

Geopolitical Risk and Global Banking

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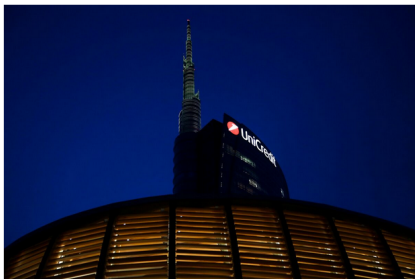
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Banks That Stuck With Russia Face Their Biggest Test of Nerve

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



UniCredit headquarters in Milan. Photographer: Stefan Wermuth/Bloomberg

By [Nicholas Comfort](#), [Hannah Levitt](#), and [Sonia Sirletti](#)

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- Invasion of Ukraine led to uncertainty for banks operating in Russia
- Uncertainty lasts: Several banks have struggled to sell their subsidiaries

This paper

Key questions

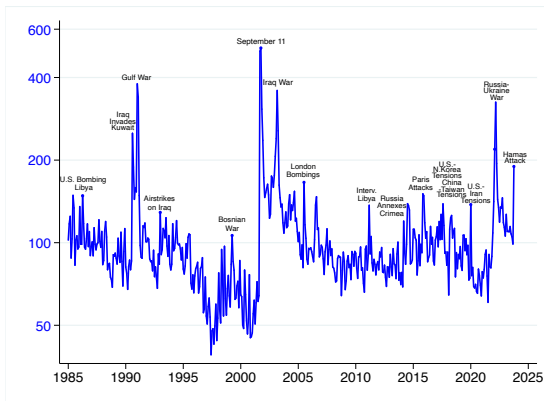
- How do banks respond to increased risk to foreign operations from geopolitical developments?
- Do global banks play a role in propagating GPR?

Focus on U.S. banks

- FFIEC 009: Data on foreign exposures of U.S. banks, by country and mode
- SLOOS and Y-9C: Information on banks' lending standards and loan volumes
- Y-14: Loan-level data showing the riskiness of banks' loans by borrower/country

Measure of banks' exposures to GPR

- Caldara and Iacoviello (2022) GPR index based on newspaper text-based method



- Construct bank-specific GPR index by weighting country-level GPR indices with bank exposures

Main findings

Internationally-active U.S. banks play a significant role in propagating GPR to the U.S. economy

- Internationally active U.S. banks tighten lending standards and lower domestic lending in response to higher GPR abroad
- Mechanism: Credit risk rises in countries where geopolitical risk increases; exposed banks cut lending to reduce risk-weighted exposures, including at home
- Effects on U.S. lending are stronger when banks have local exposures/subsidiaries in countries where GPR increases as these exposures are stickier

Related literature

- **GPR & banking:**

- ▶ Demir and Danisman (2021): GPR lowers consumer loans; banks with foreign subsidiaries respond less.
- ▶ Alsagr and Alamzor (2020): GPR hurts bank profitability less in oil dependent emerging markets.
- ▶ Zhou et al. (2020): GPR lowers domestic credit.
- ▶ Phan et al. (2022): GPR hurting bank stability measured by z-score.

- **Risk and capital flows:** Rey (2015), Kalemli-Ozcan(2019), Miranda-Agrippino and Rey (2020), Jiang et al. (2020), Akinici et al. (2021), Di Giovanni et al. (2021), Kalemli-Ozcan and Varela (2021), Hassan et al. (2022).

- **Financial intermediaries and international spillovers:** Peek and Rosengren (2000), Schnabl (2012), Cetorelli and Goldberg (2012), Kalemli-Ozcan et al. (2013), Minoiu and Reyes (2013), Ivashina et al. (2015), Amiti and Weinstein (2018), Hale et al. (2019), Morais et al. (2019), Correa et al. (2021), Shen and Zhang (2022).

