

A Geopolitical Shock to Bank Assets and Monetary Policy Transmission

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Part 1

Motivation

Geopolitics is back at the centre of macro policy

- **2022:** Russia invades Ukraine; G7 sanctions freeze Russian assets
- **2023–2024:** Israel–Gaza war; Houthi attacks disrupt Red Sea shipping
- **2024:** Iran–Israel exchanges; renewed oil-price spikes
- **2024–2026:** Strait of Hormuz tensions; recurrent disruption risk
- **2025–2026:** US–Venezuela tension; deepening US–China trade conflict

Central banks face the same question every time:

Look through the shock, or lean against it?

The standard view: geopolitics as supply shock

The dominant narrative since 2022: *geopolitical events raise energy prices, disrupt supply chains, and drive cost-push inflation.*

“The combination of base effects, the easing of supply bottlenecks . . . will contribute to inflation falling back over time . . . The monetary policy challenge is to assess the strength and persistence of the cyclical adjustment dynamics.”

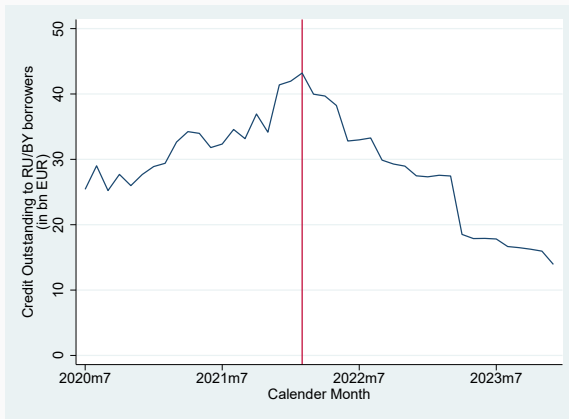
Philip Lane, ECB Executive Board, CEBRA 2022.

Policy prescription: *“Look through the supply shock unless inflation becomes persistent.”*

This view treats geopolitics as a shock to aggregate *supply*.

It misses a potential demand-side channel.

But banks were sitting on billions of Russian credit



Euro-area banks' outstanding credit to Russian/Belarusian borrowers. Source: AnaCredit.

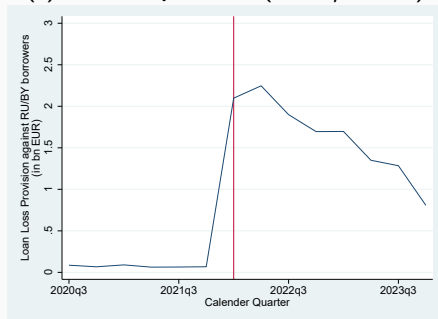
**Geopolitical shocks are also *asset* shocks for banks –
and that impacts *aggregate demand*.**

The shock was real, exogenous, and varied across banks

Why the 2022 invasion identifies a clean balance-sheet shock:

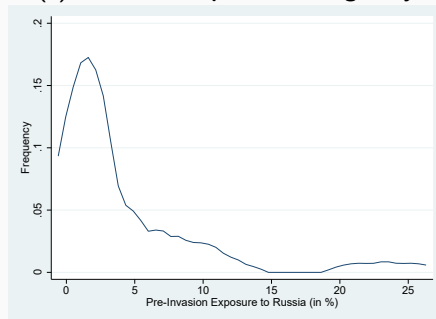
- **Unanticipated, exogenous** to euro-area balance sheets, **sharp date** (Feb 24, 2022)
- Treatment: $Exp_b^{Russia} = \overline{(\text{Loans} + \text{Bonds})}_b^{Russia} / \overline{\text{Book Equity}}_{b,2021}$ (pre-war fixed, standardised)

(a) Loan loss provisions (Russia/Belarus)



Surged to ~€2 bn within a year. Source: AnaCredit.

(b) Cross-bank exposure heterogeneity



Kernel density, exposure/equity, conditional on non-zero.

Banks really had to absorb the loss; exposure varies enough to identify causal effects.

Part 3

This Paper

Does a geopolitical shock to bank assets affect monetary conditions through the banking system?

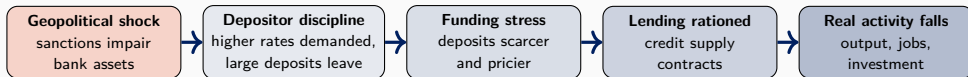
We answer this in four steps that follow the timeline of the shock:

1. Does the asset shock disrupt bank **funding** (deposits) in the period *before* any ECB action?
2. Does the funding stress translate into a **lending** contraction in the same pre-hike period?
3. Does balance-sheet weakness **amplify** the transmission of the subsequent ECB hiking cycle?
4. Do these mechanisms translate into measurable **real effects** at the firm level?

Each step maps to one block of the empirical analysis.

