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Political risk and commodity currencies

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ABSTRACT

We examine the impact of political risk on the relationship dynamics between commodity and currency returns in commodity-exporting countries. We find that the typically positive contemporaneous relationship between commodity and currency returns disappears when political risk increases. This finding is in line with the rare disasters model of Farhi and Gabaix (2016), with the negative effect of political risk being transmitted to foreign exchange rates indirectly by affecting the relationship between the foreign exchange and commodity returns. The results hold for various measures of political risk. The documented effect on the commodity-currency pricing relationship is driven by political risk, not economic uncertainty, and not by the appreciation of the US dollar during periods of heightened political risk. The documented effect is stronger for countries with high political risk. The implication is that commodity currencies do not benefit from commodity price increases during periods of heightened political risk.

1. Introduction

A well-established tenet in international finance is the positive relationship between global commodity prices and the value of currencies of commodity-exporting countries (Chen and Rogoff, 2003; Cashin et al., 2004), commonly referred to as commodity currencies. Theoretically explained through terms-of-trade (Chen and Rogoff, 2003; Chen, 2005) and risk premium (Van Huellen and Palazzi, 2023) channels, this relationship has been considered a fundamental driver of exchange rate[1] dynamics for these countries.[2] However, there are trends in the commodity and currency markets that reveal instability in this relationship (e.g., Dodd et al., 2024; Haider et al., 2023; Wang and Cheung, 2023). For example, at the onset of the Russia-Ukraine war in February 2022, a substantial increase in commodity prices was followed by a depreciation of currencies, rather than the expected appreciation (Dodd et al., 2024). These observations present an empirical puzzle: the fundamental link between commodities and currencies seems to break down when geopolitical uncertainty rises. In this study, we explore how political risk influences the pricing dynamics between commodity and currency markets.

Political risk has been increasingly on the agenda of governments, policymakers, businesses, and researchers. The recent military conflicts, such as the war between Ukraine and Russia and the Israel–Hamas war, have drawn renewed attention to the impact of

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[1] We use the terms *currency*, *exchange rate*, and *foreign exchange rate* interchangeably throughout the paper.

[2] Empirically, there is ample evidence of a positive relationship between commodity prices and the value of commodity currencies (see, e.g., Chen, 2005; Cashin et al., 2004; Chen et al., 2010; Bodart et al., 2012; Bodart and Carpantier, 2023).

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geopolitical issues on financial markets. Political instability and disasters can impose profound social costs and devastate economies and financial markets (e.g., Nordhaus, 2002; Berkman et al., 2011). For instance, Caldara and Iacoviello (2022) show that an increase in political risk predicts lower investment, employment, and stock prices, and increases the probability of an economic disaster and downside risks to GDP growth, confirming that political risk impacts financial markets and the real economy.

We examine the mediating role of political risk in the pricing dynamics of commodity and foreign exchange markets in commodity-exporting countries, analysing how political risk affects the established relationship between commodity prices and commodity currency returns. While the growing literature on the impact of political risk on commodity and currency markets provides a solid foundation for understanding commodity–currency co-movements, it largely overlooks how external risk factors, such as political instability, can influence or disrupt price transmission mechanisms in these markets. One stream of research shows that geopolitical shocks affect commodity prices by increasing volatility and disrupting supply chains (e.g., Baur and Smales, 2020; Gong and Xu, 2022). Another stream documents the significant direct effects of political risk on exchange rate markets through capital flows and risk premia (e.g., Filippou et al., 2018; Liu and Zhang, 2024). While valuable, these two areas of research treat the impact of political risk on commodities and currencies as separate phenomena, failing to consider the pricing dynamics between these two markets. This leaves a critical gap in our understanding, as the existing evidence focuses on the direct effects of political risk on commodity and currency markets and does not account for the conditional nature of this macro-financial linkage.

To bridge this gap, we posit that political risk acts as a mediating factor that can fundamentally alter the pricing dynamics between commodity markets and commodity-exporter currencies. We argue that during periods of heightened political risk, the transmission mechanism from commodity price shocks to currencies is disrupted. As political risk escalates, a country's currency becomes riskier, leading investors to demand a higher risk premium that offsets or even reverses the positive influence of rising commodity prices. In this context, political risk is not merely another shock but a conditioning factor that governs the strength and even the sign of the relationship between commodity prices and commodity-exporter currencies.

More specifically, the transmission mechanism can be understood through the lens of Farhi and Gabaix's (2016) rare disaster framework. In regular times or periods of low political risk, an increase in commodity prices improves a country's terms of trade, leading to currency appreciation. During heightened political uncertainty, the probability of supply chain disruptions and demand or supply shocks increases, driving up global commodity prices. At the same time, increased political risk signals a higher probability of a "rare disaster" for that country, as modelled by Farhi and Gabaix (2016). An increase in the probability of a "rare disaster" has two critical outcomes. First, the perceived riskiness of the country's assets increases, leading to a sharp rise in the required risk premium. Second, investors become reluctant to hold the currency, fearing a sharp depreciation in a disaster scenario, which can trigger precautionary capital outflows, or a capital "flight to safety". These two effects contribute to downward pressures on the local currency. We argue that during periods of heightened political risk, the risk premium channel dominates the terms of trade channel. The currency fails to appreciate, and may even depreciate, because the negative sentiment and capital flow dynamics driven by disaster risk subdue the positive effects of rising commodity prices.

To test our hypothesis, we examine the relationship between commodity and commodity currency returns for a sample of eight major commodity-exporting countries - Australia, Brazil, Canada, Chile, Colombia, Norway, Russia, and South Africa - from 1980 to 2021. We use the International Monetary Fund (IMF)'s Real Effective Exchange Rates (e.g., Cashin et al., 2003, 2004) and the IMF's commodity country-specific indices (Gruss and Kebhaj, 2019) to calculate monthly foreign exchange and commodity returns, respectively. Our primary measure of political risk is the country-specific geopolitical risk (GPR) index of Caldara and Iacoviello (2022).

As a preliminary analysis, we estimate the dynamic conditional correlation (DCC) series between a country's commodity and currency returns, revealing substantial volatility and heterogeneity in correlations across time and countries. While the correlations between commodity and currency returns are mainly positive, there are periods when these correlations revert and become negative. The multivariate panel fixed effects regression analysis confirms the expected positive relationship between commodity and commodity-exporter currency returns. Nonetheless, we document that this positive and significant relationship fades when political risk increases. Notably, political risk has no significant direct impact on commodity currency returns.

The theoretical rare disaster model of Farhi and Gabaix (2016) predicts that an increase in the rare disaster probability is associated with a higher expected risk premium and a contemporaneous decrease in the exchange rate. While we do not find empirical evidence of the direct negative relationship between political risk and commodity currency returns, we document a significant indirect impact of political risk on the currency's value via its impact on the commodity-currency return relationship. Heightened political risk increases commodity prices by raising market uncertainty, increasing the probability of supply chain disruptions, and causing demand or supply shocks. This phenomenon occurs without a corresponding increase in foreign exchange rates as the risk premium rises. Consequently, the typically positive relationship between commodities and commodity currencies is diminished or eliminated.

Furthermore, we show that our main finding, the effect of political risk on the relationship between commodity prices and commodity-exporter currencies, is not driven by the choice of the measure of political risk. We employ alternative measures of political risk, including the War Risk indices of Manela and Moreira (2017) and Hirshleifer et al. (2025), and the implied political risk component extracted from sovereign credit default swap (CDS) returns, and find that our main result holds when we use these alternative measures.

Next, we rule out the possibility that the documented impact on the relationship between commodity prices and commodity-exporter currencies is driven by economic uncertainty rather than political risk. We employ various measures of economic uncertainty, including the economic policy uncertainty of Baker et al. (2016) and the trade policy uncertainty of Caldara et al. (2020). We find that the impact of changes in economic uncertainty on the pricing dynamics of commodities and currencies is insignificant, and the documented effect of political risk remains significant.

Additionally, we show that the appreciation of the US dollar, as a result of flight-to-safety during periods of heightened political risk, can not explain the documented effect. We also account for the effects of equity returns, interest rate differentials, and changes in consumer confidence when political risk increases and find that the effect of political risk remains significant. Furthermore, we show that foreign exchange regimes do not affect the results: the results remain unchanged when we include only periods when the sample currencies had free-floating exchange rate regimes. A local projection analysis reveals that the impact of political risk on the relationship between commodity prices and commodity-exporter currencies is short-lived. Finally, our findings survive several robustness tests, including alternative fixed effects and clusters, as well as alternative foreign exchange and commodity indices data.

Our study contributes to the literature on the impact of political uncertainty shocks on pricing in commodity and foreign exchange markets. Previous research examines the direct impact of political risk and rare political disasters on prices and volatility of specific commodities and exchange rates. For example, studies show that political risk can increase the interconnectedness and volatility of commodity markets and affect commodity prices (e.g., Abdel-Latif and El-Gamal, 2020; Baur and Smales, 2020; Demirer et al., 2018; Gong and Xu, 2022; Liu et al., 2019; Omar et al., 2017). Also, numerous studies demonstrate significant effects of political risk on currency markets (Bossman et al., 2023; Filippou et al., 2018; Iyke et al., 2022; Liu and Zhang, 2024; Salisu et al., 2022). However, to our best knowledge, there is no evidence in the literature on how the effects of political risk on pricing dynamics in commodity markets translate into exchange rate movements for commodity currencies. We contribute to this literature by focusing on the mediating role of political risk on the pricing dynamics of commodity and commodity currencies. Our contribution lies in uncovering a conditional mechanism: the indirect effect of political risk that weakens the established positive relationship between commodity and commodity currency returns. Focusing on this interaction provides a more nuanced understanding of how political instability transmits through global markets and offers a probable answer to the puzzle of the “disappearing” commodity-currency correlation.

The rest of this paper is organised as follows. Section 2 reviews the existing literature on the impact of political risk on the commodity and foreign exchange markets. Section 3 describes the data, while Section 4 explains the empirical design and reports the findings. Lastly, Section 5 provides a conclusion.

2. Literature review

2.1. *Commodity prices and commodity currencies*

The literature offers insights into the relationship between commodity prices and the value of currencies of commodity-exporting countries (“commodity currencies”). Chen and Rogoff (2003) and Chen (2005) put forward the terms of trade theory, suggesting that increases in commodity prices benefit the terms of trade of the exporting country. As a result, there is an upward pressure on the exporter's currency, leading to its appreciation. Van Huellen and Palazzi (2023) distinguish two channels of the co-movement between commodity and currency returns: a terms-of-trade channel and a risk premium channel. The risk premium channel assumes that, since commodity currencies are tradable assets, their prices are affected by market participants' risk perceptions and expectations. Van Huellen and Palazzi (2023) highlight the importance of the risk premium channel for understanding the relationship between commodity and commodity currency prices.

Numerous studies provide empirical evidence of a positive relationship between commodity prices and the value of commodity currencies. Chen (2005), using quarterly data from 1973 to 2000, shows that commodity prices impact the real exchange rates of commodity-exporting economies. Cashin et al. (2004), using data on 44 commodity prices and the export compositions of 58 commodity-exporting countries from 1980 to 2002, provide evidence of a long-term positive association between the real exchange rates and the real export price index. Chen et al. (2010) analyse the relationship between the prices of the commodity bundles exported by Australia, Canada, Chile, New Zealand, and South Africa and find that these five countries' exchange rates outperform several alternative benchmarks in terms of forecasting global commodity prices, both inside and outside of samples. Bodart et al. (2012) report that when a commodity makes up at least 20% of a nation's total merchandise export, its price will significantly influence the real exchange rate. Breen and Hu (2021) show that oil price and volatility predict the exchange rate in small open oil-exporting economies, particularly when oil constitutes a substantial portion of the country's exports. More recently, Bodart and Carpantier (2023) examine whether declines in commodity prices can account for the concurrent occurrence of currency crises in 104 emerging and developing nations from 1970 to 2018. Their results suggest that for every 10% decline in global commodity price indices, the number of currency crises that affect commodity-exporting countries increases by roughly 7%. Jeanneret and Sokolovski (2023) show that monthly fluctuations in a country's commodity export prices can be used to predict the commodity currency value, particularly in high-uncertainty situations.

