# Geopolitical Risk: When it Matters; Where it Matters. Evidence from International Portfolio Allocations

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# Motivation

The world has become a dangerous place:

- Russia invasion of Ukraine and the war in Gaza are testing the world's order
- Most recently, even NATO is showing cracks

Amid rising geopolitical tensions, economic agents may take action to mitigate their exposure to geopolitical risk:

- Firms may bring production closer to home ("nearshoring", "onshoring") and cut back their dependance on non-allied countries ("friendshoring")
- The global economy may become more fragmented

# This Paper

- We focus on the financial side of the economy
- We leverage on a granular database containing monthly data on the portfolio holdings of international bond funds
- We study the impact of geopolitical risk on the portfolios of international investors

# Research Questions

1. How do fund managers modify the portfolio weight of a country when that country becomes more exposed to geopolitical risk?
2. Do investors reduce their overall international exposure in response to geopolitical risk? Is there evidence of fragmentation?
3. How do end investors modify injections into funds in response to geopolitical risk?

# Literature Review

1. Economic consequences of geopolitical risk
   - Caldara et al. (2024); Federle (2024); Fernandez-Villaverde (2024); Fajgelbaum et al. (2020); Bianchi and Sosa-Padilla (2023); Lorenzoni and Werning (2023); Amiti et al. (2020); Alfaro and Chor (2023); Crosignani et al. (2024)
   - Niepmann and Shen (2024); Choi and Havel (2025)

2. Determinants of investment funds portfolio
   - Broner et al. (2006); Raddatz and Schmukler (2012); Camanho et al. (2022); Gelos and Wei (2005); Maggiori et al. (2020); Hassan et al. (2023); Converse and Mallucci (2023)

# Data

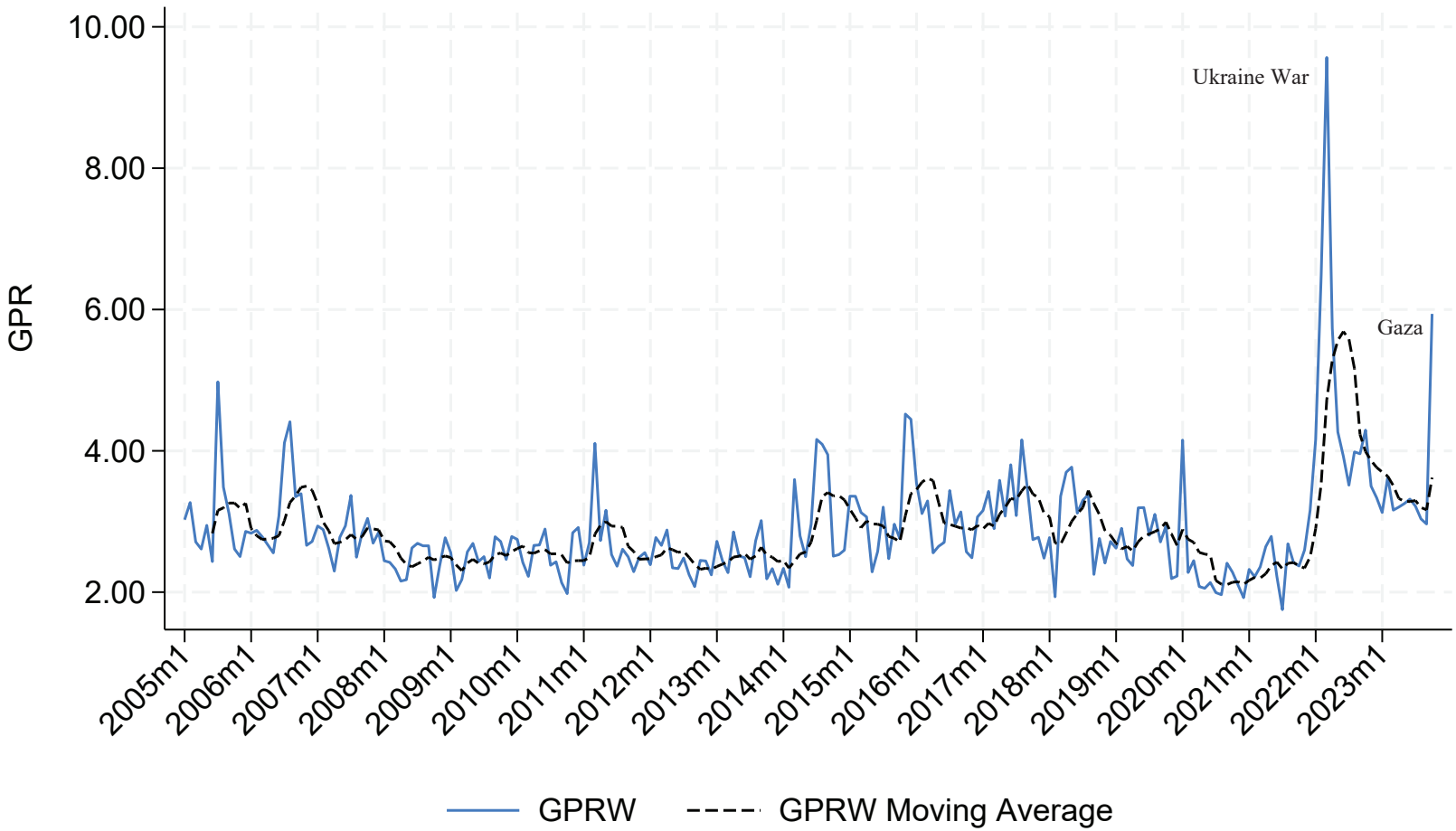
To study the impact of geopolitical risk on the portfolio of investment funds we create a database that combines:

