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Bilateral Conflict Risk and Trade: Military Wars, Trade Wars, and Diplomatic Noise

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Outline

1. **Why aggregation fails**
   A missile, a tariff, and a protest are different shocks.
2. **Measuring directed conflict**
   Monthly data, supervised calibration, four additive layers.

1. **From conflict to trade**
   Structural gravity, dynamic responses, retaliation.
2. **Exposure and rerouting**
   Trade at risk, supplier substitution, limits.

Core question: how damaging is a "trade war" relative to a military war or a war of words?

A missile strike, a tariff, and a diplomatic protest are not the same shock

Kinetic conflict

Armed violence and explicit military threats.

Military posture

Force displays and mobilisation.

Trade-context hostility

Tariffs, sanctions, export controls, and economic coercion.

Baseline diplomacy

Protests, accusations, and routine friction.

Aggregate conflict indices hide the shock that matters for trade.

1. **Measure** directed monthly bilateral hostility.
2. **Decompose** it into economically meaningful layers.
3. **Estimate** dynamic trade responses with structural-gravity fixed effects.
4. **Map** deterioration into exposure and feasible supplier diversion.

Only kinetic and trade-context hostility have significant cumulative effects; trade-context dominates trade-weighted fitted variation.

Contribution: directed data, interpretable layers, and trade effects

NEW DATA

A monthly directed panel for **209 countries** and **29,236 ordered pairs**, built from global event databases.

NEW TOOL

Supervised calibration against an independent coding pipeline, followed by a four-layer decomposition.

NEW EVIDENCE

Kinetic conflict is the sharper dyadic shock; direct and retaliatory trade hostility dominate value-weighted exposure.

US$334bn

net bilateral exposure over 2015–2023; a trade-flow concept, not welfare

55%

share plausibly divertible toward alternative suppliers in a static accounting scenario

Source: Aizenman, Desbordes, and Saadaoui (2026), NBER Working Paper 35077.

A directed bilateral architecture links events, policy context, and trade

GDELT v2
CAMEO events, Goldstein scores, media mentions

ICEWS
independent calibration benchmark

GSDB v4 + GTA
sanctions and harmful border measures

Comtrade + BACI + CEPII
monthly trade, products, gravity variables

Calibrated directed pair-month panel
$i \rightarrow j$ conflict layers + bilateral trade

209
sovereign countries

29,236
directed country pairs

133
months: Mar. 2015–Mar. 2026

The tracker runs through March 2026; the four-layer decomposition and gravity estimates end in 2023 because sanctions and border-measure context is frozen thereafter.

Source: Paper Sections 2–3; official GDELT 2.0 documentation.

From noisy news events to calibrated monthly hostility

Daily hostile share for directed pair $i \to j$:

$$r_{ij,d} = \frac{\sum_{e \in C_{ij,d}} |G_e| M_e}{\sum_{e \in C_{ij,d}} |G_e| M_e + \sum_{e \in K_{ij,d}} G_e M_e}.$$

Monthly flow and persistent stock:

$$r_{ij,t} = \frac{1}{|D_t|} \sum_{d \in D_t} r_{ij,d}, \qquad \bar{r}_{ij,t} = \lambda \bar{r}_{ij,t-1} + (1-\lambda) r_{ij,t}, \quad \lambda = .95.$$

G_e: Goldstein score; M_e: media mentions. The ratio structure ensures comparability *within* a day. Frequency re-enters at the monthly aggregation step, where days without events count as zero.

Supervised calibration

1. 84 GDELT features: levels, domains, dynamics, and salience.
2. Five Ridge models: total risk plus four domain shares.
3. Five-fold cross-validation grouped by dyad.

$$\hat{r}^{cal}_{ij,t} = \text{clip}\left(\hat{f}(X_{ij,t}), 0, 1\right).$$

$R^2 = .48$

out-of-sample performance of the total-risk model

ICEWS is not treated as ground truth; independent coding pipelines are valuable because they are unlikely to share the same source-specific errors.

Source: Paper equations (1)–(3), Section 2.3, and calibration appendix.

Four additive layers separate military, economic, and diplomatic conflict

Kinetic

Fighting and explicit military threats.

Posture

Force displays and mobilisation.

Trade-context

Economic confrontation and its diplomatic expression.

Baseline

Residual diplomacy for unsanctioned pairs.

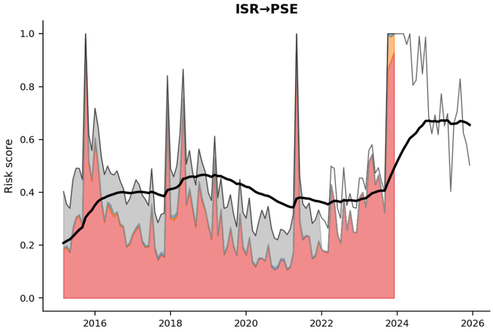
$$\begin{aligned} L^{kin}_{ij,t} &= \widehat{b}^{cal}_{kin,ij,t}, \\ L^{pos}_{ij,t} &= \widehat{b}^{cal}_{pos,ij,t}, \\ L^{trd}_{ij,t} &= \widehat{b}^{cal}_{trd,ij,t} + D^{sanc}_{ij,t}\widehat{b}^{cal}_{rdip,ij,t}, \\ L^{base}_{ij,t} &= (1 - D^{sanc}_{ij,t})\widehat{b}^{cal}_{rdip,ij,t}. \end{aligned}$$

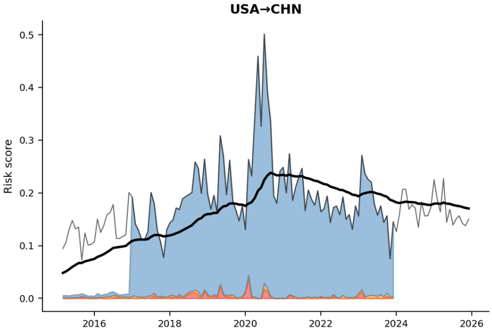
$D^{sanc}_{ij,t} = 1$ when trade or financial sanctions are active, or the pair has more than ten harmful GTA border interventions.

$$L^{kin} + L^{pos} + L^{trd} + L^{base} \equiv \widehat{r}^{cal}.$$

Source: Paper equations (5)–(8).