While there is plentiful evidence in the literature of a positive relationship between commodity and commodity currencies returns, in specific periods, there are commodity and currency market co-movements that do not follow the expected pattern. For example, Wang and Cheung (2023) investigate the explanatory power of real commodity prices to forecast real effective exchange rates using quarterly data on four commodity-exporting countries. They focus on the distinct roles of different sectoral commodity prices during alternate periods and find that the impact of commodity prices is not constant over time and is not uniform across countries or commodity sectors. Furthermore, Haider et al. (2023) analyse the relationship between commodity prices and the exchange rate of 77 commodity-dependent developed and emerging countries. They document that primary commodity prices can predict exchange rates in less than two-thirds of export-dependent developed countries. In contrast, a random walk model renders a better forecasting performance for most export-dependent emerging, import-dependent emerging, and developed countries.

Several recent studies examine the relationship between commodity prices and exchange rates during the Russia-Ukraine war, a rare political disaster event. Sokhanvar and Bouri (2023) show that commodity price shocks linked to the Russia–Ukraine war have significant and asymmetric impacts on the exchange rates of both commodity-exporting and importing countries, reinforcing the idea that geopolitical risks shape exchange rate dynamics via external trade channels. Dodd et al. (2024) examine daily currency returns of 31 currencies from January 2012 to March 2022. While they document the expected positive relationship between commodity and commodity currency returns in 2012-2021, they report that around the start of the Russia-Ukraine war in January-March 2022, the increase in commodity prices was accompanied by a decrease (rather than the expected increase) in the value of currencies. While this body of research lays the groundwork for understanding commodity–currency co-movements, it largely overlooks how external risk factors, such as political risk, can influence or disrupt these price-based transmission mechanisms. In the following subsection, we review the literature on the impacts of political risk on commodity and currency markets.

2.2. Political risk

Caldara and Iacoviello (2022) define geopolitical risk as "the threat, realisation, 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" (p.1195). Caldara and Iacoviello (2022) show that their geopolitical risk (GPR) index, computed using textual analysis, predicts declines in investment, employment, and stock prices for the U.S., and increases the likelihood of economic disasters, lowers expected GDP growth and raises downside risks to GDP growth for cross-country data over 120 years.

Subsections 2.2.1 and 2.2.2 summarise the literature on the impact of political risk on commodity and currency markets, respectively.

2.2.1. Political risk and commodity markets

Commodity market prices are prone to volatility, especially in the short term, when significant political risk events occur. Political risk substantially impacts the commodity markets because it increases market uncertainty and the probability of supply chain disruptions and demand or supply shocks.

Geopolitical events may considerably impact aggregate commodity demand and output, ultimately leading to significant price changes (Su et al., 2019). According to Abdel-Latif and El-Gamal (2020), oil prices rise as a result of both political and financial unpredictability. Antonakakis et al. (2017), using historical data from 1899 to 2016, find that political risk triggers a negative effect mainly on oil returns and volatility, while Plakandaras et al. (2019) demonstrate that political risk can reasonably accurately predict medium- and long-term oil returns. Liu et al. (2019) and Smales (2021) show that political risk plays a vital role in oil price volatility. Furthermore, Chowdhury et al. (2021) utilise the quantile-on-quantile regression method to examine the impact of political risk and find that political risk has a unidirectional causal effect on the energy market. Qin et al. (2020) show that geopolitical concerns have asymmetric effects on energy returns and volatility under various market conditions. Baur and Smales (2020) demonstrate that political risk significantly impacts the stability of the markets for precious metals and agricultural products.

More recently, Mitsas et al. (2022) show that political risk harms crude oil, gold, platinum, and silver returns, and Tiwari et al. (2021) contend that when significant political risk events happen, investors' panic will cause anomalous market fluctuations, ultimately impacting the returns and fluctuations of commodity markets. Using a Markov-Switching model, Abid et al. (2023) demonstrate how different commodity returns respond to political risk shocks; the energy market is found to be the most volatile, agricultural products and precious metals experience some variability, and livestock and industrial metals appear to be more stable over time. Moreover, Gong and Xu (2022) report that rising political risk increases the interconnectedness across commodity markets, making them more susceptible to shocks from other commodities. Similarly, Kočenda and Bartušek (2025) analyse 900 oil-related events from 1987 to 2022. They identify 21 major incidents that caused significant and lasting changes in energy market linkages and report that geopolitical events had the most substantial impact, while natural events had little effect.

Regarding the impact of rare disasters such as political crises and wars, Omar et al. (2017) document significant jumps in the price of crude oil in the aftermath of wars and global crises. Moreover, Demirer et al. (2018) show that rare disaster risks contribute to excess oil returns and volatility as a jump component in the price process. Reflecting a broader vulnerability of commodity markets to systemic shocks, Asante-Poku and van Huellen (2021) show that the COVID-19 pandemic revealed structural weaknesses in Ghana's export-dependent economy, underscoring the sensitivity of commodity revenues to global disruptions. In similar lines, Rajput et al. (2021) highlight that the COVID-19 pandemic produced an unparalleled shock to commodity markets, reinforcing the idea that rare, systemic disruptions can severely distort pricing mechanisms. Bouri et al. (2023) study return co-movements and implied volatilities of oil, gold, wheat, and copper during the period that includes the global financial crisis, COVID-19 pandemic, and Russia-Ukraine war and find that the correlations across the commodities are heterogeneous, highlighting the importance of the individual characteristics of commodities.

Lastly, recent research shows that the war in Ukraine, a significant geopolitical risk event, has led to extreme volatility in food prices (Saâdaoui et al., 2022) and oil prices (Adekoya et al., 2022). Wang et al. (2022) assess how returns and volatility are transmitted in the commodities universe around the war in Ukraine and find that overall volatility spillover rises from 35% to 85%, surpassing the level observed during the Covid-19 pandemic.

In summary, existing research primarily focuses on the relationship between political risk and prices of specific commodities because commodity markets are diverse in terms of levels of financial speculation, the ability to store, the practicality of supply, and weather sensitivity (Lyu et al., 2021). The evidence highlights the sensitivity of oil to political risk, with both short- and long-term effects on returns and volatility. Political risk also impacts other commodity markets, such as precious metals and agricultural products.

While existing studies isolate specific commodity price responses to political events, with a particular emphasis on the sensitivity of oil prices, they do not investigate how these altered price dynamics translate into exchange rate movements, particularly for commodity currencies.

2.2.2. *Political risk and currency markets*

Several studies provide theoretical contributions exploring how political risk influences currency returns and volatility through various mechanisms, including diminishing global trade flows (Gupta et al., 2019a; Ding et al., 2021), modifying global capital or portfolio flows (Broner et al., 2013; Fratzscher, 2012; Cheng and Chiu, 2018; Chiang, 2021), or changing how market participants build their expectations (Davis and Van Wincoop, 2018; Balcilar et al., 2017).

Numerous studies provide empirical evidence on the impact of political risk on currencies. Filippou et al. (2018) show that political risk is priced in the cross-section of currency momentum, providing information not contained in other risk indicators. Iyke et al. (2022) show that the information content embedded in political risk is economically useful and can improve the forecasting accuracy of exchange rate returns. Cepni et al. (2023) find that political risk considerably impacts carry trade returns and volatility for individual BRICS countries throughout various sub-periods. Liu and Zhang (2024) examine the predictive power of Caldara and Iacoviello's (2022) GPR for currency returns and report that a zero-cost strategy of buying currencies of high-GPR countries and selling those of low-GPR countries yields a significant annual excess return of 5.72%. Also, Chortane and Pandey (2022) show that the war in Ukraine has raised geopolitical concerns, leading to highly volatile currencies.

The impact of political risk on currencies, however, is often heterogeneous and complex. Using the non-linear ARDL model, Kisswani and Elian (2021) document that political risk has symmetric and asymmetric effects on exchange rates. Bossman et al. (2023) use a nonparametric quantile-on-quantile regression analysis and report that the influence of political risk on exchange rates is currency-specific and asymmetric, particularly at the low and high extremes of exchange rate returns. Salisu et al. (2022) report that the exchange rates of the BRICS countries are more susceptible to global political risks than domestic (country-specific) ones, highlighting the significant internationalisation and interconnectivity of the global financial markets.

Several theoretical and empirical studies have demonstrated the predictive power of rare disaster events for excess returns and volatility in foreign exchange markets. Building on the works of Rietz (1988) and Barro (2006), Farhi and Gabaix (2016) propose a novel exchange rate model showing that the likelihood of rare but extreme disasters significantly influences risk premia in currency markets, leading to a decrease in the currency value.[3] Kugler and Weder (2005) find that mean returns on Swiss assets have been significantly lower than in other currencies, potentially due to an existing insurance premium against rare catastrophic events, such as the fall of the Berlin Wall, or the sudden death of Soviet leaders. Gupta et al. (2019b) examine the in-sample predictability of global political crises as proxies for rare disaster risks and find that they impact returns and volatility of the BRICS's dollar-based exchange rates. In addition, Eldor and Melnick (2004) and Narayan et al. (2018) show that terrorist attacks have a negative effect on foreign exchange market returns. Similarly, Balcilar et al. (2017) report that terrorist acts impact the exchange rate volatility and returns, with the lower and upper quantiles of the conditional distribution of exchange rate returns being the most affected.

Despite these significant contributions to the literature on the impact of political risk and rare political disasters on exchange rates, the indirect influence of political risk on macro-financial interactions, such as the relationship between commodity returns and exchange rates, remains underexplored. Our study advances the understanding of political risk's impact on commodity and currency markets by analysing how political risk influences the relationship dynamics between commodity and currency returns of major commodity-exporting countries. To our best knowledge, this mechanism has been previously underexplored in the literature.

3. Data

Our analysis focuses on the currencies of eight major commodity-exporting countries, Australia, Brazil, Canada, Chile, Colombia, Norway, Russia, and South Africa, chosen based on the central role commodities play in their export profiles and the availability of political risk data. The foreign exchange of these countries are classified as "commodity currencies" (Chen and Rogoff, 2003; Norland, 2020) due to the strong economic relationship between their exchange rates and fluctuations in commodity prices. Throughout most of the sample period, these countries operate under flexible or intermediate exchange rate regimes (Ilzetzki et al., 2021), which increases

[3] For equity markets, Berkman et al. (2011), Wachter (2013), and Berkman et al. (2017) demonstrate that changes in the probability of rare disasters affect stock market prices and volatility. Chen et al. (2017) find that political instability (proxied by the growth of global militarisation) is a valid systematic risk factor in international stock markets.

the responsiveness of their currencies to market forces and political developments, making them well-suited for examining the interplay between political risk and commodity prices and exchange rate dynamics.[4]

We obtain the data from several sources. Monthly foreign exchange and commodity indices data are downloaded from the International Monetary Fund (IMF Data). To calculate monthly foreign exchange returns for each country, we use the Real Effective Exchange Rate Index[5] based on the Consumer Price Index obtained from the International Monetary Fund's (IMF) International Financial Statistics (IFS) (e.g., Cashin et al., 2003, 2004) from IMF database.[6] The IMF's real effective exchange rate index for each country is defined as the trade-weighted average of bilateral exchange rates against trading partners' currencies, adjusted for price differentials between the home country and trading partner countries; a higher (lower) value of the real effective exchange rate index represents an appreciation (depreciation) of the currency. We also use the nominal WM/Refinitiv foreign exchange rates (expressed as the US dollar price) downloaded from LSEG Datastream in the robustness tests. Monthly commodity country-specific indices come from the IMF's database developed by Gruss and Kebhaj (2019). In this comprehensive database, country-specific commodity price indices account for the changes in global market prices of up to 45 individual commodities weighted by commodity-level trade data for individual countries. As our baseline commodity index, we use the Commodity Export Price Index returns based on individual commodities weighted by the Ratio of Exports to GDP, using rolling weights in real terms from the IMF database. We use alternative commodity indices in the robustness section. The sample period is from February 1980 to December 2021, with some variations across countries.[7]

To measure political risk, we use the monthly geopolitical risk (GPR) index of Caldara and Iacoviello (2022) that estimates adverse geopolitical events and associated risks based on a tally of 10 newspapers (Chicago Tribune, the Daily Telegraph, Financial Times, The Globe and Mail, The Guardian, the Los Angeles Times, The New York Times, USA Today, The Wall Street Journal, and The Washington Post) covering geopolitical tensions.[8] We use the country-specific GPR indices for the sample commodity-exporting countries. Fig. 1 plots the monthly country-specific GPR indices. There is considerable time variation in the GPR indices across countries, showing that periods of heightened geopolitical risk do not necessarily coincide in different countries. In addition, we observe high volatility in these indices. Since we are interested in evaluating the impact of the changes in political risk, we use the changes in GPR (ΔGPR) in our analysis.

