

Geopolitical Shocks and Inflation

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Federal Reserve Board

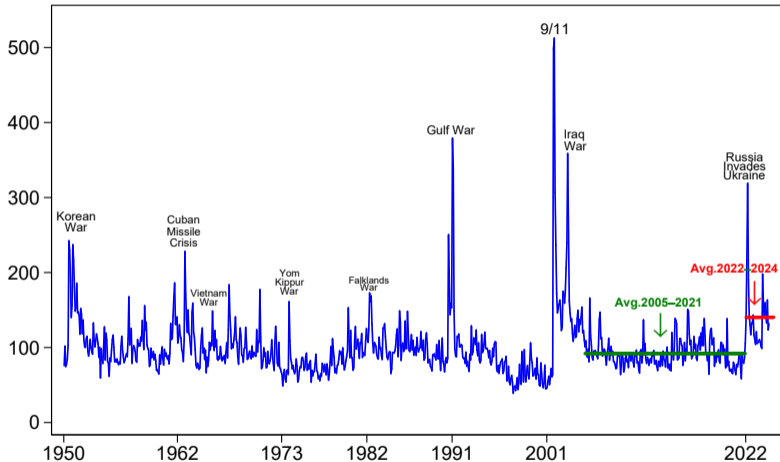
ECB Forum on Central Banking - July 2, 2024

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GEOPOLITICAL RISKS AND INFLATION

- Geopolitical risk: threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among political actors that affect peaceful course of international relations
- Will highlight link between higher geopolitical risk and inflation (π) using cross-country historical data and global time-series, monthly data.
 1. Supply and trade disruptions, commodity prices ($\pi \uparrow$)
 2. Monetary & fiscal policy responses ($\pi \uparrow$)
 3. Adverse effects on confidence and aggregate demand ($\pi \downarrow$)

GEOPOLITICAL RISKS SINCE 1950



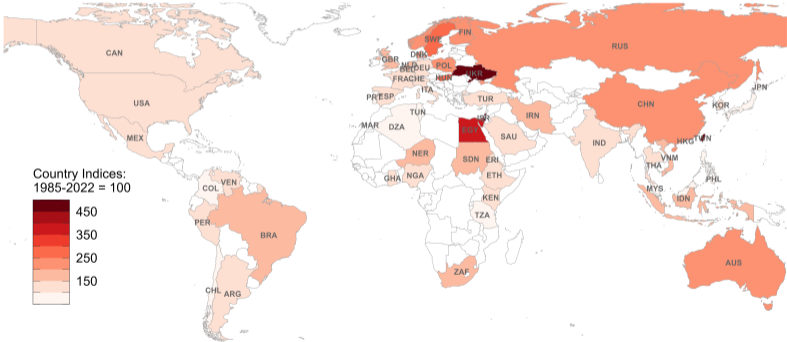
*Index: 1985-2019=100. Index shown combines data from the Historical and from the Recent Series. Source: Caldara and Iacoviello (2022)

Index of geopolitical risks constructed using mentions in international newspapers of wars and adverse geopolitical events. Last observation: June 2024. Data at <https://www.matteoiacoviello.com/gpr.htm>

THE GEOPOLITICAL RISK INDEX ACROSS COUNTRIES

Eastern Europe, Middle East sources of geopolitical risk in last year

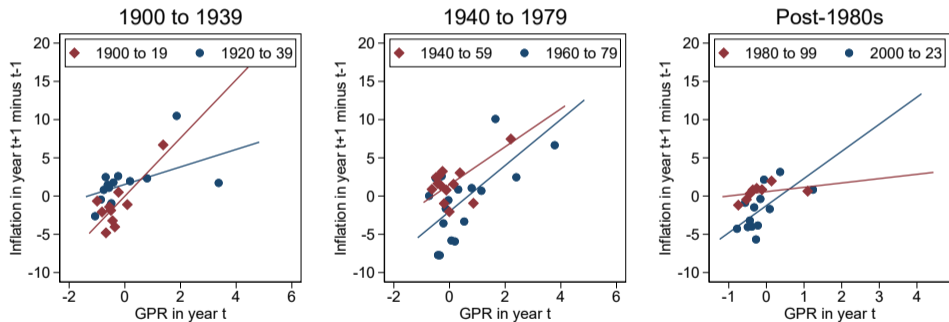
Geopolitical Risk by Country (Jun 2023 - Present)



Heat Map of Global Geopolitical Risks.

