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On the time-varying impact of China's bilateral political relations on its trading partners: "doux commerce" or "trade follows the flag"?★

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Abstract

We assess the impact of China's bilateral political relations with three main trading partners—the US, Germany, and the UK—on current account balances and exchange rates, over the 1960Q1-2022Q4 period. Relying on the lag-augmented VAR approach with time-varying Granger causality tests, we find that political relationships with China strongly matter in explaining the dynamics of current accounts and exchange rates, supporting the "trade follows the flag" view. Such relationships cause the evolution of the exchange rate (except in the UK) and the current account; these causal links being time-varying for the US and the UK and robust over the entire period for Germany. These findings suggest that policymakers should account for bilateral political relationships to understand the global macroeconomic consequences of political tensions.

Keywords:
Political relations; time-varying causality; lag-augmented vector autoregression; China.
JEL: C22; F51; Q41.

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1. Introduction

International trade across main trading blocs and countries can be either fostered or hampered depending on the level of the political tensions and/or relations between two nations, which can arise from differences in political systems, ideology, resource scarcity, etc.[1] For instance, bilateral trade between China and the US or between China and Germany, may benefit from good political relations.[2] Such blocs are economically interdependent. Indeed, the US is China's largest export market, and China is the US's largest import market. Hence, the overall relevance of China becomes in itself a geopolitical challenge,[3] as it could be the source of the emergence of a bipolar world (see, e.g., Hang, 2017; Xuetong, 2019).

The war in Ukraine is a recent example of how political tensions can significantly impinge on economic and financial decisions and developments. The conflict has indeed been accompanied by major geopolitical reallocations of trade and massive impacts on the financial and foreign exchange markets. Therefore, one might expect to observe some causal links running from political relations (notably frictions and agreements) to bilateral exchange rates and current account balances.

This paper tackles this issue and aims to assess the time-varying causal relationships between bilateral political relations, current account balances, and exchange rates between China and three non-Asian major trading partner economies, namely, (i) the US, the first trading partner of China, (ii) Germany, first China's European trading partner, and (iii) the UK, a key trading partner outside America, ASEAN, and Europe.

Investigating the time-varying nature of causal relationships is crucial, as causality is fundamentally time-varying and subject to structural breaks and regime changes. A theory and its causal interpretation may be valid during several years, or during specific recurring periods (for instance, business-cycle related), and/or be no longer valid after a large-scale event that produces a regime change. To address such features, we rely on time-varying causality tests, which are particularly appropriate as they allow us to detect whether causal relationships between political and macroeconomic variables are absent, change through time, or remain stable. In other words, they do not require the rejection of causality over the entire period, which may be seen as a very restrictive assumption in economics and finance.

Furthermore, such potential causal relationships are not straightforward as they can be bidirectional in addition to being time-varying depending on the periods under study. Indeed, the depreciation of a Chinese partner's currency and increasing current account deficits against China may generate political tensions between China and its trading partner country. On the other hand, bilateral tightened political relations are expected to hamper trade relationships between China and its trading partner, thus deteriorating the partner's current account and the bilateral exchange rate.

Moreover, the link between political relations and exchange rates can be understood through volatility. In addition to fundamental drivers, exchange rate fluctuations are strongly influenced by political relations. The latter may affect foreign exchange rate markets by leading to new policies—or

[1] Several studies exist on the link between political relations and trade, showing that bilateral trade decreases because of military conflicts (Hegre et al., 2010; Long, 2008; Morrow et al., 1998), disputes over territories (Simmons, 2005), and conflicting political objectives (Pollins, 1989*a*,*b*). See also Du et al. (2017) and Cai, Saadaoui and Wu (2023) for recent investigations.

[2] For example, Fuchs and Klann (2013) show that meetings between the Dalai Lama and countries' officials may harm trade ties with China.

[3] On the role of China in the world economy, see Taylor (2016).

significant changes in existing policies. More generally, bilateral tensions can impact the considered partner country's economic growth and various macroeconomic variables. For instance, in the case of tense political relations, this could threaten the stability of a country's financial system, impacting its currency. On the other hand, improving bilateral relations can be a sign of positive prospects regarding the economic growth of the considered country and the stability of its economic and financial system, positively affecting both the current account balance and the exchange rate.

Regarding previous literature, various recent studies have investigated the link between political relations and some macroeconomic variables. Guo and Chen (2023) report that trade tariffs and negative events/news can significantly depreciate the Chinese yuan (CNY) vis-à-vis the US dollar. In addition, political frictions similarly matter for the exchange rate. Liu and Pauwels (2012) also addressed the issue of political developments, notably by officials or institutions, as drivers of bilateral exchange rates. They mention that political statements (in terms of political pressure), notably from the US, EU member states, Japan, and major international organizations increase the daily conditional volatility of the CNY central parity.