The layers distinguish kinetic from trade-context relationships

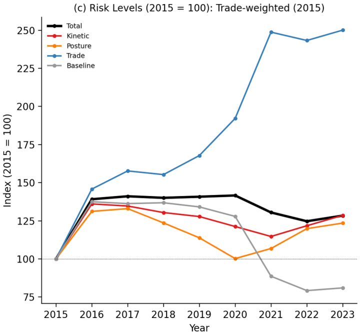


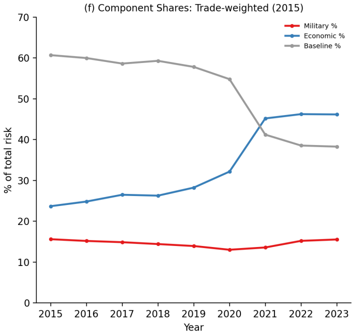


Israel–Palestine is predominantly kinetic; US–China is predominantly trade-context. The same aggregate index would obscure that economic distinction.

Source: Paper case-study figure; stacked areas are the four layers and the black line is the persistent stock. Additional dyads are in the appendix.

Conflict among the largest trading pairs increasingly takes an economic form





250

trade-weighted trade-hostility index in 2023; 2015 = 100

≈ 46%

economic share of trade-weighted hostility in 2023

≈ 15%

military share, broadly stable over time

This is a trade-weighted stock decomposition: it gives the largest commercial relationships the greatest influence.

Source: Paper geopolitical-landscape section; fixed 2015 trade weights, decomposition through 2023.

The gravity design isolates within-pair escalation from country-wide shocks

$$\mathbb{E}\left[x_{ij,t} \mid z_{ij,t}\right] = \exp\left(\sum_{s} \beta_s \, Risk_{ij,t-s} + \alpha_{ij,m} + \gamma_{i,t} + \delta_{j,t}\right).$$

Outcome and dynamics

Monthly mirror-reconciled UN Comtrade flows. Conflict enters through lag 1, average lags 2–4, and average lags 5–7. Their sum is the seven-month cumulative effect.

Preferred channels

Kinetic hostility, direct trade-context hostility, and reverse-direction trade hostility for retaliation.

Fixed effect	Absorbs
Pair $\times$ **calendar month**	Bilateral heterogeneity and seasonality
Exporter $\times$ **year-month**	Exporter shocks and outward resistance
Importer $\times$ **year-month**	Importer shocks and inward resistance

Variation comes from within-pair, month-to-month escalation that cannot be attributed to either country individually. Standard errors are clustered by directed pair.

Source: Paper equation (9); estimation sample 2015–2023.

Only kinetic and trade-context hostility have significant cumulative effects

Channel	Cumulative $\widehat{\beta}$	Approx. 1-SD
Kinetic	-4.544	-3.3%
Posture	-4.082	n.s.
Direct trade-context	-1.400	-1.5%
Reverse direction	-0.527	-0.6%
Baseline diplomacy	-0.029	n.s.

27%

retaliation share of the combined trade-context coefficient

Kinetic is immediate and deepest; **direct trade-context** accumulates gradually; **reverse-direction hostility** is delayed.

Reverse-direction hostility raises the direct trade-context coefficient by about **38%**.

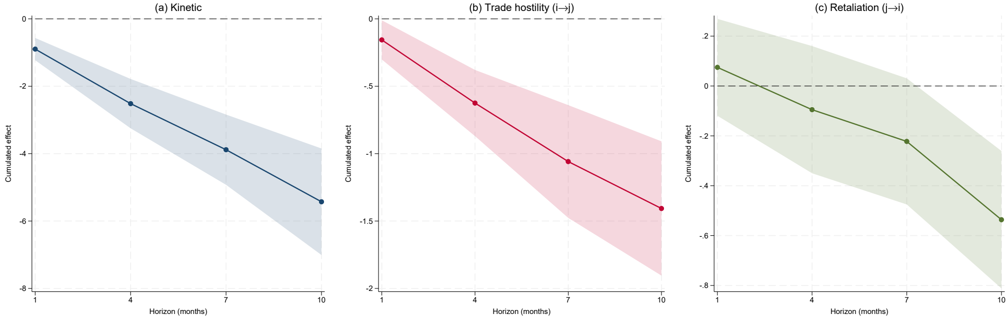
Approximate percentages use gravity-sample standard deviations and $\exp(\widehat{\beta} \times SD) - 1$.

Posture may be anticipatory, but it is not precisely estimated as an independent cumulative trade-destruction channel.

Diplomatic noise does not drive the cumulative trade result.

Source: Paper Tables B and D; preferred PPML specification.

Different conflict channels have different timing



Cumulated PPML effects with 95% CIs. Pair-clustered SEs. FE: exporter-year-month, importer-year-month, pair-calendar-month.

