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 vector autoregression 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.

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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 interaction of supply, demand, and policy forces that can move inflation in either direction. On the supply side, wars and their associated risks 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 financial conditions, consumer confidence, and business investment, 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, European Central Bank President Christine Lagarde and Federal Reserve Chair Jerome Powell noted the potential for upward pressure on near-term inflation and negative impacts on economic activity amid an uncertain outlook (Lagarde, 2022 and Powell, 2022). On the fiscal side, then-U.K. Chancellor of the Exchequer Rishi Sunak warned that the United Kingdom 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 studies 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 vary across nations and historical contexts. To preview 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 larger 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 through 2023 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 for quantifying the immediate impact of geopolitical risks on financial conditions, commodity prices, and consumer sentiment—variables that react swiftly to geopolitical news.

Section 3 uses long-run historical data to estimate the effects of geopolitical risks on inflation by means of panel vector autoregression models. Our main result is that adverse shocks to geopolitical risk—identified using a recursive identification scheme that treats GPR as exogenous to global economic conditions—lead to a sustained rise in inflation. The transmission operates through both supply and demand channels. On the supply side, trade contracts and shortages increase. On the demand side, military spending, public debt, and money growth all increase. All told, the combination of rising inflation and declining GDP suggest that supply-side forces play a dominant role in the transmission mechanism.

In addition, we provide three pieces of evidence that corroborate and sharpen our main result. First, the inflationary effects of geopolitical risk occur in response to both the "threats" and the "acts" components of the index. Second, geopolitical risk shocks are inflationary

both when they are global and when they are country specific. Third, geopolitical risks are inflationary also when we adopt a narrative identification approach that selects plausibly exogenous episodes of spikes in geopolitical risk.

In Section 4, we estimate country-by-country VAR models to explore various dimensions of the heterogeneous effects of geopolitical risk. Countries with stronger inflation responses to geopolitical risks tend to experience larger GDP declines, consistent with geopolitical risk shocks mainly acting as supply disturbances. Countries that experience larger declines in trade and larger increases in military spending and money growth tend to show stronger inflationary responses. Inflation rises and activity drops not just in response to increases in country-specific geopolitical risks, but also when geopolitical risks rise in other countries.[1]

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 tradeoffs 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 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 focused on the United States, as seen in works by Hall and Sargent (2022) and Rockoff (2015). Our work offers a formal, systematic, and global perspective.[2]

Third, our paper delves into the transmission mechanisms through which geopolitical

[1]Moreover, we find that the inflationary effects of geopolitical risk occur in both advanced and emerging economies and are robust to excluding the two world wars from the sample. Using quantile regressions, we document that adverse geopolitical events are associated with high inflation uncertainty and with upside inflation risks.

[2]See Bordo and Levy (2021) for some cross-country historical examples of the link between wars, deficit financing and inflation.

tensions can influence economic activity. 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).[3]. The approach in our paper is broadly connected to recent work by Federle et al. (2024), who examine the impact of interstate wars on GDP and inflation using cross-country historical data and a theoretical model. Their analysis focuses on how the economic effects of wars vary with conflict characteristics—for example, whether the war is fought on home soil or the distance from foreign conflicts. By contrast, we study the broader economic effects of geopolitical risk—including both realized acts and perceived threats—on inflation. In our analysis, we quantify both demand and supply transmission channels and assess cross-country heterogeneity in the responses.

2 The Data

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

2.1 Country-Level Historical Annual Data

Our first dataset is an annual panel spanning from 1900 through 2023 that covers 44 advanced and emerging economies selected for data availability and their historical economic and political importance. These economies collectively account for approximately 90 percent of global GDP.[4] The panel includes country-level measures of inflation and GDP, as well as other economic indicators: military expenditures, public debt, trade openness, government spending, money growth, and shortages.

Data on inflation for the post-World War II period are from the International Monetary Fund's (IMF) International Financial Statistics. These data are extended back to 1900 using historical data from Jordà et al. (2017) for advanced economies, and from Reinhart and Rogoff (2011) for emerging economies. Additional observations are gathered from a variety of sources

[3]Our work is also related to studies of the effect of oil and commodity prices on inflation, such as Blanchard and Galí (2007), Coibion and Gorodnichenko (2015), Conflitti and Luciani (2019), and Aastveit et al. (2023).

[4]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, the Philippines, Poland, Russia, Saudi Arabia, South Africa, South Korea, Taiwan, Thailand, Tunisia, Turkey, Ukraine, Venezuela, and Vietnam.

listed in the Appendix. These combined sources give us a total of 5,101 observations for inflation. To minimize the impact of hyperinflationary episodes, we winsorize inflation and money growth data at the 1st and 97.5th percentiles, applying a logarithmic transformation for values above the upper threshold to preserve information while mitigating the impact of extreme outliers.[5]

Real GDP per capita data are primarily from Barro and Ursúa (2012) and from the Maddison Project Database (Bolt and Van Zanden, 2020), extended through 2023 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 additional data from the WDI database and the IMF World Economic Outlook. We supplement these sources using the IMF's Public Finances in Modern History database and Reinhart and Rogoff (2011). Trade to GDP data—the sum of total imports and exports over nominal GDP—are primarily from Jordà et al. (2017), Barbieri et al. (2009), and Fouquin and Hugot (2016).[6] Money growth data are primarily from Jordà et al. (2017) and from the WDI database, as well as from other sources listed in the Appendix, including the Global Macro Database by Müller et al. (2025). Appendix Figure A.1 summarizes the coverage of the dataset.

Table 1 provides summary statistics for the variables in our panel. Average inflation is 10 percent. 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 economies. Countries in our sample display a wide range of fiscal positions, with an average debt to GDP ratio of 48 percent and an average share of military spending in GDP of 4 percent. Trade-to-GDP ratios are 53 percent and money growth is 15 percent per 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

[5]Specifically, we set values of inflation and money growth below negative 14.2 and negative 8.7 percent at this threshold value, respectively. For values above the 97.5th percentile, we employ a piecewise transformation with 110.6 percent and 83.5 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 $\pi > \overline{\pi}$.

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

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, 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 (2022). To their sample we add data for the following 18 economies: Colombia, Egypt, Hong Kong, Hungary, India, Indonesia, Israel, Malaysia, the 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 measure the frequency of articles mentioning terms related to economic shortages—of energy, food, industry, and labor—together with the name of the country. The index is presented in Caldara, Iacoviello, and Yu (2025) and is visualized, for a selected number of countries, in Appendix Figure A.2. Additionally, we break down each country-specific GPR index into two separate components—the geopolitical threats (GPT) and the geopolitical acts (GPA) indexes. The country-specific GPT index is based on articles that mention a particular country and include phrases related to threats and concerns about scope, duration, and ramifications of geopolitical tensions. The country-specific GPA index is based on phrases referring to the outbreak and actual unfolding of wars.

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 geopolitical risk and inflation for a selected group of economies. Historically, periods of high geopolitical risk are associated with high inflation, in both advanced and emerging economies. While global events like the two world wars have influenced major spikes in geopolitical risk and inflation, 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 triggered 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 compounded 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, amplifying 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 (CPI) across countries, sourced from Global Financial Data. The consumer confidence index is from the Organisation for Economic Co-operation and Development (OECD). Oil prices are measured by the West Texas Intermediate Index. Financial data encompass global monthly stock prices via the Financial Times Stock Exchange (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). The headline global GPR index is broken down into two separate components, the GPT (geopolitical threats) and the GPA (geopolitical acts) indexes. 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 How Geopolitical Risk Affects Inflation: Evidence from Pooled Panel VARs

In this section, we examine the impact of geopolitical risk on inflation using country-level data in a panel VAR framework. In our baseline model, we identify a geopolitical risk shock using a Cholesky decomposition of the reduced-form residual covariance matrix, ordering the country GPR index first. This identification strategy implies that, on impact, geopolitical risk is not affected by contemporaneous changes in other economic variables. Thus, any observed contemporaneous correlation reflects the effect of geopolitical risk shocks on the economy. This assumption is supported by the properties of the GPR index, which is typically not influenced by domestic economic conditions within the same year. We relax this assumption in the robustness analysis.[7]

We then extend the analysis along two key dimensions. First, we examine whether the macroeconomic effects of geopolitical risk differ depending on the *nature* of the shock—whether it stems from geopolitical acts or threats. Second, we assess the importance of the *scope* of the shock—whether it reflects global developments or country-specific dynamics. These extensions allow us to explore potential differences in the transmission of geopolitical risk shocks across types and sources of risk. Finally, to assess the robustness of our identification strategy, we implement a narrative approach that isolates large, plausibly exogenous geopolitical risk shocks. This strategy focuses on extreme spikes in the GPR index and relies on the historical narrative record to validate their exogeneity to contemporaneous economic conditions.

3.1 Macroeconomic Effects of Geopolitical Risk: Baseline Evidence

We begin by estimating a panel VAR on the following nine variables: country-specific GPR indexes, inflation rates, real GDP per capita, the news-based index of shortages, money growth, and the ratios to GDP of military spending, government spending, public debt, and trade. The dataset includes 43 countries (excluding Hong Kong due to missing military spending data), for a total of about 3,600 observations. We pool data across all countries in the sample, assuming that the dynamic effects of geopolitical risk are homogeneous across countries.[8] This

[7] See Caldara and Iacoviello (2022) for a detailed discussion.

[8] We allow for country-specific fixed effects by de-meaning all variables by country. Additionally, we use economy-specific cubic trends to detrend log GDP and the trade-to-GDP ratio.

assumption exploits the full cross-country dimension of the data and allows us to obtain more precise estimates of the average effects of geopolitical shocks, including data for countries with limited time-series coverage. The tradeoff is that the pooled estimator may be inconsistent if the dynamic effects of geopolitical risk shocks vary across countries (Canova and Ciccarelli, 2013). We assess the robustness of this assumption and explore cross-country heterogeneity in the next section. The model is estimated with one lag; results are robust to including a second lag (see Figure A.3 in the Appendix). The model is estimated using Bayesian methods with an uninformative Jeffreys prior on the VAR coefficients. We draw 5,000 samples from the posterior distribution using a Gibbs sampler, as implemented in the toolbox described in Canova and Ferroni (2021).

We find that increases in geopolitical risk have a persistent inflationary effect. Figure 3 displays the impulse responses to a one-standard-deviation GPR shock. Inflation rises significantly in response to the shock, peaking at approximately 2 percentage points above the no-shock baseline 3 years after the shock, and is well above baseline even 10 years after the initial surprise. GDP declines, bottoming out at around 2 percent below baseline after 10 years.[9]

To facilitate interpretation, we classify the transmission channels into supply and demand categories. The responses of trade and the shortages index are interpreted as supply-side effects, while changes in military spending, money growth, and fiscal indicators reflect demand-side pressures. This distinction is supported by a Cholesky decomposition of the panel VAR residual covariance matrix, where negative trade shocks and positive shortages shocks are associated with higher inflation and lower GDP—indicative of supply disruptions. By contrast, positive shocks to the remaining variables tend to raise both inflation and GDP, consistent with demand-driven dynamics.[10]

The negative co-movement between inflation and GDP suggests that supply-side forces are the dominant channel through which geopolitical risk shocks affect economies. On the supply-side, as shown in the middle and bottom rows of Figure 3, geopolitical shocks reduce trade and lead to higher shortages. On the demand side, geopolitical shocks trigger increases in military spending—reflecting ongoing conflicts and heightened risk of future conflicts—as

[9]In our baseline specification, inflation and money growth are winsorized using the procedure described in Section 2.1. The results of a VAR that drops the outliers altogether are very similar and reported in Figure A.4 in the Appendix.

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

well as increases in government spending, public debt, and money supply. These findings are consistent with previous research documenting the fiscal and monetary expansions that typically accompany periods of geopolitical instability, including evidence from the United States presented in Hall and Sargent (2022).

The persistent responses of inflation and GDP are driven both by the direct impact of the geopolitical risk index and by indirect propagation through other endogenous variables in the system. An inspection of the VAR coefficients reveals that fiscal and monetary variables as well as shortages play key roles in sustaining the inflation response. These channels amplify and prolong the effects of the initial GPR shock. That said, additional sources of persistence—for instance those operating through investment—may not be fully captured because of data limitations, as discussed in more detail below.[11]

Our panel VAR analysis may capture only a subset of the mechanisms through which geopolitical risk affects inflation and growth. Additional supply-side effects such as capital destruction, reduced private investment, labor dislocation, or commodity price spikes may not be fully captured due to data limitations. Similarly, demand-side channels—including declines in consumer confidence—may also play an important role. These factors are difficult to measure over long periods of time and consistently across countries. For this reason, we complement the panel VAR analysis with a time-series VAR estimated on monthly economic and financial indicators, presented in Section 5. In Figure A.5 of the Appendix, we also report the impulse responses estimated from a larger VAR that includes short-term and long-term interest rates as well as the exchange rate. Because of limited data availability, the inclusion of these variables shrinks the sample size by about 30 percent. The responses of the original variables are very similar to those of the baseline model. Higher geopolitical risk leads to persistently higher short and long-term interest rates as well as to a depreciation of the exchange rate. Interest rates rise less than one-for-one with inflation, so that real interest rates fall. These impulse responses are consistent with the notion that, in the past, geopolitical shocks may have triggered periods of persistently loose monetary policy.

[11] Another aspect worth considering relates to the nature of our news-based measure of risk. The inherent characteristics of the news cycle often result in a decline in coverage of an event even while its economic effects and broader consequences continue to unfold. In other words, the media may move on to other stories, but the economic repercussions of a geopolitical event may persist. This observation highlights an important aspect of interpreting GPR measures and their economic impacts which goes even beyond our VAR analysis. To accurately assess the stance of geopolitical risk and its cumulative effects, we find it is crucial to consider not only current geopolitical developments but also past geopolitical events whose effects may still be reverberating through the economy.

3.2 Understanding Transmission: Acts, Threats, and Global Shocks

We expand the analysis by distinguishing between two key dimensions of geopolitical risk: the *nature* of the shocks—whether they stem from the realization of geopolitical events or from the threat of such events—and the *scope* of the shocks—whether they reflect global developments or country-specific dynamics. To this end, we estimate separate panel VAR models to quantify the inflationary effects of these more refined measures of geopolitical risk and to examine differences in their transmission channels.

Nature of the Shock: Acts and Threats

GPR indexes capture both the realization of adverse geopolitical events (acts) and the threat of such events occurring. While both acts and threats may influence inflation, their transmission mechanisms can differ. Geopolitical acts—such as the beginning or the escalation of military conflicts—typically entail supply-side destruction and may often trigger stronger fiscal responses. Threats, by contrast, primarily reflect heightened risk perceptions and are not necessarily accompanied by physical disruptions.

To assess these differences, we estimate a panel VAR model in which the country-specific GPR index is replaced by two separate measures: the Geopolitical Acts (GPA) index and the Geopolitical Threats (GPT) index. In the model, the GPA index is ordered first, followed by the GPT index. This identification strategy—as in Caldara and Iacoviello (2022)—allows acts shocks to contemporaneously affect threats, consistent with the idea that the realization of events can elevate the perceived likelihood of future adverse developments. Threats shocks are identified as innovations orthogonal to contemporaneous acts and reflect changes in perceived risk and uncertainty that are not tied to the occurrence of events within the same year.

Figure 4 presents the impulse responses to geopolitical acts and threats shocks. Both shocks lead to a sustained increase in inflation and a decline in real activity, but acts generate larger and more persistent effects. The transmission mechanisms also differ. Acts shocks induce both a decline in trade and an increase in shortages, alongside strong policy responses—increases in government and military spending, higher public debt, and higher money supply. Threats shocks, by contrast, appear to transmit through a smaller set of channels: higher shortages, a gradual increase in non-military government spending, and a modest expansion of money supply.

