

Geopolitical risk and cross-country bank lending

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Motivation

- Geopolitical risk (GPR) has re-emerged as a key factor shaping the global economic and financial landscape in recent years. This has become one of the top concerns for macroeconomic policymakers and investors.
- Despite this there has been little academic work examining how banks respond to increased GPR in the countries to which they lend.
- The UK is an ideal environment to study the international propagation of geopolitical shocks through the financial system.
 - ▶ Host to over 250 banks from around the world. Foreign banks channel funds to lend via London.
 - ▶ Major source of finance for the firms borrowing from the banks. Firms are unlikely to be able to fully substitute and borrow from elsewhere.

UK is a major financial centre

Lending by country

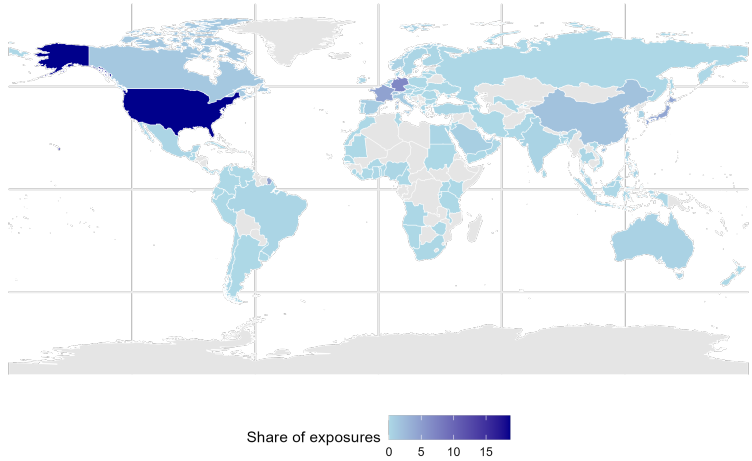


Figure: UK banks are lending all over the world

Our question: How does UK banks' cross border lending respond to geopolitical shocks?



Key contributions (1/2)

- 1 From two unique datasets, **we match UK banks' large exposures to individual firms with firm-level GPR**. Deploying tight fixed effect specifications allows us to identify causality from GPR to cross-border lending.
 - ▶ A one standard deviation increase in firm-level GPR causes cross-border bank lending to those firms to fall by 4%.
 - ▶ This estimate underscores significant heterogeneities across a number of dimensions.
- 2 **The sector of a given firm is a crucial determinant of how GPR transmits to exposures**: tradable industries are most affected; energy- and defence-related sectors are unaffected. Bank heterogeneity also affects transmission, with more resilient banks less affected.

Key contributions (2/2)

- ④ **Banks have a more significant response to the sanctions element of GPR**, though other elements remain significant even after controlling for this. Geopolitical alignment between bank and firm nationalities also shapes response to GPR.
- ④ Local projections show that **GPR transmits to cross-border lending by depressing GDP and asset prices**, which influences demand for cross-border lending at the country level. Downstream transmission varies depending on credit growth, the type of GPR and currency of lending.

Related Literature

- Macro-financial transmission channels
 - ▶ **Caldara and Iacoviello (2022)**, Hodula et al (2024), **Pinchetti (2024)**
 - ▶ Financial channel and uncertainty: Jung et al (2021), Federle et al (2022), Wang et al (2023), Brignone et al (2024)
 - ▶ Real economy: Crosignani et al. (2023), Hou et al (2024), Liu et al (2024), **Rogers et al (2024)**
 - ▶ Defence: Franconi (2024), **De Haas et al. (2025)**
- Medium-term geoeconomic fragmentation
 - ▶ Goes and Bekkers (2022), Aiyar et al (2023), Bolt et al (2023)
 - ▶ Friendshoring: Aiyar et al (2024), Converse and Malluci (2025), **Gopinath et al (2025)**
- Impact on bank lending
 - ▶ Phan et al (2022), **Niepmann and Shen (2024)**, Trinh and Tran (2024), Behn et al (2025)
 - ▶ Currency dimension: **Garofalo et al (2025)**, Pradhan et al. (2025)

Data

The firms and the large exposure dataset

- Large exposures dataset captures UK banks' **large exposures** to individual firms worldwide:¹
 - ▶ Above 10% of a bank's Tier 1 capital; or
 - ▶ Above £260 million vis-à-vis any counterparty.

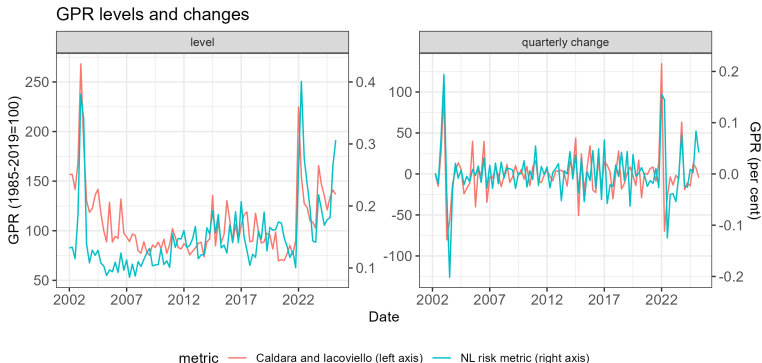
These are large firms which are likely to be significantly affected by geopolitical risk

- The sample includes **UK banks** and UK-based subsidiaries of **foreign-headquartered banks**.
- We group sectors of interest to study heterogeneities. We identify defence-related firms from 4-digit NACE codes. And aggregate other firms by sector groups: primary industry and mining; manufacturing; other secondary; financial services; public services; and other tertiary.

¹We use the Global Network dataset outlined in Covi, Brookes and Raja (2022).

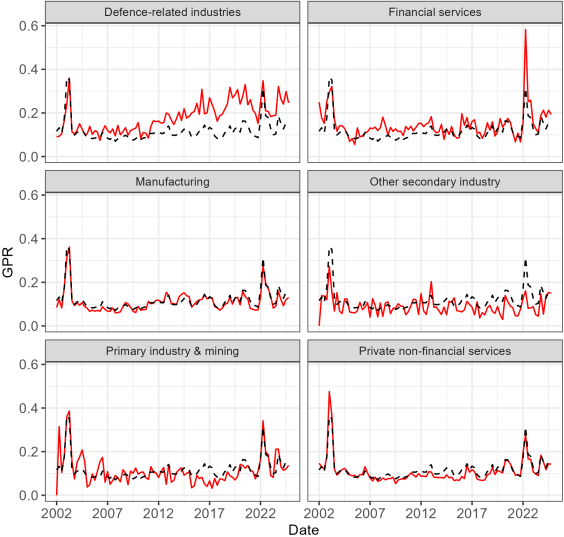
Measuring geopolitical risk at the firm level

- We measure GPR based on **text-searches from firms' earnings calls**, using the NL Analytics platform.
 - ▶ We use the same dictionary of search terms as Caldara and Iacoviello (2022). NL Analytics computes the "risk" associated with these terms.
 - ▶ We match individual firms between datasets by matching LEI codes (from large exposures) with ISIN codes (from NL Analytics).