Besides, Andresen and Sturm (2023) show that geopolitical interests may affect exchange rates and stock market development. Temporary members of the United Nations Security Council (UNSC) receiving an IMF program may face a higher risk premium (higher bond and bill yields and weaker exchange rates). Among the several drivers of exchange rates, the literature has also pointed out the relevance of political relations (factors) in addition to international capital controls, monetary policy, interest rate differentials (in the short run), and differences in labor productivity (in the long run) (see, for instance, Frieden, 1994, and Korus and Celebi, 2019).

Regarding political relations' economic and financial relevance, Cai, Chang and Chang (2023) find that shifts in US-China political relations make long-lasting Granger causal impacts on stock market variations, but the reverse effects are short-lived. Cai et al. (2022) also assess the potential impact of political US-China tensions on the oil market, reporting evidence that conflicting political relationships may undermine market stability.

Finally, let us mention the recent paper by Caldara and Iacoviello (2022), who show that, in the US, investment decreases more in industries that are exposed to the so-called aggregate geopolitical risk; the latter index being constructed by the authors based on articles mentioning adverse geopolitical events in leading newspapers. In this vein, Afonso et al. (2023), using the Geopolitical Risk Index (GPR) introduced by Caldara and Iacoviello (2018), find that geopolitical tensions and global uncertainty in border countries contribute to the rise of European countries' sovereign risk as measured by 5- and 10-year Credit Default Swaps (CDS) and bond returns.

In the present paper, we go further than the previous literature in various ways. First, we do not only consider the US-China political relationships but also the political links between China and two other major partner countries, namely the UK and Germany.[4] In this respect, we rely on the political relation index (PRI)[5], which allows us to assess the nature of bilateral political relations between China and each of its partner countries, from rivals to friends. Second, we do not limit our investigation to exchange rates and consider current account balances, which are expected to be impacted by the nature—rival or friendly—of the relationship between countries. Third, turning to methodological aspects, we go further than the usual retained specifications by investigating time-

[4]As a robustness check, we extend our sample of countries to China's Asian partners, namely Japan, India, and Korea (see Section 3.3).

[5]A detailed presentation of this index is provided in Appendix A.

varying causal relationships using the lag-augmented vector autoregression (LA-VAR) approach. To the best of our knowledge, we are the first to examine whether causal relationships between political and macroeconomic variables are at play for our sample of countries by allowing for the possibility of time-varying patterns.

Our main findings show that political relationships with China matter in the dynamics of exchange rates and current accounts in the US, the UK, and Germany over the 1960Q1-2022Q4 period. Specifically, we find that political relationships cause the evolution of the exchange rate (except in the UK) and the current account, and that these causal links are time-varying for the US and the UK. In other words, both the Montesquieu's "doux commerce"—according to which trade between countries promotes good political relations—and the "trade follows the flag"—according to which political relations influence economic activity—views are supported by empirical evidence over different times for the US and the UK, illustrating the relevance of a time-varying specification. In the case of Germany, the causality running from its political relationship with China is at play over the entire period. To the best of our knowledge, this is an original result, which indicates that "trade always follows the flag" in the German-Chinese case, underlining that good political relationships were a prerequisite for the expansion of trade between China and Germany.

The rest of the paper is organized as follows. Section 2 presents the methodology and data, and provides some stylized facts. Section 3 deals with the empirical analysis, and includes various robustness checks. Section 4 concludes.

2. Methodology, data, and stylized facts

2.1. Methodology

Following Shi et al. (2020), we rely on the lag-augmented vector autoregression (LA-VAR) approach (Toda and Yamamoto, 1995; Dolado and Lutkepohl, 1996) for testing time-varying causality between current account balances, bilateral exchange rates, and political relationships. The approach used in this paper does not require any choices concerning the detrending or differencing of the series. Besides, it explicitly allows for unknown changing points in the causal relationships. The LA-VAR model is expressed as follows for a n-dimensional vector y_t,

$$y_t=\gamma_0+\gamma_1 t+\sum_{i=1}^{k} J_i y_{t-i}+\sum_{j=k+1}^{k+d} J_j y_{t-j}+\varepsilon_t \qquad (1)$$

where t is a time trend, k is the lag order of the original VAR model, d denotes the maximum order of integration of the variables in y_t, and ε_t is the error term.

The approach relies on a series of non-Granger causality tests, which are robust to structural breaks and large-scale events that produce regime changes. The main advantage of this methodology, fully described by Shi et al. (2020), is that the null hypothesis of no causality is not constrained to be fulfilled over the whole sample. In this sense, the approach we use in the present paper is more general because the tests we apply are more dependable and have more economic underpinnings than standard Granger causality tests. Three outcomes are possible with these time-varying tests: (a) absence of causality over the entire period, (b) causality over specific periods, and (c) causality over the whole sample. In the first case, there is no causality between political and macroeconomic variables. In the second case, causality between political and macroeconomic variables is observed over specific sub-periods and can support Montesquieu's "doux commerce" view and/or the "trade follows the flag" view. In the third case, causality is at play over the full sample period, as in the standard Granger causality tests.