All told, the findings support the view that acts and threats can have different macroeconomic effects, although they both induce higher inflation and lower GDP. A caveat is that, at an annual frequency, the two components are correlated: The response of the threats index to an acts shock is nearly as large as the response to a direct threats shock—and more persistent. This result likely reflects the fact that geopolitical events are often preceded by rising tensions within the same year, making it difficult to cleanly separate their effects. In such cases, our identification strategy attributes the shared variation to acts shocks. Nonetheless, we find it reassuring that threats shocks retain independent effects on inflation and activity. A further caveat is that threats shocks likely propagate through additional channels—such as confidence or economic uncertainty—that are historically difficult to measure with the available data and are not explicitly modeled in our framework.

Scope of the Shock: Global and Country-Specific

To explore the international dimension of geopolitical risk, we estimate an alternative panel VAR specification that separately identifies global and country-specific shocks. Many geopolitical events are global in nature, with the two world wars representing the most prominent examples. Yet the baseline model is agnostic about the scope of geopolitical risk shocks, which may reflect both global and country-specific developments. In the alternative specification, we include both the global GPR index and the country-specific GPR index, ordered first and second, respectively. This ordering allows us to distinguish between global shocks, which directly affect the global index and may propagate through country-level indexes, and country-specific shocks, which move the country-specific GPR index without contemporaneously influencing the global index. Country-specific shocks may reflect either idiosyncratic geopolitical developments or heterogeneous, unusual responses to an adverse global geopolitical event.

Figure 5 displays the resulting impulse responses. Global and country-specific shocks generate qualitatively similar dynamics, but differ in relative impact and persistence of effects. Inflation rises more sharply and remains elevated for longer following a global shock, whereas the GDP decline is larger in the case of a country-specific shock. The stronger initial decline in trade following global shocks provides external validation of our identification strategy, as trade is inherently more sensitive to globally synchronized disruptions. Differences in the responses of policy variables are more nuanced: Military expenditures and money growth increase more following a global shock, while the debt-to-GDP ratio rises more in response to

a country-specific shock.[12]

3.3 Narrative Identification of Geopolitical Risk Shocks

Our baseline identification assumes that GPR indexes are exogenous to economic conditions within a year. While this assumption is plausible for many countries and contexts, it is conceivable that adverse economic conditions may, in some cases, be the main trigger of adverse geopolitical events. To assess the robustness of our main findings, we implement a narrative identification strategy that isolates shocks more likely to be exogenous to contemporaneous economic conditions. The idea is to focus exclusively on episodes characterized by large spikes in the GPR index, for which the task of verifying exogeneity using the historical record is easier and more transparent.

We employ a two-step procedure, and provide more details in the Appendix. In the first step, we regress each country-level GPR index on a constant, a one-year lag of the index, and the contemporaneous global GPR index. We examine the three largest positive residuals for each country, yielding 132 candidate episodes across 44 countries. In the second step, we apply narrative validation to exclude episodes that either are triggered by economic conditions or likely reflect measurement error. Through this process, we exclude 11 episodes and single out 121 country-year observations that meet our criteria for country-specific exogenous geopolitical shocks. Table A.1 in the Appendix lists these episodes. Many involve well-known historical events such as the 1982 Falklands War (Argentina), 9/11 (United States), or the Russian invasion of Ukraine in 2022. Others reflect regional conflicts, secession movements, or sharp escalations in political instability. We reviewed each case using historical records to verify that these episodes were not preceded by identifiable domestic economic triggers, reinforcing their validity as exogenous shocks. For instance, we exclude events such as Chile's 1973 Pinochet coup, where economic crisis and high inflation played an important role; and the 2014 Malaysian Airlines disaster, which triggered a rise in the GPR index for Malaysia, but was quickly ruled out not to be a terrorist attack.

Using the list of "exogenous" geopolitical risk shocks, we construct a narrative GPR variable that takes a value of the residual for the selected country-year episodes and zero otherwise.[13]

[12]Both shocks have been normalized to generate a one-standard deviation increase in the variable directly affected by the shock.

[13]For robustness, we constructed an alternative proxy that takes a value of one for the selected country-year episodes and zero otherwise. Results using this dummy are similar to those shown in the paper.

We then re-estimate the panel VAR, adding the narrative variable as the shock of interest and ordering it first in the VAR. This approach is equivalent to estimating a local projection using these shocks as external instruments (Plagborg-Møller and Wolf, 2021).

Figure 6 compares the impulse responses from the baseline model with those obtained using the narrative geopolitical risk shocks, scaled to generate a one-standard-deviation increase in the country-level GPR index. The results are strikingly similar. In all cases, the median responses from the narrative specification lie within the 90 percent posterior credible sets from the baseline model. This exercise confirms that the inflationary effects of geopolitical risk identified in our baseline model do not appear to be driven by reverse causality or contemporaneous feedback from macroeconomic conditions. Instead, the results seem robust to a narrative identification strategy designed to isolate large, exogenous geopolitical events.[14]

4 Heterogeneous Effects and International Spillovers of Geopolitical Risk

So far, we have maintained the assumption that geopolitical risks have common effects across countries and over time. This section investigates how the macroeconomic effects of geopolitical risk may vary across both dimensions. We begin by estimating VAR models separately for each country to assess heterogeneity in the response of inflation and output and in the transmission of shocks. We then explore international spillovers by identifying shocks to foreign GPR indexes and quantifying their effects on domestic economies. Finally, we test the robustness of our results using panel regressions and quantile methods, providing evidence on how the effects of geopolitical risk vary over time and on how geopolitical risks affect the risk of extreme inflation outcomes. Taken together, the exercises underscore that geopolitical risk has broad-based and potentially heterogeneous macroeconomic consequences.

4.1 Cross-Country Heterogeneity

Do the macroeconomic effects of geopolitical risk shocks vary across countries, or are they largely uniform? While the previous sections established that, on average, geopolitical risk

[14]Of course, we acknowledge that even among the events we classify as exogenous, some may still contain important economic components that are difficult to disentangle from purely geopolitical factors.

raises inflation and lowers real activity, those results were based on pooled estimates that impose homogeneous dynamics across countries. We now investigate whether and how the transmission of geopolitical risk varies with country characteristics by estimating VAR models separately for each country. This approach is feasible for countries with sufficiently long historical data. As illustrated in Figure A.1 in the Appendix, however, data availability varies significantly across countries and variables. To address this issue, we begin with a baseline three-variable VAR that includes the country-specific GPR index, inflation, and real GDP. This specification maximizes data coverage and allows us to quantify the dynamic response of inflation and output to geopolitical risk shocks across countries. To explore additional transmission channels, we estimate a series of four-variable VARs that incorporate one additional variable at a time——military spending, money growth, or trade. This strategy enables us to investigate fiscal, monetary, and external sector responses while maintaining a sufficient number of observations for each country included in the estimation.

We restrict estimation to the subset of countries with at least 60 years of data. This criterion is satisfied by 43 countries in the three-variable specification—only Ukraine is excluded—and by 38 countries in the four-variable VARs.[15] An additional advantage of the country-by-country approach is that, if the time dimension is sufficiently long, the average of the individual impulse responses—commonly referred to as the average time-series estimator—provides a consistent estimate of the mean response across units, even in the presence of dynamic heterogeneity (Canova and Ciccarelli, 2013).

We begin by comparing this average estimator with the pooled estimator used earlier, to extend our findings to this more general setting. Figure 7 shows results from the three-variable, country-specific VAR models. The red lines report the inverse-variance weighted average of country-specific impulse responses, an estimator that minimizes the overall variance under the assumption of independent estimates across countries (Pesaran and Smith, 1995). The shaded areas denote 90 percent posterior credible sets constructed using the same inverse-variance weighting scheme. The green lines show the equally-weighted average across country-specific estimates, in which each country contributes equally to the aggregate response. The results from this specification confirm our earlier findings. A shock to country-specific geopolitical risk leads to a sustained increase in inflation and a decline in real activity. Notably, the equally-weighted average closely matches the pooled estimate, suggesting that the latter is not

[15]The excluded economies are Hong Kong, Hungary, Poland, Russia, Ukraine, and Vietnam.

unduly influenced by any single country. By contrast, the inverse-variance weighted average delivers smaller and somewhat less persistent inflation effects. This result occurs because countries with larger inflation responses tend to have more imprecise estimates, and thus receive less weight in the variance-weighted aggregation.

To further investigate cross-country heterogeneity and transmission mechanisms, we generate a set of scatterplots using the impulse responses estimated from the unit-by-unit VARs. For each country, we extract the response of inflation to a one-standard-deviation GPR shock at a two-year horizon, and plot it against the corresponding two-year-ahead responses of GDP, military spending, money supply, and trade. We focus on the two-year horizon because it corresponds to the typical peak response of inflation.[16]

Figure 8 presents the results. The inflation responses are predominantly positive and typically range between 0 and 5 percentage points. Countries with stronger inflation responses also tend to experience larger GDP declines, consistent with geopolitical risk shocks acting primarily as supply disturbances. Inflation is positively associated with increases in military expenditure and money growth, suggesting an additional demand-side channel. Countries that experience larger declines in trade relative to GDP also tend to show stronger inflationary effects.

A review of the scatterplots reveals that the experience of the United States stands out as notably different from that of most other countries. While the typical response to a geopolitical risk shock involves a contraction in output, the United States instead exhibits a positive GDP response—the largest among the countries in our sample. This divergence reflects the unique geopolitical role of the United States, which has rarely experienced direct conflict on its own soil but has frequently responded to geopolitical tensions with large-scale military mobilizations and expanded defense spending, as seen during World War II. The relatively muted responses of trade and shortages further suggest weaker supply-side disruptions. Canada shows a similar, albeit less pronounced, pattern. These cases highlight how transmission mechanisms can vary substantially depending on a country's geopolitical position and exposure to conflict.

[16]The responses of inflation and GDP are extracted for each country from the three-variable VARs with GPR, inflation and GDP. For the other variables, the responses are taken from the four-variable VARs that adds the corresponding variable. All scatters plot 38 observations, corresponding to the countries for which we have at least 60 years of data to estimate the 4-equation VARs.

4.2 Spillovers of Geopolitical Risk Across Countries

Geopolitical shocks can affect countries both directly—through conflict, diplomatic crises, or domestic instability—and indirectly, through their economic and financial ties to countries experiencing such events. In this subsection, we take a step toward quantifying these indirect channels by estimating the spillover effects of "foreign" geopolitical risk on domestic macroeconomic outcomes. To do so, we construct for each country a news-based foreign GPR index that aggregates the country-specific GPR index of all other countries in the sample. For instance, the foreign GPR index for Italy is, each year, the average GPR index of all countries except Italy. The foreign GPR index is meant to capture global geopolitical tensions that may affect a country through trade, financial markets, or commodity prices, even when that country is less likely to be directly involved.

We identify geopolitical spillover shocks using a four-variable VAR that includes the domestic GPR index, the foreign GPR index, inflation, and real GDP. In our identification scheme, the foreign GPR index is ordered after the domestic index. This ordering ensures that the identified spillover shocks are orthogonal to contemporaneous domestic geopolitical events and reflect changes in global tensions beyond the country's direct involvement.

Figure 9 presents the impulse responses to a foreign geopolitical risk shock. On average, the shock leads to a modest and delayed increase in the domestic GPR index, suggesting some gradual awareness or second-round effects. More importantly, foreign geopolitical tensions lead to higher domestic inflation and lower real GDP. The presence of large credible sets points to substantial heterogeneity in spillover exposure and transmission across countries.

To further explore this heterogeneity, Figure 10 displays country-level scatterplots of the inflation and GDP responses two years after the spillover shock. Most countries experience a rise in inflation, although the magnitude varies considerably. Some countries, such as Chile, Turkey, or Poland, show muted or negative inflation responses. The effects on output are generally negative, with several countries experiencing sizable contractions. These results underscore the relevance of indirect transmission channels: Even in the absence of direct geopolitical disturbances, countries may suffer economically from increased global tensions.

Taken together, these findings document the international transmission of geopolitical risk and highlight the importance of accounting for spillover effects. While our empirical strategy offers only a first approximation, the results suggest that global geopolitical developments can

influence domestic inflation and output—even in countries not directly targeted by specific events.

4.3 Robustness and Nonlinearities in the Inflation Response

To assess the robustness of our findings and explore potential nonlinearities, we complement the baseline VAR and unit-by-unit estimates with a set of panel regressions that examine how the inflation response to geopolitical risk varies across subsamples, stage of economic development, and the inflation distribution. These exercises serve two goals: First, test the stability of the estimated effects under alternative model specifications, and, second, investigate whether geopolitical risk disproportionately affects the upper tail of the inflation distribution—that is, whether it raises inflation uncertainty and the likelihood of extreme inflation episodes.

We begin with panel regressions that relate the change in inflation to the country-specific GPR index, estimated at various horizons h, with country fixed effects:

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

where $\Delta\pi_{i,t+h}$ denotes the change in inflation relative to year $t-1$, and $GPRC_{i,t}$ is the standardized country-specific GPR index. Table 2 (top panel) presents results from these regressions, showing that a one-standard-deviation increase in geopolitical risk raises inflation by 1 to 2 percentage points within two years, consistent with the panel VAR findings.

We then explore robustness along several dimensions. Including the global GPR index as a control confirms that domestic geopolitical shocks significantly raise inflation beyond the effects of global tensions. When we split the sample by stage of development, we find similar inflation responses in both advanced and emerging economies. Restricting the sample to post-1950, we continue to find statistically and economically meaningful inflation effects, with only a slight attenuation in magnitude. These results suggest that the relationship between geopolitical risk and inflation is broad-based and not confined to major global conflicts or specific historical episodes.

Next, we estimate quantile panel regressions to examine how the effects of geopolitical risk shocks vary across the conditional distribution of inflation. This approach allows us to assess whether geopolitical risk not only raises average inflation but also contributes to greater

inflation uncertainty. The quantile model is given by:

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

where $\mathcal{Q}_\tau$ denotes the τ-th conditional quantile of future inflation changes.

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 results are reported in the bottom panel of Table 2. We find three consistent patterns. First, geopolitical risk shocks raise median inflation. Second, the coefficients at the 75th percentile exceed those at the median and the 25th percentile, indicating that geopolitical risk increases the likelihood of large inflation surges. Third, the large coefficient at the 75th percentile indicates that higher geopolitical risk is associated with increased dispersion of inflation—evidence of heightened inflation uncertainty. Of note, significant coefficients at the median underscore a broad-based relationship between geopolitical risks and inflation, not limited to periods of high inflation or significant geopolitical events. This results occurs because the median coefficient in a quantile regression is less influenced by extreme values than the ordinary least squares estimate.

Taken together, these exercises confirm that the inflationary effects of geopolitical risk are not sensitive to the specific estimation method or to the linear structure of the VAR. Instead, they appear across subsamples, hold across the inflation distribution, and extend beyond major historical conflicts.

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, estimating the model 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 subcomponents 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.[17] The VAR model uses data from January 1974 through December 2023 and includes three lags.[18] 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 geopolitical risk shocks.[19] We estimate the model using Bayesian techniques, with an uninformative prior on the reduced-form coefficients as in Uhlig (2005), and verify that 5,000 draws from the posterior distribution of the model coefficients are sufficient to accurately characterize all estimators of interest.

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 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 3-to-1 ratio.