Sectoral GPR

Sector-level GPR (US)



Note: Observations for 2025 and public services omitted.

Baseline results

Empirical strategy

We run panel regressions of quarterly changes in cross-country bank exposures on current and lagged changes in GPR:

$$\Delta EXP_{b,f,t} = \sum_{j=0}^3 \beta_j \Delta GPR_{f,t-j} + f_{b,t} + f_{c,s,t} + f_f + \epsilon_{b,f,t} \quad (1)$$

High-dimension fixed effects allows us to establish causal relationship between firm-level GPR and bank lending:

- $f_{b,t}$: bank-time fixed effects control for individual bank variation over time.
- $f_{c,s,t}$: nests unobserved variation across countries and sectors over time – **removes the need for macroeconomic control variables.**
- f_f : firm-level fixed effects, controls for time-invariant heterogeneity across firms.

Regression results: firm-level GPR

	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$
	(1)	(2)	(3)	(4)	(5)
$dGPR_{f,t}$	-0.356 (0.504)	-0.543 (0.540)	-0.657 (0.547)	-0.576 (0.572)	-1.060* (0.601)
$dGPR_{f,t-1}$	-0.396 (0.617)	-0.354 (0.663)	-0.410 (0.668)	-0.596 (0.693)	-1.401* (0.734)
$dGPR_{f,t-2}$	-0.271 (0.596)	-0.410 (0.662)	-0.496 (0.681)	-0.607 (0.710)	-1.222 (0.759)
$dGPR_{f,t-3}$	0.033 (0.477)	-0.361 (0.533)	-0.745 (0.541)	-0.956* (0.571)	-1.359** (0.602)
Fixed effects	b,f,t	b-t,f	b-t,c-t,s-t,f	b-s-t,c-t,f	b-t,c-s-t,f
No. Observations	28961	25129	24240	22137	23454
Cum. GPR effect	-0.989	-1.668	-2.308	-2.735	-5.042
(p-value)	0.568	0.382	0.229	0.17	0.017
R ²	0.109	0.317	0.359	0.426	0.389
Adjusted R ²	0.089	0.195	0.217	0.232	0.228

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. The dependent variable is the quarterly percentage change in gross bank exposures by bank (b) to firm (f) at time (t). The data are quarterly from 2015Q1 to 2024Q4. Standard errors are clustered at the firm-time level.

Sector heterogeneity: specification

To test the effect of an increase in GPR across different sectors, we modify Equation 1 as follows:

$$\Delta EXP_{b,c,s,t} = \sum_{j=0}^3 \beta_{1,j} GPR_{c,s,t-j} + \sum_{j=0}^3 \beta_{2,j} GPR_{c,s,t} \times DUM_s + f_{b,t} + f_{c,s,t} + f_f + \epsilon_{b,f,t} \quad (2)$$

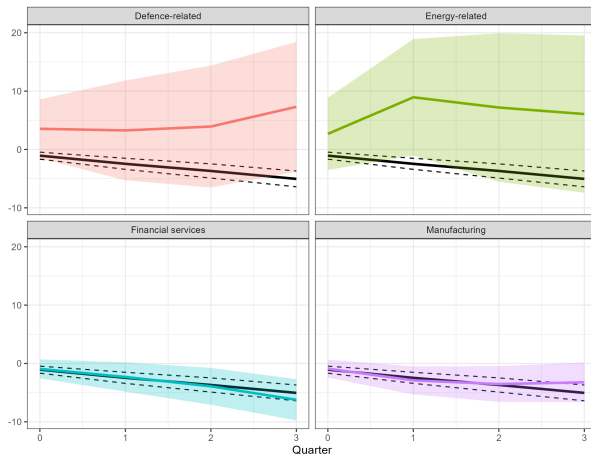
Where DUM_s is a dummy variable defined based on the sectors of interest. We focus on three tests of significance:

- Baseline: sum of GPR coefficients only
- Interaction: sum of dummy interactions only
- Overall: sum of GPR coefficients plus dummy interactions

Sector heterogeneity: firm-level results

	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$
	(1)	(2)	(3)	(4)
$dGPR_{f,t}$	-1.088 (0.691)	-1.207 (1.027)	-1.075* (0.604)	-1.101* (0.605)
$dGPR_{f,t-1}$	-1.251 (0.839)	-1.386 (1.187)	-1.439* (0.737)	-1.417* (0.737)
$dGPR_{f,t-2}$	-1.390 (0.885)	-0.510 (1.159)	-1.217 (0.762)	-1.245 (0.763)
$dGPR_{f,t-3}$	-1.798** (0.701)	0.592 (0.986)	-1.364** (0.605)	-1.402** (0.606)
$dGPR_{f,t} * DUM_s$	0.209 (1.374)	0.279 (1.266)	3.753 (6.161)	4.649 (4.991)
$dGPR_{f,t-1} * DUM_s$	-0.772 (1.664)	0.004 (1.495)	7.707 (7.776)	1.135 (6.875)
$dGPR_{f,t-2} * DUM_s$	0.767 (1.639)	-1.093 (1.513)	-0.540 (7.868)	1.910 (5.960)
$dGPR_{f,t-3} * DUM_s$	2.097 (1.354)	-2.896** (1.248)	0.247 (4.412)	4.781 (3.745)
Sector	Manuf.	Financials	Energy	Defence
No. Observations	23450	23450	23450	23450
Cum. GPR base	-5.527	-2.512	-5.094	-5.165
(p-value)	0.023	0.452	0.016	0.015
Cum. GPR interaction	2.3	-3.706	11.167	12.475
(p-value)	0.629	0.387	0.62	0.33
Cum. GPR overall	-3.227	-6.217	6.072	7.31
(p-value)	0.43	0.021	0.787	0.627

Sector heterogeneity: cumulative impact



Notes: Shaded areas denote 68% confidence interval around mean estimates, standard errors clustered around firm-time level. Black lines are shaded areas denote aggregate results, colours denote sector-specific results

