Trade Dependence, Uncertainty Expectations, and Sino–U.S. Political Relations

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Abstract
This study applies a time-varying parameter/stochastic volatility vector autoregression (TVP-SV-VAR) model to explore the time-varying property of the link between Sino-US political relations and trade. The results indicate that the association of these two variables appears to be unstable. Sino-US political relations have positive and negative impacts on their bilateral trade, and the impact on Chinese imports is stronger than on its exports. In turn, Chinese imports from the US lead to political conflict, while Chinese exports promote peace. The interaction mechanism may originate from the expectations of the future trade environment caused by trade policy uncertainty. The interactions between Sino-US political relations and bilateral trade at different time points are also investigated. The results demonstrate that the link between these two variables is slightly different, depending on the specific status of the bilateral political relationship (friendly, neutral or hostile). Both China and the US should seek common interests to maintain a stable political relationship, and even with an increasing volume of bilateral trade, the risk of political conflicts should not be neglected.

Keywords Sino-US political relations · Trade policy uncertainty · Bilateral trade · Time-varying · Trade expectations theory

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Introduction

Sino-US trade is one of the world’s most important bilateral trade relationships. Cooperation between China and the United States in various fields is of great significance for the economic development of both nations and the global economy [11]. After the end of the Cold War, China and the US reached a significant consensus on building partnerships and developed a strategic, cooperative “non-enemy and non-friend” relationship. However, this relationship was destroyed after former President Trump took office [30, 65, 71]. Although the degree of interdependence is relatively large, the US trade deficit with China is increasing. Sino-US economic relations are characterized by increasing trade imbalances, exacerbating the tension in political relations between the two countries [64]. The deterioration in Sino-US relations has also begun to spread to fields such as US policy on the entry of Chinese companies. A series of US policies towards China, in particular the trade sanctions against China imposed in 2018, has caused Sino-US relations to fall to their lowest point since the establishment of diplomatic relations [19, 27]. In the long term, trade policies are crucial for regulating interstate relations. Specifically, bilateral trade agreements can improve political relations, while trade protectionism may trigger political conflicts.

The idea of “democratic peace” posits that countries with similar ideologies are unlikely to be involved in political conflicts [31, 50]. China and the US have completely different political systems and ideologies, which is why the two countries’ core interests are objectively in conflict [58]. To maintain its political authority in the Asia–Pacific region, the US has continually engaged in conflicts with China. In recent years, the US has put forward the “Pivot to Asia”, “Asia–Pacific Rebalancing”, and “Indo-Pacific Strategy”, which make political relations between China and the US more complex. Sino-US bilateral political relations are not linear but fluctuating [69]. In short, economic and political relations have always been contradictory. However, while bilateral trade between the two countries has become increasingly close, political conflicts have intensified [66].

The existing literature mainly discusses the impact of political relations on trade [8, 34, 53] or the offset of trade dependence on political relations [23, 44, 49]. However, these two issues should not be separated. With the United States’ ongoing trade war with China, the question of whether economic interdependence brings peace should be revisited. Nevertheless, the impact of the continued deterioration of Sino-US political relations on bilateral trade has not been fully assessed empirically. Considering these two issues simultaneously can evaluate the causal interaction between Sino-US politics and economics comprehensively. Furthermore, in a world of economic and political instability, the trade or political relations between China and the US are characterized by rapid changes, leading to non-static interactions between the two variables. Subsequently, the interactions between Sino-US political relations and bilateral trade in different periods or events will also present different causal relationships. Therefore, exploring the dynamic interactions (i.e., time-varying properties of bidirectional causality) between Sino-US bilateral political relations and trade is important and necessary.
This study mainly contributes to the literature in two ways. First, the nexus between trade and political relations between a specific pair of countries has not been fully discussed or explored empirically in the literature, and this study investigates this concept using a quantitative method over the 1995:M1–2021:M9 period. Moreover, based on the data for the years covered, it is useful to explain the current relationship between the two countries and predict its course. Second, previous studies have rarely considered nonconstant parameters and covariance in their empirical models [35]. This paper seeks to identify the time-varying development of trade and political relations at different horizons and time points by applying the time-varying parameter/stochastic volatility vector autoregression (TVP-SV-VAR) model.

The remainder of this paper is structured as follows. “Literature Review” section presents the literature review; “Method” section defines the method; “Data” section describes the data; “Empirical Results” section provides the empirical results; and finally, “Conclusions” section unveils the main conclusions of this study.

Literature Review

The Impact of Political Relations on Bilateral Trade

The interaction of political relations and trade has been a focus of international relations over recent decades. However, the results have not produced a consensus. The conventional view suggests that political conflict between countries is often accompanied by the imposition of partial or total trade embargoes on the exchange of goods. Conflict may also reduce trade flows by raising the costs for private agents to engage in international business [2, 26, 28, 63, 64]. Pollins [53] constructed a theoretical model of trade flows which reveals that a reduction in political conflict increases trade between countries. Keshk et.al [34] argue that conflicts inhibit trade, while the effect of dyadic interdependence is statistically insignificant. Blomberg and Hess [9] conclude that the existence of terrorism, combined with external political conflicts, has an effect equivalent to that of a tariff of up to 30% on trade. Massoud and Magee [45] hold that strengthening cooperation between governments in politics and military aspects will result in greater trade, and Fisman et.al [22] observe the adverse reaction of the market to a negative turn in Sino-Japanese relations. These findings demonstrate that intensifying political conflicts between nations may affect bilateral trade in discrete and sudden ways.

However, Du et.al [20] believe that the negative impact of political conflicts is short-lived and indicate that even though political shocks affect exports, the impact disappears within two months. Barry [8] establishes that owing to the existence of sunk costs, corporate activities will be transferred to a third country only when the cost of the conflict exceeds that of the evacuation. Tu et.al [64] suggest that the trade war between the US and China harms both sides’ welfare and could have further adverse effects on global value chains and the multilateral trading system. Lai and Martini [35] also demonstrate that while the distribution of nationalist attitudes in countries has not changed much, nationalism conditions the effect of education on...
trade and immigration. Over time, the conditioning effect of nationalism on education is growing stronger.

The classical theory argues that the onset of political conflict will adversely affect bilateral trade, although it would not be the case if economic agents had perfect information about the political relations among states [29, 40]. As such, political conflict has little impact on trade because economic actors adjust their trading activities (increase trade or divert their trade to a third nation) before a dispute occurs in response to lower-level changes in political relations [38]. By applying an interrupted time-series model, Barbieri and Levy [7] find that in most instances, war has no permanent long-term effect on trading relationships, and trade often increases in post-war periods. Moreover, Anderton and Carter [3] observe that states may choose war as a means of opening markets to trade or may want to rebuild the economies of their defeated adversaries to strengthen them and bring them into the balance of power against new enemies. Armstrong [4] also demonstrates that although economic relationships are not independent of politics, Sino-Japanese bilateral trade seems not to be weakened or affected by political conflicts in some aspects.

