Geopolitical Turning Points and Oil Price Responses: An IV-LP Approach

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Abstract. This paper introduces a novel identification strategy of geopolitical turning points, defined as sharp, unanticipated inflection points in bilateral relations. These shocks are measured using the second difference of the Political Relationship Index (Δ^2PRI), an event-based monthly index derived from Chinese sources. Unlike standard geopolitical risk indices, Δ^2PRI isolates events that represent exogenous shifts in diplomatic relationships. Using quantile IV-local projections, the paper studies the causal and asymmetric impact of these shocks on global oil prices. An improvement in US–China relations reduces oil prices by 0.2% in the short run and raises them by 0.3% in the medium run, with effects varying across the oil price distribution. The extension to the Japan–China dyad supports external validity. The Δ^2PRI instrument offers a reusable framework for analyzing bilateral political shocks across various macroeconomic outcomes, making a methodological contribution to the international economics literature.
Keywords: Geopolitical Risk, Oil Prices, Quantile Local Projections, Instrumental Variables.
JEL Codes: C26, C32, F51, Q41.

1. Introduction

Geopolitical relationships between major players have essential consequences for the world economy. Political tension between states can generate uncertainty for firms and households, disrupt trade flows, and influence the expectations of commodity prices. An emerging literature has examined the relations between geopolitical shocks and the dynamics of oil prices. However, the establishing credible causal effects remains a challenge because previous literature relied on the (reasonable) assumption that monthly changes in oil price do not affect the geopolitical relations between major powers.

This research provides empirical evidence on that reasonable assumption using a novel identification strategy that focuses on what can be coined as *geopolitical turning points*, defined as surprise inflection points in bilateral geopolitical relations. Rather than assuming that geopolitical risk is a smooth or a gradually evolving process, we argue that markets respond more sharply to inflection points—sudden accelerations or decelerations in geopolitical relationships that depart from prior trajectories. For example, the relationship between the US and China deteriorated sharply after the US bombed the Chinese embassy in Belgrade in May 1999 during NATO operations. This deterioration was short-lived as the relationship stabilized in June 1999. More generally, these geopolitical turning points can take the form of unexpected escalation (e.g., imposition of sanctions/tariffs, diplomatic breakdowns, or military posturing) or surprise reconciliations (e.g., high-level summit or bilateral treaty announcements). Such turning points are unexpected by the markets.

To capture these dynamics, we introduce a new instrumental variable based on the second difference of the Political Relationship Index (Δ^2PRI). The political relation index (PRI) has been introduced in the literature by a group of political scientists led by Xuetong Yan (Yan, 2010; Yan et al., 2009, 2010). This quantitative measure of China with its major trade partners is based on the measurement of geopolitical events in Chinese sources, like People's Daily and the Chinese Ministry of Foreign Affairs. Each month geopolitical events are classified using a Goldstein scale (Goldstein, 1992) and used to build the PRI. The Δ^2PRI isolates the nonlinear shift in geopolitical relations by filtering out trends and persistent levels. This new instrument is likely to affect oil markets and is unlikely to be affected by concurrent changes in the oil prices or other macroeconomic fundamentals.[1]

[1] As shown by Bondarenko et al. (2024) in the Russian case, the perception of the geopolitical risk matters. The PRI index is built on Chinese sources, ensuring that the relation between China and its partners is accurately measured and, in addition, do not encounter translation problems. The PRI index has been used by Du et al. (2017) to investigate the influence of political shock on trade for China and its main trade partners. Kilian et al. (2025) warn us about the perils of reverse ordering between macroeconomic fluctuations and uncertainty. Using the geopolitical tensions between China and its partners allow to circumvent these dangers.

My findings show that significant improvements in US–China geopolitical relations cause oil prices to fall in the short run by around 0.2% and rise in the medium term by up to 0.3%. These effects are economically meaningful, as the average monthly variation in the real price of oil is approximately 0.2%. Furthermore, these responses are asymmetric: oil prices react more strongly in the short run when they are initially low and more strongly in the medium run when they are initially high. These results may be particularly useful for policymakers about the transmission of geopolitically driven oil price fluctuations. For example, a positive shock occurring when the price of oil is low will have a greater negative impact on the oil price, as it relaxes the precautionary demand for oil in the short run. It will have consequences for both the monetary policy in oil-importing countries and for fiscal policy in oil-exporting countries. Besides, a positive shock occurring when the price of oil is high will have a greater positive impact on the oil price, as it changes the outlook for the oil demand in the medium to long run. Again, it will have fiscal consequences for oil-exporting countries and inflationary consequences that need to be tackled by the monetary policy for oil-importing countries.

This study adds to the field of international economics by revealing one of the main and overlooked, for example by Backus and Crucini (2000) or Makram (2022), transmission channels of geopolitical shocks: the dynamic and asymmetric response of oil prices. As oil is a cornerstone of terms-of-trade shocks, trade balances and fiscal positions in exporting and importing economies, shocks to oil prices are triggered by bilateral geopolitical turning points can reverberate through global macroeconomic circumstances. This work has consequences for the literature on the current account dynamics (Bodenstein et al., 2011; Kilian et al., 2009). This is parallel to the literature on global spillovers of geopolitical uncertainty and commodity-induced instability in real exchange rates (Riera-Crichton and Aizenman, 2008; Golberg and Krogstrup, 2022).

To my best knowledge, this study relies for the first time in the literature on quantile IV-local projections (quantile IV-LP) that allow for dynamic, instrumented causal inference for conditional quantiles together with the use of a novel instrument, the geopolitical turning points. This research opens some perspectives on the asymmetric propagation of external shocks through commodity markets, trade links, and international financial flows under the pressure of geopolitical turbulences.

What are the main channels under investigation in this study? Firstly, it is postulated that exogenous improvements of relations in the short run should be decreasing oil prices due to their decrease in the perception of geopolitical risk and precautionary demand, most particularly at those points when markets are experiencing high levels of uncertainty. Secondly, it is hypothesized that exogenous improvements of relations in the medium run can increase expectations of international economic activity and energy demand with upward pressures on price. Thirdly, these impacts are not expected to be uniformly distributed along the oil price distribution. Short-run responses may be larger for lower quantiles of prices, given higher risk compression sensitivity. Conversely, in the case of declining prices in higher quantiles, medium-run increases may be steeper as expectations respond to further growth in demand. The empirical approach built in this paper—quantile IV-local projections—is specifically designed to identify such distributional heterogeneous causal effects.

