 are consistent with documented empirical findings.
- Test Proposition 1.3 on whether banks divest less from foreign markets that raise more local funding in response to GPR.

Local Liabilities Determine Banks' Withdrawal Decisions

	Tota	Exp.	Lo	cal	Cross-border	
$ln(exp_{bct})$	(1)	(2)	(3)	(4)	(5)	(6)
$CGPR_{ct}^N$	-0.049***	-0.050***	-0.067***	-0.066***	-0.074***	-0.071***
	(0.019)	(0.017)	(0.022)	(0.022)	(0.015)	(0.013)
$CGPR_{ct}^N \times ln(LL)_{bct-1}$	0.004**	0.004**	0.008**	0.008**	0.002	0.002
	(0.002)	(0.002)	(0.004)	(0.004)	(0.002)	(0.002)
$CGPR_{ct-1}^N$	-0.018	-0.019	-0.034	-0.034	-0.027*	-0.023
	(0.016)	(0.015)	(0.026)	(0.026)	(0.015)	(0.015)
$CGPR_{ct-1}^N \times ln(LL)_{bct-2}$	0.002	0.002	0.005	0.005	-0.001	-0.001
	(0.002)	(0.002)	(0.005)	(0.005)	(0.002)	(0.002)
Macro Controls	No	Yes	No	Yes	No	Yes
Bank-country FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank-time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16829	16107	15870	15208	16040	15374
R^2	0.956	0.958	0.919	0.922	0.938	0.938

Banks' responses to GPR by ex-ante local liabilities

- Banks withdraw less from markets that are funded via local liabilities. Local liability share
- Local funding positions do <u>not</u> significantly affect banks' response to alternative macro risks. Other risks

Spillovers to Domestic Lending

Lending at t = 1 under liquidation and continuation is given by:

$$L_{2}^{L} = \frac{\delta L^{*} + L_{1}R_{1} - D_{1}i}{\mu}.$$
$$L_{2}^{C} = \frac{L^{*} + R_{1}L_{1} - D_{1}i - \mu L^{*}\alpha(p)}{\mu}$$

Proposition 2:

- $L_2^{G,C} > L_2^{B,C}$. Domestic lending under continuation is higher in the good state of the world with low geopolitical risk than in the bad state with high geopolitical risk.
- $L_2^L > L_2^{B,C}$ if $\delta > 1 \alpha(p)\mu$. Domestic lending is higher when the bank liquidates its foreign investment at t = 1 than when it continues its foreign operation if the reduction in borrowing capacity from higher foreign risk-weighted assets due to geopolitical risk exceeds the combined effect of the equity loss and the decrease in risk-weighted assets under liquidation.

Model predictions:

- Banks exposed to heightened GPR through foreign operations reduce domestic lending.
- Spillover effects are larger when banks operate through foreign affiliates...
- ...and for banks with lower capital ratios and profits.

Outline

U.S. Banks' Exposure to Geopolitical Risk

2 Geopolitical Risk and U.S. Banks' Foreign Operations

3 Simple Model of Global Banking under Geopolitical Risk

Spillover Effects: Geopolitical Risk and U.S. Banks' Domestic Operations

Spillover Effect: GPR and Domestic C&I Loan Origination

Data: FRY-14Q, loan level.

$$ln(orig_{bit}) = \beta BGPR_{bt} + \delta Z_{bt} + \delta X_{bit} + \gamma_{it} + \alpha_b + \epsilon_{bit}$$

- $orig_{bit}$: Amount of loan origination by bank b to firm i at time t.
- Z_{bt} : Bank controls include liquid asset ratio and tier 1 capital ratio.
- X_{bit} : Loan controls include maturity and interest rate.
- γ_{it} : Firm-time fixed effects.
- α_b : Bank fixed effects.
- Sample restricted to lending by U.S. banks to U.S. firms.
- Sample period: 2013:Q1 to 2022:Q4.

Analysis also conducted at the bank level, and results hold.

