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The Interstate Conflictual Relations Index

Rodolphe Desbordes
Frédéric Munier

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GEOPOLITICAL TENSIONS

Geopolitical tensions between countries may escalate to:

- Trade tariffs/restrictions/sanctions.

- Financial restrictions/sanctions.

- Armed conflicts.

These tensions obviously affect globalisation, in all its dimensions. Being able to follow these tensions in real time, for any pair of countries, would then be useful BUT:

- How do we track *the interstate conflictual relations* in an easy and synthetic manner?

- Can we distinguish between `verbal' tensions and `material' tensions*?

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PHASES OF INTERSTATE RELATIONS:
The conflict life cycle
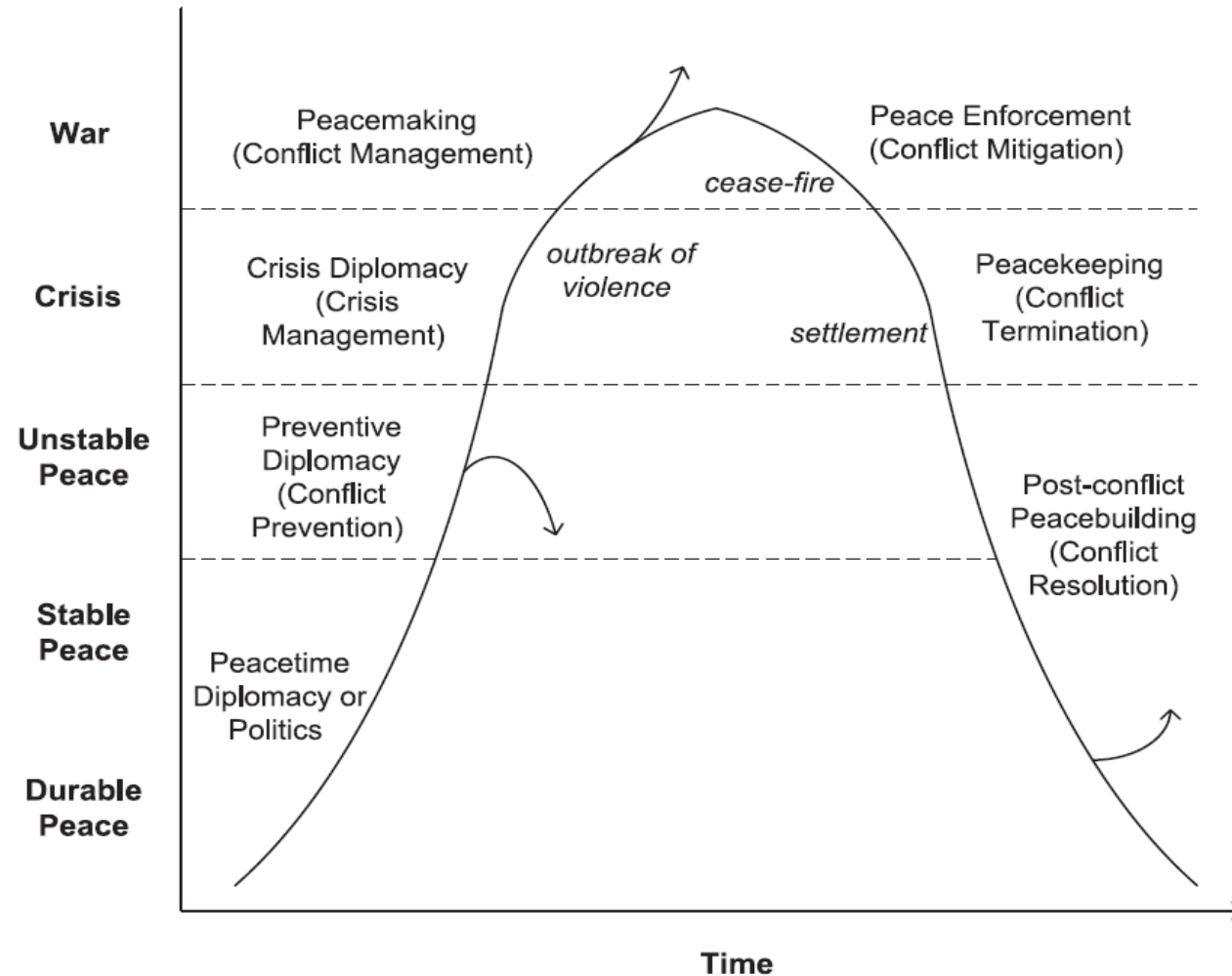
Source: Anderton & Carter (2011)

ISCR AS A SEQUENCE OF EVENTS

Each phase of the conflict life cycle is associated with a sequence of observable events reflecting the evolution of interstate relations. Ex of latent conflict:

1. Threatening language.

2. Imposing sanctions.

3. Making an apology.

Interstate conflictual relations (ISCR) is a stock variable, which is the cumulative outcome of past interstate conflictual events (ISCE):

$$ISCR_t = \sum \alpha_i ISCE_{it} + (1 - \delta)ISCR_{t-1},$$ where α_i is the impact of inter-state event i on interstate relations and δ is the rate at which ISCR decay without any additional conflictual events.

WHAT IS AN EVENT?

Gerner et al. (1994) defines an event as

- *an interaction,*

- *associated with a <u>specific point in time,</u>*

- *that can be described in a <u>natural language sentence,</u>*

- *that has as its subject and object an element of a <u>set of actors,</u>*

- *and as its verb an element of a <u>set of actions</u>, the contents of which are <u>transitive verbs</u>* (p.95).