1. Data on country-specific and worldwide geopolitical risk (from Caldara and Iacoviello 2020)

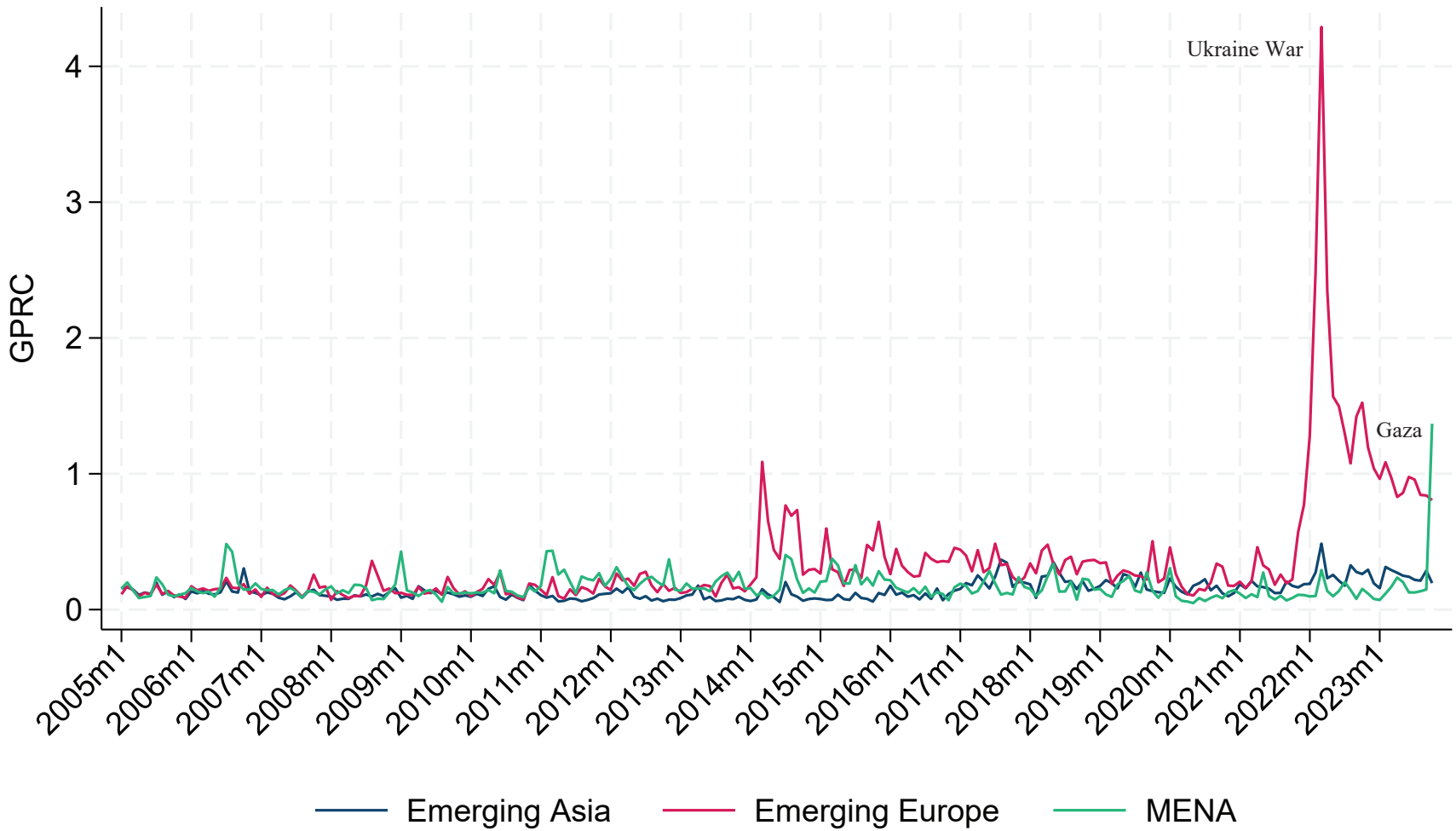
2. Micro-level data on the portfolios of international bond mutual funds (from EPFR Global)