**The Impact of Bilateral Trade on Political Relations**

Liberalism holds that economic interdependence is an important causal factor that can greatly reduce the possibility of military conflicts between countries [11, 21, 37]. Trade can bring benefits to countries, so nations that rely on trade should try to avoid war [47, 49]. Through peaceful trade, countries do not have to bear the costs and risks of military conflicts. In other words, when the level of trade is high, the opportunity cost of war is also high, so actors who may have motives for war will be constrained [52]. Gartzke et.al [23] suggest that economic dependence based on bilateral trade decreases the possibility of political conflicts. Russett and Oneal [56] also affirm that economic interdependence reduces the need to resort to costly military competition, thereby promoting peace. Xing and Zhou [68] find that promoting bilateral trade is a good policy that can reduce regional conflicts and build bilateral trust. Lu [41] empirically tests whether or how trade and foreign direct investment (FDI) and their interactions influence adversarial states’ cooperation. The results demonstrate that, with the decrease in bilateral trade, the pacifying effect of bilateral FDI strengthens for the adversarial dyads and weakens for non-adversarial dyads.

In contrast, realism holds that the closer two economies are, the more likely the countries are to compete over raw materials, investment, and markets [1, 11, 12]. In other words, economic interdependence is negligible compared to other causes of conflict. Close trade relations will not reduce the probability of war but will often make it more likely. Martin et.al [44] offer evidence that bilateral trade only partially promotes political cooperation, even if the following is assumed: trade is good for the economy, military conflict decreases bilateral trade, and political leaders are rational. Moreover, Chang et.al [13] extend the conflict-trade model to incorporate geographic distance. They find that geographic distance increases transportation and other trading costs, leading to increased conflicts and decreased cooperation through diminished trade. Wang and Zeng [66] argue that the US-China economic
relationship is evolving, from a symbiotic but asymmetric one between 2001 and 2008, toward an increasingly competitive one after the 2008 global financial crisis, particularly in the Trump-Xi era. Boylan et. al [11] conclude that to thwart China’s economic practices and boost the US economy, former President Trump’s administration levied tariffs on Chinese imports shortly after taking office, thus moving US foreign economic policy from the liberalism that had been practised for decades to protectionism.

Liberalism and realism are fundamentally opposed. Liberals believe that close trade ties between countries will increase the opportunity cost of conflict [43]. Therefore, peaceful political relations are established with the interdependence of trade. Realists hold a different view; they think that the most trade-dependent nation will take the lead in provoking conflicts to ensure continued access to the necessary materials and goods [6]. However, both theories fail to fuse the benefits of trade and the costs of severed trade into one theoretical framework [66]. More significantly, these theories lack an understanding of how rational decision-makers incorporate the future trading environment into their choice between cooperation and conflict [15]. Therefore, liberalism and realism can only explain some conflicts individually and cannot offer a reasonable explanation for all conflict events.

Trade Expectation Theory

The disadvantage of liberalism and realism is that they are too static to predict, from a dynamic point of view, what kinds of situations will affect trade and when perspectives on trade or conflict will change [15]. Copeland [15] provides a new theory, called “trade expectations theory”, to help improve the theoretical study of trade and conflict. It introduces a new variable—the expectation of traders or governments on the future trade environment. Therefore, it is a dynamic theoretical mechanism because the expectation of future trade may change over time. The occurrence of war depends on trade expectations; that is, expectations over the international trade environment among different countries directly determine whether the world can continue to maintain peace in the future [15].

If there is a large trade volume now, higher common interests may produce positive expectations. As liberals insist, close trade ties improve political relations. Furthermore, if traders or governments hold positive expectations for the future trading environment, even if there is little trade volume at present, it is possible to have peaceful political relations. However, if a country’s expectations of the future economic environment are negative, it may believe that it soon will not be able to trade with foreign countries or that trade and investment will be interrupted by other countries; then, the logic of realism will become operative. Under these circumstances, countries tend to believe that without access to key raw materials and investment, their economies will not develop healthily and will begin to decline compared to more resistant actors. If a country anticipates a severe economic recession, its leaders will think that conflict is a reasonable choice [16].

In general, trade expectations theory accepts both the liberal view (bilateral trade can bring benefits to a country, thereby preventing conflicts) and the realist view
(asymmetric trade makes a country vulnerable, possibly leading to conflicts). Subsequently, based on this theory, many scholars conducted research in the field of international relations. Snyder [60] argues that Copeland’s choice to build his theory on the subjective foundations of trade “expectations” raises the question of whether a more objective foundation based on trade trends, trade vulnerability, and autarkic feasibility might produce more summarily testable predictions that fit better with his overall realist sensibility. Peterson and Rudloff [51] find that members of preferential trade agreements (PTAs) are less likely to be involved in militarized conflict. An expectation of continuing amicable trade relations is among the factors linking PTAs to peace. Through a comparison between the cases of bilateral trade conflicts between the US and China, and the US and Japan, Lee [36] contends that increased bilateral economic interdependence also increased the frequency of conflicts in the two respective cases. They further argue that such an increase in frequency was due to the US’s negative expectations of the future trade environment. By adding militarism as a state bias and belief, Kerrane [33] demonstrates that the trade expectations theory’s logic is developed within a defensive realist framework.

Method

The vector autoregression (VAR) model can examine the interaction between variables, but its coefficients and covariance must be constant. We construct the VAR equation as follows:

\[
AY_t = F_1 Y_{t-1} + \cdots + F_s Y_{t-s} + \mu_t = s + 1, \ldots, n
\]  

where \(Y_t\) is an observable vector of \(k \times 1\) dimensions and \(F_1, \ldots, F_s\) are \(k \times k\) dimensional coefficient matrices. \(\mu_t\) is a structural impact of \(k \times 1\) dimensions, which is subject to \(\mu_t \sim N(0, \Sigma \Sigma)\), and \(\Sigma\) is as follows:

\[
\Sigma = \begin{bmatrix}
\sigma_1 & 0 & \cdots & 0 \\
0 & \ddots & \vdots & \vdots \\
\vdots & \ddots & \ddots & 0 \\
0 & \cdots & 0 & \sigma_k
\end{bmatrix}
\]  

(2)

\(A\) is a lower-triangular coefficient matrix as in Eq. (3):

\[
A = \begin{bmatrix}
1 & 0 & \cdots & 0 \\
a_{21} & \ddots & \vdots & \vdots \\
\vdots & \ddots & \ddots & 0 \\
a_{k1} & \cdots & a_{k,k-1} & 1
\end{bmatrix}
\]  

(3)

Thus, we can rewrite Eq. (1) as follows:

\[
Y_t = X_t' \beta + A^{-1} \sum \varepsilon_t = s + 1, \ldots, n
\]  

(4)

where \(\beta\) is a coefficient vector of \(k^2 s \times 1\) dimensions and \(X_t = I_s \otimes (Y_{t-1}, \ldots, Y_{t-s})\), with \(\otimes\) denoting the Kronecker product.
However, there are often structural changes in economic variables, and the VAR model cannot reflect nonlinear relationships [61]. The time-varying parameter VAR (TVP-VAR) model, which was developed by Cogley and Sargent [14], and the stochastic volatility VAR (SV-VAR) model, which was developed by Sims and Zha [59], can estimate the time-varying coefficients and the randomness of the covariance, respectively. Primiceri [55] combines these two models and proposes the TVP-SV-VAR model, which we apply here to explore the time-varying property of the link between Sino-US political relations and trade. According to Eq. (4), we construct the TVP-SV-VAR model as follows:

\[
Y_t = X_t' \beta_t + A_{t-1}^{-1} \sum_t \epsilon_t = s + 1, \ldots, n
\]  