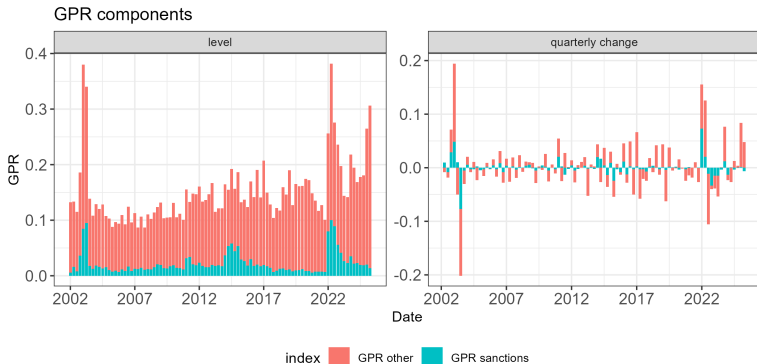
Bank heterogeneity: LCR, CET1, Profitability and Size

	$dEXP_{b,f,t}$ (1)	$dEXP_{b,f,t}$ (2)	$dEXP_{b,f,t}$ (3)	$dEXP_{b,f,t}$ (4)
$dGPR_{f,t}$	-1.097* (0.635)	-1.240* (0.645)	-0.881 (0.677)	-1.430* (0.775)
$dGPR_{f,t-1}$	-1.437* (0.778)	-1.850** (0.786)	-1.096 (0.821)	-1.522 (0.962)
$dGPR_{f,t-2}$	-1.435* (0.782)	-1.607** (0.802)	-1.307 (0.858)	-1.558 (0.973)
$dGPR_{f,t-3}$	-1.225* (0.626)	-1.511** (0.643)	-1.856*** (0.672)	-1.847** (0.791)
$dGPR_{f,t} * DUM_{b,t}$	0.116 (1.654)	1.101 (1.441)	-0.673 (1.033)	0.711 (0.989)
$dGPR_{f,t-1} * DUM_{b,t}$	0.299 (1.907)	2.738* (1.663)	-1.153 (1.227)	0.246 (1.185)
$dGPR_{f,t-2} * DUM_{b,t}$	1.738 (1.944)	2.247 (1.727)	0.266 (1.266)	0.648 (1.177)
$dGPR_{f,t-3} * DUM_{b,t}$	-1.176 (1.758)	0.796 (1.457)	1.917* (1.046)	0.930 (1.022)
Interaction	LCR _{b,t}	CET1 _{b,t}	Profit _{b,t}	Size _{b,t}
No. Observations	23450	23450	23450	23450
Cum. GPR base (p-value)	-5.194 0.019	-6.208 0.006	-5.14 0.031	-6.358 0.021
Cum. GPR interaction (p-value)	0.977 0.856	6.882 0.147	0.358 0.92	2.535 0.454
Cum. GPR overall (p-value)	-4.217 0.418	0.674 0.881	-4.783 0.137	-3.823 0.15

Geopolitics and financial fragmentation

Measuring sanctions risk

We compile a parsimonious dictionary of search terms relevant to sanctions. We then extract the component of GPR that is driven by sanctions using a text-search on the interaction of sanctions and GPR terms.

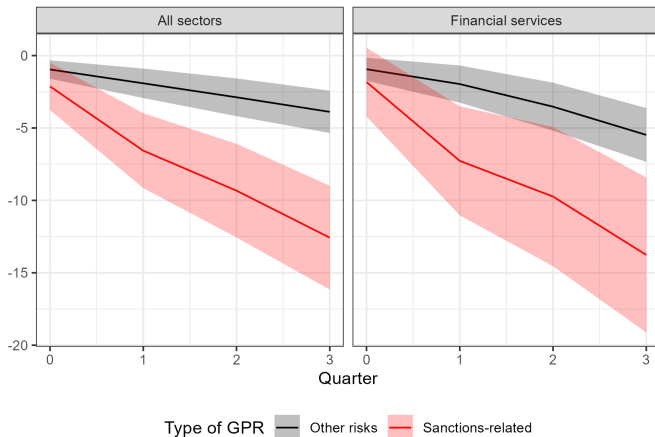


Exposure to sanctions risk may be due to: i) being directly targeted by sanctions; ii) affected via supply chains, financial counter-parties or the broader economy.

Sanctions risk: firm-level results

	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$
	(1)	(2)	(3)	(4)
$dGPR_{f,t}^{sanc}$	-2.192 (1.629)	-2.128 (1.638)	-2.180 (2.337)	-1.828 (2.371)
$dGPR_{f,t-1}^{sanc}$	-4.604** (1.972)	-4.439** (2.000)	-6.020** (2.848)	-5.444* (2.927)
$dGPR_{f,t-2}^{sanc}$	-2.874 (1.931)	-2.763 (1.943)	-2.730 (2.949)	-2.466 (2.986)
$dGPR_{f,t-3}^{sanc}$	-3.147** (1.558)	-3.247** (1.556)	-3.906* (2.356)	-4.031* (2.363)
$dGPR_{f,t}^{other}$		-0.960 (0.638)		-0.940 (0.797)
$dGPR_{f,t-1}^{other}$		-0.955 (0.793)		-1.026 (1.005)
$dGPR_{f,t-2}^{other}$		-0.964 (0.816)		-1.561 (1.048)
$dGPR_{f,t-3}^{other}$		-1.006 (0.665)		-1.952** (0.843)
Sample	All obs.	All obs.	Fin. services	Fin. services
No. Observations	23454	23450	13349	13345
Cum. GPR sanctions (p-value)	-12.817 0.018	-12.577 0.021	-14.836 0.065	-13.769 0.092
Cum. GPR other (p-value)		-3.885 0.093		-5.479 0.064

Sanctions risk: cumulative impact



Notes: Shaded areas denote 68% confidence interval around mean estimates, standard errors clustered around country-time level.

Geopolitical blocs

- We combine information about the parent nationality of the banks in the large exposure sample with the countries hosting the firms they lent to in order to test hypotheses about "friendshoring" in response to GPR (Aiyar et al. (2024), Gopinath et al. (2025)).
- We group countries into US- and China-led blocks, based on UN voting patterns. Country groupings follow Bailey et al. (2017).
- We define dummy variables based on bank-nationality and counterparty country pairs to identify within and between bloc lending.