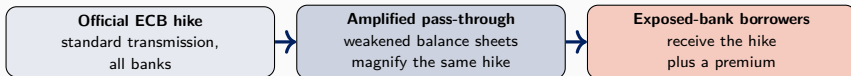
The mechanism, and our four contributions

Phase 1, before any ECB action. The shock alone already tightens monetary conditions:



This is a Silent Tightening: conditions tighten as if policy had moved, yet no central bank has acted.

Phase 2, once the ECB starts hiking. The same weakened banks transmit policy with extra force:



Our four contributions map onto this chain: (1) the *Silent Tightening* (Phase 1); (2) the *amplified* pass-through of later hikes (Phase 2); (3) *real effects* on firms (end of Phase 1); (4) a *geopolitics-adjusted Taylor rule*.

The first complete micro-chain, both balance-sheet sides, for a *realized* geopolitical shock.

Data: granular Eurosystem micro-data

Source	Granularity	Coverage
MMSR	transaction-level deposits	31 banks, 720 firms, 29k obs.
AnaCredit	loan-level credit	14M loans, 900k firms (all reporting banks)
SHS-G	security-level bond holdings	all euro-area significant banks
iMIR	bank-level rates and volumes	144 euro-area banks (representative)
iBSI	bank balance-sheet items	all euro-area reporting banks

31 banks = euro-area MMSR + German MMSR add-on; results are robust to excluding the German subset.

Unique feature: we observe both sides of the bank balance sheet – deposits *and* loans – at the transaction level, simultaneously.

Sample period: March 2021 – February 2023 (symmetric around the invasion).

Part 5

Deposit Market Results

Exposed banks pay higher deposit rates

$$\text{DiD: } r_{D,b,f,t} = \beta \cdot \text{Post}_t \cdot \text{Exp}_b^{\text{Russia}} + \gamma X_{b,t-1} + \alpha_{b,f} + \alpha_{f,t} + \epsilon_{b,f,t}$$

Dep. variable: deposit rate (bp)	(1) Bank FE	(6) Firm×Time FE	(7) WLS
$\text{Post} \times \text{Exp}_b^{\text{Russia}}$	1.07*** (3.49)	0.52*** (5.39)	0.62*** (5.76)
Bank×Firm FE	–	Yes	Yes
Firm×Time FE	–	Yes	Yes
Bank controls	Yes	Yes	Yes
Observations	29,719	29,719	29,719

- Col. (6): *same* firm on the *same* day, exposed vs. non-exposed bank $\Rightarrow$ identification off pure bank-side variation
- Effect = **21% of within firm-time dispersion** in deposit rates

Depositor discipline on prices: the same firm earns a higher rate at the more exposed bank.

Exposed banks lose deposits at the large-depositor margin

Account-level evidence on extensive margin (Tab. 4) and bank-aggregate volume (Tab. 5).

Outcome (Dep. variable)	Coefficient	t-stat	FE
<i>Extensive margin (bank-firm-day)</i>			
P(new deposit), full sample	~ 0 (ns)	1.10	Firm $\times$ Time
P(new deposit) $\times$ Large depositor	-0.060^{***}	-3.56	Firm $\times$ Time
<i>Aggregated to bank-day</i>			
log(deposit volume)	-0.051^{**}	-2.73	Bank, Time

- Large depositors react ~ 6 pp more strongly than small ones to bank exposure
- Bank-aggregate deposit volume falls by $\sim 5\%$ – economically substantial

Depositor discipline on quantities: precisely the depositors whose balances matter withdraw from exposed banks.

Identification: addressing the common concerns

Concern	What we find
Selection, observable and unobservable	Effect holds in matched sample (PSM / IPW); unobservables cannot plausibly overturn it (Oster 2019)
SUTVA / spillovers	No offsetting inflows at non-exposed banks
Small- N inference (~ 31 banks)	Significant under wild cluster bootstrap and random treatment assignment
Concentration and dose-response	No single bank drives the result (leave-one-out); effect rises with exposure intensity

Every common concern is addressed and ruled out. The headline result survives.

Parallel trends: previous slide. Covid placebo and full details → Appendix A5–A17.

Part 6

Lending Channel

Exposed banks reduce lending

Same DiD on AnaCredit loan-level data; sample of active bank-firm pairs with any new loan in the post-period.

Dep. variable: $\log(\text{loan volume})$	(3) ICST FE	(4) Firm $\times$ Time FE
Post $\times$ Exp_b^{Russia}	−0.0120** (−2.21)	−0.0402*** (−4.71)
Bank $\times$ Firm FE	Yes	Yes
Firm $\times$ Time FE	–	Yes
Observations	3,200,158	308,380

ICST = Industry $\times$ Country $\times$ Size $\times$ Time FE, following Degryse et al. (2019). Column (3) retains single-bank firms; column (4) is the Khwaja-Mian within-firm specification.