In other words, **who** (source actor) **did what to** (action on a direct object) **whom** (target actor) can be identified **in media reports** (natural language sentence) at a given **time.**
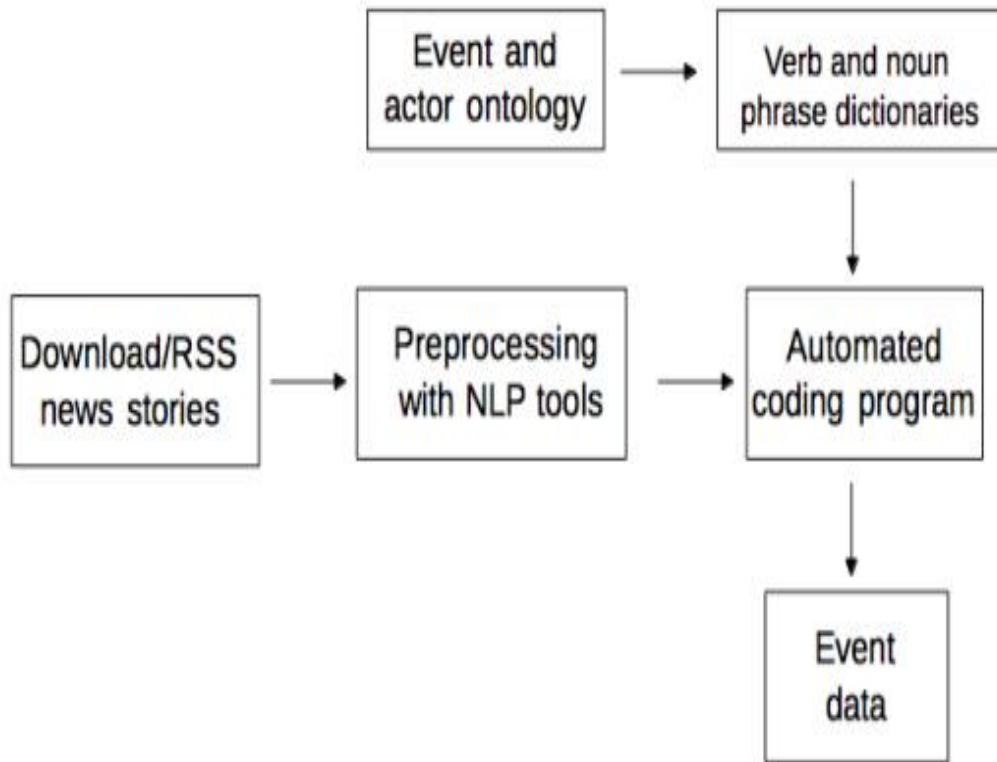
HOW TO CODE THESE EVENTS? AUTOMATIC CODING

Table 1 Tradeoffs between human and automated coding

Attributes of human coding	Attributes of machine coding
•Best for small data sets	•Best for large data sets
•Slow	•Fast
•Data coded one time at a single site	• Data may be coded over a period of time or across institutions
•Non-replicable	•Perfect replicability
•No relevant dictionaries	•Existing dictionaries can be modified
•Native speakers can code complex sentence structures	•Best coding simple sentence structures
•Native speakers can interpret metaphorical, idiomatic, or time-dependent text	•Best at coding literal, present-tense text
•Expensive to pay coders, trainers and supervisors	•Near zero costs after initial development
•Errors often subjectively correct	•Errors often objectively incorrect

Schrodt and Yonamine (2012)

EXAMPLE

If the lead of a newswire is:

> *"President Reagan has threatened further action against the Soviet Union in an international television program beamed by satellite to more than 50 countries on 10 November 1987."*

*The **source** actor is the president of the United States (USAGOV), the **target** actor is the Soviet Union (USR), and the **action** is "to threaten" (code 130 in the <u>CAMEO ontology</u>).*

The output of the automatic coding is then 19871110 (date) USA (source country) GOV (primary actor) USR (target country) ... (likely no identified primary actor) 130 (CAMEO code).

CAMEO EVENT CODING

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EXAMPLES

CAMEO	1312
Name	**Threaten to boycott, embargo, or sanction**
Description	Threaten to restrict normal economic interactions by imposing sanctions, boycotts, or embargoes.
Usage Notes	Use this code for the imposition of restrictions or restraints on economic exchange, typically on commerce and similar transactions as a way to protest or punish the target.
Example	A French minister threatened today to impose import restrictions against West German goods today as the leaders of the two countries sought to ease tensions in Franco-German relations.

CAMEO	1313
Name	**Threaten to reduce or break relations**
Description	Threaten to reduce or formally sever ties.
Usage Notes	Non-force threats to declare independence, resign, withdraw diplomats, reduce or break diplomatic ties, etc. are all coded here.
Example	The Azerbaijani parliament threatened on Monday to secede from the Soviet Union unless the Kremlin withdrew its troops from the republic.
Example	Pakistan today threatened to break off diplomatic relations with Zaire and Costa Rica over their ties with Israel on the eve of a visit here by Palestine Liberation Organization (PLO) Chairman Yasser Arafat.
Example Note	Because of the compound target, two events are coded in this example.
Example	Palestinian leaders said they would boycott all official contact with the United States.

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AGGREGATION RULES

1. **ACTORS**: one of them must be a foreign government.

2. **ACTIONS:** purely hostile.

- *Verbal*: a spoken criticism, threat, or accusation often related to past or future potential acts of material conflict (categories 10-14: demand; disapprove; reject; threaten; protest).
- Material: a physical act of a conflictual nature (categories 15-20: exhibit force posture; reduce relations; coerce; assault; fight; use unconventional mass violence).

3. **TIME**: monthly basis, to reduce noise and capture the likely "diplomatic sequences" involving back-and-forth bilateral actions.

It is crucial to use the **average number of counts**, rather than the sum of counts over a given period, to control for variation in media interest and event sources.

RELIABILITY

Automatic event coding based on media reports is a noisy process: potential mis-coding (events that never happened), duplicates, false negatives (events happened but were not reported. The growing presence of (ironically often automated) "fake news" is also a concern.

All these issues do not invalidate the use of event data if the objective is clearly defined. **Quantitative coding helps to identify, without any specific international knowledge, potential interstate conflictual relations which then need to be subject to a thorough qualitative investigation.**

We are solely interested in state actors whose conflictual actions are likely to be expressed in a clear diplomatic language or through symbolic events and to be widely reported in the international press.