Banks from a wide variety of countries have UK offices

Lending by bank nationality

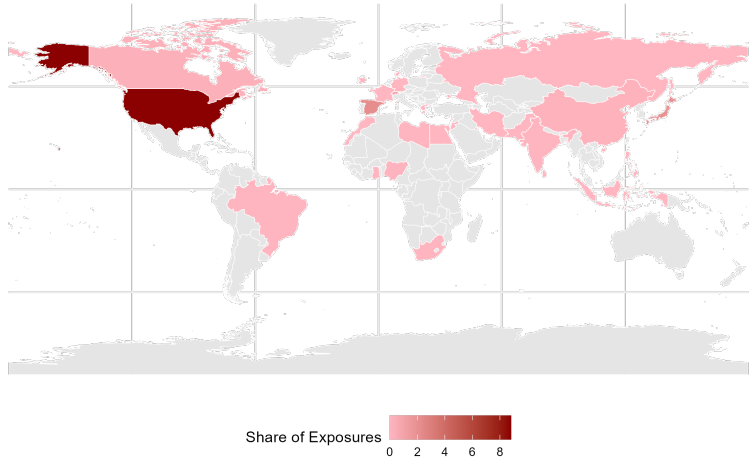
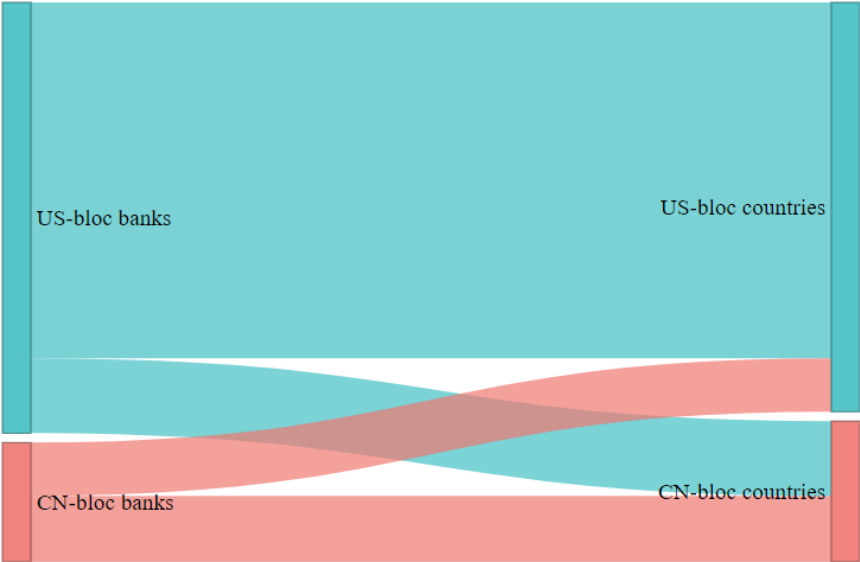


Figure: UK banks are lending all over the world

Flows between blocs



Flows between blocs: firm-level results

	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$	$dEXP_{b,f,t}$
	(1)	(2)	(3)	(4)
$dGPR_{f,t}$	-1.138 (0.808)	-1.057* (0.601)	-0.974 (0.609)	-1.057* (0.602)
$dGPR_{f,t-1}$	-1.732* (0.957)	-1.355* (0.733)	-1.422* (0.743)	-1.384* (0.736)
$dGPR_{f,t-2}$	-1.350 (1.002)	-1.201 (0.759)	-1.296* (0.766)	-1.254* (0.760)
$dGPR_{f,t-3}$	-1.461* (0.790)	-1.336** (0.602)	-1.346** (0.610)	-1.375** (0.603)
$dGPR_{f,t} * DUM_{b,c}$	0.135 (0.872)	4.861 (7.831)	-4.579 (4.553)	2.768 (10.064)
$dGPR_{f,t-1} * DUM_{b,c}$	0.578 (0.998)	-15.364* (8.616)	1.173 (4.980)	-7.488 (9.292)
$dGPR_{f,t-2} * DUM_{b,c}$	0.224 (1.018)	-1.909 (9.053)	3.384 (5.189)	11.994 (11.407)
$dGPR_{f,t-3} * DUM_{b,c}$	0.184 (0.852)	-7.705 (8.512)	-0.589 (4.130)	3.366 (12.099)
Blocs (DUM)	US-US _{b,c}	US-CN _{b,c}	CN-US _{b,c}	CN-CN _{b,c}
No. Observations	23449	23449	23449	23449
Cum. GPR base	-5.681	-4.949	-5.039	-5.071
(p-value)	0.041	0.019	0.018	0.017
Cum. GPR interaction	1.121	-20.116	-0.61	10.64
(p-value)	0.698	0.463	0.964	0.749
Cum. GPR overall	-4.561	-25.065	-5.649	5.569
(p-value)	0.054	0.361	0.676	0.867

Transmission channels

Local projections specification

We use local projections to analyse how country-level GPR affects a number of macro-financial variables over time. Including cross-border bank lending (BIS locational claims).

$$Y_{c,t+h} - Y_{c,t-1} = \alpha + \beta GPR_{c,t} + \gamma X_{c,t-1} + f_c + f_t + \epsilon_{c,t} \quad (3)$$

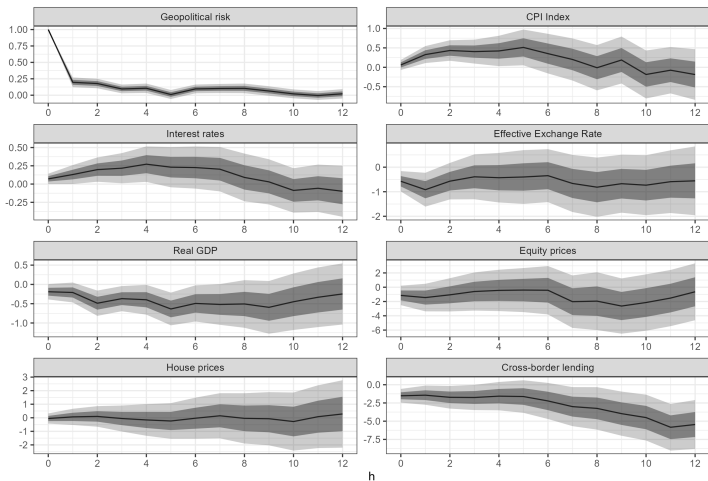
- $Y_{c,t+h} - Y_{c,t-1}$: (log) change in our variable of interest.
- $GPR_{c,t}$: country-level geopolitical risk.
- $X_{c,t-1}$: a vector of control variables, two lags of each variable.
- f_c and f_t : country and time fixed effects.