(5)

where the coefficient matrices \( \beta_t \), \( A_t \), and \( \sum_t \) are time-varying and should be processed based on the methods of Primiceri [55] and Nakajima et al [48]. First, we let the non-zero and non-one elements of \( A_t \) be stacked as \( a_t = (a_{21,t}, a_{31,t}, a_{32,t}, \ldots, a_{k,k-1,t}) \). Second, we let the stochastic volatility matrix be logarithmized as \( h_t = (h_{1t}, \ldots, h_{kt}) \), where \( h_{jt} = \log(\sigma_{jt}^2), j = 1, \ldots, k \). Third, we assume that \( \beta_t, a_t \) and \( h_t \) are subject to first-order random walk processes and the impacts of the time-varying parameters are not relevant. Then, the dynamic changes in the coefficients will be as follows:

\[
\begin{aligned}
\beta_t &= \beta_{t-1} + \mu_t \\
A_t &= A_{t-1} + \nu_t \\
h_t &= h_{t-1} + \delta_t
\end{aligned}
\]

\[
\begin{pmatrix}
\varepsilon_t \\
\nu_t \\
\delta_t
\end{pmatrix} \sim N \left( 0, \\
\begin{pmatrix}
I & 0 & 0 \\
0 & \Sigma_{\beta} & 0 \\
0 & 0 & \Sigma_{\nu}
\end{pmatrix}
\right)
\]

(6)

where \( I \) denotes an identity matrix; \( \Sigma_{\beta}, \Sigma_{\nu}, \) and \( \Sigma_h \) are all positive definite diagonal matrices; \( \beta_{s+1} \sim N \left( \mu_0, \Sigma_{\beta_0} \right) \); \( a_{s+1} \sim N \left( \nu_0, \Sigma_{a_0} \right) \); and \( h_{s+1} \sim N \left( \theta_0, \Sigma_h_0 \right) \). The above assumptions enable the TVP-SV-VAR model to fully capture potential structural changes [55]. To obtain accurate results in estimating the TVP-SV-VAR model, we apply the Markov chain Monte Carlo (MCMC) method, which can handle the nonlinear estimation and the large number of parameters that need to be solved [48]. According to the Geweke probability [25], which is based on convergence diagnostics, we can examine the null hypothesis that the simulation results follow a posterior distribution. If the Geweke probability is less than the 5% critical value (1.96), we cannot reject the null hypothesis, and the simulation result is valid.

The traditional VAR model uses a full sample in its estimations and fixes the parameters and covariance, and there is only one magnitude and direction of influence from one variable to another over the whole sample period. In general, when there are structural changes in the economic variables, the traditional VAR model is not appropriate. Thus, considering the endogeneity and coefficient changes over time, this study applies the TVP-SV-VAR model to explore the time-varying property of the link between Sino-US political relations and trade.
Data

In this study, we use monthly data covering the period 1995:M1–2021:M9 to assess the causal links between Sino-US political relations and trade, with the start and end dates purely contingent on the data availability. The data on political relations comes from Tsinghua University’s “Database of China and Great Powers Relations”. A positive score defines a cooperative relation and a negative score a conflictual one, while zero represents a neutral political relation. Trade imbalances—deficits and surpluses—are critical to political relations. Blum [10] finds that countries decrease defence spending relative to GDP when experiencing a trade surplus rather than a trade deficit. Therefore, we test trade flows separately—China’s total volume of imports and exports—and test whether the dynamics are the same in both cases. China’s import and export data comes from the General Administration of Customs of the People’s Republic of China.

Regarding the expectation of traders or governments on the future trade environment, it is difficult to quantify it into specific values because traders’ psychological expectations are very subjective [51, 60]. Many scholars, including Copeland, use case studies to test the trade expectation theory [15, 33, 36]. Nevertheless, we try to employ the trade policy uncertainty index to indirectly represent the uncertainty expectation in Sino-US trade. The larger the trade policy uncertainty index, the more frequent the trade policy fluctuations, which will have an adverse impact on the psychological expectation of traders. Trade policy uncertainty index is one of the category-specific economic policy uncertainty (EPU) indexes developed by Baker et.al [5]. It reflects the frequency of papers in American newspapers that discuss policy-related economic uncertainty and contains one or more references to trade policy. Trade policy terms, set by the category of the EPU, comprise import tariffs, import duties, import barriers, government subsidies, the World Trade Organization (WTO), trade treaties, trade agreements, trade policies, trade act, Doha Round, Uruguay Round, GATT, and dumping.

Additionally, this study considers the following variables, which have been demonstrated to significantly impact Sino-US political relations and trade. First, we consider the impact of economic growth on political relations and trade. While economic downturns may reduce bilateral trade, they can also lead to more radical foreign policy in a country which can result in more conflicts. As GDP data are only available quarterly, we use the industrial production index as a proxy for GDP [46]. The next variable considered is the exchange rate. If the RMB depreciates against the US dollar, the comparative advantage of China’s exporters will gradually increase, which will be conducive to export trade development. Changes in the RMB exchange rate will also affect Sino-US political relations. For instance, the US has listed China as a currency manipulator, and US government officials have repeatedly expressed their dissatisfaction with China’s exchange regime management. Therefore, we use the monthly average exchange rate of the US dollar against RMB. All the data are gathered from the WIND database (www.wind.com.cn).

Regarding the trade policy uncertainty index and industrial production index, we consider only relevant data from the US for two main reasons. First, China
lacks relevant data. For example, the China trade policy uncertainty index constructed by Davis et al. [17] began in 2000. Second, Sino-US trade disputes originated from the pre-emptive action of the US. For decades, the US has frequently launched trade sanctions against China. Therefore, the trade policies and economic situation of the US have a far-reaching impact on the psychological expectations, trade volume, and bilateral political relations of the two countries.

Figure 1 presents the changing trend of Sino-US political relations. In the 1995–1996 period, a serious conflict between the US and China regarding human rights and territorial sovereignty led to a sharp deterioration in political relations between these two countries. In 1998, former President Clinton visited China, which improved Sino-US relations significantly. However, bilateral relations turned sharply hostile with the bombing of the Chinese embassy in Yugoslavia in 1999 and the military aircraft collision in the South China Sea in 2001. From 2002 to 2016, Sino-US political relations were relatively stable. Although there were still many differences in politics, the bilateral relationship index for this period exposes values greater than zero, with cooperation being greater than conflict overall. However, implementing a series of US policies after President Trump assumed office, specifically the trade sanctions against China imposed in 2018, has led to the sharp deterioration of Sino-US relations. Although Trump was defeated in the 2020 general election and Democratic candidate Biden became the new president of the US, the domestic and foreign environment in which the US made policy decisions on China has not fundamentally changed, and politicians of both parties have arrived at an important consensus on China policy, that “the US must adopt a tougher and effective China strategy to deal with China’s competition”. After the Biden administration came to power, the US made certain adjustments to China’s strategic positioning and diplomatic strategy.

