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How Geopolitics Influence Chinese Firms' Exports: Firm-Level Evidence of "Friendtrading" Under Extreme Events

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Keywords

international trade, firms' export, geopolitics, countries alignment

JEL Classification

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Abstract

This paper investigates how geopolitical relationships shape Chinese exports, asking whether exporters systematically favor politically aligned countries — and whether that preference holds during periods of geopolitical turbulence. We leverage a unique high-frequency panel of over 17 million monthly firm-product-destination transactions from Chinese Customs (2000–2006), matched with the Political Relationship Index (PRI) developed by Tsinghua University, which captures monthly bilateral diplomatic relations from a Chinese perspective. Unlike most studies on geopolitics and trade, we move beyond the typical Western-centric lens of geopolitical risk and focus on export-side behavior. Our empirical strategy is robust: it combines rich fixed effects (firm-product, destination, time), sectorial tariff controls, and interactions with indicators of extreme positive and negative diplomatic events. Our results consistently show that stronger political alignment increases Chinese firms' exports in both value and quantity. We also find evidence of non-linearity and asymmetric responses: exporters react more strongly to diplomatic improvements than to deteriorations. Using extreme geopolitical events, we show that positive events amplify the export response to political alignment, while negative events tend to dampen it. The patterns are strongest for foreign-invested firms and for differentiated products, suggesting that geopolitical alignment plays a critical role in global value chain dynamics. These findings contribute to understanding how firms incorporate political signals into trade decisions. In a world of growing political fragmentation, "friendtrading" is not just a policy discourse — it is reflected in the strategic behavior of exporters, even in the absence of formal sanctions.

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1. Introduction

This paper studies the impact of bilateral geopolitical relationships on firms' exports using Chinese data. There is ample evidence that geopolitical tensions raise transaction costs and therefore influence multinational enterprises (MNEs) location choices, firms imports and the structure of global value chains (see, e.g., recent contributions from Aiyar et al. (2024) , Alfaro and Chor (2023), Gopinath et al. (2025), Charpin and Cousineau (2025) or Luo and Tung (2025)). Most papers focused on the interactions between trade and geopolitics according to a double lens: first, on MNEs or firms' imports, and second, with a Western viewpoint on geopolitical tensions. We aim at filling a gap in the literature by focusing on another double lens: firms exports' choices and local viewpoint on bilateral geopolitical relationship (including tensions and improvements).

Understanding how geopolitical relationships shape export flows is important for the following reason. In a geopolitically fragmented world, business companies have to make hard strategic decisions that impact their supply chains and their access to imported components and products. They need to carefully assess the reactions of their foreign suppliers to the current geopolitical turmoil. It may be that foreign suppliers (exporters) do not adjust their behavior when geopolitical tensions emerge. Stable exporters behavior would mitigate the disruptive impact of geopolitical tensions on trade, which would be welcome news for importers. Or exporters may modify their behavior and intensify the difficulties of importers in accessing final and/or intermediate products. The reaction of exporters to geopolitical tensions is not neutral for importers, and not neutral for business. Knowing the direction of exporters' reaction to shifts in uncertainty may thus facilitate firms strategic decisions process.

Whereas the perception on geopolitical relationships may be country specific, the measurement of geopolitical tensions is typically derived from textual analysis of articles in a subset of US and European newspapers (Caldara and Iacoviello (2022)). The measurement of geopolitical tensions may thus be plagued by a Western perception. However, as shown in Bondarenko et al. (2024) the identification of geopolitical risk at the local level (via local newspapers) or at the international level (from the perspective of English-language news sources) gives contrasting effects. As we focus on Chinese firms export decisions, we adopt a Chinese-centric perspective on geopolitical events. We rely on the Political Relationship Index *PRI*, developed by Tsinghua University, to measure monthly bilateral political relations from a Chinese perspective.

Our geopolitical tension dataset includes positive events, which is in sharp contrast to most of the literature using indicators of geopolitical risk concentrating on *rising* geopolitical tensions. We also have information about the intensity of each geopolitical event. This is key to our analysis

as it allows us to identify so-called "extreme events".[1] We make use of these extreme events to investigate potential non-linearities and asymmetries in the effect of geopolitical relationships on firms' exports. First, non-linearity, if it occurs, reflects the bigger effect of extreme events – Do extreme positive or negative events have an accelerating impact on exports? Second, an asymmetry occurs when negative and positive events do not affect exports in the same way. It helps answering the following question: does a deterioration in geopolitical relationships impact more exports than an improvement? If that were the case, maintaining good bilateral relations would be crucial to withstand access to exported products. In other words, these features allow us to test two key hypotheses: whether good and bad events have asymmetric effects on exports, and whether extreme events—positive or negative—generate disproportionate effects. This is a novel approach that has not been yet implemented in the literature.

After controlling for the specific impact of tariffs, we study the monthly impact of bilateral geopolitical relationships on Chinese bilateral trade relying on two main data sources. The first is an exhaustive database of Chinese manufacturing trade at the firm-product level for the 2000-2006 period from the Chinese Customs Trade Statistics (CCTS). The database records, monthly, all firm-level export transactions passing through Chinese customs at the product-level. The database also records the country of destination of exports and contains some firm-specific information. The second data source is the Political Relationship Index (PRI). This is an index built by the Institute of International Relations at Tsinghua University spanning from 1950 to 2022. It measures the bilateral political relationships between China and its 12 major trading partners.[2] Each month, political events appearing in some relevant Chinese newspapers are screened and included to update the index. The monthly aspect of both databases is essential to our analysis, as it allows us to account for specific, short-lasting, political events. Indeed, Du et al. (2017)'s paper shows that using yearly data in order to capture geopolitical impact is flawed.

The 2000-2006 period covered by our study is particularly well suited for our analysis as (i) it corresponds to China accession to the World Trade Organisation (WTO), leading to a surge in exports and a new organisation of China's trade partnerships (i.e., China joined in December 2001 and took a series of important commitments to open and liberalise the economy), and (ii) the period accounts for several events of geopolitical tensions or alignments between countries while not covering major conflicts. Importantly, between 2000 and 2006, China did not experience any trade war. This improves our empirical analysis by mitigating potential endogeneity issues which may occur when changes in political relationships are trade-related. Furthermore, considering a

[1] "Extreme events" are the lower- and upper-end of the distribution of either positive or negative events. We give some examples of "extreme events" in Section 2.1.2.

[2] These 12 countries account for 67% of China total exports in 2000.

period prior to the 2008 financial crisis reduces economic noises and allows capturing exogenous changes in bilateral political relationships more accurately. We thus provide a benchmark for more turbulent periods.

The empirical strategy rests on linear regressions with high-dimensional fixed effects. We regress the firm-product-destination-month-year exports on the PRI, controlling for tariffs. We also separate extreme positive and negative events, and interact them with the PRI. Thus, we highlight the impact of extreme events on exports.

We find a positive, statistically significant and robust impact of the indicator of geopolitical relationships on Chinese firms' exports in value and in quantity. An increase in our bilateral index of geopolitical relationships of one standard deviation raises a firm's export by about 2.8%. This impact is not specific to the type of firm (i.e., state-owned, private or foreign firms) although foreign firms are particularly affected. We perform several robustness tests. We check that the effect is not driven by textile exporters, which account for about 17% of the firms over the period, and consider different specifications (i.e., balanced samples, changing lags for the PRI or changing thresholds for the extreme events). Our results are robust to these alternatives. There is only one exception to the positive impact of the PRI on firms' exports: for homogeneous goods, the point estimates are not statistically significant. We interpret this as evidence of the good fit of our empirical strategy. We expect firms' export behaviour to be more relevant for differentiated goods and much less so for homogeneous goods, which are priced on world markets and subject to greater competition.