In addition, we download the following monthly variables from LSEG Datastream: MSCI equity market indices in local currencies, local 3-month interest rates,[9] and local OECD consumer confidence indices. We use these variables as controls in the panel regression analysis. Appendix A reports the LSEG Datastream series codes. All continuous series are winsorised at 1% and 99% for each country to deal with outliers. The beginning and the end of the sample (initial and final dates) for each country are reported in the last two columns of Table 1 for the main variables and Appendix B for the control variables.

Table 1 reports the descriptive statistics for the foreign exchange, commodity returns, and ΔGPR by country and the pooled sample (all countries). The monthly mean return for the foreign exchange ranges from −0.1276% (Colombia) to 0.2534% (Russia), with a significant variation across countries (−0.0164% per month, on average, across countries). On average, the commodity index's monthly mean return is positive (0.0147%) with a monthly volatility of 0.7259%. Finally, the average monthly ΔGPR is 0.0171%, with a large standard deviation of 9.5246%. The large standard deviation confirms the observed large swings in GPR indices in Fig. 1. Appendix B reports the descriptive statistics for the control variables. These statistics show stylised facts such as positive mean stock market returns (1.5856% across countries, on average) and large volatility (8.6685%), positive interest differentials over the 3-month US T-bill (3.0453%), and low changes in the consumer confidence (0.0145%) with a large standard deviation (2.6734%).

4. Empirical results

4.1. Dynamic conditional correlations

We hypothesise that political risk may distort the relationship between commodity and currency returns in commodity-exporting countries. Before formally testing this hypothesis, we conduct a preliminary analysis of the co-movement between the commodity

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4 We acknowledge that a relatively small number of countries in our sample may limit the generalisability of the findings, particularly concerning other commodity exporter countries, most notably emerging economies with less mature financial markets. Also, our sample excludes countries with fixed or heavily managed exchange rates, therefore omitting contexts in which the relationship between political risk and currency movements could be structurally different. Nevertheless, the study offers valuable insights into the complex interplay between political risk, commodity prices, and currencies for commodity-exporting countries that are highly exposed to external shocks and political fluctuations.

5 We use real exchange rates in the baseline results as these are typically employed in foreign exchange models (Hassan and Zhang, 2021).

6 Data source: https://data.imf.org.

7 The end of the sample period in December 2021 was determined by the availability of the country-specific commodity price index data from the IMF's database. We also deliberately exclude from our sample the shock caused by the 2022 Russian invasion of Ukraine, which had profound and atypical impacts on commodity and foreign exchange markets. This event period (from 2022 onwards) may be considered an outlier and thus not representative of the typical dynamics between commodity prices and exchange rates (see, e.g., Dodd et al., 2024, for the analysis of this invasion's effects on the commodity-currency relationship).

8 Data source: https://www.matteoiacoviello.com/gpr.htm.

9 We download the 3-month government interest rates for all countries, except for Colombia we use the 3-month implied deposit rate. Additionally, we download the 3-month government interest rate for the United States, which we use to calculate the interest rate differentials for each sample country.

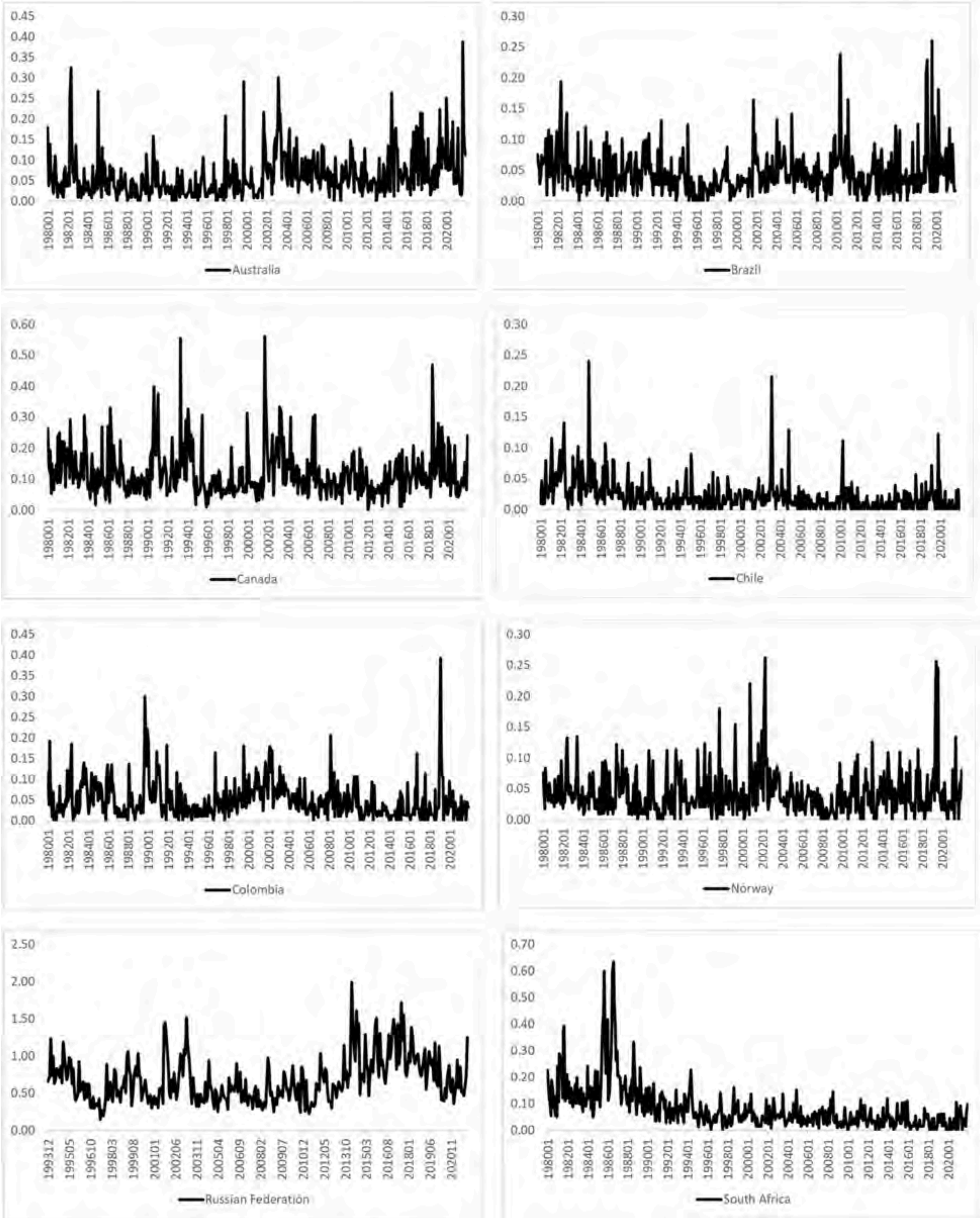

Fig. 1. Geopolitical risk (GPR) index
This figure plots the monthly geopolitical risk (GPR) index of Caldara and Iacoviello (2022) by country.

Table 1
Descriptive statistics: Main variables.

	Obs.	Mean	STD	Min	Max	Skewness	Kurtosis	AR(1)	ADF p-values	Initial date	Final date
Panel A: Foreign exchange rates (%)											
Australia	503	0.0187	2.185	−12.066	5.643	−0.908	5.827	0.308	0.001	1980/02	2021/12
Brazil	503	0.0230	4.458	−22.879	30.503	0.371	12.894	0.167	0.001	1980/02	2021/12
Canada	503	−0.0104	1.455	−9.024	5.489	−0.325	5.888	0.214	0.001	1980/02	2021/12
Chile	503	−0.0979	2.250	−13.529	6.926	−0.808	6.847	0.314	0.001	1980/02	2021/12
Colombia	503	−0.1276	2.390	−9.182	14.056	−0.199	6.516	0.276	0.001	1980/02	2021/12
Norway	503	−0.0116	1.311	−8.267	4.909	−0.837	7.382	0.268	0.001	1980/02	2021/12
Russia	337	0.2534	3.630	−35.824	14.367	−2.907	33.293	0.362	0.001	1993/12	2021/12
South Africa	503	−0.0897	3.242	−17.899	15.959	−0.161	9.713	0.216	0.001	1980/02	2021/12
Pooled series	3858	−0.0164	2.763	−35.824	30.503	−0.526	23.434	0.245	0.001	1980/02	2021/12
Panel B: Commodity index returns (%)											
Australia	503	0.0069	0.359	−1.818	1.861	−0.002	7.779	0.305	0.001	1980/02	2021/12
Brazil	503	−0.0034	0.163	−0.821	0.643	−0.179	5.373	0.363	0.001	1980/02	2021/12
Canada	503	0.0052	0.383	−2.674	1.680	−1.245	11.283	0.329	0.001	1980/02	2021/12
Chile	503	0.0242	0.939	−7.612	3.707	−1.267	16.445	0.430	0.001	1980/02	2021/12
Colombia	503	−0.0038	0.493	−3.548	1.988	−1.287	11.412	0.353	0.001	1980/02	2021/12
Norway	503	0.0258	1.256	−5.786	3.685	−0.683	6.535	0.345	0.001	1980/02	2021/12
Russia	337	0.0840	1.226	−6.358	3.736	−1.079	6.735	0.335	0.001	1993/12	2021/12
South Africa	503	0.0016	0.188	−0.920	0.878	−0.218	7.023	0.346	0.001	1980/02	2021/12
Pooled series	3858	0.0147	0.726	−7.612	3.736	−1.256	18.635	0.360	0.001	1980/02	2021/12
Panel C: ΔGPR (x100)											
Australia	502	0.0148	6.016	−22.480	35.663	0.697	8.284	−0.449	0.001	1980/03	2021/12
Brazil	502	−0.0081	4.426	−23.194	24.535	0.000	7.906	−0.412	0.001	1980/03	2021/12
Canada	502	0.0196	8.367	−30.107	49.160	0.820	7.645	−0.408	0.001	1980/03	2021/12
Chile	502	−0.0094	2.972	−18.129	17.795	−0.084	11.281	−0.395	0.001	1980/03	2021/12
Colombia	502	−0.0012	4.734	−20.488	24.496	0.153	6.282	−0.394	0.001	1980/03	2021/12
Norway	502	0.0084	4.486	−20.937	21.300	0.076	7.360	−0.447	0.001	1980/03	2021/12
Russia	336	0.1770	26.990	−95.476	125.937	0.438	4.806	−0.350	0.001	1994/01	2021/12
South Africa	502	−0.0111	5.718	−32.840	25.414	−0.415	8.592	−0.293	0.001	1980/03	2021/12
Pooled series	3850	0.0171	9.525	−95.476	125.937	0.988	28.021	−0.366	0.001	1980/03	2021/12

The table reports descriptive statistics for foreign exchange returns, commodity returns, and ΔGPR by country and the pooled sample (all countries). STD represents the standard deviation. AR(1) represents the first autocorrelation values. The Augmented Dickey-Fuller (ADF) p-values are reported, with the null hypothesis that the series are non-stationary. The last two columns report the start and the end year and month of the sample period for each country.

