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Northern InSights: Geopolitical Risk from Finnish News Media *

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Abstract

We construct a geopolitical risk indicator for Finland using local, Finnish language news media - *FinnGPR*. We compare *FinnGPR* to global and country-specific measures of geopolitical risk derived from Anglo-Saxon media. We show that in the case of Finland, *local geopolitical risk perceptions* based on local news media differ from *global attention on geopolitical risk* in Finland as reflected in the global media. We study the effects of *FinnGPR* on the Finnish economy and find that the Finnish economy tends to be resilient to geopolitical risk shocks. Nevertheless, we find that geopolitical risks can represent a threat to Finnish financial market stability.

Keywords: geopolitical risk, local perceptions, geopolitical attention, news-based index, macroeconomic stability, financial stability

JEL Codes: D80, E44, F50, G0

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1 Introduction

A growing body of research highlights the importance of geopolitical risks for economic and financial outcomes around the world.¹ Among others, [Caldara and Iacoviello \(2022\)](#) have shown that these geopolitical risks translate to economically significant declines in various aspects of the economy. A key first step in studying the effects of geopolitical risk is to quantify and measure it. This is no easy task given the heterogeneous, qualitative, and often idiosyncratic nature of geopolitical risks. The leading approach is to draw on news reports by constructing indices that capture the prevalence of certain keywords associated with geopolitical tensions. The seminal and most widely used geopolitical risk indices are constructed using English language newspapers in the United States, United Kingdom, and Canada, many with global circulation. These indices largely reflect the global or Anglo-Saxon perspective on geopolitical risk.

However, this global perspective may be too blunt due to the very specific and often local nature of geopolitical risks and their effects. To capture this local dimension, [Caldara and Iacoviello \(2022\)](#) construct country-specific indices which nevertheless retains the global perspective on geopolitical risk specific to certain countries given the source material. While informative, this approach has several limitations. *First*, these country indices would not reflect the notion that geopolitical risks not specific to a certain country can also have economic effects in the said country. *Second*, perceptions based on English-language media might be very different from perceptions based on domestic media. That is, local *geopolitical risk perceptions* may also have economic and financial implications distinct from *global attention to geopolitical risk* in that country. *Third*, such an approach can miss locally salient geopolitical events that receive limited international coverage.

The country index for Finland by [Caldara and Iacoviello \(2022\)](#) is a case in point. As we show in Section 2, this index peaks in July 2018 during the Helsinki summit between the

¹We follow [Caldara and Iacoviello \(2022, p.1195\)](#) and define geopolitical risk as the “*threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations.*”

presidents of the United States and Russia, and it reacts more strongly to Finland's NATO accession process than to Russia's invasion of Ukraine. In contrast, our Finnish geopolitical risk index, constructed from domestic Finnish language news media, does not feature a large spike in July 2018 and instead peaks at the onset of the 2022 Russian invasion of Ukraine. This discrepancy underscores the importance of relying on local sources when assessing local geopolitical risk perceptions.

Motivated by these concerns, an emerging literature has developed country-specific geopolitical risk (GPR) indices based on local news media in the local language to better capture local perspectives on geopolitical risk. We contribute to this line of work by constructing a GPR indicator for Finland. [Bondarenko et al. \(2024\)](#) develop a local monthly GPR for Russia using news from local media and in the local language. They show and argue that GPR perceptions differ significantly across nations. For instance, they find significant adverse economic effects from GPR indices capturing local perceptions whereas geopolitical risks identified from Anglo-Saxon news media sources do not. More recently, [Bondarenko et al. \(2025\)](#) extend this local language - local news media approach to the euro area and develop a euro area GPR index covering the five largest euro area economies (Germany, France, Italy, Spain, and the Netherlands). However, smaller countries, like Finland, are not included. Their euro area indicator reacts more strongly than the [Caldara and Iacoviello \(2022\)](#) GPR index to conflicts closer to Europe, confirming that geography and local narratives shape risk perceptions. Looking outside Europe, [Jung et al. \(2021\)](#) rely on automated keyword searches from local news to develop a geopolitical risk measure for South Korea that originates from North Korean threats.

[Alonso-Alvarez et al. \(2025\)](#) further advance this literature by introducing bilateral GPR indices that also traces the origin of geopolitical tensions. To capture local perspectives, they also use local news media sources for six major economies (the United States, China, Russia, the United Kingdom, Germany, France) and in addition, they partition the indicator into internal and regional (i.e., rest of the world) components. These country-specific indices

provide more nuanced perspectives to how global and local geopolitical risks are perceived in a country. They show that the size and sometimes even the sign of the macroeconomic impact of GPR shocks on the recipient country depends on the region or country in which the GPR shock originates. Against this backdrop, our paper provides a new perspective - the view from Finland, a small open economy in the euro area as well as bordering a geopolitically tense part of Europe.

We construct a geopolitical risk indicator for Finland using local Finnish language news media - the *FinnGPR*. The focus on Finland is motivated by several important points and represents a unique perspective on global geopolitical tensions. First, the view from Finland, given its historical geopolitical stance neighboring Russia and having acted for decades as an intermediary between Russia and the West, provides a distinct vantage point from which to study how geopolitical tensions shape economic and financial outcomes. Second, the Finnish language is quite unique, with very few native speakers residing outside Finland. As a result, our index can be interpreted as distinctly local allowing our index to genuinely reflect local geopolitical risk perceptions. Third, the media landscape in Finland is quite concentrated and trust in news media is extremely high. This means that a very large share of the population get their news from the national public news broadcaster Yleisradio and also trust what they read which then helps shape their world view.

We follow the methodology of [Caldara and Iacoviello \(2022\)](#) and [Bondarenko et al. \(2024\)](#) and construct a Finnish Geopolitical Risk index from Finnish news media. We then compare our *FinnGPR* with both the global and Finland-specific measure of geopolitical risk derived from Anglo-Saxon media. We find very little correlation between our geopolitical risk index for Finland based on local news media and the country index for Finland in [Caldara and Iacoviello \(2022\)](#), henceforth *GPRC-FIN*. We argue that this is not surprising, as this approach does not necessarily capture local geopolitical risk perceptions, but rather the geopolitical attention on Finland. Notably, we find that our local *FinnGPR* is more closely correlated with the global index of [Caldara and Iacoviello \(2022\)](#). That is, *local* perceptions

of geopolitical risks in Finland are much closer to *global* perceptions of geopolitical risk than to global attention of geopolitical risks associated with Finland.

We next investigate how geopolitical risk perceptions affect the Finnish economy, contributing to the broader literature on the macroeconomic and financial effects of geopolitical risk shocks. Existing work generally finds that geopolitical shocks reduce investment and consumption while possibly also raising inflation (Bondarenko et al., 2024, 2025; Caldara et al., 2026).² In their seminal work, Caldara and Iacoviello (2022) show that higher geopolitical risk lowers employment and investment, with more exposed industries hit harder. Moreover, Brignone et al. (2024) highlight non-linear effects, as uncertainty dampens activity only when shocks are large. Using survey data, Gorodnichenko et al. (2025) find households perceive geopolitical shocks as negative, making them worse off financially and leading to reduced consumption. Hodula et al. (2024) identify two main transmission channels: a financial channel driven by uncertainty and risk aversion, and a real economy channel through trade, supply chain, and commodity disruptions.