The remainder of the paper presents the related literature in Section 2, describes the empirical strategy in Section 3, and provides causal empirical evidence in Section 4 before the conclusion.

2. Related Literature

The literature review will be structured around three dimensions involved in this study. The first dimension will explore the growing body of literature on the impact of geopolitical tensions on the oil markets. The second dimension will recall some aspect related to the measurement of geopolitical tensions. The third dimension will briefly survey recent improvements in the local projection literature.

2.1. Geopolitics and Oil Markets

An increasing number of studies have explored the impact of geopolitical relations on the commodity price fluctuations. Geopolitical tensions are increasingly recognized as a first-order driver of commodity markets, particularly in contexts involving major energy-trading economies. Mignon and Saadaoui (2024) show that geopolitical tensions and political risk indicators have a statistically significant impact on global oil prices using structural vectorial autoregressions (SVAR) and local projections (LP). Their findings highlight how markets respond not only to supply and demand fundamentals but also to political signaling and uncertainty. The medium-run elasticity of oil prices to an improvement of political relations between the US and China is around 0.5%.

Mignon and Saadaoui (2025) explore the asymmetric role of China in global oil markets using quantile regression techniques. They demonstrate the growing influence of China in the oil markets, conditional to the level of oil price and on China's position in the demand structure. In particular, the oil price is related to its long-run political determinants, especially for higher quantiles of the oil price.

Other important work in this field includes Kilian and Vega (2011), who examine how oil prices respond to macroeconomic news, and Aastveit et al. (2015), who distinguish the drivers of oil price fluctuations in emerging and advanced economies.

2.2. Geopolitical Risk Measurement and Geopolitical Turning Points

Our work also aligns with recent research aimed at quantifying geopolitical risk using news-based indices or text-based indices. Caldara and Iacoviello (2022) construct a global geopolitical risk (GPR) index using several Anglo-Saxon newspapers covering international affairs. Their index has been widely adopted to study the effects of geopolitical tensions on financial markets, investment, and global growth. Their index has been extensively used in the literature to estimate the effects of geopolitical tensions on financial markets, investment, and growth.

In contrast to the GPR index, our use of the Political Relationship Index (PRI) focuses on bilateral relationships. This dyadic lens offers more granularity and allows me to examine turning points, since the GPR index is asymmetric as it does not record the influence of good events. At best, the GPR index is equal to zero when we have no record of geopolitical news in the North American press. Cai, Mignon, and Saadaoui (2022) make this point more explicit, showing that not all political shocks have the same economic consequences: the nature, direction, and timing of geopolitical events can produce sharply different oil price responses. Their study uses a structural VAR framework, which, while insightful, is limited by identification assumptions and rigidity in dynamic response functions.

The main contribution to this literature consists in isolating unanticipated changes in bilateral relations using a second-difference transformation of the PRI (Δ^2PRI). This approach filters out persistent trends and isolates inflection points that more closely resemble "news shocks" in the sense of Barsky and Sims (2011) or Ramey (2011).

3. Causal Inference Using Local Projections and Quantile-IV Methods

Local projection (LP) regressions will be used to capture the short- and long-run causal impact of geopolitical shocks. This local projection methodology has been introduced by Jordà (2005). This methodology allows the estimation of impulse response functions in a simpler and possibly in a more robust way than in the VAR-based approaches. However, it is important to note that the LP approach does not solve the identification problem. The requirement to identify an exogenous shock is still an essential part of this methodology. The econometric literature on the LP approach has known several interesting extensions. Among them, we have the Smoothed Local Projections (Barnichon and Brownlees, 2019) that aim at solving the bias-variance trade-off between VAR and LP estimators. Another major development is related to the time-varying instability of the impulse response functions. Usually, researchers relied on sub-samples to capture time-varying effects, but this approach is restrictive and faces sample limitation problems. To overcome these limitations, Inoue et al. (2024) introduced the time-varying parameter local projections (TVP-LP) that rely on a path estimator to estimate time-varying effects without relying on subsamples.

Relying on the Stata package of Ugarte (2025), I combine the local projection with the instrumental variable quantile regression (IVQR) estimators of Chernozhukov and Hansen (2006). The estimator, the inverse quantile regression (IQR), allows the estimation of conditional causal effects in the presence of endogeneity. A recent extension of this estimator, which provides improvements in terms of computational efficiency, can be found in Kaplan and Sun (2017).

Taken altogether, the combination of the LP, IV, and quantile regression approaches allows the estimation of credible short- and long-run conditional causal effects of geopolitical shocks in the bilateral relation between the US and China, without relying on the (reasonable but not yet tested) assumption that the US-China relation changes are exogenous to monthly variation in oil prices. This is a novel contribution to the literature. Finally, these causal empirical results may have important implications for policymakers to understand the asymmetric channels through which geopolitical tensions between China and the US propagate in an era of turbulent geopolitics.

3. Empirical Strategy

3.1 Identification Strategy and Instrument Design

The Political Relationship Index (PRI) captures the evolving intensity of the bilateral political relationship between China and the US. However, shifts in PRI may be partially endogenous to oil price movements, introducing bias due to simultaneity or omitted global shocks. In Figure 1, we can see that the deterioration of the relationship after the US bombing of the Chinese embassy during NATO operations in May 1999 was short-lived. The deterioration of the relationship stopped the month after in June 1999. Moving from a step deterioration to a stable relation may be considered a geopolitical turning point and is susceptible to reassuring the market participants.

To address this concern of partial endogeneity between the monthly changes in PRI and the monthly changes in oil prices, we construct an instrument defined as the second difference of PRI:

$$Z_t = \Delta^2 PRI_t = PRI_t - 2PRI_{t-1} + PRI_{t-2}. \quad (1)$$

This second difference captures the acceleration or deceleration in political change, reflecting turning points such as abrupt diplomatic breakdowns or reconciliations. These are less likely to be anticipated or driven by oil price dynamics and more likely to reflect exogenous political events. This logic parallels the concept of "news shocks" in macroeconomic models.

