Do Geopolitical Risks Raise or Lower Inflation?*

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Abstract

Do geopolitical risks raise or lower inflation? Using a unique dataset containing historical macroeconomic data since 1900 for 44 economies, we find that geopolitical risks foreshadow high inflation, with the intensity of this effect differing across countries and historical periods. The rise in inflation is accompanied by lower economic activity; an increase in military spending, public debt, and money growth; supply disruptions; and a decline in international trade. Geopolitical risks are also associated with higher inflation uncertainty and the risk of significant inflation increases. Using a monthly VAR model estimated on global data since the 1970s, we confirm that global geopolitical risks increase inflation, with the inflationary effect of higher commodity prices and currency depreciation more than offsetting the deflationary effects of lower consumer sentiment and tighter financial conditions.

KEYWORDS: Geopolitical Risk; War; Inflation; Commodity Prices; Fiscal Policy; Shortages; Vector Autoregressions; International Trade; Panel Data Estimation.

JEL CLASSIFICATION: C30. D80. E31. F44. H56.

1   Introduction

Adverse geopolitical events play a pivotal role in shaping global economic and financial conditions, often acting as catalysts for significant fluctuations in markets and economies worldwide. Despite the well-documented impact of elevated geopolitical risks on tightening financial conditions and dampening economic activity, their effects on inflation have been relatively unexplored. This paper provides a systematic exploration of the relationship between geopolitical risks and inflation across a broad sample of countries and time periods.

From a theoretical perspective, the impact of elevated geopolitical tensions on inflation is ambiguous, due to the convolution of supply, demand, and policy forces that can move inflation in either direction. On the supply side, wars can destroy human and physical capital, divert international trade, disrupt global supply chains, and trigger surges in commodity prices—effects that could drive up inflation. On the demand side, adverse geopolitical events might undermine consumer confidence and investment, as well as tighten financial conditions, potentially exerting downward pressure on inflation.

Policy responses add another layer of uncertainty. Geopolitical crises can influence central banks to either tighten or relax monetary policy, depending on the prevailing economic conditions and objectives, and can cause increased government debt through a combination of higher spending and targeted fiscal support. As a case in point, in the immediate aftermath of Russia's invasion of Ukraine, policymakers around the world noted the increased risks associated with both the outlook for activity and inflation. For instance, ECB President Christine Lagarde and Fed Chair Jerome Powell noted the potential for additional upward pressure on near-term inflation and negative impacts on economic activity amid an uncertain outlook (Lagarde, 2022; Powell, 2022). On the fiscal side, then-U.K. Chancellor of the Exchequer Rishi Sunak warned that the U.K. should be prepared for the economy and public finances to significantly worsen, while advocating for fiscal support to firms and households (Sunak, 2022).

This paper measures how demand, supply, and policy forces shape the response of inflation to geopolitical risks throughout history. Using data since 1900 for 44 countries and employing a range of empirical methods, we find that geopolitical risks lead to higher inflation, although the manner and extent of this influence may vary across nations and historical contexts. To visualize our main result, Figure 1 shows that adverse geopolitical events—as measured by the Caldara and Iacoviello (2022) global geopolitical risk (GPR) index—are historically associated

both with higher global inflation and with a large share of countries experiencing higher-than-average inflation. Importantly, our analysis also reveals that all previously discussed transmission mechanisms—supply, demand, and policy responses—actively contribute to shaping the inflation response. Notably, supply-side factors emerge as particularly significant, as evidenced by the concurrent rise in inflation and decline in real economic activity in the face of geopolitical tensions.

The relationship between the global GPR index and inflation pictured in Figure 1 serves as the springboard for a deeper analysis. Our investigation is structured around two comprehensive datasets, which are detailed in Section 2. Our primary dataset consists of an annual panel that spans from 1900 to 2022 and covers 44 advanced and emerging economies. This panel includes country-level measures of geopolitical risk, inflation, GDP, military expenditures, public debt, trade openness, government spending, and money growth, as well as an index measuring shortages. Our second dataset encompasses monthly global economic and financial indicators spanning from 1974 through 2023.

The need for two datasets stems from our goal of conducting a thorough analysis of a diverse array of transmission channels, capturing their evolution over time and variability across different countries. The annual data for a large panel of countries are particularly apt for assessing the long-term impact of geopolitical risks on inflation, and for understanding the role of fiscal and monetary policies alongside trade developments. Monthly data are better suited to quantify the immediate impact of geopolitical risks on financial conditions, commodity prices, and consumer sentiment—variables that react swiftly to geopolitical news.

Section 3 exploits the long-run historical data to estimate the effects of geopolitical risk on inflation using panel vector autoregression (VAR) models. We approach this analysis by pooling data from all countries to ascertain the average effect, while conducting a separate analysis for the U.S. due to its distinctive geopolitical and economic stance. The United States, unlike other major powers in our sample, has never faced extensive conflict on its soil. However, it has been deeply involved in or affected by many key geopolitical events over the past 120 years.

We find that adverse shocks to geopolitical risks are linked to higher inflation both globally and in the United States. Additionally, we observe commonalities such as an increase in military spending, public debt, and money growth. However, a stark contrast emerges in the impact on GDP: geopolitical risks are associated with lower GDP outside of the United States

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but with higher GDP in the United States. We provide evidence that this divergence results from a stronger public demand channel in the U.S., primarily fueled by an increase in military spending larger than in other countries. This pattern aligns with the U.S. experience during major geopolitical events, most notably World War II, when American industry supplied almost two-thirds of all Allied military equipment.[1] In addition, the different effect on GDP can also be explained by a muted response to geopolitical risks of total trade between the United States and the rest of the world, against a decline, on average, of total trade for the other economies in the sample.

In Section 4, we explore how the relationship between geopolitical risk (GPR) and inflation varies over time and across country characteristics. We find that the effect transcends the development stage of a country—advanced and emerging economies experience a similar rise in inflation—and is present regardless of whether the sample includes the world wars. In addition, using quantile regressions, we also document that geopolitical events generate large uncertainty and upside risks to inflation. We also document heterogeneity in how strongly inflation responds to geopolitical risk across different countries. In particular, countries experiencing higher military spending, higher money growth and lower trade in response to geopolitical risk shocks, also experience higher inflation.

Finally, in Section 5, we organize our analysis around the monthly dataset and explore how financial variables shape the response of inflation to geopolitical risks. We estimate a structural VAR model of the global economy and quantify the global inflation and global GDP effect of the rise in geopolitical risks observed in 2022 following the Russian invasion of Ukraine. We find that the 2022 war shock led to a rise in world inflation of about 1.2 percentage points while reducing the level of global GDP about 1 percent. The adverse effects of geopolitical risks are accompanied by a decline in consumer sentiment, higher commodity prices, a decline in stock prices, and an appreciation of the dollar.

Our paper makes three contributions. First, our work is the first to document that, across many countries and using a long sample period, geopolitical risks not only reduce activity but also boost inflation, thus creating stabilization trade-offs for monetary and fiscal authorities. Second, we undertake a comprehensive examination of the relationship between geopolitical events and inflation across a large panel of countries. While the existing literature focuses

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[1] Caldara and Iacoviello (2022) show that in a sample that starts in 1985 and that excludes major military buildups, U.S. GDP declines in response to geopolitical risk shocks.

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on the impact of wars on economic activity (Barro, 2006) and on fiscal policy (Ohanian, 1997; Ramey, 2011), the investigation into the inflationary effects of wars is less common and predominantly U.S.-focused, as seen in works by Hall and Sargent (2022) and Rockoff (2015). Our work extends such analysis beyond the United States, offering a broader, global perspective.

Third, our paper delves into the transmission mechanisms through which geopolitical tensions can influence economic indicators. Consistent with extensive literature on the fiscal determinants of inflation, we show that increased military expenditures and rising public debt exert upward pressures on inflation (Sims, 1994). We also contribute to the literature quantifying the effects of higher oil and commodity prices on inflation (Blanchard and Gali, 2007; Coibion and Gorodnichenko, 2015; Conflitti and Luciani, 2019; Aastveit et al., 2023).

2 The Data

In this section, we discuss construction of two datasets that underlie our empirical analysis.

2.1 Country-Level Historical Annual Data

Our first dataset is an annual panel that spans from 1900 to 2022 and covers 44 advanced and emerging economies.[2] This panel includes country-level measures of inflation and GDP, as well as other economic indicators: military expenditures, public debt, trade openness, government spending, and money growth. Data on inflation are from four separate sources. For the post-World War II period, the main source is the IMF's International Financial Statistics. These data are extended back to 1900 using historical data from Jordà et al. (2017) (for advanced economies), Reinhart and Rogoff (2009) (from emerging economies), and, in other cases, a variety of domestic sources listed in the Appendix. These combined sources give us a total of 4,969 observations. To minimize the impact of hyper-inflationary episodes, we

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[2] Advanced economies include Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Emerging market economies include Argentina, Brazil, Chile, China, Colombia, Egypt, Hong Kong, Hungary, India, Indonesia, Israel, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Saudi Arabia, South Africa, South Korea, Taiwan, Thailand, Tunisia, Turkey, Ukraine, Venezuela, and Vietnam.

winsorize inflation and money growth data at the 1st and 97.5th percentiles.[3]

Real GDP per capita data are from Barro and Ursúa (2012) or from the Maddison Project Database (Bolt and Van Zanden, 2020), extended through 2022 using the World Bank's World Development Indicators (WDI) database. Military expenditures data are primarily from Roser and Nagdy (2013) and from the Stockholm International Peace Research Institute. Debt to GDP ratio data are from Jordà et al. (2017), with recent data added using the WDI and the IMF World Economic Outlook. We fill remaining missing observations using the IMF's Public Finances in Modern History database and Reinhart and Rogoff (2009). Trade to GDP data—the sum of total imports and exports over nominal GDP—are primarily from Jordà et al. (2017) and Barbieri et al. (2009).[4] Money growth data are from Jordà et al. (2017) and extended using the WDI database. Money growth is also winsorized at the 1st and 97.5th percentiles. Appendix Figure A.1 summarizes the coverage of the dataset.

Table 1 provides summary statistics for the variables in our panel. Average annual inflation in the sample is 9.2 percent, but the panel contains sizable variability and episodes of particularly high inflation, largely coming from years surrounding World War I and II in advanced economies and from the inflationary experiences of many emerging countries. Economies in our sample display a wide range of fiscal positions, with an average debt to GDP ratio of 47 percent and an average share of military spending in GDP of 4 percent. Trade to GDP ratios are 52 percent and money growth is 15 percent a year, on average.

We complement this panel with country-level measures of geopolitical risk from Caldara and Iacoviello (2022). Geopolitical risk is defined as the threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations. Country-specific geopolitical risk is constructed by using news-based mentions of adverse geopolitical events together with the country's name, or its capital, or some of its major cities (e.g. Frankfurt for Germany or Saint Petersburg for Russia). Accordingly, country-specific indexes capture the exposure of a given country to geopolitical concerns and conflicts. Initial data are from Caldara and Iacoviello

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[3] Specifically, we set values of inflation and money growth below negative 14.6 and negative 6.6 percent at this threshold value. For values above the 97.5th percentile, we employ a piecewise transformation with 101.8 percent and 82.9 percent thresholds, respectively. Values below the threshold are preserved, and values above are transformed by adding to the threshold the natural log of one plus the excess over the threshold. That is, denoting the threshold with $\overline{\pi}$, $f(\pi) = \pi$ for $\pi \leq \overline{\pi}$, and $f(\pi) = \overline{\pi} + ln(1 + \pi - \overline{\pi})$ for $\pi > \overline{\pi}$.