To obtain a series of Wald statistics to address the null hypothesis of non-Granger causality, three recursive strategies, combined with Granger causality tests, can be used: (i) the forward expanding (FE) window method, which fixes the starting point at the first observation and moves the ending points; (ii) the rolling window (RW) method, which moves the starting and ending points together with a constant distance; and (iii) the recursive evolving (RE) window method, which is a mix between the FE and RW strategies where the starting and ending points vary. According to the simulations by Shi et al. (2020)), the RE window algorithm provides the most reliable results, followed by the RW method.[6]

2.2. Data

We use quarterly data for China, the US, Germany, and the UK from the first quarter of 1960 to the last quarter of 2022 (see Table A1 in Appendix A for the descriptive statistics). Bilateral exchange rates are extracted from the International Financial Statistics database provided by the IMF,[7] and the current account data are obtained from the Main Economic Indicators database of the OECD.[8] The bilateral political relation index (PRI) for the main economic partners of China is produced by the Institute of International Relations at Tsinghua University.[9] The PRI varies from -9 and 9, and 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). Bilateral exchange rates and PRIs are also available at a monthly frequency, but the current account balance is not.

2.3. Stylized facts

Figure 1 displays the bilateral PRIs for the three considered countries vis-à-vis China. As shown, whereas PRIs globally followed an increasing trend until the mid-2010s, bilateral political relations strongly deteriorated for the three countries after 2015-2016, especially in the cases of the US and the UK. Regarding the US, the main explanation lies in the trade war engaged by Donald Trump when he came into power. During its campaign speech in June 2016, Donald Trump announced that, if elected, he intended to sanction China which he accused of manipulating foreign exchange markets, to take legal actions against its "unfair" trade practices, and to apply tariffs on imports from China. This paved the way for the trade war between the two countries, which began in

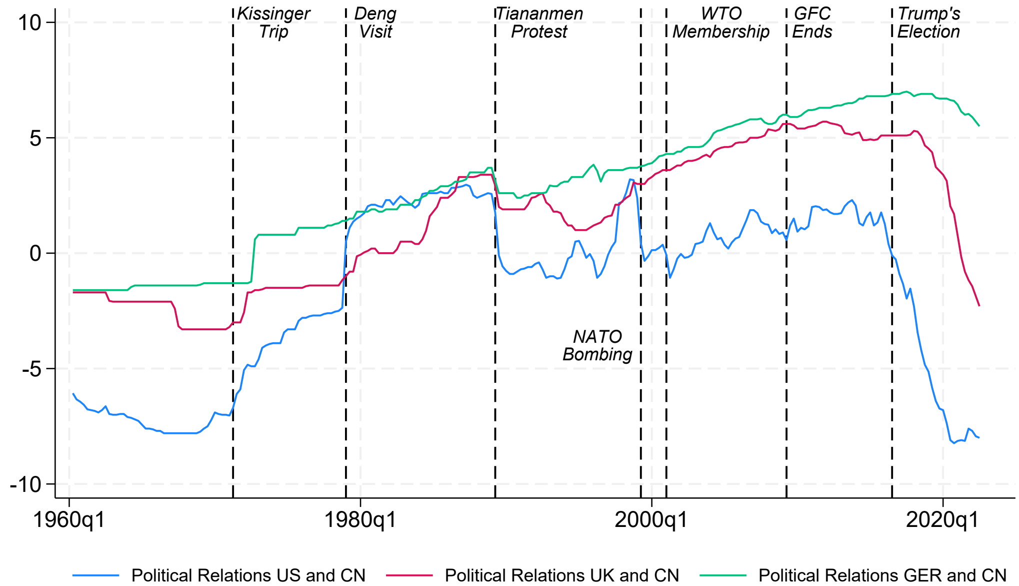
[6]For brevity and to save space, we report the results using the RE window algorithm in the following. Similar findings are obtained with the two other algorithms and are available upon request to the authors.

[7]Source: https://db.nomics.world/IMF/IFS. A rise denotes a depreciation of the Chinese currency.

[8]Source: https://db.nomics.world/OECD/MEI. It is worth mentioning that an alternative to the current account would have been trade openness, i.e., the sum of bilateral exports and imports. However, relying on the current account is more appropriate in our context as it includes the income balance for the production factors, which is relevant to explore in a situation of increasing financial integration. Trade openness does not include financial components. We expect that a large deterioration of the current account, like the one we observed in the US during the 2000s, may fuel the electoral discourse of populist leaders. Variations in the current account are, therefore, linked to political relationship changes.

[9]Source: http://www.tuiir.tsinghua.edu.cn/imiren/info/1091/1320.htm. Dreher et al. (2009) use an alternative way to measure geopolitical interest or relations by analysing the temporary Security Council membership at the UN. This approach is not relevant in our case as we focus on the relations between permanent members of the UNSC, like the US, China, and the UK.