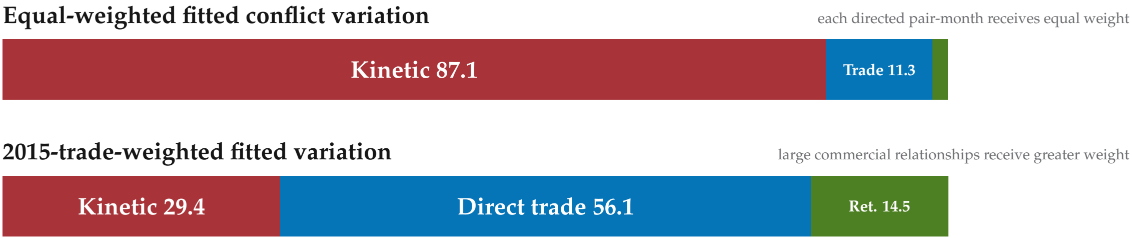
Kinetic: immediate and deepening

Direct trade: gradual accumulation

Reverse direction: delayed

Source: Cumulated PPML effects at 1, 4, 7, and 10 months; 95% CIs; directed-pair clustered standard errors.

The sharpest dyadic shock is not the channel that moves the most trade



Kinetic conflict is the sharper shock to an individual relationship; direct and retaliatory trade hostility account for 70.6% of trade-weighted variation because they strike the largest trading pairs.

Source: Paper variance decomposition; shares sum to 100 within each weighting scheme.

Geopolitical deterioration corresponds to US$334bn of net bilateral exposure

$$\mathcal{L}_{ij} = \widehat{\beta}^{kin}\Delta\bar{L}_{ij}^{kin} + \widehat{\beta}^{trd}\Delta\bar{L}_{ij}^{trd} + \widehat{\beta}^{trd,ji}\Delta\bar{L}_{ji}^{trd},$$

$$TaR_{ij} = x_{ij,2015}\left(1 - e^{\mathcal{L}_{ij}}\right).$$

2015 trade weights avoid circularity because 2023 flows may already reflect geopolitical deterioration. The net sum contains predicted bilateral losses partly offset by gains across other pairs.

Composition of exposure:

3% kinetic • 68% direct trade-context • 29% retaliation.

US$334bn

net bilateral exposure, 2015–2023

2.4%

of 2015 world bilateral trade

The two directions of the US–China relationship account for roughly **half** of the total.

Aggregate exposure is concentrated in very large trade relationships, not only in the highest-conflict pairs.

Source: Paper equations (10)–(11) and Table F; values in current US dollars.

A static supplier scenario leaves US$149bn hard to replace

$$s_{ijp} = \frac{x_{ijp}}{M_{jp}}, \qquad w_{ij} = \sum_p \frac{x_{ijp}}{x_{ij}} s_{ijp},$$

$$\text{hard-to-replace core} = w_{ij}\, TaR_{ij},$$

$$\text{plausibly divertible} = (1 - w_{ij})\, TaR_{ij}.$$

s_{ijp} is exporter i's share of importer j's purchases of product p. Dependence is high when the disrupted supplier already dominates that product market.

- Product-level BACI HS6 supplier shares are fixed at 2015 values.
- The calculation does not model prices, capacity constraints, entry, or adjustment costs.
- It is an accounting scenario—not observed rerouting and not a welfare estimate.

Source: Paper trade-diversion section; 2015 BACI HS6 supplier shares.

55%

of bilateral exposure is plausibly divertible toward alternative suppliers

US$149bn

hard-to-replace supplier core

Supplier concentration determines where a geopolitical rupture is most difficult to absorb.

Validation supports the interpretation, while the limits remain explicit

What supports the design

- Kinetic and direct trade-context effects retain their sign and significance with pair trends and lagged trade.
- No joint evidence that past trade predicts future conflict; the summed trade-context response is marginal at 10% and economically small.
- The calibrated measure retains explanatory power alongside IntenSE, co-moves with external benchmarks, and separates adversaries from allies.

What the design does not establish

- Media reports select and frame events; ICEWS is an independent benchmark, not ground truth.
- The 55% diversion share is static accounting under fixed supplier shares and available capacity.
- Retaliation is less robust to pair trends; posture is illustrative as an early-warning layer, not a validated forecast.

The contribution is the joint combination of directionality, independent-pipeline calibration, interpretable conflict layers, and a gravity application.

Source: Paper robustness and validation sections; detailed estimates in the appendix.

Three takeaways for tracking trade in a changing world

1. **New data.** A monthly, readily updatable directed bilateral conflict architecture covering 209 countries.
2. **New tool.** Supervised calibration and four additive layers separate kinetic conflict, military posture, trade-context hostility, and baseline diplomacy.
3. **New evidence.** Military and trade wars reduce bilateral trade; trade-context hostility creates the larger aggregate exposure because it strikes the largest commercial relationships.

US$334bn
net bilateral exposure

70.6%
of 2015-trade-weighted fitted variation: direct + retaliatory trade hostility

US$149bn
hard-to-replace supplier core

The estimates point toward a reshaping of globalisation through rerouting and supplier substitution, rather than uniform suppression.

THANK YOU

Questions and discussion

BANQUE DE FRANCE
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Full programme and technical appendix in the project archive.

OECD

Backup slides

Data construction, validation, identification checks, and robustness.

APPENDIX

The indicator and gravity samples are deliberately different

Indicator panel

March 2015–March 2026

209 countries; 29,236 directed pairs; 133 months; 912,136 event-months. No-event days and pair-months enter as zero risk.

Gravity panel

2015–2023

24,118 directed pairs; 196 exporters and importers. The preferred seven-month lag structure leaves 1,525,222 observations.

Monthly trade mirror-reconciles exporter-reported FOB shipments and importer-reported CIF receipts.

Variable	Mean	SD	% zero	P75	P99
Trade (USD mn)	81.9	690.0	–	11.4	1,464
Calibrated risk	1.27	2.23	68.9	2.87	6.99
Kinetic	0.21	0.73	70.0	0.22	2.43
Posture	0.03	0.12	73.3	0.01	0.39
Trade_{ij}	0.31	1.09	69.3	0.06	4.70
Baseline	0.71	1.45	77.1	0.00	4.99
Trade_{ji}	0.30	1.09	70.4	0.05	4.68

Conflict variables are percentage points: 1.00 is an average daily hostility share of 0.01. Summary statistics use the pre-long-lag gravity sample ($N = 1{,}856{,}916$).

