

Geopolitical risk dashboard

BlackRock

Feb. 9, 2023

Geopolitical Risks – February update

A new world order is taking shape. The Ukraine war and U.S.-China competition have fueled fragmentation and the emergence of geopolitical blocs. There has been a dramatic reduction in cooperation among major powers. Our BlackRock Geopolitical Risk Indicator has declined from its 2022 peak, but market attention remains elevated amid this turbulent geopolitical environment.

Geopolitical events historically have had a short-lived impact on markets and economies, our [analysis](#) of 68 risk events since 1962 finds. This has changed in the new, more volatile regime described in our [2023 Outlook](#). We now see geopolitics as structural market risks, with direct and long-lasting effects.

We see strategic competition between major powers intensifying in 2023 – and global economic and energy ties shifting along geopolitical lines. Nations have weaponized energy, technology and financial networks to try to achieve strategic objectives. This hinders economic efficiency and presents challenges for global investors, we find.

Key highlights this month include:

- We raise our *U.S.-China strategic competition* risk rating to a high level amid heightened distrust in the relationship. Structural tensions between the two nations present significant risks for investors, in our view.
- We increase the likelihood of *Gulf tensions* to high. Tensions over Iran's nuclear program and support for Russia are building, raising the risk of military confrontation in the Middle East to its highest level in nearly a decade.
- We keep the likelihood of *Climate policy gridlock* at a medium level. The Inflation Reduction Act (IRA) should accelerate decarbonization in the U.S., but a split Congress makes new legislation unlikely in the near term. The EU, for its part, has announced its own set of IRA-like investment packages.

Our dashboard features both data-driven market attention barometers and judgment-based assessments of our top risks. We show market attention to each risk, assess the likelihood of it occurring over a six-month horizon and analyze its potential market impact.

Our BlackRock Geopolitical Risk Indicators (BGRIs) track market attention to each risk using mentions in brokerage reports and financial news stories. They integrate natural language processing and machine learning techniques. This assessment helps determine when geopolitical risks start to appear on investors' radar screens – and when they start fading.

We recently improved our data cleaning process, including removing mistranslated language and other non-investment relevant content. We have adjusted the historical data accordingly, resulting in the removal of some spikes in market attention that were overstated.

We also have developed a market movement measure that we believe gives us insights into how asset prices are responding to geopolitical risks. It integrates analysis from our Risk & Quantitative Analysis (RQA) team and its Market-Driven Scenarios (MDS) for each risk.

The gauge's score is based on how similar the market environment is to the MDS assumptions and how much the MDS-related asset prices have moved over the past month. See the "How it works" section. We also list the three assets that we see as the key variables of each MDS.

We believe tracking geopolitical risks' market impact is as much an art as a science. We continuously update our risk scenarios and refine our methodologies. Our scenarios are hypothetical and do not reflect all possible outcomes. Our market movement analyses are not recommendations to invest in any specific investment strategy or product.



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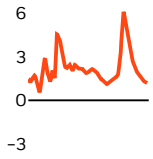
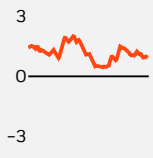
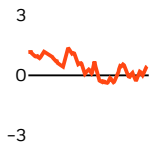
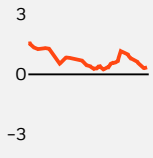
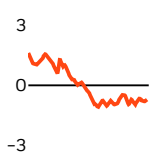
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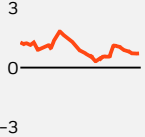
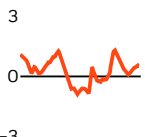
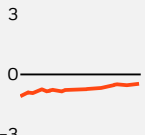
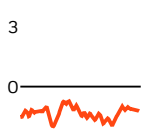
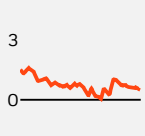
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Top 10 risks by likelihood