Figure 1: Bilateral political relation indices (PRI)



Note: The political relation indexes (PRI) are extracted from:
http://www.tuiir.tsinghua.edu.cn/imiren/info/1091/1320.htm

January 2018 when the US introduced tariffs and trade barriers on various Chinese products. In response, China established a list of several products for which tariffs would increase significantly. The conflict escalated in 2019, leading to the signing of a tense agreement in January 2020, which expired in December 2021.

Turning to the UK, the political tensions are primarily explained by the accumulation of frictions regarding notably (i) Hong Kong, with the UK opposition to the Hong Kong National Security Law, (ii) the Uyghur Muslim minority in Xinjiang, and (iii) Huawei, with the announce of the UK to ban all equipment from the Chinese group from its 5G networks. Considering the case of Germany, although its political relations with China started to tighten after 2019, they followed an increasing trend over the entire period.

Figures 2 and 3 respectively display the current account balance and the bilateral PRI, and the bilateral exchange rate and the PRI for the three countries. Regarding the current account balance for the US, its global deterioration up until the mid-2000s goes along with an improvement in the political relation with China; hence the negative correlation between the current account and the PRI over the full period (correlation = -0.49, see Table 1). From the second half of the 2000s, the pattern has significantly changed, with a tendency of the series to move commonly; the correlation being equal to 0.48 after 2010. This illustrates the relevance of investigating the existence of a time-varying relationship between the two series. This is also the case for the exchange rate. Indeed, as shown in Figure 3, during the 1970s, an improvement in the PRI went along with an appreciation of the CNY, contrary to the 1980s. On the other hand, in the 1980s, an amelioration in the US-China political relation was observed alongside a depreciation of the CNY vis-à-vis the US dollar. Regarding the recent period, the degradation of the political relations between the two countries is accompanied by a depreciation of the Chinese currency.

Table 1: Correlations between political and macroeconomic variables

Variables	PRI US/CN	PRI UK/CN	PRI GER/CN
Pairwise correlations over the whole period			
CNY/USD exchange rate	**0.376*****	0.751***	0.772***
GBP/USD exchange rate	0.491***	**0.672*****	0.826***
EUR(DEU)/USD exchange rate	-0.709***	-0.791***	**-0.883*****
US current account	**-0.491*****	-0.759***	-0.774***
UK current account	-0.307***	**-0.650*****	-0.716***
GER current account	-0.094	0.589***	**0.744*****
Pairwise correlations after 1990			
Variables	PRI US/CN	PRI UK/CN	PRI GER/CN
CNY/USD exchange rate	**0.188****	-0.047	-0.136
GBP/USD exchange rate	-0.669***	**-0.201****	-0.393***
EUR(DEU)/USD exchange rate	-0.243***	-0.216**	**-0.159***
US current account	**-0.067**	-0.277***	-0.338***
UK current account	0.057	**-0.392*****	-0.633***
GER current account	-0.180**	0.552***	**0.916*****
Pairwise correlations after 2000			
Variables	PRI US/CN	PRI UK/CN	PRI GER/CN
CNY/USD exchange rate	**0.148**	-0.027	-0.833***
GBP/USD exchange rate	-0.712***	**-0.449*****	0.347***
EUR(DEU)/USD exchange rate	-0.285***	-0.389***	**-0.478****
US current account	**-0.147**	0.149	0.644***
UK current account	-0.051	**-0.092**	-0.495***
GER current account	-0.149	0.179*	**0.915*****
Pairwise correlations after 2010			
Variables	PRI US/CN	PRI UK/CN	PRI GER/CN
CNY/USD exchange rate	**-0.548*****	-0.175	0.051
GBP/USD exchange rate	-0.783***	**-0.517*****	0.157
EUR(DEU)/USD exchange rate	-0.573***	-0.455***	**0.254***
US current account	**0.475*****	0.743***	0.777***
UK current account	-0.200	**-0.087**	-0.273*
GER current account	0.062	0.275*	**0.678*****

Note: Source: authors' calculations. An increase in the political relation index (PRI) indicates an improvement of the political relation with China. An increase in the X/Y exchange rate indicates a depreciation of the currency X. *** (resp. **, *): significance at the 1% (resp. 5%, 10%) statistical level. Bold figures relate to political relations and macroeconomic outcomes for each country.

For the UK, Figures 2 and 3 globally show an improvement in the bilateral political relation with China, except at the end of the period. This deterioration is linked to Hong Kong's National Security Law, which the UK opposed, constituting a breach of the UK-China agreement. The extradition treaty with China is also suspended due to the treatment of the Uyghur Muslim minority in Xinjiang province, declared as a genocide by the UK. The overall improvement in political relations between the two countries is accompanied by both a deteriorating trend in the UK current account (correlation = -0.62) and a tendency for the British pound depreciation.