index and commodity currency returns. We employ the Dynamic Conditional Correlation (DCC) model proposed by Engle (2002), which is well-suited for capturing time-varying correlations—an essential feature given the volatile nature of geopolitical tensions and their influences on financial markets. Unlike static models, DCC allows for a dynamic assessment of co-movements between commodity and currency returns, capturing shifts in economic and geopolitical conditions. A dynamic assessment is crucial for identifying changes in the commodity-currency relationships, especially in commodity-exporting countries where commodity prices and the exchange rate are interconnected.[10]

Fig. 2 plots the DCC series between the country's commodity and currency returns. There are two general observations from these graphs. First, the correlations between currency and commodity returns for commodity currencies exhibit substantial volatility and heterogeneity across time and countries. Second, these correlations for commodity currencies are mainly positive in line with the existing evidence (Chen et al., 2010; Bodart et al., 2012; Bodart and Carpantier, 2023). However, there are periods when this relationship weakens or reverses (i.e., the correlations become negative), often during periods of turmoil. We observe that these turning points often coincide with significant country-specific geopolitical events that heighten domestic political risk, potentially weakening the influence of global commodity prices on the exchange rates. For instance, the negative correlations observed in Chile during the late 1980s and early 1990s aligned with its transition from authoritarianism to democracy (Barton, 2002). Similarly, South Africa's correlations weakened during the 1990s transition from apartheid. In Colombia, the correlations were close to zero in the 1980s and 1990s during the period of intense internal conflict and narco-terrorism. Financial crises may also affect the correlations between commodity and currency returns, as evidenced by a sudden drop to negative correlations for Russia during its 1998 financial crisis. These observations suggest that periods of political instability could fundamentally alter the co-movement between currency and

[10] While more sophisticated approaches such as asymmetric DCC models may offer greater flexibility by capturing differential responses to positive and negative shocks, in this study, we opt for a standard DCC model due to its parsimony, computational efficiency, and empirical robustness. The standard DCC model of Engle (2002) effectively captures time-varying correlations between asset returns without introducing the additional complexity and parameter burden associated with asymmetric specifications. In the context of commodity and currency returns, where the primary focus is on the dynamic co-movement rather than directional asymmetries, the standard DCC provides an adequate framework for analysing correlation dynamics. Moreover, the symmetric structure of the DCC model ensures greater stability in estimation, particularly when dealing with multiple asset pairs or limited sample sizes. This makes it a practical and reliable choice for investigating the transmission of political risk through commodity-currency linkages.

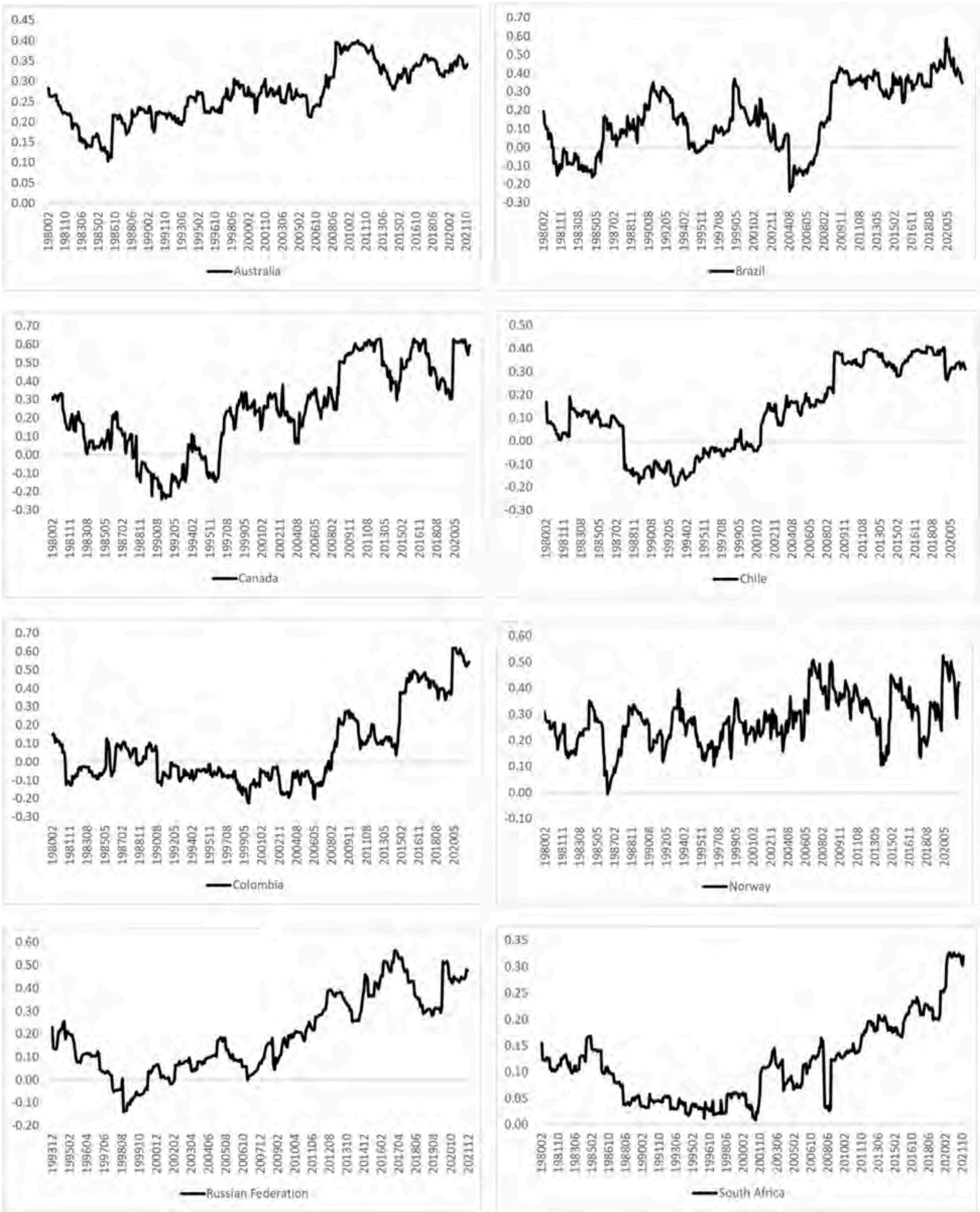

Fig. 2. Dynamic conditional correlation between foreign exchange and commodity returns
The figure plots dynamic conditional correlations (DCC) (Engle, 2002) between foreign exchange and commodity index returns for each country.

commodity returns. This preliminary analysis motivates a further examination of the dynamics of the relationship between commodity and currency returns, particularly, how political risks may explain them.

4.2. Political risk and the commodity-currency return relationship

In this section, we test our hypothesis that political risk affects the relationship between commodity and currency returns in commodity-exporting countries. To test this hypothesis, we run a multivariate panel fixed effects regression of foreign exchange (FX) returns on commodity returns and the changes in the geopolitical risk index, including an interaction term between them. Specifically, we estimate the following OLS panel regressions with fixed effects:

$$fx_{i,t} = \beta_0 + \beta_1 Comm_{i,t} + \beta_2 \Delta GPR_{i,t} + \beta_3 Comm_{i,t} \times \Delta GPR_{i,t} + \boldsymbol{\Gamma} Controls_{i,t} + \varepsilon_{i,t}, \quad (1)$$

where $fx_{i,t}$ is the foreign exchange return of commodity currency i at month t, $Comm_{i,t}$ is the commodity index return, and $\Delta GPR_{i,t}$ is the changes in the GPR index.[11] Controls are the MSCI equity market index returns in local currencies, local 3-month interest rate differentials with the 3-month US interest rate and the changes in local OECD consumer confidence indices, and $\varepsilon_{i,t}$ are the error terms.[12] Since some countries exhibit higher average levels of political risk than others (Fig. 1), we include country fixed effects. The fixed effects control for unobserved, time-invariant heterogeneity across countries, such as differences in institutional quality, policy frameworks, and broader structural characteristics. We also include year fixed effects to control for common trends in foreign exchange rates and cluster the standard errors by country and year-month. The main coefficient of interest is β_3, which captures the effect of the changes in geopolitical risk on the relationship between currency and commodity returns. A significant β_3 would suggest that changes in political risk influence the relationship between currency and commodity returns. When the signs of β_1 and β_3 align (diverge), it indicates that the changes in political risk amplify (diminish) the relationship between currency and commodity returns. Table 2 reports the estimation results.

First, we report the estimation results without the interaction term (Model 1). All variables, except ΔGPR, are significant and have expected signs. Consistent with the findings of Cashin et al. (2004, 2005), Chen et al. (2010), Bodart et al. (2012), and Jeanneret and Sokolovski (2023), we document the expected positive and significant relationship at the 1% level between commodity and currency returns. Specifically, one standard deviation increase in the commodity index return (0.73% per month across countries) is associated with a 0.57% per month increase in the foreign exchange return. This figure is economically significant, representing 21% of the exchange rate volatility (2.76% per month across countries).

Furthermore, increases in local equity market returns, larger interest rate differentials, and increases in consumer confidence are associated with a significant appreciation of the commodity currency. The existing empirical evidence partially supports these findings. While the channels involving stock market returns (see Chaban, 2009; Camanho et al., 2022, among others) and interest rate differentials (Akram, 2009; Ready et al., 2017) are well established, the influence of consumer confidence is more indirect and remains comparatively underexplored.

Notably, there is no significant direct relationship between the geopolitical risk index and foreign exchange returns.[13] Political risk can be interpreted as a rare disaster shock, in the context of Farhi and Gabaix (2016), who show that an increase in the probability of a rare disaster is associated with a contemporaneous decrease in the exchange rate. Our estimation results do not support this proposition. We suggest that for commodity currencies, the effect of political risk may be indirect, as it impacts the relationship between the currency returns and commodity prices. In other words, we hypothesise that the contemporaneous negative effect on the currencies of low-resilience countries predicted by Farhi and Gabaix (2016) could be reflected in the diminished sensitivity of the commodity currencies to commodity prices. Before examining this mechanism directly, we first assess how changes in geopolitical risk influence commodity prices. To this end, we estimate panel fixed effects regressions with commodity return as the dependent variable and changes in geopolitical risk as the main explanatory variable. The unreported results indicate that rising political risk is associated with higher commodity index returns.[14] This finding implies that, in the absence of any indirect or offsetting effects of political risk on the commodity–currency relationship, commodity-exporting countries could benefit from the commodity price increases triggered by geopolitical tensions. Building on this result, we proceed to test our main hypothesis and present the estimation results in Models 2 to 4 of Table 2.

Model 2 includes only the commodity return, ΔGPR, and their interaction term without fixed effects, and Model 3 additionally

[11] We estimate a contemporaneous relationship between commodity and foreign exchange returns based on a common assumption that country-specific commodity index values are exogenous (e.g., Gruss and Kebhaj, 2019). Also, Mendoza (1995) and Broda (2004) provide evidence that small open economies are price takers in international markets for standard terms-of-trade measures.

[12] Unreported Pearson correlations between the independent variables in Equation (1) are low, suggesting that there are no multicollinearity issues in our panel regressions.

[13] This finding is consistent with the evidence presented by Bouri et al. (2023) and Sokhanvar and Bouri (2023), both highlighting that the relationship between financial assets, particularly commodities and currencies, is inherently unstable and sensitive to external shocks. While Bouri et al. (2023) document heterogeneous and time-varying co-movements among major commodities during crisis periods, Sokhanvar and Bouri (2023) show that commodity price shocks linked to geopolitical events, such as the Russia–Ukraine war, have asymmetric effects on exchange rates of both commodity-exporting and importing countries.

[14] These results are in line with the literature. For instance, Li et al. (2023) find that GPR positively impacts precious metals and crude oil prices, while Mo et al. (2024) show that GPR positively affects commodity prices during bull markets.

Table 2
Commodity currencies and political risk.