[4] For the estimation of panel VARs, we use economy-specific cubic trends to detrend GDP and the trade-to-GDP ratio.

(2022). To their sample we add data for the following 18 economies: Colombia, Egypt, Hong Kong, Hungary, India, Indonesia, Israel, Malaysia, Philippines, Poland, Saudi Arabia, South Africa, Thailand, Tunisia, Turkey, Ukraine, Venezuela, and Vietnam. The data are available on the geopolitical risk webpage (https://www.matteoiacoviello.com/gpr.htm). In addition, for the panel VAR analysis of section 3 we include country-specific, news-based indexes of shortages. Similar to the country-specific GPR indexes, these indexes measures the frequency of articles mentioning terms related to shortages together with the name of the country. The index is presented in Caldara, Iacoviello, and Yu (2024) and visualized, for a select number of countries, in Appendix Figure A.2.

The construction of a large panel allows a deep dive into the relationship between geopolitical risk and inflation at the country level. Figure 2 illustrates the joint behavior of GPR and inflation for a selected group of advanced and emerging economies. Historically, periods of high geopolitical risk are associated with high inflation, both in advanced and emerging economies. While major spikes in geopolitical risk and inflation have been influenced by global events like World Wars I and II, they are not the sole contributors. For instance, the experience of several emerging economies outside of World Wars I and II is illustrative of the driving force of emerging markets in this correlation after 1950. The Korean War in 1950 plunged Korea into economic chaos, disrupting economic activities and leading to severe inflation. Similarly, Vietnam grappled with economic challenges amid the Vietnam War throughout the 1960s, which caused widespread disruption of infrastructure, disrupted agricultural production, and caused high inflation. Indonesia experienced a period of instability in the mid-1960s due to political upheaval and economic mismanagement, including the aftermath of the Indonesian-Malaysian confrontation: this period resulted in high inflation exacerbated by large budget deficits, excessive money creation, and state intervention. Chile underwent a significant economic crisis in the 1970s, exacerbated by political instability and a military coup. The accompanying expropriations, protectionism and shortage led to triple-digit inflation. South Africa faced economic turmoil in 1986 due to apartheid sanctions, severe restrictions from access to international markets, and internal unrest, exacerbating inflationary pressures. These illustrative episodes underscore how political, social, and external factors can significantly impact a country's economic stability and inflation rates.

2.2 Global Monthly Time-Series Data

Our second dataset includes the following monthly global economic data from 1974 through 2023: world GDP, world inflation, consumer confidence, oil prices, stock prices, commodity prices, and the dollar exchange rate.

Our measure of world GDP is sourced from Cuba-Borda et al. (2018). World inflation is calculated as an aggregate of the 12-month change in the consumer price index across countries, sourced from Global Financial Data. The consumer confidence index is obtained from the Organisation for Economic Co-operation and Development. Oil prices are measured by the West Texas Intermediate Index. Financial data encompass global monthly stock prices via the FTSE World Dollar index, commodity prices through the S&P Goldman Sachs Commodity Index, and the dollar exchange rate from the Federal Reserve Board's broad dollar index.

Finally, we include in the dataset the monthly global measure of geopolitical risk from Caldara and Iacoviello (2022). Specifically, the headline global GPR index is broken down into two separate components, the geopolitical threats (GPT) and the geopolitical acts (GPA) indexes. The GPT index is based on articles that include phrases related to threats and concerns about scope, duration, and ramifications of geopolitical tensions, while the GPA index concerns phrases referring to the outbreak and actual unfolding of wars. The use of the two subcomponents of the GPR index allows us to better capture the effects of geopolitical risks on financial conditions and commodity prices, fast-moving variables that immediately react to "threats" about future events.

3 The Inflationary Effects of Geopolitical Risk: Country-Level Evidence

In this section, we examine the impact of geopolitical risk on inflation by analyzing country-level data through VAR models. We identify a geopolitical risk (GPR) shock in all VAR models by employing a Cholesky decomposition of the covariance matrix of the VAR reduced-form residuals, with the GPR index ordered first. This ordering imposes that, on impact, geopolitical risks are not influenced by other economic variables. Thus, any contemporaneous correlation observed between the GPR index and economic variables reflects the effects of GPR shocks. The rationale for this approach is bolstered by the characteristics of the GPR indexes as

discussed in Caldara and Iacoviello (2022), which are generally not influenced by economic conditions within the same year, thereby supporting our assumption. We estimate the models using one or two lags and bootstrap the standard errors.

3.1   International Evidence

We begin our analysis by estimating a bivariate panel VAR model, focusing on country-specific geopolitical risk (GPR) indexes and inflation rates. This specification allows us to utilize the largest available dataset on inflation, limited only by the availability of reliable data, particularly at the start of the sample period or during hyper-inflationary episodes. We exclude the United States from the estimation due to its unique experience with geopolitical events compared to other countries, reserving a detailed analysis of the U.S. experience for the following subsection. Thus, this model is estimated on data from $44 - 1 = 43$ countries, totaling 4,847 observations. The specification uses two lags.

An increase in geopolitical risks has an inflationary effect. We illustrate this result in Figure 3, which shows the impulse responses to a one standard deviation GPR shock. The median response is represented by a solid blue line, with shaded areas indicating the 90% confidence interval bands. Following a rise in geopolitical risk, we observe a persistent increase in domestic inflation, which peaks at 3 percentage points above the no-shock baseline around three years after the shock.

To deepen our understanding of how GPR shocks influence inflation, we expand our panel VAR to include seven additional variables: real GDP per capita, the news-based global index of shortages, money supply growth, and the ratio over GDP of military spending, government spending, public debt, and trade. The expanded model—which covers 42 economies as we do not have military spending data for Hong Kong—results in a dataset containing 3,052 observations. The nine-variable specification uses one lag. Results with two lags are similar.

As illustrated in the top row of Figure 4, a one standard deviation GPR shock results in an approximate 2 percentage points increase in inflation and a 1.5 percent drop in GDP. The significant rise in inflation found in the bivariate model is reaffirmed after incorporating additional variables into the model and considering the smaller number of observations available for estimation. The observed negative co-movement between inflation and GDP suggests that supply-side factors predominantly drive the effects of GPR shocks.

For ease of exposition, we break down the transmission of GPR shocks by dividing variables

into two categories: supply and demand. We associate the responses of trade and the shortages index with supply-side effects. We associate the responses of military spending, money growth, and fiscal variables as indicative of demand-side dynamics. This division is supported by observing that, in a Choleski decomposition of the panel VAR's covariance matrix of the residuals, negative shocks to trade and positive shocks to shortages lead to higher inflation and lower GDP—characteristic of supply disruptions. In contrast, shocks to the remaining variables tend to cause inflation and GDP to move in the same direction, indicative of demand-driven pressures.[5]

As shown in the middle and bottom rows of Figure 4, on the supply side, adverse geopolitical events typically lead to reduced trade and increased shortages. Conversely, on the demand side, such events often trigger increases in military spending due to ongoing conflicts and the heightened risk of wars. Additionally, there is a significant rise in government spending as a percentage of GDP, alongside increases in public debt and money supply. These responses are consistent with findings from studies that have observed increases in public expenditure, debt, and money supply associated with conflicts, as exemplified by Hall and Sargent (2022) in the case of the United States.

To quantify the inflationary impact of demand and supply forces following adverse geopolitical events, we perform two counterfactual analyses using the methodology described in Leeper and Zha (2003), Sims and Zha (2006), and Kilian and Lewis (2011), among others. In the first counterfactual scenario, we explore the importance of the supply-side forces measured in the VAR by simulating the effects of GPR shocks holding the response of trade and shortages constant. To do so, we utilize a sequence of trade and shortages shocks that zero out the response of trade and shortages to the GPR shock at every horizon. In the second counterfactual, we explore the importance of the demand-side forces measured in the VAR by holding constant the response of military spending, public debt, and money growth through a sequence of shocks to these variables.[6]

Figure 5 shows the results of the counterfactuals. If trade and shortages did not respond to a GPR shock, the rise in inflation would be substantially lower, and the decline in GDP would be less severe compared to the baseline responses. Were the fiscal and monetary responses to

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[5] The Choleski decomposition is based on the following variable order: GPR, inflation, GDP, trade, shortages, military spending, debt, money growth and government spending.

[6] The shocks in the VAR for the counterfactual are identified using the Cholesky decomposition discussed in footnote 5.

remain constant, the rise in inflation would be nearly half as the baseline response. However, the counterfactual GDP decline would be substantially larger, due to the lack of economic stabilization provided by such policies.

In concluding our discussion, it is important to recognize that our panel VAR analysis of supply and demand determinants captures only a subset of the factors influencing inflation and GDP growth in response to geopolitical events. Some dynamics remain unexplored due to data limitations. On the supply side, wars can lead to the destruction of physical and human capital, as well as spikes in commodity prices driven by shortages, panic buying, or other supply disruptions. On the demand side, geopolitical events may dampen consumption and investment by eroding consumer confidence and diminishing investment returns. Some of these factors are difficult to measure at a granular country level and to incorporate in the panel VAR model. To this end, we complement the analysis in this section with a time-series VAR analysis estimated on monthly economic and financial indicators, presented in Section 5, along with a VAR analysis estimated on U.S. data, which we present next.

3.2   U.S. Evidence

The United States occupies a unique position among major superpowers, being the only country that has never faced a major conflict on its soil in spite of having been involved–directly or indirectly—in most of the key geopolitical events of the past 120 years. This exclusivity likely influences the economic outcomes resulting from geopolitical risks.

To investigate the U.S. reaction to geopolitical risk shocks, we estimate the VAR model separately for the United States. Figure 6 illustrates the results, and compares the U.S. findings with the international findings. A one standard deviation shock to geopolitical risk leads to a rise in inflation of around 1.5 percentage points, consistent with findings from the panel VAR (albeit slightly smaller in magnitude). Contrary to the international experience, however, GDP rises in the United States, peaking at around 3 percent above baseline before reverting to its pre-shock level.

The response of the other variables in the VAR lines up qualitatively with the international experience, with the differences supporting the view that geopolitical risks are historically associated in the United States with relatively stronger demand channels and relatively weaker supply channels. On the demand side, military spending as a share of GDP increases substantially over time, peaking at more than 3 percentage points two years after the shock.

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This increase in military spending is twice as large relative to the other nations. Such an observation is consistent with the U.S. experience during major geopolitical events, most notably World War II, when the American industry supplied a large portion of all the Allied military equipment. On the supply side, the rise in geopolitical risk produces effects that are more muted relative to the international experience. The response of trade is negligible, and not significant. The increase in shortages is slightly smaller and more delayed relative to other countries. The combined effect of demand and supply factors explains why, relative to other countries, inflation rises less, whereas GDP increases instead of decreasing.[7]

This analysis underscores the unique resilience of the U.S. economy in weathering adverse geopolitical events over the past 120 years, supported by large military build-ups—that have more than offset contractionary effects of weak private demand and of typical supply-side disruptions—and the lack of wars on U.S. soil. That said, it also underscores that responses may vary by sample period and by country. We address these issues in the next section.