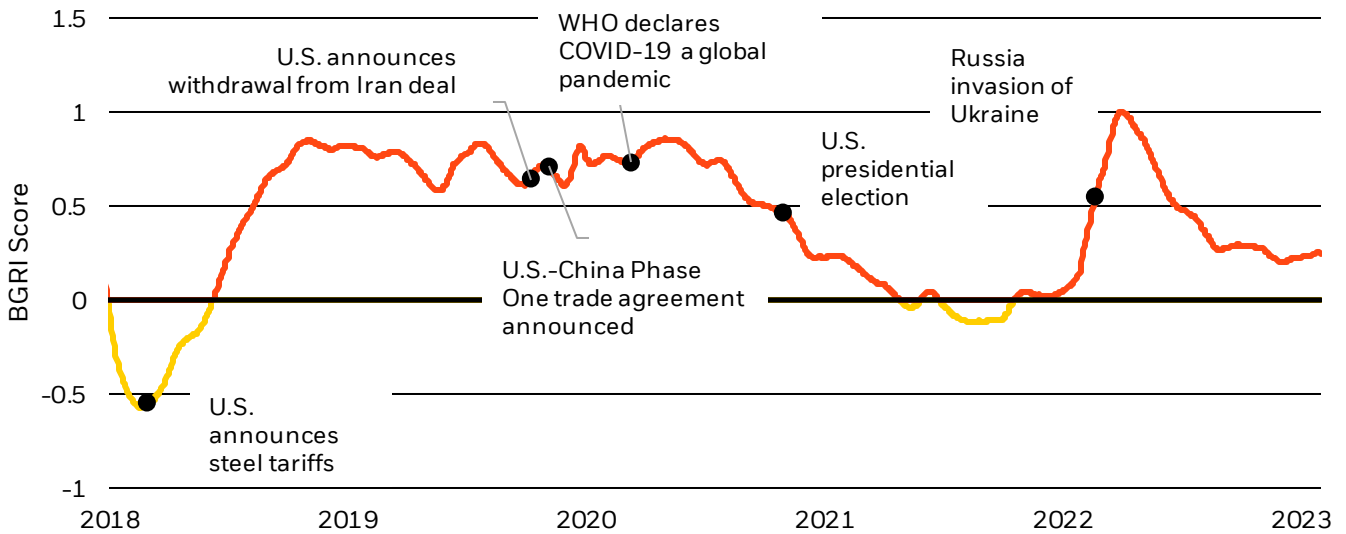
Risk	Description	Market attention since 2019	Likelihood	Our view
1 Russia-NATO conflict	Russia launches a large-scale invasion of Ukraine. The U.S. and EU respond with financial, energy and technology sanctions on Russia.		High	Russia's invasion of Ukraine is the largest, most dangerous military conflict in Europe since WWII. Russian President Vladimir Putin failed in his initial aim to destroy Ukrainian sovereignty. Ukraine has recaptured significant territory in the south and northeast, though battlefield progress has slowed and Russia appears to be preparing an offensive. Russia has increased attacks on Ukraine's energy and civilian infrastructure. A settlement or even a ceasefire looks unlikely for now. Instead, we see an extended conflict, alongside a long-term political, economic and military standoff between the West and Russia. Intentional or accidental escalation between NATO and Russia remains a risk.
2 U.S.-China strategic competition	China takes military action against Taiwan or asserts claims in the South China Sea by force.		High	The U.S. downing of a Chinese surveillance balloon highlights the increasing distrust and structural tensions between the U.S. and China. It also shows the fragility of efforts to put a floor under the relationship, as Presidents Biden and Xi attempted at recent G-20 meeting. Taiwan is a key flashpoint. Xi reaffirmed his intention to unify Taiwan with the mainland at last year's National Party Congress. The U.S. Congress is likely to support closer Taiwan relations - including a possible visit by Speaker Kevin McCarthy this year - elevating tensions. We do not see military action in the near term but expect the risk to increase over time. China can take a range of steps short of military action to pressure Taiwan.
3 Major cyberattack(s)	Cyberattacks cause sustained disruption to critical physical and digital infrastructure.		High	We see the pace of cyber attacks increasing as the Russia-Ukraine conflict persists. Critical government and private sector networks, as well as infrastructure, are vulnerable to hacking and spying. Attacks are increasing in scope, scale and sophistication. The U.S. government is pushing for more protection requirements. Repeated attacks could cause significant damage and disruption that could spill over to financial markets and the economy.
4 Global technology decoupling	Technology decoupling between the U.S. and China significantly accelerates in scale and scope.		High	Strategic competition between the U.S. and China is driving global fragmentation as both focus on boosting self-reliance, reducing vulnerabilities and decoupling their tech sectors. We see unprecedented U.S. semiconductor export restrictions against China accelerating the decoupling. Japan and the Netherlands appear set to roll out similar measures. The U.S. is weighing additional export controls on other technologies like quantum and AI, as well as a mechanism to review investments in China. The U.S. has enacted the CHIPS and Science Act aimed at boosting competitiveness in critical technologies. Technology was a focus of China's 20th Party Congress, highlighting the drive for self-sufficiency.
5 Gulf tensions	Iran nuclear talks collapse, and tensions escalate, raising the risk of a regional conflict.		High	Negotiations toward a revived nuclear deal have ground to halt, and U.S. leaders have said it's no longer a priority. In addition, Iran's military cooperation with Russia and support for militant groups in the region are exacerbating tensions. The closer Iran now gets to being able to produce and deploy a nuclear weapon, the higher the likelihood of military action against Iran. The drone attack against a military facility—reportedly by Israel—in the Iranian city of Isfahan underscores this. The risk of military attack may be at its highest in a decade. There has been a general de-escalation of tensions among Gulf oil producers, who have benefited from high energy prices. The Abraham Accords and diplomatic efforts by the U.S. administration are enhancing cooperation between Israel and Arab states.