The overall pattern differs for Germany compared to the US and the UK. As shown in Figure 3, the current account balance improves mostly throughout the period at hand, together with a positive trend in the China-Germany PRI (correlation = 0.74). The positive slope of the political relations was accentuated at the beginning of the 1970s because of the official diplomatic contacts established between West Germany and China. The deterioration observed at the end of the period can be explained by the same factors as for the UK, i.e., the mistreatment of the Uyghurs and Germany's opposition to Hong Kong's National Security Law. The overall improvement in political relations between the two countries is also associated with an appreciation of the German currency during most of the period (up until the mid-1990s), while a more stable trend is at play afterward.

Overall, this preliminary analysis shows the existence of a significant correlation between bilateral political relations and the current accounts and the exchange rates of the three China's partners. Furthermore, the links between (i) political relations and (ii) current account balances and exchange rates evolve over time, especially in the case of the US and, to a lesser extent, the UK. Germany follows a quite different pattern as the links between the PRI and the German macroeconomic variables seem to be rather stable over time. This calls for a deeper investigation through the estimation of LA-VAR models and the implementation of time-varying causality tests.

3. Empirical results

3.1. Unit root tests and LA-VAR lag order

The LA-VAR procedure does not involve pre-filtering the data by removing the trend or taking the first difference. However, it requires the application of unit root tests to determine the maximum order of integration of the series.

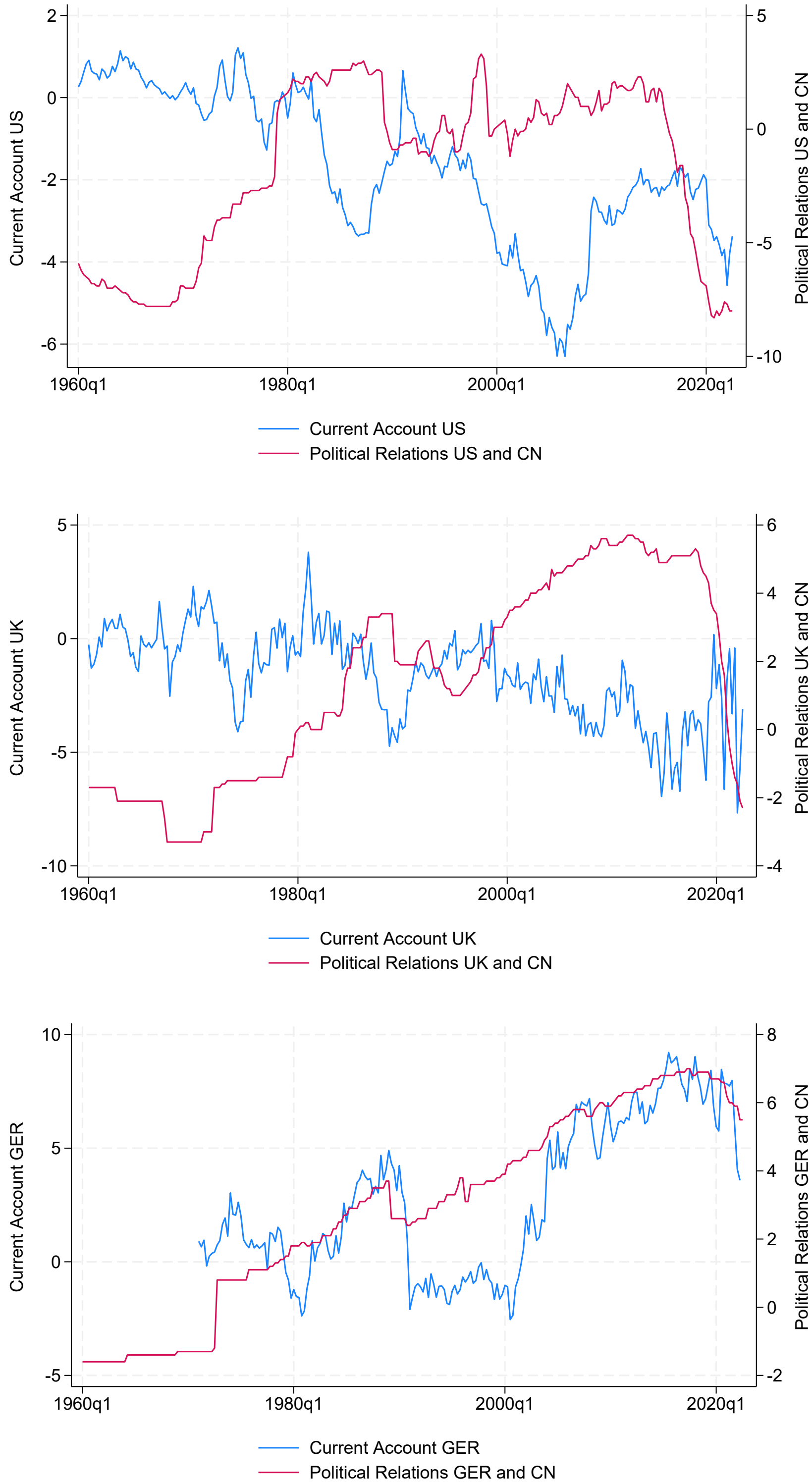
Table 2 reports the results of the augmented DF-GLS test (Elliott et al., 1996) and the ADF-max test of Leybourne (1995), which account for residual serial correlation.[10] As shown, the maximum order of integration of the series is equal to 1. Therefore, we will consider $d = 1$ in the LA-VAR.