To assess the face validity of the Δ^2PRI, we match its largest spikes to known geopolitical shocks. For the U.S.–China dyad, these include the 1996 Third Taiwan Strait Crisis, the 1999 Belgrade bombing, and the 2018 trade war onset. For Japan–China, sharp PRI inflections coincide with the 2010 rare-earth export freeze and the 2012 Senkaku nationalization. These alignments support the instrument's plausibility as a measure of unanticipated political turning points.

To increase readability, I can recall how the PRI is computed following the description made by Mignon and Saadaoui (2024). The PRI is an index built by the Institute of International Relations at Tsinghua University to measure the political relationships between China and its major trading partners (see Yan (2010) for a discussion). PRI, ranging between −9 and 9, indicates whether the countries are rivals (between −9 and

−6), in a tense relationship (between −6 and −3), in a bad relationship (between −3 and 0), in a normal relationship (between 0 and 3), in a good relationship (between 3 and 6), or friends (between 6 and 9). PRI fluctuates according to a scale similar to the Goldstein scale (Goldstein, 1992). Each month, bad or good events appearing in *People's Daily* and on the Chinese Ministry of Foreign Affairs website and other sources are included to update the index. Specifically, the formula used to update PRI is given by

$$PRI_t = \frac{\left(\frac{N - PRI_{t-1}}{N} EV^+ + \frac{N + PRI_{t-1}}{N} EV^- \right)}{5} + PRI_{t-1}. \quad (2)$$

with N denotes the half of the range of the PRI index. EV^+ is the level of good events and EV^- is the level of bad events during the current month, respectively. The first term after the equal sign is rounded to the smallest increment 0.1. The division by 5 is a time window of 5 months used to smooth the influence of large events. The formula used to update PRI gives less weight (i) to bad events when the relation deteriorates, and (ii) to good events when the relationship is good.

3.2 Instrumented Local Projections

To estimate the dynamic effects of geopolitical shocks between China and the US on the oil price between January 1990 and March 2022, we implement instrumented local projections (IV-LP) as proposed by Jordà (2005). For each horizon (h), we estimate:

$$WTI_{t+h} = \alpha_h + \beta_h \widehat{PRI}_t + \sum_{j=1}^{2} X'_{t-j}\gamma_h + \sum_{g=1}^{3} \phi_h WTI_{t-g} + \sum_{k=1}^{2} \lambda_h \widehat{PRI}_{t-k} + \varepsilon_{t+h}, \quad (3)$$

$$h = 0, \ldots, 48.$$

In Equation (3), WTI is the real price of crude oil (West Texas Intermediate). $\widehat{PRI}_t$ is the fitted value from the first-stage regressions of PRI on Z_t at each horizon. $\boldsymbol{X}_t$ includes usual controls in the oil price literature (see Kilian, 2009), such as the first difference of the oil production measured in thousands of barrels of oil per day obtained from the US Energy Information Administration's (EIA) Monthly Energy Review and the world industrial production proxied by the industrial production index for OECD countries and six major non-member economies (Brazil, China, India, Indonesia, the Russian Federation, and South Africa); see Baumeister and Hamilton (2019) for more details about these two controls. I use two lags and the log transform for these controls and for the oil price. For the PRI index, which includes 0 in its definition range, I also use two lags and the log-modulus transform as in Mignon and Saadaoui (2025). Finally, we use 48 horizons to investigate the possibility of medium- to long-run effects, as in Mignon and Saadaoui (2024).

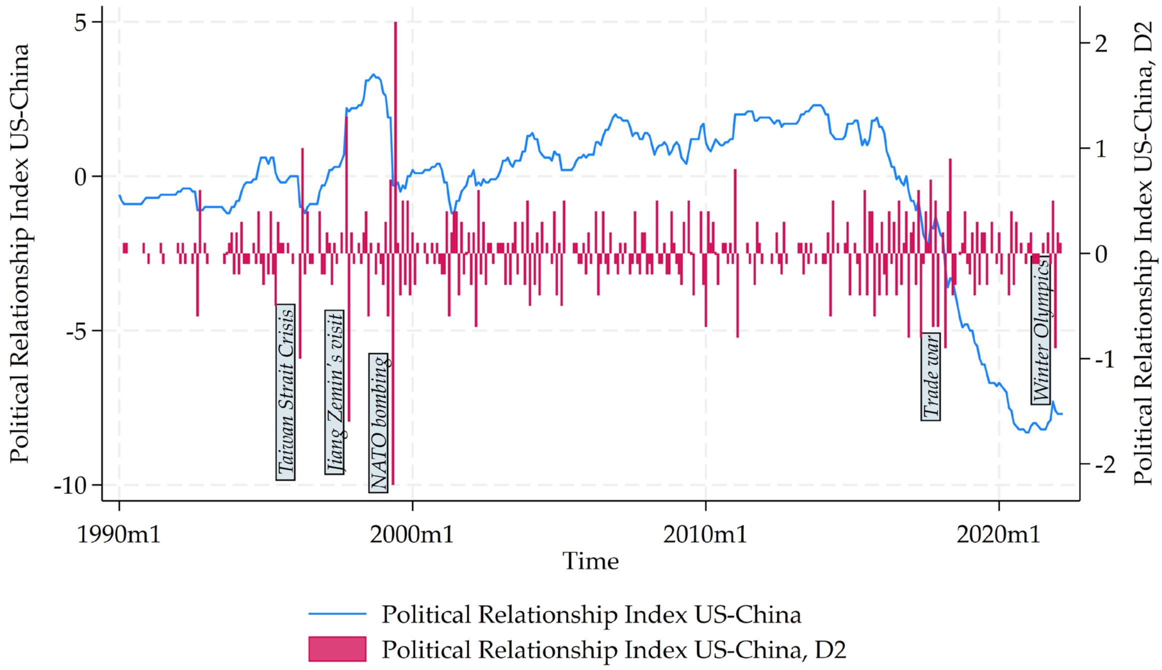

Figure 1. Original PRI and the second difference of PRI (US-China).