![Fig. 1 Trends in Sino-US political relations. Source: Institute of international relations, Tsinghua University](image)
The US believes that China is a “severe competitor” and poses an all-around challenge to the US [67].

Table 1 presents the descriptive statistics of the variables. China’s exports to the US are nearly three times as much as its imports from the US. The skewness of Chinese imports, exports, and trade policy uncertainty is greater than 0, indicating they are not normally distributed. The kurtosis of Chinese imports, Chinese exports, and exchange rate are below 3.0, thus indicating that these variables have platykurtic (“thin-tailed”) distributions, while the kurtosis for political relations, trade policy uncertainty, and industrial production index reveal a leptokurtic (“fat-tailed”) distribution. The Jarque–Bera test rejects the null hypothesis that the variables are normally distributed at the 1% significance level, indicating that all six variables have non-normal distributions. The traditional causality testing method is unsuitable for time series data with non-normal distributions [62]; therefore, we use the TVP-SV-VAR approach and examine the time-varying characteristics of Sino-US political relations and trade. All variables are transformed into logarithmic values to eliminate heteroscedasticity in the time series. Further, to obtain a stationary time series, we perform a first-order difference on the data.

**Empirical Results**

For comparative purposes, several unit root tests, namely, the ADF, PP, and KPSS tests, are employed to test the stability of the data. The results in Table 2 demonstrate that the ADF and PP tests reject the null hypothesis of non-stationarity for the underlying series. The KPSS test accepts the null hypothesis of stationarity for the underlying series. Accordingly, the results derived from the unit root tests establish that all the series are stationary and integrated at level I (0).

In this study, the model selection lags two periods, according to the Schwarz information criterion (SIC). We set the prior distribution as $\mu_{0} = \mu_{0} = \mu_{0} = 0$, $\sum_{b_i} = \sum_{a_i} = 10I$, $\sum_{h_i} = 100I$, $(\sum_{b_i})^{-2} \sim IG(20, 0.01)$, $(\sum_{a_i})^{-2} \sim IG(2, 0.01)$, and $(\sum_{h_i})^{-2} \sim IG(2, 0.01)$. To obtain the posterior distribution, we set the number of iterations of the MCMC simulation to 10,000. The first 1,000 results are discarded as burn-ins to avoid instability of the initial value. The estimation results of the parameters in the TVP-SV-VAR model are illustrated in Table 3 and demonstrate

| Variables               | Symbol | Mean   | Std. dev | Skewness | Kurtosis | Jarque–Bera |
|-------------------------|--------|--------|----------|----------|----------|-------------|
| Political Relations     | PR     | 0.180  | 2.733    | -1.773   | 5.311    | 239.593***  |
| Chinese Imports         | IM     | 69.450 | 47.201   | 0.278    | 1.670    | 27.773***   |
| Chinese Exports         | EX     | 197.789| 141.103  | 0.268    | 1.840    | 21.814***   |
| Trade Policy Uncertainty| TPU    | 115.599| 195.859  | 4.819    | 34.153   | 14,222.84***|
| Industrial Production Index | IPI | 92.517 | 8.142    | -1.016   | 3.441    | 57.806***   |
| Exchange Rate           | ER     | 7.373  | 0.851    | -0.066   | 1.284    | 39.624***   |

*** denotes significance at 1% levels
that the mean of the estimation results of the parameters is within the 95% confidence interval. Geweke [25] refers to convergence diagnostics, which are less than the 5% critical value and indicates that the null hypothesis of convergence to the posterior distribution cannot be rejected. The inefficiency factors are less than 100, indicating that enough unrelated samples can be obtained from 10,000 total iterations of the MCMC. Thus, the estimation of the TVP-SV-VAR model is valid.

Figure 2 presents the sample autocorrelations, paths and posterior densities of the MCMC estimation results. The coefficients decrease to zero (in the first row), meaning that there is no obvious autocorrelation in the samples. The trajectory fluctuates around the mean (in the second row), demonstrating no obvious trend in the sample. The samples converge to the posterior distribution (in the third row). In summary, the sampling results are robust, and there is no obvious divergence. The sampling path has the characteristics of a random fluctuation, and the estimated data are within the range to be estimated, demonstrating that the model setting and estimation results are effective.

Figure 3 highlights the impulse responses for different horizons (3-, 6-, and 12-month horizons). We can see that Sino-US political relations are affected by the political relations of the previous period. Overall, the effect is mostly positive, indicating that friendly political relations generate expectations of continued improvement in future political relations, pushing up such relations. The influence

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**Table 2** The result of the unit root test

| Variables                  | ADF   | PP    | KPSS  |
|----------------------------|-------|-------|-------|
| Political Relations        | -9.884*** | -16.077*** | 0.111 |
| Chinese Imports            | -5.469*** | -45.776*** | 0.087 |
| Chinese Exports            | -4.386*** | -43.023*** | 0.106 |
| Trade Policy Uncertainty   | -12.610*** | -37.617*** | 0.093 |
| Industrial Production Index| -13.171*** | -14.625*** | 0.058 |
| Exchange Rate              | -10.261*** | -10.345*** | 0.136 |

*** denotes significance at 1% levels

**Table 3** Parameter estimation results of the model

| Parameters     | Mean | Standard deviation | 95% confidence interval | Geweke’s Z-score | Inefficiency factors |
|----------------|------|-------------------|-------------------------|-----------------|---------------------|
| \( \Sigma_\rho \)_1 | 0.022 | 0.002             | [0.018, 0.028]          | 0.028           | 19.07               |
| \( \Sigma_\rho \)_2 | 0.023 | 0.002             | [0.019, 0.028]          | 0.792           | 16.42               |
| \( \Sigma_v \)_1 | 0.052 | 0.011             | [0.035, 0.078]          | 0.355           | 61.77               |
| \( \Sigma_v \)_2 | 0.052 | 0.011             | [0.035, 0.078]          | 0.068           | 55.91               |
| \( \Sigma_h \)_1 | 0.457 | 0.090             | [0.298, 0.648]          | 0.378           | 50.96               |
| \( \Sigma_h \)_2 | 0.490 | 0.096             | [0.312, 0.686]          | 0.216           | 55.35               |
of political relations on imports and exports is close to zero at the 6- and 12-month horizons, but there are unstable impacts at the 3-month horizon. Three obvious periods in which political relations affected imports are 1995–2004 (negative),
2005–2016 (positive), and 2017–2021 (with frequent positive and negative fluctuations). The impact of political relations on exports is negative, with the only exception being 2005–2012 (with frequent positive and negative fluctuations).