4 Country-Level Evidence Across Time and Space

In this section, we explore the dynamics between geopolitical risk (GPR) and inflation, investigating how this relationship fluctuates over time and differs based on country characteristics.

We first introduce illustrative evidence suggesting that the linkage between geopolitical risk and inflation is relatively stable across several dimensions. Specifically, Figure 7 features binned scatter plots that illustrate the effect of geopolitical risks on inflation across various subsamples, stages of national development, and inflation quantiles.

The figure's top row reveals a consistent positive correlation between geopolitical risk and the change in inflation across six different sample periods analyzed.[8] This connection is notably stronger during the world wars and the 1970s but appears somewhat weaker in the 1980s and 1990s. The bottom row's left panel demonstrates that the positive relationship is present in both advanced and emerging economies. Meanwhile, the middle and right panels, representing

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[7] In a robustness exercise, we replace trade with the military spending news variable as constructed by Ramey (2011). The addition of the military spending news variable allows us to capture the anticipatory aspects of defense expenditure in response to geopolitical tensions. We find that our results are robust, with much of the increase in military spending being anticipated, in line with the notion that geopolitical risks are associated with news about future military build-ups.

[8] The figure shows the correlation between inflation at $t+1$ relative to period $t-1$, so the slopes reflect the values in column $t+1$ of Table 2. The results are broadly similar at different horizons.

the 25th and 75th inflation percentiles, indicate that the relationship is feeble during periods of low inflation (25th percentile) and robust during periods of high inflation.

The visual evidence shows that the positive relationship between geopolitical risk and inflation prevails across history and across countries. Such relationship is not driven solely by a few outliers, such as the World wars I and II or a few hyper-inflationary episodes. The evidence coming from the scatter plots of Figure 7 is confirmed by regression analysis shown in the next subsections.

4.1 Effects by Subsample

First, we estimate the average effects of geopolitical risk on inflation in country i at horizon h with the following panel regression:

$$\Delta\pi_{i,t+h} = \alpha_i + \beta GPRC_{i,t} + u_{i,t}, \tag{1}$$

where $\Delta\pi_{i,t+h}$ represents the change in inflation h periods ahead relative to inflation in year $t-1$, α_i denotes country-specific fixed effects, and $GPRC_{i,t}$ is the standardized GPR index for country i. Beyond this baseline regression, we explore alternative specifications that include the global GPR index (GPR_t), differentiate between advanced and emerging economies, and focus on data post-1950.

The results from the various specifications are illustrated in Table 2. Each column details the impact of country-specific geopolitical risk on inflation at different horizons. The baseline results are in the top panel. A one standard deviation increase in geopolitical risk is associated with an inflation increase of 1 to 2 percentage points within two years, corroborating the panel VAR findings.

The next rows confirm the robustness of these results across different time periods and country groups. As shown in the second row of the table, a domestic increase in geopolitical risk significantly raises a country's inflation even after controlling for the global GPR index. As shown in the following two rows of the table, this effect transcends the development stage of a country. Inflation both in advanced and emerging economies peaks within two years from the shock before returning to the pre-shock levels. Moreover, the inflationary impact of geopolitical risk is not confined to historical events such as World Wars I and II or other incidents in the early 20th century. Analysis restricted to the post-1950 period indicates a minimally reduced

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inflationary effect, merely a few tenths of a percentage point lower than that observed over the entire sample duration. These findings align with the narrative presented in Section 2 linking high inflation to geopolitical events experienced by specific countries outside major global conflicts.

4.2 Effects Along the Distribution

To further understand the impact of geopolitical risk (GPR) on inflation, we employ quantile regressions, examining how GPR influences the conditional distribution of both contemporaneous and future inflation. This approach allows us to capture not only average effects but also the implications of GPR on inflation uncertainty and the risk of significant inflation increases. Such outcomes are particularly relevant given that major geopolitical events, though infrequent, can lead to disproportionately large effects, aligning with insights from the rare-disasters literature (Barro and Ursúa, 2012).

The quantile regression model is formulated as follows:

$$\mathcal{Q}_\tau(\Delta\pi_{i,t+h}|x_{i,t}) = \alpha_{i,\tau} + \beta_\tau GPRC_{i,t}. \tag{2}$$

Here, the model predicts the τ-th percentile of the change in inflation ($\Delta\pi_{i,t+h}$) between year $t-1$ and $t+h$, given country-specific geopolitical risk ($GPRC_{i,t}$). We include country fixed effects so that the coefficients on GPR variables can be interpreted as capturing the effects of geopolitical risk on the distribution of a country's future inflation.

The bottom panel of Table 2 shows the results. We perform these estimations for the median, the 25th percentile (capturing lower inflation outcomes), and the 75th percentile (capturing higher inflation outcomes) of the inflation distribution. The analysis reveals three concurrent effects of an increase in GPR. First, it lifts the median inflation level ($q50$ coefficient); second, it heightens inflation uncertainty; third, it amplifies the risk of extreme inflation increases. The second and third results stem from the higher coefficient at the 75th percentile compared to the median. This suggests a more pronounced shift in the distribution's right tail, indicating increased uncertainty and upside inflation risks.

Significant coefficients at the median also underscore a broad-based relationship between geopolitical risks and inflation, not limited to periods of high inflation or significant geopolitical events. This is because the median coefficient in a quantile regression is less influenced by

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extreme values than an ordinary least squares estimate.

4.3   Cross-Country Heterogeneity

The transmission of geopolitical risk to inflation varies with country characteristics. To document these differences, we estimate panel regressions that accommodate country-specific responses to geopolitical risk. Specifically, the regression model used to assess the impact of geopolitical risk on a variable X in country i at time $t + h$ is as follows:

$$X_{i,t+h} = \alpha_i + \beta_i GPRC_{i,t} + \gamma X_{i,t-1} + u_{i,t}, \tag{3}$$

where $X_{i,t+h}$ is the dependent variable h horizons ahead, $X_{i,t-1}$ is the level of the variable in year $t - 1$, $GPRC_{i,t}$ is the standardized country-specific GPR index, and the coefficient α_i denotes country fixed effects. We consider five variables in this analysis, so that X_i denotes inflation, GDP, military spending, money supply, and trade. We set $h = 2$, broadly in line with the VAR evidence showing that the peak effects of GPR on most variables materialize between one and three years. Accordingly, β_i denotes the response of variable X in country i two years after a one standard deviation increase in a country GPR index.[9]

Figure 8 visualizes the results using four scatter plots, each showing point estimates of the β coefficients as follows. The y-axis in each plot measures the inflation response to geopolitical risk across countries, predominantly showing a positive reaction, with most responses ranging between 0 and 5 percentage points. Some countries experience more pronounced inflationary effects, with the largest coefficients found for China, Japan, Hungary, and Poland.

The x-axis across these plots shows country-specific responses to geopolitical risk of GDP, military spending, money supply, and trade. The observed larger inflationary responses correlate with more significant GDP declines, confirming the panel VAR results by showing that geopolitical shocks typically act more as "supply" shocks. However, the "demand" component also plays a significant role. Higher inflation is associated with increased military expenditure and money supply growth. Intuitively, countries experiencing larger trade to GDP declines tend to show slightly greater inflation increases.

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[9] The coefficient on the lagged variable is assumed to be the same across countries to enhance the comparability across the β_i coefficients.

5 The Global Effects of Geopolitical Risk since the 1970s: An Application to the Russian Invasion of Ukraine

This section expands upon the earlier analysis of the effects of geopolitical risk on inflation by leveraging our second dataset. The variables in the monthly dataset facilitate the investigation of the transmission of geopolitical risks through commodity prices, financial conditions, and consumer sentiment. The use of monthly instead of annual data allows for a more precise quantification of the effects of geopolitical risks on these rapidly changing variables. Furthermore, the model estimated on monthly data enables the construction of scenarios that track the effects of historical and ongoing geopolitical events. Accordingly, we illustrate the global effects of geopolitical risks through a scenario analysis of the onset of Russia's invasion of Ukraine.

The model includes all variables in our monthly time-series database: world GDP, world inflation, global stock prices, real oil prices, the broad real dollar, commodity prices, global consumer confidence, and the geopolitical threats (GPT) and acts (GPA) indexes. The inclusion of the two sub-components of the GPR index allows the model to better capture the effects of geopolitical risks on financial conditions and commodity prices, which primarily react to "threats" about future events measured by the GPT index.[10] The VAR model uses data from January 1974 through December 2023 and includes three lags. As with the panel VAR model, we identify geopolitical risk shocks ordering the GPT and GPA indexes before the remaining variables in the model. Thus, any contemporaneous correlation observed between the GPR indexes and economic variables reflects the effects of GPR shocks.[11] We estimate the model using Bayesian techniques, with an uninformative prior on the reduced-form coefficients as in Uhlig (2005), and take 10,000 draws from the posterior distribution of the model coefficients.

We illustrate the global effects of geopolitical risks through a scenario analysis of the onset of Russia's invasion of Ukraine. Specifically, we use the model to construct a simulation that tracks the dynamic effects of the GPT and GPA shocks that materialized between January and April 2022. We pick April 2022 as the last period since the largest positive shocks to geopolitical risk in 2022 took place between January and April. Notably, GPT and GPA

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[10] A model that includes the GPR index instead of the GPT and GPA indexes does not detect a significant response of commodity prices to GPR shocks, while the response of all other variables is similar to what we report in this section.

[11] Since we look at the combined effects of the two geopolitical shocks, whether we order GPT or GPA first or second is irrelevant for the results.

shocks between January and April averaged 2 standard deviations and 0.7 standard deviation, respectively, indicating that the analyzed impulse responses are influenced by a mix of GPT and GPA shocks in a roughly three-to-one ratio.

Figure 9 shows the evolution in the scenario of inflation and GDP between January 2022 and December 2023 relative to a no-war baseline where there is no shock to geopolitical tensions. The rise in geopolitical risks observed during the onset of the war in Ukraine is estimated to have produced a drag on world GDP of 1 percent in 2022. Concurrently, these geopolitical risks have produced a persistent increase in global inflation, with the effects peaking at 1.2 percentage points by the end of 2022. Thus, the estimation of the monthly global VAR and this scenario confirms that the global effects of GPR shocks resemble those of shocks to supply, with inflation rising and GDP declining in the aftermath of the Russian invasion of Ukraine.

Figure 10 presents the peak response in the scenario of the remaining variables in the model. The estimates highlight how effects of elevated geopolitical risks are associated with declining consumer confidence and stock prices—the latter dropping by around 5 percent in 2022—factors that weaken aggregate demand. Meanwhile, the exchange value of the dollar appreciates, albeit weakly, in line with the evidence that spikes in global uncertainty and adverse risk sentiment can trigger flight-to-safety international capital flows (Forbes and Warnock, 2012).[12] The dollar appreciation is inflationary for all countries—as their currency depreciates, the price of imports in dollars increases—except for the United States. Lastly, commodity prices and oil prices increase, putting downward pressure on global activity and upward pressure on inflation.