Figure 11 shows the evolution in the scenario of inflation and GDP between January 2022 and December 2023 relative to a no-war baseline in which there is no shock to geopolitical tensions. The rise in geopolitical risks observed during the onset of the war on Ukraine is estimated to have produced a drag on world GDP of 1 percent in 2022. Concurrently, these

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

[18] To avoid excessive volatility in the impulse responses, we limit the number of lags in the VAR to three—corresponding to one quarter. Rather than applying shrinkage through prior distributions, we rely on this parsimonious lag specification to achieve smoother impulse responses. Results are similar using 2, 4, 6 and 12 lags: see Figure A.6 in the Appendix.

[19] 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.

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 geopolitical risk shocks resemble those of shocks to supply, with inflation rising and GDP declining in the aftermath of the Russian invasion of Ukraine.

Figure 12 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).[20] 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.

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, such as supply disruptions, a decline in international trade, and an increase

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

in the cost of commodities; demand forces, such as 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.

References

Aastveit, K. A., H. C. Bjørnland, and J. L. Cross (2023): "Inflation expectations and the pass-through of oil prices," *Review of Economics and Statistics*, 105, 733–743.

Anayi, L., N. Bloom, P. Bunn, P. Mizen, G. Thwaites, and I. Yotzov (2022): "The impact of the war in Ukraine on economic uncertainty," Voxeu column, Center for Economic and Policy Research.

Barbieri, K., O. M. Keshk, and B. M. Pollins (2009): "Trading Data," *Conflict Management and Peace Science*, 26, 471–491.

Barro, R. J. (2006): "Rare Disasters and Asset Markets in the Twentieth Century," *The Quarterly Journal of Economics*, 121, 823–866.

Barro, R. J. and J. F. Ursúa (2012): "Rare Macroeconomic Disasters," *Annual Review of Economics*, 4, 83–109.

Blanchard, O. J. and J. Galí (2007): "The Macroeconomic Effects of Oil Shocks: Why are the 2000s so different from the 1970s?" Working Paper 13368, National Bureau of Economic Research.

Bolt, J. and J. L. Van Zanden (2020): "Maddison-style estimates of the evolution of the world economy: A new 2023 update," *Journal of Economic Surveys*.

Bordo, M. D. and M. D. Levy (2021): "Do enlarged fiscal deficits cause inflation? The historical record," *Economic Affairs*, 41, 59–83.

Caldara, D. and M. Iacoviello (2022): "Measuring geopolitical risk," *American Economic Review*, 112, 1194–1225.

Caldara, D., M. Iacoviello, and D. Yu (2025): "Measuring shortages since 1900," International Finance Discussion Paper 1407, Federal Reserve Board.

Canova, F. and M. Ciccarelli (2013): "Panel Vector Autoregressive Models: A Survey," ECB Working Paper 1507, European Central Bank.

Canova, F. and F. Ferroni (2021): "A Hitchhiker's Guide to Empirical Macro Models," Working Paper 2021-15, Federal Reserve Bank of Chicago, revised October 2021.

Coibion, O. and Y. Gorodnichenko (2015): "Information rigidity and the expectations formation process: A simple framework and new facts," *American Economic Review*, 105, 2644–2678.

Conflitti, C. and M. Luciani (2019): "Oil price pass-through into core inflation," *The Energy Journal*, 40, 221–248.

Cuba-Borda, P., A. Mechanick, and A. Raffo (2018): "Monitoring the World Economy: A Global Conditions Index," IFDP Notes 2018-06, Board of Governors of the Federal Reserve System.

Deutsch, J. J. (1940): "War Finance and the Canadian Economy, 1914-201," *Canadian Journal of Economics and Political Science/Revue canadienne de economiques et science politique*, 6, 525–542.

Efremov, S. M. (2012): "The role of inflation in soviet history: Prices, living standards, and political change," .

Federle, J., A. Meier, G. J. Müller, W. Mutschler, and M. Schularick (2024): "The Price of War," CEPR Discussion Paper 18834, CEPR.

Forbes, K. J. and F. E. Warnock (2012): "Capital flow waves: Surges, stops, flight, and retrenchment," *Journal of International Economics*, 88, 235–251.

Fouquin, M. and J. Hugot (2016): "Two centuries of bilateral trade and gravity data: 1827-2014," Mimeo, Universidad Javeriana-Bogotá.

Hall, G. J. and T. J. Sargent (2022): "Three world wars: Fiscal–monetary consequences," *Proceedings of the National Academy of Sciences*, 119, e2200349119.

Hercowitz, Z. and M. Strawczynski (1996): "Government Debt Policy In Israel (In Hebrew)," *Bank Of Israel Economic Review*, 70, 3–26.

Huff, G. and S. Majima (2013): "Financing Japan's World War II Occupation of Southeast Asia," *The Journal of Economic History*, 73, 937–977.

Institute of Economic Research, Hitotsubashi University (1965/1988): "Gross National Expenditure in Current Prices," in *Long-Term Economic Statistics of Japan*, ed. by K. Ohkawa, M. Shinohara, and M. Umemura, Tokyo: Toyo Keizai Shinposha, vol. 1.

Johnson, S. and P. Temin (1993): "The macroeconomics of NEP," *Economic History Review*, 750–767.

Jordà, Ò., M. Schularick, and A. M. Taylor (2017): "Macrofinancial History and the New Business Cycle Facts," *NBER Macroeconomics Annual 2016*, 213–263.

Kim, B.-Y. (2000): "Causes of repressed inflation in the Soviet consumer market: Retail price subsidies, the siphoning effect, and the budget deficit," Mimeo, BOFIT.

Kim, N. N. (2022): *Historical Statistics of Korea*, Springer Nature, 723–836.

Kimura, T. (1991): "Economic Reform in Vietnam: Coming to the Crucial Point," in *Development Strategies for the 21st Century*, Institute of Developing Economies, 248–269.

Koen, V. and S. T. Phillips (1992): "Price liberalization in Russia: The early record," *IMF Working Papers*, 1992.

Lagarde, C. (2022): "Interview with CBS 'Face the Nation,' April 24, 2022," Transcript.

Michaely, M. (1975): "Appendix A: Basic Statistical Data," in *Foreign Trade Regimes and Economic Development: Israel*, NBER, 183–204.

Mironov, B. N. (2010): "Wages and prices in Imperial Russia, 1703-1913," *The Russian Review*, 69, 47–72.

Mitchell, B. (2013): *International historical statistics, 1750-2010*, Palgrave/Macmillan.

Müller, K., C. Xu, M. Lehbib, and Z. Chen (2025): "The Global Macro Database: A New International Macroeconomic Dataset," Working paper.

Nazrin, R. (2002): "Historical GDP statistics of Malaya, 1900–1939: progress and perspectives," in *Paper at XIII International Economic History Congress, Buenos Aires, Session*, vol. 30.

Ohanian, L. E. (1997): "The Macroeconomic Effects of War Finance in the United States: World War II and the Korean War," *The American Economic Review*, 87, 23–40.

Pesaran, M. H. and R. Smith (1995): "Estimating long-run relationships from dynamic heterogeneous panels," *Journal of Econometrics*, 68, 79–113.

Plagborg-Møller, M. and C. K. Wolf (2021): "Local projections and VARs estimate the same impulse responses," *Econometrica*, 89, 955–980.

Powell, J. (2022): "May 2-3, 2022 Press Conference," Transcript, Federal Reserve Board.

Ramey, V. A. (2011): "Identifying government spending shocks: It's all in the timing," *The Quarterly Journal of Economics*, 126, 1–50.

Reedy, C. M. (2008): "A Historical Study: Banknotes of South Vietnam," *International Bank Note Society Journal*, 22.

Reinhart, C. M. and K. S. Rogoff (2011): "From financial crash to debt crisis," *American economic review*, 101, 1676–1706.

Rockoff, H. (2015): "War and inflation in the United States from the revolution to the first Iraq War," Working Paper 21221, National Bureau of Economic Research.

Roser, M. and M. Nagdy (2013): "Military Spending," *Our World in Data*, https://ourworldindata.org/military-spending.

Schuler, K. (2015): "Establishing an International Data Archive on Free Banking," Tech. rep., The Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise.

Shenoy, B. (1950): "The Currency, Banking, and Exchange System of Thailand," *Staff Papers-International Monetary Fund*, 1, 289–314.

Sims, C. A. (1994): "A simple model for study of the determination of the price level and the interaction of monetary and fiscal policy," *Economic theory*, 4, 381–399.

Sunak, R. (2022): "Speech during Financial Statement, Volume 711: debated on March 23, 2022," Transcript, Parliament of the United Kingdom.

Uhlig, H. (2005): "What Are the Effects of Monetary Policy on Output? Results from an Agnostic Identification Procedure," *Journal of Monetary Economics*, 52, 381–419.

Van der Wee, H. (2009): *A small nation in the turmoil of the Second World War: money, finance and occupation (Belgium, its enemies, its friends, 1939-1945)*, Leuven University Press.

Table 1: Summary Statistics for the Annual Dataset

	Average	St.Dev.	p5	p50	p95	Count
Inflation (%)	10.4	22.3	-5.0	3.8	53.9	5,101
Advanced Economies	5.1	11.6	-3.4	2.6	18.3	2,108
Emerging Economies	14.2	26.8	-6.4	5.4	84.8	2,993
GDP Growth (%)	2.3	5.7	-6.7	2.4	10.1	4,929
Govt. Spending to GDP (%)	19.4	10.3	5.5	18.1	39.0	4,329
Military Spending to GDP (%)	4.2	8.0	0.7	2.3	14.3	4,245
Public Debt to GDP (%)	47.6	37.4	7.0	39.2	116.3	4,233
Trade to GDP (%)	53.6	42.1	10.8	44.5	126.7	4,423
Money Growth (%)	14.9	17.5	-1.3	10.2	50.9	4,061
Country GPR Index	0.0	1.0	-0.8	-0.3	2.0	5,456
Country Shortages Index	0.0	1.0	-0.7	-0.4	1.9	5,456

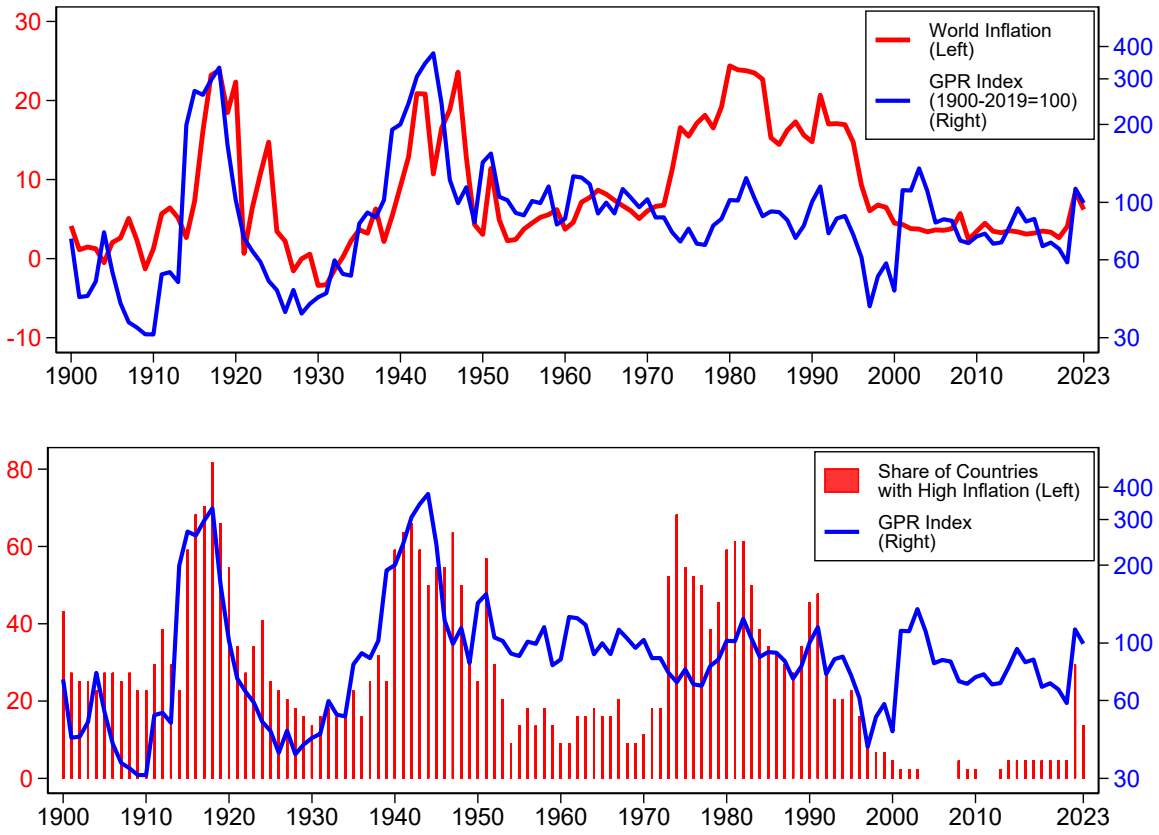
Note: The table presents the mean, standard deviation, 5th percentile, 95th percentile, and number of observations for variables included in the annual dataset. The sample includes 44 countries and spans from 1900 through 2023. GDP growth is in real, per capita terms. The country-specific GPR indexes and Shortages indexes are standardized at the country level. Trade is the sum of imports plus exports. Inflation and Money Growth are winsorized at the 1st and 97.5th percentiles as described in the text.

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	1.33	1.80	1.66	0.82	0.13
	(0.32)	(0.51)	(0.61)	(0.79)	(0.86)
Robustness					
Controlling for Global GPR	1.04	1.17	0.76	-0.02	-0.22
	(0.32)	(0.47)	(0.59)	(0.73)	(0.72)
Advanced Economies	1.25	1.80	1.85	1.29	0.54
	(0.45)	(0.88)	(0.97)	(1.42)	(1.42)
Emerging Economies	1.39	1.80	1.50	0.45	-0.20
	(0.41)	(0.50)	(0.59)	(0.73)	(0.84)
Post-1950s	1.00	1.20	0.97	0.32	-0.13
	(0.33)	(0.54)	(0.78)	(1.03)	(1.08)
Quantiles					
q25	0.66	0.66	0.18	-0.64	-1.52
	(0.30)	(0.45)	(0.47)	(0.52)	(0.63)
q50	1.42	1.96	1.80	0.94	0.16
	(0.33)	(0.47)	(0.47)	(0.48)	(0.54)
q75	2.28	3.49	3.74	2.63	1.89
	(0.36)	(0.59)	(0.64)	(0.60)	(0.57)
Observations	5,052	5,003	4,956	4,910	4,865
Number of Countries	44	44	44	44	44