During 1995–2004, a series of political events led to frequent fluctuations in Sino-US relations. For instance, in the first half of 1995, there were many bilateral conflicts over intellectual property rights, human rights, and Taiwan. China postponed the visits of several government officials to the US and held large-scale military exercises in the Taiwan Strait. In 1996, the International Relations Committee of the US House of Representatives passed a resolution proposing to defend Taiwan by force [54]. Although the two heads of state conducted historic mutual visits in 1997, the US House of Representatives issued a report on the Chinese theft of US core secrets by espionage (the Cox Report) in 1998, straining Sino-US relations. In 1999, the US bombed the Chinese Embassy in Yugoslavia, and the Chinese people held a large-scale protest. In 2001, Chinese and American military planes collided in the South China Sea. In short, Sino-US political relations in the period from 1995 to 2001 were very unstable and mainly dominated by political conflicts. Although Washington shifted its strategic focus to combating terrorism and Beijing supported Washington’s call for cooperation and responsive action after the attacks of September 11, 2001, the relationship between the two countries from 2001–2004 developed little due to the continuation of the political conflicts in the previous years [18, 32]. However, even in the context of continued political conflict, China’s imports to the US are still increasing. This situation demonstrates that the two governments or importers have positive expectations for trade cooperation. This is primarily because the Chinese government reformed the socialist market economic system in the 1990s. Simultaneously, in November 2001, China joined the WTO. As a member country, China can enjoy non-discriminatory treatment and trade liberalization, effectively reducing trade barriers and enhancing fair competition. These events have stimulated Chinese enterprises to expand imports of American goods.

During 2005–2016, the improvement of political relations led China to increase its imports to the US. After the resolution of the Sino-US plane collision incident, relations between the two countries began to ease into a period of stability, lasting more than ten years. Friendly political relations gave importers confidence in the trade environment. These developments further strengthened the positive expectations of traders. While the improvement of political relations at this stage was conducive to the growth of Chinese imports in the US from 2017–2021, the impact of political relations on imports was unstable.

After former President Trump took office, Sino-US political relations deteriorated sharply. In March 2018, the Trump administration imposed tariffs on China, and since then, the Sino-US trade war has become increasingly fierce. Since 2020, the COVID-19 epidemic has been spreading worldwide. The Biden government has politicized the epidemic and attacked China’s anti-epidemic policy. The political relations between the two countries are worse than they have been since the establishment of diplomatic relations. The trade war and COVID-19 have made Sino-US trade face great uncertainty, and neither government can accurately predict whether the trade environment will improve in the future. Therefore, the impact of Sino-US political relations on imports during this period is extremely unstable.
During periods of deteriorating Sino-US relations, a negative correlation between the two variables means that Chinese exports to the US increased. During the period of friendly political relations, such as 2005–2012, although the relationship between the two variables is unstable, it was positive most of the time. Therefore, we can assume that China’s exports to the US have mostly increased, whether political relations are friendly or conflicted, indicating that these exports may be less affected by political relations. Following the socialist market economic system reform and after joining the WTO, Chinese foreign trade companies developed rapidly and provided the US with many inexpensive and high-quality goods. US imports of Chinese goods reduce the cost of living in the US, and US consumers are unlikely to want to give up this advantage owing to changes in political relations. Since April 2018, China and the US have conducted five rounds of mutual tariffs until the phase-one trade deal was signed on January 15, 2020. However, the tariffs of this deal did not bring a particularly significant reduction in China’s total exports to the US. Due to the export of epidemic prevention materials, the US replaced the European Union (EU) as the largest receiving country for Chinese exports. By comparing the impacts of political relations on imports (greater than 0.02) and exports (less than 0.02), we see that the effect on imports is greater than that on exports. This indicates that China’s imports from the US are highly substitutable, while China’s exports are difficult to be replaced.

The impact of imports and exports on political relations can also be verified in Fig. 3. The impact of exports on political relations is unidirectional (positive), especially at three-month horizons. This means that the increase in Chinese exports to the US helps improve bilateral political relations. Although the US often imposes trade sanctions on China, it relies heavily on Chinese goods. Most of China’s exports to the US are labour-intensive and have low value-added. China’s labour-intensive industries need the US market, and in turn, the US needs cheap products made in China [64, 70]. The products exported by China have not been produced in the US since the 1950s, and the country’s domestic labour-intensive industries lost their competitive advantage long ago. Thus, there are only two options for the US: to continue to import from China or to switch to imports from Vietnam, Cambodia, and other Southeast Asian countries. However, the products of these alternative countries are currently more expensive than those of China, and after the pass-through of this cost, US consumer prices will also increase [39]. Therefore, if the import channel from China is interrupted, it will be detrimental to the US. The impact of exports on political relations seems to be more in line with the predictions of the theory of liberalism, which holds that economic interdependence can greatly reduce the possibility of political conflicts among countries [24, 42].

Conversely, the increase in Chinese imports in the US was detrimental to political relations. The US government has been waging a trade war under the pretext of the huge trade deficit between China and the US. While China importing American goods can reduce the trade deficit, the results in Fig. 3 demonstrate that despite China importing many goods from the US, it cannot guarantee that peace will be maintained. This implies that the cause of the Sino-US political conflict may not only lie in the trade imbalance but also in the confrontation between the two political systems and ideologies. The strategic competition between China and the US
will not be eased if China imports many American goods. Conversely, even without a trade deficit, the US would provoke disputes in other areas. In addition, the negative impact of imports on political relations around 2008 is extremely strong. The global financial crisis was the main reason for this phenomenon. During the financial crisis, the US and global economies entered a recession. Contrarily, China’s relative strength continued to increase, and the advantage of the US over China gradually shrank. This poses a potential threat to the US, which wants to maintain its dominant position. Driven by this negative expectation, the US has advocated the “China threat” theory in politics and imposed economic sanctions on China, which have intensified the political conflict.

We use the trade policy uncertainty index to indirectly measure trade expectations. Figure 3 reveals that the increase in exports will reduce trade policy uncertainty. Combined with the previous conclusion that exports have improved Sino-US relations, the increase in China’s exports to the US will reduce the uncertainty of US trade policy, and the continued stability of trade policy will ensure traders have positive expectations for the future trade environment. Therefore, the two governments tend to maintain friendly political relations for common economic interests. Increased Chinese imports from the US can increase trade policy uncertainty, and increased imports can also adversely affect political relations. This is consistent with the impact mechanism above; that is, the increase in Chinese imports from the US leads to frequent trade policy fluctuations, and negative expectations for future trade worsen political relations. In short, imports and exports have had negative and positive influences on bilateral political relations, respectively, and their mechanisms may originate from the expectations of the future trade environment caused by trade policy uncertainty. These results align with Copeland’s [15] trade expectations theory, which states that expectations concerning the future trading environment largely determine political relations. However, the static analysis of traditional liberalism and realism theories may not be suitable for studying the interaction of Sino-US political relations and trade. Trade expectations make the relationship between variables dynamic and time-varying, and people’s views on trade or conflict will change according to the future trade environment [15, 33, 60].