# Data Sources: Global Geopolitical Risk Index (GPRW)

- Caldara & Iacoviello (2020) news-based GPR index



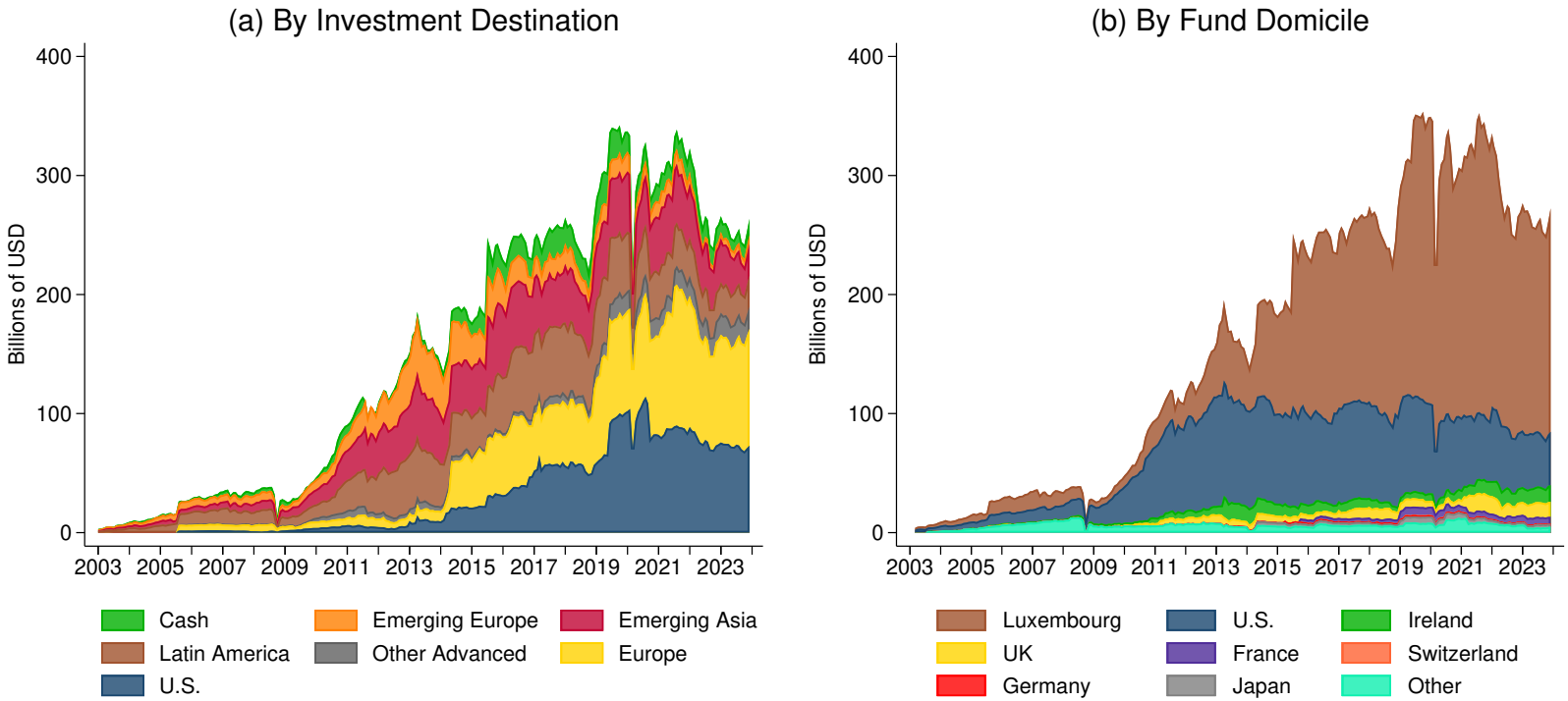
# Data Sources: Country Specific Geopolitical Risk (GPRC)