Notes: On the left axis, the line is the original PRI. On the right axis, the bars correspond to the instrument, Δ^2PRI. The largest negative second differences of PRI (inferior or equal to 0.9) align with major geopolitical turning points, including the Third Taiwan Strait Crisis, when U.S. aircraft carriers were deployed in response to Chinese missile tests (March 1996, sharp deterioration), Jiang Zemin's state visit to the U.S., initially symbolic but followed by backlash over Taiwan and human rights (November 1997, improvement in October and sharp deterioration November); the NATO bombing of the Chinese embassy in Belgrade, triggering spontaneous mass protests and a temporary freeze in bilateral dialogue (May 1999, very sharp deterioration), the onset of the U.S.-China trade war, marked by the Trump administration's tariff announcements (March 2018, sharp depreciation), Biden administration's announcement of a diplomatic boycott of the 2022 Beijing Winter Olympics, in protest of human rights abuses in Xinjiang, Hong Kong, and over the disappearance of Peng Shuai (December 2021, sharp deterioration). These events demonstrate the instrument's sensitivity to exogenous shocks in geopolitical relations and support its use in identifying causal effects on oil prices.

4. Data and Results

We use a sample of data spanning the period January 1990 to March 2022 (387 monthly observations) to capture the role of political tensions between the US and China on the oil price dynamics. The sample choice is driven by data availability. The number of observations available for the estimation fluctuates from 384 at horizon 0 to 336 at horizon 48. Besides, the influence of China and other emerging markets started to increase significantly in the early days of trade globalization. The Figure 2 shows the results for the IV-LP using our "geopolitical turning point" instrument. The results are in line with Mignon and Saadaoui (2024). Following an improvement in the relations, the oil prices decline (i.e., the elasticity is around -0.2% after 6 months) in the short run and increase in the medium term (i.e., the elasticity is around 0.3% after 32 months).

At all the horizons, first-stage regressions confirm the strength of Z_t, and support its exogeneity. Besides, standard weak instrument tests confirm that results are robust to weak instruments. The correlation Figures A1 and A2 and the complete results in Tables A1 and A2 are given in the Appendix A.

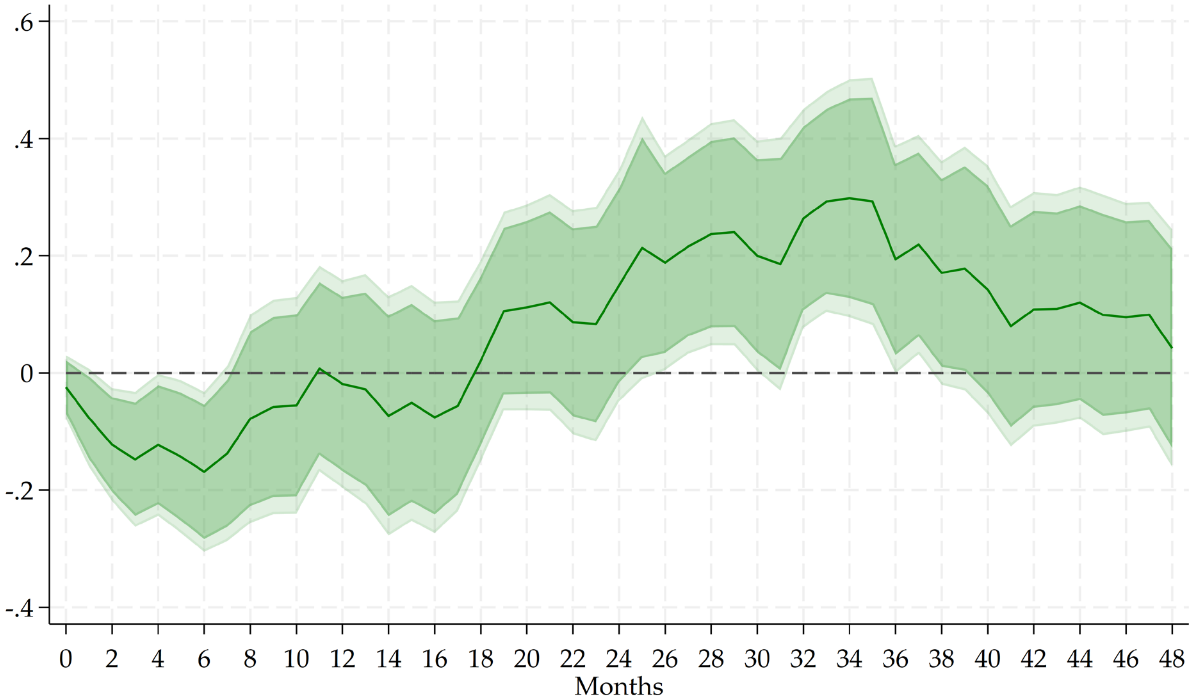

Figure 2. Oil price reaction to an improvement of PRI between the US and China.
Note: IV-LP local projections estimates. The shock is a positive unit shock on the PRI. This positive shock corresponds to an improvement in the relationship between the US and China. 90% and 95% confidence intervals in green and light green, respectively.

Figure 3 confirms and extends the pattern observed in Figure 2. We document for the first time an important asymmetric response of the oil price conditional to its level following exogenous shocks in the political relation between the US and China. Following an improvement in US-China political relations and when the price of oil is low, the short-run reaction is stronger. The elasticity is above -0.2 percent during 9 months after the shock. Besides, when the price of oil is high, the medium-run reaction is stronger. The elasticity is above 0.2 percent 30 months after the shock.

To test the validity of our identification approach and estimation technique, we redo the analysis for Japan–China bilateral relations. The Japan–China bilateral relation, as with the US–China dyad, experiences similar geopolitical differences and widespread energy dependence; hence, it is an appropriate case for comparison.

The geopolitical instrument is highly first-stage relevant for all 48 horizons, with partial R^2 above 0.8 and F-statistics above 100 (see Appendix B). Orthogonality tests also confirm instrument validity.

The IV-local projections (Figure B2) exhibit the same dynamic response pattern as the one in the US–China case: oil prices fall short-term and rise medium-term after a positive geopolitical shock. Of particular note, quantile IV-LP estimates (Figure B3) validate asymmetric effects throughout the whole distribution of oil prices. The short-term response is more pronounced at lower quantiles, whereas the medium-term rise is greater at higher quantiles. While the confidence intervals in the Japan–China case are wider—particularly in the medium run and at the tails—this is consistent with lower geopolitical volatility in that dyad. Nevertheless, the directional patterns of the oil price responses are broadly consistent with those found for US–China. The U.S.–China and Japan–China dyads offer empirically tractable geopolitical archetypes—one in terms of long-term strategic rivalry and high-frequency turns, the other in terms of spasmodic maritime and historical tensions.[2] These results corroborate the general validity of the geopolitical turning point instrument and confirm that commodity price responses to political shocks are quantile-specific.