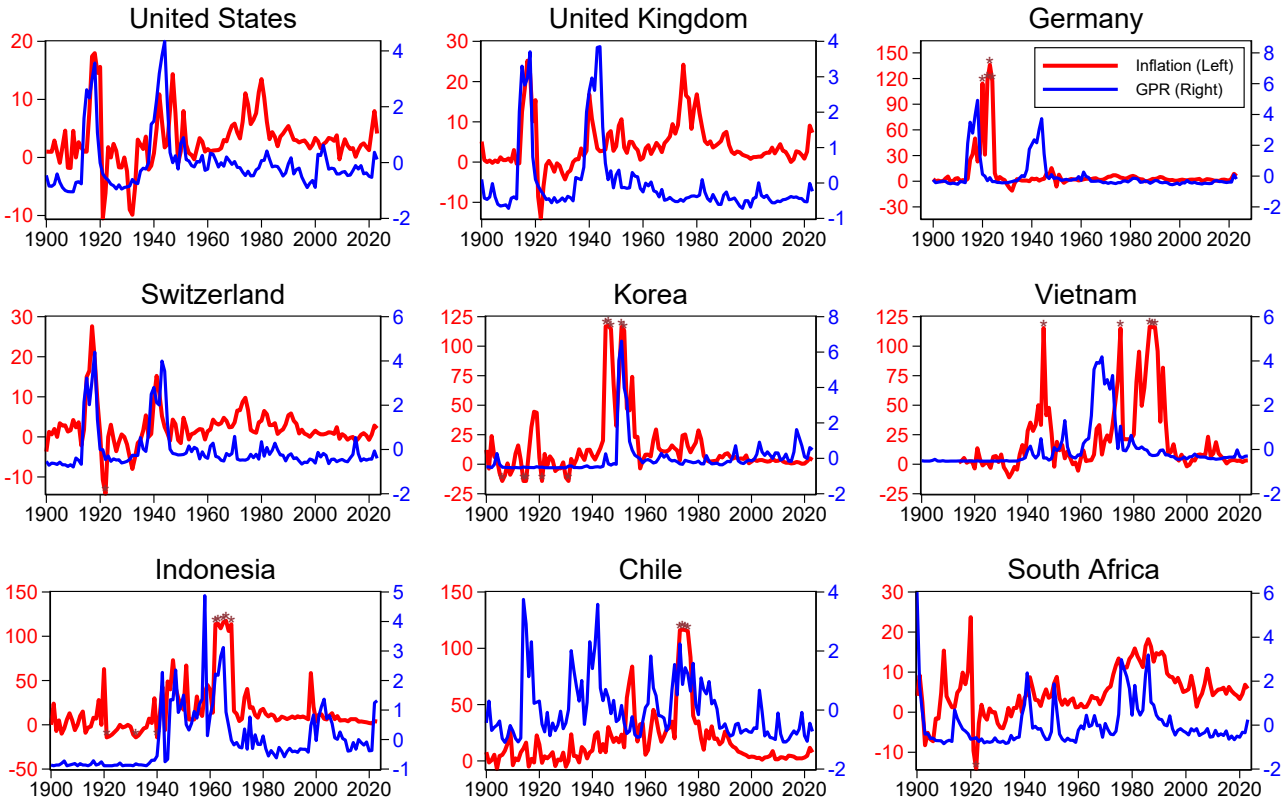
Note: Effects of geopolitical risk on inflation estimated using the annual dataset. Inflation is annual inflation in year $t+h$ minus its value in year $t-1$. Each row displays the effect of country-specific geopolitical risk (standardized by country) in different specifications. The row labeled 'Controlling for Global GPR' reports the effect when controlling for global geopolitical risk. Similarly, the rows labeled '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. All specifications include country fixed effects. Standard errors in parentheses are clustered by country and year in the Baseline and Robustness regressions, and are bootstrapped (using 500 replications) in the quantile regressions.

Figure 1: World Inflation and Global Geopolitical Risk



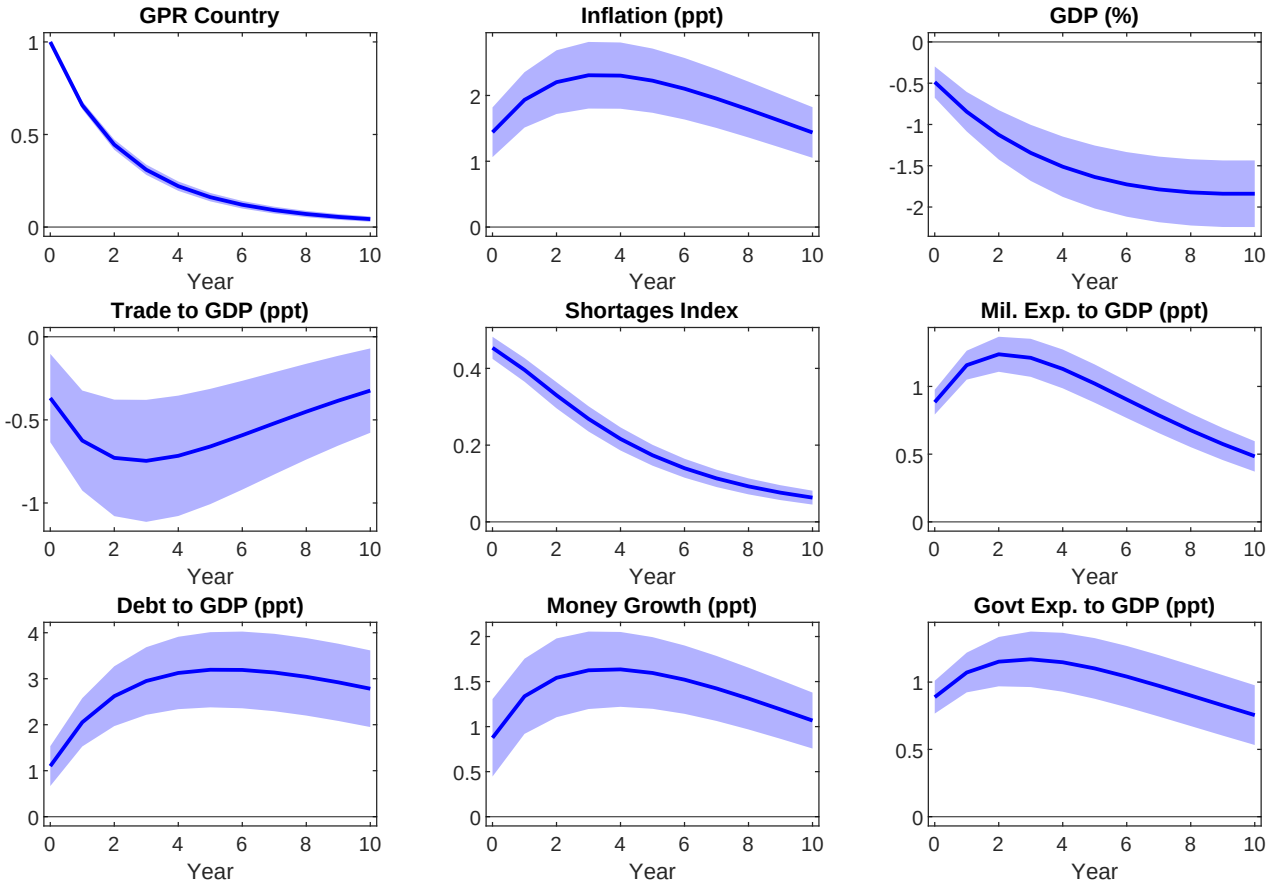
Note: The top panel plots world inflation and global geopolitical risk (using a log scale) from 1900 through 2023. World inflation is calculated by averaging inflation (winsorized as described in the text) across countries using real GDP weights. In the bottom panel, a country is classified as having "high inflation" based on a regression that allows mean inflation to vary systematically between advanced and emerging economies within each of three historical periods (pre-1946, 1946-1972, and post-1972), with country fixed effects. Countries with regression residuals exceeding 3 percentage points are classified as having high inflation. The share of countries with high inflation is the percentage of countries meeting this criterion in each year.

Figure 2: Inflation and Country-Specific Geopolitical Risk, Selected Countries



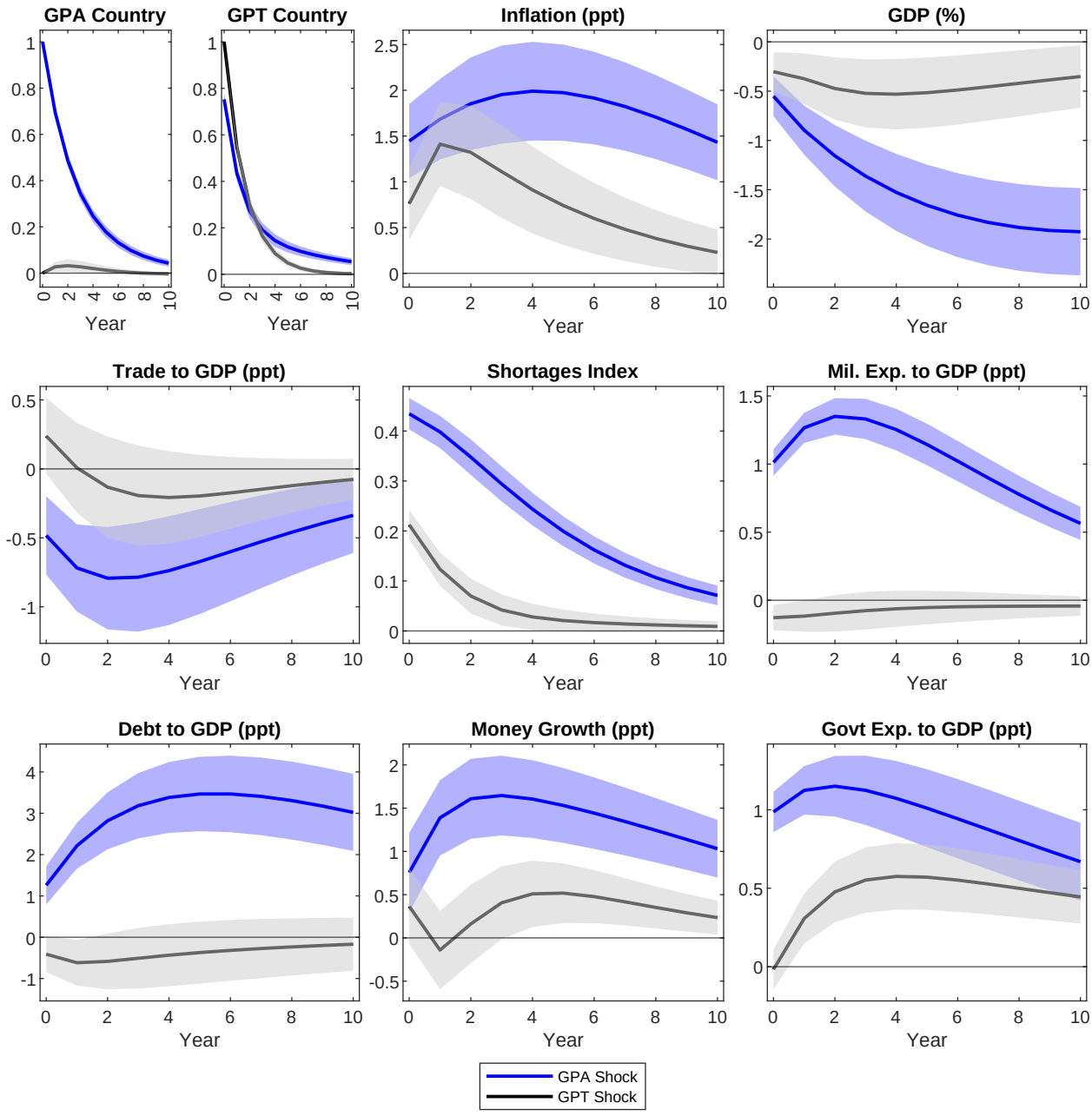
Note: Each panel displays inflation and country-specific geopolitical risk from 1900 through 2023 for selected economies. Inflation is winsorized as described in the text and winsorized values are denoted with an asterisk. Country-specific geopolitical risk is standardized so as to have zero mean and unit standard deviation in each country.

Figure 3: Effects of Geopolitical Risk: Panel VAR Model, 1900-2023



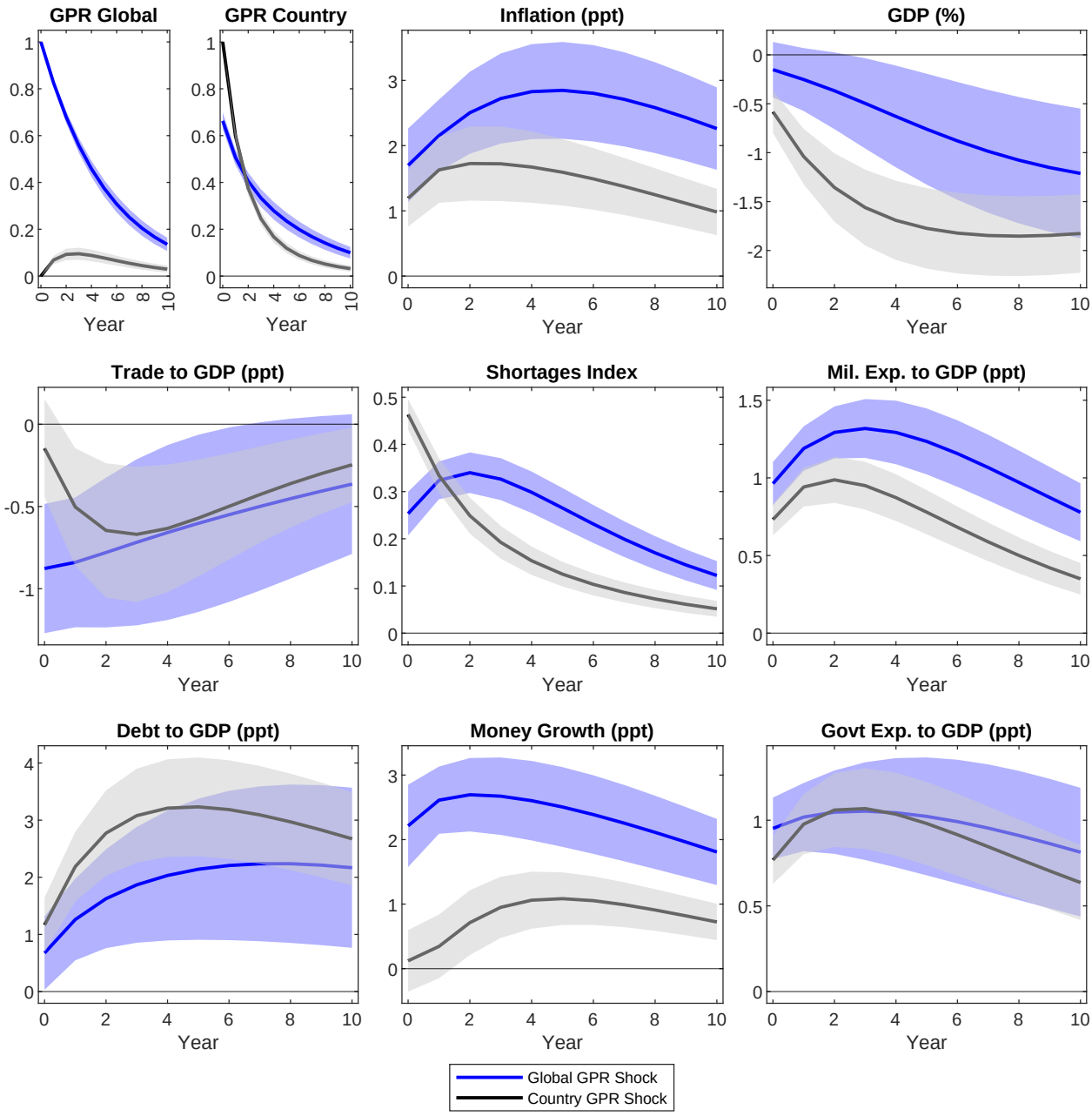
Note: The figure plots impulse responses to an exogenous one-standard deviation increase in country-specific geopolitical risk. The impulse responses are estimated using a vector autoregression model on annual data from 1900 through 2023. The model is estimated pooling data across all countries in our sample, assuming that the dynamic effects of geopolitical risk are homogeneous across countries. The solid blue lines plot the median estimates. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure 4: Effects of Geopolitical Risk: Acts versus Threats