# Data Sources: Mutual Fund Portfolios

- EPFR Global provides end-of-month snapshots of the portfolios of investment funds, detailing allocations to each destination country
- We focus on international bond funds that actively manage their portfolios and reside in anglophone countries and Luxembourg

# Data Sources: Mutual Fund Portfolios




Source: EPFR, authors' calculations

- 1.8% of the foreign-held bonds issued by the countries in our sample
- EPFR reports about 35% of the assets held by funds domiciled in Luxembourg, the U.S., and Ireland

# Econometric Specification

We derive our specification from the law of motion of portfolio weights $w_{ijt}$ (Raddatz & Schmukler 2012) Details :

$$\omega_{ijt} = \beta\omega_{ijt-1} + \zeta\left(r_{ijt} - r_{it}\right) + \gamma GPRC_{jt} + \psi_{ij} + \psi_t + \nu_{ijt}.$$

- $\omega_{ijt}$: Portfolio weight of country $j$ at time $t$ in fund $i$
- $(r_{ijt} - r_{it})$: Excess returns of country $j$
- $GPRC_{jt}$: log of country-specific geopolitical risk
- $\psi_{ij}$ & $\theta_t$ Factors specific to the fund-country match and time
- We approximate $r_{ijt}$ with $r_{jt}$

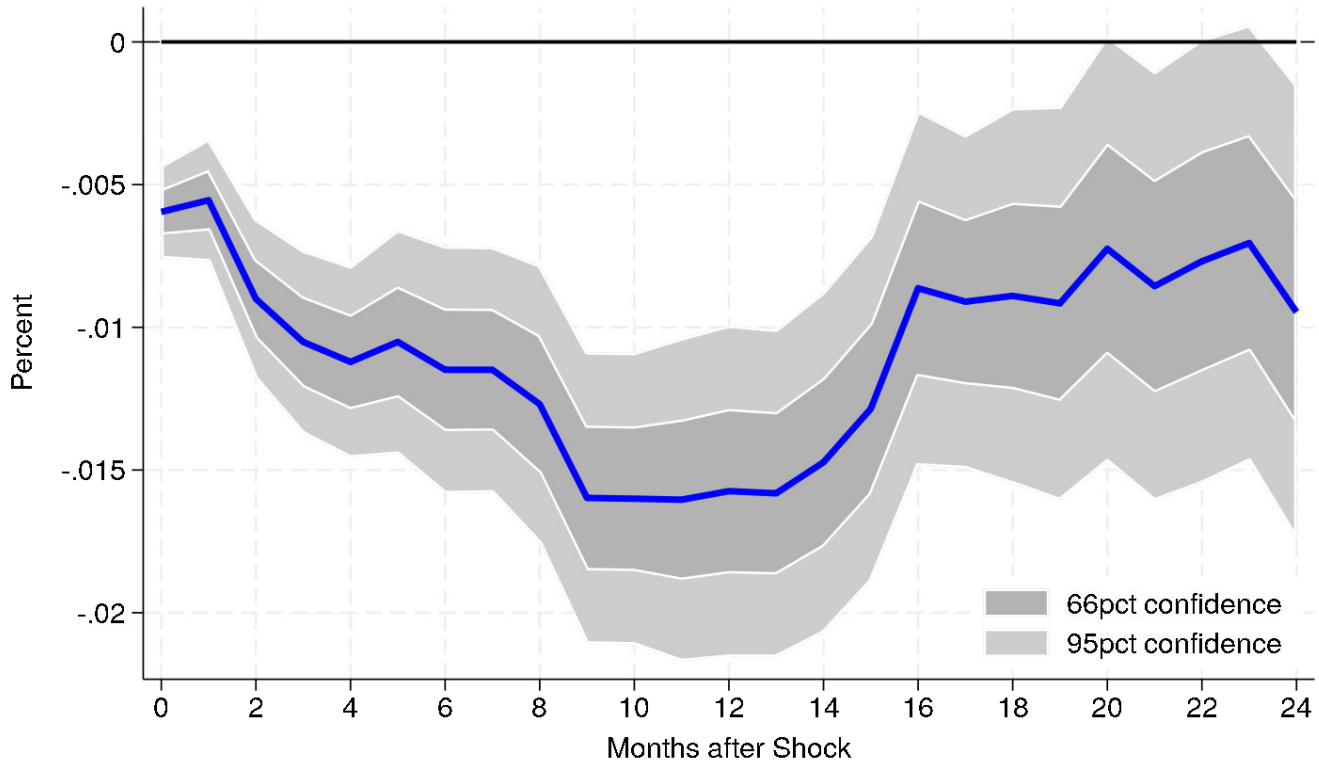
# GPRC Reduces Portfolio Weights

| | $\omega_{ijt}$ |
|---|---|
| $\omega_{ijt-1}$ | 0.873*** |
| | (0.00458) |
| $r_{jt} - r_{it}$ | 0.754*** |
| | (0.0372) |
| GPRC | -0.00631*** |
| | (0.000763) |
| $N$ | 584102 |
| Fund-Country FE | Yes |
| Time Fixed Effects | Yes |
| Asset | Bonds |

- Portfolio weights decline when GPRC increases
- Impact is modest: 200% increase of GPRC $\rightarrow$ 1.3% decline of portfolio weight (5% of $\sigma_{\omega_{ijt}}$)