Dep.Var.: FX return	(1)	(2)	(3)	(4)
Commodity_return	0.789***	0.616***	0.528***	0.768***
	(2.830)	(4.356)	(4.374)	(2.979)
ΔGPR	−0.001	−0.003	−0.002	−0.001
	(-0.193)	(-0.761)	(-0.696)	(-0.167)
Commodity_return × ΔGPR		−0.610***	−0.620***	−1.688***
		(-7.790)	(-11.979)	(-8.678)
Equity_return	0.069**			0.070**
	(1.998)			(2.053)
IR_diff	0.001***			0.001***
	(3.711)			(5.379)
ΔCons_confid	0.043*			0.041*
	(1.721)			(1.667)
Constant	−0.004***	−0.000	−0.000	−0.004***
	(-4.367)	(-0.421)	(-0.575)	(-5.155)
Observations	1604	3858	3858	1604
R-squared	0.181	0.030	0.068	0.187
Country FE	Yes	No	Yes	Yes
Year FE	Yes	No	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country and year fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

includes country and year fixed effects. Finally, Model 4 includes the control variables. The commodity index return is positive and significant at the 1% level, consistent with existing evidence (Chen et al., 2010; Bodart et al., 2012; Bodart and Carpantier, 2023), while *ΔGPR* is insignificant in all three models. Notably, the coefficient estimate on the interaction term between the commodity return and *ΔGPR* is negative and significant at the 1% level in all models.

To test the total effect of commodity returns on foreign exchange returns, conditional on changes in political risk, we estimate the marginal effects of a one-unit increase in commodity return on foreign exchange return at different values of the variable ΔGPR in Model 4 of Table 2 and plot the results in Fig. 3. We observe that the relationship between commodity and foreign exchange returns highly depends on the change in geopolitical risk, ΔGPR. When geopolitical risk decreases (i.e., ΔGPR is negative), the marginal effect of commodity returns is positive. This indicates that a decrease in political risk significantly amplifies the expected positive relationship between commodity prices and commodity-exporter currencies, resulting in currency appreciation following positive commodity price shocks. Conversely, when geopolitical risk is increasing (i.e., ΔGPR is positive), the positive impact of commodity returns on foreign exchange returns diminishes rapidly. The marginal effect crosses the zero line at a ΔGPR value of 0.45; however, it becomes statistically insignificant at the 5% level when ΔGPR values are greater than 0.13 (when the 95% confidence lower band crosses the zero line) and turns negative and significant at the 5% level for ΔGPR values above 0.92. Overall, the marginal effect plot in Fig. 3 provides additional support to our hypothesis that changes in political risk have a mediating impact on the relationship between commodity prices and commodity-exporter currencies. We find that the positive commodity-currency relationship holds only when geopolitical risk is stable or decreasing. An increase in country-specific geopolitical risk diminishes or even reverses the positive effect of rising commodity prices on the commodity currency value.

The positive relationship between commodity prices and exchange rates of commodity-exporting countries disappears, as investors are reluctant to hold assets denominated in currencies that could depreciate in the event of a disaster, a behaviour consistent with Farhi and Gabaix's (2016) model. The evidence presented in Table 2 and Fig. 3 suggests that while commodity prices are a key driver of exchange rate movements in commodity-exporting countries, political risk moderates this relationship, reducing the beneficial impact of rising commodity prices on exchange rates. Therefore, an increase in the probability of a rare disaster associated with political risk does not directly impact commodity currencies but has an indirect impact through its relationship with commodity prices. This finding carries significant implications for commodity-exporting economies, indicating that their currencies do not benefit from the commodity price increases during periods of heightened political risk. This uncovered interplay emphasises the importance of stable political environments for commodity-exporting economies.

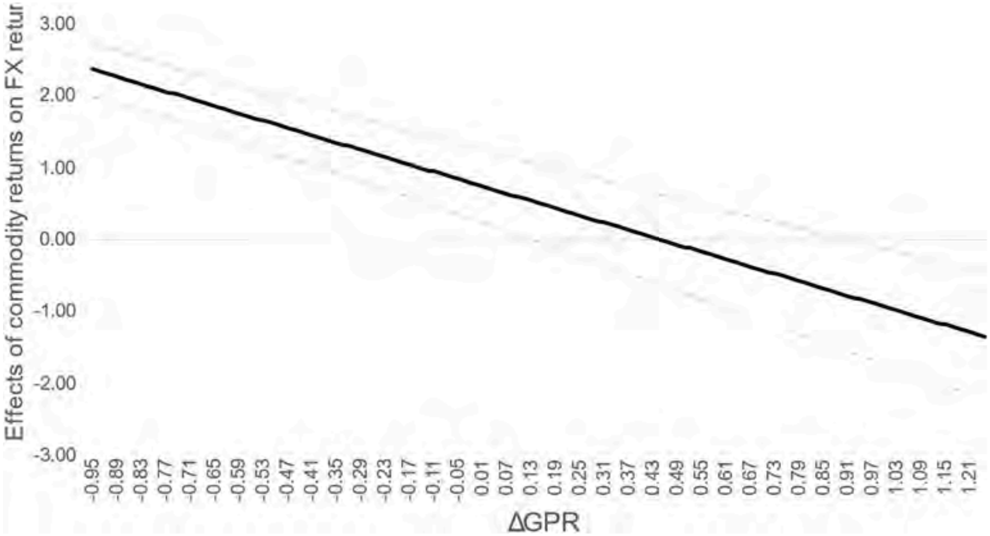

Fig. 3. Marginal effects of commodity returns on foreign exchange returns, conditional on the changes in political risk
The figure plots the marginal effects of a one-unit increase in commodity returns on foreign exchange (FX) returns conditional on ΔGPR (black line), estimated for Model 4 of Table 2. It also plots the 95% confidence bands (dashed grey lines).

We interpret our findings as plausible evidence that rising political risk significantly impacts commodity markets by increasing uncertainty, increasing the probability of supply chain disruptions, and causing demand and supply shocks. Political risk affects investment decisions in commodity markets through the financial channel, which increases financial constraints and risk aversion among investors, and the real channel, which changes trade patterns and disrupts supply chains. At the same time, political risk hinders the increase in the currency value due to the rising risk premium. These combined effects distort or eliminate the typically positive relationship between commodities and commodity currencies.[15],[16]

4.3. Alternative measures of political risk

In this section, we test the sensitivity of our main result to the choice of the political risk measure. In the baseline results, we use the changes in Caldara and Iacoviello's (2022) GPR index, the most widely used measure of political risk in the literature. As a robustness test, we employ several alternative measures of political risk based on the War Risk indices of Manela and Moreira (2017) and Hirshleifer et al. (2025) and sovereign credit default swap (CDS) returns.[17] Manela and Moreira (2017) and Hirshleifer et al. (2025) construct their War Risk indices using text-based analysis that assumes that investors' expectations about future prospects can be shaped by media coverage, which in turn can affect their behaviour and decision-making (Shiller, 2019). The co-movement between the Wall Street Journal's front-page coverage of war-related words and options implied volatility (VIX) is the source of Manela and Moreira's (2017) index, while Hirshleifer et al. 's (2025) index is based on New York Times articles on war-related topics. These series are available from the late 1800s until March 2016 in Manela and Moreira (2017) and October 2019 in Hirshleifer et al. (2025). Both indices are designed to capture war-related risk, with higher values indicating periods of high political uncertainty. Although these two War Risk Indices are positively correlated, the strength of their relationship is modest (exhibiting a Pearson correlation of 0.3633 over their shared sample from July 1889 to March 2016), which suggests that each index captures distinct dimensions of political risk.

We use the global War Risk indices of Manela and Moreira (2017) and Hirshleifer et al. (2025) to estimate country-specific exposure to war risk. Specifically, we run OLS contemporaneous regressions of the local equity market returns as a barometer of a country's economic conditions on the War Risk Index using 5-year rolling windows.[18] The absolute values of the betas of these rolling regressions

[15] The effect of rising political risk may vary during periods of high versus low political risk levels. To test this argument, we create a dummy equal one when the country's GPR in levels is at its highest total sample tercile and zero otherwise, and examine the effect of high-level political risk on the commodity and foreign exchange returns relationship. The unreported results confirm the findings reported in Table 2. That is, the positive and significant relationship between commodity and foreign exchange returns weakens during periods of high political risk. These results are available upon request.

[16] As a robustness test, we include a one-month lagged foreign exchange return as an additional control in Equation (1), given the moderate persistence of foreign exchange returns (see AR(1) in Table 1, Panel A). The main findings remain unchanged with this control variable. These estimation results are available upon request from the authors.

[17] The data source for the War Risk Index of Manela and Moreira (2017) is https://apps.olin.wustl.edu/faculty/manela/data.html. The data source for the War Risk Index of Hirshleifer et al. (2025) is https://www.kuntara.net/working-papers.html.

[18] The results are similar when we use alternatives 3- or 7-year windows.

Table 3
Alternative measures of political risk.

Dep.Var.: FX return	(1)	(2)	(3)	(4)
	War risk index Manela and Moreira (2017)	War risk index Hirshleifer et al. (2025)	Sovereign CDS returns	Implied ΔPR from sovereign CDS returns
Commodity_return	1.043**	0.901**	1.329***	1.601***
	(2.426)	(2.447)	(6.732)	(5.196)
Political risk	0.008	0.003***	−0.055***	−0.165***
	(0.470)	(2.995)	(-3.316)	(-3.229)
Commodity_return × ΔGPR	−3.144***	−0.409*	−1.442	−8.522*
	(-2.398)	(-1.684)	(-0.884)	(-1.672)
Equity_return	0.040	0.047	0.018	0.099**
	(1.378)	(1.377)	(0.454)	(2.253)
IR_diff	−0.000***	0.001**	0.001***	0.001***
	(-2.728)	(2.362)	(5.345)	(4.344)
ΔCons_confid	0.046*	0.048**	1.387***	1.521***
	(1.892)	(1.979)	(3.045)	(2.872)
Constant	−0.001	−0.004***	−0.006***	−0.007***
	(-0.556)	(-3.633)	(-8.492)	(-6.479)
Observations	1051	1367	629	629
R-squared	0.178	0.167	0.316	0.263
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *Political risk* represents the political risk measure used: (1) *War risk* index Manela and Moreira (2017) is the exposure of a country to the War Risk index of Manela and Moreira (2017), with data ending in March 2016; (2) War risk index Hirshleifer et al. (2025) is the exposure of a country to the War Risk index of Hirshleifer et al. (2025), with data ending in October 2019; and (3) *Sovereign CDS returns*; and (4) *Implied ΔPR from sovereign CDS* returns is the implied change in a country's political risk constructed as in Equation (4). *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country and year fixed effects. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

capture the country's exposure to war risk, with higher values indicating a greater exposure of the country to war risk. We use the estimates of country-specific exposure to war risk as a measure of political risk instead of ΔGPR in Equation (1). The estimation results (Models 1 and 2 in Table 3) confirm that our main results hold when we use these alternative measures of political risk.

Next, we use sovereign CDS returns as another proxy for country-specific political risk (e.g., Della Corte et al., 2022). The CDS series are downloaded from Bloomberg. We acknowledge that sovereign CDS returns, in addition to changes in political risk, capture changes in economic uncertainty. Indeed, the estimation results (Model 3 of Table 3) show that, in line with the analysis of the impact of economic uncertainty (in Section 4.4 below), the interaction term of commodity returns and sovereign CDS returns, although negative, is insignificant. This finding complements and reinforces the results of Bouri et al. (2017) and Cheuathonghua et al. (2022), who examine the transmission of commodity market shocks to sovereign credit risk, measured by CDS spreads. They show that commodity price volatility, particularly in the energy and metal markets, induces significant spillovers into sovereign risk. These effects are especially pronounced in countries heavily dependent on commodity exports and that suffer from institutional fragility or heightened political uncertainty. Taken together, the evidence suggests that countries with high political risk and commodity dependence not only face increased exchange rate volatility in response to commodity shocks but also see these shocks reflected in sovereign credit risk indicators.