We also find non-linearities as extreme events modify the effect of the PRI on firms' exports and an asymmetry between extreme positive and negative events. The occurrence of extreme positive events tends to amplify the impact of the PRI on Chinese firms' exports, whereas the occurrence of extreme negative events tends to damp it. This result is consistent across all alternative specifications and suggests firms' strategic bias toward optimism and continuity: firms may be more inclined to exploit diplomatic openings than to adjust to rising tensions, particularly when such adjustments entail sunk costs, supply chain reconfigurations, or reputational risks. This dynamic could reflect a form of "geopolitical inertia," where trade relationships persist through moderate frictions but accelerate in times of alignment.

The paper is related to two different strands of the literature. First, as a large share of Chinese firms exports corresponds to foreign firms (MNEs) embodied in global value chain activities, we contribute to the international business literature on MNEs. This research has extensively examined the rise of MNEs (e.g., Cantwell et al. (2010) or Meyer et al. (2011)), not only in terms of their localisation and institutional environment, but also as actors embedded in—and shaped by—geopolitical dynamics (Burmester (2021); Boddewyn (2016)). In today's context of increasing

business uncertainty, the literature shows that considering the role of geopolitical tensions in MNEs decisions is essential. For example, Ghauri et al. (2021) highlights the necessity to explore how geopolitical tensions affect MNEs strategy and localisation, as geopolitics challenges have become as central as efficiency and market access concerns. Similarly, Luo and Tung (2025) propose a new framework—the "multi-polar geo-strategy" of MNEs—arguing that firms must adapt to increasing geopolitical risks by pursuing more flexible strategies and Charpin and Cousineau (2025) study how geopolitical tensions influence firms' foreign procurement decisions toward politically aligned countries ("friendly countries").

The trade literature has also extensively examined globalisation by linking, for instance, trade and tariffs (Goldberg and Pavcnik (2016)), trade and trade wars (Fajgelbaum and Khandelwal (2022)) or conflicts and trade (Martin et al. (2012)). Recent work connecting trade and geopolitics has also largely focused on advanced economies, often through imports of intermediate goods in global value chains and the notion of 'friendshoring.' A broad consensus has emerged that imports respond to geopolitical tensions: recent studies (Alfaro and Chor (2023); Benguria et al. (2022); Caldara et al. (2020); Coelli (2025); Freund et al. (2024); Gopinath et al. (2025); Jackson and Shepotylo (2024)) show that such tensions reduce imports, trigger a reallocation of global value chains and modify investment and innovation strategies.

A few recent papers are closer to us: Fuchs and Klann (2013) shows that China reduces its imports from countries hosting the Dalai Lama (i.e., the Dalai Lama visits are used as proxy for increased tensions in bilateral political relations). Du et al. (2017) uses the Chinese political relationship index (PRI) to show that political shocks on trade are short-lived. We complement their work by focusing on firms-product level exports and studying the role of extreme events. Finally, Li et al. (2021) finds that political conflicts significantly reduce Chinese imports using firms-level data similar to ours and yearly Goldstein score of geopolitical relationships.

We contribute to the literature in several ways. First, we rely on a unique measure of geopolitical relationships which (i) considers bilateral political relations (instead of specific political events or country level index of geopolitics (e.g., the Geopolitical Risk (GPR) index developed by Caldara and Iacoviello (2022)), (ii) is constructed locally (i.e, under the same political perceptions as the exporters) and (iii) is updated monthly thereby capturing short-lasting but important geopolitical events. Except for Du et al. (2017), this is a novel approach. Second, we highlight the changing behavior of exporters (here, Chinese firms) to modifications in geopolitical relationships, whereas the literature has been focusing on imports. Finally, we broaden the scope of geopolitical relationships by embedding positive events and shedding light on possible asymmetries and non-linearities in the impact of geopolitical relations. Given today's renewed interest in economic security, our

findings speak directly to current debates on friendshoring, strategic autonomy, and the resilience of global supply chains.

The rest of the paper is organized as follows: Section 2 presents the data and discusses the empirical strategy; Section 3 reports our main results regarding the role of geopolitical relationships on firms exports and the impact of extreme geopolitical events; Section 4 presents several robustness and sensitivity checks. The last Section concludes.

2. Data and empirical strategy

2.1. Data

2.1.1. Chinese Trade Data

Our trade database is a panel of Chinese manufacturing firms for the 2000-2006 period. We rely on transaction data from the Chinese Customs Trade Statistics (CCTS) database which is compiled by the General Administration of Customs of China. This database records, monthly, all firm-level export transactions passing through Chinese customs at the 8-digit Harmonised Commodity Description and Coding System (HS) product-level. Trade data are reported free on board (f.o.b.) in US dollars. The database also records the country of destination of exports and contains firm-specific information such as name, address or custom regimes.[3]

We aggregate product data at the 6-digit HS level and deflate them using 2-digit HS level deflators from Upward et al. (2010). We do these modifications in order to match transaction data with tariff data (one of our main control variables), which are at the HS6 level.[4] Export quantities are reported in various units depending on the nature of the goods. Within HS6 codes, HS8 products may thus be measured in different units (e.g., kilograms or meters). In order to avoid measurement errors, we drop HS8 products that differ in units from the rest of the HS6 category (i.e., less than 0.15% of the observations each year). Finally, as the HS classification changed over time, we convert older classifications (i.e., HS1-1996 and HS2-2002) into HS0-1988/1992 classification using WITS conversion tables.

2.1.2. Chinese Geopolitics Data

The Political Relationship Index (PRI) is an index built by the Institute of International Relations at Tsinghua University to measure the political relationships between China and its 12 major trading

[3]The Chinese transaction data are proprietary. They could be purchased from the General Administration of Customs of China. They have been used in several recent papers (e.g., Manova and Zhang (2012), Bas and Strauss-Kahn (2015)).

[4]The tariff data used in this study are openly available in The World Integrated Trade Solution (WITS) software provided by the World Bank at https://wits.worldbank.org.

partners, namely the US, South Korea, Japan, Vietnam, Russia, Australia, Germany, Indonesia, India, United Kingdom, France, and Pakistan (see Yan and Qi (2009) and Yan et al. (2010)). The 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), and friends (between 6 and 9). The PRI fluctuates according to a scale similar to the Goldstein scale (Goldstein, 1992). Each month, positive or negative events appearing in the Chinese newspaper *Renmin Ribao* (or in english *People's Daily*) and on the Chinese Ministry of Foreign Affairs website are included to update the index. Specifically, the formula used to update PRI is given by:

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

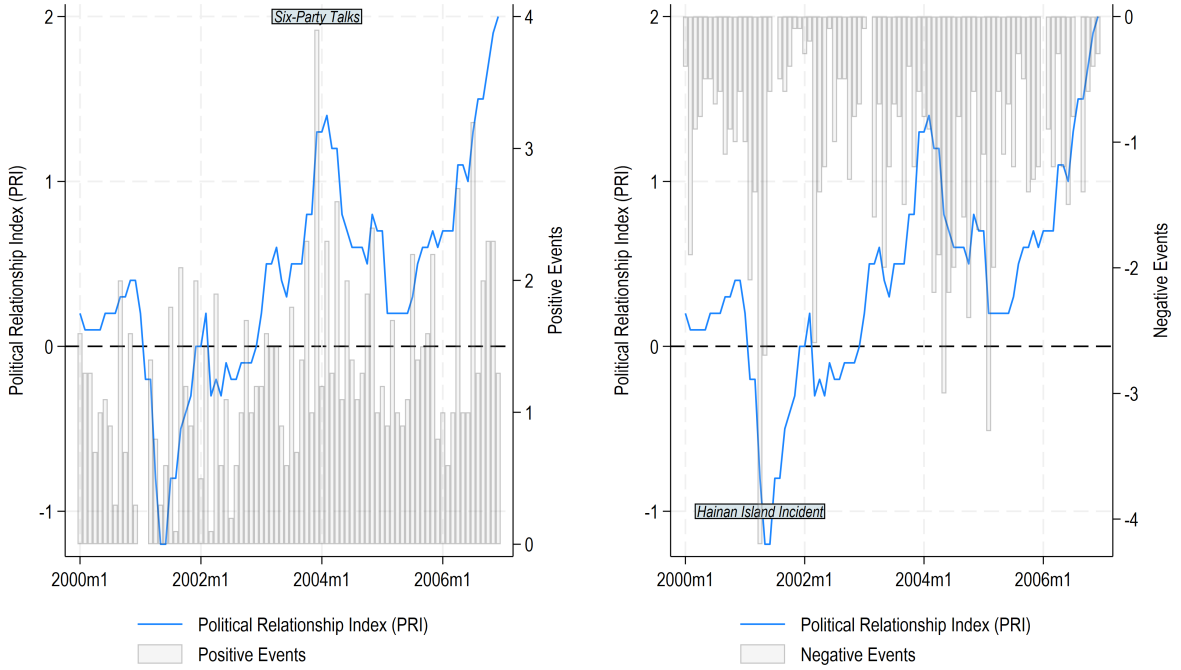
where N denotes half of the range of the PRI index, EV^+ is the level of positive events, and EV^- is the level of negative events during the current month. $(N - PRI_{t-1})$ represents the PRI deviation from the highest level of friendship (i.e., 9) in $t-1$ while $(N + PRI_{t-1})$ represents the deviation from the lowest level (i.e., -9). As shown in the formula, the PRI is updated with less weight (i) to negative events when the relation deteriorates, and (ii) to positive events when the relationship is already good. The first term after the equal sign is rounded to the smallest increment 0.1. For the sake of clarity, we can take an example of a monthly variation of the index for the relation between China and the US. In March 2001, one month before the Hainan Island incident,[5] the China-US index was equal to -0.2. The following month in April, the positive events amount to 0.8 and the negative events amount to -4.2 (Goldstein scale). Thus, the index varies according to the following calculation: the weighted positive events equal to $((9 - (-0.2))/9) \times 0.8 \simeq 0.82$; the weighted negative events equal to $((9 + (-0.2))/9) \times (-4.2) \simeq -4.11$. The sum of weighted events in April 2001 for the US-China relation is equal to $((0.82 + (-4.11))/5 \simeq -0.6$ (rounded to the smallest increment). The division by 5 is used to smooth monthly fluctuations. Finally, as shown in Equation (1), we add the variation of April 2001 to the PRI value of the previous month to obtain the value of the PRI in April 2001, $(-0.6) + (-0.2) = -0.8$.

Figures 1 and 2 describe bilateral PRI and monthly extreme events (distinguishing between positive and negative events) for China-US and China-Japan, respectively. The figures illustrate the relationship between political events and our index of political relationships and makes it possible

[5]This extreme negative event was triggered by the collision of a U.S. Navy intelligence aircraft on patrol with a Chinese interceptor near Hainan Island which resulted in the death of the Chinese pilot. This was the most serious diplomatic crisis between the United States and the People's Republic of China since the end of the Cold War in 1991.

to revisit the geopolitical relations between China and its partners. Refering to Figure 1, the deterioration in the *PRI* at the end of 2000 coincides with the inauguration of George W. Bush as President of the United States and a shift in U.S. strategic discourse that became more favorable toward Taiwan. This period also marks the emergence of a new doctrine in Washington, under which China was no longer considered a commercial partner (as had largely been the case under the Clinton administration) but increasingly as a strategic rival. The deterioration peaks with the Hainan Island incident described above.

Figure 1: US-China PRI movements and events

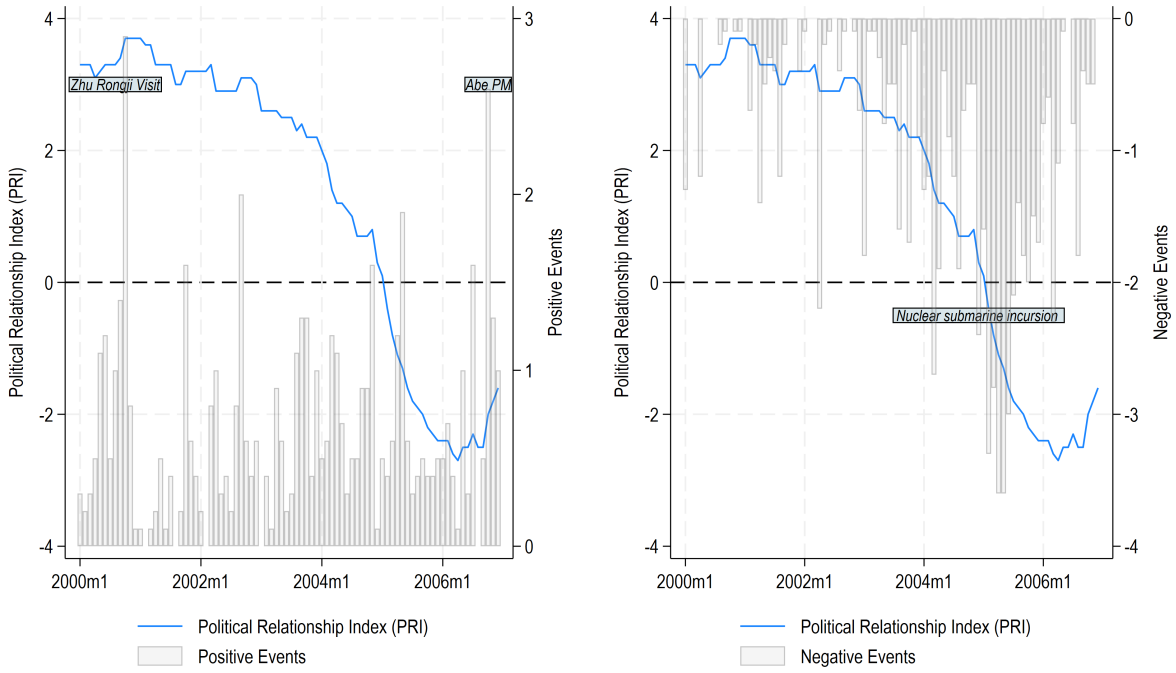


In contrast, the September 11 attacks and China's accession to the World Trade Organization (WTO) in 2001 contributed to an improvement in bilateral relations, culminating in the so-called Six-Party Talks which appears as an extreme positive event in December 2003. During the visit of the Prime Minister of China, Wen Jiabao, to the US, the two sides highlighted China's role in hosting the new Six-Party Talks (i.e., multilateral talks aiming at a peaceful solution to security problems brought by North Korea nuclear weapons program) and commitment to continued coordination on denuclearization.

It is noteworthy that Sino–U.S. relations display numerous instances of simultaneity between positive and negative events. Typically, an improvement (respectively, a deterioration) in the

PRI does not preclude the occurrence of negative (respectively, positive) events. This pattern stands in sharp contrast to the geopolitical relations between China and Japan (see Figures 2), which appear considerably more polarized. By polarization, we mean that, particularly after 2004, negative events are both more concentrated and larger in magnitude, while large positive events are comparatively rare and isolated.