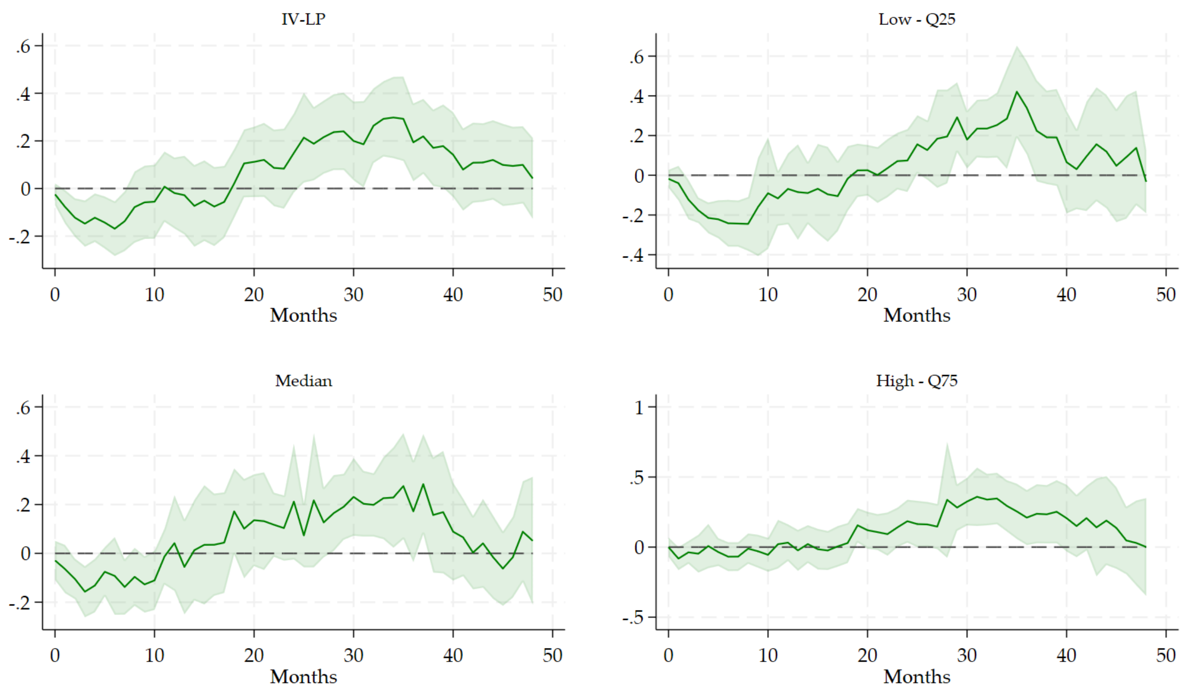

Figure 3. Oil price reaction to an improvement of PRI between the US and China for different quantiles.

Note: IV-LP quantile local projections estimates. The shock is a positive unit shock on the PRI. This positive shock corresponds to an improvement in the relationship between the US and China. 90% confidence intervals.

[2] The US-China relationship is marked by enduring strategic rivalry that periodically reaches critical junctures, whereas the Japan-China relationship is colored by periodic maritime and historical issues. Other dyads, including China–India or China-Germany, may not have adequate temporal variation in monthly PRI to be used in the identification strategy.

6. Conclusion

This study presents empirical evidence for the transmission of geopolitical shocks to oil prices via dynamic and heterogeneous channels. Exploiting a new identification strategy using the second difference of the Political Relationship Index (Δ^2PRI), we form an instrument that identifies geopolitical turning points—surprise inflection points in bilateral political relations. With the use of instrumental variable local projections (IV-LP), we can observe that the improvement in US–China relations reduces oil prices in the short term and increases them in the medium term. These impacts are quantile-dependent: short-run decreases are larger when initial prices are lower, and medium-run increases are larger when initial prices are higher. These results are economically meaningful in magnitude and clarify how geopolitical tensions are transmitted into commodity prices.

Besides the US–China dyad, we conduct the exercise with the Japan–China political relationship to quantify the cross-robustness of the framework. The instrument continues to hold, and quantile IV-LP estimates reveal comparable asymmetric patterns. Although geopolitical events between Japan and China are less frequent and abrupt, the quantile IV-local projections yield similar asymmetric patterns. Wider confidence intervals reflect this lower signal variance, yet the persistence of the effects across quantiles reinforces the robustness of our instrument.

More generally, our evidence is suggestive of the influence of geopolitical shocks as a stand-alone and measurable cause of terms-of-trade changes. By influencing current account trajectories and capital flow patterns, including real exchange rate changes and saving-investment balance adjustment, augment the consequences. Economies with foreign energy dependence or vulnerability to the resulting mineral supply chain can have more volatile strategic imports, amplifying macroeconomic exposure to external shocks. In documenting a strong and asymmetric causal relationship from geopolitical tension to oil prices, I contribute to the transmission of geopolitical risk across global markets and monetary and fiscal policy framework design in a more interdependent and uncertain world.

Aside from the oil price situation, the Δ^2PRI instrument provides a strong and replicable framework for estimating the causal effect of bilateral geopolitical shocks on various global economic variables. It can be employed in future studies to forecast capital flows, exchange rate volatility, sovereign spreads, or trade imbalance—particularly for emerging economies or strategic dyads that have volatile foreign policy. While geopolitical uncertainty continues to influence global macroeconomic trends, the Δ^2PRI offers a methodology for high-frequency, event-based, exogenous shock detection, usable in international economics.

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Appendix A. Supplementary materials.