We contrast the Finnish experience with that of other countries’ as documented in the literature by comparing the effects of *global* geopolitical risk perceptions and global attention on geopolitical risk in Finland to *local* geopolitical risk perceptions on the real economy, financial markets, and consumer expectations. While Finnish output and inflation tend to be unperturbed by geopolitical risk shocks, we find that both global and local geopolitical risk perceptions tend to raise market stress in Finland. We also document a worsening of consumer sentiment. Consistent with Bondarenko et al. (2024), we find that the geopolitical risk index derived from Finnish language local news media, local geopolitical risk perceptions, have stronger effects on the Finnish economy relative to global attention to geopolitical risk in Finland where we find negligible effects on the Finnish economy for the latter.

The rest of the paper is organized as follows. The next section provides a brief overview

²Anttonen and Lehmus (2025) analyze how two major conflicts (the Russian invasion of Ukraine in February 2022 and the Israel– Hamas war in October 2023) affected the euro area and argue that geopolitical surprises don’t always raise inflation but their impact depends on the nature and timing of the event.

of the related literature. Section 2 describes how the Finnish GPR index is constructed. Section 3 documents the effects of geopolitical risk on the Finnish economy. Finally, section 4 concludes.

2 The Finnish Geopolitical Risk Index

2.1 Data and Background

Finland is a highly industrialized and developed small open economy located in the north-east corner of Europe bordering Russia and is a member of the European Union (EU), the euro zone and the Organization for Economic Cooperation and Development (OECD). In April 2023 it joined the North Atlantic Treaty Organisation, NATO. It has a population of roughly 5.6 million, a real gross domestic product (GDP) per capita approximately equal to the EU average and accounts for about 1.6% of EU GDP (0.2% of world GDP). It ranks very highly in most development indices and features relatively low inequality and perceived corruption. Moreover, Finland regularly ranks among the highest with respect to trust in news media, scoring 71 against an EU average of 48 in a 2023 Eurobarometer survey and garnering a score of 69 against a global average of 40 in the 2024 Digital News Report of the Oxford Reuters Institute.³

After the Second World War Finland pursued a policy of neutrality, especially when it came to relations between the Soviet Union and the Western countries. At the same time it sought to maintain a credible national defense, e.g., with the help of mandatory military service. After the fall of the Soviet Union Finland was quick to join the European Union in 1995, together with two other formerly neutral countries, Sweden and Austria. At the same time, all three countries remained outside NATO. However, both Finnish and Swedish armed forces were tightly linked to NATO already during this period. The situation changed drastically in 2022 after Russia's illegal and brutal invasion of Ukraine. Both Finland and

³See Ipsos European Public Affairs (2023) and Newman et al. (2024).

Sweden applied for the membership in the NATO. Finland became a member in April 2023 and Sweden in March 2024. The empirical results reported in the paper largely cover the period which predate Finnish membership in NATO.

Our source of information regarding Finnish news is the *Yle Finnish News Archive* containing all online articles from the public Finnish broadcasting company *Yleisradio Oy* (Yle) from 2011 to 2024. Yle is the state-owned Finnish national public broadcasting company with a presence in television, radio, and online media. While the company is state-owned, Yle is generally considered to maintain a high level of journalistic independence. Yle's Board of Directors consists of independent experts, not politicians.

The Yle news archive we use is an ideal source for our purposes given that the publisher *Yle* consistently ranks among the most read sources of news in traditional news media and online and also receives the highest trust ratings among news outlets (Newman et al., 2024).⁴ Our use of online news articles is also consistent with online sources being the most relevant source of news for the Finnish general public (at 90% of the population with television ranking second at 63%).

The news archive provides us with a total of about one million articles over a 14 year period which is approximately over 200 articles a day or 6,200 articles a month. In our empirical analyses, we aggregate the Finnish GPR index to monthly frequency and complement data on online news articles with standard macroeconomic and financial variables at the monthly frequency. Basic summary statistics are reported in Table 1.

⁴Moreover, according to the 2024 Yle Annual Report, Yle outreach is about 92% of Finns with 82% of Finns considering Yle news to be a reliable source.

Table 1: Summary statistics

Variable	Mean	Std. Dev.	Count	Description
Finn GPR	1.439	0.740	167	Finnish GPR Index
Global GPR	101.859	31.438	167	Caldara and Iacoviello (2022) GPR Index
EA GPR	0.941	0.325	167	Bondarenko et al. (2024) Euro area GPR Index
INDPROD	0.034	2.052	167	Month-on-month growth rate of Industrial Production
HICP	0.160	0.378	167	Month-on-month Consumer Price Inflation
UNEMPRATE	0.002	0.461	167	Month-on-month change in Unemployment Rate
RET	0.317	4.278	167	Month-on-month return on OMX Helsinki 25 Index
EURIBOR	0.417	1.316	167	Euribor 1 month
CISS	0.053	0.070	167	Composite indicator of systemic stress for Finland
CONS CONF	-4.605	5.310	167	Consumer Confidence Index for Finland
PPI	0.167	0.996	167	Month-on-month Producer Price Index Inflation
SpotOil	-0.001	8.262	167	Month-on-month BFOE Crude Oil Spot Price growth

The table reports summary statistics for variables used in the empirical analysis. Data is at monthly frequency over the period January 2011 to November 2024. The underlying data sources are from YLE/Kielipankki, Statistics Finland, the ECB Statistical Data Warehouse, and Macrobond.

2.2 Index Construction

To construct our Finnish GPR index, we follow closely the methodology of Caldara and Iacoviello (2022). We translate into the Finnish language the English language keywords that they use to identify news relating to the eight topics below.

- | | |
|----------------------|----------------------|
| 1. Peace threats | 5. Military buildup |
| 2. War threats | 6. Beginning of war |
| 3. Nuclear threats | 7. Escalation of war |
| 4. Terrorist threats | 8. Terrorist acts |

In addition, we also identify keywords to rule out reports on fictional, sports, or historical events. To identify whether an article refers to any of the eight topics above, we use the Finnish-language equivalent of word combinations in Caldara and Iacoviello (2022).⁵ The list of keywords we use are reported in the Appendix.

⁵The rules for these word combinations include a proximity requirement, that certain words appear *near* another set of words. For our index, we replace this proximity requirement with an alternative rule that requires these sets of words to appear within the same sentence instead.

The presence of the required combination of words for any one topic is sufficient to flag an article as geopolitical in nature, with the additional condition that it does not contain any keyword in the exclusion list. The index is then constructed simply by averaging the number of flagged articles relative to the total number of articles at a given frequency such as daily or monthly,

$$FinnGPR_t = \text{FlaggedArticles}_t / \text{TotalArticles}_t. \tag{1}$$

Approximately 1.4% of articles are flagged as geopolitical. There is also significant variation with many days featuring zero articles flagged and a peak day of nearly one third of all articles flagged on November 13, 2015, the day of the Paris terrorist attacks. Figure 1 plots the annotated daily Finnish GPR index.