Risk	Description	Market attention since 2019	Likelihood	Our view
6 Emerging markets political crisis	Ripple effects from the Ukraine crisis severely stress EM political systems and institutions.		Medium	Falling inflation, the slowing pace of U.S. interest rate hikes and a weaker U.S. dollar will reduce financial pressures on emerging markets this year, in our view. We see China's reopening further supporting EM economies. Still, slowing global growth will prove a drag. We expect divergence. Some EMs, like Brazil and Mexico, hiked rates and tightened fiscal policies early and may be able to ease policies this year. Others, mainly in Africa, have engaged with the IMF and can better absorb global shocks. We see commodity exporters as generally well buffered.
7 Major terror attack(s)	A terror attack leads to significant loss of life and commercial disruption.		Medium	Al-Qaida has been slow to reorganize following the killing of Ayman al-Zawahiri, but remains a significant threat. Additionally, ISIS is undergoing a resurgence in Afghanistan, raising the risk of foreign fighters returning to their home countries and conducting attacks. This comes at a time when Western governments are focused on other policy priorities. In the U.S., the administration has underscored the growing risk of domestic terrorism, calling it the most serious and persistent terrorist threat to the homeland. We see the threat increasing amid a polarized U.S. political backdrop.
8 North Korea conflict	North Korea pushes ahead with its nuclear buildup and takes provocative actions such as missile launches.		Medium	North Korea has rebuffed talks with the U.S. and escalated provocations. This includes threatening rhetoric and record tests of short-range and intercontinental ballistic missile in 2022, with some increasingly close to South Korean and Japanese territory. South Korea and Japan are bolstering their defenses in response. We do not see an imminent threat of regional conflict but think tensions will worsen in 2023. This could include additional long-range missile tests, the further development of tactical weapons and a seventh nuclear test. We believe markets are underappreciating this risk.
9 Climate policy gridlock	Developed economies fail to increase public investment or take action to achieve net-zero emission targets.		Medium	The Ukraine war has brought energy security to the fore. The world will need more non-Russian fossil fuels in the near term, but we believe the crisis will accelerate the transition to a lower-carbon world in the long run. The energy shock will likely boost decarbonization plans in Europe amid a race for clean energy leadership, as the continent responds to the Inflation Reduction Act (IRA) that is driving investment in the U.S. A divided U.S. Congress means the Biden administration will focus on implementation of the IRA and regulatory actions. Further legislative action is unlikely in the short-term, in our view.
10 European fragmentation	The energy crunch and inflationary pressures lead to a populist resurgence and economic volatility.		Low	The Ukraine war triggered a strong impulse toward European unity, as governments came together to sanction Russia and support Ukraine. Italy's conservative government has so far avoided stoking tensions with the EU, and Brussels has shown openness to reform EU fiscal rules. Franco-German relations are improving. Europe has weathered the energy crisis this winter better than expected. We remain cautious of divisions emerging as the economic costs of the Ukraine war mount. Countries are still grappling with how to approach China in the increasingly competitive geopolitical environment.