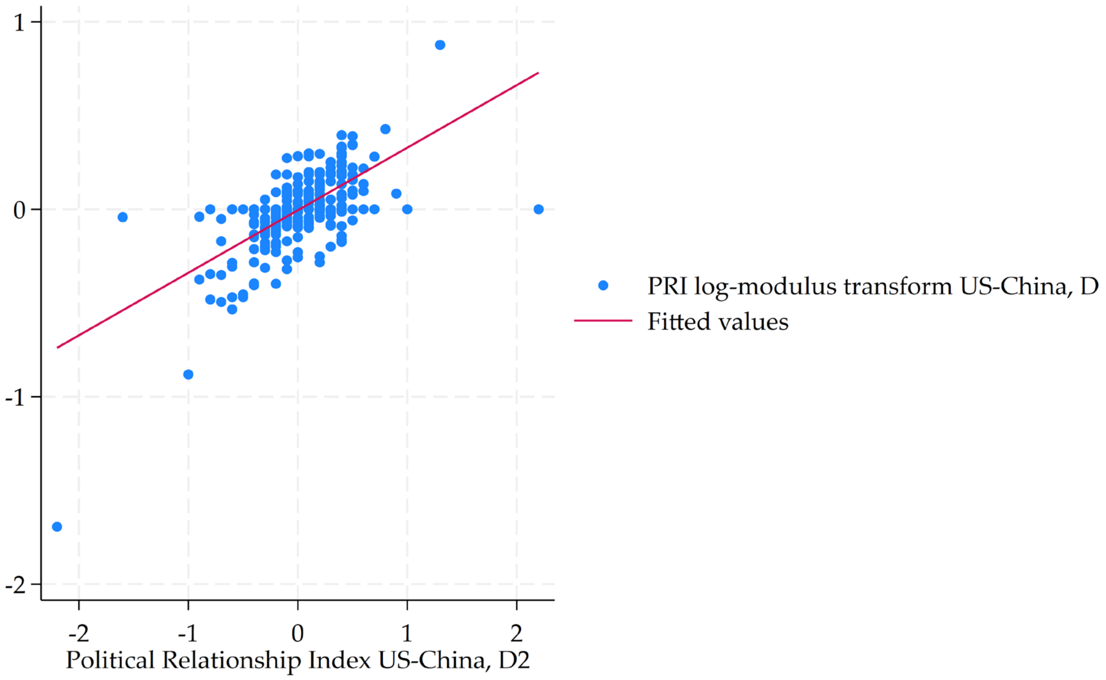

Figure A1. Relevance of the instrument.
Note: contemporaneous correlation between the log-modulus transform of the PRI and the Δ^2PRI. The correlation is positive and significant at the conventional levels.

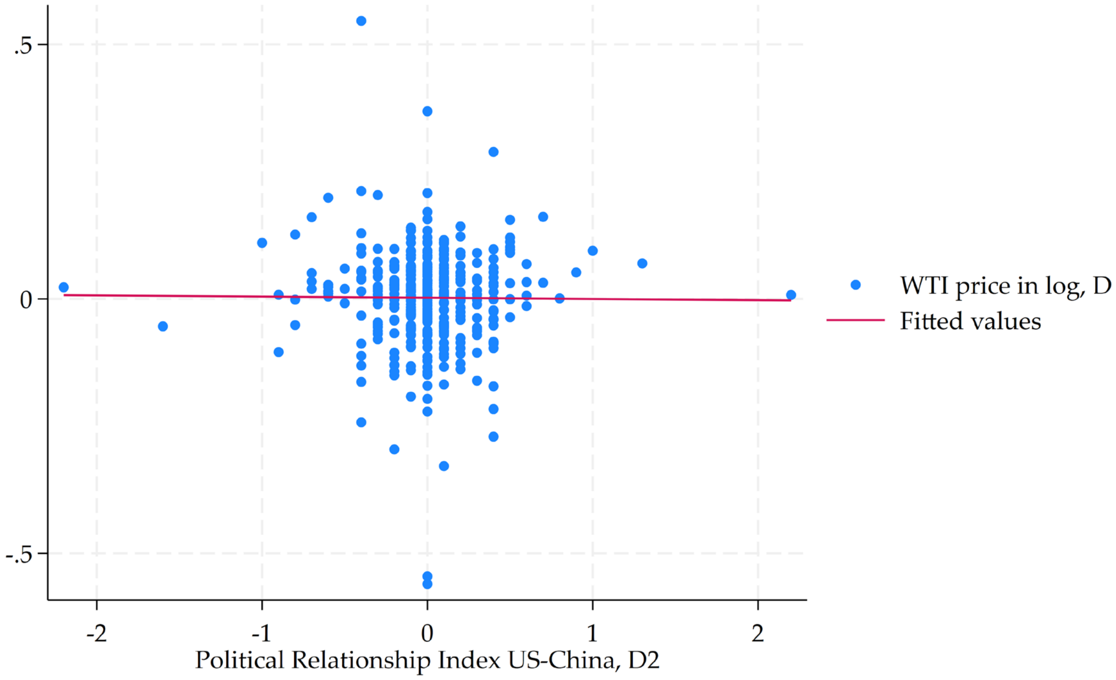

Figure A2. Orthogonality of the instrument.
Note: contemporaneous correlation between the WTI oil price in log and the Δ^2PRI. The correlation is almost zero, and the p-value is very high.

Horizon	Adjusted R^2	Partial R^2	F stat	p-value
0	0.9969	0.8250	236.279	<0.0000
1	0.9969	0.8250	236.185	<0.0000
2	0.9968	0.8250	236.716	<0.0000
3	0.9968	0.8259	239.271	<0.0000
4	0.9971	0.8443	313.417	<0.0000
5	0.9972	0.8494	330.080	<0.0000
6	0.9972	0.8496	329.385	<0.0000
7	0.9971	0.8506	331.764	<0.0000
8	0.9971	0.8506	331.800	<0.0000
9	0.9970	0.8507	332.625	<0.0000
10	0.9970	0.8507	332.464	<0.0000
11	0.9970	0.8510	332.883	<0.0000
12	0.9969	0.8511	332.157	<0.0000
13	0.9969	0.8516	334.186	<0.0000
14	0.9968	0.8523	335.597	<0.0000
15	0.9968	0.8524	335.774	<0.0000
16	0.9967	0.8527	335.348	<0.0000
17	0.9967	0.8527	335.218	<0.0000
18	0.9966	0.8528	335.745	<0.0000
19	0.9966	0.8527	335.613	<0.0000
20	0.9966	0.8551	340.384	<0.0000
21	0.9966	0.8578	349.945	<0.0000
22	0.9965	0.8581	345.593	<0.0000
23	0.9965	0.8595	343.745	<0.0000
24	0.9964	0.8595	344.640	<0.0000
25	0.9964	0.8595	344.687	<0.0000
26	0.9963	0.8600	346.920	<0.0000
27	0.9963	0.8609	348.614	<0.0000
28	0.9962	0.8610	348.235	<0.0000
29	0.9961	0.8610	347.740	<0.0000
30	0.9961	0.8629	350.751	<0.0000
31	0.9960	0.8629	350.888	<0.0000
32	0.9960	0.8651	353.560	<0.0000
33	0.9959	0.8659	356.605	<0.0000
34	0.9959	0.8669	358.329	<0.0000
35	0.9958	0.8689	362.377	<0.0000
36	0.9958	0.8708	366.118	<0.0000
37	0.9958	0.8744	373.712	<0.0000
38	0.9958	0.8750	374.307	<0.0000
39	0.9957	0.8756	373.452	<0.0000
40	0.9956	0.8758	372.638	<0.0000
41	0.9956	0.8791	385.051	<0.0000
42	0.9955	0.8793	386.349	<0.0000
43	0.9954	0.8792	386.748	<0.0000
44	0.9953	0.8790	387.096	<0.0000
45	0.9953	0.8800	386.726	<0.0000
46	0.9953	0.8828	389.163	<0.0000
47	0.9957	0.8944	470.933	<0.0000
48	0.9956	0.8955	476.593	<0.0000