The following step consists of determining the VAR order for each causal relationship between PRIs and the two macroeconomic variables, i.e., the current account balance and the bilateral exchange rate. To this end, we restrict the maximum number of lags to four, as is usual when working with quarterly data. Furthermore, we include a linear trend that enters as an exogenous variable in the VAR. We find that the optimal lag is $k = 2$; the selected lag order in the LA-VAR approach being thus equal to $k + d = 3$.[11]

[10] Roughly speaking, the DF-GLS test is an efficient test that consists of detrending or demeaning the considered series using GLS, and performing usual ADF unit root tests on the resulting transformed data. The ADF-max test consists of estimating Dickey-Fuller-type regressions using forward and reverse realizations of the data. Those two tests outperform usual unit root tests in terms of power. See Otero and Baum (2017, 2018) and Baum et al. (2022) for more details.

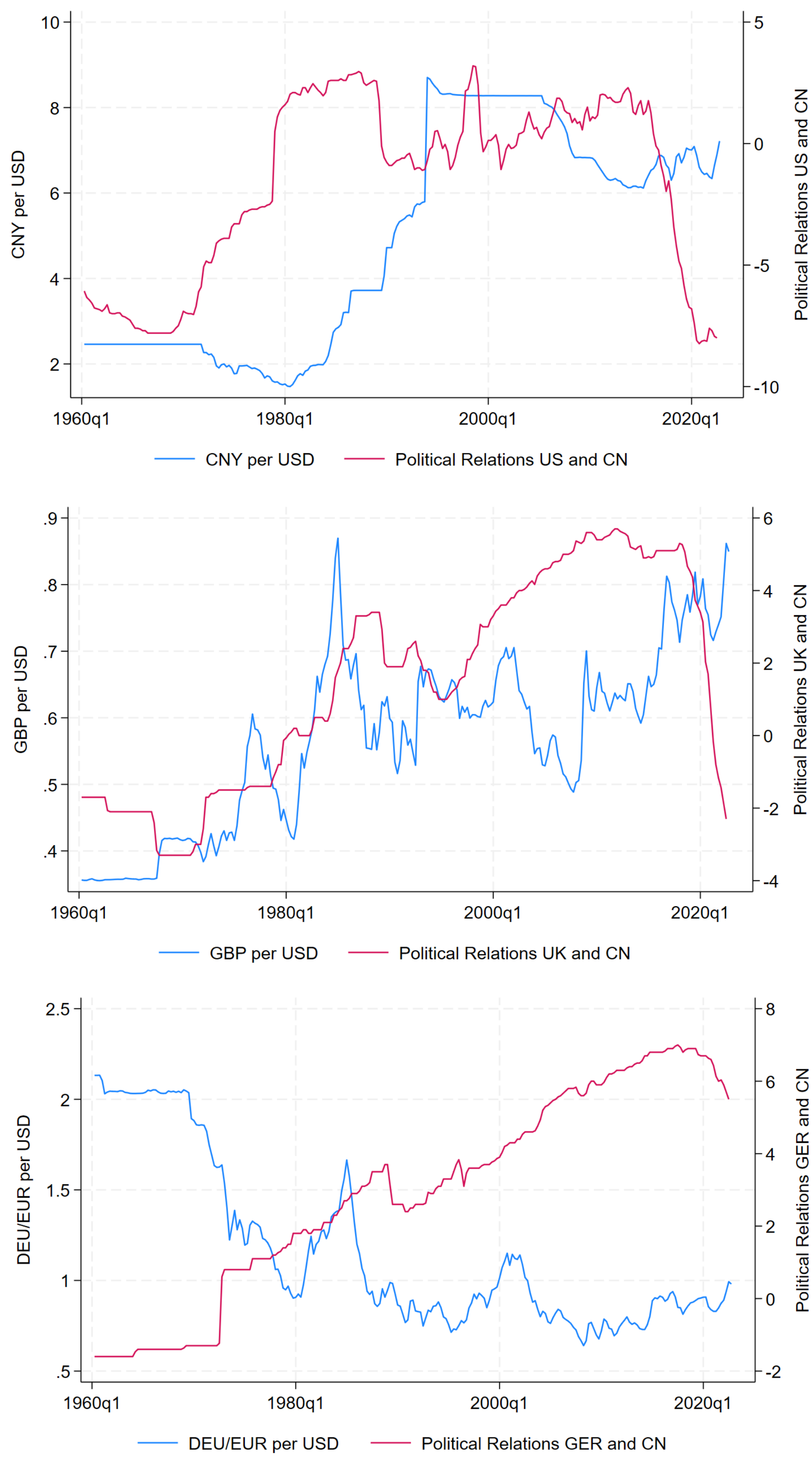
[11] The results are available upon request to the authors.