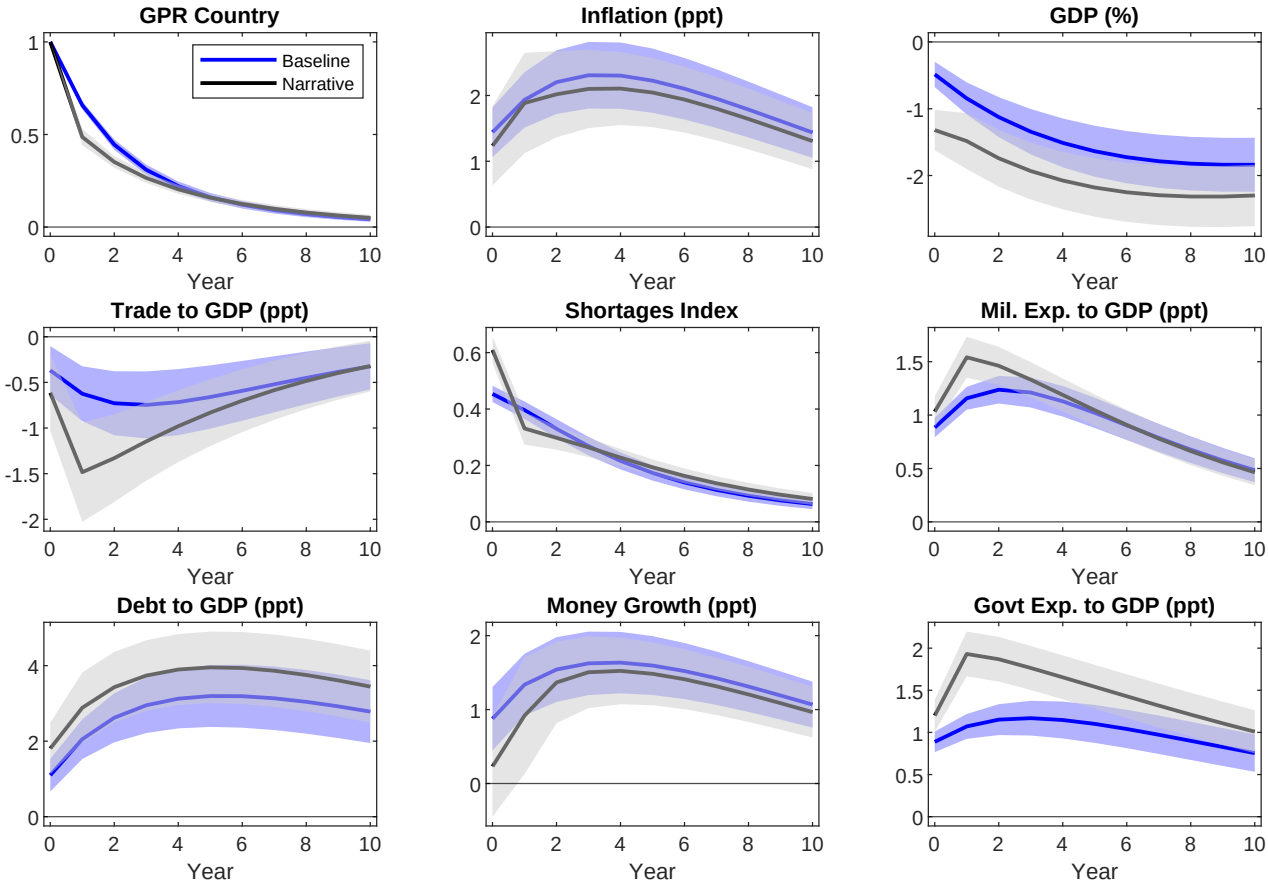
Note: The figure plots impulse responses to an exogenous increase in country-specific geopolitical acts (blue lines) and threats (gray lines). Each shock is one-standard deviation in size. The impulse responses are estimated using a vector autoregression model on annual data from 1900 through 2023. The model is estimated pooling data across all countries, thus assuming that the dynamic effects of geopolitical risk are homogeneous across countries. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure 5: Effects of Geopolitical Risk: Global vs Country Shocks



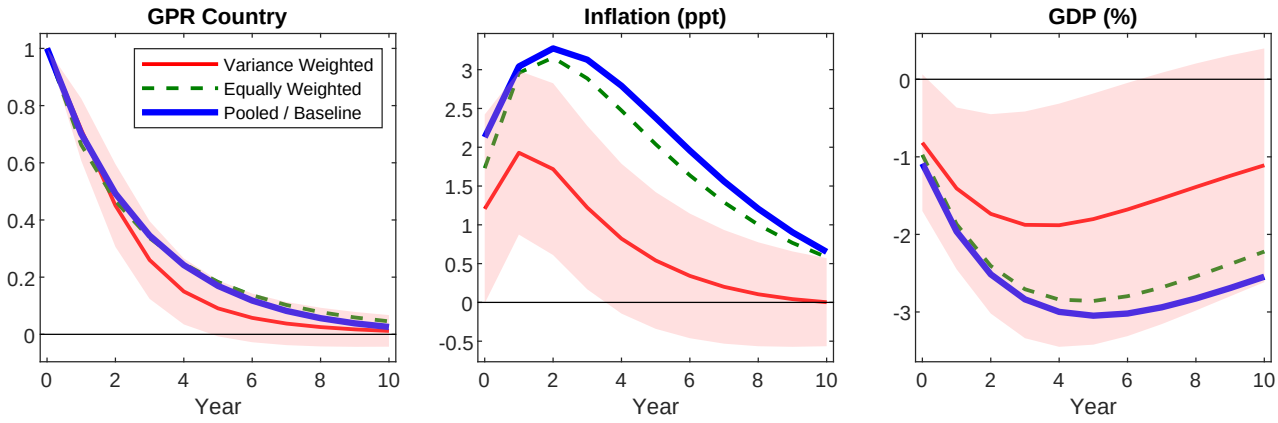
Note: The figure plots impulse responses to an exogenous increase in the global GPR index (blue lines) and in the country specific GPR indexes (gray lines). Each shock is one-standard deviation in size. The impulse responses are estimated using a vector autoregression model on annual data from 1900 through 2023. The model is estimated pooling data across all countries in our sample, thus assuming that the dynamic effects of geopolitical risk are homogeneous across countries. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure 6: Effects of Geopolitical Risk: Narrative Identification



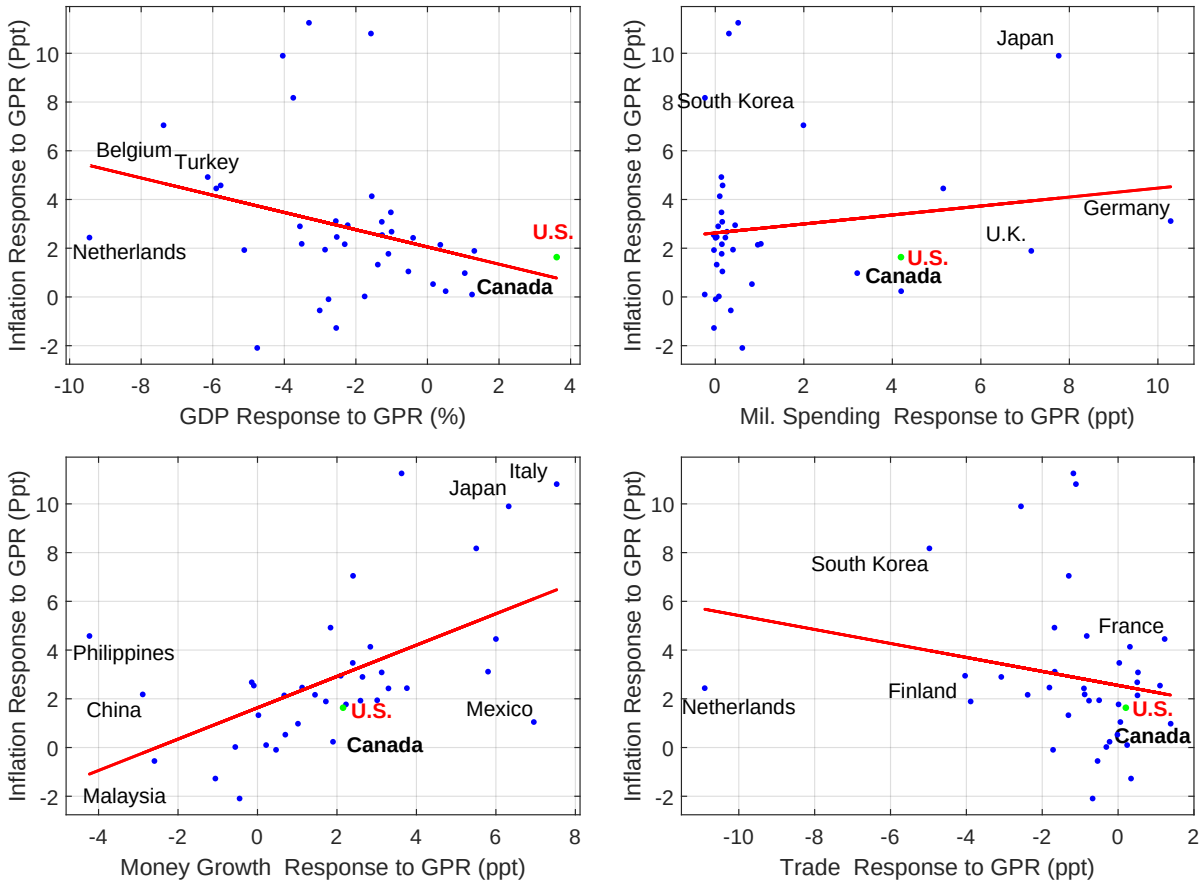
Note: The figure plots impulse responses to an exogenous increase in the country GPR index using the baseline identification strategy (blue lines) and an alternative narrative identification approach (gray lines). The shocks are sized to generate a one-standard deviation increase in the country-specific GPR indexes. The impulse responses are estimated using a vector autoregression model on annual data from 1900 through 2023. The model is estimated pooling data across all countries in our sample, thus assuming that the dynamic effects of geopolitical risk are homogeneous across countries. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure 7: Effects of Geopolitical Risk: Baseline vs Units Estimators



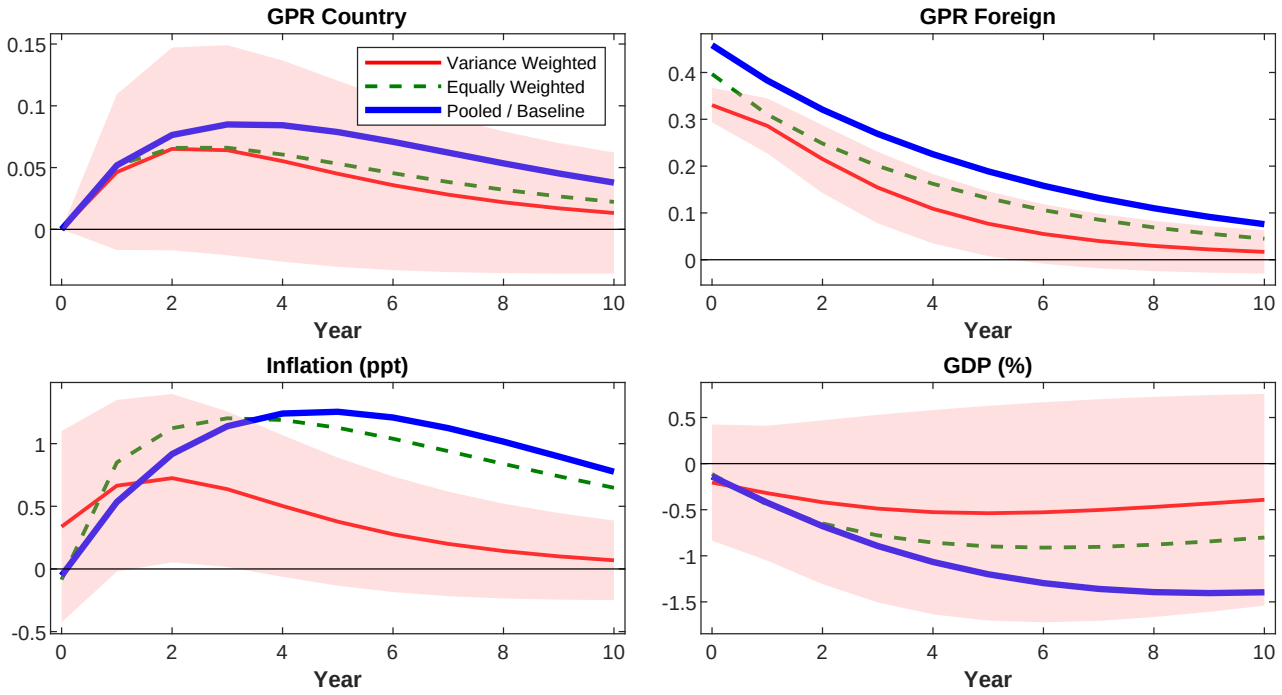
Note: The figure plots impulse responses to an exogenous one-standard deviation increase in country-specific geopolitical risk. We estimate a three-variable VAR that includes the country-specific GPR index, inflation, and real GDP. This specification maximizes data coverage. The red (green) lines report the unit-by-unit estimator described in Section 4, where country-specific impulse responses are weighted by the inverse of their variance (equally weighted). The blue lines report the pooled estimator. The shaded areas denote posterior 90 percent credible sets calculated using inverse variance weights. Variables are plotted in deviation from the no-shock baseline.

Figure 8: Cross-Country Dispersion in the Effects of Higher Geopolitical Risk



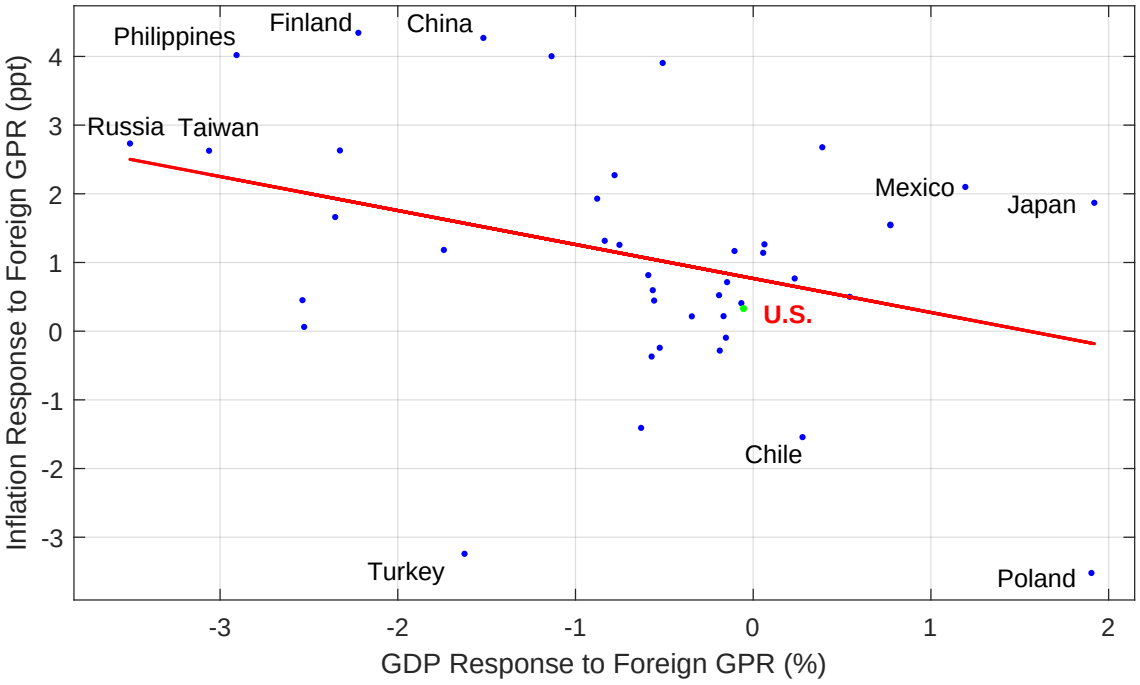
Note: The y-axis in each scatterplot displays point estimates of the impulse response of inflation at the two-year horizon to a one-standard deviation increase in country-specific geopolitical risk. The x-axis shows the two-year ahead response of GDP, military spending, money growth, or trade to the same shock. The inflation and GDP responses are estimated using three-variable, country-by-country VARs. To examine additional transmission channels while maximizing data coverage, we estimate separate four-variable VARs that include military spending, money growth, or trade one at a time.