(SLOW) HUMAN CODERS ALSO MAKE MISTAKES

An Automated Information Extraction Tool for International Conflict Data with Performance as Good as Human Coders: A Rare Events Evaluation Design

Gary King and Will Lowe

WHY NOT USE A MORE GRANULAR SCALE?

Event category	Goldstein
Request action; call for	-0,1
Explicit decline to comment	-0,1
Urge or suggest action or policy	-0,1
Comment on situation	-0,2
Deny an accusation	-0,9
Deny an attributed policy, action, role or position	-1,1
Grant asylum	-1,1
Make complaint (not formal)	-1,9
Cancel or postpone planned events	-2,2
Charge; criticize; blame; disapprove	-2,2
Issue formal complaint or protest	-2,4
Give warning	-3
Denounce; denigrate; abuse	-3,4
Halt negotiation	-3,8
Turn down proposal; reject protest, demand, threat	-4
Refuse; oppose; refuse to allow	-4
Reduce routine international activity; recall officials	-4,1
Detain or arrest person(s)	-4,4
Threat without specific negative sanction stated	-4,4
Issue order or command, insist, demand compliance	-4,9
Expel organization or group	-4,9
Order person or personnel out of country	-5
Nonmilitary demonstration, walk out on	-5,2
Reduce or cut off aid or assistance; act to punish/deprive	-5,6
Threat with specific negative nonmilitary sanction	-5,8
Ultimatum; threat with negative sanction and time limit	-6,9
Threat with force specified	-7
Break diplomatic relations	-7
Armed force mobilization, exercise, display; military buildup	-7,6
Noninjury destructive action	-8,3
Nonmilitary destruction/injury	-8,7
Seize position or possessions	-9,2
Military attack; clash; assault	-10

Source: Goldstein (1992)

Weights may be perceived as **arbitrary**, **anachronistic**, and lead to **dubious equivalences** between a few low-intensity events and one high-intensity event.

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THE INTERSTATE CONFLICTUAL RELATIONS INDEX

We thus calculate for each day, the fraction of events which are conflictual and then take the monthly average of these daily scores. **Our ISCR indicator (ISCRI)** for month m of year y between source country S and target country T is

$$ISCR_{STmy} = \frac{1}{D_{my}} \sum \frac{C_{STdy}}{E_{STdy}} + (1 - 0.10)ISCR_{STmy-1}$$
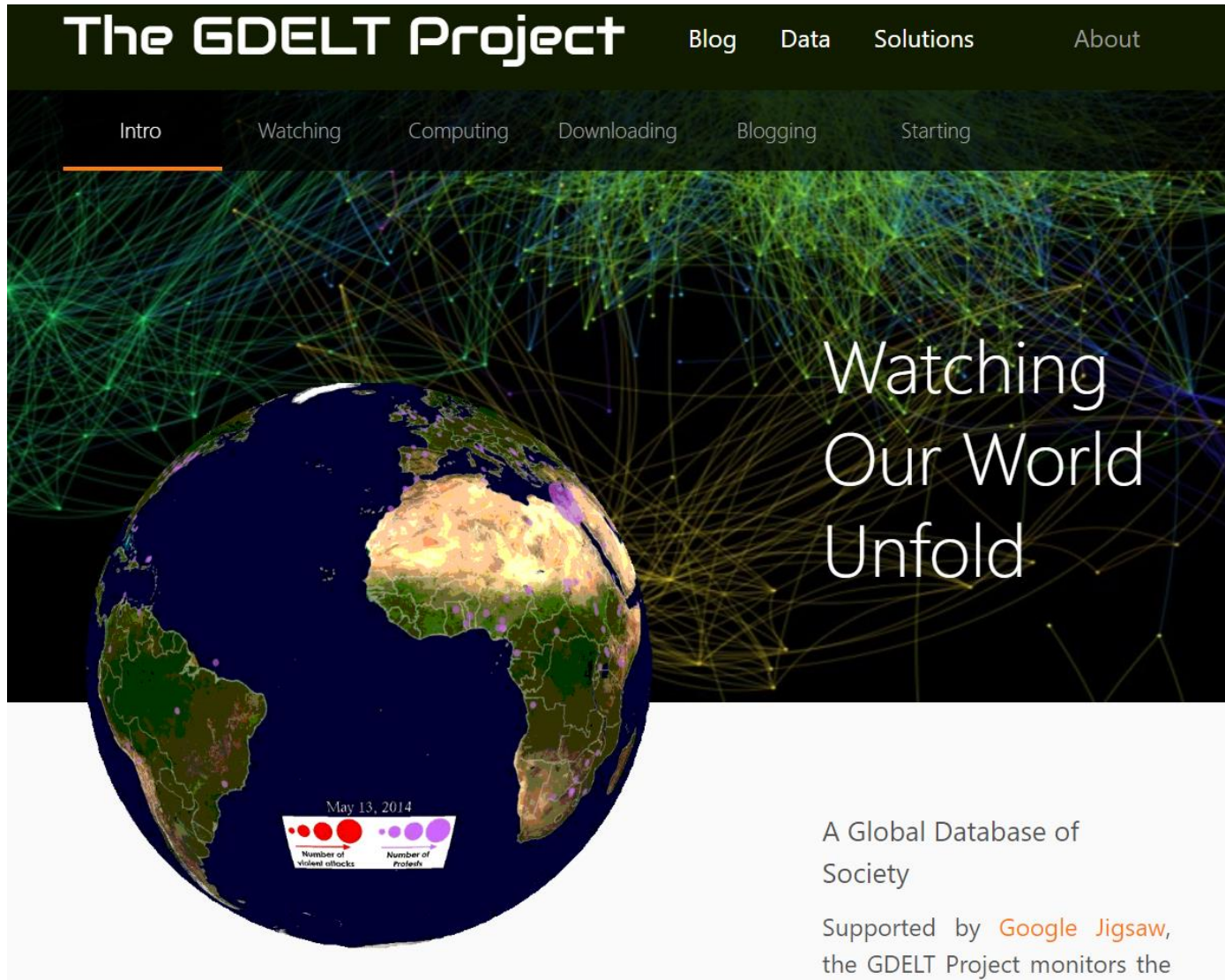
where D_{my} is the number of days in a given month, C is the daily number of verbal or material conflict interstate events, and E is the daily total number of cooperative and conflictual interstate events. If there is no conflictual event or no events on a given day, $\frac{C_{STdy}}{E_{STdy}} = 0$. This indicator is directional ($ISR_{STmy} \neq ISR_{TSmy}$).