To explore heterogeneities, we use a state-dependent local projection framework:

$$Y_{c,t+h} - Y_{c,t-1} = \alpha + \beta_1 GPR_{c,t} * Z_{c,t} + \beta_0 GPR_{c,t} * (1 - Z_{c,t}) + \gamma X_{c,t-1} + f_c + f_t + \epsilon_{c,t} \quad (4)$$

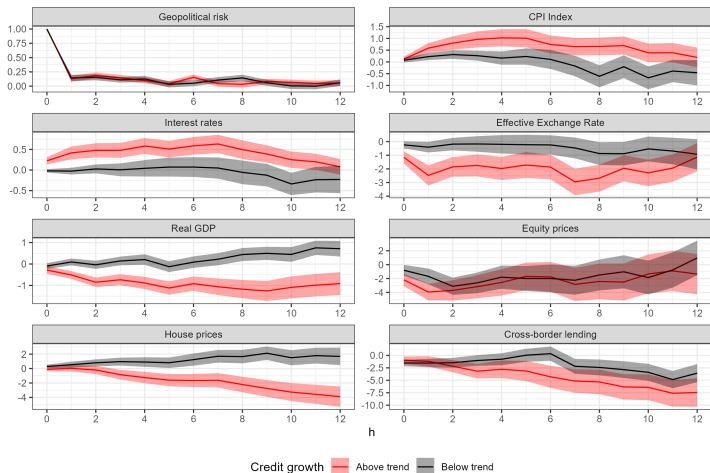
- $Z_{c,t} \in [0, 1]$: smooth-transition variable for a given heterogeneity.

Baseline LPs



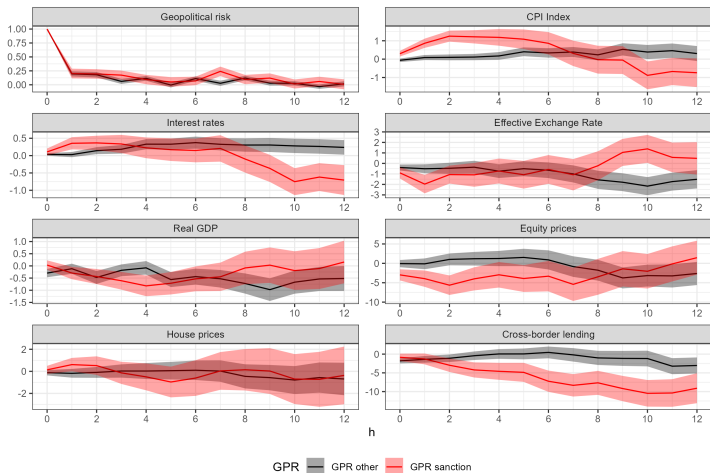
Notes: Dark shaded areas denote 68% confidence interval around mean estimates, standard errors clustered around country-time level. Light shaded areas denote 95% confidence interval.

Credit cycle



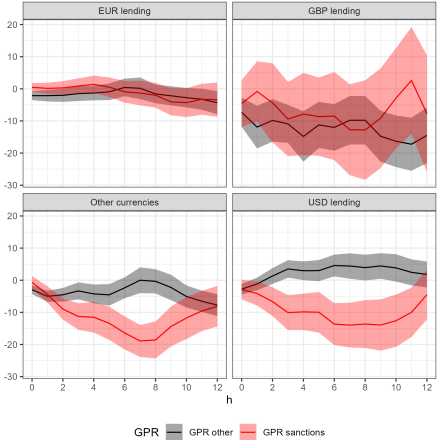
Notes: Dark shaded areas denote 68% confidence interval around mean estimates, standard errors clustered around country-time level.

Type of GPR



Notes: Dark shaded areas denote 68% confidence interval around mean estimates, standard errors clustered around country-time level.

Lending in different currencies



Notes: Dark shaded areas denote 68% confidence interval around mean estimates, standard errors clustered around country-time level. Local projections are smoothed using a moving average, with a window size of two.

Conclusion

Conclusion

- Firm-level GPR has significant and heterogeneous causal effects on cross-border bank lending to those firms. The sectoral dimension is particularly important: lending to financial services is hardest hit; lending to energy and to defence-related sectors may increase in response to GPR.
- Greater financial stability risks - indicated by higher credit or house price growth - is associated with a larger impact of GPR. The impact is also greater for less capitalised banks, with business cycle dynamics playing a key role in the transmission of GPR to lending.
- Geopolitical tensions may have significant spillovers to macroeconomic and financial stability. The volume and composition of banks' cross-border lending is sensitive to GPR, while this effect may be amplified by overseas financial stability risks.

Appendix


Search terms

List of search terms for geopolitical risk²

war OR military OR terror* OR geopolitical OR conflict OR "Middle East" OR Iraq OR Afghanistan OR Iran OR Syria OR Libya OR Ukrain* OR Russia* OR "North Korea" OR Venezuela OR coup OR expropriation OR confiscation OR nationalism OR security OR protest* OR country OR countries OR political OR retaliation OR unrest OR geograph* OR troop* OR sanction OR sanctions OR embargo OR wars OR warfare OR army OR navy OR weapon* OR combat OR missile* OR immigration OR diplomacy

List of search terms for sanctions risk

"Middle East" OR Iraq OR Afghanistan OR Iran OR Syria OR Libya OR Ukrain* OR Russia* OR "North Korea" OR Venezuela OR "OFAC" OR "EU sanctions" OR "UN sanctions" OR "UK sanctions" OR export restriction* OR export control* OR export ban* OR trade sanction* OR trade restriction* OR import restriction* OR import ban* OR import control* OR trade control* OR trade ban* OR asset freeze OR frozen asset* OR economic sanction* OR international sanction* OR travel ban* OR embarg*

²Asterisk denotes all words starting with a given set of letters 

More detail about large exposures data

- We use the dataset of Covi et al (2022). This data, based on confidential large exposure supervisory reporting (COREP C.27-28 templates), captures all UK banks' exposures above 10% of a bank's Tier 1 capital.
- This includes: large UK banks, which participate in the Bank Capital Stress Test; smaller UK banks and building societies; UK-based subsidiaries of banks globally headquartered in a foreign jurisdiction.
- We remove: lending to UK-based firms, to focus on cross-border flows; structural break in 2022Q2; and smaller bank exposures (following Covi et al (2025), banks must have at least 2 exposures reported per quarter for 5 quarters).
- We identify defence-related firms from 4-digit NACE codes. And aggregate other firms by sector groups: primary industry and mining; manufacturing; other secondary; financial services; public services; and other tertiary.
- We combine large exposures with bank-specific information (e.g. CET1).