Banks reduce domestic loan origination when BGPR rises

		BG	$BGPR^N$ $BGPR^T$					
$ln(orig_{bit})$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$BGPR_{bt}^N$	-0.087***	-0.061**	-0.089***	-0.087***				
	(0.027)	(0.029)	(0.027)	(0.027)				
$BGPR_{bt}^{T}$					-0.081***	-0.061***	-0.083***	-0.081***
					(0.020)	(0.022)	(0.020)	(0.020)
$BCRI_{bt}$		0.072**				0.069**		
		(0.032)				(0.032)		
$BWUI_{bt}$			-0.044				-0.047	
			(0.030)				(0.030)	
$BCDS_{bt}$				0.001				0.005
				(0.024)				(0.024)
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Controls	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	175943	175943	175943	175943	175943	175943	175943	175943
R^2	0.617	0.617	0.617	0.617	0.617	0.617	0.617	0.617

• A 1 std. increase in BGPR reduces loan origination by 9 percent (column 1).

Spillover of GPR through Cross-border vs. Local Exposure

Does the mode of operation matter for the spillover of GPR?

Loan Level										
$ln(orig_{bit})$	(1)	(2)	(3)	(4)	(5)	(6)				
$BGPR_{bt}^{N}(\mathbf{1(Local)})$	-0.060**	-0.062**			-0.060**	-0.060**				
	(0.026)	(0.026)			(0.027)	(0.027)				
$BGPR_{bt}^{N}(1(Cross-border))$			-0.021	-0.037	-0.010	-0.023				
			(0.044)	(0.046)	(0.045)	(0.046)				
Bank Controls	No	Yes	No	Yes	No	Yes				
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes				
Firm-time FE	Yes	Yes	Yes	Yes	Yes	Yes				
Observations	205642	199753	205642	199753	205642	199753				
R^2	0.594	0.592	0.594	0.592	0.594	0.592				

• Effect of BGPR on loan origination is more significant when stemming from countries where banks have affiliates.



Additional Results and Robustness

• Loan Origination:

- Banks with stronger capital and profit positions reduce origination less. Capital & Profit Position
- Results are driven by geopolitical threats rather than acts. Acts vs. Threats
- Lending standard:
 - Lending standards tighten in response to geopolitical risk. SLOOS Results
 - Effect of BGPR on lending standards is more significant when stemming from countries where banks have affiliates. Local vs CB Claims
 - Banks also tighten lending standards for CRE loans.

Conclusion

- Three findings on GPR and global banks' foreign operations:
 - An increase in GPR increases credit risk of exposed banks.
 - **②** U.S. banks reduce cross-border lending to high GPR countries, but not local lending.
 - Bank do not adjust foreign exposure in a similar asymmetric way in response to other macro risks.
- Model
 - Foreign funding can partially offset asset losses through a reduction in liabilities, lowering net loss from GPR.
- Global banks play a significant role in transmitting geopolitical risk to domestic credit supply, esp risk from countries where banks have local operations

Future research: real and distributional consequences of geopolitical risk transmitted through global banks.

Appendix

U.S. Banks' Foreign Operations: Distribution by Region



- Banks differ with respect to the geography and magnitude of their exposure.
- These variations change over time within each bank.

Search Query for GPR Index

Panel A. Search categories and search queries		Panel B. Search words Topic sets	Phrases
Threats		War_words	war OR conflict OR hostilities OR revolution* OR insurrection OR uprising OR
 War threats Pages threats 	War_words N/2 Threat_words	Peace_words Military_words	revolt OR coup OR geopolitical peace OR truce OR armistice OR treaty OR parley military OR troops OR missile * OR "arms" OR weapon* OR bomb* OR warhead* (more area * 100 missile * 00 "unders michael * 00 "unders michael * 00")
2. Feace threats	Peace_disruption_words	Nuclear_Digrams	OR "atomic bombs" OR "hobombs" OR "huclear bombs" OR "nuclear bombs" OR "huclear bombs" OR "huclear test" OR "nuclear test" OR "nuclear test" OR
3. Military buildup	Military_words AND buildup_words	Terrorism_words Actor_words	terror* OR guerrilla* OR hostage* allie* OR enem* OR insurgen* OR foe* OR army OR navy OR aerial OR troops OR rebels
4. Nuclear threats	Nuclear_bigrams AND Threat_words	Threat/act sets	Phrases
5. Terrorist threats	Terrorism_words N/2 Threat_words	Threat_words	threat* OR warn* OR fear* OR risk* OR concern* OR danger* OR doubt* OR crisis OR troubl* OR disput* OR tension* OR imminen* OR inevitable OR footing OR menace* OR brink OR scare OR peril*
Acts		Peace_disruption_words	threat* OR menace* OR reject* OR peril* OR boycott* OR disrupt*
6. Beginning of war	War_words N/2	Buildup_words	buildup* OR build-up* OR sanction* OR blockad* OR embargo OR quarantine OR ultimatum OR mobiliz*
7. Escalation of war	Actors_words N/2	War_begin_words	begin* OR start* OR declar* OR begun OR began OR outbreak OR "broke out" OR breakout OR proclamation OR launch*
8. Terrorist acts	Actors_fight_words Terrorism_words N/2	Actor_fight_words	advance* OR attack* OR strike* OR drive* OR shell* OR offensive OR invasion OR invad* OR clash* OR raid* OR launch*
	Terrorism_act_words	Terrorism_act_words	attack OR act OR bomb* OR kill* OR strike* OR hijack*
		Panel C. Excluded words Exclusion words	movie* OR film* OR museum* OR anniversar* OR obituar* OR memorial* OR arts OR book OR books OR memoir* OR "price war" OR game OR story OR history OR veteran* OR tribute* OR sport OR music OR racing OR cancer OR "real estate" OR