Figure 2: Japan-China PRI movements and events



Indeed, the two most extreme positive events correspond to the official visit of the Chinese Prime Minister to Japan in October 2000—followed by a period of relative stability until 2003—and the official visit of the Japanese Prime Minister to China in October 2006. In the intervening period, positive developments are of a much more limited scale. By contrast, the pronounced deterioration of relations between China and Japan after 2003 is characterized by an accumulation of negative events and the near absence of stabilizing interactions. This phase was shaped by recurrent political frictions, most notably disputes over historical memory and leadership-level symbolism during the premiership of Junichiro Koizumi, which acted as a catalyst for successive negative diplomatic episodes and significantly constrained bilateral engagement.

Our analysis is based on both this bilateral geopolitical relations index and Chinese transaction

level trade data. Our estimated sample is a panel of firms that export HS6-level products to at least one of the 12 trading partners covered by the PRI. The estimated sample is highly representative of the full sample (which includes all Chinese trade partners) in terms of sectoral composition (see Table A.1 in the appendix for descriptive statistics). On average, we have 43,404 firms per month which export up to 667 products (in average 4 products) across 12 destinations. Regarding the main specifications, we work with a panel of 17,470,260 firms-HS6 product-country of destination-month-year observations.

2.2. Empirical strategy

We investigate the impact of bilateral geopolitical relationships on firm exports. More specifically, we analyze whether positive (negative) political events with a trade partner result in increased (decreased) exports to this country. That is: Do you trade more with your friends?

In our baseline estimation, we regress firm-product-destination-month-year export values $Exports_{ikcmt}$ on our index of political relationships, controlling for tariffs. We focus on the following specification:

$$Exports_{ikcmt} = \delta_1 PRI_{c,mt-1} + \delta_2 \tau_{kc,t-1} + \gamma_{ik} + \gamma_m + \gamma_t + \gamma_c + \eta_{ikcmt} \tag{2}$$

where $Exports_{ikcmt}$ is the log of exports value of firm i for product k to country c at time mt, which corresponds to a specific month-year. $PRI_{c,mt-1}$ is the index of political risk lagged one period. $\tau_{ikc,t}$ is the tariff faced by products k exported to country c in year $t-1$. γ_{ik}, γ_m, γ_t and γ_c are firm-product, month, year and destination-country fixed effects and η_{ikcmt} an i.i.d. component. Firm-product fixed effects capture firms specificities at the product level (e.g., size or productivity) and allow a within firm-products analysis of the influence of political relationships on exports. Months and years fixed effect control for seasonality and common time shocks. Country fixed effects capture non time-varying characteristics of China's partners (e.g., distance or contiguity). These fixed effects control for idiosyncratic shocks and mitigate potential concerned about omitted variables bias. We cluster standard errors at the firm-product level.

In order to capture potential nonlinear effects, we introduce two dummy variables called *'Extreme Positive Events'*, EV^{++} and *'Extreme Negative Events'*, EV^{--}. These dummy variables take the value of one during months when extreme events are observed. In order to create these dummies, we use the 25 percent highest values for positive events, EV^{++}, and the 25 percent lowest values for negative events, EV^{--}.[6]

[6]Our findings remain robust to the use of more extreme thresholds (top/bottom 10% events instead of 25%) as shown in Table A.4 in the Appendix

We provide results with one month lag between a change in political relationtionships and in firms' exports levels. It is reasonable to think that firms take decisions on their exports quickly after a change in bilateral political relationships. How much time does it take for these exports decisions to be observed on exports flows is however an empirical matter. Several patterns may emerge: First, firms may more easily cut their exports in situation of bilateral tensions than increase exports in case of improved relationships, as new contracts, increased production and supply chains reconfiguration take time to be implemented. Second exports values may change more rapidly than volumes, as prices are more flexible than quantities. Finally, firms' export responses may vary across sectors and product complexity. We tested other lags and found similar results as the ones presented here. Tables A.2 and A.3 in the appendix provide results with lags 3 and 5 months.

2.3. Discussion on endogeneity

Our causal identification relies on several complementary approaches. First, we believe that the high level of disaggregation of our dependent variable limits potential reverse causality issues. We study exports at the firm-product-country of destination-month-year level (i.e., transaction levels). It seems difficult for an individual firm, aiming at increasing some of its products' exports, to influence national level political relations with trade partners. Besides, in order to mitigate potential lobbying effects of firms on trade policy, we control for the influence of trade-related events in our political relationship index by including sectoral tariffs in the empirical analysis.[7]

Second, we rely on monthly data for firms' exports and bilateral geopolitical relations. At monthly frequency, the occurrence of geopolitical events is less likely to be anticipated by Chinese firms. In particular, it is unlikely that a monthly fluctuation in exports can cause a diplomatic crisis in real time. Moreover, using monthly data mitigates the issue of spurious causality often present in yearly data. Indeed, a contemporaneous correlation between export and political relationships at the yearly level may not exist when considering the monthly timing of events (see Du et al. (2017)).

The use of extreme events also ensure a better identification, as extreme geopolitical events can reasonably be regarded as exogenous shocks: it would be unlikely that such events are engineered by the authorities to stabilize Chinese exports at a monthly frequency. The Hainan Island diplomatic crisis illustrates this point. This exogeneity strengthens the causal interpretation of our results.

In addition to the above steps and in order to confirm that our results are robust to potential remaining endogeneity issues, we run an instrumental variable (IV) estimation with fixed effects as described in Section 4.4. We construct an IV based on sudden geopolitical changes that influence

[7] Alternatively, Du et al. (2017) constructed a trade-filtered *PRI* to remove the influence of trade-related events, using textual analysis based on US press outlets, the non-sectorial dimension of their analysis precluding the use of tariffs.

bilateral geopolitical relationships (i.e., the PRI) but are not expected by firms and governments. Our results are robust to this alternative specification.

3. Results

3.1. Baseline results

Table 1 reports our baseline regression results based on more than 17.5 million observations. Across all specifications, the coefficient on the Political Relationship Index, PRI, is positive, highly significant and robust, rising from 0.142 to 0.160 when interactions are introduced, implying that an increase in PRI (i.e., better political relationships with China) is associated with a substantial increase in export value. Using the estimated coefficient of 0.142 (i.e., not accounting for exteme events), an increase in PRI of one standard deviation from its neutral level (i.e, from 0 to 2.16) raises predicted exports by about 2.8%. The impact of the PRI on exports is not linear.[8] A one standard deviation increase in the index when political relationships are good (say PRI equals to 6) results in an increase of 1.8% of firms' exports. In contrast, a one standard deviation increase in the index when political relationships are bad (say PRI equals to -6) increases exports by 6,3%. Importantly, tariffs have a negative and significant effect on exports (coefficient around –0.09) in all specification, in line with standard trade theory. To conclude, geopolitical relationships affect exports beyond tariffs, as firms prefer to export to countries with whom they are aligned (i.e., higher PRI), while controlling for tariff levels.

Column 2 adds Extreme Positive Events, EV^{++}, and its interaction with *PRI*. The $PRI{*}EV^{++}$ coefficient is positive and significant, indicating that during periods of highly favorable geopolitical events, the positive effect of political alignment on exports is amplified. The net effect of the PRI during months with positive extreme events rises to 0.150, (0.009 + 0.141): Political relations matter more when EV^{++} are observed.[9] Column 3 adds Extreme Negative Events, EV^{--}, and their interaction with *PRI*. The coefficient of $PRI{*}EV^{--}$ is negative and significant, suggesting that during periods of geopolitical crises, the marginal impact of improved political relationships is dampened. The net effect of PRI during months with negative extreme events is equal to 0.114 (i.e, -0.046 + 0.160). During geopolitical crisis, which is what the dummy for extreme

[8] PRI is included in the model in logarithmic form as $\log(PRI{+}10)$ to account for zero and low values. Consequently, the estimated coefficient identifies the elasticity of exports with respect to $(PRI{+}10)$, rather than with respect to the PRI itself. The implied effect of a change in PRI on exports is therefore nonlinear and depends on the initial level of the PRI.