# GPRC Has a Persistent Impact on Weights

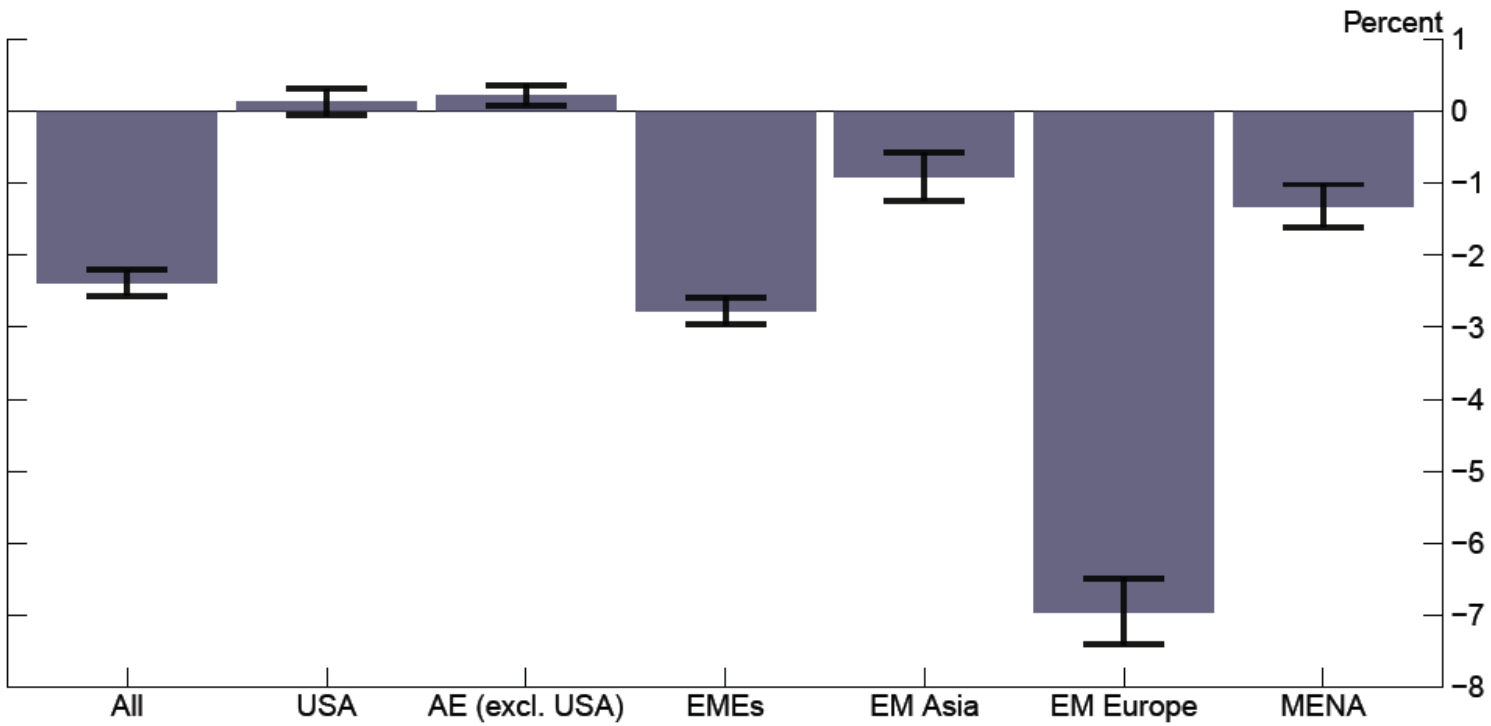
Figure: Response of $\omega_{ijt}$ to a Geopolitical Risk Shock




- Peak impact is reached after 10-12 months: 200% increase in GPRC $\rightarrow$ 3.8% decline of portfolio weight