SOURCE OF DATA
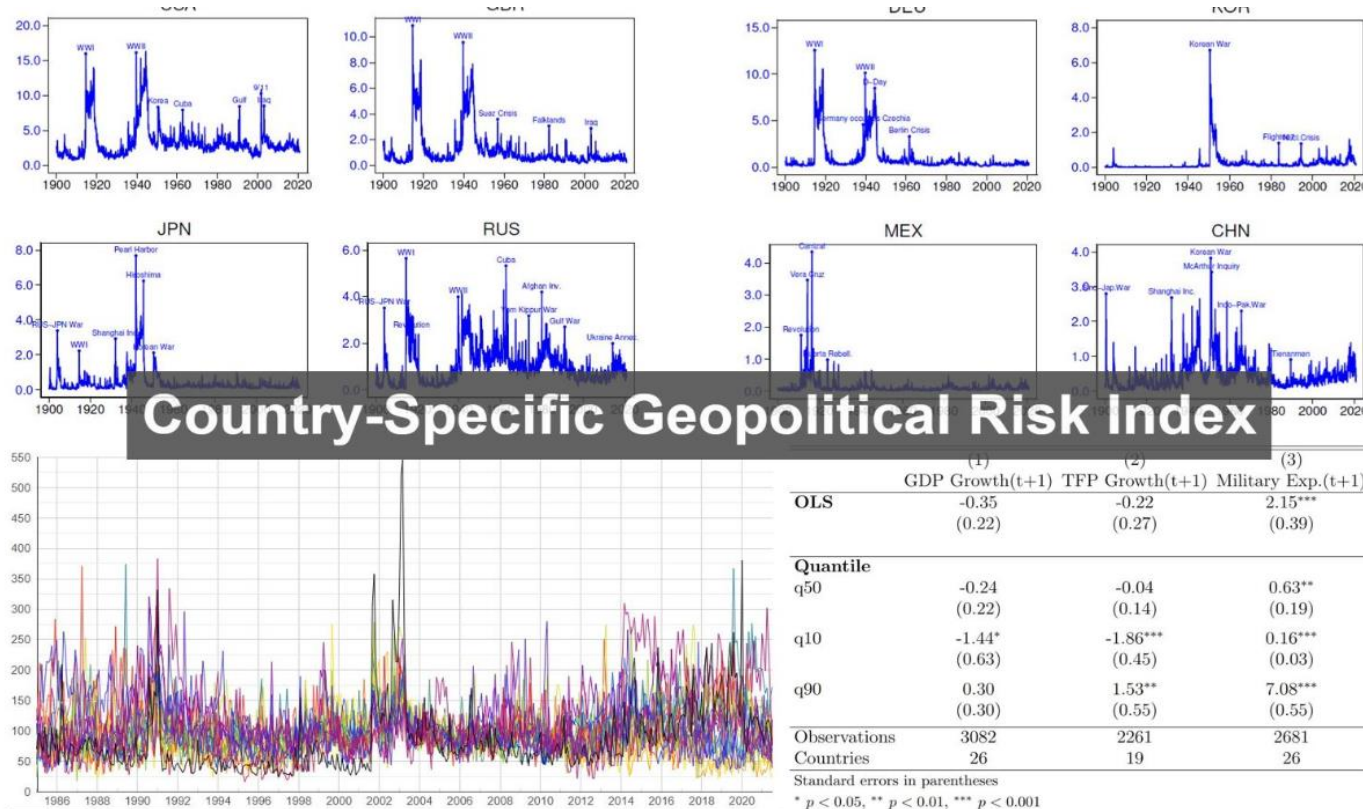

[GDELT 1.0 Events database](#)
Text sources include **sources written in English** such as *Agence France Presse, Associated Press, Xinhua, BBC, Washington Post, New York Times, Google News*. **Filtering** involves avoiding sport or financial news which contain languages similar to those used to describe violent political conflicts as well as **reducing the number of duplicate** reports of events.

>250 millions events.

VALUE ADDED vs. GRI

GRI seems to capture a mix of exposure of countries to global risks and domestic conflictual events important enough to be reported in the press. **In contrast with the GPR index, our approach relies on more sources, makes use of a validated dictionary, is country-pair specific and focuses on interstate relations.**

Overview

The country-specific GPR indexes reflect automated text-search results of the electronic archives of newspaper articles. For 44 advanced and emerging countries, Caldara and Iacoviello calculate the country-specific index by counting the monthly share of all newspaper articles from 1900 to present (or 1985 to present for the Recent Index) that both (1) meet the criterion for inclusion in the GPR index and (2) mention the name of the country or its major cities. Each index is expressed as a monthly share of newspaper articles. The resulting indices capture the U.S. perspective on risks posed by, or involving, the country in question. Visit our main GPR index page for additional details.

SOME INITIAL EXPERIENCE...

GLOBAL AND DIPLOMATIC POLITICAL RISKS AND FOREIGN DIRECT INVESTMENT

RODOLPHE DESBORDES[*]

This paper investigates whether multinational enterprises (MNEs) take into account both global and diplomatic political risks when investing abroad. Whereas global political risk is common to all foreign investors, diplomatic political risk is dyad-specific as it is related to the overall diplomatic climate between the home and host countries. The main result of this study is that both global and diplomatic political risks matter for U.S. MNEs investing in developing countries. Their required return on investment rises when the political risk faced by all foreign investors worsens or when diplomatic tensions arise between the United States and their host countries, presumably because in both cases uncertainty about future returns increases.

