

Box 5: Monitoring Geopolitical Factors in the Investment Portfolios of Foreign Reserves

Following the recent increase in geopolitical events that have affected the performance of assets traded in capital markets, the International Investments Department (DII for the acronym in Spanish) decided to establish the Geopolitical Monitoring Group (GSG for the acronym in Spanish) in 2023, through which geopolitical events are monitored, and their impact on managed portfolios is assessed through the publication of a quarterly bulletin. Simultaneously, the GSG has been working on a project to quantify geopolitical risks using various metrics.

Geopolitical risk is often cited as a determining factor in policymakers' and investors' economic decisions. Caldara and Iacoviello (2022)¹ define this risk as “associated with wars, terrorist attacks, and tensions between States that affect the normal and peaceful course of international relations,” meaning it captures both the likelihood of disruptive events occurring and the potential escalation of existing events. This implies that geopolitical dynamics may increasingly influence the performance of investment portfolios, and therefore, it is necessary to understand the nature, causes, and consequences of these factors.

1. GSG Motivation: Case Studies

In recent years, the geopolitical factor has become increasingly relevant due to the direct involvement of developed countries in conflicts, trade tensions, and strategic disputes. In the past, instability hotspots were primarily concentrated in developing regions; however, today prominent actors such as the United States, China, Russia, and members of the European Union (EU) are at the center of disputes affecting global security, international trade, and financial stability. The involvement of advanced economies has intensified the impact of geopolitical events on markets, supply chains, and global investment decisions, creating a more uncertain and volatile environment for governments, businesses, and citizens, with repercussions that can be either transitory or, in some cases, structural.

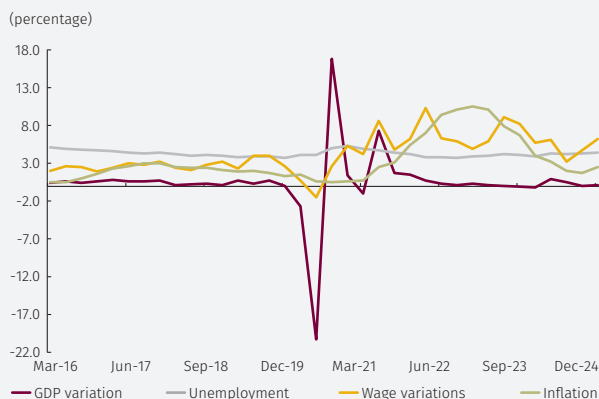
Although numerous cases illustrate how geopolitical factors have affected international security and the global economy, the GSG has focused its analysis on events with the greatest impact on assets eligible for the foreign reserve portfolios. The following three cases are presented, as they have generated structural transformations in international relations due to their scale, duration, or depth, and provide a better understanding of the complexity of current geopolitical challenges:

1. *The United Kingdom's exit from the EU (Brexit)*: A referendum to determine the United Kingdom's future in the European Union was held on 23 June 2016. As the results started to become public, the pound sterling (GBP) fell by approximately 12% against the U.S. dollar (USD) within 24 hours and it has not recovered to pre-Brexit levels. Finally, the United Kingdom officially left the European Union on 31 January 2020.

Although the pandemic caused distortions across various indicators for the United Kingdom, since Brexit, moderate impacts have been observed on trade, GDP, and investment, along with a temporary increase in inflation and interest rates. The labor market has exhibited tensions, reflected in a mismatch between job vacancies and

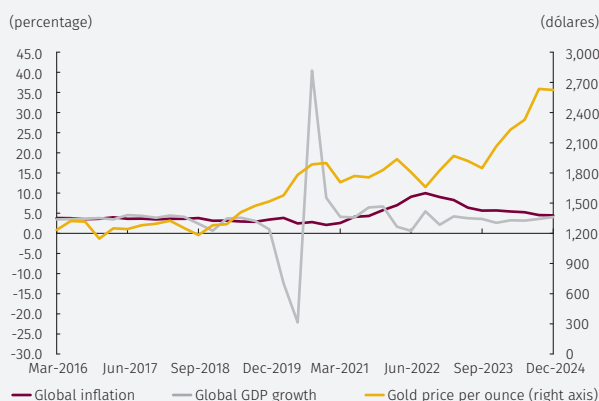
¹ Caldara, D.; Iacoviello, M. (2022). “Measuring Geopolitical Risk,” *American Economic Review*, Vol. 112, No. 4, p. 1194-1225, <https://doi.org/10.1257/aer.20191823>

Graph B5.1
United Kingdom Economic Variables (2016–2024)



Source: Bloomberg; Calculations by Banco de la República.