# GPRC Matters More for EMEs

Figure: Response to a 1 s.d. in GPRC




- Portfolio weights of EMEs are more sensitive to GPRC. ▸ NATO

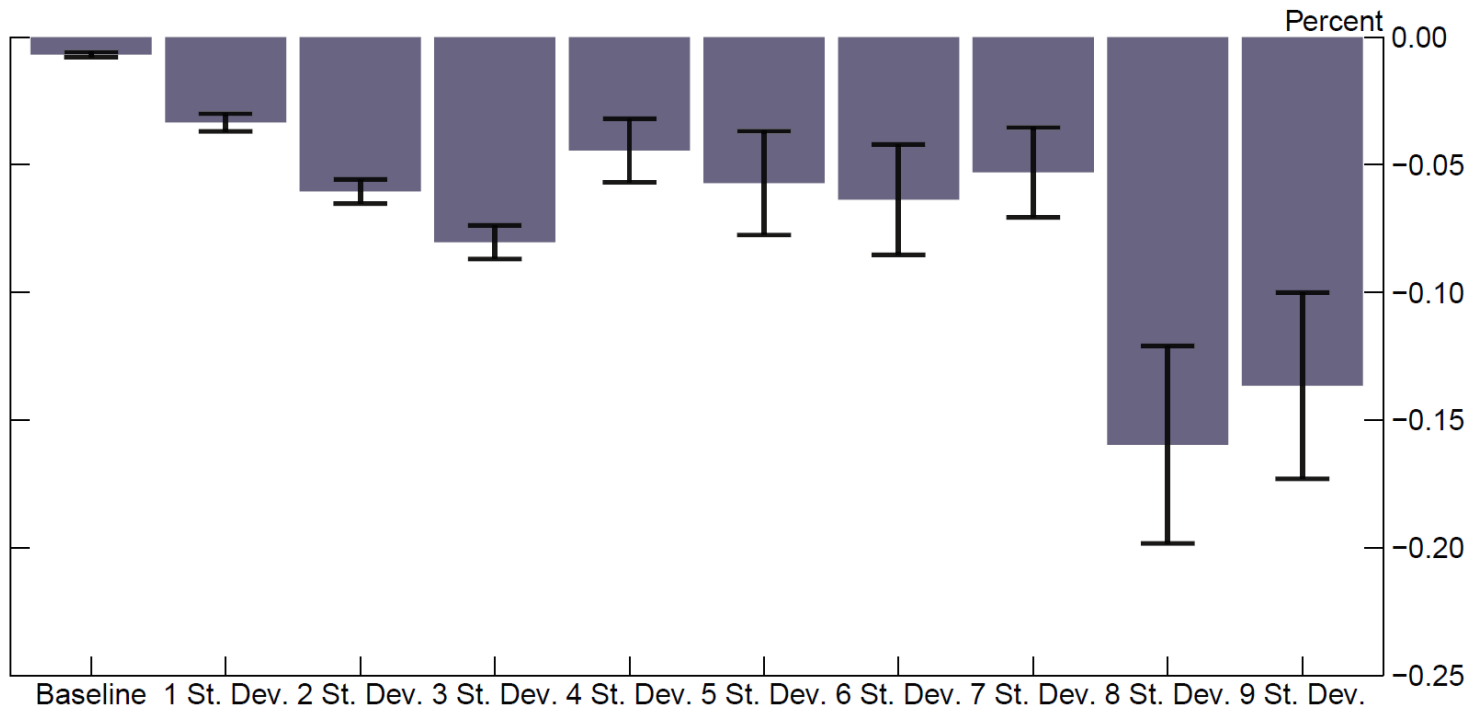
# GPRC Matters More When It Is Extreme

| | $\omega_{ijt}$ |
|---|---|
| $\omega_{ijt-1}$ | 0.913*** |
| | (0.00475) |
| $r_{jt} - r_{it}$ | 0.953*** |
| | (0.0475) |
| GPRC | -0.00117 |
| | (0.00107) |
| GPRC * High GPRC | -0.0445*** |
| | (0.00383) |
| $N$ | 280982 |
| Fund-Country FE | Yes |
| Time Fixed Effects | Yes |
| Destination | EME |

- *High GPRC* is equal to one when GPRC is in the top quartile of GPRC for that country

# GPRC Matters More When It Is Extreme

Figure: Impact of GPRC by Intensity




- Impact of GPRC is stronger when GPRC is at least 2 s.d above its mean value

# Portfolio composition

Are portfolios more fragmented as a consequence of geopolitical risk?

To answer the question we analyze how global geopolitical risk (GPRW) and the exposure of funds to geopolitical risk (GPR Exp) affect:

- Number of countries in the portfolios
- Portfolio concentration: Herfindahl-Hirschman Index
- Cash holdings