The impact of trade policy uncertainty on political relations and imports and exports is extremely complex (frequent positive and negative fluctuations). It is mainly because expectations over the future trade environment may determine the quality of political relations and quantity of imports and exports. In the process of expectation formation, waiting and seeing are followed by the establishment. When trade policy changes, it does not affect bilateral trade and political relations rapidly at the beginning. Moreover, the governments of the two countries constantly adjust their expectations over future trade, which may have positive or negative effects on bilateral trade and political relations. All things considered, the previous study is a static perspective, as the previous analysis proves, and Chinese imports from the US lead to political conflict, while Chinese exports promote peace, which is a static result (positive or negative correlation). However, the trade policy uncertainty leads to traders’ uncertain expectations of the future trade environment, which vary according to the specific era, background, events, and time. Therefore, the impact on bilateral relations and trade is dynamic and time-varying, as demonstrated by our
empirical results (frequent positive and negative fluctuations). This result suggests that we should analyse the interaction between Sino-US political relations and trade from a dynamic perspective in combination with specific events rather than using a static conclusion.

The impact of the US economic growth and exchange rate on political relations, imports, and exports have a unidirectional effect. Economic growth in the US is conducive to the improvement of political relations. Economic growth fosters good expectations of the future trade environment and development opportunities, and foreign policy also tend to be moderate to avoid damaging such growth. However, economic growth is not conducive to imports and exports. Efforts to improve the US economic development level may involve attempts to diversify its import channels. The US’s increased economic strength also gives it sufficient capacity to impose sanctions on China through tariffs. Nevertheless, the development of the US economy has given it the ability to regulate which high-tech products it exports to China. The devaluation of the RMB exacerbated political conflicts and had positive and negative effects on exports and imports, respectively, which were in line with expectations.

We also investigate the interaction between Sino-US political relations and trade at different time points (1998:M6, 2008:M9, and 2018:M3); Fig. 4 presents the results of impulse responses. These three points indicate different bilateral relationship conditions (friendly, neutral or hostile), which may have differentiated interactions with trade. In June 1998, Jiang Zemin held formal talks with President Clinton in Beijing. The two sides issued three joint statements on South Asia, the Protocol to the Biological Weapons Convention, and the issue of antipersonnel mines.
President Clinton reiterated that the US adheres to the one-China policy and abides by the principles of the three joint Sino-US communiques. In September 2008, the financial crisis caused many large financial institutions to close down or be taken over by the government. Both China and the US faced the responsibility of coping with the crisis, and there were conflicts over ideology, human rights, and other aspects. However, both sides exercised restraint, and the quality of bilateral relations at that point was neutral. On March 22, 2018, President Trump formally signed a memorandum of trade with China, announcing the immediate imposition of tariffs on several Chinese import categories valued at $60 billion and restricting Chinese companies’ investment in the US. In response, on March 23, the Chinese Ministry of Commerce imposed tariffs on some products imported from the US to balance the damage to China’s interests caused by the additional US tariffs on imported steel and aluminium products.

According to the impulse responses, the impacts on imports and exports have been different at different stages of the Sino-US political relationship. Specifically, in cases of friendly and neutral political relations, an improvement in political relations may not stimulate an increase in trade volumes in the short term or may have a negative effect. This situation may be because the bilateral relations are relatively stable, and trade is already at a relatively high level in such periods, so further improvement of political relations does not stimulate an increase in trade. However, when the relationship between the two countries is in a hostile phase, mitigation of political conflicts stimulates both imports and exports and has a stronger stimulus effect on imports (absolute value greater than 0.02). Nevertheless, improving political relations does not stimulate trade for a long time and negatively impacts subsequent periods. The destructive effect of hostile political relations on trade cannot be underestimated. Even if political relations are subsequently eased, it will still not eliminate the negative impact of previous tensions on trade. In general, regardless of the quality of Sino-US relations, the impact of the relationship on trade fluctuates constantly over time.

Under two bilateral relationship conditions (neutral or hostile), an increase in imports initially did not significantly affect political relations. In the following several periods, there are alternating positive and negative effects. However, under friendly conditions, the increase in China’s imports to the US will lead to political conflict. An increase in exports does not affect political relations initially, but it significantly improves political relations over the next few periods. China’s exports are mutually beneficial to both China and the US. Therefore, expectations of peaceful relations between countries increase as exports increase. Additionally, compared with friendly and hostile relations, neutral political relations between China and the US are associated with a greater likelihood of improved political relations from increased exports.

The import and export data used in the analysis above are derived from the statistics of the General Administration of Customs of China. To ensure the robustness of the empirical results, it is also meaningful to consider the economic data from the US. Therefore, we use statistics from the US Department of Commerce on US imports and exports to China to make the same analysis. In theory, China’s imports to the US are equal to the exports of the US to China and vice versa. However, the
two values are not equal. The main reason is that there are differences in the statistical methods of Sino-US trade data and the identification of entrepot trade. Figures 5 and 6 present the impulse response results at different horizons and time points. The imports here represent US imports to China, which should correspond to exports in Figs. 3 and 4. To simplify the results, we removed some unimportant figures. By comparing the results with the Chinese data, we find that most variables consistently demonstrate that the difference in official statistical methods between China and the US has little impact on the empirical results, which are therefore considered robust. Nevertheless, subtle differences still remind us to pay attention to the disparities in economic data between China and the US when predicting the interaction of Sino-US trade and political relations.

Conclusions

This study examines the time-varying relationship between Sino-US political relations and trade. Considering subsamples of data for the period 1995:M1–2021:M9, we separately test unilateral trade flows—Chinese imports and Chinese exports—and test whether the dynamics are the same in both cases. This study finds that the relationship between the two variables is unstable over time. The results establish that the influence of political relations on imports and exports is close to zero at six- and 12-month horizons, but there are positive and negative impacts at the three-month horizon, and the influence of political relations is greater for imports than for exports. In turn, the increase in Chinese imports from the US was detrimental

Fig. 5 Impulse responses at different horizons (American perspective)
Trade Dependence, Uncertainty Expectations, and Sino–U.S. political relations. This means that the cause of Sino-US political conflict may lie not only in the trade imbalance but also in the confrontation between the two political systems and ideologies. However, the impact of exports on political relations seems to be more in line with the predictions of liberal theory, which holds that economic interdependence can greatly reduce the possibility of political conflicts between countries.

We use the trade policy uncertainty index to indirectly measure trade expectations. The results demonstrate that imports and exports have had negative and positive influences on bilateral political relations, respectively, and their mechanisms may originate from the expectations of the future trade environment caused by trade policy uncertainty. These results align with Copeland’s [15] trade expectations theory, which states that political relations are largely determined by expectations concerning the future trading environment. When political relations are under different conditions (friendly, neutral or hostile), the mechanism of their influence on trade is also slightly different. Specifically, in the case of friendly and neutral political relations, an improvement in political relations may not stimulate a trade volume increase in the short term or it may even have a negative effect. When the relationship between the two countries is in a hostile phase, mitigating political conflicts stimulates imports and exports and has a stronger stimulus effect on imports. Under two bilateral relationship conditions (neutral or hostile), an increase in imports initially does not significantly affect political relations. However, in the following several periods, there are positive and negative alternating effects. An increase in exports also does not affect political relations at the outset but significantly improves political relations over the next few periods.
In recent years, the Sino-US trade imbalance has adversely affected US employment, and the US has frequently launched trade wars against China. Trade disputes have damaged political relations between the two countries, and the deterioration of Sino-US relations will have an uncertain impact on bilateral trade. With China’s “go global” strategy, the country has become a leader in outward direct investment, with its direct investment in the US growing quickly. Meanwhile, Chinese exports to the US have frequently suffered serious impacts from many trade barriers [57]. The industry distribution of China’s direct investment in the US is diversified, and there is a certain overlap between the industries of investment and the export sectors suffering from US anti-dumping measures. Therefore, exporters can choose direct investment to cross trade barriers, which in turn shrinks the trade deficit, as exports are transferred to direct investment. We suggest that with the strengthening of international competitiveness, the government should encourage capable enterprises to invest in the US market instead of exporting, which will help ease the growth of the bilateral trade deficit.