Source: Paper summary-statistics table and data appendix.

Calibration is strongest for total hostility and military content

Ridge target	Selected α	OOS R^2	RMSE
Total risk	264	0.48	0.063
Kinetic share	1,129	0.23	–
Political/diplomatic share	0.38	0.20	–
Posture share	4,833	0.08	–
Trade share	10,000	0.04	–

$$\min_{\beta} \sum_{n} (y_n - x_n' \beta)^2 + \alpha \|\beta\|_2^2.$$

Training design

About 30,500 directed pair-months and 5,500 dyads; five-fold grouped cross-validation keeps each dyad in one fold.

Feature set

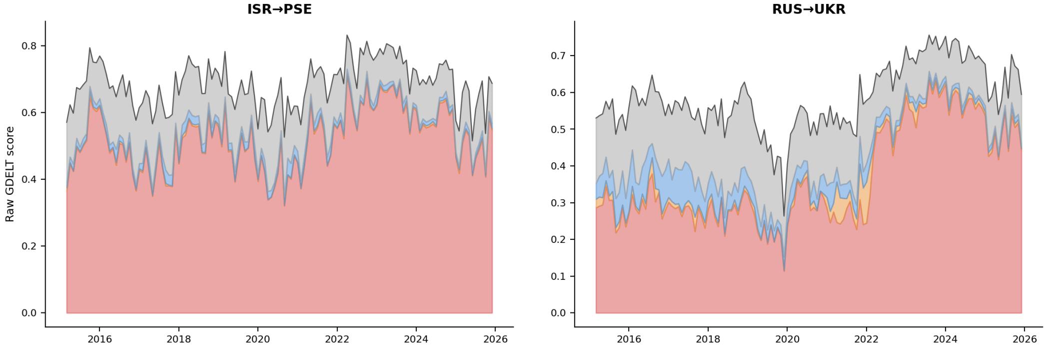
84 GDELT features capture levels, domain composition, dynamics, and raw event statistics.

Takeaway

The weak trade-share fit motivates routing diplomatic hostility through observed sanctions and harmful border-measure context.

Source: Paper calibration appendix.

Raw event coding inflates active-conflict relationships

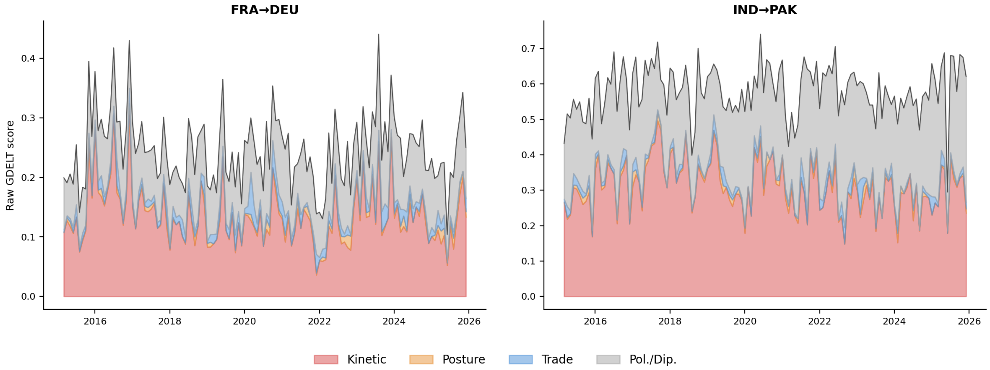


Takeaway

The uncalibrated decomposition is informative about timing, but it overstates levels and blurs the layer mix even for canonical adversaries.

Source: Paper raw-versus-calibrated case studies; GDELT v2.

Calibration removes routine hostility from allied relationships

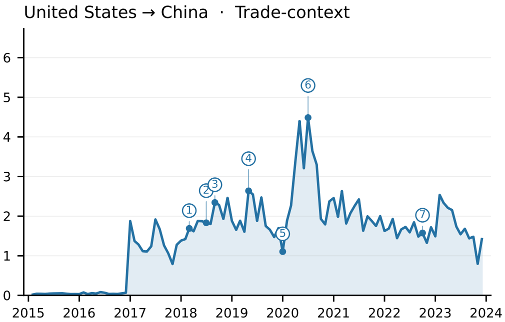


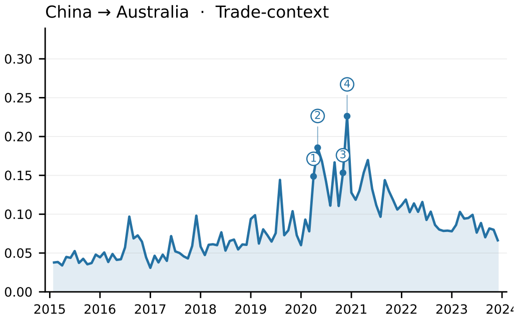
Takeaway

France–Germany illustrates the media-coding problem: frequent political interaction can look hostile without independent calibration.

Source: Paper raw-versus-calibrated case studies; full eight-pair comparison in the paper.

Trade-context peaks line up with documented policy episodes





Event key: 1 tariffs announced (Mar. 2018); 2 first tariffs in force (Jul. 2018); 3 tariffs on an additional \$200bn (Sep. 2018); 4 talks fail and the rate rises to 25% (May 2019); 5 Phase One truce (Jan. 2020); 6 consulates closed (Jul. 2020); 7 US chip-export curbs (Oct. 2022).