Lastly, we estimate our fourth alternative measure of political risk, the implied changes in political risk from sovereign CDS returns. First, we decompose sovereign CDS returns into different components, including the political risk component, by estimating the following model:

$$CDS_{i,t} = \beta_0 + \beta_1 Comm_{i,t} + \beta_2 \Delta GPR_{i,t} + \beta_3 Equity_{i,t} + \beta_4 IR\_diff_{i,t} + +\beta_5 \Delta Cons\_confid_{i,t} + \varepsilon_{i,t}. \quad (3)$$

We use the β_2 estimate from Equation (3) to calculate the implied change in political risk as:

$$Implied\Delta PR\_CDS_{i,t} = \widehat{\beta}_2 \Delta GPR_{i,t}. \quad (4)$$

The estimation results with the implied changes in political risk (ΔPR) from sovereign CDS returns as a measure of political risk (Model 4 of Table 3) confirm that the positive relationship between commodity and commodity currency returns disappears when political risk increases. Overall, our main findings hold when we use alternative measures of political risk.

4.4. Political risk versus economic uncertainty

It is well documented that economic uncertainty affects pricing in commodity markets and foreign exchange markets (e.g., Gozgor et al., 2016; Kido, 2016; Bakas and Triantafyllou, 2018). One possibility is that political risk is correlated with economic uncertainty, and we are capturing the effect of economic uncertainty, rather than political risk, on the relationship between commodity and currency returns. To rule this out, we re-estimate Equation (1), additionally controlling for the changes in economic uncertainty. We employ various measures of economic uncertainty, including the US equity market uncertainty index (EMU), the trade policy uncertainty index (TPU), the climate policy uncertainty index (CPU), the global economic policy uncertainty index (in PPP-adjusted GDP) (GEPU), the US monetary policy uncertainty index (US_MPU), and the US VIX index (US_VIX). All series are downloaded from Prof. S.C. Baker's website,[19] except for VIX, which is downloaded from LSEG Datastream.

Table 4 reports the estimation results. The economic uncertainty measures are either insignificant or negative and significant (GEPU and US_MPU) determinants of foreign exchange returns. The interaction terms of commodity returns with the changes in economic uncertainty are insignificant for all measures except for EMU, which is negative and significant at the 10% level. Overall, there is no evidence that the changes in economic uncertainty affect the relationship between commodity and commodity currency returns. More importantly, the interaction term of commodity returns with the changes in political risk remains negative and significant at the 1% level in all models after controlling for the effects of various measures of economic uncertainty. To conclude, the documented effect of political risk on commodity-currency pricing is driven by political risk, not economic uncertainty. This finding is consistent with the results of Kočenda and Bartušek (2025), who point out that geopolitical events were more influential than economic or natural factors in causing significant and long-term disruptions to energy market connections. This reinforces the notion that external shocks, such as geopolitical risk, can disrupt macro-financial linkages and amplify perceived currency risk.

4.5. The US dollar effect

The US dollar (USD) is the most traded currency globally, and commodities are typically priced in USD. The USD has been coined a 'safe-haven' currency that tends to appreciate during political and economic crises as a result of flight-to-safety (Ahmed, 2023). Since the U.S. is typically an important trading partner for commodity-exporting countries, the USD would have a significant weight in the IMF's real effective exchange rates. Therefore, the observed negative relationship between commodity and currency returns during periods of heightened political risk could be due to the effect of political risk on the USD value. To rule out this possibility, we re-estimate our baseline model with the USD return as an additional control variable and report the results in Table 5. We calculate USD return using the USD index downloaded from LSEG Datastream, which measures the value of the USD relative to a basket of currencies; an increase (decrease) in the USD index signals USD appreciation (depreciation). As expected, the coefficient of the USD index is negative and significant. That is, a USD appreciation is associated with a depreciation of commodity currencies. In Model 2 of Table 5, we additionally include an interaction term between USD return and ΔGPR to control for the effect of the changes in the USD value during periods of political risk increases. This interaction term is insignificant. Importantly, the main results are not affected by the inclusion of USD return and the interaction term of USD return with ΔGPR as controls. We conclude that the documented reversal in the commodity-currency return relationship is not driven by the appreciation of USD during periods of heightened political risk.

4.6. The effects of other factors during periods of heightened political risk

We have documented that changes in political risk affect the relationship between commodity and currency returns. However, this effect might also encompass the impact of other factors, such as local equity market returns, interest rate differentials, and consumer confidence changes. To rule out this possibility, we estimate regressions that include interaction terms of these variables with ΔGPR. The interaction terms capture the effects of these other factors when political risk increases. Table 6 reports the estimation results. Interacting these factors with ΔGPR does not impact the main finding of the negative commodity-currency returns relationship in periods of increased political risk. In Model 4 of Table 6, the only significant interaction term is with equity returns, exhibiting the same positive sign as the coefficient on equity return without the interaction. It implies that the positive impact of equity returns on foreign exchange returns is amplified during periods of heightened political risk. Notably, the interaction term of commodity return and ΔGPR remains positive and significant at the 1 % level in all models after controlling for the impact of other factors. This confirms that our results are not influenced by the indirect effects of these other factors when political risk increases.

4.7. Local projections impulse responses analysis

The analysis thus far has focused on contemporaneous effects. While such analysis is suitable for answering our research question, it does not capture long-term dynamics. Since political risk can have persistent effects over time, we extend the analysis to evaluate longer-term dynamics that link political risk to the relationship between commodity prices and commodity-exporter currencies by estimating impulse response functions using the local projections methodology introduced by Jordà (2005). This approach offers an intuitive and flexible framework by estimating separate regressions at each forecast horizon h, and has been widely adopted in recent literature (see, for example, the surveys in Jordà, 2023; Jordà and Taylor, 2025). Specifically, we modify Equation (1) by shifting the dependent variable forward by $h = \{0, 1, 2, \ldots, 24\}$ months,

$$fx_{i,t+h} = \beta_{0,h} + \beta_{1,h}Comm_{i,t} + \beta_{2,h}\Delta GPR_{i,t} + \beta_{3,h}Comm_{i,t} \times \Delta GPR_{i,t} + \boldsymbol{\Gamma_h}Controls_{i,t} + \varepsilon_{i,t+h}. \tag{5}$$

[19] Data source: https://www.policyuncertainty.com/index.html.

Table 4
The impact of political risk versus economic uncertainty.

Dep.Var.: FX return	(1)	(2)	(3)	(4)	(5)	(6)
Commodity_return	0.752***	0.767***	0.768***	0.724***	0.756***	0.765***
	(3.024)	(2.976)	(2.969)	(3.156)	(3.059)	(2.976)
ΔGPR	−0.001	−0.001	−0.001	−0.002	−0.000	−0.001
	(-0.218)	(-0.252)	(-0.156)	(-0.352)	(-0.082)	(-0.311)
Commodity_return × ΔGPR	−1.673***	−1.812***	−1.693***	−1.492***	−1.675***	−1.442***
	(-7.113)	(-9.886)	(-7.938)	(-6.760)	(-8.652)	(-5.786)
ΔEMU	−0.000					
	(-1.127)					
Commodity × ΔEMU	−0.001*					
	(-1.943)					
ΔTPU		0.000				
		(0.799)				
Commodity × ΔTPU		0.006				
		(0.968)				
ΔCPU			−0.000			
			(-0.040)			
Commodity × ΔCPU			−0.000			
			(-0.057)			
ΔGEPU				−0.0001***		
				(-3.107)		
Commodity × ΔGEPU				0.002		
				(1.227)		
ΔUS_MPU					−0.0001*	
					(-1.743)	
Commodity × ΔUS_MPU					0.000	
					(0.052)	
ΔUS_VIX						−0.000
						(-1.217)
Commodity × ΔUS_VIX						0.017
						(1.552)
Observations	1604	1604	1600	1443	1604	1567
R-squared	0.192	0.189	0.187	0.207	0.190	0.193
Controls, country, and year FE	Yes	Yes	Yes	Yes	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. *ΔEMU* is the change in the US equity market uncertainty index. *ΔTPU* is the change in the trade policy index. *ΔCPU* is the change in the climate policy index. *ΔGEPU* is the change in the global economic policy index (in PPP-adjusted GDP). *ΔUS_MPU* is the change in the US monetary policy index. *ΔUS_VIX* is the change in the US VIX index. Controls are the MSCI equity market return in local currency, the 3-month interest rate differential between the local and the US 3-month interest rates, and the changes in the country-specific consumer OECD confidence index. Panel regressions include country and year fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

Once we estimate the OLS regressions for all the horizons, h, we plot the cumulated estimated coefficients, $\{\widehat{\beta}_{1,h}, \widehat{\beta}_{2,h}, \widehat{\beta}_{3,h}, \widehat{\boldsymbol{\Gamma}}_{\boldsymbol{h}}\}$, and their 95% confidence bands. Note that the results for $h = 0$ coincide with those reported in Table 2, Model 4. Fig. 4 plots the impulse response functions derived from the local projections analysis.

The impulse-response results reveal several notable patterns. First, the positive effect of commodity returns on foreign exchange is short-lived, becoming statistically insignificant after one month. This result suggests that commodity price shocks tend to have an immediate but short-lived positive impact on the exchange rate in commodity-exporting economies. This likely occurs because forex investors quickly incorporate changes in global commodity prices into currency valuations. In contrast, geopolitical risk does not exhibit any significant effect at forecast horizon h, consistent with the insignificant contemporaneous relationship reported in Table 2. Interestingly, the interaction term between commodity returns and political risk shows a negative and statistically significant effect for up to two months ahead. This finding suggests that the influence of political risk on the commodity–currency relationship persists slightly longer than the direct effect of commodity returns alone. This may be because forex investors require more time to fully assess the implications of political risk on the commodity–currency dynamic, and only then begin to adjust their currency valuations accordingly.

Regarding the control variables, the interest rate differential has the most persistent impact. Specifically, a positive shock to the interest rate differential increases foreign exchange returns for up to eight months, after which the effect becomes statistically insignificant. This may be explained by the gradual adjustment of interest rates, which consequently leads to slower capital flows across countries (see e.g., Duffie, 2010; Greenwood et al., 2018).

In summary, the results of the local projections impulse-response analysis indicate that the effects of both commodity returns and political risk on currencies are relatively short-lived, dissipating within one or two months.

Table 5
The impact of the US dollar returns.

Dep.Var.: FX return	(1)	(2)
Commodity_return	0.749***	0.748***
	(2.850)	(2.854)
ΔGPR	−0.001	−0.001
	(-0.358)	(-0.346)
Commodity_return x ΔGPR	−1.684***	−1.730***
	(-7.926)	(-7.637)
USD_return	−0.067*	−0.068*
	(-1.659)	(-1.688)
USD_index x ΔGPR		−0.204
		(-0.682)
Equity_return	0.063*	0.063*
	(1.886)	(1.878)
IR_diff	0.001***	0.001***
	(5.376)	(5.123)
ΔCons_confid	0.044*	0.044*
	(1.830)	(1.855)
Constant	−0.004***	−0.004***
	(-5.372)	(-5.195)
Observations	1567	1567
R-squared	0.190	0.190
Country FE	Yes	Yes
Year FE	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. *USD_return* is the return of the USD index. Panel regressions include country and year fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

4.8. Robustness tests

In this section, we test the robustness of our findings by using alternative fixed effects and clusters, alternative exchange rates, and commodity indices.

4.8.1. Alternative fixed effects and clusters

To rule out the possibility that our results may be driven by the choice of fixed effects or clusters, we estimate the baseline model (as in Model 4 of Table 2) with alternative fixed effects and clusters. Table 7 reports the estimation results with the fixed effects and cluster selections specified in the last rows. Although some controls turn insignificant in some models depending on the fixed effect or cluster choices, the effects of the commodity index return and its interaction with *ΔGPR* remain significant in all specifications, consistent with the baseline analysis in Table 2. We can conclude that the choice of fixed effects or clusters does not drive our findings.