[9] As usual in the binary interaction terms, the value for the coefficient of EV^{++} (or EV^{--}) alone allows for an heterogenous intercept and is not involved in the computation of the marginal effect of geopolitical relations on exports during extreme events.

Table 1: Export in Value

	(1)	(2)	(3)
PRI	0.142***	0.141***	0.160***
	(0.009)	(0.009)	(0.009)
EV^{++}		-0.026**	
		(0.010)	
$PRI{*}EV^{++}$		0.009**	
		(0.004)	
EV^{--}			0.106***
			(0.015)
$PRI{*}EV^{--}$			-0.046***
			(0.007)
Tariff	-0.092**	-0.092**	-0.090**
	(0.040)	(0.040)	(0.040)
Intercept	8.865***	8.870***	8.820***
	(0.022)	(0.022)	(0.024)
R-squared	0.544	0.544	0.544
Observation	17,501,693	17,501,693	17,501,693
F-stat	144.80	78.70	80.17
RMSE	1.444	1.444	1.444

Notes: The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

negative events captures, firms do not modify their exports as much as in the baseline change of political relationships. This suggests that the effect of negative extreme events is cushioned. It reflects a strategic choice by Chinese exporters to prioritize the preservation of market share in foreign markets during diplomatic crises, rather than reacting immediately to short-term political deterioration. A decrease in the PRI (withstanding extreme effects) reflects a more profound and long term deterioration of the relationships as the index smoothens, by construction, the effect of individual crisis.

These findings support our hypothesis of asymmetric effects: extreme positive events reinforce the export-enhancing impact of good political relations, whereas extreme negative events do not reduce firms' export as much as broader deterioration of political relations (i.e, including positive and negative events).

Table 2 reports the results of our main regressions using the quantity of exports as dependent variables. The coefficients on PRI remains positive and significant, albeit smaller. The interaction with EV^{++} is positive but not significant, while the interaction with EV^{--} is negative and robust (–0.020), which confirms a similar asymmetric pattern as the one observed with export values. Unsurprisingly, firms export values react more strongly to changes in political relations than firms

Table 2: Export in Quantity

	(1)	(2)	(3)
PRI	0.075***	0.074***	0.082***
	(0.009)	(0.009)	(0.010)
EV^{++}		-0.018	
		(0.011)	
$PRI*EV^{++}$		0.006	
		(0.004)	
EV^{--}			0.044***
			(0.016)
$PRI*EV^{--}$			-0.020***
			(0.007)
Tariff	0.043	0.042	0.044
	(0.042)	(0.042)	(0.043)
Intercept	7.731***	7.734***	7.714***
	(0.023)	(0.023)	(0.025)
R-squared	0.680	0.680	0.680
Observations	17,470,260	17,470,260	17,470,260
F-stat	35.04	22.24	19.21
RMSE	1.500	1.500	1.500

Notes: The table reports estimates of equation (2). The dependent variable is export quantity of firm i for product k to country c in month c and year t. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

export volumes. This feature is particularly pronounced for extreme positive events which are not significant in this specification, reflecting the time needed to adjust production and export quantities. Tables A.2 and A.3 in the appendix show that with more lags, we recover the amplifying effect of positive events on the link between political alignment and firms export quantities. Interestingly, tariffs are not significant, suggesting that firms respond to variations in tariffs by modifying prices (i.e., their margins) in order to maintain market shares.

3.2. Firms heterogeneity

Table 3 breaks down the results by type of firm ownership: state-owned enterprises (SOEs), private domestic firms, and foreign firms (including those emanating from foreign direct investment and foreign-Chinese joint venture). For foreign firms, the PRI coefficient is the largest (in the range 0.150 to 0.170) and highly significant. The interaction term ($PRI*EV^{++}$) is also positive and significant for foreign firms (+0.023), while $PRI*EV^{--}$ is negative and significant (–0.029). This suggests that foreign firms are more sensitive to changes in the political climate, particularly during extreme events. We could interpret this as evidence that foreign exporters may be more exposed to reputational and regulatory risks in the host country and may adjust more swiftly to

preserve market access and avoid backlash during crises. By contrast, SOEs, and private domestic firms exhibit weaker responsiveness, especially in situations of extreme positive events, consistent with their potentially stronger insulation from international reputational concerns or closer ties to domestic policy priorities.

4. Robustness

This section presents several sensitivity tests. First, we proceed with some robustness tests that distinguish products by their types (homogeneous versus differentiated). Second, we consider the possibility that our results may be driven by the textile/apparel sector, which accounts for about 17% of the total number of Chinese firms (see Table A.1 in the appendix). We then propose alternative specifications by considering balanced samples and performing instrumental variable estimations.

4.1. Product heterogeneity

First, we investigate whether our results depend on the type of product exported. We expect the effect of geopolitical relationships to be stronger for differentiated goods than for homogeneous goods. The rationale for this prediction is that countries alignment is less likely to affect firms exports in homogeneous goods that have world-referenced prices and for which exports are more standardized.

We implement this identification strategy by running our baseline regressions of the impact of PRI on exports on the subsamples of homogeneous and differentiated goods separately (see Table 4). Goods are distinguished according to Rauch (1999) classification of product differentiation.

The effect of the PRI is not statistically significant for homogeneous goods (commodities, raw materials) but it is strong and robust for differentiated goods, with clear asymmetries: while EV^{++} boosts the marginal effect of PRI, EV^{--} significantly reduces it.[10] We interpret this as evidence of the good fit of our empirical strategy. Exporters of differentiated products—often embedded in longer-term relationships or global value chains—are more responsive to shifts in political alignment. Homogeneous goods, being traded on world markets with little product differentiation, are less sensitive to bilateral political signals. This result comes close to Jakubik and Ruta (2023) and Hakobyan et al. (2023) who point out that geopolitical tensions impact more trade in sensitive sectors such as technology, transport equipment or high-value manufacturing.

[10]Note that joint coefficient of the PRI and its interacted variable $PRI{*}EV^{++}$ is not significant for homogeneous products (i.e., Column (2)).

Table 3: Type of Firms

	(1) SOE	(2) SOE	(3) SOE	(4) Private	(5) Private	(6) Private	(7) Foreign	(8) Foreign	(9) Foreign
PRI	0.097***	0.098***	0.109***	0.122***	0.120***	0.150***	0.157***	0.153***	0.170***
	(0.015)	(0.015)	(0.016)	(0.020)	(0.020)	(0.021)	(0.014)	(0.014)	(0.015)
EV^{++}		0.005			-0.019			-0.060***	
		(0.019)			(0.021)			(0.017)	
$PRI{*}EV^{++}$		-0.002			0.005			0.023***	
		(0.007)			(0.008)			(0.007)	
EV^{--}			0.082***			0.142***			0.071***
			(0.028)			(0.034)			(0.024)
$PRI{*}EV^{--}$			-0.039***			-0.061***			-0.029***
			(0.012)			(0.014)			(0.010)
Tariff	0.003	0.003	0.005	0.012	0.012	0.014	-0.299***	-0.299***	-0.297***
	(0.059)	(0.059)	(0.059)	(0.070)	(0.070)	(0.070)	(0.082)	(0.082)	(0.082)
Intercept	8.869***	8.868***	8.841***	8.645***	8.651***	8.574***	9.073***	9.082***	9.039***
	(0.037)	(0.037)	(0.040)	(0.050)	(0.050)	(0.054)	(0.035)	(0.035)	(0.038)
R-squared	0.497	0.497	0.497	0.611	0.611	0.611	0.546	0.546	0.546
Observations	6,196,506	6,196,506	6,196,506	3,556,678	3,556,678	3,556,678	6,516,402	6,516,402	6,516,402
F-stat	22.59	11.30	17.18	19.05	12.96	12.81	73.25	42.70	39.11
RMSE	1.425	1.425	1.425	1.316	1.316	1.316	1.522	1.522	1.522