GEOPOLITICAL RISK AND INFLATION OVER TIME

Relationship between Geopolitical Risk and inflation weakened in the 1980s-1990s, but became strong again in last 20 years

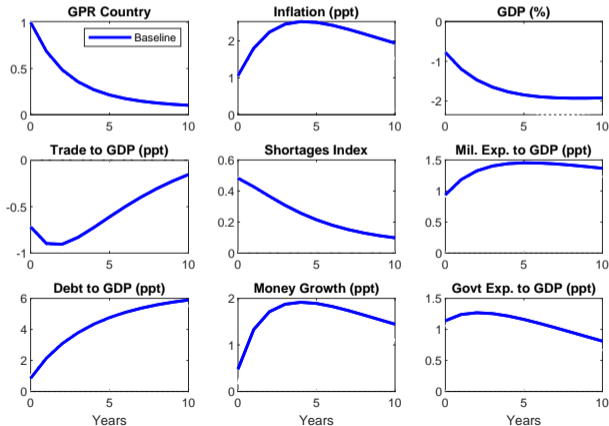


Binned scatterplots of relationship between country-specific geopolitical risk index and changes in inflation.

TRANSMISSION CHANNELS

Following increase in country-specific geopolitical risk...

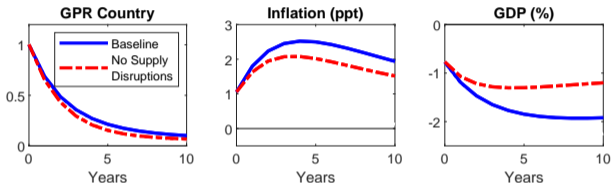
- Decline in international trade and supply disruptions (shortages)
- Public spending, public debt, money supply increase



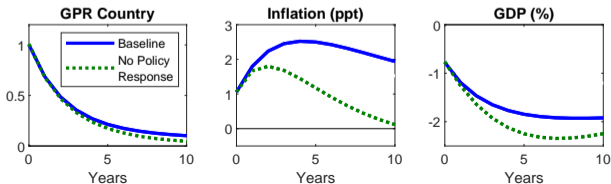
Simulated Effects over time of Increase in Geopolitical Risk in a particular country.

WHY DOES INFLATION RISE? SUPPLY AND DEMAND

- Absent supply-side effects (fix trade and shortages)
→ smaller inflation rise, smaller GDP drop

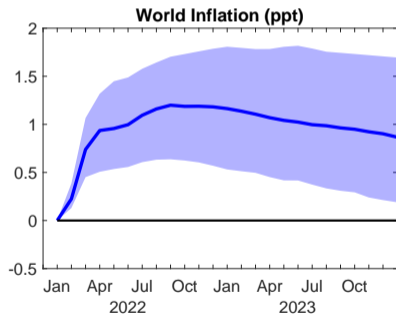
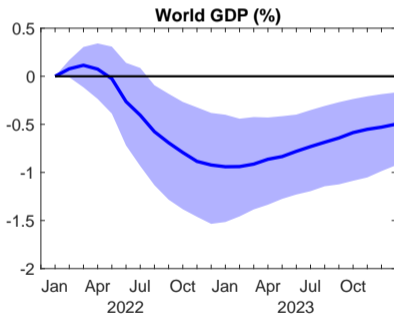


- Absent policy response (fix public spending and money supply)
→ smaller inflation rise, larger GDP drop