4.8.2. Alternative exchange rates and regimes

In this section, we test the sensitivity of our main result to the choice of exchange rates. In the baseline results, we use the real effective exchange rates from the IMF. As a robustness test, we use the nominal exchange rates against the US dollar from LSEG Datastream (USD price of a commodity currency), where an increase (decrease) in the exchange rate represents an appreciation (depreciation) of the commodity currency. Table 8 reports the estimation results. The main result is not affected by the choice of the exchange rates. The positive and significant commodity-currency returns relationship disappears during periods of heightened political risk.

Next, we test the sensitivity of the results to prevailing exchange rate regimes. Our sample spans the period from 1980 to 2021, during which the exchange rate markets underwent significant changes, including shifts from managed to freely floating exchange rate regimes (Ilzetzki et al., 2021). At the beginning of this period, only Brazil had a freely floating exchange rate. Under pegged or managed exchange rate regimes, central banks may have prevented their currencies from responding to fluctuations in commodity prices, thereby weakening the link between exchange rates and commodity prices.

To address this issue, we focus on periods when the exchange rate regimes of our sample currencies were classified as "freely floating" or "freely falling" (Ilzetzki et al., 2021). We re-estimate Equation (1) using this restricted subsample of the IMF's real effective exchange rate indices. These estimation results are not reported for brevity but are available upon request. Although the number of

Table 6
The impact of other factors.

Dep.Var.: FX return	(1)	(2)	(3)	(4)
Commodity_return	0.656***	0.738***	0.674***	0.764***
	(3.091)	(3.721)	(4.557)	(2.979)
ΔGPR	−0.003	0.015	−0.004	0.015
	(-0.933)	(1.608)	(-1.121)	(0.851)
Commodity_return x ΔGPR	−2.027***	−0.727***	−0.531***	−2.232***
	(-7.062)	(-6.735)	(-4.012)	(-8.262)
Equity_return	0.008			0.072**
	(0.580)			(2.105)
Equity_return x ΔGPR	0.251***			0.322***
	(3.808)			(3.775)
IR_diff		0.000		0.001***
		(0.020)		(4.468)
IR_diff x ΔGPR		−0.002**		−0.003
		(-2.239)		(-1.263)
ΔCons_confid			0.082***	0.042*
			(3.332)	(1.758)
ΔCons_confid x ΔGPR			−0.619***	−0.044
			(-4.884)	(-0.128)
Constant	−0.000	−0.001	−0.000	−0.004***
	(-0.817)	(-0.664)	(-0.925)	(-4.911)
Observations	3146	1724	2916	1604
R-squared	0.086	0.141	0.103	0.194
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. Equity_return is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country and year fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

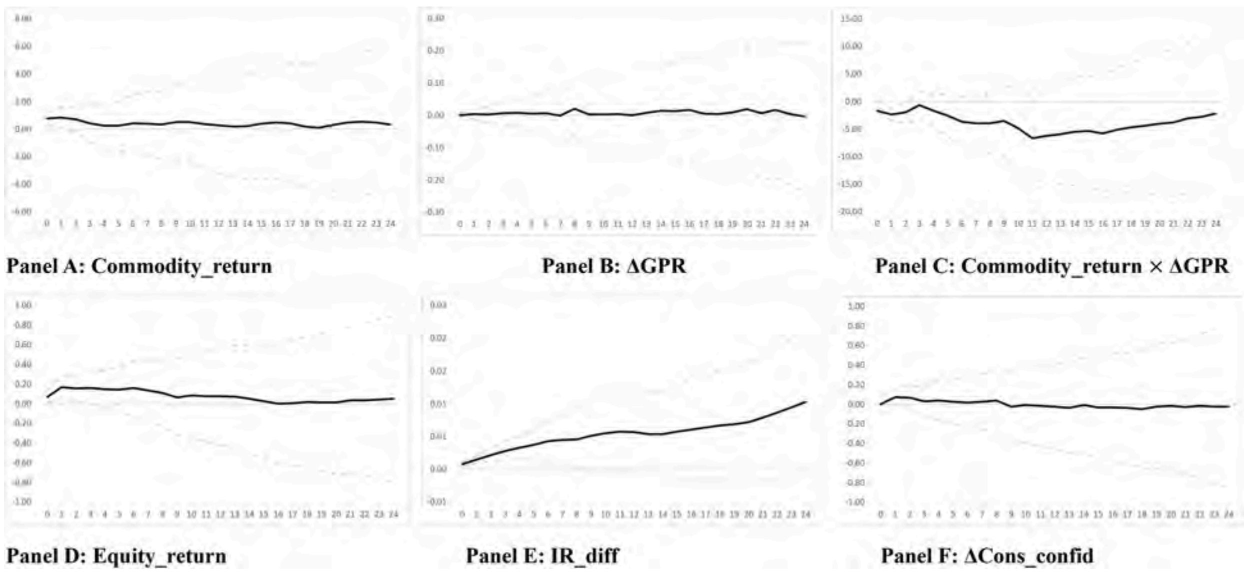

Fig. 4. Local projections impulse-response
This figure plots the local projection estimates for a one-unit shock in the variable, Commodity_return, ΔGPR, Commodity_return × ΔGPR, Equity_return, IR_diff, and ΔCons_confid (black lines) on the foreign exchange rate return from zero to 24 months ahead. It also plots the 95% confidence bands (dashed grey lines). The local projections are based on Equation (5).

observations is considerably reduced (from 1604 to 529), our primary findings remain consistent: the impact of commodity prices on exchange rates continues to be positive and significant, with a coefficient of 1.897 and a t-statistic of 3.69. This effect diminishes in periods of increased political risk, as indicated by an interaction term coefficient of −2.003 with a *t*-statistic of −3.39.

Table 7
Robustness test: Alternative fixed effects and clusters.

Dep.Var.: FX return	(1)	(2)	(3)	(4)	(5)
Commodity_return	0.364*	0.813***	0.761***	0.768***	0.768***
	(1.664)	(3.064)	(3.035)	(3.029)	(9.377)
ΔGPR	−0.006	−0.001	−0.001	−0.001	−0.001
	(-1.214)	(-0.325)	(-0.181)	(-0.435)	(-0.103)
Commodity_return x ΔGPR	−1.314***	−1.720***	−1.622***	−1.688***	−1.688**
	(-3.255)	(-6.145)	(-9.337)	(-8.359)	(-2.407)
Equity_return	−0.006	0.075**	0.069**	0.070**	0.070***
	(-0.162)	(2.137)	(2.056)	(2.251)	(3.811)
IR_diff	0.001**	0.001**	0.000	0.001***	0.001
	(2.201)	(2.426)	(1.125)	(3.279)	(1.441)
ΔCons_confid	0.029	0.050**	0.040*	0.041**	0.041*
	(1.282)	(2.433)	(1.921)	(2.168)	(1.766)
Constant	−0.003***	−0.003***	−0.002***	−0.004***	−0.004**
	(-3.255)	(-3.190)	(-3.434)	(-4.655)	(-2.379)
Observations	1523	1604	1604	1604	1604
R-squared	0.470	0.160	0.183	0.187	0.187
Country FE	Yes	Yes	No	Yes	Yes
Year FE	No	No	Yes	Yes	Yes
Year-Month FE	Yes	No	No	No	No
Cluster	Country-Year-Month	Country-Year-Month	Country-Year-Month	Country	Year-Month

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country, year, or year-month fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and/or month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

Table 8
Robustness test: Alternative exchange rates.

Dep.Var.: FX return (USD/Local currency)	(1)	(2)
Commodity_return	0.954***	0.818***
	(4.805)	(3.523)
ΔGPR	0.002	0.003
	(0.748)	(0.673)
Commodity_return x ΔGPR	−0.873***	−1.308***
	(-7.115)	(-2.825)
Equity_return		0.272***
		(4.589)
IR_diff		0.000
		(0.361)
ΔCons_confid		−0.021
		(-1.012)
Constant	−0.003***	−0.005**
	(-2.781)	(-2.462)
Observations	2655	1517
R-squared	0.109	0.263
Country FE	Yes	Yes
Year FE	Yes	Yes

The dependent variable, FX return, is calculated using nominal foreign exchange rates (USD price of local currency) from LSEG Datastream for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country and year fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

4.8.3. Alternative commodity indices

The IMF provides a set of country-specific commodity price indices that differ in how the commodity weights are calculated (Gruss and Kebhaj, 2019). In the baseline analysis, we use the commodity export price index returns based on individual commodities weighted by the ratio of exports to GDP using rolling weights in real terms. As a robustness test, we employ the other available commodity-specific price indices from the IMF: 1) commodity net export price index, individual commodities weighted by the ratio of net exports to GDP using fixed weights (Net_export_to_GDP_Fixed), 2) commodity net export price index, individual commodities weighted by the ratio of net exports to GDP using rolling weights (Net_export_to_GDP_Rolling), 3) commodity net export price index, individual commodities weighted by the ratio of net exports to total commodity exports using fixed weights (Net_export_to_TotalCom_Fixed), 4) commodity net export price index, individual commodities weighted by the ratio of net exports to total commodity exports using rolling weights (Net_export_to_TotalCom_Rolling), 5) commodity export price index, individual commodities weighted by the ratio of exports to GDP using fixed weights (Export_to_GDP_Fixed), 6) commodity export price index, individual commodities weighted by the ratio of exports to total commodity exports using fixed weights (Export_to_TotalCom_Fixed), and 7) commodity export price index, individual commodities weighted by the ratio of exports to total commodity exports using rolling weights (Export_to_TotalCom_Rolling). Table 9 reports the estimation results. Notably, the commodity return coefficients are smaller when the individual commodities are weighted by the ratio of exports to total commodity exports. Nevertheless, the main finding holds when we use alternative country-specific commodity price indices.

4.9. Cross-sectional heterogeneity in the impact of political risk

The theoretical model of Farhi and Gabaix (2016) offers testable hypotheses on the impact of rare disasters on exchange rates, several of which are relevant to our analysis. First, countries with high rare disaster risk have high interest rates (Hypothesis 1). Second, currencies of countries with high rare disaster risks have high expected currency returns (Hypothesis 2). Third, a contemporaneous negative relationship exists between the rare disaster risk and the exchange rates (Hypothesis 3).

To test these hypotheses in our setting, we divide the sample countries into high and low political risk groups using the cross-sectional median of the full sample averages of GPR (in levels) as the cutoff point. In our sample, the countries with high average political risk are Australia, Canada, Russia, and South Africa, while the countries with low average political risk are Brazil, Chile, Colombia, and Norway. We acknowledge the caveat of this analysis due to the limited number of countries in our sample compared to the sample of Farhi and Gabaix (2016). However, we can still confirm their hypotheses. Specifically, we find that countries with high political risk have higher average interest rate differentials (3.65 in Appendix B) than countries with low political risk (3.51), which confirms Hypothesis 1. Similarly, countries with high political risk have a higher average foreign exchange return (0.0430% in Table 1) than countries with low political risk (−0.0535%), which confirms Hypothesis 2. It shows that countries with high political risk are riskier and, consequently, have higher interest rates and higher foreign exchange returns.

To test Hypothesis 3, the most relevant for our analysis, we estimate the baseline regression (Equation (1)) for two subsamples: countries with high and low political risk. Table 10 reports these results. We find that the documented indirect impact of political risk on exchange rates is present only in countries with high political risk. This finding further validates our argument, rooted in Farhi and Gabaix's (2016) rare disaster model, that for commodity currencies, the impact of political risk on exchange rates manifests indirectly by neutralising the relationship between commodity prices and exchange rates. This indirect effect of political risk on commodity currency exchange rates is consistent with the theoretical mechanisms of the rare disaster model proposed by Farhi and Gabaix (2016), emphasising the role of investor precautionary behaviour in response to low-probability, high-impact events, which affects asset pricing, in this case, the valuation of currencies in commodity-exporting countries.

5. Conclusions

Our study provides insights into the relatively under-explored topic of how political risk influences pricing in the commodity currency markets. Our analysis confirms that political risk significantly influences commodity and commodity-exporter currency markets. We contribute to the literature by analysing the relationship between commodity and currency returns conditional on changes in political risk in major commodity-exporting countries. We document that the typically positive relationship between commodity and currency returns disappears when political risk escalates.