Notes:The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. Columns (1) to (3) refer to state owned firms while columns (4) to (6) refer to private firms and columns (7) to (9) refer to foreign firma and firms in Joint venture with China. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

Table 4: Type of Products

	(1) Homog.	(2) Homog.	(3) Homog.	(4) Heterog.	(5) Heterog.	(6) Heterog.
PRI	0.022	0.027	0.022	0.161***	0.158***	0.182***
	(0.024)	(0.024)	(0.025)	(0.009)	(0.009)	(0.010)
EV^{++}		0.074***			-0.041***	
		(0.027)			(0.011)	
$PRI*EV^{++}$		-0.030***			0.015***	
		(0.011)			(0.004)	
EV^{--}			-0.003			0.122***
			(0.041)			(0.017)
$PRI*EV^{--}$			0.001			-0.053***
			(0.017)			(0.007)
Tariff	-0.011	-0.011	-0.011	-0.152***	-0.152***	-0.149***
	(0.072)	(0.072)	(0.072)	(0.048)	(0.048)	(0.048)
Intercept	9.391***	9.380***	9.393***	8.783***	8.790***	8.731***
	(0.061)	(0.061)	(0.065)	(0.023)	(0.024)	(0.025)
R-squared	0.621	0.621	0.621	0.528	0.528	0.528
Observations	2,536,699	2,536,699	2,536,699	14,938,192	14,938,192	14,938,192
F-stat	0.47	2.19	0.25	164.93	91.62	91.32
RMSE	1.413	1.413	1.413	1.448	1.448	1.448

Notes:The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. In columns (1) to (3), we only consider homogeneous products while in columns (4) to (6) include only heterogeneous products. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

4.2. Textiles vs. Non-textiles

Table 5 shows that results are not driven by the textile sector, which represented around 17% of the total number of Chinese firms in average over the period. Both textile and non-textile exports respond positively to the PRI. The interaction effects with positive extreme events are stronger in textiles, suggesting that (i) even "low-tech" sectors are not immune to political dynamics — possibly due to regulatory scrutiny or labor rights narratives associated with Chinese textiles in global markets and (ii) textile production may be more flexible in adapting prices and volumes to positive change in bilateral relationships.

Table 5: Textile vs. Non-textile

	(1) Textile	(2) Textile	(3) Textile	(4) Non-Textile	(5) Non-Textile	(6) Non-Textile
PRI	0.073***	0.066***	0.086***	0.072***	0.073***	0.083***
	(0.015)	(0.015)	(0.016)	(0.011)	(0.011)	(0.012)
EV^{++}		-0.128***			0.017	
		(0.021)			(0.012)	
$PRI*EV^{++}$		0.045***			-0.007	
		(0.009)			(0.005)	
EV^{--}			0.067***			0.070***
			(0.026)			(0.019)
$PRI*EV^{--}$			-0.028**			-0.032***
			(0.011)			(0.008)
Tariff	-0.311***	-0.312***	-0.306***	-0.092*	-0.092*	-0.090*
	(0.090)	(0.090)	(0.090)	(0.048)	(0.048)	(0.048)
Intercept	9.237***	9.256***	9.203***	8.989***	8.987***	8.962***
	(0.039)	(0.039)	(0.042)	(0.028)	(0.028)	(0.030)
R-squared	0.438	0.438	0.438	0.566	0.566	0.566
Observations	4,009,136	4,009,136	4,009,136	13,492,557	13,492,557	13,492,557
F -stat	21.84	33.77	12.47	24.80	12.83	17.84
RMSE	1.417	1.417	1.417	1.451	1.451	1.451

Notes:The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. In columns (1) to (3), we only consider products belonging to the textile sector (i.e., section XI which includes textile and apparel) while (4) to (6) include all products except the textile ones. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

4.3. Balanced panel

In this section, we propose two alternative specifications that account for the unbalanced aspect of our baseline panel. As well known in the trade literature since Besedes and Prusa (2006), exports at the firm-product level are unlikely to occur every months. We thus cannot rely on a full balanced sample (i.e., balanced at the firm/hs6/year/month level) and propose the following strategies: First, we run our baseline regression on a balanced sample at the product level. We only consider firms that trade a specific product at least once every year (i.e., balanced at the firm/hs6/year level). Second, we test our results on a balanced sample at the firm level. That is, we select firms that export every month (i.e., balanced at the firm/year/month level)

Results are presented in Table 6. Despite the drastic drops in the number of observations, using a subsample of balanced firms does not qualitatively change our findings. The PRI effect and

the dampening effect of extreme negative events on the PRI-export relationship, in particular, are robust across all specifications.

Table 6: Balanced Samples

	(1) Product	(2) Product	(3) Product	(4) Firm	(5) Firm	(6) Firm
PRI	0.173***	0.170***	0.193***	0.116***	0.116***	0.128***
	(0.017)	(0.017)	(0.018)	(0.019)	(0.019)	(0.020)
EV^{++}		-0.058**			0.002	
		(0.023)			(0.023)	
$PRI*EV^{++}$		0.023**			-0.000	
		(0.009)			(0.009)	
EV^{--}			0.118***			0.077**
			(0.034)			(0.036)
$PRI*EV^{--}$			-0.050***			-0.035**
			(0.014)			(0.015)
Tariff	-0.060	-0.060	-0.057	-0.192*	-0.192*	-0.189*
	(0.100)	(0.100)	(0.100)	(0.098)	(0.098)	(0.098)
Intercept	9.205***	9.213***	9.154***	8.886***	8.886***	8.859***
	(0.044)	(0.044)	(0.047)	(0.048)	(0.048)	(0.052)
R-squared	0.420	0.420	0.420	0.484	0.484	0.484
Observations	3,695,472	3,695,472	3,695,472	3,885,083	3,885,083	3,885,083
F -stat	53.84	29.29	28.90	23.02	11.55	13.27
RMSE	1.542	1.542	1.542	1.527	1.527	1.527

Notes:The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. In columns (1) to (3), we consider a balanced sample at the firm/hs6/year level while (4) to (6) a balanced sample at the firm/year/month level. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

4.4. Instrumental variable estimation

Finally, in order to account for any remaining potential endogeneity issues, we use an instrumental variable regression approach based on the use of *Sudden Geopolitical Changes* – unanticipated acceleration, decelerations or inflection-points in bilateral relations – as introduced in Saadaoui (2025). By using the second difference of the bilateral relation index with China (i.e., the change in the change of the PRI), we can detect these sudden geopolitical changes, which are unexpected by firms and governments.

Sudden geopolitical change is a valid candidate for an instrument as it is orthogonal to firms' exports and significantly correlated with the PRI. In order to verify this, we residualize exports, PRI, and sudden geopolitical changes by regressing each of them on our set of baseline controls and fixed effects and analyse their correlations. The correlation between residualized exports and residualized sudden geopolitical changes is equal to 0 with a p-value of 1 (see Figure 4.4 in

the appendix). This absence of correlation provides support for the notion that, after accounting for the fixed-effects and baseline controls, sudden geopolitical changes are not systematically correlated with the remaining variation in exports. The correlation between residualized PRI and residualized sudden geopolitical changes is negative with a p-value of 0. Consistent with this, Table A.6 in the Appendix reports the first-stage regression using sudden geopolitical change as IV. The results confirm that our instrumental variable is highly relevant, which is also corroborated by a Kleibergen–Paap rk Wald F-statistic equal to 5879.6 as shown in Table A.6 in the Appendix.