Geopolitical risk metrics (1/3)

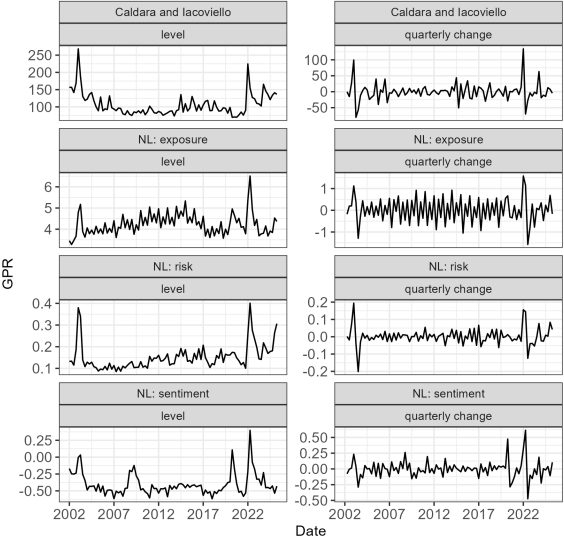
- To exploit the rich granularity of the large exposures data, we need a metric of geopolitical risk which varies across a higher degree of dimensionality than the newspaper-based metric of Caldara and Iacoviello (2022).
- Hence, we measure geopolitical risk based on text-searches from firms' earnings calls, using the NL Analytics platform.
 - ▶ We use the same dictionary of search terms as developed by Caldara and Iacoviello (2022).
 - ▶ We match individual firms between datasets by matching LEI codes (from large exposures) with ISIN codes (from NL Analytics).
 - ▶ Information about firms' headquarter and sector also allows us to develop metrics of GPR that vary across countries and sectors, in addition to firm-level.

Geopolitical risk metrics (2/3)

- The NL Analytics platform provides three metrics from any given dictionary of search terms:
 - ▶ "Exposure": Number of sentences in a given call that mention a given topic divided by the total number of sentences.
 - ▶ "Risk": Firms' perceptions of risks around a given topic, based on synonyms for risk (e.g. uncertainty).
 - ▶ "Sentiment": Net of "negative" tone sentences minus "positive" tone sentences.
- We focus on the "Risk" metric as it is likely most relevant for banks when making lending decisions to particular firms (as well as countries and/or sectors). It also co-moves most closely with the newspaper-based index.

Geopolitical risk metrics (3/3)

GPR levels and changes



Defence sector classification

Table: Defence-related industries

Sector	SIC	NACE
Instruments and appliances for measuring testing and navigation	3812	C2651
Private security and systems service	7381-7382	N8010-N8020
Electronic components and boards	3671-3679	C2600-C2601
Computer programming and management	7371-7376	J6201-J6203
National security/Public defence	9711	O8422
Air and spacecraft and related machinery	3721-3724; 3760-3769	C3030
Military fighting vehicles	3261	C3040
Manufacture of weapons and ammunition	3482-3489	C2540
Other research and experimental development on natural sciences and engineering	8711; 8731	M7219

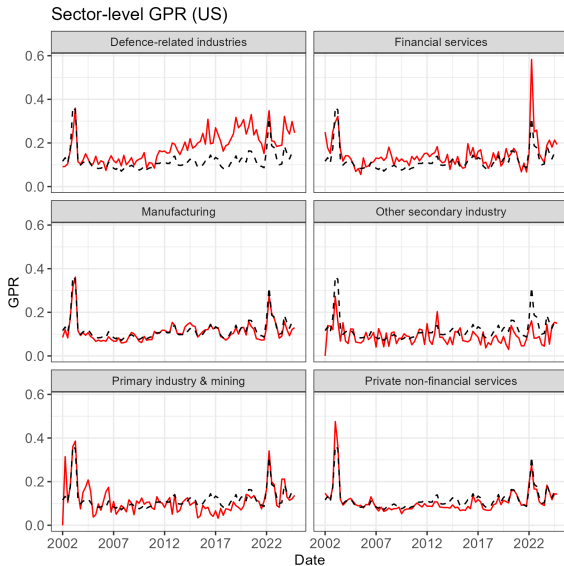
Gross exposures by sector

Table: Large exposures to different sector groups

	Gross exposure (£bn)	of which: matched (£bn)
Primary industry & mining	15.60	4.50
Manufacturing	174.10	102.60
Other secondary industry	67.20	18.20
Financial Services	1568.50	711.00
Public Services	692.40	0.00
Defence-related industries	12.70	7.90
Private non-financial services	218.60	42.70

Note: Data points from 2019Q4, excluding UK lending.

Sectoral GPR



Note: Observations for 2025 and public services omitted.

Summary statistics (firm-level data)

Table: Summary statistics of key variables

	Mean	Median	SD	Min	Max	Obs.
Gross exposures (%)	-13.44	-2.68	49.65	-100.00	163.31	90470
Net exposures (%)	-12.28	-3.30	60.49	-100.00	277.54	79091
GPR risk (ppts)	-0.00	0.00	0.80	-2.00	2.00	118328
GPR sentiment (ppts)	-0.01	0.00	2.41	-11.00	11.00	118328
GPR exposure (ppts)	-0.11	0.00	6.22	-29.00	33.00	118328

Note: Summary statistics for country-level variables, expressed as quarterly changes from 2015Q1-2024Q4.

Other Data

- We source data across a range of macroeconomic variables in order to study the transmission of geopolitical risk to cross-border lending.
- Last, we use a country-level metric of cross-border bank lending, the BIS locational banking statistics.
 - ▶ This metric captures cross-border lending from a locational perspective, as opposed to a nationality perspective, as per the large exposures data.
 - ▶ BIS data coverage is broader than large exposures and available over a longer time period. It is also useful to explore the currency dimension of cross-border lending.
- Most other data we use is also sourced from the BIS website, including: consumer prices; central bank policy rates; exchange rates; residential property prices; and credit growth.
- We also use real GDP (OECD) and equity prices (LSEG).