In anticipating likely conflict areas, one should look for situations in which the two powers have both high levels of dependence on outsiders and low expectations for trade. The key to moderating these potential conflicts is to alter leaders’ perceptions of the future trading environment in which they operate. Hence, we encourage further research in this field on topics such as trade and conflicts between Ukraine/EU countries and Russia. Simultaneously, FDI is a noteworthy variable. Future research can also explore the impact of FDI inflows and outflows on conflicts in specific countries and test whether the inferences are the same in both cases.

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Declarations

Conflict of Interest We declare that we do not have any commercial or associative interest that represents a conflict of interest in connection with the work submitted.

References

1. Akdag, Yavuz. 2019. The likelihood of Cyberwar between the United States and China: A neorealism and power transition theory perspective. Journal of Chinese Political Science 24 (2): 225–247.
2. Albertoni, Nicolás, and Carol Wise. 2021. International trade norms in the age of Covid-19 nationalism on the rise? Fudan Journal of the Humanities and Social Sciences 14 (1): 41–66.
3. Anderton, Charles H., and John R. Carter. 2009. Principles of Conflict Economics: A Primer for Social Scientists. Cambridge: Cambridge University.
4. Armstrong, Shiro P. 2012. The politics of Japan-China trade and the role of the world trade system. The World Economy 35 (9): 1102–1120.
5. Baker, Scott R., Nicholas Bloom, and Steven J. Davis. 2016. Measuring economic policy uncertainty. The Quarterly Journal of Economics 131 (4): 1593–1636.
6. Barbieri, Katherine. 1996. Economic interdependence: A path to peace or a source of interstate conflict? Journal of Peace Research 33 (1): 29–49.
7. Barbieri, Katherine, and Jack S. Levy. 1999. Sleeping with the enemy: The impact of war on trade. Journal of Peace Research 36 (4): 463–479.
8. Barry, Colin M. 2018. Peace and conflict at different stages of the FDI lifecycle. Review of International Political Economy 25 (2): 270–292.
9. Blomberg, S. Brock., and Gregory D. Hess. 2006. How much does violence tax trade? The Review of Economics and Statistics 88 (4): 599–612.
10. Blum, Johannes. 2018. Defense burden and the effect of democracy: Evidence from a spatial panel analysis. Defence and Peace Economics 29 (6): 614–641.
11. Boylan, Brandon M., Jerry McBeath, and Bo. Wang. 2021. US–China relations: Nationalism, the trade war, and COVID-19. Fudan Journal of the Humanities and Social Sciences 14 (1): 23–40.
12. Cai, Kevin G. 2020. Constructing an analytical framework for explaining Chinese foreign policy. Chinese Political Science Review 5 (3): 355–373.
13. Chang, Yuan-Ching., Solomon W. Polachek, and John Robst. 2004. Conflict and trade: The relationship between geographic distance and international interactions. Journal of Socio-Economics 33 (4): 491–509.
14. Cogley, Timothy, and Thomas J. Sargent. 2005. Drifts and volatilities: Monetary policies and outcomes in the post WWII US. Review of Economic Dynamics 8 (2): 262–302.
15. Copeland, Dale C. 1996. Economic interdependence and war. A theory of trade expectations. International Security 20 (4): 5–41.
16. Copeland, Dale C. 1999. Trade expectations and the outbreak of peace: Détente 1970–74 and the end of the cold war 1985–91. Security Studies 9 (1–2): 15–58.
17. Davis, Steven J., Dingquian Liu, and Xuguang Simon Sheng. 2019. Economic policy uncertainty in China since 1949: The view from mainland newspapers. In Fourth Annual IMF-Atlanta Fed Research Workshop on China’s Economy Atlanta (vol. 19).
18. DeLisle, Jacques. 2011. 9/11 and US-China Relations. Foreign Policy Research Institute, 3 September.
19. Du, Mengshuang. 2021. Cross-Border M&A performance of Chinese enterprises in the context of the Belt and Road Initiative. Chinese Political Science Review 6 (2): 228–250.
20. Du, Yingxin, Ju. Jiandong, Carlos D. Ramirez, and Xi. Yao. 2017. Bilateral trade and shocks in political relations: Evidence from China and some of its major trading partners, 1990–2013. Journal of International Economics 108: 211–225.
21. Dunfjäll, Matilda. 2019. Sino-African relations and ODA in the twenty–first century: Chinese aid and public expenditure in education and health sectors of Sub-Saharan African nations. Chinese Political Science Review 4 (3): 375–402.
22. Fisman, Raymond, Yasushi Hamao, and Yongxiang Wang. 2014. Nationalism and economic exchange: Evidence from shocks to sino–japanese relations. The Review of Financial Studies 27 (9): 2626–2660.
23. Gartzke, Erik, Quan Li, and Charles Boehmer. 2001. Investing in the peace: Economic interdependence and international conflict. International Organization 55 (2): 391–438.
24. Gasiorowski, Mark, and Solomon W. Polachek. 1982. Conflict and interdependence: East-West linkages in the era of detente. Journal of Conflict Resolution 26 (4): 709–729.
25. Geweke, John. 1992. Comment: Inference and prediction in the presence of uncertainty and determinism. Statistical Science 7 (1): 94–101.
26. Glick, Reuven, and Alan M. Taylor. 2010. Collateral damage: Trade disruption and the economic impact of war. The Review of Economics and Statistics 92 (1): 102–127.
27. Hu, Bo. 2021. Sino–US competition in the south China sea: Power, rules and legitimacy. Journal of Chinese Political Science 26 (3): 1–20.
28. Hussain, Ejaz, and Muhammad Furqan Rao. 2020. China-Pakistan economic cooperation: The case of special economic zones (SEZs). Fudan Journal of the Humanities and Social Sciences 13 (4): 453–472.
29. Islam, Md. 2021. Is the trade–led growth hypothesis valid for the Kingdom of Saudi Arabia? Evidence from an ARDL approach. Fudan Journal of the Humanities and Social Sciences 14 (3): 1–19.
30. Jaworsky, Bernadette Nadya, and Runya Qiaoan. 2021. The politics of blaming: The narrative battle between China and the US over COVID-19. Journal of Chinese Political Science 26 (2): 295–315.
31. Jones, Lee. 2020. Does China’s belt and road initiative challenge the liberal, rules-based order? Fudan Journal of the Humanities and Social Sciences 13 (1): 113–133.
32. Kan, Shirley. 2009. US-China counterterrorism cooperation: Issues for US policy. DIANE Publishing.
33. Kerrane, Evan. 2021. Russia and the Ukraine crisis: an analysis of trade expectations theory (Doctoral dissertation, Swansea University).