Background

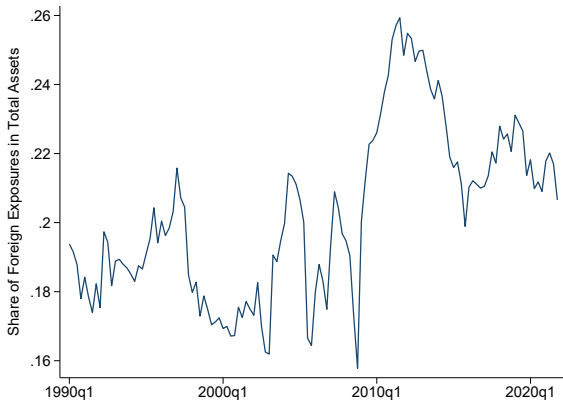
How banks propagate GPR

$$\frac{\text{Equity capital}}{\underbrace{\text{Dom. lending} \times \text{Dom. Risk} + \text{For. Lending} \times \text{For. Risk}}_{\text{Risk-weighted Assets}}} = \mu + \text{buffer}$$

- Banks are constrained by regulation
- Capital divided by risk-weighted assets kept above a threshold
- Increase in foreign risk demands reduction of foreign and/or domestic assets
- Reduction in domestic lending is stronger when
 - ▶ foreign risk increases by more
 - ▶ foreign assets are larger
 - ▶ foreign assets are stickier

U.S. banks' foreign operations

- Around 20 percent of U.S. banks' assets are foreign assets
- The largest banks are most active internationally
- Around half of banks' foreign exposures stems from assets in foreign branches and subsidiaries
- Banks reach scale abroad through foreign offices, often subsidiaries



Construction of bank-specific GPR index (BGPR)

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

where

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

- $\exp_{bct}$: foreign (or local) claims of bank b to country c at quarter t
- Country-level GPR indices are weighted by exposure of each bank to that country
- 34 percent of variation in BGPR explained by common time factors

How does GPR affect U.S. banks' domestic operations?

Regressing lending standards on BGPR

$$LS_{bt} = \beta_0 LS_{b1-1} + \beta_1 \Delta \log(BGPR_{bt}) + \beta_2 \Delta \log(BGPR_{bt-1}) + \gamma_1 X_t \\ + \gamma_1 X_{t-1} + \delta_1 Z_{bt} + \delta_1 Z_{bt-1} + \alpha_b + \epsilon_{bt}$$

- LS_{bt} : Bank response to question whether lending standards have tightened (values 1-5)
- X_t : Macro controls including 2y yield, term spread, VIX, S&P500, Industrial production
- Bank fixed effects included (time fixed effects too restrictive)
- Robust standard errors or clustered by bank/time for robustness
- Sample period: 1990:Q3 (because of lag) to 2022:Q2

Banks tighten lending standards when BGPR rises

	(1)	(2)	(3)	(4)	(5)
LS_{bt}	Baseline	Macro controls	Demand control	More intern.	Less intern.
$\Delta \text{Log BGPR}_{bt}$	-0.073*** (0.020)	-0.073*** (0.020)	-0.045** (0.021)	-0.113*** (0.040)	-0.004 (0.025)
$\Delta \text{Log BGPR}_{bt-1}$	-0.066*** (0.022)	-0.066*** (0.022)	-0.058** (0.026)	-0.081* (0.046)	-0.043 (0.032)
LS_{bt-1}	0.413*** (0.024)	0.413*** (0.024)	0.326*** (0.026)	0.310*** (0.039)	0.323*** (0.037)
Loan demand $_{bt}$			-0.041*** (0.015)	-0.056** (0.022)	-0.031 (0.019)
Loan demand $_{bt-1}$			-0.018 (0.013)	-0.016 (0.019)	-0.021 (0.018)
Bank FE	Yes	Yes	Yes	Yes	Yes
Macro Controls	No	Yes	Yes	Yes	Yes
Observations	3047	3047	2788	1258	1528
R^2	0.233	0.233	0.297	0.314	0.297

- Effect driven by more internationally active banks (share of foreign assets > 4.5 percent)
- Changes in GPR have 90 percent of effect of changes in VIX (contemporaneous and lag)

Regressing C&I lending on BGPR

$$\ln(Y_{bt}) = \beta_1 BGPR_{bt} + \beta_2 BGPR_{bt-1} + \gamma_1 X_{bt-1} + \alpha_b + \delta_t + \epsilon_{bt}$$

- Y_{bt} : C&I lending to U.S. borrowers from call reports
- X_{bt-1} : Bank controls including liquid asset ratio and tier 1 capital ratio
- Bank and time fixed effects included
- Robust standard errors
- Sample period: 1985:Q1 to 2022:Q1