RUSSIAN INVASION SCENARIO: GLOBAL EFFECTS

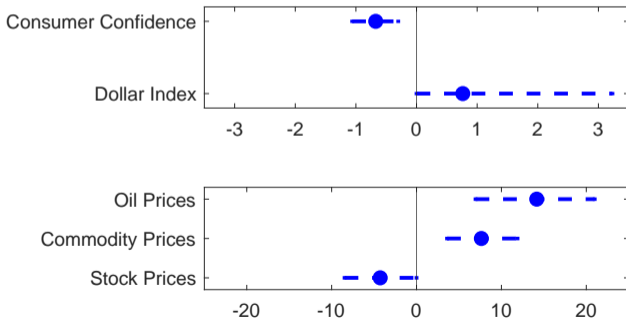
- Use monthly data on global macro and financial variables since 1970 to take closer look at recent events
- Simulate shock to global geopolitical risk of magnitude seen in 2022
- Shock estimated to have reduced global GDP and boosted global inflation



Simulated effects over time on world GDP and inflation of Russia-Ukraine shock. Shaded areas indicate 90 percent confidence intervals.

RUSSIAN INVASION SCENARIO: TRANSMISSION

- Rise in inflation accompanied by lower consumer confidence, tighter financial conditions, higher commodity prices
- Lower confidence and tighter financial conditions point to additional channel that could mitigate adverse inflationary effects.



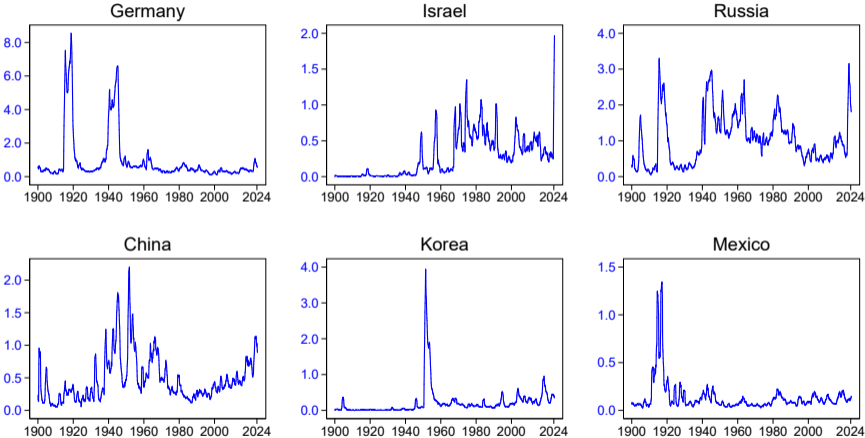
Blue dots shows the estimated peak effects of a Russia-Ukraine-sized shock (dashed lines show 90% confidence intervals). All variables expressed in percent deviation (except for confidence in standard deviation units) from baseline.

CONCLUSIONS

- Inflation rises in the aftermath of geopolitical shocks
- Magnitude of the effects reflect variety of forces
 - adverse effects on supply chains, trade, commodity markets
 - size of policy responses
 - reverberations of shock on financial markets and business and household sentiment

APPENDIX

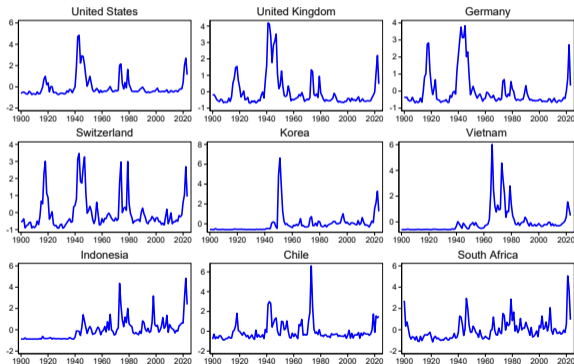
COUNTRY-SPECIFIC GEOPOLITICAL RISK INDEXES



Country-Specific Geopolitical Risk. Scale proportional to news coverage for each country