Table A1. First-Stage Regression Diagnostics for IV-LP.

Note: This table reports diagnostic statistics from the first-stage regressions of the IV-local projection framework across forecast horizons $h=0$ to $h=48$. The dependent variable in each regression is the instrumented oil price response at horizon h. The key endogenous regressor—PRI—is instrumented using the Δ^2PRI. Adjusted R^2 reflects overall model fit, while partial R^2 and the corresponding F-statistics assess the relevance of the instrument. P-values refer to the robust F-test for instrument significance. All reported p-values are less than 0.0001, indicating strong instrument relevance across all horizons.

Horizon	GMM C-statistic	p-value
0	0.2955	0.5867
1	1.0426	0.3072
2	1.5282	0.2164
3	2.1502	0.1425
4	0.0963	0.7563
5	0.5251	0.4687
6	1.5646	0.2110
7	0.6228	0.4300
8	0.3567	0.5503
9	0.5267	0.4680
10	0.6101	0.4347
11	0.0008	0.9765
12	0.1073	0.7432
13	0.0326	0.8566
14	0.1391	0.7091
15	0.0207	0.8855
16	0.2438	0.6214
17	0.5736	0.4488
18	0.3428	0.5582
19	0.0873	0.7676
20	0.0036	0.9519
21	0.3697	0.5431
22	0.0149	0.9028
23	0.5401	0.4624
24	0.0001	0.9893
25	0.1897	0.6632
26	0.1063	0.7443
27	0.2310	0.6307
28	0.3904	0.5321
29	0.1947	0.6590
30	0.0229	0.8796
31	0.2276	0.6333
32	0.0029	0.9566
33	0.0315	0.8591
34	0.0597	0.8069
35	0.0733	0.7866
36	0.1128	0.7369
37	0.0426	0.8364
38	0.0261	0.8716
39	0.0319	0.8581
40	0.0123	0.9114
41	0.1244	0.7242
42	0.0646	0.7994
43	0.1487	0.6998
44	0.0150	0.9023
45	0.0264	0.8707
46	0.0977	0.7546
47	0.0001	0.9889
48	0.2488	0.6179

Table A2. GMM Endogeneity Tests across Horizons (0–48).

Note: This table reports the results of Hansen's J-test for overidentifying restrictions (GMM C-statistic) applied to instrumented local projection regressions of oil prices at horizons 0 through 48. The null hypothesis is that the regressors are exogenous. For each horizon *h*, the test statistic follows a chi-squared distribution with 1 degree of freedom. High p-values (above 0.10) indicate failure to reject the null, suggesting that the instrument, Δ^2PRI, is valid and not correlated with the structural error term.

Appendix B. Results for the Japan-China PRI

I apply my identification strategy based on the *geopolitical turning points* instrument to the Japan-China dyad. Like in the case of the US-China dyad, the partial R-square (above 0.8) and the F-stat (above 100) validate the identification strategy at each of the 48 horizons. Besides, the p-values for the exogeneity of the instrument are very high at each of the 48 horizons. The full set of results is available in the replication archive.

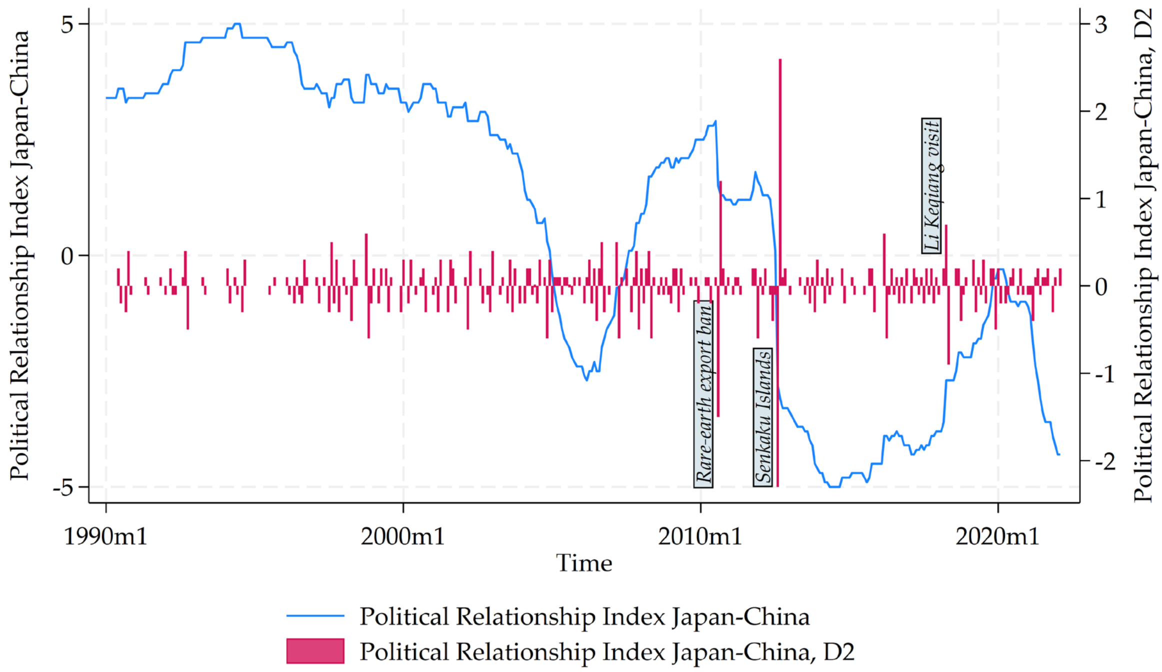

Figure B1. Original PRI and the second difference of PRI (Japan-China).