- Quantity rationing; no systematic loan-rate repricing; externally validated on the broader iMIR sample (Appendix A19)

The funding shock reaches the asset side: exposed banks ration credit.

Funding stress causes the lending contraction

Identification challenge: is the lending decline driven by the funding shock, or by something co-moving with exposure?

We isolate the *geopolitically-driven* component of each bank's deposit-rate change in the 5 days around the invasion. Only this component predicts lending cuts; the restricted prediction (without exposure) does not. The 2SLS confirms the causal direction with a weak-IV-robust AR test at $p = 0.015$.

Effect of Δr_b^{inv} on lending	raw	geopolitical component	restricted (no exposure)
Coefficient	−0.013**	−0.011**	−0.002 (n.s.)

2SLS confirms the direction: weak-IV-robust Anderson-Rubin $p = 0.015$.

raw: observed deposit-rate change around the invasion. *geopolitical component*: projected on Exposure. *restricted*: projected on pre-war bank controls only (size, capital, funding mix, risk), *without* Exposure.

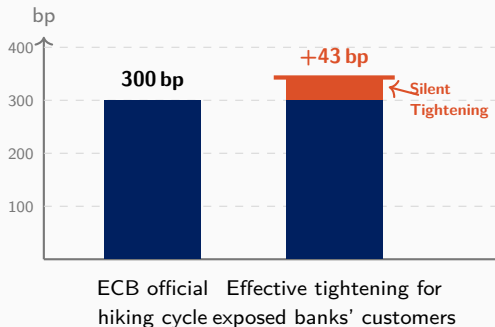
The *geopolitically-driven* part of funding costs causes the lending contraction.

Part 7

Silent Tightening

Silent Tightening: ~ 43 bp of *implicit* tightening

Aggregating bank-level funding-cost effects, benchmarked against the common deposit-rate pass-through (Chodorow-Reich 2014; Federico, Hassan & Rappoport 2025). Baseline group: high-exposure banks ($>5\%$ of book equity).



How we arrive at ~ 43 bp:

$$\Delta r_p^{\text{equiv}} = \frac{C_{\text{Shock}}}{C_{\text{MP}}^{\text{per bp}}} \approx 43 \text{ bp}$$

economy-wide: $\approx 5.4 \text{ bp}$ [0.8; 13.4]

C_{Shock} ($\sim \text{€}414 \text{ mn}$): funding-cost increase from the shock alone, high-exposure banks ($>5\%$ of equity), four pre-hike months.

$C_{\text{MP}}^{\text{per bp}}$: funding costs per +1 bp of policy, transmitted through the common pass-through over the same horizon.

Economy-wide: computed on all euro area deposits; bootstrap 95% CI [0.8; 13.4], bootstrap $p = 0.014$; stable at 3–10 bp across all material-exposure definitions.

~ 43 bp implicit tightening for exposed banks' customers before any ECB action; ~ 5.4 bp economy-wide.

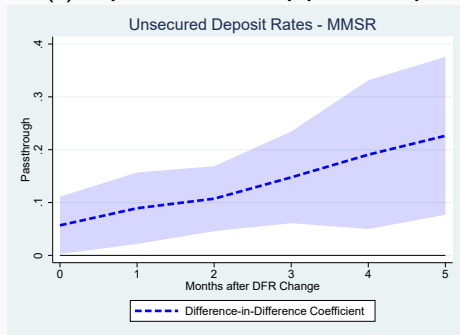
Part 8

Monetary Policy Transmission

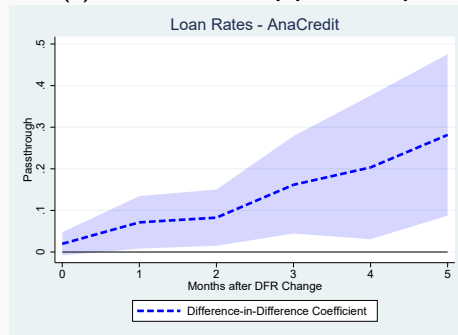
Amplified pass-through: each hike hits exposed banks harder

LP-DiD with $\sum_k \Delta MP_{t-k} \times Exp_b^{Russia}$; full sample through 2023. Robust to high-frequency MP surprises (Jarocinski-Karadi 2020).