We also conduct lead falsification tests, using sudden geopolitical changes in $t + 2$ instead of PRI in the baseline regression, to test whether sudden geopolitical changes could be anticipated.[11] The p-value for sudden geopolitical changes in $t + 2$ is equal to 0.935. This non-significativity confirms that our instrument is exogenous, relevant, and non-anticipated.

The 2SLS regression results are shown in Table A.6 in the Appendix. These results are consistent with our previous findings. The positive effect of geopolitical relationships (PRI) on exports is precisely identified with an elasticity of 1.016. The coefficient is stronger than in the baseline regression reflecting the stronger reaction of exporters during episodes of sudden changes in bilateral geopolitical relations.[12]

5. Conclusion

Our empirical analysis provides robust evidence that geopolitical alignment significantly influences Chinese exporters' decisions, with three main insights emerging from the data.

First, diplomacy matters. Stronger bilateral political alignment is consistently associated with higher Chinese firms' exports, even after controlling for tariffs, product characteristics, and high-dimensional fixed effects. This confirms that political factors can shape international trade at the firm level, beyond the traditional determinants of costs, comparative advantage, or market access.

Second, the export response is nonlinear. Our results show that extreme geopolitical events significantly alter exports' patterns. Exporters amplify their trade responses in reaction to highly positive episodes and dampen it during periods of crisis. These effects are particularly salient among foreign-invested firms and exporters of differentiated goods, whose activities are more exposed to political signals, reputational sensitivities, and contractual relationships.

Third, the effect of political alignment is asymmetric. Exporters react more strongly to improvements in political relations than to their deterioration. This asymmetry may reflect a strategic

[11] A 2-step lead is natural because the second difference in PRI involves 2 lags.

[12] The IV captures heterogeneous effects and local identification: 2SLS leverages only the component of PRI shifted by sudden geopolitical changes and identifies a local causal effect that naturally differ from the one found in OLS.

bias toward optimism and continuity: positive diplomatic developments offer a clearer green light to expand, while negative signals and rising tensions are absorbed more cautiously — especially when adaptation involves sunk costs, contractual frictions, reputational risks, or supply-chain reconfigurations. This suggests the existence of a form of "geopolitical inertia" in trade where exports accelerate in times of alignment and resist in times of political tensions.

Together, these findings deepen our understanding of how geopolitical dynamics shape firms' exports in an increasingly fragmented global economy. They suggest that "friendtrading" is not only a post-pandemic policy doctrine, it was already an observable pattern of firms' behavior during the early stages of China's trade liberalization. Trade reallocation by firms is not just reactive to sanctions or tariffs, but also proactive and shaped by perceived diplomatic signals. In a fragmented global order, exporters behave not only as rational optimizers of cost and demand but also as strategic observers of international politics.

From a policy perspective, this emphasizes the economic value of diplomatic predictability, for both firms and governments. Countries seeking to attract or retain key Chinese exports may benefit from maintaining stable and constructive political relations, not only for high-tech sectors but also for more traditional industries embedded in global value chains. For firms, the results highlight the need to integrate geopolitical assessments into export strategies, particularly in volatile regions or sensitive product lines.

Finally, this also invites further reflection on the role of geopolitics in economic resilience. In a world of rising uncertainty, the dual logic between diplomacy and trade will only grow in importance. Understanding the political foundations of trade — a frontier this paper seeks to chart — will be critical for navigating the next phase of globalization.

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Appendix A. Supplementary Materials

Table A.1: Estimated sample descriptive evidence (average over the period 2000–2006)

	Number of firms (shares)		Exports (shares)	
Industry	Full sample	Estimated sample	Full sample	Estimated sample
Live animals and animal products	0.4%	0.5%	0.4%	0.5%
Vegetable products	1.1%	1.3%	0.4%	0.4%
Food products and beverages	2.6%	2.5%	1.8%	2.0%
Mineral products	0.3%	0.2%	1.2%	1.3%
Chemicals	7.8%	6.7%	4.8%	4.9%
Rubber and plastic products	7.5%	8.1%	3.6%	3.8%
Leather products	3.7%	4.3%	2.6%	3.2%
Wood and products of wood	3.2%	3.3%	0.8%	1.0%
Paper and paper products	4.2%	4.2%	0.7%	0.7%
Textiles	6.2%	5.0%	2.7%	1.6%
Apparel	10.7%	11.2%	12.0%	13.1%
Footwear	5.2%	4.8%	3.3%	3.8%
Glass. ceramic and stone products	5.8%	5.7%	2.2%	2.1%
Pearls. stones and precious metals	1.0%	0.9%	0.4%	0.2%
Iron and steel products	4.3%	4.6%	3.4%	3.8%
Other metals	9.2%	8.6%	6.2%	6.2%
Machinery and equipment (including data processing)	5.8%	6.1%	18.3%	17.3%
Radio. television and other electrical machinery	5.5%	5.7%	20.1%	18.2%
Vehicles and other transport equipment	2.1%	2.1%	3.7%	3.3%
Medical, precision and optical instruments	3.9%	3.5%	3.3%	2.8%
Furniture and toys	9.0%	10.1%	7.9%	9.6%
Other sectors	0.5%	0.5%	0.0%	0.0%
Total	100%	100%	100%	100%

Notes: Authors' calculations. The table reports mean values over 2000–2006. By sector, the number of exporting firms is computed on a yearly basis (i.e., firms exporting at least once during the year), which may differ from the number of firms exporting each month and then averaged over the year. Sectoral shares are nevertheless similar. The full sample corresponds to all firms that export and import over the period. The estimated sample restricts trade flows to the 12 destination countries for which the bilateral geopolitical index (PRI) is available: the United States, South Korea, Japan, Vietnam, Russia, Australia, Germany, Indonesia, India, the United Kingdom, France, and Pakistan.

Table A.2: Export values different lags

	(1) lag 3	(2) lag 3	(3) lag 3	(4) lag 5	(5) lag 5	(6) lag 5
PRI	0.143***	0.145***	0.181***	0.147***	0.144***	0.176***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)
EV^{++}		-0.016*			-0.082***	
		(0.008)			(0.011)	
$PRI*EV^{++}$		0.004*			0.033***	
		(0.006)			(0.005)	
EV^{--}			0.183***			0.152***
			(0.017)			(0.018)
$PRI*EV^{--}$			-0.077***			-0.066***
			(0.007)			(0.008)
Tariff	-0.091**	-0.091**	-0.087**	-0.090**	-0.090**	-0.086**
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Intercept	8.862***	8.860***	8.765***	8.852***	8.861***	8.780***
	(0.022)	(0.022)	(0.024)	(0.022)	(0.022)	(0.025)
R-squared	0.544	0.544	0.544	0.544	0.544	0.544
Observations	17,501,693	17,501,693	17,501,693	17,501,693	17,501,693	17,501,693
F-stat	148.13	83.73	97.31	151.81	87.84	87.78
RSME	1.444	1.444	1.444	1.444	1.444	1.444

Notes: The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. In columns (1) to (3), the PRI is lagged three months whereas in columns (4) to (6) to is laggeg 5 months. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