Notes: On the left axis, the line is the original PRI. On the right axis, the bars correspond to the Δ^2PRI. For the Japan–China dyad, the three largest negative second differences in the PRI (inferior or equal to -0.9) correspond to the Senkaku Islands nationalization (September 2012, sharp deterioration in August), the rare-earth export ban and fishing-boat dispute (September 2010, sharp deterioration in August), and Li Keqiang's visit to Japan (May 2018, improvement then deterioration). These events show the instrument's ability to capture exogenous and politically driven inflection points.

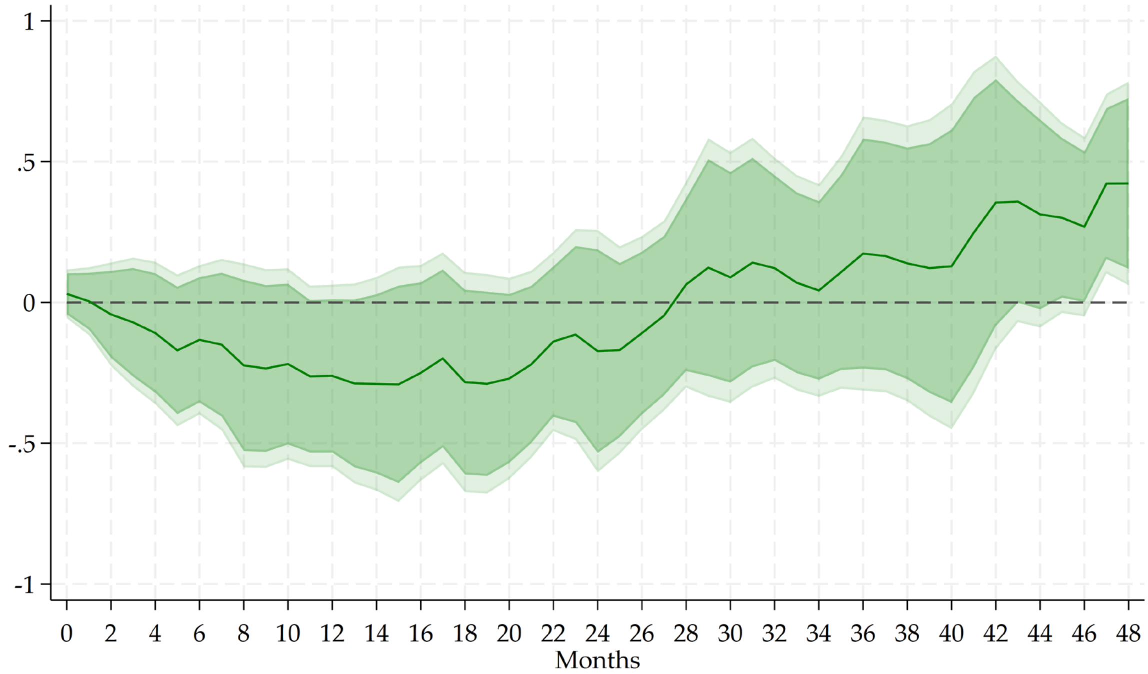

Figure B2. Oil price reaction to an improvement of PRI between Japan and China.

Note: IV-LP local projections estimates. The shock is a positive unit shock on the PRI. This positive shock corresponds to an improvement in the relationship between Japan and China. 90% and 95% confidence intervals in green and light green, respectively.

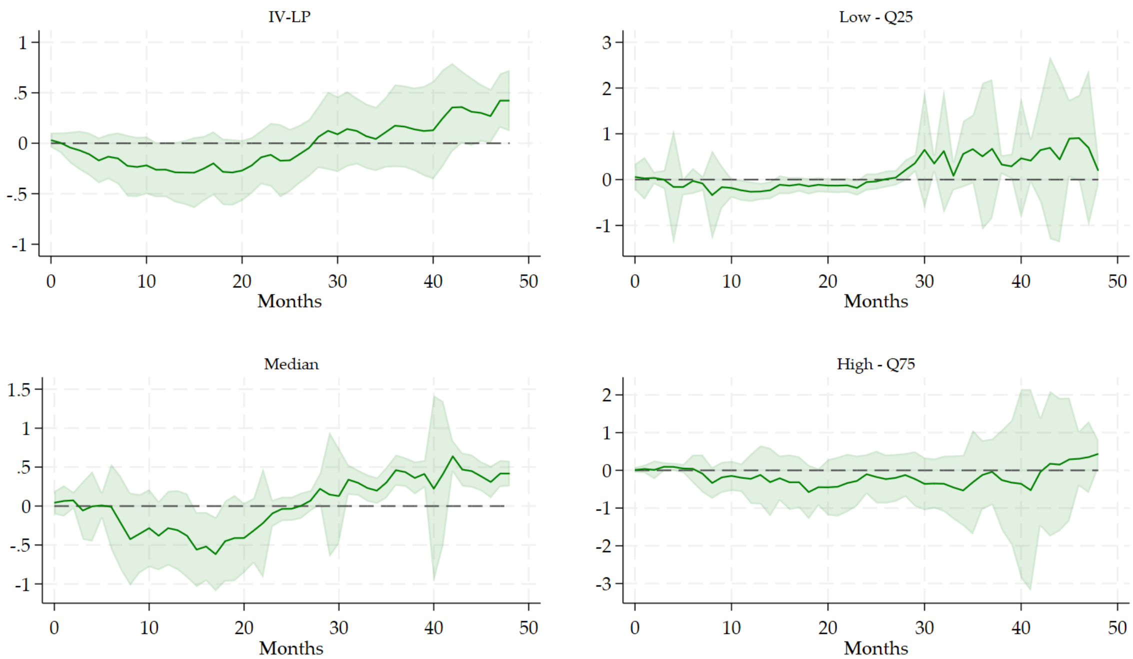

Figure B3. Oil price reaction to an improvement of PRI between Japan and China for different quantiles.

Note: IV-LP quantile local projections estimates. The shock is a positive unit shock on the PRI. This positive shock corresponds to an improvement in the relationship between Japan and China. 90% confidence intervals.