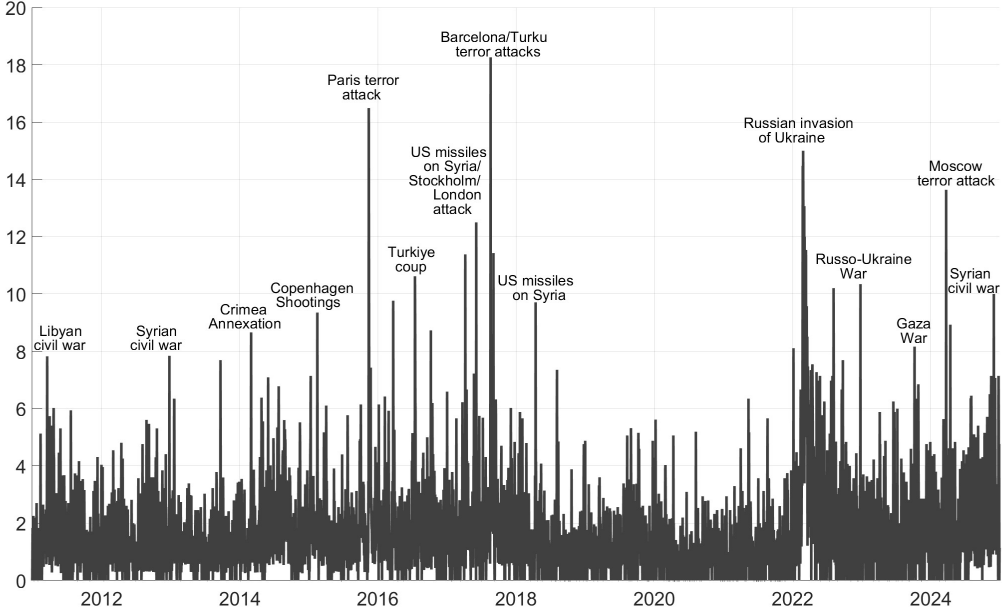


Figure 1: Annotated Daily Finnish GPR Index

Notes: The figure plots the daily Finnish GPR index using online news article from the Finnish public broadcaster Yle. Key events associated with peaks in the daily index are annotated for reference.

It is worth noting that in Figure 1, several daily peaks in the index are associated with

terrorist attacks. This is consistent with both the definition of geopolitical risk in [Caldara and Iacoviello \(2022\)](#) as well as the properties of their own index.⁶ A number of major conflicts involving significant state-led military action have been preceded by terrorist acts. For instance, the US-led war on terror and the 2003 invasion of Iraq was preceded by the September 11 terror attacks on US soil. More recently, the Israel-Iran conflict was preceded by the October 2023 terror attack on Israel by Hamas. These type of events are extensively covered by media and thus heighten perceptions of geopolitical risks. Figure 2 illustrates how the main GPR index for Finland along with the eight topical sub-components have developed over time.

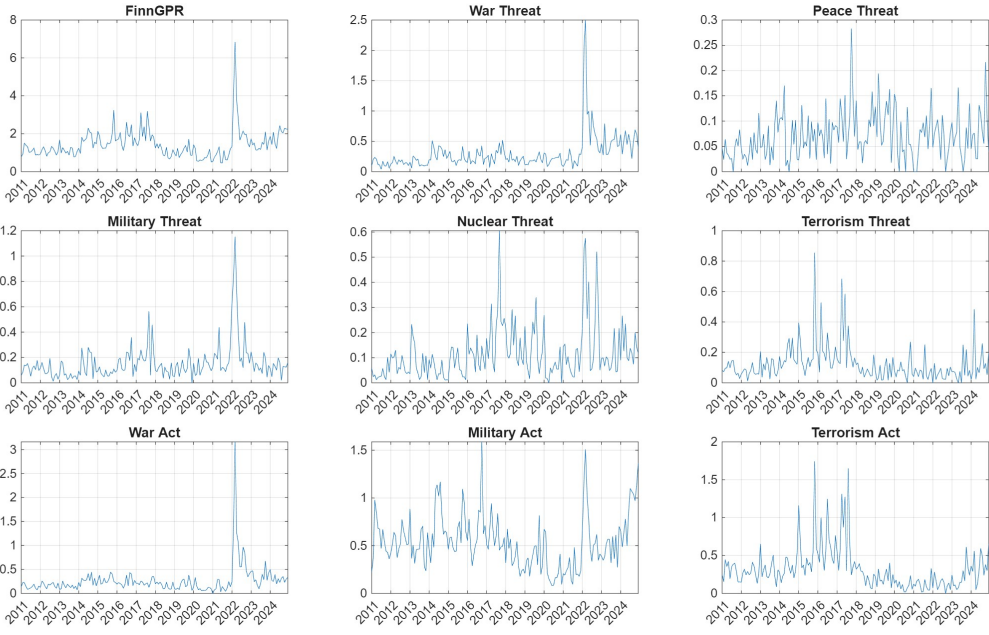


Figure 2: Finnish GPR Sub-Indices

Notes: The figure plots the monthly Finnish GPR index split into eight topics using online news article from the Finnish public broadcaster Yle.

⁶We refer the reader to the relevant sections in [Caldara and Iacoviello \(2022\)](#) which extensively discusses the definition of geopolitical risk and the associated topics.

2.3 Index Validation

To ensure that our *FinnGPR* index is working as intended, we recursively update the list of words used with related words that are actually commonly used in the Yle news articles. For instance, we added keywords associated with airspace violations, hybrid influence, and cyber attacks. We then validate the latest version of the keywords we use by checking a sample of news articles against a human evaluator who then decides whether the articles in question do indeed indicate an increase in geopolitical risk.

We conduct both a targeted and randomized sampling approach in our validation. Given that on average only 1.4% of articles are flagged as geopolitical in nature, a pure random sampling for validation will yield very few flagged articles. To overcome this, we combine four sampling strategies as follows. We first randomly draw 30 articles from the sample period covering 2011-2021, another 30 from the sample of flagged articles over 2011-2021, and a third set of 30 random articles from the sample of unflagged articles in 2011-2021. Second, we collect the first 100 flagged articles. Third, we identify the four days where the daily index is highest over the period 2011-2021 and collect all articles on those dates (447 in total). Finally, we take all articles on the day of the Barcelona and Turku terror attacks and the day after (392 in total).

Together, these four sampling strategies yield 1023 articles of which 157 have been flagged by the algorithm.⁷ We then have a human evaluator categorize each of these articles. We define a true positive and true negative as when both the algorithm and human evaluator agree on the article categorization. Conversely, a false positive (negative) is defined as when the algorithm flags (fails to flag) an article while the human evaluator comes to the opposite conclusion. The breakdown of algorithmic against human evaluation of these articles are reported in Table 2

⁷Six articles were dropped from the sample.

Table 2: Human vs. Index Article Evaluation

Algorithm	Human	Flagged	Not Flagged	Total
Flagged		147 (94%)	10 (6%)	157
Not Flagged		141 (16%)	725 (84%)	866
Total		288	735	1023

Notes: The table reports a two-way tabulation of algorithmic (rows) and human (columns) categorization of articles. Row percentages are reported in parentheses.

The current version of the index has an 85% accuracy rate (true positives and true negatives to total articles). We find a slight bias towards false negatives against false positives suggesting that our index is more conservative relative to a human evaluator.

2.4 Comparison with other GPR indices

We compare the Finnish GPR index with other indices provided in the literature.⁸ First, we compare our index against the [Caldara and Iacoviello \(2022\)](#) country GPR index for Finland (GPRC-FIN) and also include for reference their main (global) GPR index as well as the GPR index for the Euro area from [Bondarenko et al. \(2024\)](#). Figure 3 plots our index against these indices.

⁸We also compare our index with the frequency of online searches containing a few keywords using *Google Trends* data. Specifically, we collect monthly search frequencies on the Finnish words for “terrorism”, “attack”, and “bombing” (“terrorismi”, “hyökkäys”, and “pommitus” respectively). We find that our index has a correlation of between 0.3 to 0.7 with the search frequencies of these words in Finnish.