Our findings provide indirect empirical support for the central hypothesis of Farhi and Gabaix (2016) that political risk acts as a rare disaster shock influencing investor behaviour. When political risk increases, investors require higher risk premia to hold the currencies of politically unstable countries, weakening the usual link between commodity prices and exchange rates. This shift reflects a precautionary response consistent with the rare disaster model, as currencies of less resilient countries become less sensitive to commodity price movements, mirroring the contemporaneous depreciation predicted by Farhi and Gabaix (2016) in the face of rising disaster risk.

The empirical evidence presented in this paper has important practical implications for market participants and policymakers. The findings highlight the importance of incorporating political risk in investment decision-making, risk management strategies, and foreign exchange trading strategies in commodity-exporting countries, especially those with high political risk. Also, policymakers in these countries should be aware of the impact of political risk on their economies. Even during periods of high commodity prices, political instability may prevent corresponding gains in currency values, limiting the economic resilience of the commodity-exporting countries. Political stability can be crucial for maintaining stable commodity prices and foreign exchange rates, which, in turn, significantly contribute to macroeconomic and financial stability.

Table 9
Robustness tests: Alternative commodity indices.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep.Var.: FX return	Net_export_to_GDP_ Fixed	Net_export_to_GDP_ Rolling	Net_export_to_TotalCom_ Fixed	Net_export_to_ TotalCom_ Rolling	Export_to_GDP_ Fixed	Export_to_TotalCom_ Fixed	Export_to_TotalCom_ Rolling
Commodity _return	0.738***	0.678***	0.175***	0.157***	0.793***	0.171***	0.158***
	(3.610)	(2.961)	(4.618)	(3.808)	(3.335)	(5.177)	(5.499)
ΔGPR	−0.000	−0.000	−0.000	0.000	−0.000	0.000	0.000
	(-0.084)	(-0.121)	(-0.014)	(0.001)	(-0.098)	(0.035)	(0.036)
Commodity_return x ΔGPR	−1.672***	−1.802***	−0.382***	−0.337***	−1.519***	−0.270***	−0.270***
	(-5.696)	(-7.998)	(-4.907)	(-8.048)	(-7.459)	(-4.713)	(-4.344)
Equity_return	0.078**	0.077**	0.076**	0.075**	0.072**	0.063**	0.062**
	(2.008)	(2.057)	(1.963)	(2.021)	(2.018)	(2.032)	(2.033)
IR_diff	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(5.862)	(5.291)	(5.513)	(5.167)	(6.021)	(5.055)	(4.795)
ΔCons_confid	0.045*	0.045*	0.046**	0.048**	0.043*	0.044*	0.045*
	(1.824)	(1.831)	(1.967)	(1.997)	(1.714)	(1.804)	(1.896)
Constant	−0.004***	−0.004***	−0.004***	−0.004***	−0.004***	−0.004***	−0.004***
	(-5.552)	(-5.248)	(-5.795)	(-5.537)	(-5.466)	(-5.503)	(-5.424)
Observations	1604	1604	1604	1604	1604	1604	1604
R-squared	0.157	0.164	0.168	0.173	0.173	0.209	0.218
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies: AUD, BRL, CAD, CLP, COP, NOK, RUB, and ZAR. *Commodity_return* is calculated using one of the IMF's country-specific commodity export price indices. *ΔGPR* is the change in the country-specific GPR index. *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country and year fixed effects. White's *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

Table 10
The impact of political risk in countries with high versus low political risk.

	(1)	(2)	(3)	(4)
Dep.Var.: FX return	High GPR	Low GPR	High GPR	Low GPR
Commodity_return	0.721***	0.426***	1.294***	0.570***
	(2.869)	(4.104)	(7.416)	(2.889)
ΔGPR	−0.003	0.001	−0.001	−0.006
	(-0.694)	(0.146)	(-0.207)	(-0.414)
Commodity_return x ΔGPR	−0.578***	0.821	−1.336***	0.208
	(-3.845)	(0.848)	(-5.419)	(0.195)
Equity_return			0.050***	0.081
			(4.743)	(1.383)
IR_diff			0.001***	0.001***
			(3.052)	(4.071)
ΔCons_confid			0.060	0.033
			(1.187)	(1.174)
Constant	0.000	−0.001*	−0.004***	−0.004***
	(0.613)	(-1.956)	(-4.148)	(-4.528)
Observations	1846	2012	823	781
R-squared	0.097	0.064	0.233	0.185
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

The dependent variable, FX return, is calculated using the IMF's real effective foreign exchange rates for eight commodity currencies, divided into high political risk (AUD, CAD, RUB, and ZAR) and low political risk (BRL, CLP, COP, and NOK) groups, using the cross-sectional median of the full sample averages of GPR (in levels) as the cutoff point. *Commodity_return* is the country-specific commodity export price index return based on individual commodities weighted by the ratio of exports to GDP using rolling weights. *ΔGPR* is the change in the country-specific GPR index. *Equity_return* is the MSCI equity market return in local currency. *IR_diff* is the 3-month interest rate differential between the local and the US 3-month interest rates. *Cons_confid* is the change in the country-specific OECD consumer confidence index. Panel regressions include country and year fixed effects. White *t*-statistics, calculated with standard errors clustered by country and month-year, are reported in parentheses. The sample is from February 1980 to December 2021; country-specific variations in the sample period are reported in Table 1. ***, **, ** represent significance at 1%, 5%, and 10%, respectively.

Taken together, the findings of this study demonstrate that the typically positive relationship between commodity prices and commodity currency returns is significantly weakened under conditions of heightened political risk. This attenuation cannot be explained by economic uncertainty, flight-to-safety effects, or variations in exchange rate regimes, underscoring the distinct and disruptive role of political instability in conditioning macro-financial transmission channels. While the analysis provides a robust and multifaceted perspective on this interaction, it also opens up several avenues for further research. Future studies could expand the country sample to include additional developing economies, where institutional fragility may amplify vulnerability to political shocks. Additional research might explore the role of fixed exchange rate regimes, high-frequency political risk proxies, or sector-specific commodity categories to assess potential asymmetries in transmission. Moreover, incorporating nonlinear modelling techniques and accounting for climate-related geopolitical factors may yield further insights into the commodity-currency pricing dynamics. Future work could also differentiate between distinct dimensions of geopolitical risk, such as geopolitical acts (GPA) and threats (GPT), to more precisely isolate which type of political instability is most disruptive to the commodity–currency linkage. Addressing these questions would contribute to a more comprehensive understanding of the multifaceted interplay between political risk, commodity market behaviour, and exchange rate responsiveness in an increasingly complex global environment.

CRediT authorship contribution statement

Olga Dodd: Writing – original draft, Formal analysis, Data curation, Conceptualization. **Adrian Fernandez-Perez:** Writing – original draft, Formal analysis, Data curation, Conceptualization. **Simon Sosvilla-Rivero:** Writing – original draft, Visualization, Investigation, Conceptualization.

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Declaration of competing interest

none.

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Appendix A. LSEG Datastream codes

Country	Foreign exchange rates	MSCI Equity indices	3-month interest rates	Consumer confidence index
Australia	AUSTDOI	MSAUSTL	TRAUZ3M	AUMCS002Q
Brazil	BRACRU$	MSBRAZL	TRBR3MT	BROCS005Q
Canada	CNDOLL$	MSCNDAL	TRCN3MT	CNOCS005Q
Chile	CHILPE$	MSCHILL	TRCCZ3M	CLMCS005Q
Colombia	COLUPE$	MSCOLML	COP3MID	CBMCS005Q
Norway	NORKRO$	MSNWAYL	TRNW3MT	NWCNFCONQ
Russian Federation	CISRUB$	MSRU25L	TRRS3MT	RSMCS005Q
South Africa	COMRAN$	MSSARFL	TRSA3MT	SAOCS005Q
USA			TRUS3MT	

Appendix B. Descriptive statistics: Control variables

	Obs.	Mean	STD	Min	Max	Skewness	Kurtosis	AR(1)	ADF p-values	Initial date	Final date
Panel A: MSCI equity returns (%)											
Australia	503	0.6228	4.855	−41.496	15.320	−1.617	14.672	0.016	0.001	1980/02	2021/12
Brazil	408	6.7970	18.103	−44.370	96.679	2.150	9.702	0.350	0.011	1988/01	2021/12
Canada	503	0.5883	4.499	−21.786	15.944	−0.738	6.370	0.064	0.001	1980/02	2021/12
Chile	408	1.0515	5.926	−28.060	21.517	0.162	4.628	0.109	0.001	1988/01	2021/12
Colombia	348	1.2088	7.519	−33.090	34.735	0.131	5.772	0.118	0.001	1993/01	2021/12
Norway	503	0.7238	6.481	−29.848	20.088	−0.682	5.180	0.113	0.001	1980/02	2021/12
Russia	348	0.9209	5.299	−27.631	16.771	−0.469	5.554	−0.049	0.001	1993/01	2021/12
South Africa	125	0.5730	5.193	−14.579	15.238	−0.129	3.593	−0.051	0.001	2011/08	2021/12
Pooled series	3146	1.5856	8.669	−44.370	96.679	3.379	32.380	0.279	0.001	1980/02	2021/12
Panel B: 3M interest rates differentials (%)											
Australia	126	1.2989	1.506	−1.056	4.787	0.326	2.070	0.968	0.001	2011/07	2021/12
Brazil	152	9.1114	3.951	1.869	13.935	−0.565	1.710	0.995	0.573	2009/05	2021/12
Canada	420	0.8451	1.572	−2.379	5.977	1.027	4.075	0.975	0.022	1987/01	2021/12
Chile	127	0.0686	2.150	−3.853	5.951	0.349	2.570	0.929	0.025	2011/06	2021/12
Colombia	163	3.5824	2.495	−8.156	11.098	−0.022	6.320	0.844	0.047	2008/06	2021/12
Norway	339	0.8971	1.793	−2.155	5.900	0.657	3.063	0.975	0.046	1993/10	2021/12
Russia	245	6.5795	4.685	−1.910	27.367	1.133	5.550	0.947	0.132	2001/08	2021/12
South Africa	152	5.5116	1.042	2.782	7.915	−0.271	2.850	0.854	0.207	2009/05	2021/12
Pooled series	1724	3.0453	3.930	−8.156	27.367	1.375	5.667	0.973	0.001	1987/01	2021/12
Panel C: ΔConsumer confidence (%)											
Australia	503	0.0099	5.189	−19.000	15.000	−0.273	3.895	−0.129	0.001	1980/02	2021/12
Brazil	330	0.0018	0.288	−1.453	0.985	−0.524	6.496	0.787	0.001	1994/07	2021/12
Canada	503	0.0001	0.287	−1.734	0.852	−0.697	7.572	0.806	0.001	1980/02	2021/12
Chile	237	0.0033	0.412	−1.170	1.144	−0.106	2.710	0.795	0.001	2002/04	2021/12
Colombia	241	0.0045	0.443	−1.503	1.304	−0.426	3.776	0.716	0.001	2001/12	2021/12
Norway	352	0.0815	4.484	−31.790	22.515	−1.635	21.851	0.000	0.001	1992/09	2021/12
Russia	276	0.0266	0.421	−1.931	0.900	−1.647	8.135	0.891	0.001	1999/01	2021/12
South Africa	474	−0.0025	0.327	−1.180	1.571	0.411	5.733	0.821	0.001	1982/07	2021/12
Pooled series	2916	0.0145	2.673	−31.790	22.515	−1.250	30.193	−0.074	0.001	1980/02	2021/12

The table reports descriptive statistics for the MSCI equity returns, 3-month interest rate differentials (local 3-month interest rate minus the US 3-month interest rate), and changes in the consumer confidence index by country and for the pooled sample (all countries). STD represents the standard deviation. AR(1) represents the first autocorrelation values. The Augmented Dickey-Fuller (ADF) p-values are reported, with the null hypothesis that the series are non-stationary. The initial and final sample dates are reported in the last two columns.

Data availability

Data will be made available on request.

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