cer OR "real estate" OR

mafia OR trial OR tax

Country-specific GPR (CGPR)

South Korea: CGPR and Other Risk Measures



24 / 24

Country-specific GPR (CGPR)

United Kingdom: CGPR and Other Risk Measures



Poland 24 / 24

Geopolitical Risk and Credit risk (event study)

How did Russia's annexation of Crimea in 2013:Q4 and invasion of Ukraine in 2022:Q1 affect U.S. banks' outstanding exposures to Russia relative to other countries?



- Banks attribute greater credit risk to loans to Russian borrowers post two GPR shocks.
- Magnitude of increase after three quarters is about 2x std of average PD.

Fact 2: Foreign Operation Reallocation: Cross-border vs. Local Claims

How do banks adjust foreign exposures in response to increase in riskiness of loan portfolios?

- Cross-border claims: credit extended to foreign borrowers from an office outside of the country of the borrower.
- Local claims: foreign credit extended from branch or subsidiary in the country of residence of the borrower.

	To	tal	Cross-	border	Local	
	(1)	(2)	(3)	(4)	(5)	(6)
$ln(exp_{bct})$	Baseline	Controls	Baseline	Controls	Baseline	Controls
$CGPR_{ct}^T$	-0.016*	-0.016*	-0.023**	-0.023**	-0.015	-0.014
	(0.009)	(0.009)	(0.012)	(0.011)	(0.018)	(0.018)
$CGPR_{ct-1}^T$	-0.000	-0.001	-0.004	-0.004	-0.010	-0.011
	(0.009)	(0.008)	(0.011)	(0.010)	(0.026)	(0.026)
Macro Controls	No	Yes	No	Yes	No	Yes
Bank-country FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank-time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	35515	33501	34813	32826	11587	11094
R^2	0.947	0.949	0.936	0.937	0.938	0.942

• While cross-border claims decrease, local claims remain stable in response to increasing GPR.

Evidence from 2022 Russia Invasion of Ukraine

Following Russia's invasion of Ukraine in 2022, UniCredit, RBI, and Citigroup have deliberately reduced their cross-border operations with Russia while continuing to operate their Russian subsidiaries

Our Russia exposure has been reduced further at minimum cost. [...] Net cross-border exposures were reduced...mainly as a result of proactive discussions with clients producing early repayment at nominal value. The [Russian] subsidiary is robust and performing well.

— UniCredit CEO, 2022:Q2 earnings presentations

UniCredit and RBI emphasized the strategic importance of local self-funding in managing geopolitical risk

Naturally, we did not foresee a military conflict such as the one we are currently witnessing. We have however ... ensured that RBI's subsidiaries are self-financing, allowing only a restricted amount of cross-border financing.