Figure 9: Effects of Foreign Geopolitical Risk on Inflation: Spillovers



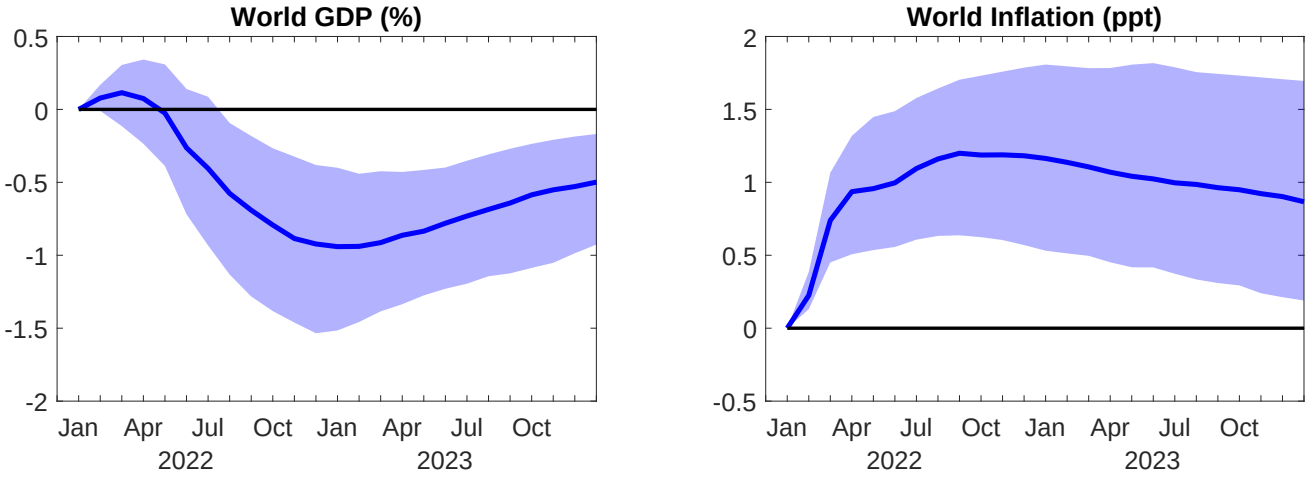
Note: The figure plots impulse responses to an exogenous one-standard deviation increase in foreign, country-specific geopolitical risk (a geopolitical spillover shock). For each country, we estimate a four-variable VAR that includes the country-specific GPR index, the GPR index of other countries, inflation, and real GDP. A geopolitical spillover shock is defined as an exogenous increase in the GPR index of other countries while holding the domestic GPR index constant on impact. The red (green) lines report unit-by-unit estimators described in Section 4, where country-specific impulse responses are aggregated using inverse-variance weights (equally weighted). The blue line shows the pooled estimator. Shaded areas denote 90 percent posterior credible sets based on the inverse-variance weighting. All variables are plotted in deviation from the no-shock baseline.

Figure 10: Cross-Country Spillovers of Higher Geopolitical Risk



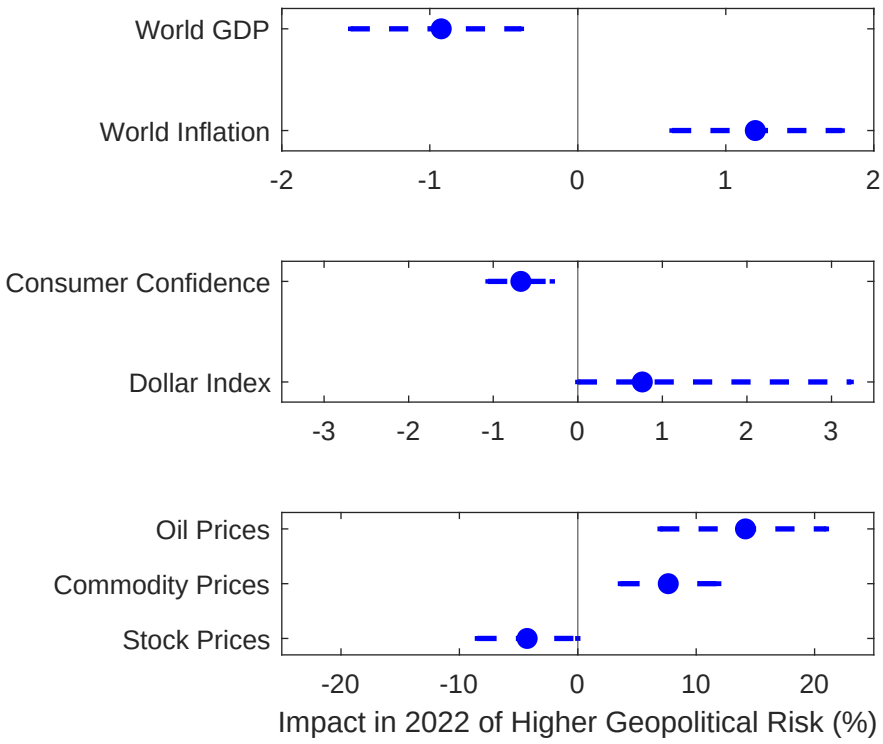
Note: The scatterplot displays point estimates of the impulse responses of inflation (y-axis) and GDP (x-axis) at the two-year horizon to a one-standard deviation increase in country-specific geopolitical spillovers. The responses are estimated using four-variable country-by-country VARs. A geopolitical spillover shock is defined as an exogenous increase in the GPR index of other countries, holding the domestic GPR index constant on impact.

Figure 11: 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 12: Maximum Effects of Geopolitical Risk: Russian Invasion of Ukraine Simulation



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 11 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, the 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, the Philippines, Poland, Saudi Arabia, South Africa, Thailand, Tunisia, Turkey, Ukraine, Venezuela, and Vietnam. This exercise 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.

The dataset is extended back to the year 1900 with historical data from Jordà, Schularick, and Taylor (2017); when the data from Jordà, Schularick, and Taylor (2017) are missing, we use data from Reinhart and Rogoff (2011), including recent updates from Carmen Reinhart's website (see `https://carmenreinhart.com/inflation/`, accessed May 1, 2025).

Next, some gaps in data for Hong Kong, Korea, Malaysia, the Philippines, Russia, Thailand, and Vietnam are then filled using information from a variety of other sources, as described below.

Hong Kong: Data are taken from the Hong Kong Census and 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 between 1944 and 1945 are missing in Carmen Reinhart's database. Various newspaper sources from around that period and immediately after report that the country struggled with high inflation in those years and the aftermath. A variety of sources report rampant inflation (including triple digit inflation) in 1944 and 1945, so we estimate yearly inflation in those years at 150 percent, slightly above the 141.7 value in 1943 in Reinhart's database ("Manila Hungry But Still Gets Prewar Films", The Washington Post, November 12, 1944; "Inflation Gets Loose In the Philippines; Peso's Value Plummets", Wall Street Journal, July 20, 1945). Inflation was also reportedly high in 1946, in spite of government's attempts to control "unwarranted and speculative" food price increase, so we estimate 100 percent inflation in 1946 (see "Freedom, Little Else, for the Philippines: Poverty and wreckage are war's legacy to the nation that will soon be a republic", New York Times, February 24, 1946; "Filipinos' Price Ceilings Are Restored by Roxas", Chicago Daily Tribune, September 15, 1946.). An article in 1947 reports that the specter of inflation kept lingering, and that while wages had increased by 50 percent, purchasing power had declined significantly, so we set inflation at 75 percent in 1947 ("Post-War Philippines: Islands Still Struggle With Broken Industries, Sick Communications", Wall Street Journal, August 4, 1947). Some progress was made in 1948 and 1949, with some reports suggesting stabilization, some reports indicating that inflation remained enough of a concern that additional measures were being taken. We estimate inflation at 30 percent in 1948 and 1949. ("Inflation Ups Killing Costs", The Washington Post, March 14, 1948; "Trip to Orient: Far East Impressions Of Globe Trotter Mr J. W. Mariner", South China Morning Post, June 13, 1948; "Yanks in Philippines Now Paid in Script", The Washington Post, December 21, 1949).

Russia: Initial data coverage was spotty. Data for the period 1911-1913 are calculated using information in Table 5 in 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 Table 2 in Kim (2000). Data for the years 1991-1992 are from Tables 2 and 3 in Koen and Phillips (1992). Data for the years 1924, 1928-1940, and 1945-1972 are taken from the Global Financial Database (see `https://www.finaeon.com/`; Series name: CPRUSMAPC).

Thailand: Data for the period 1942-1948 are from Table 3 in 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 Kimura (1991).

Lastly, for a handful of countries and years, we fill additional data gaps using data on inflation from the Global Macro Database by Müller et al. (2025). The country-year data are as follows: Argentina, from 2014 through 2016; China, 1951-1962; Colombia, 1900; Hungary, 1924; Israel, 1946-1952; Malaysia, 1949; the Philippines, 1938; Poland, 1921; Taiwan, 1939-1952; Tunisia, 1930-1938; Ukraine, 1970-1992; Vietnam, 1942-1946.

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 onward, 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 data, as follows.

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

Venezuela: We obtain data from 2006 onward 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 2023. 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 obtained as follows.

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

Japan: Military expenditure data for Japan present challenges during the US occupation and demilitarization period (1946-1951). We utilize Japan's comprehensive Long-Term Economic Statistics (LTES) database to overcome these limitations. Specifically, we extract military and war-related expenses from Table 10 (variable J0710-313, Total B) in Volume 7 of LTES, and calculate expenses as a percentage of GDP by dividing by "Gross National Expenditure in Current Prices" (variable JPA08-008) from Volume 1 of the same dataset (see Institute of Economic Research, Hitotsubashi University (1965/1988)).

Vietnam: Data for the 2019-2023 period are taken from the CIA Factbook at `https://www.cia.gov/the-world-factbook/field/military-expenditures/`.

Public Debt

Debt to GDP ratio data are taken from several sources. For advanced economies, data are from Jordà, Schularick, and Taylor (2017). Additional coverage is gained using data—in the order described below, depending on availability—from the World Bank's World Development Indicators, from the IMF World Economic Outlook, from the IMF's Public Finances in Modern History (IMFPFH) Database, and, when not available from any of the above sources, from Reinhart and Rogoff (2011), 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 span from 1900 through 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 2023 using additional national accounts data from the World Bank's World Development Indicators via Haver Analytics (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, includes in some cases only merchandise trade rather than total trade.

Additional data are obtained as follows.

Netherlands: We complement the data above with additional data from Statistics Netherlands for the period 1917-1920 and 1940-1943 (`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 1951-2022 period.

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 taken either from the World Bank's World Development Indicators via Haver or from the IMF International Financial Statistics. For emerging economies, we obtain data from the World Bank's World Development Indicators or from Haver's EMERGE database.

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).

Israel: Data for the period 1951-1960 are taken from Tables A-16 in Michaely (1975).

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

Mexico: Data for the period 1926-1960 are taken from the Historical Financial Statistics as described in Schuler (2015). The series used is 'Monetary authority: liabilities: old data series'.

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

We complement the data above with data on M2 (and, when not available, M3) growth taken from the Global Macro Database by Müller et al. (2025). Specifically, we fill in any missing data with their observations on the growth rate of money supply for M2 or M3.

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).

From 2020 through 2023, any missing data are spliced using the rate of change of government spending to GDP taken from the IMF's World Economic Outlook.

Shortages

We construct the country-specific shortage indexes used in this paper using the text-based methodology described in Caldara, Iacoviello, and Yu (2025). Specifically, we count in historical newspapers the joint occurrence of articles mentioning economic shortages alongside the name, capital city, or major cities 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*.

Data Gaps

After the panel was put together, some data gaps were filled using linear interpolation when one or two consecutive observations were missing. In total, 46 country-year-variable combinations (out of a total of about 40,000 observations in total) were interpolated across six different variables: 4 observations for GDP (Hungary 1911-1912, Poland 1911-1912), 15 for military expenditure shares (Argentina 1919, Brazil 1904, Chile 1901, 1904, 1917, Colombia 1912, 1917-1918, France 1943, Hungary 1923, 1940, Russia 1917-1918, 1991, Saudi Arabia 1956), 8 for debt-to-GDP ratios (Belgium 1944-1945, Japan 1945, Peru 1962, 1969, Thailand 1942, 1946-1947), 7 for government spending to GDP ratios (Belgium 1940, Denmark 1936, Japan 1945, Turkey 1937, 1944, 1946-1947), and 9 for money supply growth (Belgium 1914, 1919-1920, 1946-1947, Turkey 1948-1949, Vietnam 1994-1995).

Additional Variables Used in the Larger VAR Model of the Appendix: Interest Rates and Exchange Rates

In the Appendix, we show the effects of geopolitical risk on exchange rates, short-term interest rates, and long-term interest rates using a larger annual panel VAR (from 1900 through 2023)

that includes these variables. We obtain these variables from the Global Macro Database by Müller et al. (2025). The exchange rate is expressed in annual percent change relative to the U.S. dollar. The variables are winsorized at the 1st and 97.5th percentiles.

A.2 Data Sources for Monthly Global VAR

The data cover the 1974-2023 period. 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, taken from Cuba-Borda, Mechanick, and Raffo (2018) and updated using the same methodology.
- World inflation, defined as the aggregate of countries' 12-month change in the consumer price index (Global Financial data).
- Stock prices, from the FTSE World Dollar index (Global Financial Data).
- OECD Consumer Confidence Index for Europe (Haver mnemonics: C023CCE@OECDMEI).
- Spot oil prices, West Texas Intermediate Index (Haver mnemonics: PXTEXP@USECON).
- Commodity prices (GSCI@USECON — from the S&P Goldman Sachs Commodity Index)
- Dollar exchange rate (FXTWBDI@USECON - Federal Reserve Board Nominal Trade-Weighted broad dollar index)

B Appendix: Identifying Country-Specific Narrative Geopolitical Shocks

To isolate genuine country-specific geopolitical risk episodes, we employ a two-step empirical strategy that combines statistical identification with narrative validation. While the first step provides a purely statistical criterion for identifying potential shocks, the second step applies a narrative filter to ensure these episodes represent exogenous geopolitical events rather than geopolitical events driven by broader economic phenomena.

In the first step, we estimate country-specific models where the dependent variable is the standardized country-level geopolitical risk index ($GPRC_{i,t}$) regressed on its own lag and the global geopolitical risk index (GPR_t). Specifically, for each country i, we estimate:

$$GPRC_{i,t} = \alpha_i + \beta_i GPRC_{i,t-1} + \gamma_i GPR_t + \varepsilon_{i,t} \tag{3}$$

The residuals from these regressions represent country-specific geopolitical risk innovations that are orthogonal to both persistent country-level dynamics and contemporaneous global geopolitical developments.

In the second step, we examine for each country the three largest positive residuals (for a total of $3 \times 44 = 132$ candidate episodes) and apply narrative validation to exclude 11 episodes that: (1) are partly triggered by economic conditions, such as financial crises or hyperinflation; (2) likely reflect measurement error rather than genuine geopolitical shocks. Through this process, we identify 121 residual episodes that meet our criteria for exogenous geopolitical shocks. The resulting country-specific narrative GPR shocks take the value of the residual for these 120 episodes and zero otherwise.

The list of the episodes that we classify as narrative geopolitical shocks can be found in Table A.1.