Foreign direct investment and bilateral investment treaties: An international political perspective

Rodolphe Desbordes[a], Vincent Vicard[b,*]

[a] University of Strathclyde, United Kingdom
[b] University of Paris I Panthéon-Sorbonne and Banque de France, France

A R T I C L E   I N F O

A B S T R A C T

Desbordes, Rodolphe, and Vicard, Vincent—Foreign direct investment and bilateral investment treaties: An international political perspective

This paper investigates the effect of the implementation of bilateral investment treaties (BITs) on the bilateral stocks of foreign direct investment (FDI). We argue that the understanding of how BITs affect FDI requires recognizing that multinational enterprises (MNEs) are not Stateless and that their investment return may well depend on the quality of political relations between the home and host countries. Using bilateral FDI data and event data to measure political interactions between countries, we show that the effect of the entry into force of a BIT crucially depends on the quality of political relations between the signatory countries; it increases FDI more between countries with tense relationships than between friendly countries. We also find evidence that BITs and good domestic institutions are complementary. BITs should therefore be understood as a mechanism for host governments to credibly commit not to expropriate investors in the future. *Journal of Comparative Economics* 37 (3) (2009) 372–386. University of Strathclyde, United Kingdom; University of Paris I Panthéon-Sorbonne and Banque de France, France.
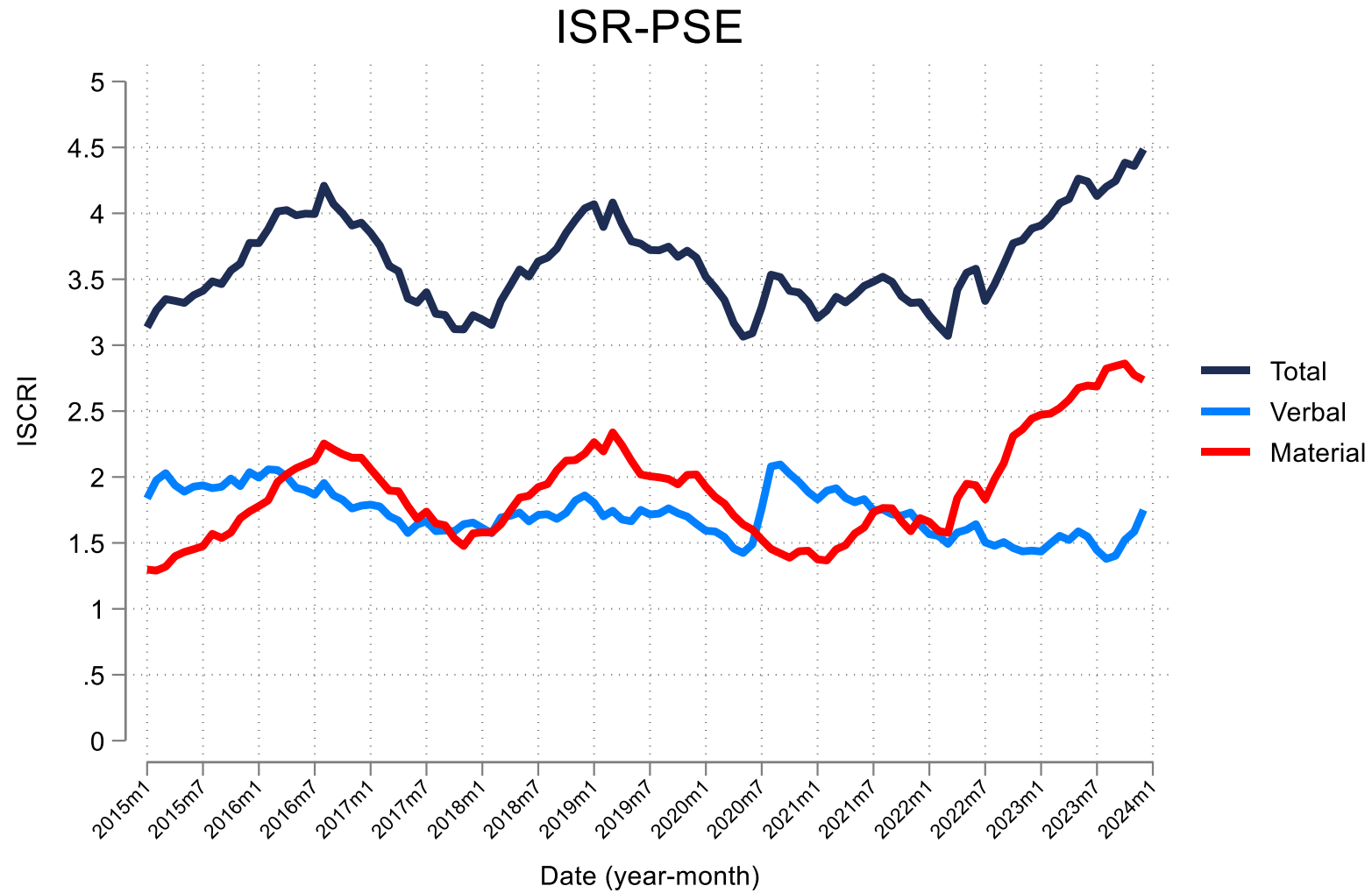
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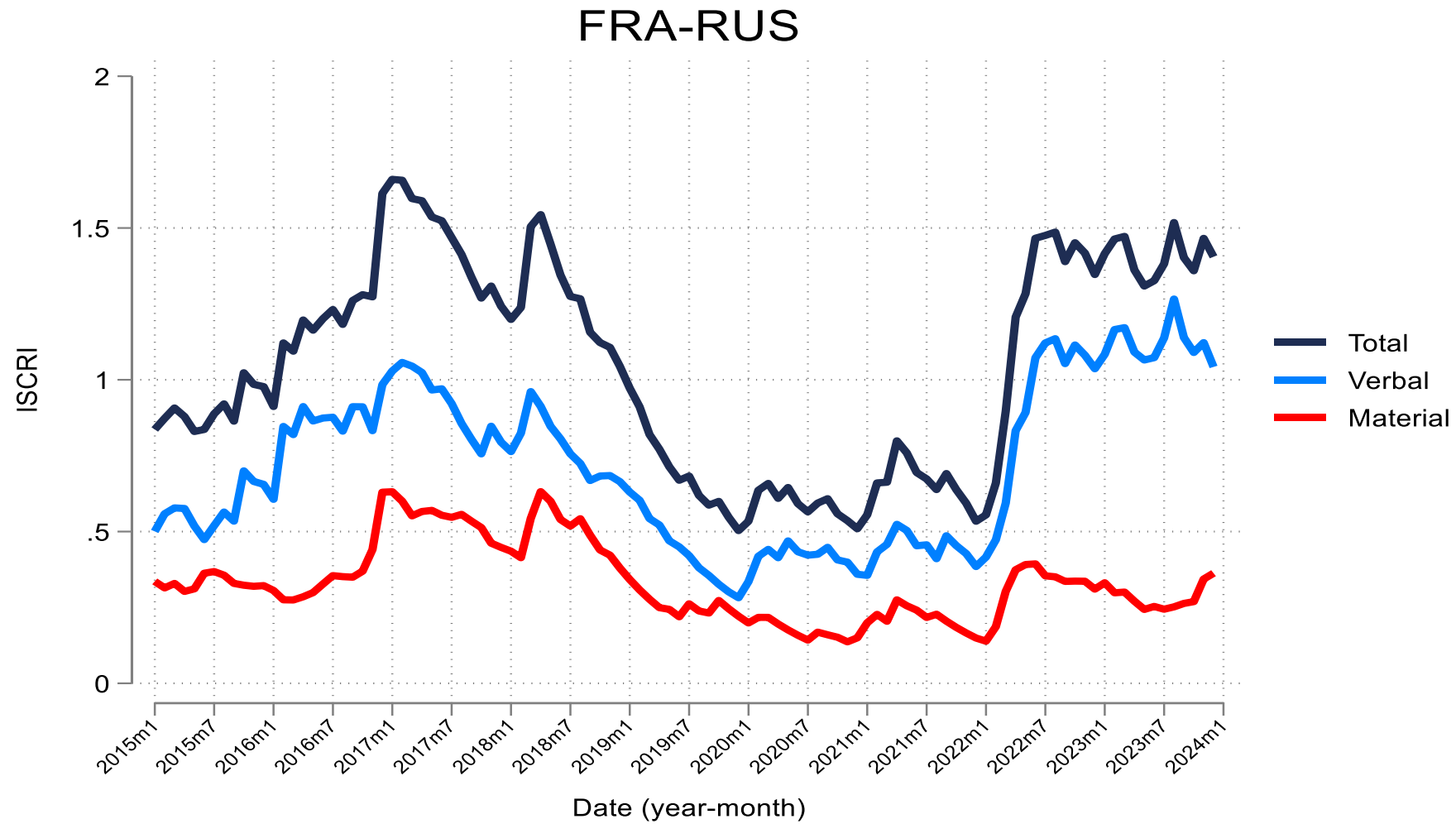# THE USA-CHINA ISCRI: `REAL-TIME' TRACKING