Taken together, our results indicate that, in the aftermath of adverse geopolitical events, the inflationary pressures from supply-side disruptions outweigh the deflationary effects from lower aggregate demand, leading to a scenario of rising inflation and slowing economic growth.

6 Conclusions

Global geopolitical risks soared after Russia's invasion of Ukraine, bringing to the forefront concerns of investors, market participants, and policymakers that wars and adverse geopolitical events can exert a drag on the global economy while pushing up inflation.

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[12] Anayi et al. (2022) show that the Russian invasion of Ukraine has led to an increase in several measures of economic uncertainty.

We used historical data spanning over a century for a large panel of countries to quantify the relationship between inflation and geopolitical tensions. Using these data, we documented that global and country-specific geopolitical shocks are largely inflationary, a result that appears consistent across countries and over time. In a more recent monthly sample from 1970 onward, we confirm that geopolitical risks increase global inflation and transmit through financial markets. The transmission of geopolitical shocks to inflation is multifaceted, involving adverse supply side forces—supply disruptions, a decline in international trade, and an increase in the cost of commodities—, demand forces—lower consumer confidence and tighter financial conditions—, and a policy response characterized by expansionary fiscal and monetary policy actions.

Our findings underscore the importance of considering the multifaceted effects of geopolitical shocks and highlight the need for policymakers to remain vigilant and adaptable in the face of evolving geopolitical risks. In such scenarios, policymakers must weigh the risks of allowing inflation to become entrenched against the risks of tightening policy too aggressively and exacerbating the economic downturn.

Disclaimer

During the preparation of this work the authors used ChatGPT and Claude for proofreading. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Table 1: Summary Statistics for the Annual Dataset

	Average	St.Dev.	p5	p50	p95	N
Inflation (%)	10.1	21.0	-5.3	3.8	49.7	4,969
Advanced Economies	5.1	11.4	-3.4	2.5	18.4	2,091
Emerging Economies	13.6	25.2	-6.8	5.5	84.2	2,878
GDP Growth (%)	2.3	5.7	-6.8	2.5	10.1	4,916
Govt Spending to GDP (%)	19.3	10.3	5.5	18.1	38.9	4,272
Military Spending to GDP (%)	4.2	7.5	0.7	2.3	14.4	4,164
Public Debt to GDP (%)	47.4	37.2	7.0	39.0	116.0	4,181
Trade to GDP (%)	53.2	41.7	10.8	43.9	125.3	4,381
Money Growth (%)	14.8	16.8	-0.6	10.0	51.4	3,569
Country GPR Index	0.0	1.0	-0.9	-0.3	2.0	5,412
Country Shortages Index	0.0	1.0	-0.7	-0.4	1.9	5,412

Note: The table presents the mean, standard deviation, 5th percentile, 95th percentile, and number of observations for variables included in the annual dataset. The sample includes 44 countries and spans from 1900 to 2022. GDP growth is in real, per capita terms. The country-specific GPR indexes and Shortages indexes are standardized at the country level. Trade is the sum of imports plus exports.

Table 2: Effects of Country-Specific Geopolitical Risk on Inflation at Different Horizons

	Horizon				
Inflation relative to $t-1$	t	$t+1$	$t+2$	$t+3$	$t+4$
Baseline	1.30	1.89	1.78	1.02	0.36
	(0.33)	(0.47)	(0.49)	(0.71)	(0.82)
Robustness					
Controlling for Global GPR	0.99	1.36	1.04	0.38	0.28
	(0.30)	(0.39)	(0.45)	(0.63)	(0.69)
Advanced Economies	1.20	1.76	1.81	1.23	0.47
	(0.45)	(0.88)	(0.95)	(1.40)	(1.41)
Emerging Economies	1.39	2.00	1.75	0.84	0.27
	(0.46)	(0.56)	(0.54)	(0.65)	(0.86)
Post-1950s	1.28	1.64	1.36	0.72	0.38
	(0.33)	(0.55)	(0.56)	(0.75)	(0.86)
Quantiles					
q25	0.72	0.93	0.55	-0.30	-1.12
	(0.28)	(0.35)	(0.38)	(0.43)	(0.58)
q50	1.39	2.05	1.94	1.15	0.43
	(0.25)	(0.37)	(0.41)	(0.51)	(0.49)
q75	2.16	3.35	3.58	2.68	1.99
	(0.36)	(0.54)	(0.56)	(0.59)	(0.52)
Observations	4,918	4,867	4,817	4,768	4,720
Number of Countries	44	44	44	44	44

Note: Effects of geopolitical risk on inflation estimated using the annual dataset. Inflation is annual inflation in year $t+h$ minus its value in year $t-1$. Each row displays the effect of country-specific geopolitical risk (standardized by country) in different specifications. The row labeled 'Controlling for Global GPR' reports the effect when controlling for global geopolitical risk. Similarly, the rows labelled "Advanced Economies," "Emerging Economies," and "Post-1950s" show the effects when limiting the sample to only those sets of countries or years. Quantile coefficients report the effects at the 25th, 50th, and 75th percentile of the distribution of inflation. Country-specific geopolitical risk is standardized to have a mean of 0 and standard deviation of 1 for each country. All specifications include country fixed effects. Standard errors in parentheses are clustered by country and year.

Figure 1: Global Inflation and Global Geopolitical Risk
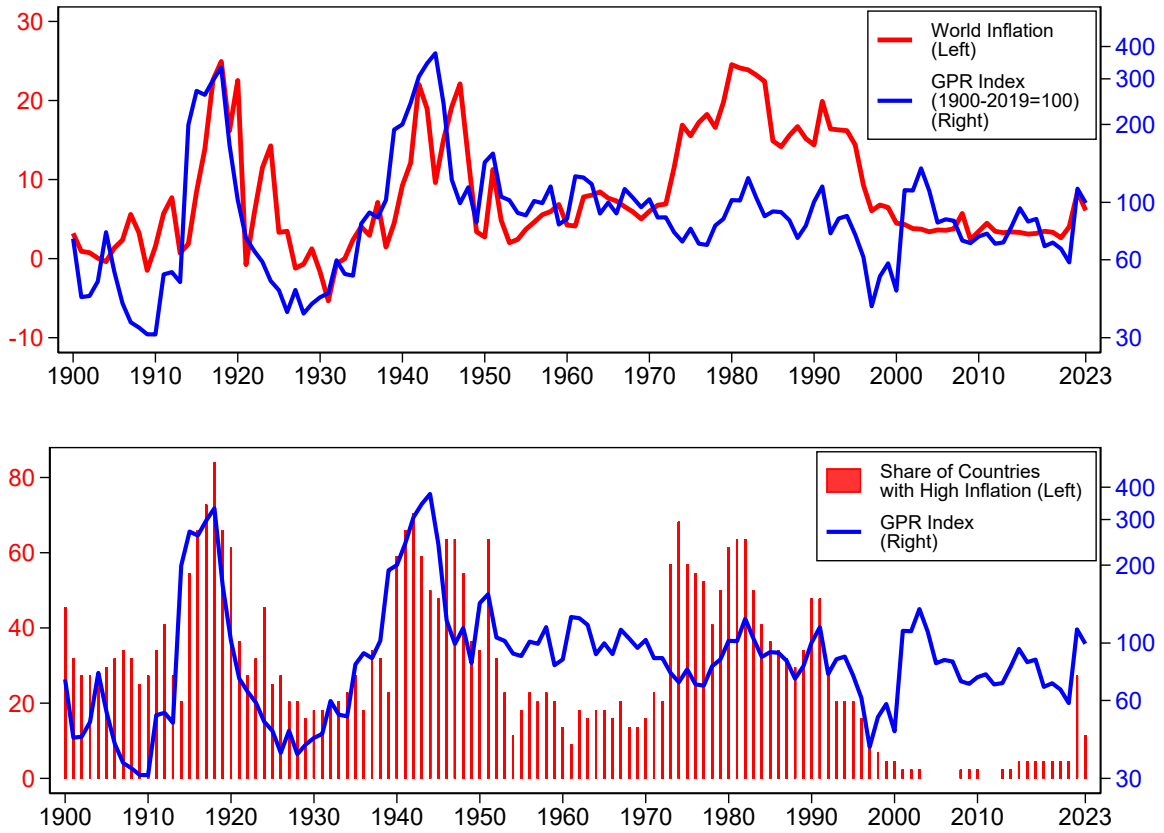

Note: The top panel plots world inflation and global geopolitical risk from 1900 through 2023. World inflation is calculated by averaging inflation for countries in our sample using real GDP weights.