— UniCredit 2022:Q1 financial report

Evidence from Russia Conflicts



24 / 24

Back

Local Liabilities Determine Banks' Withdrawal Decisions

	Tota	Exp.	Lo	cal	Cross-	border
$ln(exp_{bct})$	(1)	(2)	(3)	(4)	(5)	(6)
$CGPR_{ct}^N$	-0.018**	-0.021**	0.003	0.001	-0.027***	-0.030***
	(0.009)	(0.010)	(0.015)	(0.016)	(0.010)	(0.010)
$CGPR_{ct}^N \times LL_{bct-1}^{Shr}$	0.003	0.001	0.013	0.015	-0.013	-0.013
	(0.005)	(0.005)	(0.011)	(0.011)	(0.009)	(0.009)
$CGPR_{ct-1}^N$	-0.014	-0.019*	0.004	0.001	-0.019*	-0.023**
	(0.009)	(0.010)	(0.014)	(0.015)	(0.010)	(0.012)
$CGPR_{ct-1}^N \times LL_{bct-2}^{Shr}$	0.015***	0.014***	0.026**	0.027**	-0.005	-0.004
	(0.006)	(0.006)	(0.012)	(0.012)	(0.008)	(0.009)
LL_{bct-1}^{Shr}	-0.014**	-0.016**	-0.021	-0.024*	-0.022**	-0.022**
000 x	(0.007)	(0.007)	(0.013)	(0.013)	(0.010)	(0.011)
LL_{bct-2}^{Shr}	0.017***	0.016**	0.032**	0.037**	0.010	0.009
	(0.007)	(0.007)	(0.016)	(0.016)	(0.010)	(0.010)
Macro Controls	No	Yes	No	Yes	No	Yes
Bank-country	Yes	Yes	Yes	Yes	Yes	Yes
Bank-time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94336	77649	30303	27420	93173	76556
R^2	0.911	0.919	0.886	0.894	0.891	0.900

Banks' responses to GPR by ex-ante share of local liabilities in total foreign assets

No Significant Role of Local Liabilities for Other Risks

		CRI		WUI		CDS
$ln(exp_{het})$	(1) Local	(2) Cross-border	(3) Local	(4) Cross-border	(5) Local	(6) Cross-border
CRIt	-0.025	-0.019				
0	(0.033)	(0.035)				
$CRI_t \times ln(LL)_{hct-1}$	0.002	-0.003				
0000-1	(0.004)	(0.004)				
CRI_{t-1}	-0.010	-0.059*				
	(0.032)	(0.033)				
$CRI_{+} \rightarrow ln(LL)_{1-1}$	0.004	0.005				
t=1	(0.004)	(0.004)				
WILL	(0.001)	(0.00.)	-0.004	0.030**		
			(0.015)	(0.012)		
$WUL \times ln(LL)$			-0.000	-0.006***		
n elt / th(LL)bct-1			(0.002)	(0.002)		
WILL A			0.021	0.002)		
$t \in T_{t-1}$			(0.01E)	(0.012)		
WILL A MIN(II)			(0.015)	(0.013)		
$w \circ r_{t-1} \wedge w (LL)_{bct-2}$			-0.002	-0.003		
$l_{\mathcal{D}}(\mathcal{O}\mathcal{D}\mathcal{S})$			(0.002)	(0.002)	0.004	0.067
$(CDS)_t$					(0.004	-0.007
$ln(CDS) \times ln(LL)$					-0.004	(0.090)
$in(CDS)_t \wedge in(DD)_{bct-1}$					-0.004	(0.007)
					(0.012)	(0.007)
$ln(CDS)_{t-1}$					-0.107	0.083
					(0.087)	(0.086)
$\ln(CDS)_{t-1} \times \ln(LL)_{bct-2}$					0.008	0.008
Mana Gastada	N	N	N	N	(0.012)	(0.007)
Nacro Controis	res	res	res	res	res	Yes
Bank-country FE	res	res	res	res	res	Yes
	10621	10501	14400	14247	12000	12002
-2	12631	12521	14490	14347	13982	13803
R"	0.943	0.922	0.940	0.922	0.941	0.922

Back

BGPR and Domestic Loan Origination, Bank Level

		BGI	PR^N		$BGPR^{T}$			
$ln(orig_{bt})$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$BGPR_{bt}^N$	-0.073	-0.095	-0.072	-0.078				
	(0.062)	(0.071)	(0.062)	(0.063)				
$BGPR_{bt-1}^N$	-0.177**	-0.185**	-0.160**	-0.185**				
	(0.074)	(0.073)	(0.066)	(0.072)				
$BGPR_{bt}^{T}$					-0.045	-0.066	-0.042	-0.053
					(0.069)	(0.073)	(0.068)	(0.070)
$BGPR_{bt-1}^T$					-0.175**	-0.172**	-0.163**	-0.163**
					(0.070)	(0.068)	(0.068)	(0.073)
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AltRisk Controls	No	CRI	WUI	CDS	No	CRI	WUI	CDS
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	475	475	475	475	475	475	475	475
R^2	0.955	0.955	0.956	0.955	0.956	0.957	0.957	0.956

• At the bank level: U.S. banks reduce domestic loan origination in response to increasing BGPR.