- Political distance of the portfolio from the US: weighted average of the political distance from the US using UN voting data

# Portfolios Become Less Diversified and Politically Distant

| | $n^{\circ}$ Countries | HHI | Cash | Ave. Dist vs US |
|---|---|---|---|---|
| Dep var$_{t-1}$ | 0.919*** | 0.897*** | 0.474*** | 0.814*** |
| | (0.00849) | (0.00800) | (0.0183) | (0.0690) |
| GPR Exp$_{t-1}$ | -0.000230 | -0.000654 | -0.0711*** | -0.000212 |
| | (0.00215) | (0.00376) | (0.0254) | (0.00345) |
| GPRW | -0.00838*** | 0.0111*** | 0.0819*** | -0.00976*** |
| | (0.00233) | (0.00370) | (0.0297) | (0.00345) |
| GPRW * GPR Exp$_{t-1}$ | -0.00371*** | 0.00315* | 0.0156 | -0.00801*** |
| | (0.00128) | (0.00187) | (0.0156) | (0.00225) |
| $N$ | 25384 | 25384 | 20790 | 25384 |
| Fund and TS Controls | Yes | Yes | Yes | Yes |
| Fund-Country FE | Yes | Yes | Yes | Yes |
| Time Fixed Effects | No | No | No | No |
| Control Variables | Yes | Yes | Yes | Yes |

- $N^{\circ}$ of destination countries and political distance decline. Concentration and holdings of cash increase

# Fund Flows

How do end investors react to geopolitical risk?