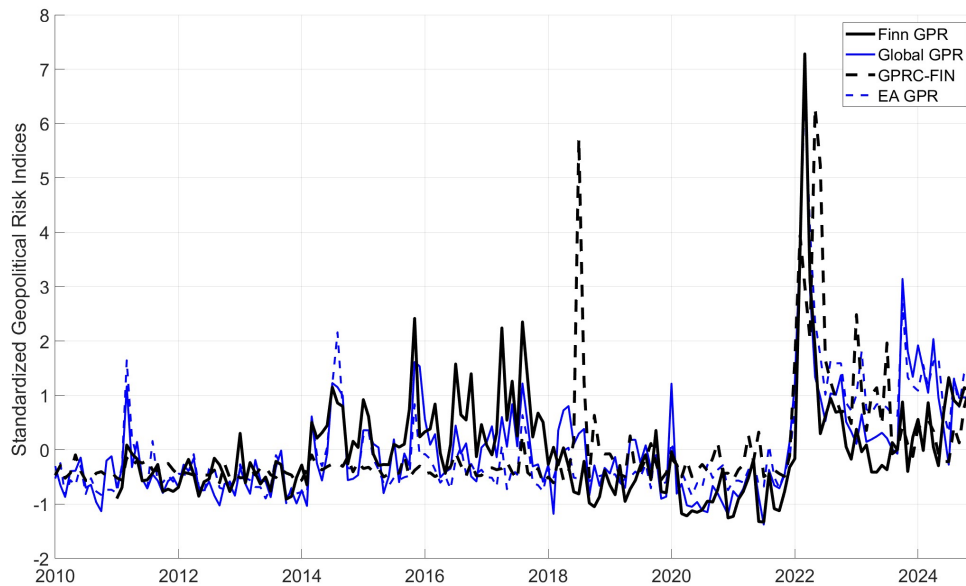


Figure 3: Comparison of Select Geopolitical Risk Indices

Sources: Authors' calculations, [Caldara and Iacoviello \(2022\)](#), and [Bondarenko et al. \(2024, 2025\)](#). Notes: The figure plots the Finnish Geopolitical Risk Index (Finn GPR), the [Caldara and Iacoviello \(2022\)](#) index (Global GPR), and the GPR index for Finland from [Caldara and Iacoviello \(2022\)](#) based on English language foreign news media (GPRC-FIN) along with the [Bondarenko et al. \(2024\)](#) index for the Euro area. The indices have been standardized for ease of comparison.

A cursory inspection of the indices suggests that our index tracks the global GPR index of [Caldara and Iacoviello \(2022\)](#) quite well and the correlation between the two is about 0.8. Our index is, however, notably different from the [Caldara and Iacoviello \(2022\)](#) country index for Finland which features a very prominent peak on July 2018 when the Trump-Putin Helsinki Summit took place. This is perhaps symptomatic of a tendency by the (English-language) news media to cater to the interests and perspectives of their readership. Consequently, news reports in such news media concerning small economies like Finland seldom appear and when they do, it is typically by association with a topic that the typical reader would find interesting. This is a strong argument for why a news-based index sourced from local news media can provide complementary information as well as a different, more local, perspective relative to indices based on global news media.

We also compare our index to two country geopolitical risk indices also sourced from local news media for Russia and the Euro area from [Bondarenko et al. \(2024, 2025\)](#). We

report pairwise correlations with these indices along with the [Caldara and Iacoviello \(2022\)](#) indices (Global GPR and GPRC-FIN) in [Table 3](#). Interestingly, we find that our index correlates the most with the global GPR index and the least with the country index for Finland based on English-language news media (GPRC-FIN). That is, local perceptions of geopolitical risk are more or less the same as global perceptions of geopolitical risk. Crucially, our analysis suggests that local perceptions of geopolitical risk are quite different from what one would obtain under the approach taken in [Caldara and Iacoviello \(2022\)](#) to construct country indices.

Table 3: Correlations with Other Geopolitical Risk Indices

	Finn GPR	GPRC-FIN	Global GPR	EA GPR	Russia GPR
Finn GPR	1.000	0.387	0.800	0.744	0.495
GPRC-FIN	0.387	1.000	0.513	0.597	0.538
Global GPR	0.800	0.513	1.000	0.895	0.655
EA GPR	0.744	0.597	0.895	1.000	0.749
Russia GPR	0.495	0.538	0.655	0.749	1.000

Notes: The table reports correlation coefficients of several geopolitical risk indices. Finn GPR is the Finnish GPR index. Global GPR is the [Caldara and Iacoviello \(2022\)](#) GPR index while GPRC-FIN is the [Caldara and Iacoviello \(2022\)](#) index for Finland. Russia GPR is the index for Russia from [Bondarenko et al. \(2024\)](#) and EA GPR is the Euro area GPR index from [Bondarenko et al. \(2024\)](#). The sample period covers January 2011 to December 2024.

3 Empirical Findings

In this section, we evaluate the economic implications of fluctuations in geopolitical risk for Finland using our index. The literature has documented that geopolitical risk shocks tend to lower stock returns, output, and investment among others (see e.g., [Caldara and Iacoviello, 2022](#); [Bondarenko et al., 2024](#); [Alonso-Alvarez et al., 2025](#)). In this regard, we want to verify that we find similar results for Finland using our index. In addition, we also explore the potential effects of geopolitical risk shocks on consumer sentiment as [Gorodnichenko et al. \(2025\)](#) find that geopolitical risks tend to make households believe they and the general economy are worse off.

We employ lag-augmented local projections to estimate the effects of geopolitical risk from Finnish news media captured by *FinnGPR* on the Finnish economy. The local projection includes as controls up to six lags of the dependent variable as well as up to six lags of month-on-month industrial production growth, month-on-month harmonized consumer price inflation, the 1-month Euribor rate, the month-on-month growth rate of oil prices, month-on-month producer price index inflation, the change in the unemployment rate, month-on-month OMX Helsinki index returns, and the sovereign composite systemic stress index for Finland. All variables have been standardized prior to estimation. The sample period covers January of 2011 to November of 2024.

Figure 4 plots the cumulated responses of industrial production growth, consumer price inflation, the change in the unemployment rate, consumer confidence, stock returns, and the Finnish systemic stress index to a one standard deviation geopolitical risk index shock. Responses to *FinnGPR* are denoted with black lines along with 90% confidence intervals indicated by the gray shaded areas. For comparison, we also report responses to the [Caldara and Iacoviello \(2022\)](#) GPR index (Global GPR) and the [Bondarenko et al. \(2024, 2025\)](#) GPR index for the Euro area (EA GPR).