Figure 2: Current account balances and political relations



Source: see Section 3.2. On the left-hand side scale, current balance as a percentage of GDP. On the right-hand scale, political relationship with China, PRI $\in [-9, 9]$.

Figure 3: Bilateral exchange rates and political relations



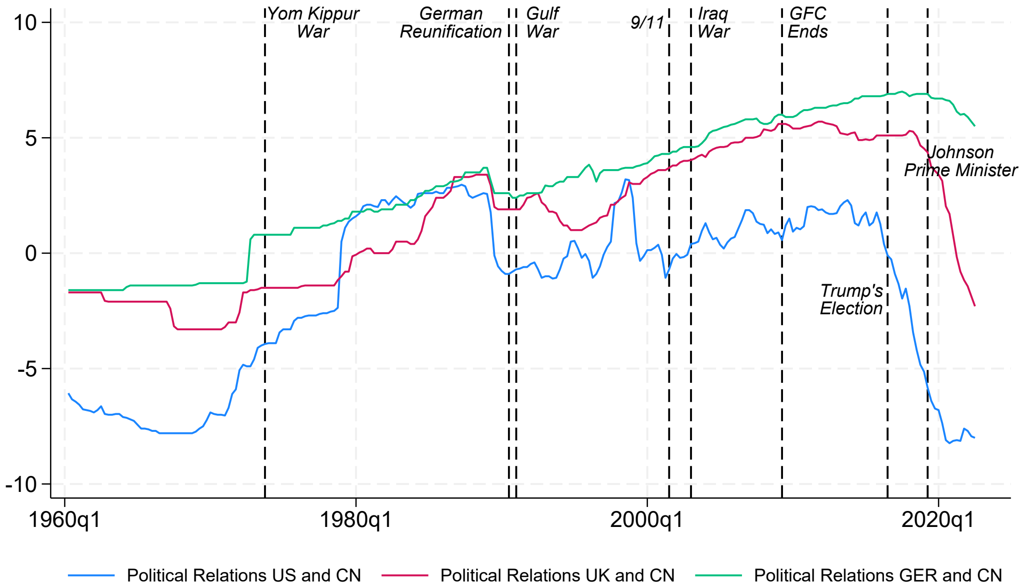
Source: see Section 3.2. On the left-hand side scale, bilateral X/USD exchange rate (an increase denotes a depreciation of the currency X). On the right-hand scale, political relationship with China, PRI $\in[-9,9]$.

Table 2: Unit root tests

Variable	DF-GLS						ADF-max					
	Levels			First difference			Levels			First difference		
	Lags	Statistic	[p-value]	Lags	Statistic	[p-value]	Lags	Statistic	[p-value]	Lags	Statistic	[p-value]
CNY/USD exchange rate	1	0.211	[0.793]	0	-14.588	[0.000]	1	-0.568	[0.747]	0	-14.584	[0.000]
GBP/USD exchange rate	2	-0.038	[0.722]	1	-11.482	[0.000]	3	-1.499	[0.303]	1	-11.512	[0.000]
EUR/USD exchange rate	1	-0.015	[0.729]	0	-11.492	[0.000]	1	-0.219	[0.863]	0	-11.537	[0.000]
PRI US	3	-1.622	[0.547]	2	-8.049	[0.000]	3	-1.413	[0.734]	2	-8.124	[0.000]
PRI UK	3	-1.08	[0.835]	3	-3.691	[0.000]	3	0.017	[0.992]	2	-6.065	[0.000]
PRI GER	0	-1.275	[0.745]	0	-16.249	[0.000]	0	-1.136	[0.843]	0	-16.434	[0.000]
US current account	0	-0.708	[0.469]	2	-6.399	[0.000]	0	-1.454	[0.322]	0	-14.997	[0.000]
UK current account	4	-1.924	[0.064]	1	-15.046	[0.000]	4	-2.195	[0.089]	3	-11.798	[0.000]
GER current account	0	-1.479	[0.164]	0	-14.213	[0.000]	0	-1.746	[0.208]	0	-15.264	[0.000]

Notes: The tests include a constant and a trend for the political relations, and a constant for the other variables. For the PRI, we use the log-modulus transformation as in Mignon and Saadaoui (2024). The number of lags is determined using the AIC criterion considering a maximum of 4 quarters. Source: authors' calculations.

Figure 4: Bilateral political relation indices (PRI)



Note: The political relation indexes (PRI) are extracted from:
http://www.tuiir.tsinghua.edu.cn/imiren/info/1091/1320.htm

3.2. Time-varying Granger causality tests

We report in Figures 5 to 7 the time-varying causality test results using the RE window approach. As shown, the null hypothesis of non-causality is rejected in several cases. For the three China's partner countries, we find that bilateral political relations have a causal effect on their current account balances. It is worth mentioning that whereas such causality is at play over some sub-periods in the case of the US and the UK, it is observed over the full period for Germany. Clearly, this illustrates that bilateral relations strongly matter in the evolution of China's partners' current accounts, particularly for Germany.