Summary statistics (country-level data)

Table: Summary statistics for macroeconomic variables

	Mean	Median	SD	Min	Max	Obs.
GPR risk (ppts)	0.00	0.00	0.29	-2.00	2.00	3727
Real GDP (log)	0.67	0.72	2.20	-25.85	21.87	4878
CPI (log)	0.75	0.60	1.06	-3.52	9.84	5127
Policy rate (ppts)	-0.00	0.00	0.63	-12.54	8.33	4952
Effective exchange rate (log)	-0.01	0.12	2.69	-27.43	31.34	5261
Equity prices (log)	1.48	2.42	11.89	-168.05	78.72	4960
House prices (log)	1.24	1.17	2.77	-26.22	23.91	4745
Locational claims (log)	1.18	0.89	6.98	-57.37	48.23	5260

Note: Summary statistics for country-level variables, expressed as quarterly changes from 2002Q1-2024Q4.

Additional Results

Sensitivity analysis: regression specification

	(1)	(2)	(3)	(4)
$dGPR_{f,t}$	-0.595 (0.771)	-0.557 (0.411)	-0.928 (0.596)	-1.350** (0.589)
$dGPR_{f,t-1}$	-0.972 (0.963)	-1.006** (0.471)	-1.417* (0.727)	-1.263* (0.715)
$dGPR_{f,t-2}$	-0.650 (0.962)	-0.833* (0.459)	-1.053 (0.748)	-0.989 (0.742)
$dGPR_{f,t-3}$	-1.282* (0.769)	-0.732* (0.383)	-1.278** (0.602)	-1.000* (0.582)
$dEXP_{b,f,t-1}$				-0.182*** (0.015)
Fixed effects	b-t,c-s-t,f	b-t,c-s-t,f	b-t,c-s-t,f	b-t,c-s-t,f
Robustness	Net exposure	No. winzor	Inc. 2022Q2	Inc. LDV
No. Observations	23066	23454	24146	20096
Cum. GPR effect	-3.499	-3.128	-4.676	-4.602
(p-value)	0.197	0.020	0.025	0.028
R ²	0.360	0.389	0.388	0.419
Adjusted R ²	0.192	0.228	0.228	0.256

Note: This table reports the estimation results for equation (1). The dependent variable is the quarterly percentage change in gross bank exposures by bank (b) to firm (f) at time (t). The data are quarterly from 2015Q1 to 2024Q4. Standard errors are clustered at the firm-time level.

Sensitivity analysis: other GPR metrics

	(1)	(2)	(3)	(4)
$dGPR_{f,t}^{exposure}$	-0.053 (0.080)		-0.151 (0.113)	
$dGPR_{f,t-1}^{exposure}$	-0.084 (0.089)		-0.141 (0.122)	
$dGPR_{f,t-2}^{exposure}$	-0.048 (0.087)		-0.174 (0.121)	
$dGPR_{f,t-3}^{exposure}$	-0.123 (0.080)		-0.111 (0.116)	
$dGPR_{f,t}^{sentiment}$		-0.021 (0.207)		-0.009 (0.316)
$dGPR_{f,t-1}^{sentiment}$		0.054 (0.245)		-0.035 (0.392)
$dGPR_{f,t-2}^{sentiment}$		-0.311 (0.247)		-0.414 (0.393)
$dGPR_{f,t-3}^{sentiment}$		0.0002 (0.201)		-0.119 (0.317)
Fixed effects	b-t,c-s-t,f	b-t,c-s-t,f	b-t,c-t,f	b-t,c-t,f
Sample	All observations	All observations	Fin. services	Fin. services
No. Observations	23454	23454	13349	13349
Cum. GPR effect	-0.309	-0.278	-0.577	-0.578
(p-value)	0.217	0.695	0.093	0.620
R ²	0.389	0.389	0.436	0.436
Adjusted R ²	0.228	0.228	0.245	0.245

Sensitivity analysis: including UK lending

	(1)	(2)	(3)	(4)
$dGPR_{f,t}$	-0.985* (0.597)	-0.977* (0.565)	-0.934* (0.566)	-0.793 (0.545)
$dGPR_{f,t-1}$	-1.502** (0.726)	-1.579** (0.703)	-1.580** (0.694)	-1.478** (0.678)
$dGPR_{f,t-2}$	-1.294* (0.752)	-1.199* (0.712)	-1.218* (0.710)	-1.134* (0.683)
$dGPR_{f,t-3}$	-1.299** (0.595)	-1.546*** (0.568)	-1.585*** (0.557)	-1.488*** (0.549)
$dGPR_{f,t} * DUM_{b,c}$	1.270 (1.474)	2.042 (1.354)	2.754 (1.764)	0.920 (2.066)
$dGPR_{f,t-1} * DUM_{b,c}$	0.237 (1.836)	0.843 (1.662)	1.507 (2.346)	-0.140 (2.070)
$dGPR_{f,t-2} * DUM_{b,c}$	0.753 (1.744)	0.298 (1.752)	0.825 (2.294)	-0.464 (2.512)
$dGPR_{f,t-3} * DUM_{b,c}$	-1.101 (1.391)	0.062 (1.406)	0.808 (1.793)	-1.064 (2.029)
Interaction	uk _c	home _{b,c}	uk _c *home _{b,c}	(1-uk _c)*home _{b,c}
No. Observations	28012	28012	28012	28012
Cum. GPR base (p-value)	-5.079 0.015	-5.3 0.009	-5.316 0.008	-4.893 0.012
Cum. GPR Interaction (p-value)	1.159 0.826	3.246 0.473	5.894 0.33	-0.748 0.904
Cum. GPR overall (p-value)	-3.92 0.417	-2.054 0.634	0.578 0.921	-5.641 0.36

Regression results: more aggregated

	$dEXP_{b,c,t}$	$dEXP_{b,c,t}$	$dEXP_{b,c,s,t}$	$dEXP_{b,c,s,t}$	$dEXP_{b,c,s,t}$
	(1)	(2)	(3)	(4)	(5)
$dGPR_{c,t}$	-2.421 (1.608)	-1.587 (1.706)			
$dGPR_{c,t-1}$	-2.335 (1.982)	-1.098 (2.177)			
$dGPR_{c,t-2}$	-1.602 (1.716)	-0.542 (1.873)			
$dGPR_{c,t-3}$	-1.339 (1.379)	-0.871 (1.513)			
$dGPR_{c,s,t}$			-0.959 (0.848)	-0.910 (0.923)	-2.262** (1.115)
$dGPR_{c,s,t-1}$			-1.378 (0.981)	-0.991 (1.101)	-2.304* (1.302)
$dGPR_{c,s,t-2}$			-0.307 (0.963)	-0.322 (1.136)	-1.471 (1.414)
$dGPR_{c,s,t-3}$			-0.346 (0.826)	0.105 (0.932)	-0.735 (1.194)
Fixed effects	b,c,t	b-t,c	b,c,s,t	b-t,c-t,s-t	b-s-t,c-t
No. Observations	35994	31388	39495	33291	27018
Cum. GPR effect	-7.698	-4.097	-2.99	-2.119	-6.773
(p-value)	0.134	0.459	0.3	0.516	0.089
R ²	0.024	0.186	0.025	0.230	0.372
Adjusted R ²	0.015	0.059	0.018	0.079	0.075