Sources: BlackRock Investment Institute, with data from Refinitiv. Data as of February 2023. Notes: The "risks" column lists the 10 key geopolitical risks that we track. The "description" column defines each risk. "Market attention" is a graphical snapshot of recent movement in the BlackRock Geopolitical Risk Indicator (BGRI) for each risk. The BGRI measures the degree of the market's attention to each risk, as reflected in brokerage reports and financial media. See the "how it works" section on p.7 for details. The table is sorted by the "Likelihood" column which represents our fundamental assessment, based on BlackRock's subject matter experts, of the probability that each risk will be realized – either low, medium or high – in the near term. The "our view" column represents BlackRock's most recent view on developments related to each risk. This is not intended to be a forecast of future events or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding any funds or security in particular. Individual portfolio managers for BlackRock may have opinions and/or make investment decisions that may, in certain respects, not be consistent with the information contained herein.

Geopolitical risk framework

BlackRock Geopolitical Risk Indicator



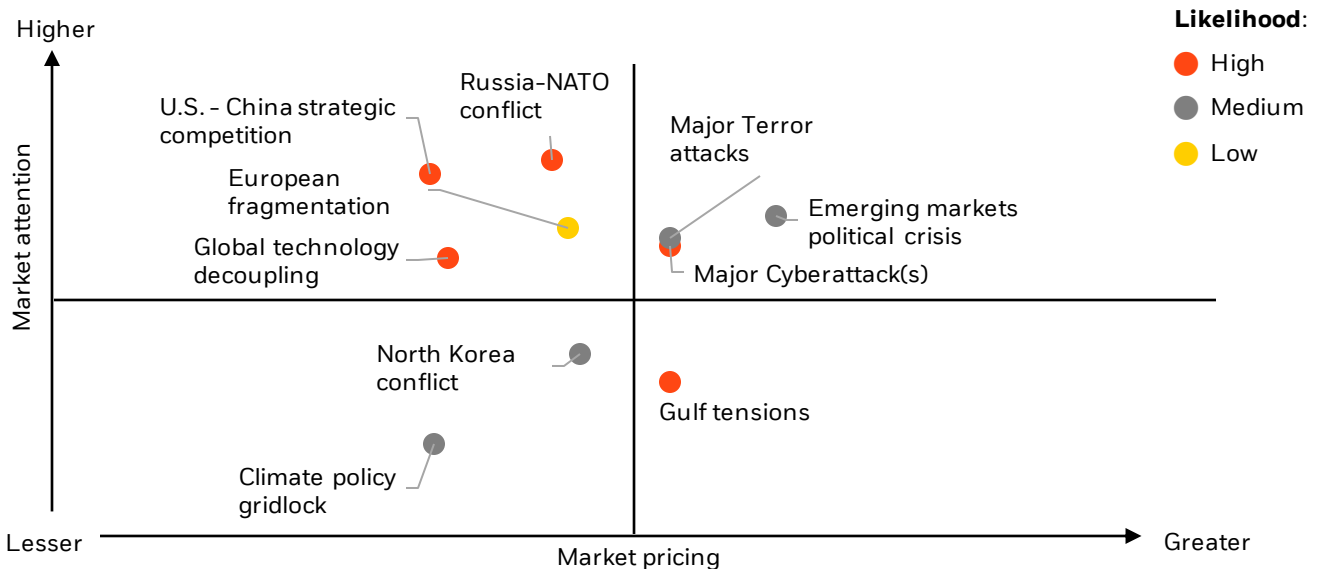
Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute. February 2023. Notes: The BlackRock Geopolitical Risk Indicator (BGRI) tracks the relative frequency of brokerage reports (via Refinitiv) and financial news stories (Dow Jones News) associated with specific geopolitical risks. We adjust for whether the sentiment in the text of articles is positive or negative, and then assign a score. This score reflects the level of market attention to each risk versus a 5-year history. We use a shorter historical window for our COVID risk due to its limited age. We assign a heavier weight to brokerage reports than other media sources since we want to measure the market's attention to any particular risk, not the public's. We recently improved our data cleaning process, including removing disclosure and mistranslated language. We have adjusted the historical data accordingly, resulting in the removal of some spikes in market attention to geopolitical risk that were overstated previously.