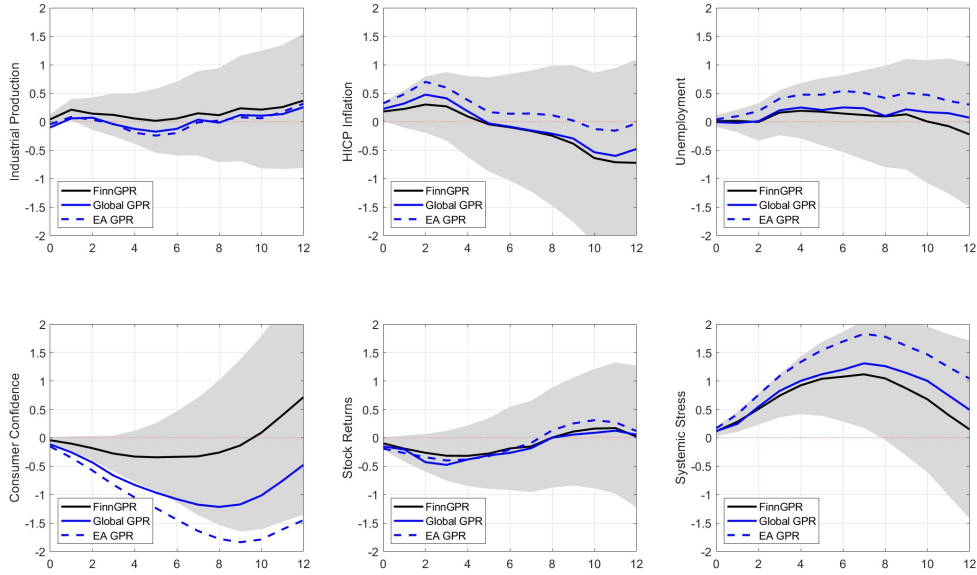


Figure 4: Impulse Responses to Geopolitical Risk Shocks

Notes: The figure plots cumulated impulse responses from lag-augmented local projections to FinnGPR shocks in black along with [Caldara and Iacoviello \(2022\)](#) GPR shocks in blue and [Bondarenko et al. \(2024\)](#) Euro area GPR shocks in dashed blue. The gray shaded areas represent 90% confidence intervals around the responses to the FinnGPR shocks. Industrial production is in month-on-month growth rates, HICP inflation is month-on-month, Unemployment is the month-on-month change in the unemployment rate, Consumer confidence is the standardized balance score from consumer surveys, Stock returns are the monthly returns of the OMXH25 index, and the Systemic Stress indicator is the (sovereign) CISS indicator of systemic stress for Finland. All variables have been standardized prior to estimation.

The impulse responses indicate that the Finnish economy is relatively resilient to geopolitical risk shocks. Industrial production and unemployment remain largely unaffected, inflation rises only mildly, and consumer confidence and stock returns show modest declines. In contrast, the Finnish indicator of systemic stress increases significantly following such shocks, with peak effects slightly exceeding one standard deviation. These findings are broadly consistent with the literature, although the magnitudes we document for Finland are comparatively smaller.⁹

We also find that the responses of consumer confidence and systemic stress are more pronounced when using the Euro Area GPR index of [Bondarenko et al. \(2024, 2025\)](#). Furthermore, consistent with the evidence in [Bondarenko et al. \(2024\)](#) regarding the weaker

⁹These results are robust to alternative specifications using both local projections and Bayesian vector auto-regressions. In particular, the significant increase in systemic stress following a geopolitical risk shock is consistently observed across empirical approaches. Full details are reported in the Appendix.

effects of geopolitical risk shocks based on English-language news sources when compared to local language news sources, we also find that the Finnish country-specific GPR index constructed from English-language media produces smaller and generally statistically insignificant effects.¹⁰

One plausible explanation for these findings is that the Finnish population may be relatively unfazed by geopolitical risks. This could reflect Finland’s historically neutral stance in Russia–Western Europe relations prior to the Ukraine invasion and the perception that other recent geopolitical events are geographically and strategically distant from Finland. Moreover, survey evidence suggests that Finns feel well prepared to manage such risks, as indicated by exceptionally high trust in the armed forces and strong willingness to defend the country regardless of circumstances.¹¹ By contrast, Finland’s internationally integrated financial markets are more sensitive to global geopolitical developments. Nevertheless, Finnish households may still adopt a European perspective on global affairs, which could explain why geopolitical risks erode consumer confidence to some extent.¹² Consistent with this interpretation, the Euro Area GPR index of [Bondarenko et al. \(2024, 2025\)](#) elicits the strongest negative response in consumer confidence in our analysis (see bottom-left panel of [Figure 4](#)).

4 Conclusion

We construct a geopolitical risk indicator for Finland using local Finnish language news media - *FinnGPR*. We find that our index differs from the country index of [Caldara and Iacoviello \(2022\)](#) for Finland. Our interpretation for this difference is that while the country index by [Caldara and Iacoviello \(2022\)](#) may be better interpreted as geopolitical attention

¹⁰Impulse responses based on the [Caldara and Iacoviello \(2022\)](#) country GPR index for Finland (GPRC-FIN) are provided in the Appendix.

¹¹For example, the Spring 2025 Eurobarometer survey reports that 97% of Finnish respondents trust the army (compared to a 76% EU average). Moreover, when we do the analyses for sub-components of the index (e.g., when decomposed into Threats and Acts as well as Terror-related and State-led) we find that shocks to the Terror sub-component of geopolitical risk does not have any significant effects on the economic and financial variables we consider.

¹²In the same Eurobarometer survey, 82% of Finnish respondents report feeling “attached” to Europe (vs. 70% EU average), and 87% hold a neutral or positive view of the EU (vs. 81% EU average).

on Finland, i.e. foreign perceptions of geopolitical risk in Finland, our index captures local perceptions of (global) geopolitical risk. Consistent with this view, we find that the *FinnGPR* index is more closely linked with the index of global geopolitical risk in [Caldara and Iacoviello \(2022\)](#) and the euro area geopolitical risk index of [Bondarenko et al. \(2024, 2025\)](#). That is, local geopolitical risk perceptions in Finland are closely aligned with global perceptions of geopolitical risks.

We find that local perceptions of geopolitical risk in Finland have important economic and financial implications. That said, we do find that the Finnish economy tends to be more resilient to geopolitical risk shocks than some other countries. Nevertheless, we find evidence that geopolitical risks represent a threat to Finnish financial market stability.

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APPENDIX

A.1 Index Construction

Our index is constructed using a rule based classifier to flag whether a given news article concerns geopolitical risk or not. The rules we use for our classifier match those from [Caldara and Iacoviello \(2022\)](#) where we use the most relevant Finnish-language equivalents to the extent possible. The list of words we use in the classifier are reported in Tables [A1](#) and [A2](#).

Table A1: Finnish Terms and English equivalents Used in the Rule-based Classification I