Loan Level

Spillover of GPR: Cross-border vs. Local Exposure

		Loan Lev	el			
Orig _{bit}	(1)	(2)	(3)	(4)	(5)	(6)
$BGPR_{bt}^{T}$ (1(Local))	-0.059***	-0.053**			-0.064***	-0.057***
	(0.020)	(0.021)			(0.020)	(0.020)
$BGPR_{bt}^{T}$ (1(Cross-border))			-0.051	-0.050	0.263	0.228
			(0.347)	(0.366)	(0.342)	(0.351)
Bank Controls	No	Yes	No	Yes	No	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	205642	199753	205642	199753	205642	199753
R^2	0.594	0.592	0.594	0.592	0.594	0.592

• Effect of BGPR on loan origination is more significant when stemming from countries where banks have affiliates.

Spillover of GPR through Cross-border vs. Local Exposure

Does the mode of operation matter for the spillover of GPR?

Bank Level								
$ln(orig_{bt})$	(1)	(2)	(3)	(4)	(5)	(6)		
$BGPR_{bt}^N(1(Local))$	-0.061	-0.075			-0.069	-0.082		
	(0.061)	(0.060)			(0.061)	(0.060)		
$BGPR_{bt-1}^N(1(Local))$	-0.168**	-0.165**			-0.169**	-0.167**		
	(0.076)	(0.075)			(0.075)	(0.074)		
$BGPR_{bt}^{N}(1(Cross-border))$			-0.175	-0.159	-0.179	-0.160		
			(0.229)	(0.237)	(0.234)	(0.242)		
$BGPR_{bt-1}^{N}(1(Cross-border))$			-0.108	-0.148	-0.198	-0.238		
00 1			(0.265)	(0.276)	(0.288)	(0.298)		
Bank Controls	No	Yes	No	Yes	No	Yes		
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes		
Time FE	Yes	Yes	Yes	Yes	Yes	Yes		
Observations	475	461	475	461	475	461		
R^2	0.954	0.955	0.952	0.953	0.954	0.955		

• Effect of BGPR on loan origination is more significant when stemming from countries where banks have affiliates.

$ln(orig_{bt})$	(1)	(2)	(3)	(4)
$BGPR_{bt}^N$	-0.824**		-0.100	
	(0.342)		(0.096)	
$BGPR_{bt}^{T}$		-0.284		-0.274***
		(0.237)		(0.079)
$BGPR_{bt}^N \times Capital_{bt-1}$	0.050**			
	(0.021)			
$BGPR_{bt}^T \times Capital_{bt-1}$. ,	0.011		
		(0.015)		
$BGPR_{bt}^N \times ROAA_{bt-1}$		· · · ·	0.010	
			(0.036)	
$BGPR_{bt}^T \times ROAA_{bt-1}$			· · · ·	0.155***
				(0.040)
Bank Control	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Observations	477	477	477	477
R^2	0.952	0.952	0.952	0.953

Role of Banks' Capital Position and Profitability

• Banks with stronger capital positions and profit reduced origination less.

Geopolitical Risk from Threat vs. Act

$ln(orig_{bit})$	(1)	(2)	(3)	(4)
$BGPR_{ht}^{T(Threat)}$	-0.075***			
01	(0.021)			
$BGPR_{tt}^{T(Act)}$		-0.048*		
bt		(0.025)		
$PCPP^{Tfin}(Threat)$		· · ·	0.061***	
$BGFR_{bt}$			(0.021)	
Tfin(Act)			(0.021)	
$BGPR_{bt}^{II}$ (Her)				-0.026
				(0.019)
Bank Controls	Yes	Yes	Yes	Yes
Loan Controls	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Firm-time FE	Yes	Yes	Yes	Yes
Observations	171380	171380	171380	171380
R^2	0.615	0.615	0.615	0.615

• Threat of geopolitical risk plays a stronger role.