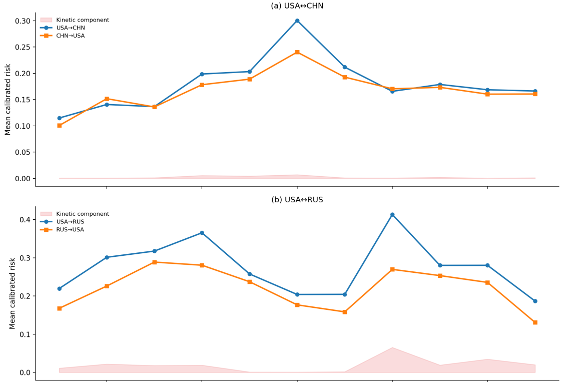
Event key: 1 Australia urges a COVID-origin inquiry (Apr. 2020); 2 China targets barley and beef (May 2020); 3 China imposes wine tariffs (Nov. 2020); 4 China bans coal (Dec. 2020).

Takeaway

US–China and China–Australia peaks coincide with tariffs, export controls, and diplomatic coercion—the layer is interpretable, not merely statistical.

Source: Paper event-validation figure and case-study chronology.

Great-power rivalries differ in both intensity and composition

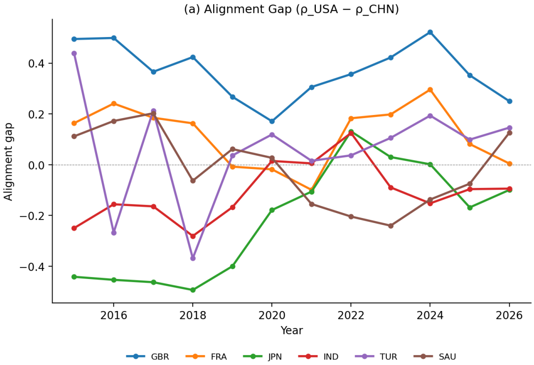


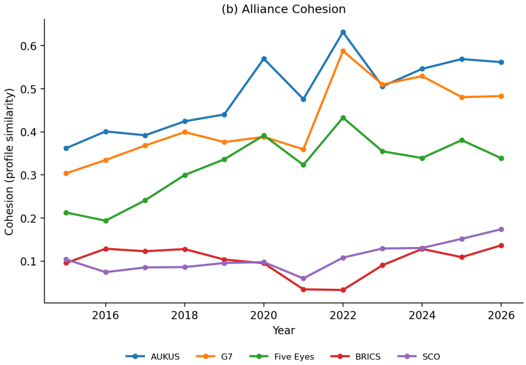
Takeaway

US–China is predominantly trade-context hostility; US–Russia is much more kinetic. An aggregate index cannot reveal that distinction.

Source: Paper geopolitical-landscape figure; annual means, 2015–2025.

Hostility profiles reveal alignment relative to the United States and China



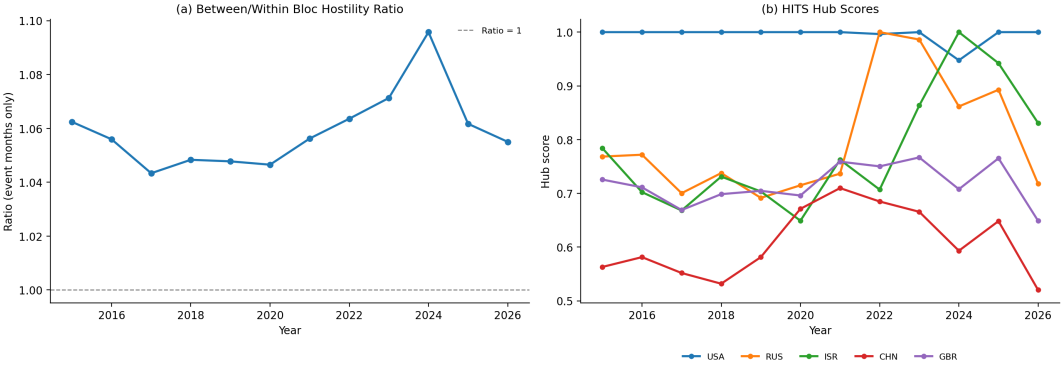


Takeaway

Alignment gaps compare countries' directed hostility vectors; profile cohesion is higher within established Western groupings.

Source: Paper alignment analysis.

Network structure separates within- and between-bloc hostility

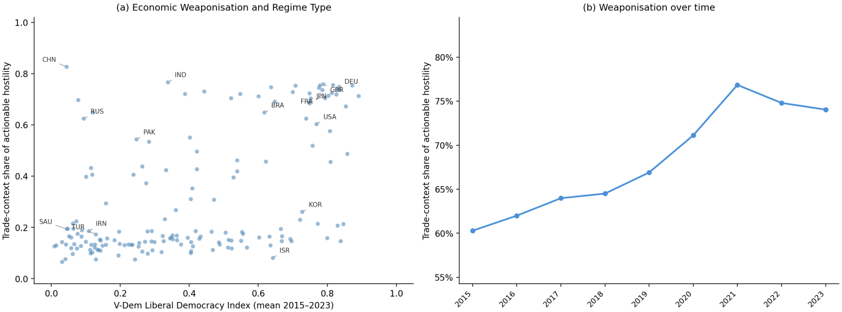


Takeaway

The same directed panel supports bloc-comparison and hub measures without collapsing military and economic antagonism into one category.

Source: Paper bloc-formation and network analysis.