USA-CHN
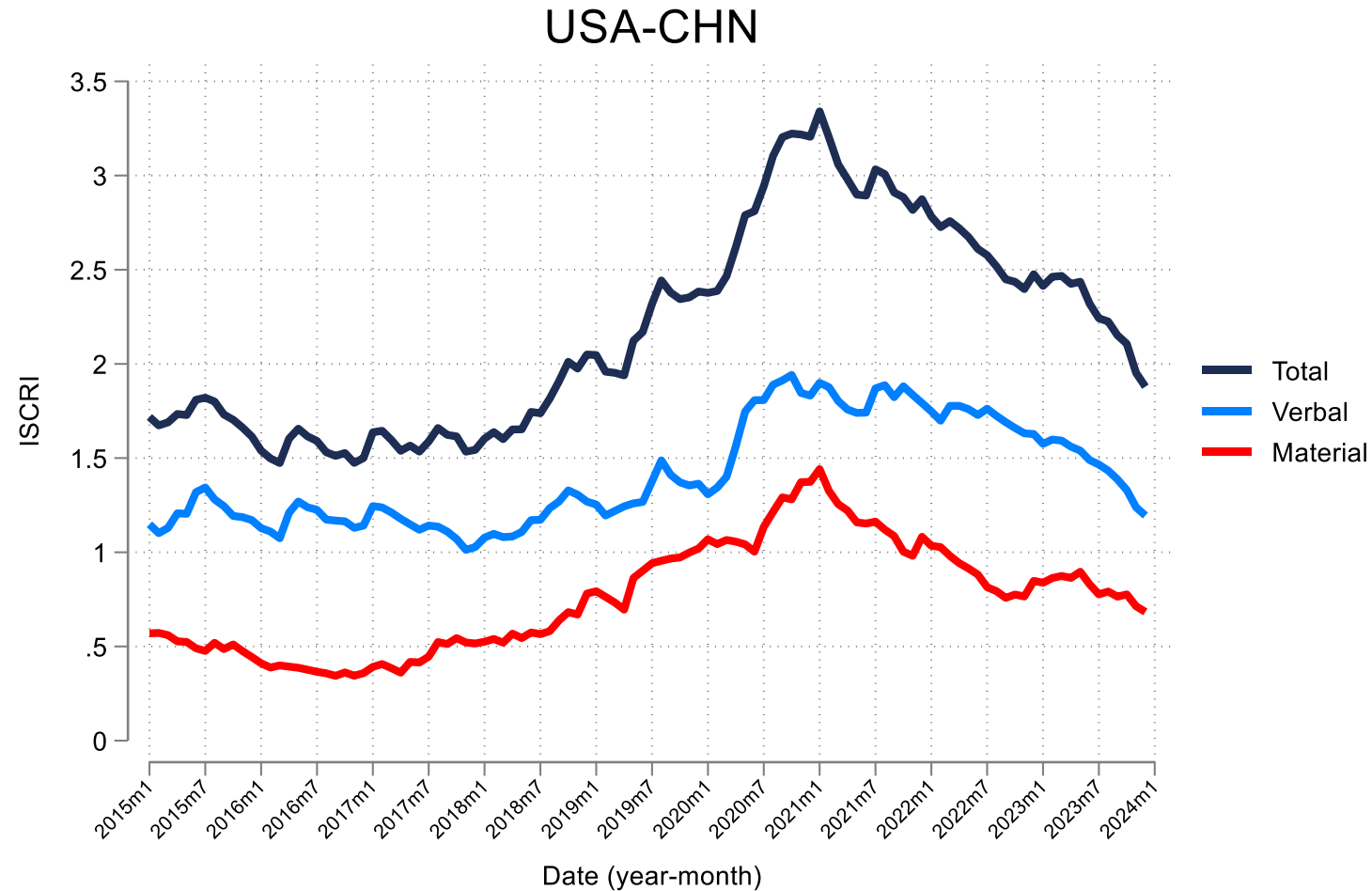
The ISCRI tracks well reported tensions.