Graph B5.2
United Kingdom Economic Variables (2016–2024)



Source: Bloomberg; Calculations by Banco de la República.

unemployment, partly due to a decrease in labor migration from the EU² (see Graph B5.1). Sectors such as construction, manufacturing, transportation, and accommodation and food services have been particularly affected. It is estimated that the Brexit decision cost the United Kingdom approximately GBP 140 billion (b)³ and medium- to long-term projections suggest that by 2035, GDP could be roughly 10% lower than the level it would have reached had it remained in the European Union⁴.

2. *Volatility in the price of gold and other commodities during the escalation of conflicts in Europe and the Middle East:* Although the conflict between Russia and Ukraine began in 2014, the escalation following the 2022 military incursion had social, political, and economic effects that disrupted certain supply chains. Ukraine, a major exporter of corn, wheat, sunflower oil, and other products, experienced constraints on its export capacity, which in turn affected inflation and economic growth in several regions. These inflationary pressures, in turn, prompted central banks to maintain interest rates high for longer periods. The resulting uncertainty led investors to seek refuge in assets commonly considered safe, such as gold.

The scenario became even more complex in October 2023, following the Hamas terrorist attack in southern Israel and Israel's military response in the Gaza Strip. In both cases, the price of gold per troy ounce increased by 8.5% and 8.9%, respectively, in less than a month (see Graph B5.2).

3. *U.S. elections and a potential new tariff regime:* In 2024, the GSG analyzed the potential impact of the U.S. presidential elections, anticipating a possible shift in trade policies, as well as increased market volatility and uncertainty regarding the direction of monetary policy. The high volatility of the U.S. dollar amid electoral uncertainty drove the exchange rate to three-week lows vis-à-vis the euro and the yen. Following the confirmation of the election outcome, fiscal and trade expectations temporarily increased demand for dollar-denominated assets, leading to a revaluation of the U.S. dollar.

2. Monitoring Process of Geopolitical Factors

Through the publication of a quarterly bulletin outlining the main geopolitical situations that could affect the performance of assets eligible for the portfolios, the GSG has become familiar with current monitoring matters beyond the usual financial market issues. It currently reports to the DII team on the potential impacts of these events under different scenarios, while also sharing the DII's perspective on the international situation with other areas of the Bank, with a focus on the performance of foreign reserve portfolios.

Additionally, the bulletin includes the Geopolitical Risk Index (GPR) as a component of the analysis. This index is the most widely used

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- 2 Casey, B. H.; Mayhew, K. (2024). "The Labour Market Implications of Brexit: A Beveridge Curve Analysis," *National Institute Economic Review*, Vol. 268, No. 1, p. 3-14. <https://doi.org/10.1017/nie.2024.11>
 - 3 Greater London Authority (2024). "New Report Reveals UK Economy is Almost £140 Billion Smaller because of Brexit," [London.gov.uk](https://www.london.gov.uk/press-releases/npr-2024-01-11), 11 January.
 - 4 Cambridge Econometrics (2024). "London's Economy After Brexit: Impacts and Implications," Greater London Authority.

publicly available tool for measuring the impact of geopolitical risks. This index is based on news reporting of adverse geopolitical events. It counts the number of articles containing words related to geopolitical tensions as a proportion of the total number of articles in the ten leading international newspapers⁵ from which it derives an overall index: the GPR, along with two sub-indices that distinguish events into risks and threats.

Similarly, through the project focused on quantifying geopolitical risk, the GSG has collected and analyzed information on the quantification methods used by other market participants. To this end, a review of the academic literature on existing quantification methodologies was conducted, and external administrators of the active management program, banking counterparties, and rating agencies were consulted regarding the methodologies and tools they use to quantify this risk. As a result, the analysis found that the predominant analysis method is natural language processing (NLP). Particularly, word counting, sentiment analysis, topic modeling, and named-entity recognition stand out as the NLP techniques that enable the automated collection and analysis of data required to assess geopolitical risk. Currently, the DII is working to quantify this risk by identifying the correlation between geopolitical events and the market performance of assets eligible for foreign reserve portfolios. It is worth noting that a diversified portfolio, such as the one currently held, allows for mitigating and managing market volatility that may arise from geopolitical events.

Finally, the GSG analysis indicates that such events not only affect asset valuations but have also altered the dynamics among them, thereby impacting their correlation and risk perceptions. In line with this, the relevance of diversification is highlighted as follows: 1) assets eligible for the portfolios; 2) accounts across different currencies; 3) geographic location of counterparties and custodians; and 4) sources of liquidity, to address the impact of geopolitical events on markets.

⁵ Chicago Tribune, The Daily Telegraph, Financial Times, The Globe and Mail, The Guardian, Los Angeles Times, The New York Times, USA Today, The Wall Street Journal, and The Washington Post.