Our approach identifies truly idiosyncratic conflicts like Argentina's 1982 Falklands War and Ukraine's 2022 Russian invasion, the highest country-specific shocks in our sample, both of which were largely initiated by geopolitical rather than economic motivations. By contrast, we exclude episodes where economic conditions likely played a more substantial role in triggering the event. Among these excluded events are financial or debt-driven political crises such as Chile's 1973 Pinochet coup against Allende (driven by hyperinflation) and Venezuela's 2019 presidential crisis (precipitated by economic collapse). Similarly, we omit episodes of civil unrest with strong economic underpinnings, such as South Africa's 1985 State of Emergency (where township unrest was fueled by economic inequality), Thailand's 1972 student uprising, and Colombia's 1948 Bogotazo riots.

All told, the narrative shocks selected isolate a subset of large adverse geopolitical shocks where the narrative record confirms country-specific triggers such as: domestic political crises not rooted in economic conditions (coups, revolutions), localized conflicts, country-specific policy decisions with major geopolitical implications, or external events that disproportionately affected individual countries. The narrative selection thus provides an additional layer of refinement that distinguishes between genuine idiosyncratic events and those driven by economic factors, measurement error, or global spillovers.

Table A.1: Country-Specific Narrative Geopolitical Shock Episodes

Country	Year	Episode Description	Included
Argentina	1945	War Declaration against Axis powers	Yes
Argentina	1962	Military coup against Frondizi (triggered by economic crisis and inflation)	No
Argentina	1982	Falklands War	Yes
Australia	1941	War mobilization against Japan	Yes
Australia	1942	Japanese attacks on Australia	Yes
Australia	2022	Ukraine war implications	Yes
Belgium	1914	German invasion (WWI)	Yes
Belgium	1917	Ongoing occupation	Yes
Belgium	1940	German invasion (WWII)	Yes
Brazil	1930	Revolution of 1930/Vargas coup	Yes
Brazil	1942	Brazil enters WWII	Yes
Brazil	1962	Involvement in the Cuban crisis	Yes
Canada	1939	Canada enters WWII	Yes
Canada	1940	Full war mobilization	Yes
Canada	2022	Ukraine war implications	Yes
Chile	1914	WWI	Yes
Chile	1932	Socialist Republic of Chile	Yes
Chile	1973	Pinochet coup against Allende (primarily driven by economic crisis)	No
China	1950	China enters Korean War	Yes
China	1951	Tibet annexation	Yes
China	2022	Taiwan tensions escalation	Yes
Colombia	1901	Thousand Days' War peak (precipitated by coffee market collapse and depression)	No
Colombia	1903	Panama secedes from Colombia	Yes
Colombia	1948	Bogotazo riots/La Violencia begins (economic inequality as major contributing factor)	No
Denmark	1917	WWI submarine warfare impact	Yes
Denmark	1939	Pre-invasion neutrality crisis	Yes
Denmark	1940	German occupation	Yes
Egypt	1956	Suez Crisis	Yes
Egypt	1967	Six-Day War	Yes
Egypt	1973	Yom Kippur War	Yes
Finland	1939	Winter War begins	Yes
Finland	1940	Winter War major battles	Yes
Finland	1944	Soviet-Finnish War	Yes
France	1914	WWI begins	Yes
France	1918	German Spring Offensive	Yes
France	1939	WWII begins	Yes
Germany	1914	WWI begins	Yes
Germany	1915	Unrestricted submarine warfare	Yes
Germany	1918	German Revolution of 1918-1919	Yes
Hong Kong	1945	Liberation from Japanese occupation	Yes
Hong Kong	1967	Riots during colonial rule	Yes
Hong Kong	2019	Pro-democracy protests	Yes
Hungary	1914	WWI mobilization	Yes
Hungary	1944	Nazi occupation	Yes
Hungary	1956	Hungarian Revolution	Yes
India	1942	Quit India Movement	Yes
India	1944	Bengal famine/Japanese threat	Yes
India	1971	Indo-Pakistani War/Bangladesh Liberation	Yes
Indonesia	1942	Japanese occupation begins	Yes
Indonesia	1945	Declaration of Independence	Yes
Indonesia	1958	PRRI-Permesta rebellion (regional economic grievances as possible driver)	No
Israel	1967	Six-Day War	Yes
Israel	1973	Yom Kippur War	Yes
Israel	2023	Hamas attack and Gaza war	Yes
Italy	1935	Ethiopian invasion	Yes
Italy	1940	Italy enters WWII	Yes
Italy	1943	Allied invasion/Mussolini ousted	Yes
Japan	1904	Russo-Japanese War begins	Yes
Japan	1942	Pacific War expansion	Yes
Japan	1944	Allied island-hopping campaign	Yes
Malaysia	1941	Japanese invasion begins	Yes
Malaysia	1942	Japanese occupation	Yes
Malaysia	2014	Flight MH370 disappearance (aviation incident without large geopolitical dimension)	No
Mexico	1913	Ten Tragic Days coup	Yes
Mexico	1914	US occupation of Veracruz	Yes
Mexico	1916	Pancho Villa raids/US expedition	Yes
Netherlands	1914	WWI neutrality crisis	Yes
Netherlands	1939	Pre-invasion mobilization	Yes

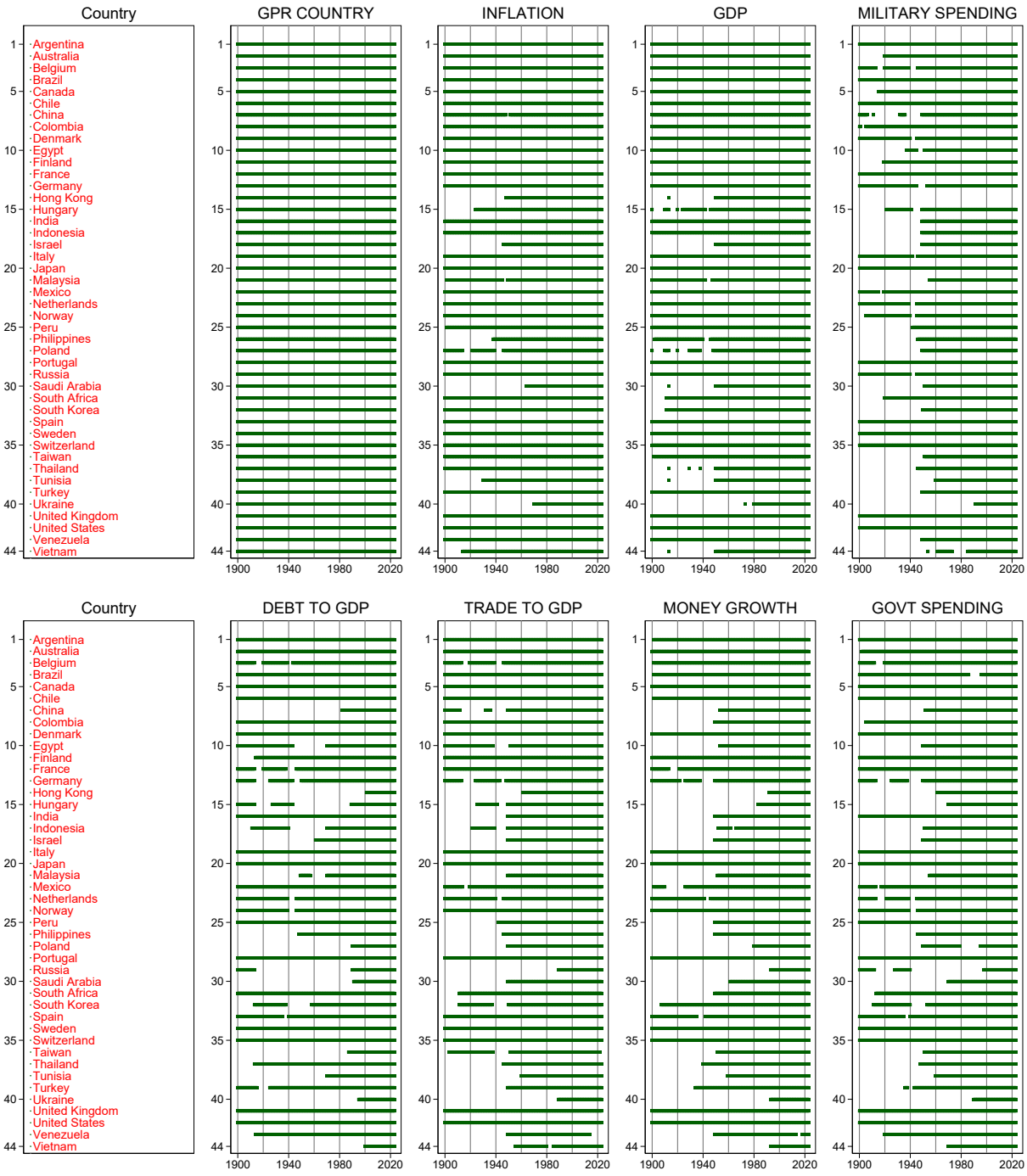
Continued on next page

Table A.1: Country-Specific Narrative Geopolitical Shock Episodes

Country	Year	Episode Description	Included
Netherlands	1940	German invasion	Yes
Norway	1939	Pre-invasion neutrality crisis	Yes
Norway	1940	German invasion	Yes
Norway	1957	NATO/Soviet tensions	Yes
Peru	1933	Colombian-Peruvian War	Yes
Peru	2022	Castillo coup attempt/impeachment (driven by economic grievances and inequality)	No
Peru	2023	Ongoing political instability (continuation of economic crisis from 2022)	No
Philippines	1942	Japanese invasion/occupation	Yes
Philippines	1944	Battle of Leyte Gulf	Yes
Philippines	1945	Liberation battle of Manila	Yes
Poland	1939	Nazi-Soviet invasion	Yes
Poland	1944	Warsaw Uprising	Yes
Poland	2022	Ukrainian refugee crisis	Yes
Portugal	1936	Spanish Civil War tensions	Yes
Portugal	1961	Colonial wars begin	Yes
Portugal	1975	Carnation Revolution aftermath	Yes
Russia	1904	Russo-Japanese War	Yes
Russia	1914	WWI begins	Yes
Russia	2022	Ukraine invasion	Yes
Saudi Arabia	1990	Gulf War threat from Iraq	Yes
Saudi Arabia	2001	9/11 aftermath	Yes
Saudi Arabia	2015	Yemen intervention begins	Yes
South Africa	1951	Defiance Campaign begins	Yes
South Africa	1976	Soweto Uprising	Yes
South Africa	1985	State of Emergency declared (economic factors contributing to township unrest)	No
South Korea	1950	Korean War begins	Yes
South Korea	1951	Chinese intervention impact	Yes
South Korea	2017	North Korea missile crisis	Yes
Spain	1914	WWI neutrality pressures	Yes
Spain	1936	Spanish Civil War begins	Yes
Spain	1937	Spanish Civil War continuation	Yes
Sweden	1939	War preparations	Yes
Sweden	1940	Transit agreement with Nazi Germany	Yes
Sweden	2022	NATO application process due to war in Ukraine	Yes
Switzerland	1918	World War I	Yes
Switzerland	1939	War mobilization	Yes
Switzerland	1940	National Redoubt strategy	Yes
Taiwan	1950	US 7th Fleet deployments	Yes
Taiwan	1955	First Taiwan Strait Crisis	Yes
Taiwan	1958	Second Taiwan Strait Crisis	Yes
Thailand	1941	Japanese invasion	Yes
Thailand	1972	Student uprising (economic inequality as possible driver)	No
Thailand	1975	US military withdrawal	Yes
Tunisia	1942	WWII Tunisia Campaign begins	Yes
Tunisia	1943	Battle of Tunisia	Yes
Tunisia	2011	Jasmine Revolution	Yes
Turkey	1912	First Balkan War	Yes
Turkey	1915	Armenian Genocide	Yes
Turkey	2022	Military Tensions near border with Syria	Yes
Ukraine	1918	Independence declaration	Yes
Ukraine	2014	Crimea annexation/Donbas conflict	Yes
Ukraine	2022	Russian invasion	Yes
United Kingdom	1914	WWI begins	Yes
United Kingdom	1915	WWI escalation	Yes
United Kingdom	1940	Battle of Britain	Yes
United States	2001	9/11 terrorist attacks	Yes
United States	2022	Ukraine war reaction/NATO mobilization	Yes
United States	2023	Chinese balloon incident/tensions	Yes
Venezuela	1901	Venezuelan Crisis beginning	Yes
Venezuela	1902	European naval blockade	Yes
Venezuela	2019	Presidential crisis (economic collapse as possible driver)	No
Vietnam	1964	Gulf of Tonkin incident	Yes
Vietnam	1965	US combat troops deployed	Yes
Vietnam	1975	Fall of Saigon	Yes

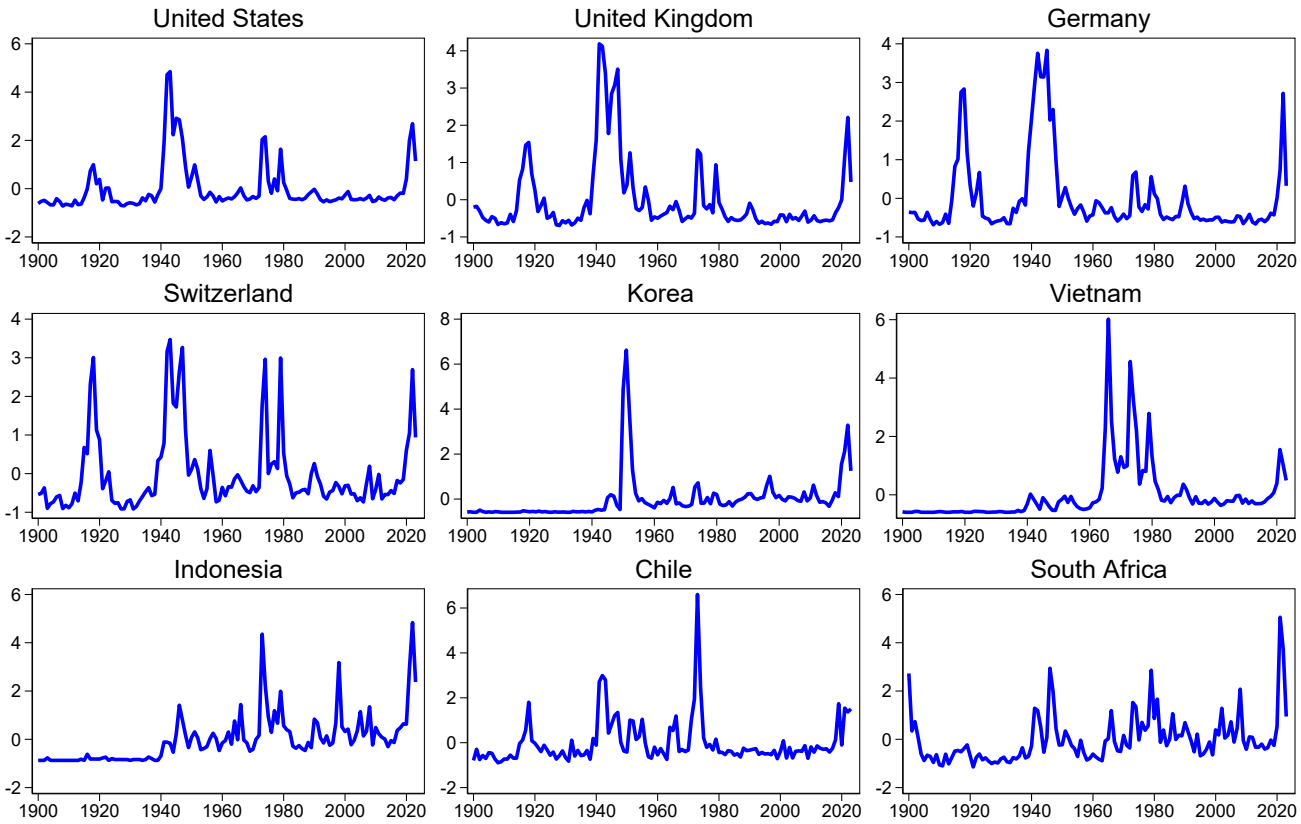
Note: Listing of candidate narrative geopolitical shock episodes, indicating with "Yes" those included in the narrative index based on criteria excluding economic triggers.