Economic-policy weaponisation has risen over time



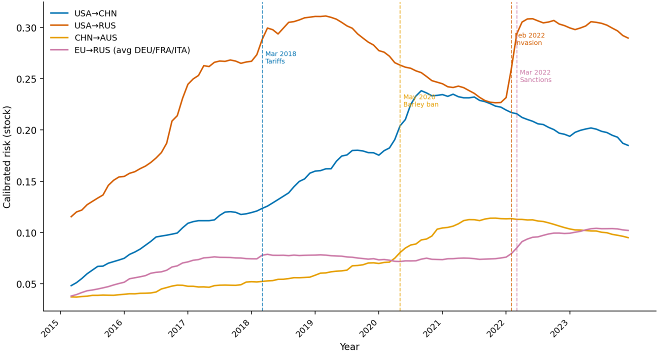
Weaponisation index: $W_i = \Sigma_j L_{ij}^{trade} / \Sigma_j (L_{ij}^{kinetic} + L_{ij}^{posture} + L_{ij}^{trade})$ = trade-context share of actionable hostility (baseline diplomacy excluded from the denominator). Countries with < 100 outgoing events excluded. Panel (b) uses 2015 bilateral trade weights.

Takeaway

Cross-country variation is associated with political institutions, while the time series shows a broad rise in trade-weighted economic confrontation.

Source: Paper weaponisation figure; V-Dem liberal-democracy index and fixed trade weights.

Formal sanctions often follow a pre-existing deterioration

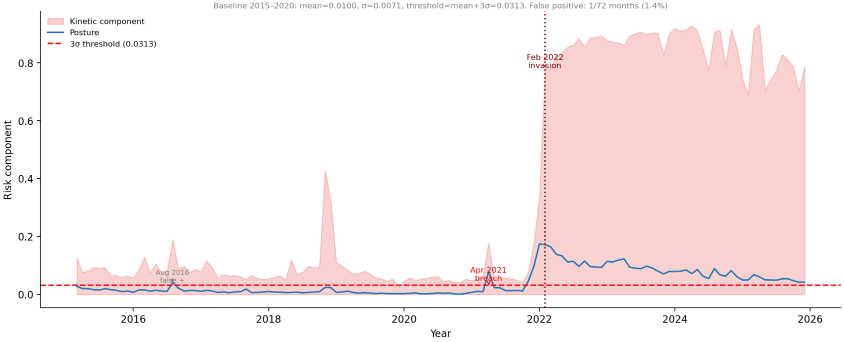


Takeaway

Persistent bilateral hostility generally begins rising before sanctions onset; formal measures often amplify rather than initiate the rupture.

Source: Paper sanctions-onset figure; persistent stock with $\lambda = .95$.

Posture is an illustrative in-sample warning signal—not a forecast



June 2025 is omitted: GDELT recorded no events between 15 June and 1 July 2025.

The Russia→Ukraine posture layer crosses a three-standard-deviation threshold before the February 2022 invasion.

This is a retrospective case illustration; forecast validation across episodes remains future work.

Source: Paper early-warning illustration; threshold based on 2015–2020 posture.

Calibration strengthens economically interpretable gravity effects

	Calibrated			Raw GDELT		
Component	Cum. $\widehat{\beta}$	SD	Std. effect	Cum. $\widehat{\beta}$	SD	Std. effect
Kinetic	-4.19^{***}	.007	−3.0%	-0.48^{***}	.040	−1.9%
Posture	−4.08	.001	–	-1.58^{***}	.005	−0.8%
Trade	-1.56^{***}	.011	−1.7%	-0.96^{***}	.011	−1.1%
Baseline / pol.-dip.	−0.02	.014	–	-0.27^{**}	.043	−1.2%
Kinetic + trade			−4.7%			−3.0%

Same gravity design

PPML with pair×calendar-month, exporter×year-month, and importer×year-month fixed effects.

Interpretation

Calibration removes a spurious baseline channel and increases the standardised combined kinetic-plus-trade effect.

Source: Paper raw-versus-calibrated gravity table; seven-month cumulative effects.

The preferred PPML result is stable across lag horizons and route controls

	Kinetic+trade	Preferred	+Route	+Months 8–10
Kinetic	-4.666^{***}	-4.544^{***}	-4.535^{***}	-5.428^{***}
Trade_{ij}	-1.547^{***}	-1.400^{***}	-1.399^{***}	-1.407^{***}
Trade_{ji}	–	-0.527^{***}	-0.529^{***}	-0.536^{***}
Route risk	–	–	-0.011	–
Total trade-context	–	-1.927^{***}	–	-1.943^{***}
Lag groups	3	3	3	4
Horizon	7 mo.	7 mo.	7 mo.	10 mo.
Observations	1,525,222	1,525,222	1,525,222	1,434,020

Takeaway

Direct and reverse-direction trade hostility jointly imply a seven-month cumulative coefficient of -1.927; maritime route risk adds little conditional variation.

Source: Paper Table D; clustered standard errors by directed pair; $^{***}p < .01$.

Kinetic and direct trade hostility survive demanding persistence checks

	Baseline	+Pair trend	+Lagged trade	Lagged trade+leads
Kinetic	-4.544^{***}	-3.066^{***}	-5.460^{***}	-4.469^{***}
Trade-context$_{ij}$	-1.400^{***}	-0.530^{**}	-1.502^{***}	-1.400^{***}
Retaliation$_{ji}$	-0.527^{***}	$+0.158$	-0.541^{***}	-0.505^{***}
Kinetic leads	–	–	–	-0.570^{***}
Trade-context leads	–	–	–	-0.013
Observations	1,525,222	1,525,222	1,463,618	1,361,715

What survives

Kinetic and direct trade-context hostility retain their sign and significance with pair trends and lagged trade.

What weakens

The reverse-direction retaliation coefficient is not robust to pair-specific trends.

Source: Paper identification table; cumulative seven-month effects.