The global BlackRock Geopolitical Risk Indicator (BGRI) aims to capture overall market attention to geopolitical risks, as the line chart shows. The indicator is a simple average of our top-10 individual risks. The indicator has declined from 2022 highs but remains elevated amid market attention to *Russia-NATO conflict* and *U.S.-China strategic competition*.

We raise our *U.S.-China strategic competition* risk rating to a high likelihood rating amid heightened distrust and structural tensions in the relationship. We raise *Gulf tensions* to high amid decreased prospects for a nuclear deal and an increased risk of military action in the region. We maintain the *North Korea conflict* risk at a medium likelihood as North Korea's provocations increase. The market's attention to both these risks is low, as the chart shows. We keep our *Russia-NATO conflict*, *Major cyber attacks* and *Global technology decoupling* risks at high levels (the red dots).

Risk map

BlackRock Geopolitical market attention, market movement and likelihood



Forward-looking estimates may not come to pass. Source: BlackRock Investment Institute. February 2023. Notes: The vertical axis depicts the market attention to each of our top-10 risks, as reflected in brokerage reports and financial media and measured by the BlackRock Geopolitical Risk Index (BGRI). The horizontal axis shows our estimate of the degree to which asset prices have moved in accordance with our risk scenarios (horizontal axis). See the "How it works" section on p.7 for details. The color of the dots indicates our fundamental assessment of the relative likelihood of the risk – low, medium or high, as per the legend. Some of the scenarios we envision do not have precedents – or only imperfect ones. The scenarios are for illustrative purposes only and do not reflect all possible outcomes as geopolitical risks are ever-evolving. The chart is meant for illustrative purposes only. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding any funds, strategy or security in particular.

Key scenario variables

How to gauge the potential market impact of each of our top-10 risks? We have identified three key “scenario variables” for each – or assets that we believe would be most sensitive to a realization of that risk. The chart below shows the direction of our assumed price impact.

Geopolitical risk	Asset	Direction of assumed price impact
Russia-NATO conflict	Russian equities	▼
	Russian ruble	▼
	Brent crude oil	▲
Major cyberattack(s)	U.S. high yield utilities	▼
	U.S. dollar	▲
	U.S. utilities sector	▼
Global technology decoupling	Chinese yuan	▼
	U.S. investment grade	▼
	Asia ex-Japan electrical	▼
Gulf tensions	Brent crude oil	▲
	VIX volatility index	▲
	U.S. high yield credit	▼
U.S.-China strategic competition	Taiwanese dollar	▼
	Taiwanese equities	▼
	China high yield	▼
Emerging markets political crisis	Latin America consumer staples sector	▲
	Emerging vs. developed equities	▼
	Brazil debt	▼
Major terror attack(s)	Germany 10-year government bond	▲
	Japanese yen	▲
	Europe airlines sector	▼
North Korea conflict	Japanese yen	▲
	South Korean won	▼
	South Korean equities	▼
Climate policy gridlock	U.S. building products sector	▼
	U.S. construction materials sector	▼
	U.S. utilities sector	▲
European fragmentation	Italy 10-year government debt	▼
	EMEA hotels and leisure	▼
	Russian rouble	▼

Source: BlackRock Investment Institute, with data from BlackRock’s Aladdin Portfolio Risk Tools application, February 2023. Notes: The table depicts the three assets that we see as key variables for each of our top-10 geopolitical risks – as well as the direction of the assumed shocks for each in the event of the risk materializing. The up arrow indicates a rise in prices (corresponding to a decline in yields for bonds); the down arrow indicates a fall in prices. Our analysis is based on similar historical events and current market conditions such as volatility and cross-asset correlations. See the “implied stress testing framework” section of the 2018 paper Market-Driven Scenarios: An Approach for Plausible Scenario Construction for details. For illustrative purposes only. The scenarios are for illustrative purposes only and do not reflect all possible outcomes as geopolitical risks are ever-evolving. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events or a guarantee of future results. This information should not be relied upon by the reader as research or investment advice regarding any funds, strategy or security in particular.