Figure A.1: Data Coverage for the Cross-Country Panel



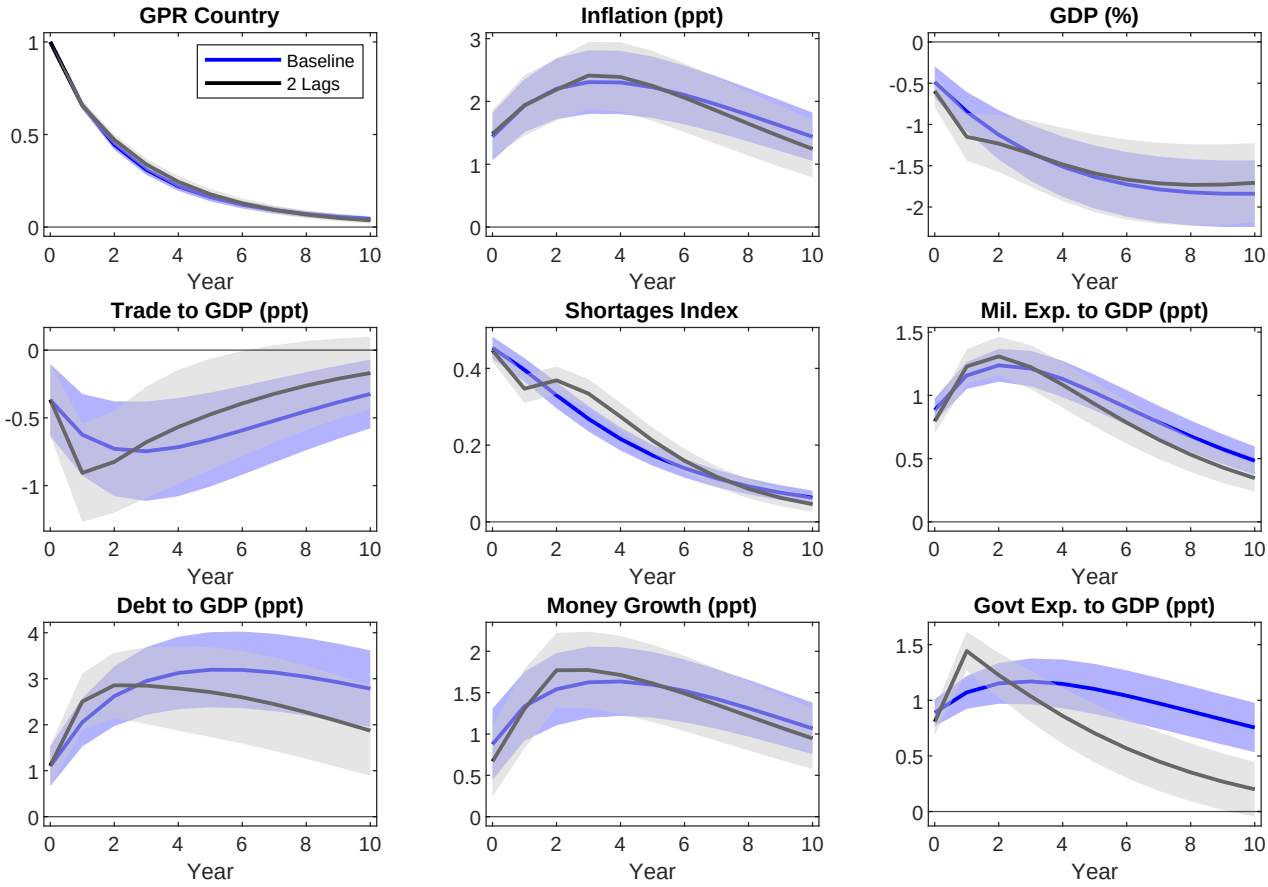
Note: The figure illustrates coverage between 1900 and 2023 of country-specific variables over the sample: country-specific geopolitical risk, inflation, log real GDP per capita, military spending as a share of GDP, public debt to GDP, trade to GDP, money growth, and government spending to GDP. Country-specific geopolitical risk and country-specific shortages (coverage not shown) are available for the full 1900-2023 sample.

Figure A.2: Country-Specific News Indexes of Shortages, Selected Countries



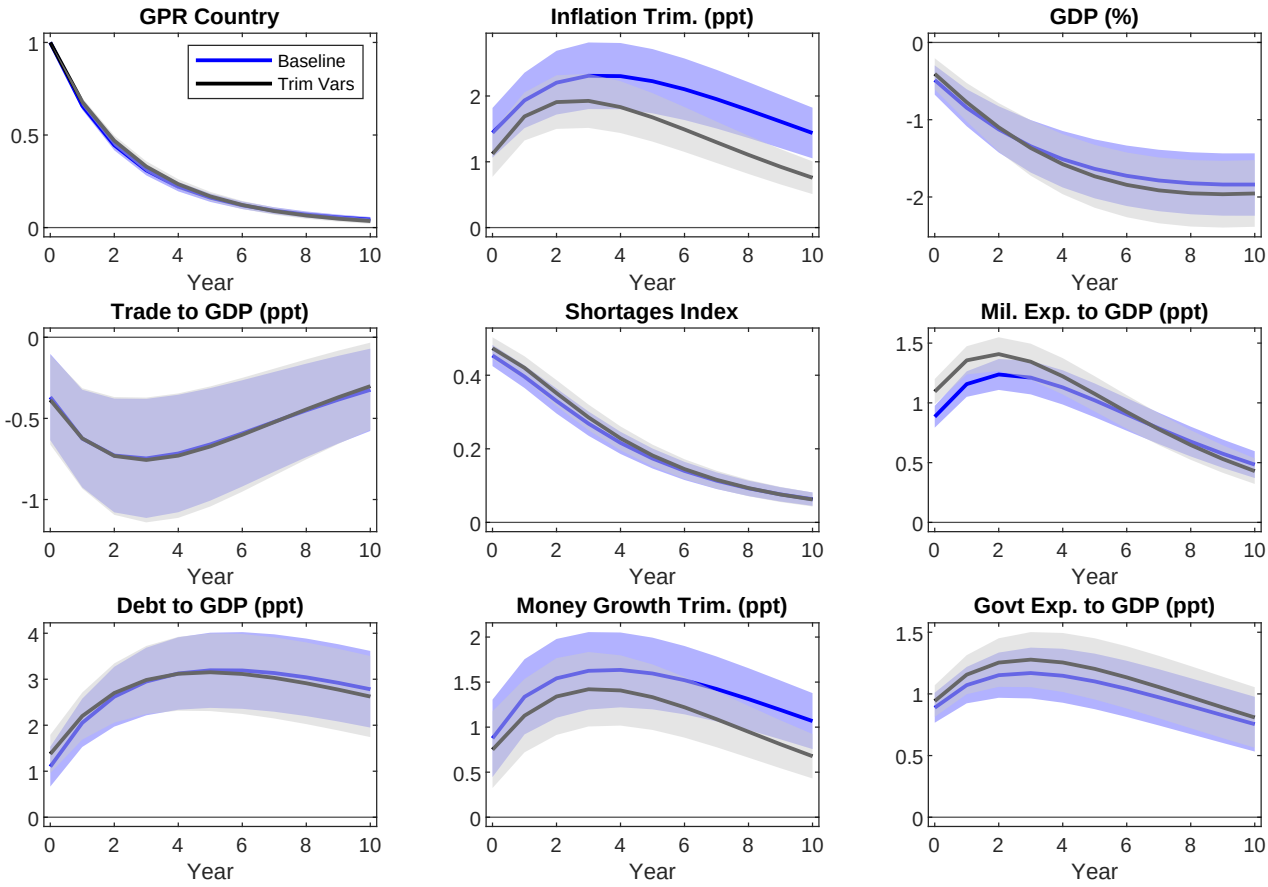
Note: Each panel displays news-based index of shortages from 1900 through 2023 for selected countries. The indexes are standardized so as to have 0 mean and unit standard deviation in each country.

Figure A.3: Effects of Geopolitical Risk: VAR Model with two Lags



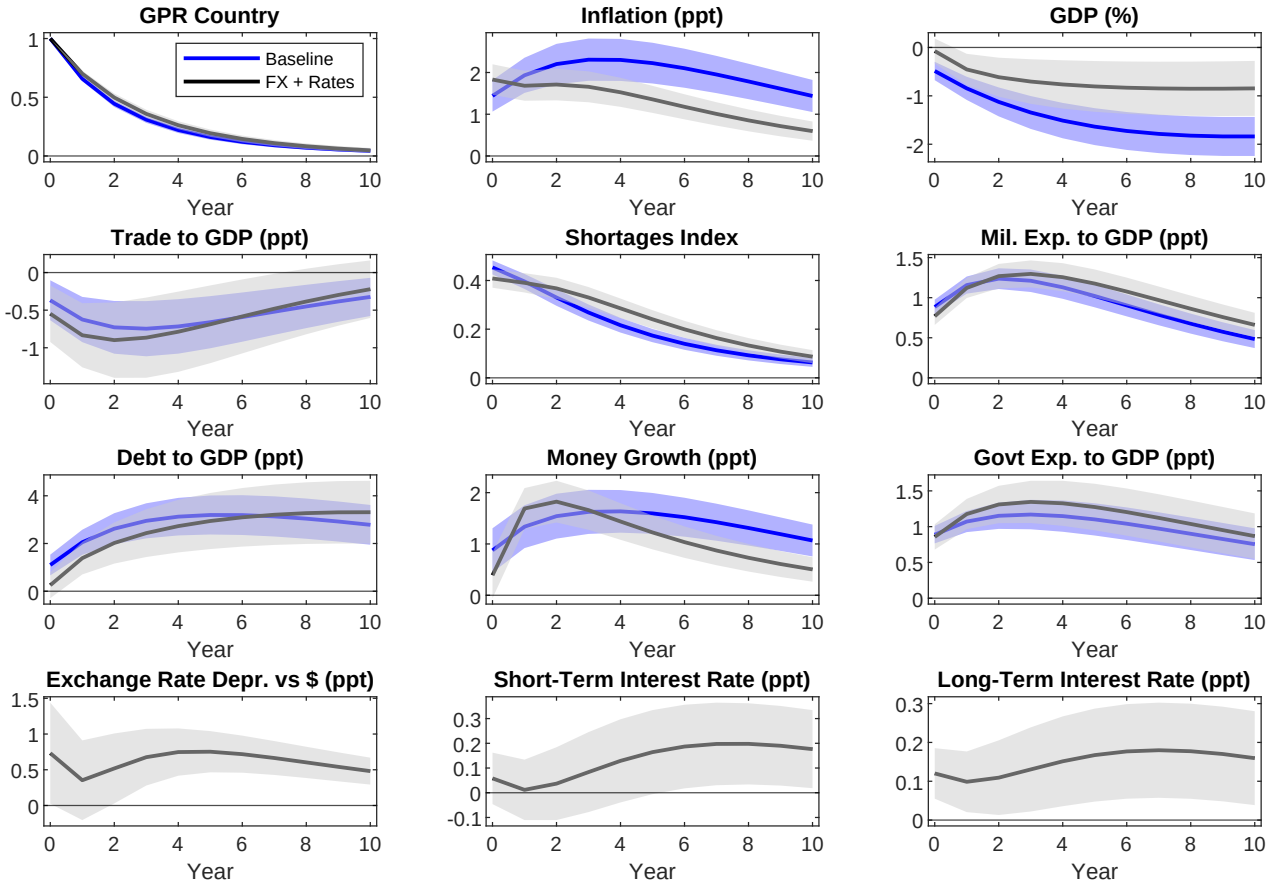
Note: The figure plots impulse responses to an exogenous increase in the country GPR index identified using the baseline model (blue lines) and an alternative version of the VAR model that includes two lags of each endogenous variable. The shocks are sized to generate a one-standard deviation increase in the country-specific GPR indexes. The impulse responses are estimated using a panel vector autoregression model on annual data from 1900 through 2023. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure A.4: Effects of Geopolitical Risk: Baseline Dataset versus Dataset with Trimmed Inflation and Money Growth



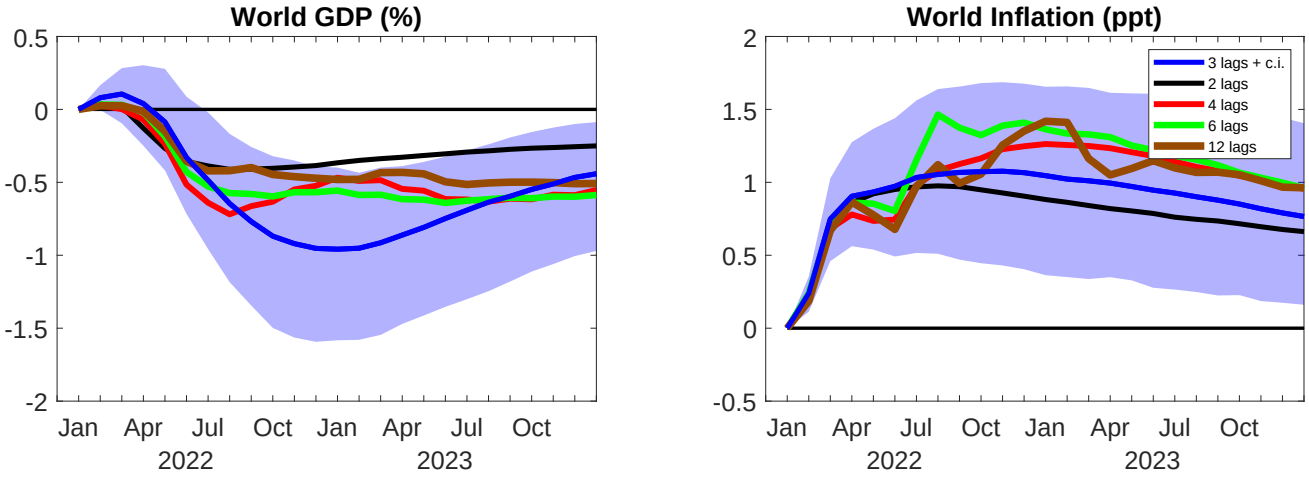
Note: The figure plots impulse responses to an exogenous increase in the country GPR index identified using the baseline model (blue lines) and an alternative version (black lines) that treats extreme observations for inflation and money growth as missing instead of winsorizing them using the procedure described in Section 2.1 of the paper. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure A.5: Effects of Geopolitical Risk: Larger VAR Model



Note: The figure plots impulse responses to an exogenous increase in the country GPR index identified using the baseline model (blue lines) and an alternative model that includes data on exchange rates, short-term interest rates, and long term interest rates (gray lines). Including these additional variables reduces the sample size by 30 percent. The shaded areas denote posterior 90 percent credible sets. Variables are plotted in deviation from the no-shock baseline.

Figure A.6: Global Effects of Geopolitical Risks on World GDP and Inflation: Russian Invasion of Ukraine Simulation. Sensitivity to Number of Lags



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 2022 and April 2022, estimated using a structural vector autoregression (VAR) model on the monthly dataset. The solid blue lines plot the baseline estimates in the text. The other lines plot the response varying the number of lags in the VAR specification.