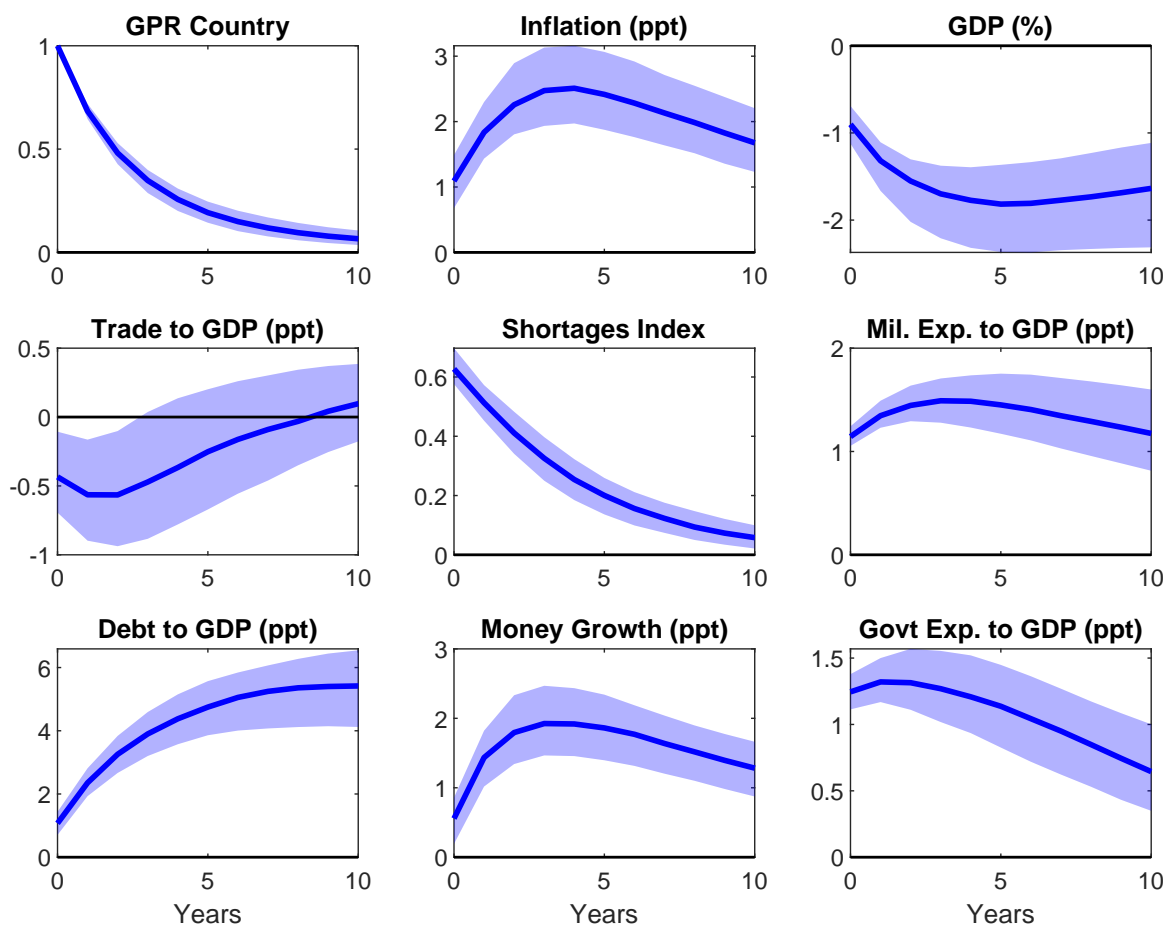Figure 2: Inflation and Country-Specific Geopolitical Risk, Selected Countries
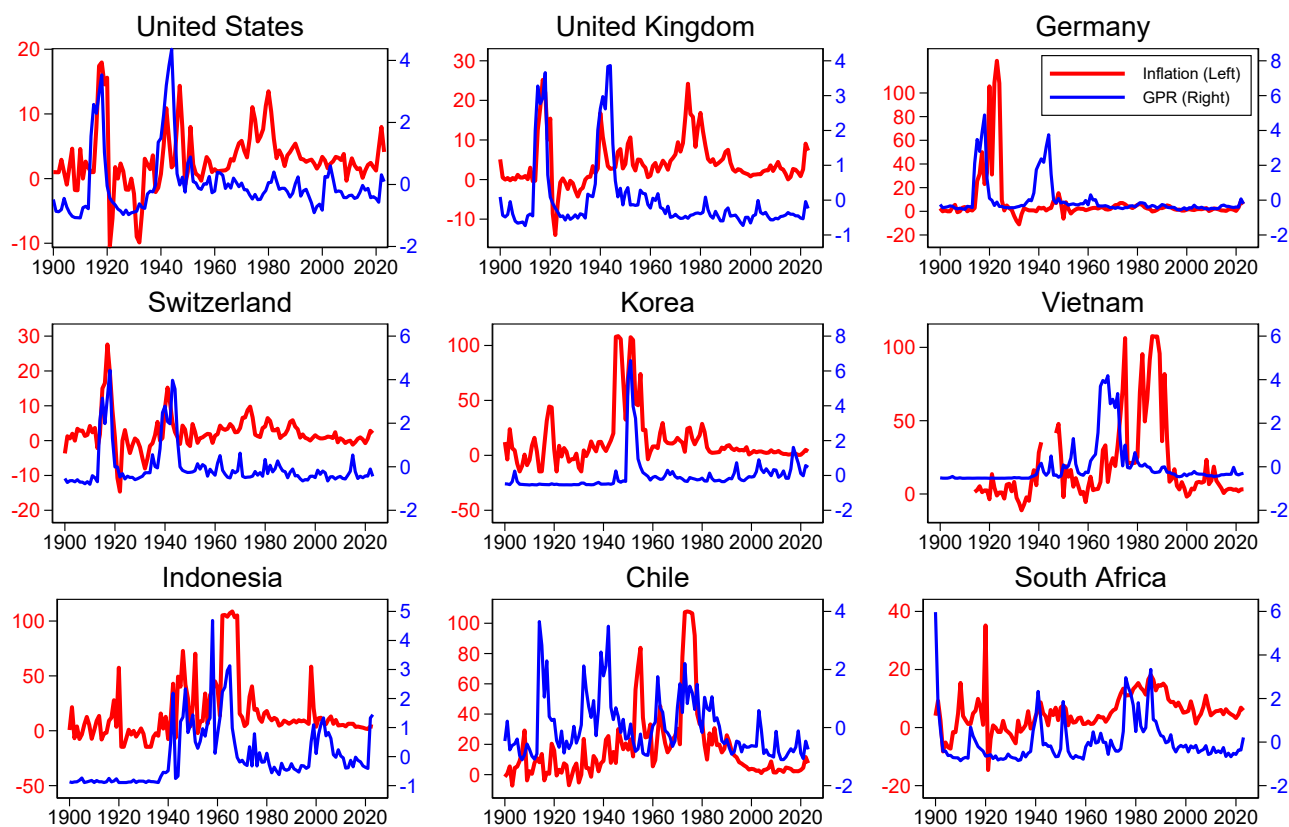
Note: Each panel displays inflation and geopolitical risk from 1900 through 2023 for a selection of advanced and emerging economies. Country-specific geopolitical risk is standardized so as to have 0 mean and unit standard deviation in each country.

Figure 3: Effects of Geopolitical Risk on Inflation: Bivariate Panel VAR
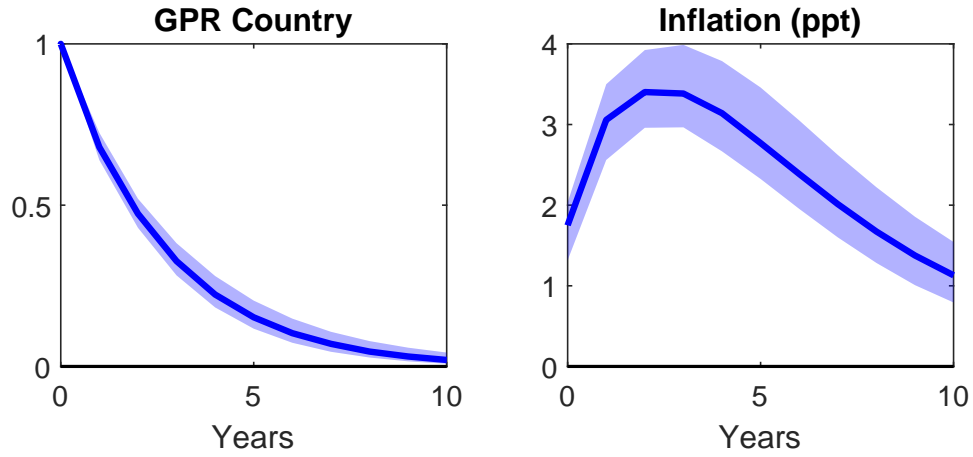
Note: The figure shows binned scatter plots of the response over time of geopolitical risk and inflation to a one standard deviation shock to country-specific geopolitical-risk. The impulse responses were estimated using a panel vector autoregression model. Data are annual from 1900 to 2022. The solid blue lines plot the central estimates. The shaded areas denote bootstrapped 90 percent confidence intervals. Variables are plotted in deviation from the baseline.

Figure 4: Effects of Geopolitical Risk on Inflation: Multivariate Panel VAR, 1900-2022

Note: The figure plots impulse responses to a one standard deviation shock to country-specific geopolitical risk. The impulse responses are estimated using a panel vector autoregression model on annual data from 1900 to 2022 for all economies except the United States. The solid blue lines plot the central estimates. The shaded areas denote bootstrapped 90 percent confidence intervals. Variables are plotted in deviation from the no-shock baseline.

Figure 5: Effects of Geopolitical Risk on Inflation: Counterfactual Simulations
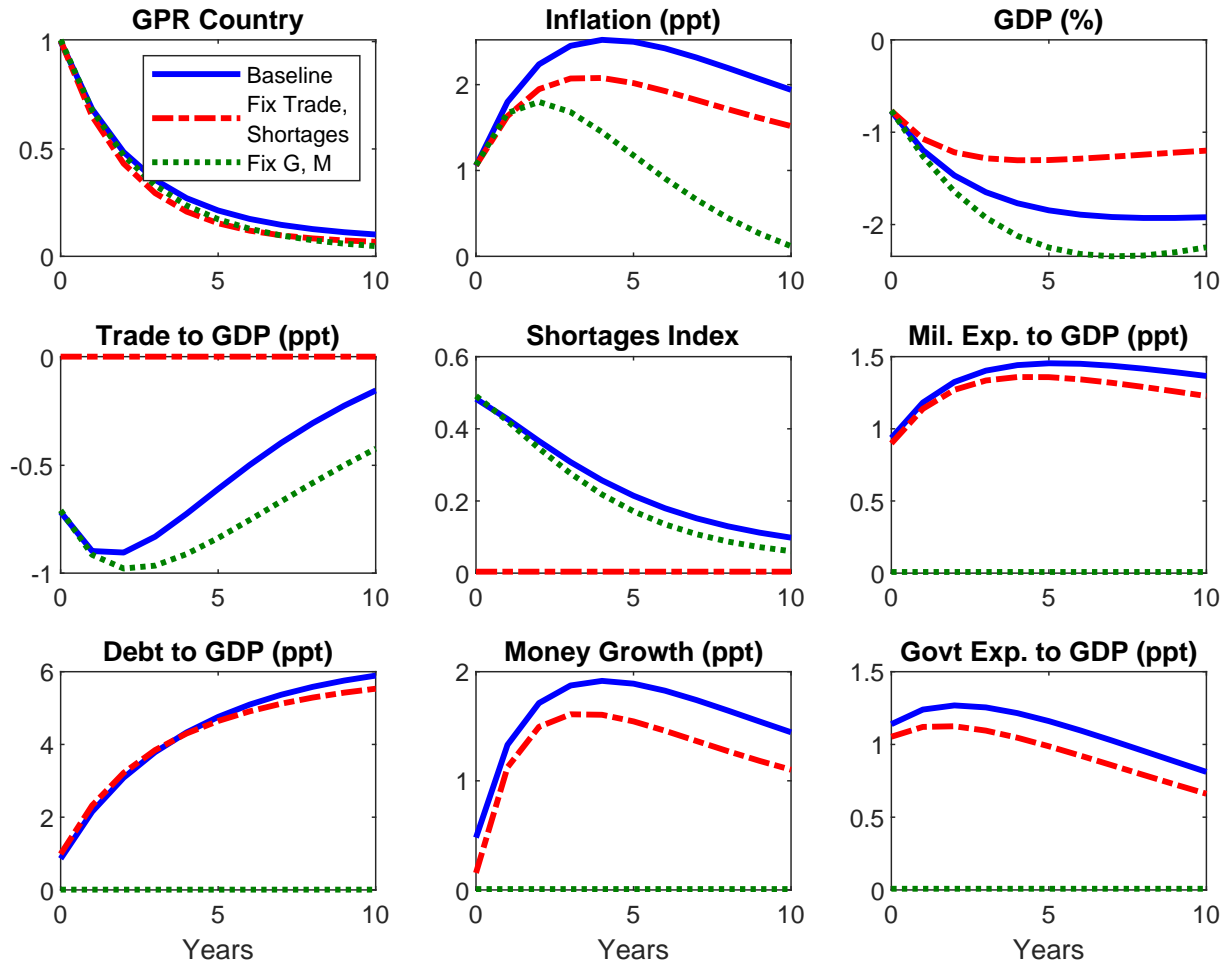
Note: The figure plots impulse responses to a one standard deviation shock to country-specific geopolitical risk. The blue lines are the responses from the panel vector autoregression model. The red dashed lines plot the counterfactual impulse responses that restrict to zero the response of trade and shortages following a GPR shock. The green dotted lines plot the counterfactual impulse responses that restrict to zero the response of military spending, debt to GDP and money growth.