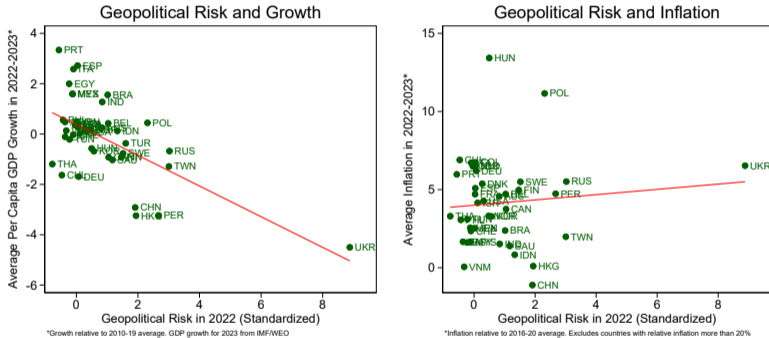
GLOBAL SHORTAGES

- Shortages News Index: newspaper articles related to supply-based scarcity, including shortages, rationing, bottlenecks.



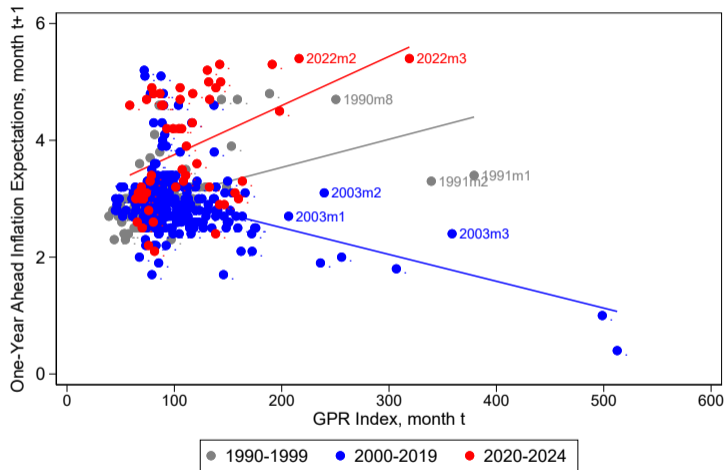
Note: Indexes are standardized to have zero mean and unit standard deviation in each country.

GEOPOLITICAL RISK AND INFLATION SINCE 2022



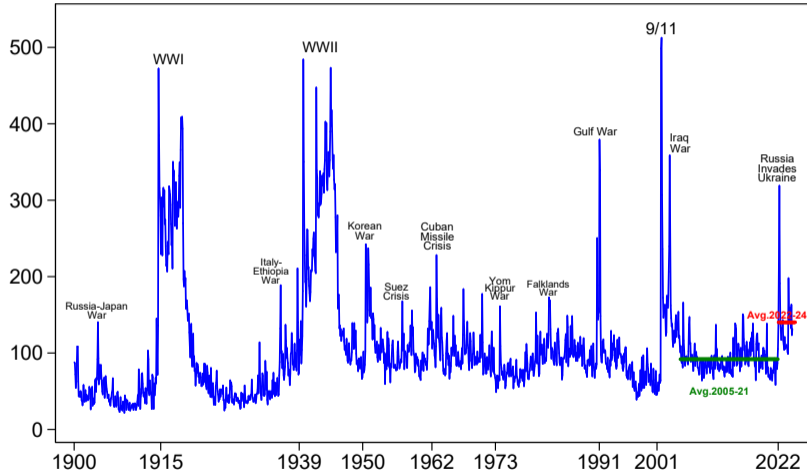
Note: Geopolitical Risks and Inflation since 2022 in a cross-section of countries

GEOPOLITICAL RISK AND INFLATION EXPECTATIONS IN THE U.S.



Note: Scatter plots of the relationship between Geopolitical Risk and University of Michigan Survey of Inflation Expectations.

GEOPOLITICAL RISKS SINCE 1900



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Last observation: May 2024. Data available at <https://www.matteoiacoviello.com/gpr.htm>