(a) Deposit rates: +20 bp per +100 bp



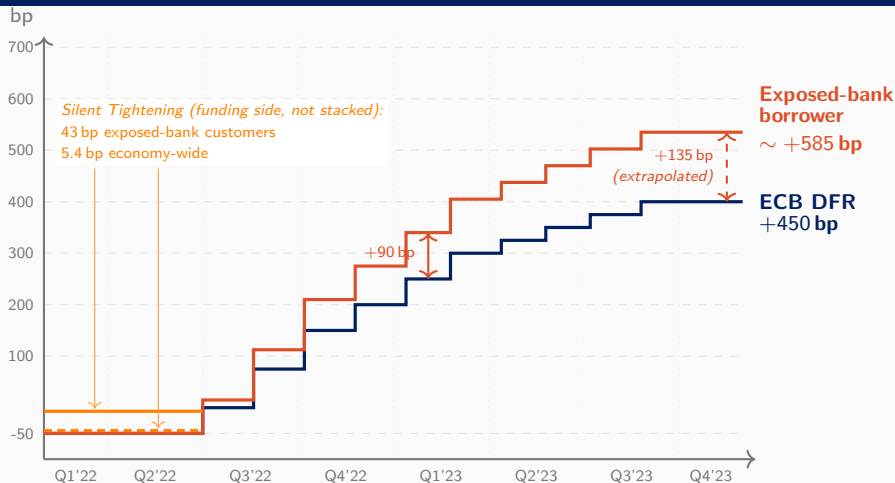
(b) Loan rates: +30 bp per +100 bp



- Differential builds over time for both deposits and loans
- Per +100 bp ECB hike: **+20 bp** extra on deposit rates, **+30 bp** extra on loan rates

Weakened balance sheets amplify policy on both rate margins.

Effective tightening at exposed-bank borrowers



+30 bp per +100 bp loan-rate amplification ($1.3\times$ pass-through): **+90 bp** in-sample, **~ +135 bp** extrapolated over the full cycle (borrower ~ +585 bp vs. ECB +450 bp cumulative).

Funding-side Silent Tightening (43 bp pre-hike) shown unstacked; the two channels are not additive.

Geopolitics-adjusted Taylor rule: numerical example

Standard Taylor rule: calibrated to the observed 2022-2023 ECB cycle peak ($r_p^* \approx +400$ bp); applied to the ECB's *first* step (July 2022, +50 bp), the reference point closest in time to the silent tightening.

How much of its own did the ECB need? Net the banking-channel tightening out of the desired first-step tightening of 50 bp:

$$\underbrace{50 \text{ bp}}_{\text{tightening the ECB wants}} - \underbrace{\Delta r_N^{\text{equiv}}}_{\text{silent tightening } \approx 5.4 \text{ bp}} - \underbrace{\text{amplification}}_{\text{arriving with the step } \approx 1-2 \text{ bp}} \Rightarrow \underbrace{\approx 43.5 \text{ bp}}_{\text{ECB's own step needed}}$$

The banking channel does part of the tightening, so the ECB can do less.

To deliver the same 50 bp, the ECB's own step needed to be only ~ 43.5 bp; exposed banks supplied the other $\sim 13\%$.

This is the central bank's *own* dose; exposed-bank customers still *experience* more tightening, not less (the counterfactual chart). The two questions carry opposite signs.

Part 9

Real Effects

Real Effects on firms: the chain reaches the real economy

Firm-level analysis; firm exposure = loan-weighted bank exposure. Annual data centered on the invasion period (AnaCredit and JANIKA).

	(1) Loan Volume	(2) Employees	(3) Balance Sheet	(4) Turnover	(5) Investment
$\overline{Exp}_f^{Russia}$	-0.0050*** (-3.82)	-0.0081*** (-4.77)	-0.0115*** (-7.77)	-0.0189*** (-5.88)	-0.0928*** (-3.11)
Adj. R^2 (%)	4.48	4.08	3.35	3.40	0.47
Obs	173,349	173,349	173,349	173,349	4,808
Controls	Yes	Yes	Yes	Yes	Yes
ICS FE	Yes	Yes	Yes	Yes	Yes

t-stats in parentheses; SEs clustered at industry-size-country level.

- Firms cannot fully substitute the lost credit from exposed banks
- Annual outcomes capture the downstream effects of the credit contraction
- Mechanism chain: *shock* → *funding* → *lending* → *real activity*

Finding 3: measurable real economic consequences.

Part 10

Conclusion

Conclusion

- 1. Silent Tightening.** A geopolitical shock to bank assets tightens funding conditions before any ECB move: ~ 43 bp policy-rate equivalent for exposed-bank customers (~ 5.4 bp economy-wide).
- 2. Amplified transmission.** The same weakened banks pass each later hike on with extra force: $+20$ bp on deposits and $+30$ bp on loans per $+100$ bp.
- 3. Real effects.** Firms tied to exposed banks contract credit, investment, and employment.
- 4. Policy.** A geopolitics-adjusted Taylor rule nets out the banking-channel tightening: the ECB's own first step needed to be only ~ 43.5 of 50 bp.

Geopolitics is also a financial channel.
Monetary policy needs to acknowledge it.