Topic	Rule	English	Finnish
War	Word list 1	war, conflict, hostilities, revolution, insurrection, uprising, revolt, coup, coup/hijack, geopolitical, warfare, act of war, confrontation, hybrid influence, cyber security, information influencing, cyber attack	sota*, soda*, sotia, sota, sotaan, konflikt*, vihollisu*, vallankumou*, kapina*, kansannous*, kapinoi*, vallankaappau*, kaappau*, geopolitiitti*, sotatoim*, yhteenot*, hybridivaikutta*, kyberturvallisuus*, tietoturvallisuus*, informaatiovaiku*, kyberhyök*
	Near		
Threat	Word list 2	risk, warn, fear, peril, scared, scare, danger, threat, menace, doubt, crisis, trouble, dispute, concerns, tension, threaten, imminent, inevitable, footing	riski*, varoitta*, varoit*, pelko, pelon, pelossa, pelästyttää, pelottaa, vaara*, vaara, uhka, uhkaa, uhata, epäily, kriisi*, vaikeu*, vaikeuks*, kiista*, huoli, huolia, jännite*, jännitteen*, välitön*, välittöm*, lähesty*, väistämä*, vääjäämä*, jalansij*
	Near		
Peace	Word list 3	peace, truce, armistice, treaty, negotiation, parley	rauha, rauhan*, aselepo, aselevo*, sopimus*, sopimuks*, neuvottel*, sovittel*
Threat	Word list 4	threat, threaten, menace, peril, reject, boycott, boycott, disrupt, disruption, hybrid influence	uhka, uhkaa, uhata*, vaara*, hylät*, boikotti, boikotoida, häirit*, häiriköi*, häiriö*, hybridivaikut*
	Near		
Military	Word list 5	military, troops, missile*, arms, weapon*, bomb, warhead, cruise missile	sotilaalli*, *joukot, ohjus, ohjuks*, ase, aseita, aseet*, aseelli*, pommi*, pommit*, taistelukär*, ristelyohjus*, ristelyohjuks*
	And		
Threat	Word list 6	buildup*, blockad*, embargo, quarantine, ultimatum, ultimatum, saction*, sanction measure, mobiliz*	kasautu*, kerty*, saarto*, saarro*, saartaa, kauppasaarto*, kauppasaarro*, karanteeni*, ultimaatum*, uhkavaatimus*, uhkavaatimuks*, pakotte*, pakotetoim*, pakote, mobilisoi*
	Near		
Threat	Word list 2	risk, warn, fear, peril, scared, scare, danger, threat, menace, doubt, crisis, trouble, dispute, concerns, tension, threaten, imminent, inevitable, footing	riski*, varoitta*, varoit*, pelko, pelon, pelossa, pelästyttää, pelottaa, vaara*, vaara, uhka, uhkaa, uhata, epäily, kriisi*, vaikeu*, vaikeuks*, kiista*, huoli, huolia, jännite*, jännitteen*, välitön*, välittöm*, lähesty*, väistämä*, vääjäämä*, jalansij*
	And		
Nuclear	Word list 7	nuclear war, nuclear warhead, atomic wars, atomic warfare, atomic warheads, atomic war, nuclear missile, nuclear bomb, atomic bombs, h-bomb*, hydrogen bomb, nuclear test, nuclear weapon	ydinsot*, ydinkär*, atomisot*, atomisodankäyn*, atomitaistelukär*, atomikärk*, atomisot*, ydinohju*, ydinpomm*, atomipomm*, h-bomb, vetypomm*, ydinko*, ydinase*
	Near		
Threat	Word list 2	risk, warn, fear, peril, scared, scare, danger, threat, menace, doubt, crisis, trouble, dispute, concerns, tension, threaten, imminent, inevitable, footing	riski*, varoitta*, varoit*, pelko, pelon, pelossa, pelästyttää, pelottaa, vaara*, vaara, uhka, uhkaa, uhata, epäily, kriisi*, vaikeu*, vaikeuks*, kiista*, huoli, huolia, jännite*, jännitteen*, välitön*, välittöm*, lähesty*, väistämä*, vääjäämä*, jalansij*
	Near		
Terrorism	Word list 8	terrori*, guerilla, freedom fighter, rebel, resistance fighter, revolutionary, hostage, terror strike, terrorist strike	terrori*, sissi*, vapaustaistelija*, kapinalli*, vastarintataistelija*, vallankumoukselli*, panttivan*, terrori-isku*, terroristi-isku*
	Near		

Table A2: Finnish Terms and English equivalents Used in the Rule-based Classification II

Topic	Rule	English	Finnish
War	Word list 1	war, conflict, hostilities, revolution, insurrection, uprising, revolt, coup, coup/hijack, geopolitical, warfare, act of war, confrontation, hybrid influence, cyber security, information influencing, cyber attack	sota*, soda*, sotia, sota, sotaan, konflikt*, vihollisu*, vallankumou*, kapina*, kansannous*, kapinoi*, vallankaappau*, kaappau*, geopolitiitti*, sotatoim*, yhteenot*, hybridivaikutta*, kyberturvallisuus*, tietoturvallisuus*, informaatiovaiku*, kyberhyök*
	Near Act	Word list 9	begin*, began, broke out, breakout, start*, declar*, launch*
Armed forces	Word list 10	allie*, enem*, foe*, army, navy, air force, soldiers, soldier, military unit, rebels, insurgen*, attacker, armed forces, rebel group, rebel group, military base/headquarters, command center, airspace violation, drone*	liittolai*, viholli*, vastustaj*, armeij*, laivast*, ilmavoim*, joukko-osast*, sotila*, sotilasyksikk*, kapinallis*, kapinallin*, iski*, asevoim*, kapinallisjouk*, tukikoh*, komentokesk*, ilmatila*, drooni*
	Near Act	Word list 11	drive*, drive*, shelling, air attack, air bombing, advance*, violation, offensive, invasion, clash, attack*, launch, strike, to strike, to bomb/to shell, bomb strike/bomb attack, air strike
Terrorism	Word list 8	terrori*, guerilla, freedom fighter, rebel, resistance fighter, revolutionary, hostage, terror strike, terrorist strike	terrori*, sissi*, vapaustaistelija*, kapinalli*, vastarintataistelija*, vallankumoukselli*, panttivan*, terrori-isku*, terroristi-isku*
	Near Act	Word list 12	act, act, attack, bomb, bombing, bomber, kill, killer, striking, attacker/striker, strike, hijack, hijacker, terrorist*, terror*, terrorist-strike*, bomb-strike*
Not Fictional, Sports, or Entertainment	Does not contain Word list 13	movie, moviemaker, film, museum, anniversary, obituary, memorial, remembering, art, book, momoir, price ware, game, playing a game, gamification, story, history, veteran, tribute, sport, music, racing, cancer, real estate, mafia, criminal organization, trial, tax, taxing, tax burden, ice hockey, championship/title, football, sports match, tournament, tournament final, word championship final, researcher of history, historian, tennis tournament, fooball federation, Sodankylä	elokuv*, filmi*, muse*, vuosipäiv*, muistokirjoitu*, muistomerk*, muistel*, taide*, kirja*, muistelmä*, hintaso*, peli*, pelata*, pelillistäminen, tarina, histori*, veteraan*, kunnianosoitu*, urheil*, musiik*, kilpail*, syöpä*, syövä*, kiinteistö*, mafia*, rikollisjärjes*, oikeudenkäyn*, vero*, jääkiek*, mestaruu*, jalkapal*, ottel*, turna*, lopputurna*, MM-loputurna*, historiatutki*, historioits*, tennisturna*, jalkapalloli*, sodankyl*

A.2 Additional Empirical Analyses

We estimate the effects of geopolitical risk shocks on the Finnish economy using local projections with the following specification. We run local projections of several variables of interest on the geopolitical risk index along with one to six lags of the variable itself, one to six lags each of a monthly trend indicator for output in logs, log consumer price index, log producer price index, unemployment rate, log stock market index, and the log composite indicator for systemic stress along with contemporaneous values of the one month Euribor and log spot oil prices as controls. All variables are standardized prior to estimation. The cumulated impulse responses from these local projections are reported in Figure A1 which indicate a decline in consumer confidence and stock returns and an increase in unemployment and systemic stress as a result of increases in the Finnish geopolitical risk index. For comparison, responses to the global GPR of [Caldara and Iacoviello \(2022\)](#) and the Euro area GPR of [Bondarenko et al. \(2024\)](#) are also reported.