Past trade does not jointly predict future conflict

Past trade → future conflict

Channel	Cum. response	p_{sum}	p_{joint}
Kinetic	-0.005	.22	.45
Trade-context	$+0.018$	.06	.25

The trade-context summed response is marginal at 10%, but the lag coefficients are not jointly significant.

Kinetic anticipation

	Rest of world	RUS–UKR
Long-run effect	-4.132^{***}	-3.646^{**}
Cum. lead	-0.807^{***}	-0.355^{***}

The kinetic lead is smaller for Russia–Ukraine, consistent with a more sudden invasion after a visible build-up.

Takeaway

The tests do not establish perfect exogeneity, but they provide no joint evidence that weak trade mechanically generates the measured escalation.

Source: Paper reverse-causality and kinetic-lead heterogeneity tables.

Core coefficients survive sanctions controls, persistence, and zero trade

	Preferred	+Sanc.$_{ij}$	+Sanc.$_{ij,ji}$	Stock95	$\times$Initial	Zero-fill
Kinetic	-4.544^{***}	-4.536^{***}	-4.556^{***}	–	-6.064^{***}	-4.852^{***}
Trade$_{ij}$	-1.400^{***}	-1.305^{***}	-1.340^{***}	–	-0.881	-1.458^{***}
Trade$_{ji}$	-0.527^{***}	-0.540^{***}	-0.403^{**}	–	-0.409	-0.554^{***}
Aggregate stock95	–	–	–	-3.110^{***}	–	–
Observations	1,525,222	1,525,222	1,525,222	1,532,988	1,525,222	2,698,701

Direct sanctions dummies are small and insignificant once the decomposed hostility layers enter.

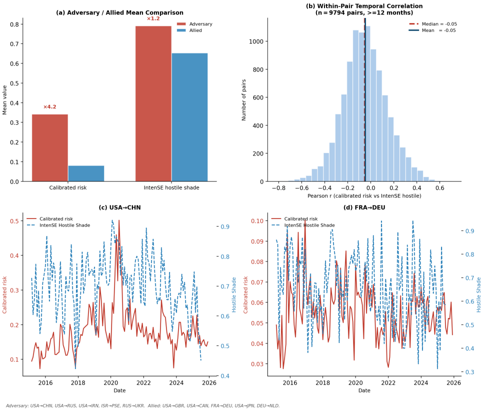
Expanding active pairs to all months and zero-filling missing trade strengthens the preferred coefficients.

Takeaway

Conditioning on positive observed trade is conservative in this sample.

Source: Paper robustness table; cumulative seven-month effects.

The calibrated measure retains explanatory power alongside IntenSE



Cross-section

Adversary/allied mean ratio: 4.2× for calibrated risk, versus 1.2× for IntenSE.

Within-pair time series

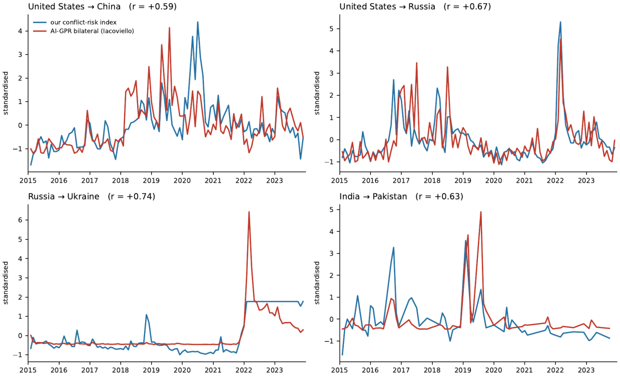
Median temporal correlation is near zero: the measures capture distinct variation.

Joint gravity model

Conflict layers remain significant; IntenSE terms are jointly insignificant ($p = .380$).

Source: Paper Table H and IntenSE comparison figure; Chevalier et al. (2026).

An independent AI-based measure tracks the same bilateral episodes



Takeaway

Co-movement with AI-GPR across selected pairs is external validation of timing; it does not imply that the two measures are interchangeable.

Source: Paper AI-GPR validation figure; independently constructed benchmark.

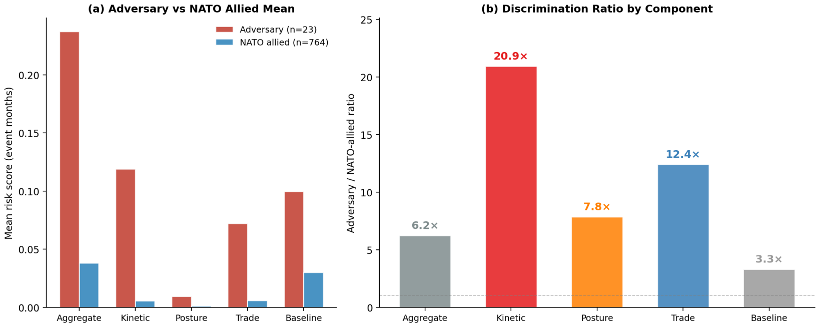
Political-relations scores corroborate most China-centred profiles

Takeaway

Ten of twelve pairs have the expected positive correlation with $-$PRI; China–Russia and China–Pakistan are the two exceptions.

Source: Paper PRI comparison figure; both series z-scored within pair.

Domain discrimination is robust to a NATO-based classification



Adversary: 23 pairs with mean riskg_cal > 0.133 (NATO-max threshold, excl. Turkey). Allied: 764 intra-NATO pairs (excl. Turkey). Event months only (component > 0).