We do not recommend using the indicator to compare ISCRI between countries as each interstate relation is context-specific, with events not having the same weight or meaning across country pairs; The real informational value of our indicator lies in its **time-series variation**.

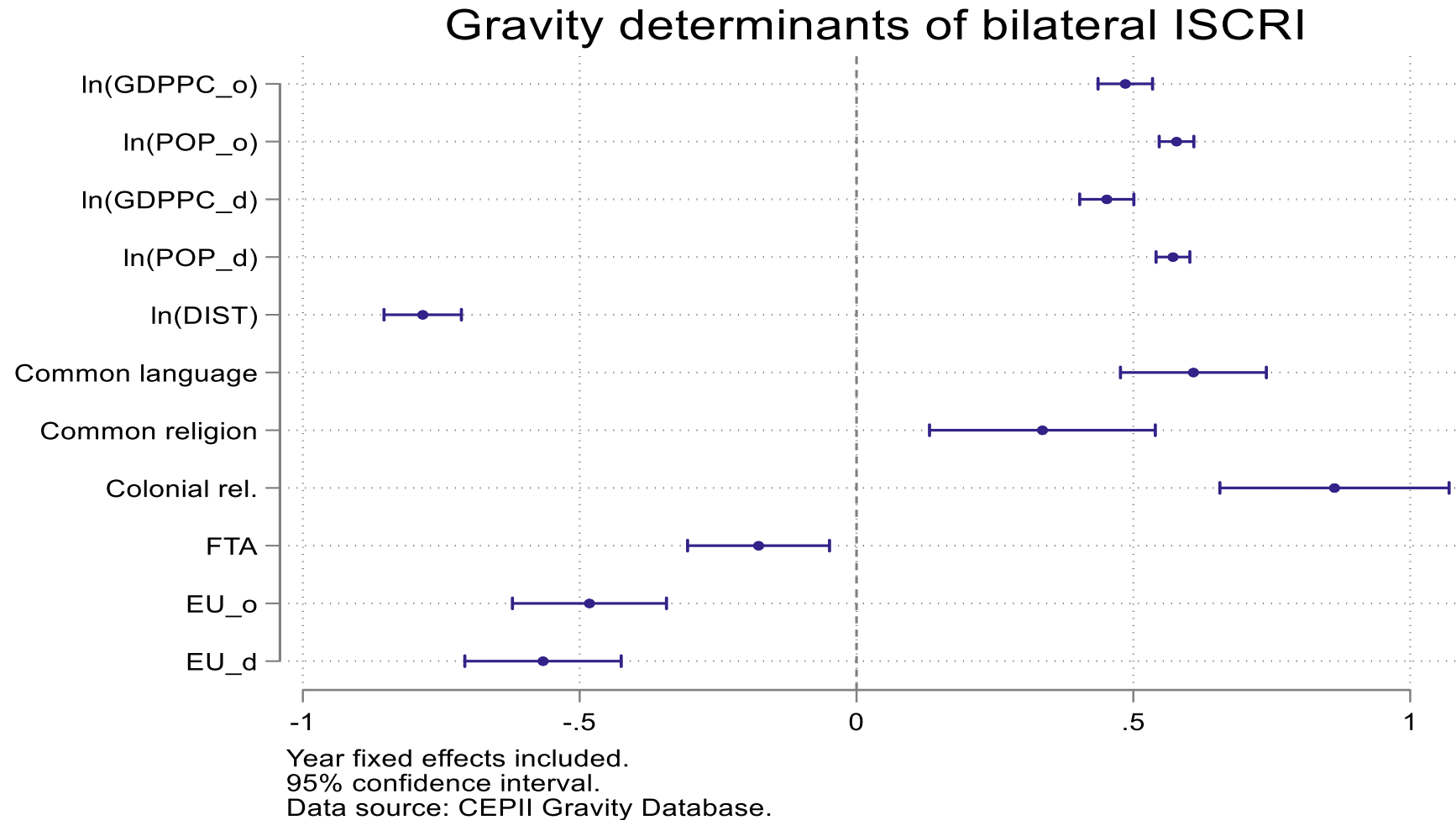# THE ISR-PSE ISCRI

ISR-PSE
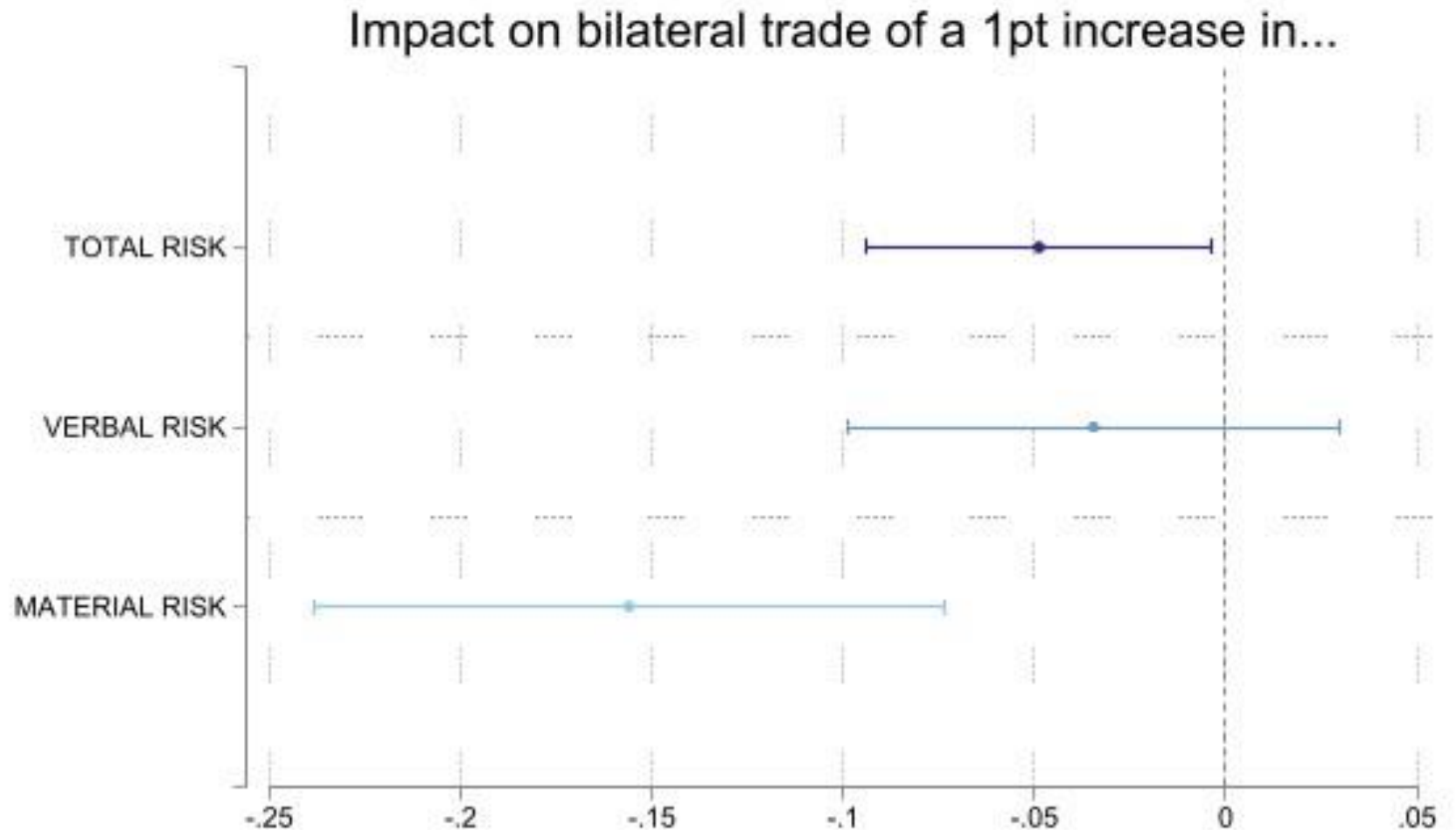
THE FRA-RUS ISCRI

FRA-RUS

DETERMIANTS of ISCRI: power, history, and norms

Gravity determinants of bilateral ISCRI

Year fixed effects included.
95% confidence interval.
Data source: CEPII Gravity Database.

DO ISCR RISKS MATTER ?
The case of bilateral trade

Impact on bilateral trade of a 1pt increase in...

Impact of total, verbal, material risks on bilateral trade in a gravity trade model.

Increase in material risk reduces bilateral trade in the next quarter!

Interpretation: a one pt increase in Material Risk (q-1) reduces bilateral trade (in q) by about 16%. 95% confidence interval. Model includes O*T D*T O*D fixed effects. One quarter lag. Data source: OECD quarterly trade data 2015Q1-2022Q3.

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PURPOSES

The ISCRI:

- can distinguish between verbal and material conflicts, follows best practices, and is available for **virtually all country-pairs in the world since 2015 on a `real-time' basis**.

- **complements** other, more aggregated indicators, such as the Geopolitical Risk Indicator.

- can be used in **a descriptive manner** to assess diplomatic tensions or as an **explanatory variable** in econometric models investigating, for instance, the determinants of globalisation (trade, capital flows, migration).

- *provides a novel early warning synthetic signal specific to each country-pair.*

HUMAN-AUGMENTED INTELLIGENCE

Because even reading this much information, much less understanding it all, is physically impossible for individual researchers, we need some summary of it. One reasonable summary would come from reading a necessarily small, selective fraction of the materials. This could provide a very deep understanding of a very small fraction of the materials. Another summary would come from analyzing a quantitative coding, which produces a more shallow understanding of a much larger fraction of materials. Optimally, and ultimately, scholars should use both approaches—to identify "important" areas (by some definition) via a quantitative approach, and then to examine the specific cases identified in more depth via a more traditional qualitative approach.

Our focus here on quantitative events data seeks to shore up this part of the optimally combined quantitative-qualitative approach. Quantitative events data collectors have made enormous progress over the years, but it is probably fair to say that the approach has not yet been able to fulfill its promise, and results from events data analyses have not always caught on in the academic community.[1] Indeed, one good measure of the problems is that qualitative scholars have not yet been very interested.

King and Lowe (2003)