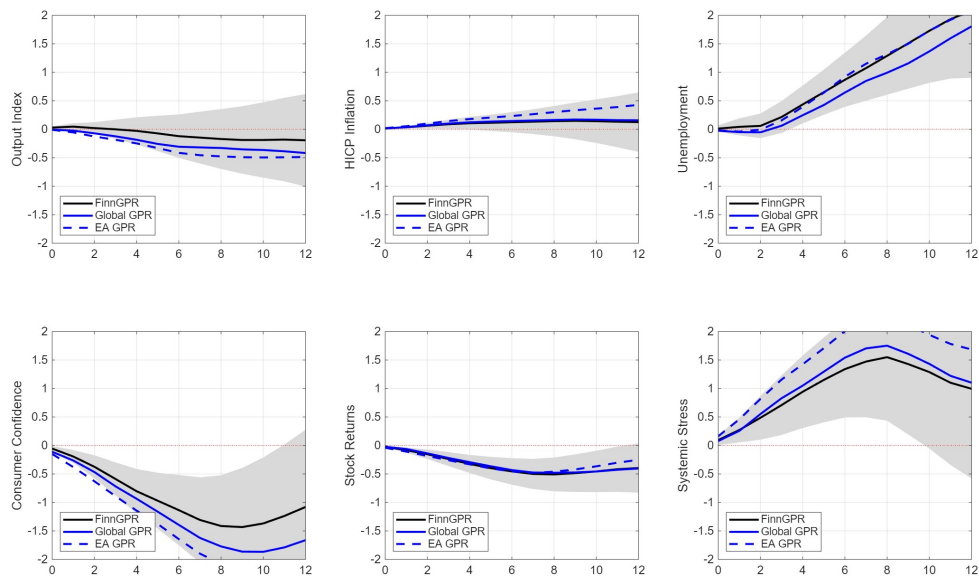


Figure A1: Impulse Responses with Lag-Augmented Local Projections I

Notes: The figure plots local projections of a monthly indicator for output, consumer price inflation, unemployment, consumer sentiment, stock returns, and systemic stress on geopolitical risk shocks. Responses to FinnGPR shocks are in black while responses to [Caldara and Iacoviello \(2022\)](#) GPR shocks and Euro area GPR shocks ([Bondarenko et al., 2024](#)) are in blue and dashed blue respectively. The shaded areas represent 90% confidence intervals around the FinnGPR responses.

We repeat the exercise using shocks to the [Caldara and Iacoviello \(2022\)](#) GPR index for Finland (GPRC-FIN). The results are reported in [Figure A2](#). For reference we also include the responses to the FinnGPR and the [Caldara and Iacoviello \(2022\)](#) global GPR index.

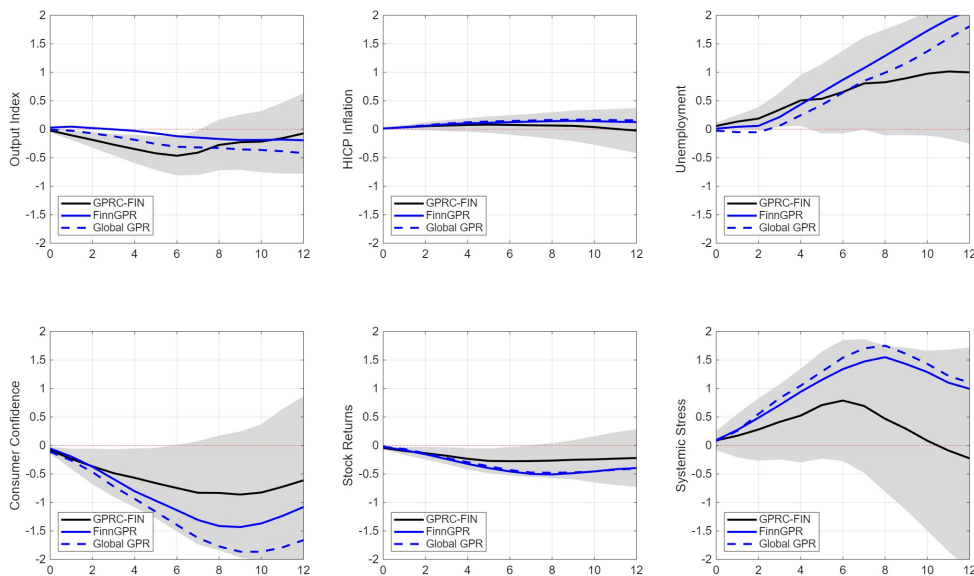


Figure A2: Impulse Responses with Lag-Augmented Local Projections II

Notes: The figure plots local projections of a monthly indicator for output, consumer price inflation, unemployment, consumer sentiment, stock returns, and systemic stress on geopolitical risk shocks. Responses to the [Caldara and Iacoviello \(2022\)](#) GPR index for Finland (GPRC-FIN) are in black while responses to the Finn GPR and [Caldara and Iacoviello \(2022\)](#) GPR shocks are in blue and dashed blue respectively. The shaded areas represent 90% confidence intervals around the GPRC-FIN responses.

We estimate an alternative local projection specification augmenting the up to six lags of the dependent variable with up to six lags of seven factors taken from 21 indicators as additional controls. The list of variables used to extract the factors are 10-year benchmark bond yields, the employment and unemployment rates, consumer and manufacturing confidence indicators, capacity utilization in the manufacturing sector, a sales index for the services sector, the 1-month and 1-year Euribor rates, the Euro-US Dollar exchange rate, realized volatility of the OMX Helsinki index returns, the composite indicator for systemic stress, consumer, producer and import price indices, an index for new orders in the manufacturing sector, the number of enterprise bankruptcies, indices for industrial production and monthly output, the OMX Helsinki stock market index, and spot oil prices. The cumulated impulse responses from the factor-augmented local projections are reported in [Figures A3 and A4](#).

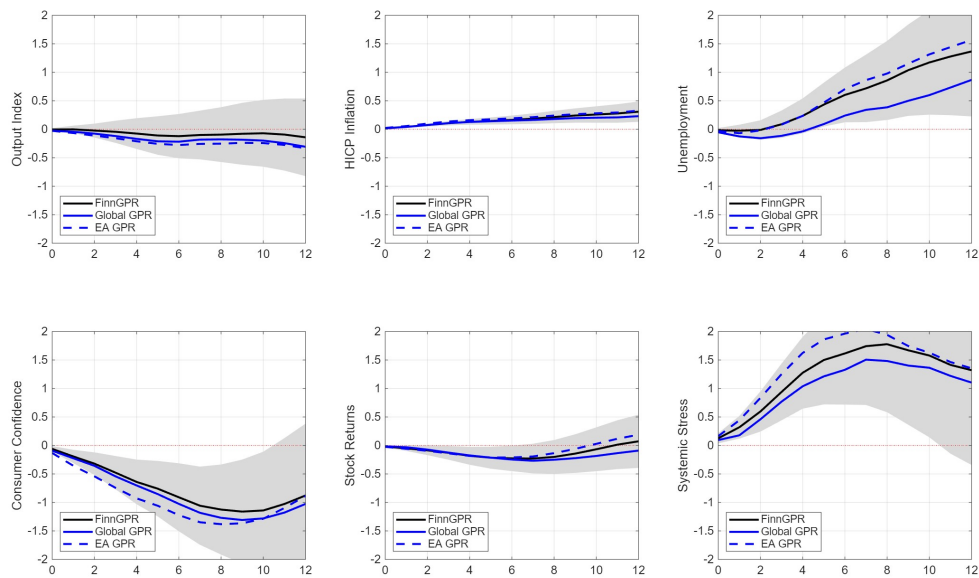


Figure A3: Impulse Responses with Factor-Augmented Local Projections I

Notes: The figure plots local projections of a monthly indicator for output, consumer price inflation, unemployment, consumer sentiment, stock returns, and systemic stress on geopolitical risk shocks. Responses to FinnGPR shocks are in black while responses to Caldara and Iacoviello (2022) GPR shocks and Euro area GPR shocks (Bondarenko et al., 2024) are in blue and dashed blue respectively. The shaded areas represent 90% confidence intervals around the FinnGPR responses.