Banks reduce U.S. C&I lending when BGPR rises

	(1)	(2)	(3)	(4)	(5)	(6)
$\ln(Y_{bt})$	All	All	More intl.	More intl.	Less intl.	Less intl.
$BGPR_{bt}$	-0.220** (0.108)	0.133 (0.119)	-0.744*** (0.156)	-0.395** (0.188)	0.197 (0.148)	0.319** (0.147)
$BGPR_{bt-1}$	-0.097 (0.097)	0.212** (0.095)	-0.495*** (0.126)	-0.233* (0.132)	0.273* (0.143)	0.397*** (0.140)
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	12420	6704	6405	3336	5993	3357
R^2	0.870	0.913	0.919	0.934	0.870	0.922

- More internationally active US banks reduce domestic lending in response to rising BGPR
- A one std. increase in BGPR reduces loan volumes by around 16 percent for internationally active banks (column 4)

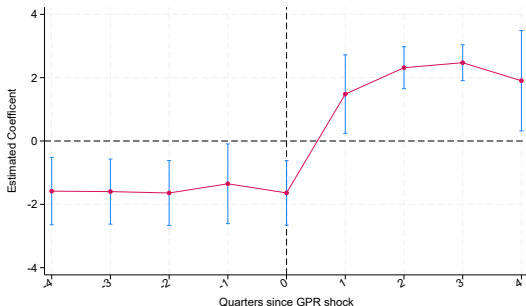
Evidence for the mechanism

Foreign credit risk increases with rising GPR

- 1 The expected weighted average probability of default of loans to residents of a country covaries with the country's GPR for the more internationally active banks
- 2 After the invasion of Ukraine by Russia and Russia's annexation of Crimea, the probability of default associated with loans to Russia and Ukraine increased
- 3 The weighted average probability of default of internationally active banks' C&I loan portfolios covaries with BGPR

Russian aggressions cause increase in credit risk

Figure: Response of probabilities of default to Russian invasion of Ukraine/annexation of Crimea

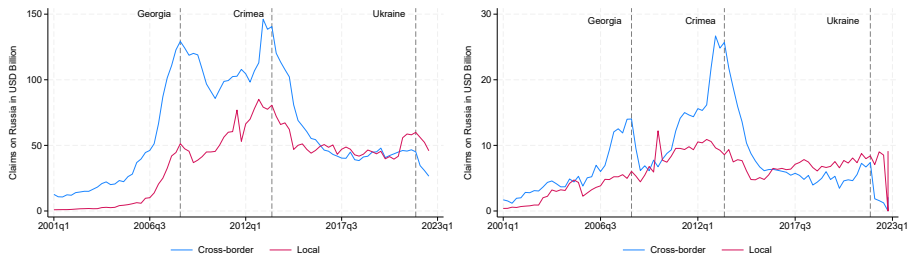


- Chart shows evolution of pds on exposures to Russia/Ukraine relative to other exposures; 11 banks included
- Pd increases by around 1 standard deviation of the average pd measure in the first quarter after the shock

Foreign exposures decline with GPR; mode matters

- 1 Cross-border claims to a country decrease while local claims remain largely stable when the country's GPR increases
- 2 Exposures are reduced less, the more important a market is for a bank

Figure: Bank exposures on Russia



BIS reporting banking systems (left); U.S. banks (right)

Local exposures are stickier

- Divesting from subsidiaries/large exposures difficult and takes time
- Harder trade-offs when operations are large: Larger losses from selling; larger revenue loss
- UniCredit and Raiffeisenbank International still operating in Russia more or less as usual despite pressure from ECB to divest

Spillovers from GPR to U.S. increase with local exposures

$$\frac{\text{Equity capital}}{\underbrace{\text{Dom. lending} * \text{Dom. Risk} + \text{For. Lending} * \text{For. Risk}}_{\text{Risk-weighted Assets}}} = \mu + \text{buffer}$$

- 1 The effects of BGPR on bank lending standards and loan volumes increase with importance of foreign branches and subsidiaries for foreign operations

Conclusions

- Global banks play a role in transmitting geopolitical risk
- Even if GPR does not affect a country directly, its banks through global operations can transmit GPR to the domestic economy
- As largest US banks face risks to foreign operations, they tighten credit standards and lend less at home
- Mode of foreign operations appears to play role in transmission, with stronger transmission through local operations
- Banks face more difficult trade-offs and potentially more frictions when reducing local exposures, especially those stemming from subsidiaries

Thank you for your attention!