34. Keshk, Omar MG., Brian M. Pollins, and Rafael Reuveny. 2004. Trade still follows the flag: The primacy of politics in a simultaneous model of interdependence and armed conflict. Journal of Politics 66 (4): 1155–1179.

35. Lai, Brian H., and Nicholas F. Martini. 2021. Nationalism and its effects on attitudes about trade, cooperation, and immigration. Fudan Journal of the Humanities and Social Sciences 14 (1): 1–22.

36. Lee, Yaechan. 2018. Economic interdependence and peace: A case comparison between the US–China and US–Japan trade disputes. East Asia 35 (3): 215–232.

37. Li, Yuanxin. 2021. Does Chinese foreign aid work in Sub-Saharan Africa? An empirical analysis. Chinese Political Science Review 6 (2): 285–319.

38. Lin, Hsuan-Yu. 2021. COVID-19 and American attitudes toward US–China disputes. Journal of Chinese Political Science 26 (1): 139–168.

39. Lin, Yifu. 2018. New era in China and trade war between China and the United States [in Chinese]. Wuhan University Journal 72: 159–165.

40. Li, Quan, and David H. Sacko. 2002. The (ir)Relevance of militarized interstate disputes for international trade. International Studies Quarterly 46 (1): 11–43.

41. Lu, Kelan Lilly. 2020. The spillover effect of the trade war between adversarial dyads: Evidence from the Sino-US investment relationship. Journal of Chinese Political Science 25 (1): 21–47.

42. Mansfield, Edward D., and Brian M. Pollins. 2001. The study of interdependence and conflict: Recent advances, open questions, and directions for future research. Journal of Conflict Resolution 45 (6): 834–859.

43. Maoz, Zeev. 2009. The effects of strategic and economic interdependence on international conflict across levels of analysis. American Journal of Political Science 53 (1): 223–240.

44. Martin, Philippe, Thierry Mayer, and Mathias Thoenig. 2008. Make trade not war? Review of Economics Studies 75 (3): 865–900.

45. Massoud, Tansa G., and Christopher S. Magee. 2012. Trade and political, military, and economic relations. Peace Economics, Peace Science and Public Policy 18 (1): 1–37.

46. Miron, Jeffrey A., and Christina D. Romer. 1990. A new monthly index of industrial production, 1884–1940. The Journal of Economic History 50 (2): 321–337.

47. Moravcsik, Andrew. 1997. Taking preferences seriously: A liberal theory of international politics. International Organization 51 (4): 513–553.

48. Nakajima, Jouchi, Munehisa Kasuya, and Toshiaki Watanabe. 2011. Bayesian analysis of time-varying parameter vector autoregressive model for the Japanese economy and monetary policy. Journal of the Japanese and International Economies 25 (3): 225–245.

49. Oneal, John R., and Bruce M. Russett. 1997. The classical liberals were right: Democracy, international, and conflict, 1950–1985. International Studies Quarterly 41 (2): 267–294.

50. Oneal, John R., Bruce Russett, and Michael L. Berbaum. 2003. Causes of peace: Democracy, interdependence, and international organizations, 1885–1992. International Studies Quarterly 47 (3): 371–394.

51. Peterson, Timothy M., and Peter Rudloff. 2015. Preferential trade agreements and trade expectations theory. International Interactions 41 (1): 61–83.

52. Polachek, Solomon William. 1980. Conflict and trade. Journal of Conflict Resolution 24 (1): 55–78.

53. Pollins, Brian M. 1989. Does trade still follow the flag? American Political Science Review 83 (2): 465–480.

54. Portada, Robert A., Steve B. Lem, and Uttam Paudel. 2020. The final frontier: China, Taiwan, and the United States in strategic competition for Central America. Journal of Chinese Political Science 25 (4): 551–573.

55. Primiceri, Giorgio E. 2005. Time varying structural vector autoregressions and monetary policy. The Review of Economic Studies 72 (3): 821–852.

56. Russett, B.M., and J.R. Oneal. 2001. Triangulating peace: Democracy, interdependence, and international organizations. Foreign Affairs 80 (3): 131–132.

57. Shi, Benye, and Zihui Li. 2017. China’s direct investment in the United States: From the perspective of crossing trade barriers [in Chinese]. Journal of Northeast Normal University (Philosophy and Social Sciences) 1: 54–62.

58. Shih, Chih-yu, and Ching-chiu Huang. 2020. Competing for a better role relation: International relations, Sino-US rivalry and game of Weiqi. Journal of Chinese Political Science 25 (1): 1–19.
59. Sims, Christopher A., and Tao Zha. 2006. Were there regime switches in US monetary policy? *American Economic Review* 96 (1): 54–81.

60. Snyder, Jack. 2015. Trade expectations and great power conflict—A review essay. *International Security* 40 (3): 179–196.

61. Song, Yu., Bo. Chen, Xinyi Wang, and Pingping Wang. 2022. Defending global oil price security: Based on the perspective of uncertainty risk. *Energy Strategy Reviews* 41: 100858.

62. Song, Yu., Bo. Chen, Na. Hou, and Yi. Yang. 2022. Terrorist attacks and oil prices: A time-varying causal relationship analysis. *Energy* 246: 123340.

63. Su, Chiwei, Yu. Song, Ran Tao, and Linna Hao. 2020. Does political conflict affect bilateral trade or vice versa? Evidence from Sino–US relations. *Economic Research-Ekonomiska Istraživanja* 33 (1): 3238–3257.

64. Tu, Xinquan, Du. Yingxin, Lu. Yue, and Chengrong Lou. 2020. US-China trade war: Is winter coming for global trade. *Journal of Chinese Political Science* 25 (2): 199–240.

65. Wang, Zhaohui, and Zhiqiang Sun. 2021. From globalization to regionalization: The United States, China, and the post-Covid-19 world economic order. *Journal of Chinese Political Science* 26 (1): 69–87.

66. Wang, Zhaohui, and Jinghan Zeng. 2020. From economic cooperation to strategic competition: Understanding the US–China trade disputes through the transformed relations. *Journal of Chinese Political Science* 25 (1): 49–69.

67. Wei, Zongyou, and Yunhan Zhang. 2021. The Biden administration’s Indo-Pacific strategy and China–US strategic competition. *China Quarterly of International Strategic Studies* 7 (2): 157–178.

68. Xing, Weibo, and Li.-An. Zhou. 2018. Bilateral trust and trade: Evidence from China. *The World Economy* 41 (8): 1918–1940.

69. Xu, Qin yi, and Chuangji Guan. 2021. Escalated policy space conflict: Tracing institutional contestations between China and the United States. *Chinese Political Science Review* 6 (1): 143–165.

70. Yan, Xuetong. 2010. The instability of China–US relations. *The Chinese Journal of International Politics* 3 (3): 263–292.

71. Ye, Xiaodi. 2021. To engage or not to engage? Explaining the logic of the US’s China strategy in the Post-Cold war era. *Journal of Chinese Political Science* 26 (3): 449–484.

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