Spillover Effects: BGPR and Domestic Lending Standards

Data: SLOOS at bank level.

$$LS_{bt} = \beta_0 LS_{bt-1} + \beta_1 \Delta log(BGPR_{bt}) + \beta_2 \Delta log(BGPR_{bt-1}) + \gamma_1 X_t + \gamma_1 X_{t-1} + \delta_1 Z_{bt} + \delta_1 Z_{bt-1} + \alpha_b + \epsilon_{bt}$$

- LS_{bt} : Banks' response to question about whether lending standards have tightened (values 1-5).
- X_t : Macro controls including 2y yield, term spread, VIX, S&P500, Industrial production.
- Z_{bt} : Banks' responses to question about whether demand for loans changed, other bank-level controls.
- Bank fixed effects included.
- Sample period: 1990:Q3 (because of lag) to 2022:Q2.

Back

GPR and Domestic C&I Loan Lending Standard

Data: SLOOS at bank level, 1990:Q3 to 2022:Q2.

Banks' response to question about whether lending standards have tightened (values 1-5)

ls_{bt}	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \log(BGPR_{bt}^N)$	-0.023***	-0.015**	-0.023**			
	(0.008)	(0.007)	(0.011)			
$\Delta \log(BGPR_{bt-1}^N)$	-0.019**	-0.014*	-0.037***			
	(0.008)	(0.008)	(0.012)			
$\Delta \log(BGPR_{bt}^T)$				-0.008	-0.032***	-0.034***
				(0.011)	(0.011)	(0.012)
$\Delta \log(BGPR_{bt-1}^T)$				-0.005	-0.014	-0.011
				(0.010)	(0.010)	(0.010)
Macro Controls	No	Yes	Yes	No	Yes	Yes
Bank Controls	No	No	Yes	No	No	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3099	3050	2095	1486	1486	1476
R^2	0.235	0.294	0.331	0.258	0.339	0.352

- Banks tighten domestic lending standards when BGPR rises
- Changes in GPR have 90 percent of effect of changes in VIX (contemporaneous and lag).

Spillover of GPR through Cross-border vs. Local Exposure

ls_{bt}	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \log(BGPR_{bt}^N (1(Local)))$	-0.027**		-0.021*			
	(0.011)		(0.011)			
$\Delta \log(BGPR_{bt-1}^N (1(Local)))$	-0.031***		-0.025**			
	(0.012)		(0.012)			
$\Delta \log(BGPR_{bt}^N (1(\text{Cross-border})))$		-0.020**	-0.011			
		(0.008)	(0.009)			
$\Delta \log(BGPR_{bt-1}^N (1(\text{Cross-border})))$		-0.025**	-0.013			
		(0.010)	(0.011)			
$\Delta \log(BGPR_{bt}^T (1(Local)))$. ,	. ,	-0.038***		-0.039***
				(0.013)		(0.015)
$\Delta \log(BGPR_{bt-1}^T (1(Local)))$				-0.010		-0.010
				(0.013)		(0.015)
$\Delta \log(BGPR_{bt}^T (1(\text{Cross-border})))$					-0.004	0.011
					(0.011)	(0.013)
$\Delta \log(BGPR_{bt-1}^T (1(\text{Cross-border})))$					-0.017*	-0.014
					(0.010)	(0.012)
Macro Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1303	2067	1275	1019	1264	808
R^2	0.340	0.330	0.339	0.341	0.338	0.323

• Effect of BGPR on lending standards is larger and more significant when stemming from countries where banks have affiliates.

CRE loan standards also respond to BGPR

ls_{bt}	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \log(BGPR_{bt}^N)$	-0.002	0.000	-0.001			
	(0.017)	(0.017)	(0.017)			
$\Delta \log(BGPR_{bt-1}^N)$	-0.045***	-0.040**	-0.040**			
	(0.017)	(0.016)	(0.016)			
$\Delta \log(BGPR_{bt}^T)$				-0.026	-0.041*	-0.038*
				(0.020)	(0.021)	(0.020)
$\Delta \log(BGPR_{bt-1}^T)$				-0.043**	-0.046***	-0.042**
				(0.017)	(0.017)	(0.017)
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Macro Controls	No	Yes	Yes	No	Yes	Yes
Bank Controls	No	No	Yes	No	No	Yes
Observations	1156	1156	1152	704	704	704
R^2	0.246	0.298	0.325	0.250	0.305	0.357

• Banks also tighten commercial real estate loan standards when BGPR increases.