How it works

The quantitative components of our geopolitical risk dashboard incorporate two different measures of risk: the first based on the market attention to risk events, the second on the market movement related to these events.

Market attention

The BlackRock Geopolitical Risk Indicator (BGRI) tracks the relative frequency of brokerage reports (via Refinitiv) and financial news stories (Dow Jones News) associated with specific geopolitical risks. We adjust for whether the sentiment in the text of articles is positive or negative, and then assign a score. This score reflects the level of market attention to each risk versus a five-year history. We use a shorter historical window for our COVID-19 risk due to its limited age. We assign a heavier weight to brokerage reports than other media sources since we want to measure the market's attention to any particular risk, not the public's.

Our updated methodology improves upon traditional "text mining" approaches that search articles for predetermined key words associated with each risk. Instead, we take a big data approach based on machine-learning. Huge advances in computing power now make it possible to use language models based on neural networks. These help us sift through vast data sets to estimate the relevance of every sentence in an article to the geopolitical risks we measure.

How does it work? First we augment a pre-trained language model with broad geopolitical content and articles representative of each individual risk we track. The fine-tuned language model then focuses on two tasks when trawling through millions of brokerage reports and financial news stories:

- classifying the relevance of each sentence to the individual geopolitical risk to generate an attention score
- classifying the sentiment of each sentence to produce a sentiment score

The attention and sentiment scores are aggregated to produce a composite geopolitical risk score. A zero score represents the average BGRI level over its history. A score of one means the BGRI level is one standard deviation above its historical average, implying above-average market attention to the risk. We weigh recent readings more heavily in calculating the average. The level of the BGRIs changes slowly over time even if market attention remains constant. This is to reflect the concept that a consistently high level of market attention eventually becomes "normal."

Our language model helps provide more nuanced analysis of the relevance of a given article than traditional methods would allow. Example: Consider an analyst report with boilerplate language at the end listing a variety of different geopolitical risks. A simple keyword-based approach may suggest the article is more relevant than it really is; our new machine learning approach seeks to do a better job at adjusting for the context of the sentences – and determining their true relevance to the risk at hand.

Market movement

In the market movement measure, we use Market-Driven Scenarios (MDS) associated with each geopolitical risk event as a baseline for how market prices would respond to the realization of the risk event.

Our MDS framework forms the basis for our scenarios and estimates of their potential one-month impact on global assets. The first step is a precise definition of our scenarios – and well-defined catalysts (or escalation triggers) for their occurrence. We then use an econometric framework to translate the various scenario outcomes into plausible shocks to a global set of market indexes and risk factors.

The size of the shocks is calibrated by various techniques, including analysis of historical periods that resemble the risk scenario. Recent historical parallels are assigned greater weight. Some of the scenarios we envision do not have precedents – and many have only imperfect ones. This is why we integrate the views of BlackRock's experts in geopolitical risk, portfolio management, and Risk and Quantitative Analysis into our framework. See the 2018 paper [Market Driven Scenarios: An Approach for Plausible Scenario Construction](#) for details. MDS are for illustrative purposes only and do not reflect all possible outcomes as geopolitical risks are ever-evolving.

We then compile a market movement index for each risk.* This is composed of two parts:

1. Similarity: This measures how "similar" the current market environment is to our expectation of what it would look like in the event the particular MDS was realized. We focus on trailing one-month returns of the relevant MDS assets.
2. Magnitude: This measures the magnitude of the trailing one-month returns of the relevant MDS assets.

These two measures are combined to create an index that works as follows:

- A value of 1 would mean that asset prices reacted in an identical way as our MDS indicated.
- A value of zero would indicate that the pattern of asset prices bears no resemblance at all to what the MDS for a particular risk would indicate.
- A value of -1 would indicate that asset prices are moving in the opposite direction to what the MDS would indicate. Markets are effectively betting against the risk.

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