Figure 6: Effects of Geopolitical Risk on Inflation in the United States, 1900-2022.
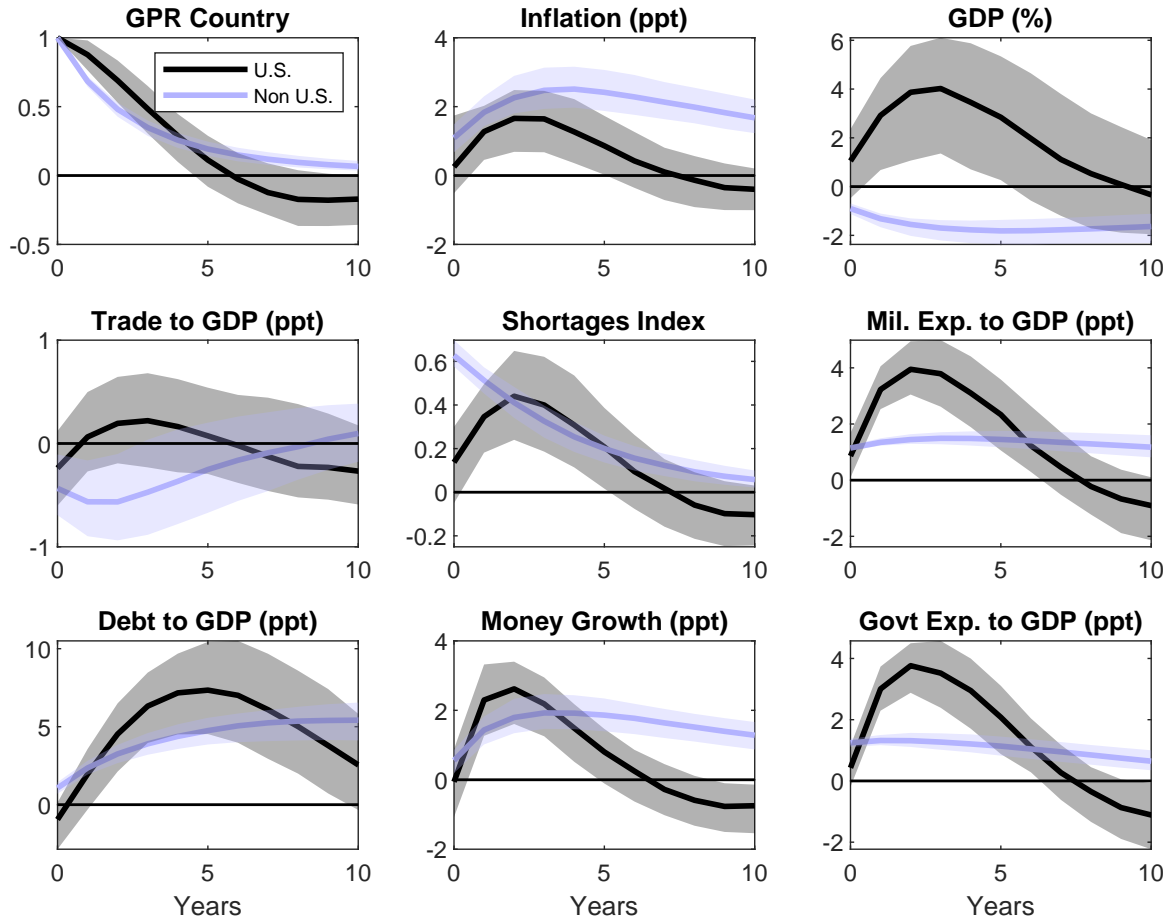

Note: The figure plots impulse responses to a one standard deviation shock to U.S. geopolitical risk. The impulse responses are estimated using a structural VAR model on U.S. data. The black lines plot the central estimates. The shaded gray areas denote bootstrapped 90 percent confidence intervals. The blue lines and shaded areas show the responses from the analogous shock in the multi-country panel VAR of Section 4, shown in Figure 4. Variables are plotted in deviation from baseline.

Figure 7: Heterogeneous Effects of Geopolitical Risk on Inflation
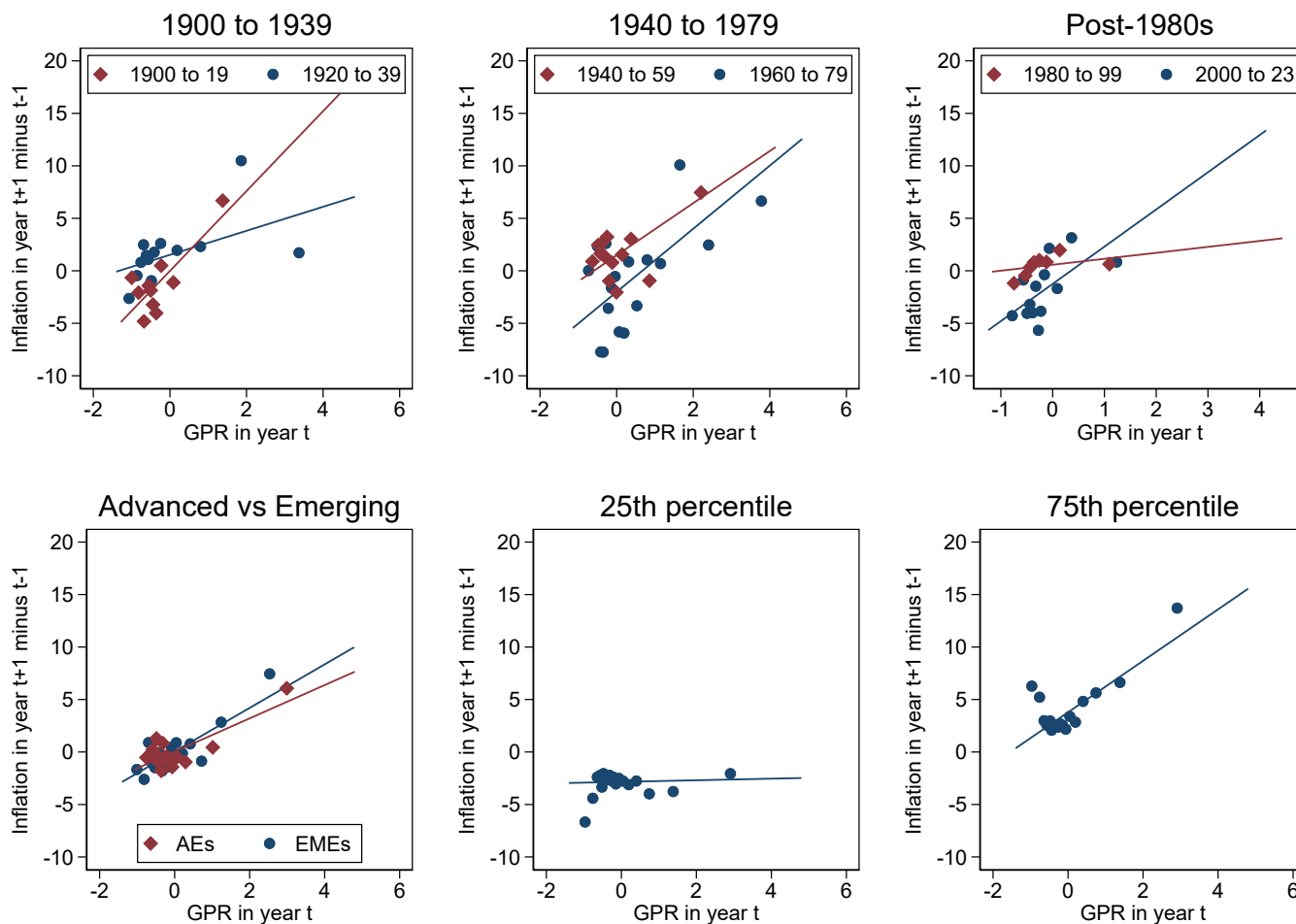
Note: The figure plots the relationship between changes in geopolitical risk and changes in inflation, by sample period, by stages of development, and by quantile. Data for 44 countries are annual and run from 1900 to 2023.

Figure 8: Cross-Country Dispersion in the Effects of Higher Geopolitical Risk
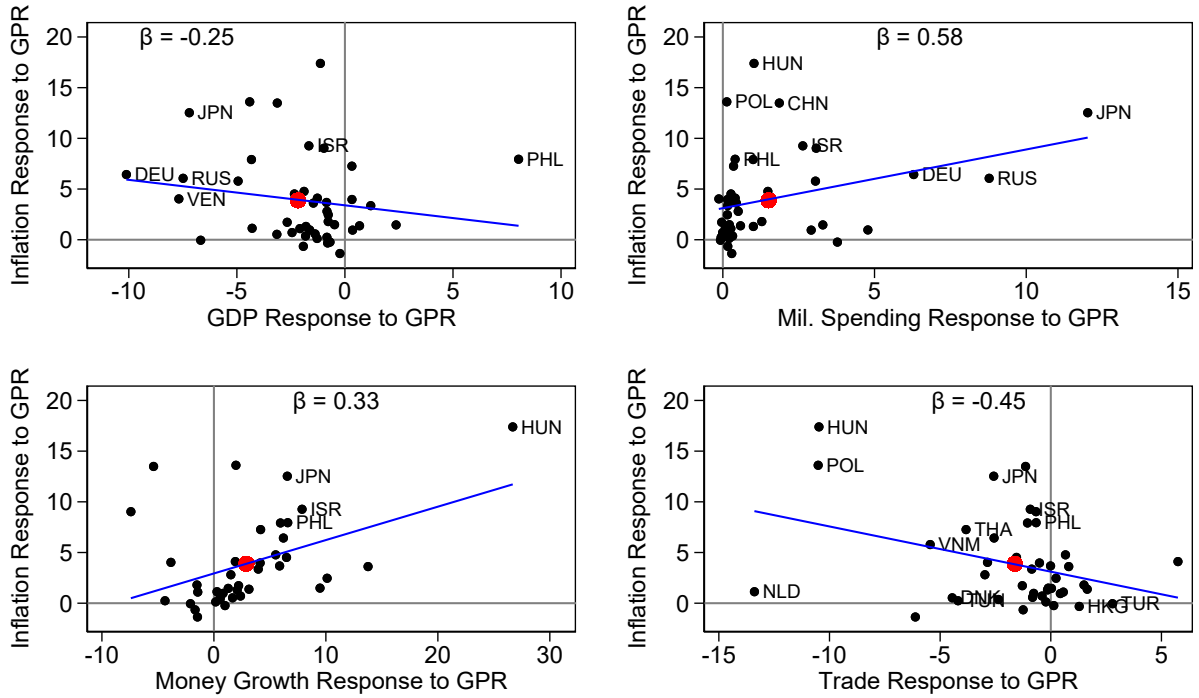
Note: The x-axis in each panel plots point estimates of the coefficients β_i measuring the effect of geopolitical risk on variable X in country i in year $t + 2$, obtained using the panel regression $X_{i,t+2} = \alpha_i + \beta_i GPRC_{i,t} + \gamma X_{i,t-1} + u_{i,t}$. The y-axis plots the country-specific response of inflation to geopolitical risk. The inset in each panel reports the slope of the fitted line. The red dots denote the unweighted averages of the β_i's across countries.