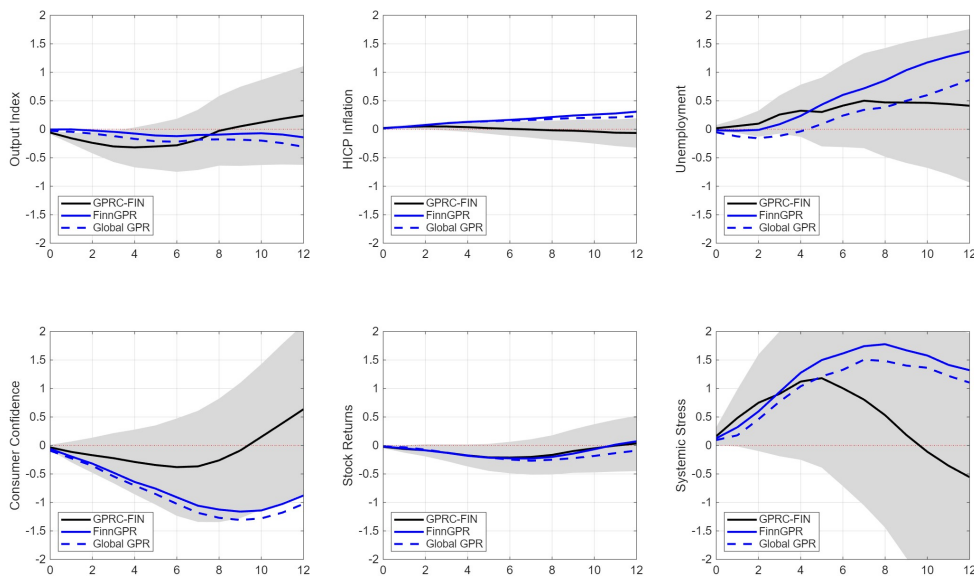


Figure A4: Impulse Responses with Factor-Augmented Local Projections II

Notes: The figure plots local projections of a monthly indicator for output, consumer price inflation, unemployment, consumer sentiment, stock returns, and systemic stress on geopolitical risk shocks. Responses to the [Caldara and Iacoviello \(2022\)](#) GPR index for Finland (GPRC-FIN) are in black while responses to the Finn GPR and [Caldara and Iacoviello \(2022\)](#) GPR shocks are in blue and dashed blue respectively. The shaded areas represent 90% confidence intervals around the GPRC-FIN responses.

We also estimate the empirical effects of geopolitical risk shocks using Bayesian vector auto-regressions (BVAR) with recursive identification. The BVARs include a measure for geopolitical risk, log output, log stock market index, 10-year benchmark bond yields, a composite indicator for systemic stress, and log spot oil prices and is estimated with six lags. The cumulated impulse responses under recursive identification with the geopolitical risk indices ordered first are reported in [Figure A5](#).

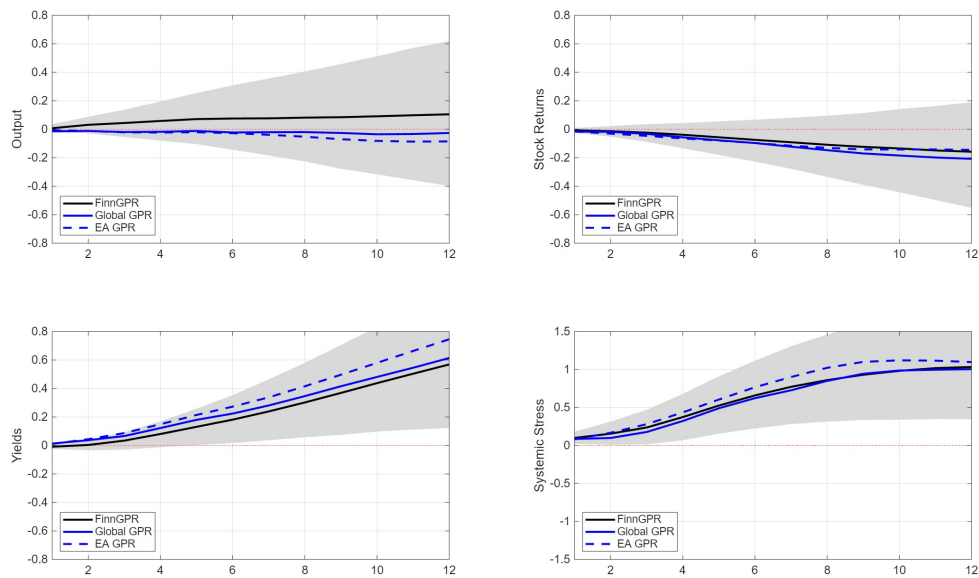


Figure A5: Impulse Responses with Bayesian Vector Auto-regressions

Notes: The figure plots cumulated responses of a monthly indicator for output, stock returns, 10-year benchmark bond yields, and systemic stress on geopolitical risk shocks. Responses to FinnGPR shocks are in black while responses to [Caldara and Iacoviello \(2022\)](#) GPR shocks and Euro area GPR shocks ([Bondarenko et al., 2024](#)) are in blue and dashed blue respectively. The shaded areas represent 90% confidence intervals around the FinnGPR responses.

We also estimate factor-augmented local projections (seven factors taken from 21 indicators) using sub-indices of the FinnGPR as the measure for geopolitical risk. Specifically we construct sub-indices capturing *Threats* and *Acts* following [Caldara and Iacoviello \(2022\)](#) as well as sub-indices capturing topics associated with terrorism (*Terror*) and the remaining topics which we refer to as the *State* sub-index. The cumulated impulse responses from the factor-augmented local projections using these four sub-indices are reported in [Figure A6](#).

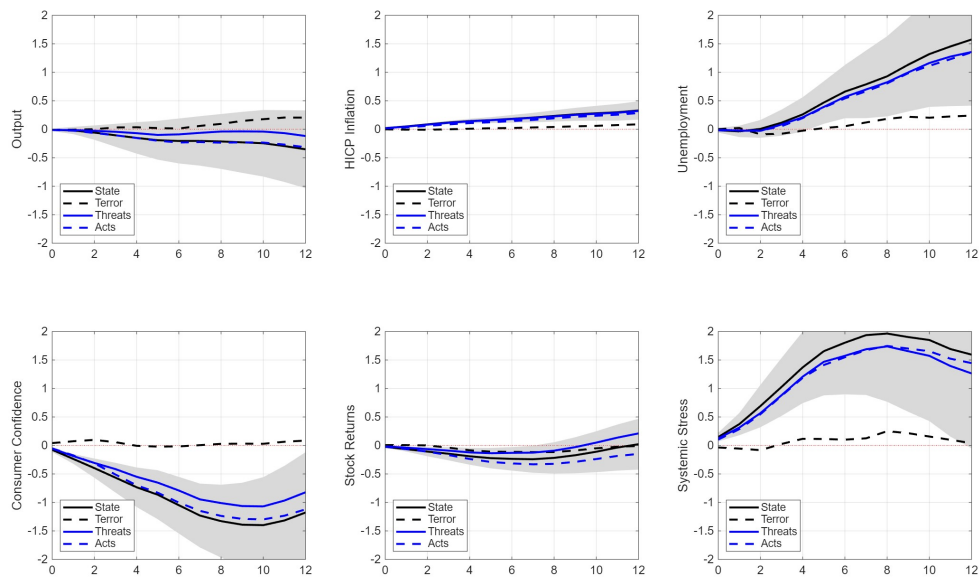


Figure A6: Responses to FinnGPR Sub-Indices from Factor-Augmented Local Projections

Notes: The figure plots local projections of a monthly indicator for output, consumer price inflation, unemployment, consumer sentiment, stock returns, and systemic stress on geopolitical risk shocks. Responses to FinnGPR *State* shocks are in black while *Terror* are dashed black. Responses to *Threat* shocks are in blue and *Acts* are in dashed blue. The shaded areas represent 90% confidence intervals around the *State* shock responses.

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