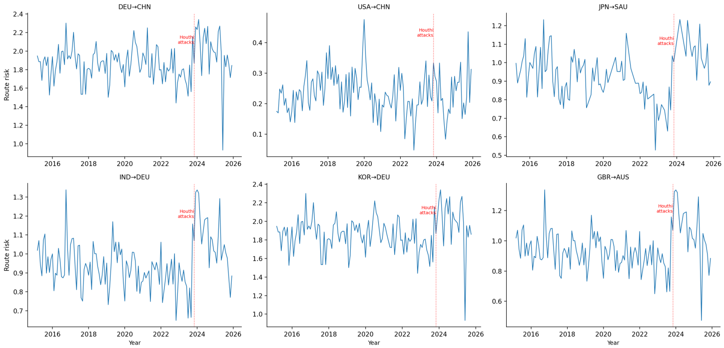
6.2×
aggregate adversary/allied ratio

20.9×
kinetic adversary/allied ratio

12.4×
trade adversary/allied ratio

Source: Paper NATO-based domain-discrimination appendix.

Maritime route risk is descriptive but weakly identified in gravity



Construction

Route risk aggregates bilateral conflict around chokepoints such as Suez, Hormuz, and Malacca along exporter-to-importer routes.

-0.011

preferred-gravity route-risk coefficient; statistically insignificant

Takeaway

Common route exposure leaves limited differential variation after the full set of structural-gravity fixed effects.

Source: Paper route-risk construction and Table D, column 3.

A few major dyads account for most net bilateral exposure

Directed pair	2015 trade (USD bn)	Exposure (USD bn)	Main channel
CHN→USA	503	136.6	Direct trade + retaliation
USA→CHN	116	32.7	Direct trade + retaliation
USA→MEX	212	24.0	Direct trade
MEX→USA	303	16.7	Retaliation
RUS→UKR	7	6.3	Kinetic
CAN→USA	321	6.2	Kinetic
KOR→CHN	137	5.1	Direct trade
CHN→IND	61	4.4	Kinetic

US$169bn

two directions of the US–China relationship

77%

share of global exposure in the top 15 directed pairs

Russia–Ukraine is the exception: falling trade-context hostility partly offsets the dominant kinetic collapse.

Source: Paper Table F; 2015 trade weights and 2015–2023 changes in hostility.

The US$334 billion total is a net trade-flow exposure

US$10bn
kinetic contribution: 3% of the total

US$228bn
direct trade-context: 68%

US$96bn
reverse-direction retaliation: 29%

Pair-level accounting

$$Exposure_{ij} = x_{ij,2015}\left(1 - e^{\mathcal{L}_{ij}}\right),$$

where $\mathcal{L}_{ij}$ combines the estimated coefficients with the 2015–2023 change in each layer.

Netting matters

The headline US$334bn equals US$414bn of predicted pair-level losses offset by US$81bn of gains where measured risk fell.

Takeaway

This is neither gross trade "destroyed" nor a welfare estimate; it is a model-based net exposure of bilateral flows.

Source: Paper equations (10)–(11), Table F, and trade-at-risk discussion.

Supplier concentration partitions exposure into a dependent core and a divertible share

$$s_{ijp} = \frac{x_{ijp}}{M_{jp}}, \qquad w_{ij} = \sum_p \frac{x_{ijp}}{x_{ij}} s_{ijp}.$$

$$TaR_{ij} = \underbrace{w_{ij} TaR_{ij}}_{\text{dependent / hard to replace}} + \underbrace{(1 - w_{ij}) TaR_{ij}}_{\text{divertible / rerouted}}.$$

s_{ijp} is exporter i's share of importer j's purchases of product p; w_{ij} is its trade-weighted average across HS6 products.

US$149bn
dependent core with no ready supplier substitute

55%
share of US$334bn allocated to alternative suppliers

A stricter majority-supplier rule gives a similar US$141bn hard-to-replace core.

Takeaway

The 55% is static accounting with fixed supplier shares—not observed rerouting, a forecast, or a welfare effect.

Source: Paper trade-diversion section; 2015 BACI HS6 supplier shares.

After rerouting, world net value-added exposure is US$143 billion

Economy	Gross VA at risk	Diversion gain	Net
	billions of US dollars		
China	−139.0	+12.5	−126.5
United States	−61.7	+14.7	−47.0
Russia	−15.5	+2.6	−12.9
Germany	−19.7	+12.8	−6.9
France	+0.1	+6.5	+6.6
Japan	−8.2	+12.1	+3.9
Italy	−2.6	+5.4	+2.7
World	**−323**	**+179**	**−143**

US$143bn

world net value-added exposure after supplier diversion

US$35bn

indirect loss transmitted through third countries' disrupted exports

France, Japan, and Italy gain in this accounting as alternative suppliers, but prices and capacity constraints are held fixed.

Source: Paper value-added propagation table; OECD ICIO.

The architecture is updatable; the current estimates have clear limits

Current limitations

- Media reports omit unreported events; calibration addresses coding disagreement, not source invisibility.
- Sparse-pair tails remain noisy even after normalising by event salience.
- GSDB and GTA context is frozen after 2023, so the full decomposition and gravity sample end there.
- Exposure, diversion, and value-added propagation are partial-equilibrium accounting exercises, not welfare estimates.

Promising extensions

- Recover event context from source text with multilingual language models.
- Refresh sanctions and border-measure context in the monthly pipeline.
- Estimate product- and sector-specific responses for strategic goods and critical inputs.
- Model prices, capacity constraints, domestic substitution, and general-equilibrium rerouting.

Takeaway

Best use today: a transparent monthly tracker and empirical input—not an autonomous early-warning or welfare system.

Selected references and data documentation

Core paper and methods

Aizenman, J., Desbordes, R., and Saadaoui, J. (2026). "Bilateral Conflict Risk and Trade: Military Wars, Trade Wars, and Diplomatic Noise." *NBER Working Paper* 35077. doi:10.3386/w35077.

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Complete definitions, database versions, estimation tables, and the full bibliography are documented in NBER Working Paper 35077.