Figure 9: Global Effects of Geopolitical Risks on World GDP and Inflation: Russian Invasion of Ukraine Simulation
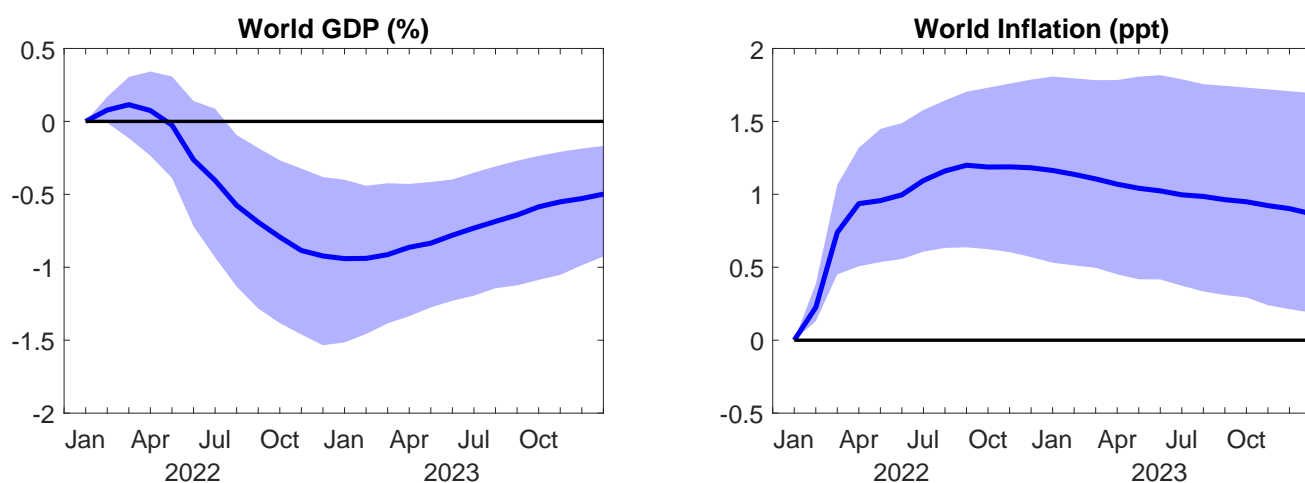
Note: The figure plots the responses of world GDP and world inflation to a rise in geopolitical risks sized to mimic the increase that occurred between January and April 2022, estimated using a structural vector autoregression (VAR) model on the monthly dataset. The solid blue lines plot the central estimates. The shaded areas denote bootstrapped 90 percent confidence intervals. The variables are plotted from January 2022 through December 2023 in deviation from a no-shock baseline.

Figure 10: Effects of Geopolitical Risk on Selected Variables: Monthly VAR from 1974 to 2023
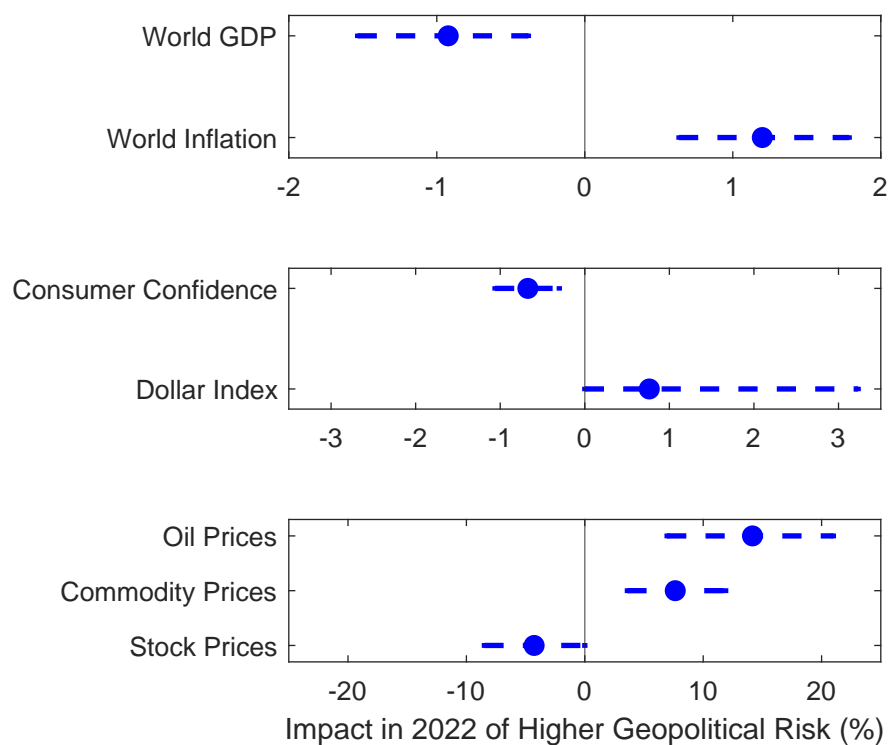
Note: The figure plots the maximum impact in the first year of a rise in geopolitical risks sized to mimic the increase that occurred between January and April 2022, estimated using a structural vector autoregression (VAR) model. See footnote in Figure 9 for details. For each variable, the blue dots plot the central estimates of the maximum impact in the first year. The blue dashed lines denote 90 percent confidence intervals. The effect is measured in percent deviation from a no-shock baseline for all variables except for inflation, which is measured in percentage points.

Appendix

A Appendix: Data Sources

A.1 Data Sources for Cross-Country Analysis

The economies included in the panel are Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Colombia, Denmark, Egypt, Finland, France, Germany, Hong Kong, Hungary, India, Indonesia, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, Norway, Peru, Portugal, Philippines, Poland, Russia, Saudi Arabia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Tunisia, Turkey, Ukraine, the United Kingdom, the United States, Venezuela, and Vietnam.

Below we describe coverage for each variable.

Geopolitical Risk

Initial data on country-specific geopolitical risk are from Caldara and Iacoviello (2022). To their sample we add data for the following countries: Colombia, Egypt, Hong Kong, Hungary, India, Indonesia, Israel, Malaysia, Philippines, Poland, Saudi Arabia, South Africa, Thailand, Tunisia, Turkey, Ukraine, Venezuela, and Vietnam. This is done using the same methodology as in Caldara and Iacoviello (2022), counting the share of newspaper articles mentioning geopolitical risks alongside the name, capital city, or major city of a given country. The sample of newspapers includes the *Chicago Tribune*, *The New York Times*, and *The Washington Post*.

Inflation

Inflation data are compiled from a variety of sources. Post-world war II data are initially from the IMF International Financial Statistics. Data coverage differs across countries and mostly starts in the 1950s (with the exception of Canada, for which data begin in 1920). The dataset is extended back to 1900 with historical data from Jordà, Schularick, and Taylor (2017) or Reinhart and Rogoff (2009).

Some gaps in data are then filled using information from a variety of other sources, as described below.

Hong Kong: Data are taken from the Hong Kong Statistics of Census & Statistics Department (years 1947-1967) or from the Hong Kong Annual Digest of Statistics (years 1968-1980).

Korea: Data on inflation for the period 1900-1959 are from the Historical Statistics of Korea in Kim (2022). CPI Inflation for the period 1900-1907 is from the CPI for the city of Yechon, for the period 1908-1960 is from the CPI index for the city of Seoul.

Malaysia: Data for the years 1942-1945 are from Table 6 in Huff and Majima (2013). Data for the period 1901-1939 are taken from the GDP deflator inflation in Nazrin (2002).

Philippines: Data for inflation during World War II are constructed using information from https://factsanddetails.com/southeast-asia/Philippines/sub5_6b/entry-3842.html, from newspaper articles from New York Times and the Wall Street Journal, and from Sicat (2003).

Russia: Initial data coverage was spotty. Data for the period 1911-1913 are taken from Mironov (2010). We use data from Efremov (2012) to add observations for the periods 1914-1923, 1926-1927, 1941-1944, and 1985-1990 (Tables 2, 5, 8 and 12 respectively). Data for 1925 are from Johnson and Temin (1993), Table 4. Data for the years 1973-1984 are from Kim (2000), Table 2. Data for the years 1991-1992 are from Koen and Phillips (1992), Tables 2 and 3.

Thailand: Data for the period 1942-1948 were taken from Shenoy (1950).

Vietnam: We use data from Mitchell (2013)'s International Historical Statistics (see https://rdcu.be/dAYWB) for the years 1913-1969. Data for 1925-1969 are for wholesale prices. Data for 1970-1974 are from the World Development Indicators (wholesale prices). Inflation for 1975 is set equal to 195.2 percent based on the equivalent currency depreciation against the dollar that year (see Reedy, 2008). Data for the 1976-1979 period are from Tetsusaburo (1991).

GDP

From 1900 through 2005, real per capita GDP data are from Barro and Ursúa (2012) or from the Maddison Project Database (Bolt and Van Zanden, 2020). When data are available for the entire sample from both sources, we use the Barro and Ursúa's data. The countries for which coverage is better through the Maddison Project are Colombia, Hong Kong, Hungary, Israel, Poland, Saudi Arabia, Thailand, Tunisia, Ukraine, and Vietnam.

From 2006 onwards, the data are extended using real per capita GDP growth from the World Bank World Development Indicators (WDI), with two exceptions due to missing WDI.

Taiwan: We take data from 2006 onwards from Haver Analytics based on underlying data from Directorate-General of Budget, Accounting and Statistics (series mnemonics A528GCPC@EMERGE).

Venezuela: We take data from 2006 onwards from the IMF's World Economic Outlook.

Military Expenditures

Data on military expenditures as a share of GDP are taken from Roser and Nagdy (2013) and from the Stockholm International Peace Research Institute and extend through 2022. The data were retrieved from https://ourworldindata.org/military-spending and from https://www.sipri.org/databases/milex. Coverage for each of the 44 economies in our panel differs; data for 18 countries are available as early as 1900.

Additional data are taken as follows.

Canada: Data for the period 1915-1920 on total expenditures on war and mobilization and national income are taken from Deutsch (1940).

Public Debt

Debt to GDP ratio data are taken from several sources. For advanced economies, data are from Jordà, Schularick, and Taylor (2017). Additional data coverage is gained using data the IMF World Economic Outlook (series mnemonics A***GDSS), from the IMF's Public Finances in

Modern History database (IMFPFH), and from Reinhart and Rogoff (2009), adjusting the series for possible breaks in the mean when coverage changes from one dataset to another.

Additional data are taken from the following sources.

Israel: Data for the period 1961-1972 are taken from Hercowitz and Strawczynski (1996). This series overlaps with the IMFPFH series for the year 1972. We aligned these data with the IMFPFH series by adjusting one series to match the value of the other for the year 1972. Data from the IMFPFH database were missing in the year 1981-1982, and were linearly interpolated. We thank Jonathan Benchimol for help with these data.

Trade

Trade to GDP ratio data are constructed as follows. For advanced economies, trade and GDP data are taken from Jordà, Schularick, and Taylor (2017) and the measure is constructed by taking the ratio of total imports and exports over GDP. Data for these countries spans from 1900 to 2019, with some gaps around World wars I and II. Additional data are taken from Fouquin and Hugot (2016) (available through https://ourworldindata.org/trade-and-globalization). We merge these two datasets and extend the data through 2022 using additional national accounts data from the World Bank's World Development Indicators via Haver (series mnemonics N***GPCD@WDI), adjusting the different series for possible breaks in the mean when coverage changes from one dataset to another: in particular, the Fouquin and Hugot (2016) dataset, which covers many emerging economies, only covers in some cases merchandise trade rather than total trade.