- Do funds that are more exposed to geopolitical risk receive less injections?
- Does the intensity of end investor's response to GPR change with the level of geopolitical risk?

# Fund Flows Decline When Funds Are Exposed to GPR

| | Flows(%AUM) | Flows(%AUM) |
|---|---|---|
| GPR $Exp_t$ | -0.787*** | -0.706** |
| | (0.280) | (0.281) |
| GPR $Exp_{t-1}$ | 0.222 | 0.205 |
| | (0.285) | (0.285) |
| GPR $Exp_{t-2}$ | 0.444* | 0.459* |
| | (0.253) | (0.253) |
| $Growth_{t+12}$ | -0.424*** | -0.444*** |
| | (0.143) | (0.144) |
| $\pi_{t+12}$ | -0.0437** | -0.0433** |
| | (0.0179) | (0.0178) |
| GPR $Exp_t$ * High GPRW | | -0.294** |
| | | (0.148) |
| $N$ | 23257 | 23257 |
| Fund-level Controls | Yes | Yes |
| Fund FE | Yes | Yes |
| Time FE | No | No |
| Mandate-Time FE | Yes | Yes |

- Fund flows decline on the impact, but recover quickly
- Decline is about 30% larger when GPRW risk is high

# Conclusions

- The impact of GPRC on portfolio weights is negative, persistent, and statistically significant
- On impact, GPRC only affects portfolio weights modestly. Over the course of 1 year the impact becomes more sizable
- There are places **where** GPRC matters more, and periods **when** it matters more:
  - Where: EMEs, especially Emerging Europe and MENA
  - When: GPRC is 2 or more s.d. away from its mean value
- We find evidence of financial fragmentation:
  - The number of destination countries and their political distance fall, portfolio's concentration increases
- Fund flows decline, at least in the short run, especially when GPRW is high.

# Econometric Specification I

We derive our specification from the law of motion of portfolio weights $w_{ijt}$ (Raddatz & Schmukler 2012):

$$w_{ijt} \equiv w_{ijt-1} \frac{R_{ijt} + f_{ijt}}{R_{it} + f_{it}}.$$

Loglinearizing:

$$\omega_{ijt} = \omega_{ijt-1} + (r_{ijt} - r_{it}) + (f_{ijt} - f_{it}) + \epsilon_{ijt}$$

- $\omega_{ijt}$: Portfolio weight of country $j$ at time $t$ in fund $i$
- $(r_{ijt} - r_{it})$: Excess returns of country $j$
- $(f_{ijt} - f_{it})$: Relative flows of new funds to country $j$

# Econometric Specification II

The relative flow equation is:

$$f_{ijt} - f_{it} = \delta\omega_{ijt-1} + \phi\left(r_{ijt} - r_{it}\right) + \gamma GPRC_{jt} + \psi_{ij} + \theta_t + \nu_{ijt}$$

- $GPRC_{jt}$: log of country-specific geopolitical risk
- $\psi_{ij}$ & $\theta_t$ Factors specific to the fund-country match and time

Combining the law of motion for $\omega_{ijt}$ with the relative flow equation, we get our baseline specification:

$$\omega_{ijt} = \beta\omega_{ijt-1} + \zeta\left(r_{ijt} - r_{it}\right) + \gamma GPRC_{jt} + \psi_{ij} + \psi_t + \nu_{ijt}.$$

- We approximate $r_{ijt}$ with $r_{jt}$ Back

# NATO Membership Mitigates the Impact of GPRC

| | $\omega_{ijt}$ | $\omega_{ijt}$ |
|---|---|---|
| $\omega_{ijt-1}$ | 0.914*** | 0.917*** |
| | (0.00470) | (0.00817) |
| $r_{jt} - r_{it}$ | 0.981*** | 0.813*** |
| | (0.0485) | (0.0544) |
| GPRC | -0.00857*** | -0.00828*** |
| | (0.00106) | (0.00153) |
| GPRC * NATO | 0.0128*** | 0.00631* |
| | (0.00264) | (0.00321) |
| Fund-Country FE | Yes | Yes |
| Time Fixed Effects | Yes | Yes |
| Domicile | Anglo/Lux | NATO |

- Portfolio weights of NATO EMEs are less sensitive to GPRC

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