Sector heterogeneity: country-sector panel

	(1)	(2)	(3)	(4)
$dGPR_{c,s,t}$	-2.080*	-1.517	-2.300**	-2.397**
	(1.161)	(1.432)	(1.127)	(1.119)
$dGPR_{c,s,t-1}$	-1.943	-0.820	-2.265*	-2.386*
	(1.348)	(1.758)	(1.316)	(1.306)
$dGPR_{c,s,t-2}$	-0.956	-1.272	-1.582	-1.456
	(1.470)	(2.004)	(1.425)	(1.419)
$dGPR_{c,s,t-3}$	-0.473	0.738	-0.915	-0.715
	(1.237)	(1.577)	(1.209)	(1.198)
$dGPR_{c,s,t} * DUM_s$	-2.395	-1.756	4.179	28.830**
	(4.639)	(2.270)	(7.728)	(11.599)
$dGPR_{c,s,t-1} * DUM_s$	-4.636	-3.187	-3.632	10.067
	(4.828)	(2.600)	(8.620)	(14.550)
$dGPR_{c,s,t-2} * DUM_s$	-6.282	-0.213	10.121	-9.999
	(4.643)	(2.684)	(9.124)	(11.046)
$dGPR_{c,s,t-3} * DUM_s$	-2.599	-3.158	16.691**	-6.702
	(3.667)	(2.244)	(7.077)	(10.771)
Sector	Manuf.	Financials	Defence	Energy
No. Observations	27014	27014	27014	27014
Cum. GPR base	-5.452	-2.871	-7.062	-6.954
(p-value)	0.188	0.598	0.08	0.082
Cum. GPR interaction	-15.913	-8.314	27.359	22.197
(p-value)	0.231	0.275	0.219	0.558
Cum. GPR sector	-21.365	-11.185	20.297	15.243
(p-value)	0.094	0.047	0.354	0.686

Flows between blocs: country-sector panel

	(1)	(2)	(3)	(4)
$dGPR_{c,s,t}$	-2.565*	-2.283*	-2.698**	-2.594**
	(1.486)	(1.221)	(1.194)	(1.193)
$dGPR_{c,s,t-1}$	-2.253	-2.579*	-2.789**	-2.968**
	(1.628)	(1.426)	(1.391)	(1.393)
$dGPR_{c,s,t-2}$	-2.528	-2.090	-2.001	-2.258
	(1.821)	(1.572)	(1.532)	(1.521)
$dGPR_{c,s,t-3}$	-0.975	-0.951	-0.347	-0.887
	(1.566)	(1.339)	(1.312)	(1.293)
$dGPR_{c,s,t} * DUM_{b,c}$	0.231	-2.185	5.911	6.213
	(1.810)	(3.358)	(6.434)	(7.211)
$dGPR_{c,s,t-1} * DUM_{b,c}$	-1.172	-2.095	2.023	10.052
	(1.939)	(3.762)	(7.197)	(9.100)
$dGPR_{c,s,t-2} * DUM_{b,c}$	0.999	0.516	-0.535	10.689
	(1.937)	(3.975)	(6.865)	(8.446)
$dGPR_{c,s,t-3} * DUM_{b,c}$	0.468	2.530	-10.333	8.639
	(1.712)	(3.120)	(7.033)	(6.192)
$DUM_{b,c}$	-2.432*	1.511	2.011	0.280
	(1.466)	(1.668)	(2.856)	(2.941)
Interaction	US-US _{b,c}	US-CN _{b,c}	CN-US _{b,c}	CN-CN _{b,c}
No. Observations	24976	24976	24976	24976
Cum. GPR base	-8.322	-7.903	-7.835	-8.707
(p-value)	0.103	0.071	0.069	0.042
Cum. GPR interaction	0.526	-1.234	-2.933	35.594
(p-value)	0.926	0.909	0.885	0.149
Cum. GPR overall	-7.796	-9.137	-10.768	26.887
(p-value)	0.126	0.385	0.591	0.273

Flows between blocs: financial services only

	(1)	(2)	(3)	(4)
$dGPR_{f,t}$	-0.662 (0.953)	-0.928 (0.759)	-0.784 (0.774)	-0.928 (0.761)
$dGPR_{f,t-1}$	-1.657 (1.124)	-1.419 (0.950)	-1.440 (0.966)	-1.444 (0.956)
$dGPR_{f,t-2}$	-2.038* (1.185)	-1.686* (0.997)	-1.788* (1.010)	-1.704* (1.000)
$dGPR_{f,t-3}$	-2.031** (0.938)	-2.272*** (0.778)	-2.295*** (0.790)	-2.301*** (0.781)
$dGPR_{f,t} * DUM_{b,c}$	-0.572 (1.074)	7.302 (9.339)	-5.998 (5.351)	4.559 (10.970)
$dGPR_{f,t-1} * DUM_{b,c}$	0.379 (1.222)	-14.622 (11.721)	-1.386 (5.809)	-8.729 (10.377)
$dGPR_{f,t-2} * DUM_{b,c}$	0.737 (1.248)	10.360 (10.891)	3.897 (5.900)	7.657 (12.330)
$dGPR_{f,t-3} * DUM_{b,c}$	-0.560 (1.056)	-7.074 (11.970)	0.064 (4.674)	-1.862 (12.919)
$DUM_{b,c}$	22.783*** (7.681)	-25.905*** (8.204)	-41.189*** (11.516)	39.241*** (11.861)
Interaction	US-US _{b,c}	US-CN _{b,c}	CN-US _{b,c}	CN-CN _{b,c}
No. Observations	13344	13344	13344	13344
Cum. GPR baseline (p-value)	-6.389 0.051	-6.305 0.022	-6.307 0.024	-6.377 0.021
Cum. GPR interaction (p-value)	-0.015 0.997	-4.033 0.912	-3.422 0.826	1.626 0.962
Cum. GPR overall (p-value)	-6.404 0.051	-10.338 0.776	-9.729 0.525	-4.751 0.889