Additional data are obtained as follows.

Netherlands: We complement the data above with additional data for the period 1917-1920 and 1940-1943 from Statistics Netherlands (https://www.cbs.nl/en-gb/news/2018/14/exports-nearly-400-times-higher-than-in-1917). To fill two years of gap in the data, we set openness in 1944 and 1945 as equal to their 1943 value.

Taiwan: We complement the data above with data on nominal imports, nominal exports and nominal GDP from Directorate-General of Budget, Accounting and Statistics (via Haver Analytics) which are used to calculate the trade-to-GDP ratio for the period 1951-2022.

Money Supply

Money growth data are constructed as follows. For advanced economies, broad money data are taken from Jordà, Schularick, and Taylor (2017). We merge and extend these data with additional data on broad money growth for advanced economies, as well as all data for emerging markets, taken from the World Bank's World Development Indicators via Haver (series mnemonics F***BMG@WDI) or from the IMF International Financial Statistics.

Some additional gaps in the data are filled in as follows.

Belgium: Data for money growth during World Wars I and II are taken respectively from the International Encyclopedia of the First World War (https://encyclopedia.1914-1918-online.net/article/war_finance_belgium) and from Chapter 8 in Van der Wee (2009).

Korea: Data for the period 1906-1960 are taken from Tables S1-S9 in Kim (2022).

Thailand: Data for the period 1940-1948 are taken from Table 3 in Shenoy (1950).

Government Spending

Government spending to GDP data are taken from several sources. For advanced economies, data are from Jordà, Schularick, and Taylor (2017). For other economies, we use data either from the IMF's Public Finances in Modern History database or from the Penn World Tables, whichever has a larger coverage. Data for Korea for the period 1911-1940 are ratio of government consumption to GDP taken from Kim (2022).

Shortages

Country-specific shortages indexes are constructed using the methodology described in Caldara, Iacoviello, and Yu (2024), counting the joint occurrence of articles mentioning economic shortages alongside the name, capital city, or major city of a given country. The articles mentioning economic shortages are those simultaneously mentioning terms such as shortage, scarcity, bottleneck and rationing, within five words of terms such as food, labor, energy, oil, and materials. The sample of newspapers includes the *Boston Globe*, the *Chicago Tribune*, the *Los Angeles Times*, *The New York Times*, *The Wall Street Journal*, and *The Washington Post*.

A.2 Data Sources for Monthly Global VAR

The data cover the period 1974-2023. The monthly global indicators used in the VAR are:

- Geopolitical threats (GPT) and acts (GPA) indexes are described in Caldara and Iacoviello (2022).

- World GDP in purchasing power parity is from Cuba-Borda, Mechanick, and Raffo (2018), and updated using the same methodology.

- World inflation is defined as the aggregate of countries' 12-month change in consumer price index (Global Financial data)

- Stock prices from the FTSE World Dollar index (Global Financial Data)

- The OECD Consumer Confidence Index for Europe (Haver mnemonics: C023CCE@OECDMEI)

- The spot oil prices from West Texas Intermediate (Haver mnemonics: PXTEXP@USECON)

- Commodity prices (GSCI@USECON - from the S&P Goldman Sachs Commodity Index)

- The dollar exchange rate (FXTWBDI@USECON - Federal Reserve Board Nominal Trade-Weighted broad dollar index)

Figure A.1: Data Coverage for the Cross-Country Panel
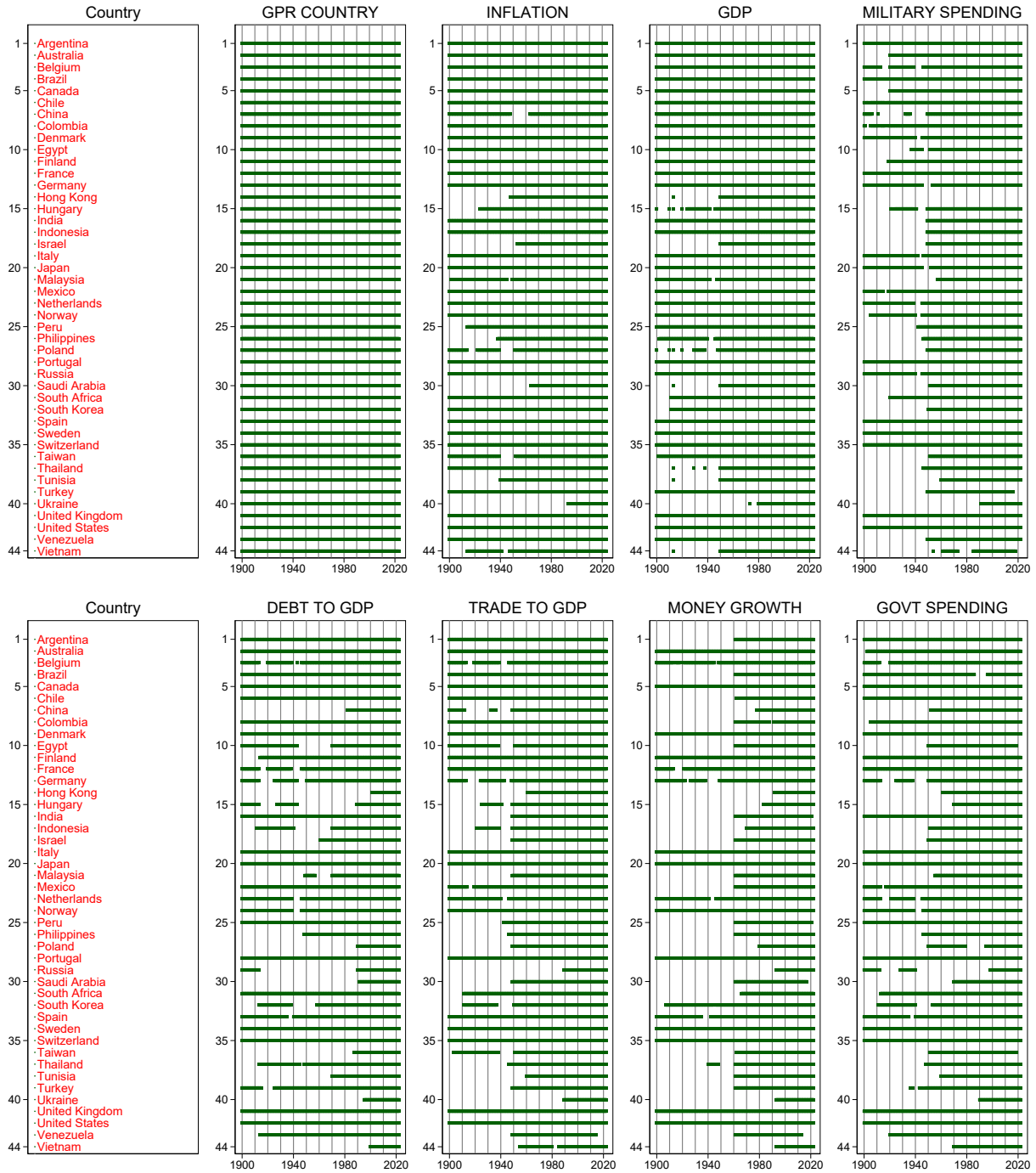
Note: The figure illustrates coverage between 1900 and 2022 of country-specific variables over the sample: country-specific geopolitical risk, inflation, log real GDP per capita, military spending as a share of GDP, public debt to GDP, trade to GDP, money growth, and government spending to GDP. Like country-specific geopolitical risk, country-specific shortages are available for the full 1900-2022 sample.

A.5

Figure A.2: Country-Specific News Indexes of Shortages, Selected Countries
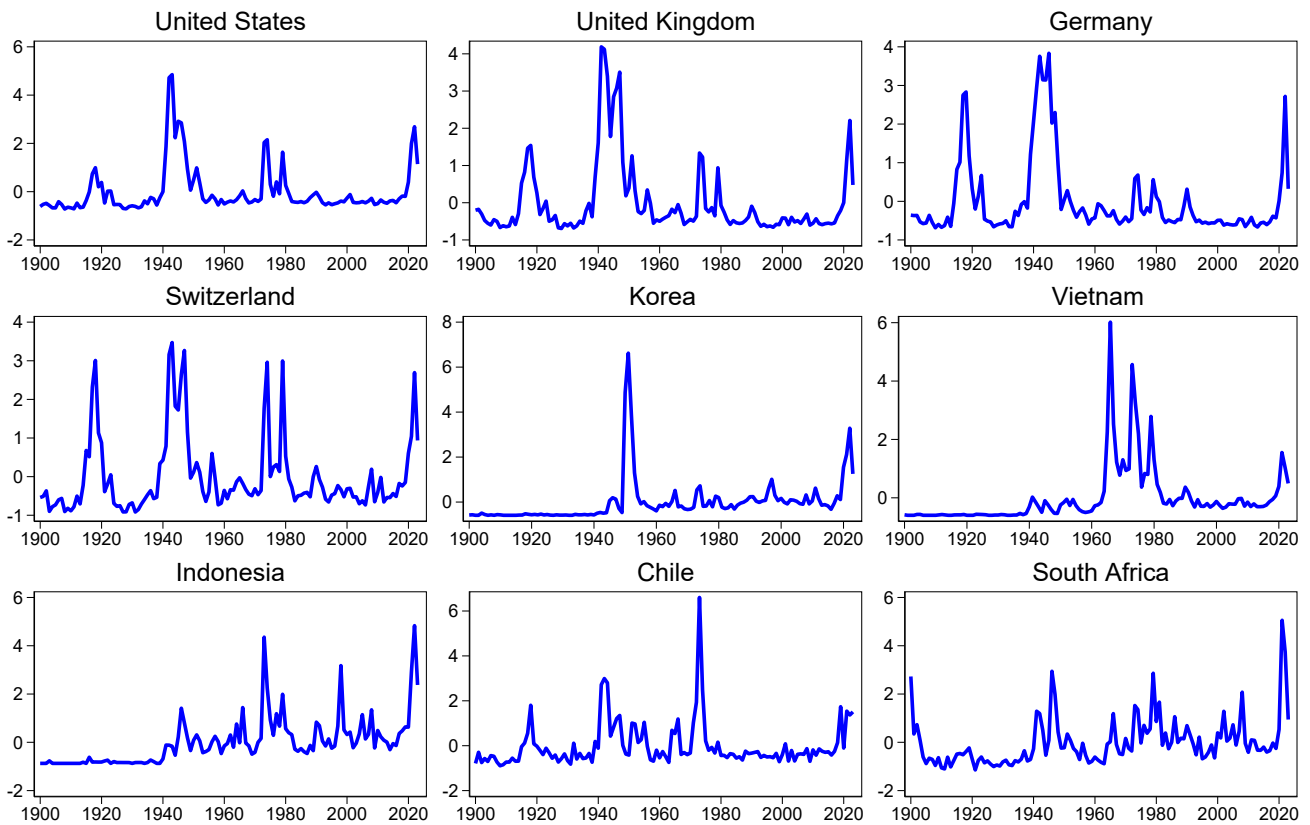
Note: Each panel displays news-based index of shortages from 1900 through 2023 for selected countries. The indexes are standardized so as to have 0 mean and unit standard deviation in each country.