Table A.3: Export volumes different lags

	(1) lag 3	(2) lag 3	(3) lag 3	(4) lag 5	(5) lag 5	(6) lag 5
PRI	0.074***	0.075***	0.105***	0.077***	0.074***	0.116***
	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)	(0.010)
EV^{++}		-0.028*			-0.082***	
		(0.012)			(0.012)	
$PRI*EV^{++}$		0.008*			0.033***	
		(0.005)			(0.005)	
EV^{--}			0.149***			0.185***
			(0.017)			(0.018)
$PRI*EV^{--}$			-0.062***			-0.078***
			(0.007)			(0.008)
Tariff	0.043	0.043	0.046	0.044	0.043	0.048
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
Intercept	7.734***	7.734***	7.653***	7.725***	7.734***	7.628***
	(0.023)	(0.023)	(0.026)	(0.023)	(0.023)	(0.027)
R-squared	0.680	0.680	0.680	0.680	0.680	0.680
Observations	17,470,260	17,470,260	17,470,260	17,470,260	17,470,260	17,470,260
F-stat	33.99	27.80	34.46	36.32	29.82	37.56
RMSE	1.500	1.500	1.500	1.500	1.500	1.500

Notes: The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. In columns (1) to (3), the PRI is lagged three months whereas in columns (4) to (6) to is laggeg 5 months. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

Table A.4: More extreme events

	(1) Export Value	(2) Export Value	(3) Export Quantity	(4) Export Quantity
PRI	0.143***	0.150***	0.076***	0.078***
	(0.009)	(0.009)	(0.009)	(0.009)
EV^{+++}	-0.001		0.025*	
	(0.015)		(0.015)	
$PRI*EV^{+++}$	-0.001		-0.011*	
	(0.006)		(0.006)	
EV^{---}		0.066***		0.024
		(0.018)		(0.019)
$PRI*EV^{---}$		-0.025***		-0.008
		(0.008)		(0.008)
Tariff	-0.092**	-0.091**	0.043	0.043
	(0.040)	(0.040)	(0.042)	(0.043)
Intercept	8.864***	8.845***	7.729***	7.722***
	(0.022)	(0.022)	(0.023)	(0.023)
R-squared	0.544	0.544	0.680	0.680
Observations	17,501,693	17,501,693	17,470,260	17,470,260
F-stat	75.23	92.29	19.14	22.48
RMSE	1.444	1.444	1.500	1.500

Notes: The table reports estimates of equation (2). The dependent variable is export value of firm i for product k to country c in month c and year t. All estimations include firm-product, month, year and destination-country fixed effects. Standard errors are clustered at the firm-product level. ***, **, * indicate significance at the level of 1, 5 and 10% respectively.

Figure A.3: Correlation between exports and sudden geopolitical changes

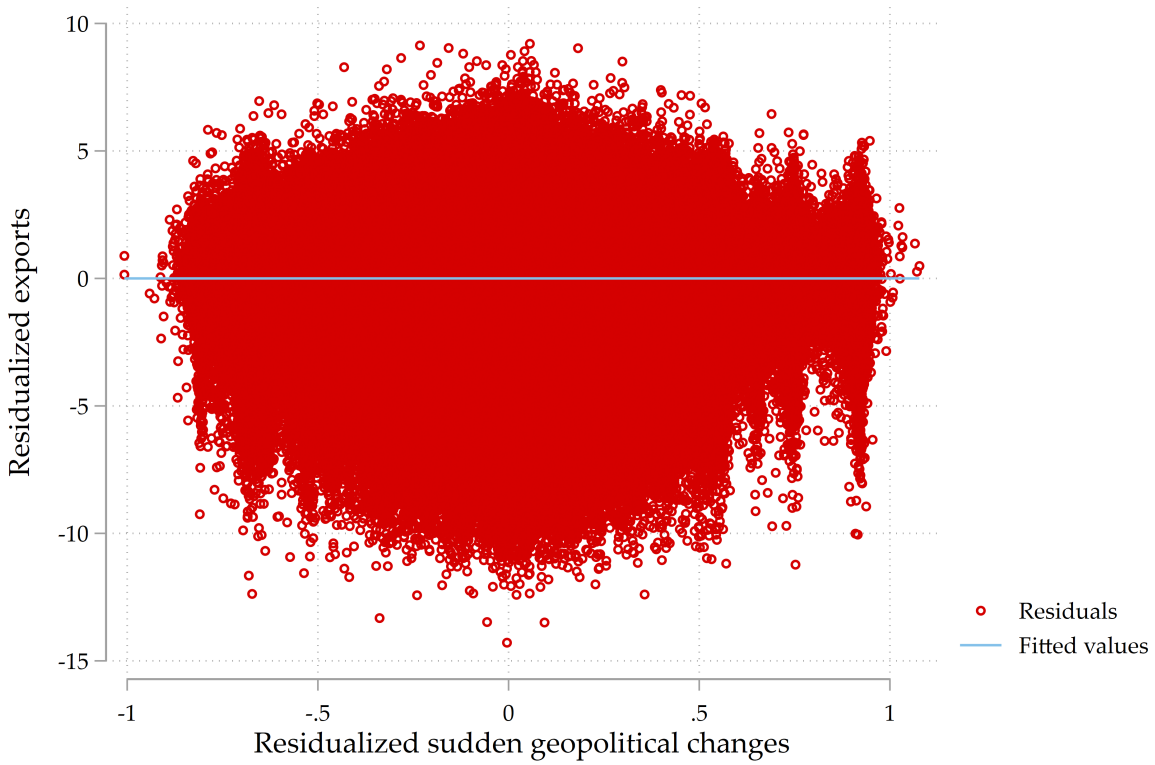

Table A.5: First-stage regression: Sudden geopolitical changes and the political relations index

	(1) Dependent variable: PRI
$\Delta^2 PRI$	-0.0069***
	(0.0001)
Tariffs	-0.1997***
	(0.0036)
Constant	2.5303***
	(0.0002)
Observations	17,501,694
Clusters	1,340,018
R-squared	0.8204

Notes: This table reports the first-stage regression corresponding to the baseline IV specification. The dependent variable is the political relations index (PRI). The regressor of interest is the sudden geopolitical changes measure ($\Delta^2 PRI$). The specification absorbs fixed effects. Standard errors clustered at the HS6 level are reported in parentheses.

Table A.6: IV estimates of the impact of political relations on exports

	(1) Second stage: Export Value	(2) First-stage diagnostics
Second stage (2SLS)		
PRI	1.016***	
	(0.241)	
Tariff	0.082	
	(0.062)	
First-stage / identification statistics (instrument: sudden geopolitical changes)		
Kleibergen–Paap rk LM (underidentification)		5705.282***
Kleibergen–Paap rk Wald F (weak-ID robust)		5879.630
Cragg–Donald Wald F (i.i.d. benchmark)		3325.541
Stock–Yogo critical value (10% maximal IV size)		16.38
Stock–Yogo critical value (15% maximal IV size)		8.96
Stock–Yogo critical value (20% maximal IV size)		6.66
Stock–Yogo critical value (25% maximal IV size)		5.53
Observations	17,501,693	
Clusters	1,340,018	

Notes: Column (1) reports 2SLS estimates where export value is regressed on the political relations index (PRI) and tariffs, absorbing fixed effects. The endogenous regressor PRI is instrumented by sudden geopolitical changes. Standard errors clustered at the HS6 level are reported in parentheses. Column (2) reports identification diagnostics: the Kleibergen–Paap rk LM test (underidentification) and Kleibergen–Paap rk Wald F statistic (weak identification robust to heteroskedasticity and clustering), along with the Cragg–Donald F statistic and Stock–Yogo critical values (which apply under i.i.d. errors). The model is exactly identified, so overidentification tests are not available.