Turning to our second macroeconomic variable, our findings underline a robust causal relationship running from the PRI to the exchange rate in Germany, corroborating the key role played by China. Bilateral political relations also impact the US currency over some sub-periods. On the contrary, the null hypothesis of non-causality from the PRI to the CNY/GBP exchange rate is never rejected. These results are in line with the fact that the US—first China's trading partner—and Germany—first China's European trading partner—are more important partners for China than the UK.[12]

Our long period incorporates several large-scale political and economic events, some of which are mentioned in Figures 1 and 4. Germany is particularly concerned by major changes such as the reunification in October 1990, the launch of the euro in 1999, the European debt crisis from 2009 until the mid to late 2010s, and the Global Financial Crisis in 2008, which has also strongly

[12]To assess the robustness of our results, we use the alternative approach proposed by Rossi and Wang (2019) to test Granger non-causality in presence of instability. As shown in Appendix B, our results regarding Germany are robust to the retained approach.

impacted the US and the UK. The fall of the Soviet Union in 1991 and Brexit in 2020 are among the major changes known by the UK, as well as the Tiananmen Square events in 1989, the NATO bombing of the Chinese embassy in 1999, and the accession into the WTO in 2001 for China. The fall of the Soviet Union and China's accession to WTO also constituted essential changes for the US, in addition to the election of Donald Trump in 2016. Some of those aforementioned events, particularly Trump's accession to power, may impact the political relations of these countries with China. Applying time-varying causality tests will allow us to assess such potential effects.

Regarding the US, our findings highlight the existence of a time-varying bidirectional causality between the PRI and the exchange rate. The most interesting result concerns the recent period, starting in the mid-2010s, for which a depreciation of the Chinese currency accompanies a deterioration of the US-China political relation, the causality being bidirectional. This is linked to the trade war and Donald Trump's accusation against China for manipulating its currency, leading to political tensions between the two countries. More generally, the worsening of the US current account balance and the undervaluation of the Chinese currency have indeed been supposedly two factors that led to the rise of populism (contributing eventually to Donald Trump's election), and to the US-China trade war (Moosa et al., 2020; see Panel (b) of Figure 5). Furthermore, as Autor et al. (2016) and Pierce and Schott (2016) mentioned, changing world trade patterns with China's emergence have contributed to increased unemployment in US industries more exposed to import competition. Even though the US Senate declined to label China as a currency manipulator[13] in 2012, the debates were intense.[14] All these debates may have contributed to the rise of Donald Trump's power and the start of the US-China trade war. As shown in Panel (b) of Figure 5, the CNY/USD exchange rate has indeed been a cause of political tensions from the start of Donald Trump's presidency, the reverse causality being also at play.

Tuning to the UK, while there is no causality between the PRI and the CNY/GBP exchange rate, a time-varying causality is observed between the PRI and the current account (Figure 6). The latter is mainly observed after 2010, i.e., until the deterioration of the political relations between the countries linked to the tensions regarding Hong Kong, Xinjiang, and Huawei.

The case of Germany is particularly interesting. As shown in Figure 7, a one-way causality runs from the PRI to the exchange rate and the current account over most of the considered period. Globally, the continuously improving political relationships between China and Germany are accompanied by a depreciation of the CNY and growing current account surpluses, except at the end of the period where the tense relations that are beginning to emerge go hand in hand with the appreciation of the Chinese currency. After the entrance of China into the WTO,[15] the relation between China and Germany was at the heart of the Global Value Chains. This particular link was reinforced during the enlargement in 2004 to Eastern Europe, as Germany began to become the industrial core of this new EU with a center of gravity that shifted to the East. Overall, Germany and China have become two major players in terms of trade flows (Miranda-Agrippino et al., 2020). According to Heiduk (2014), Germany's 'Chinapolitik' under Chancellor Gerhard Schröder was driven by economic interests and, despite a meeting with the Dalai Lama in 2007, Chancellor Angela

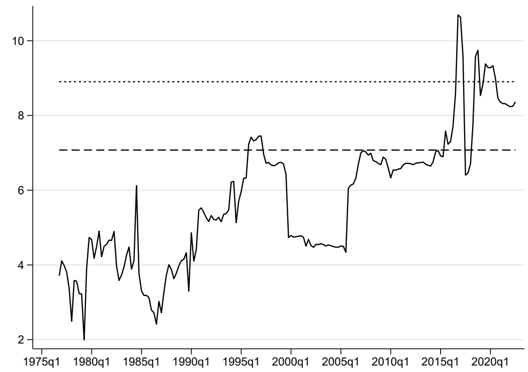
[13] https://www.reuters.com/article/us-usa-china-treasury-idUSBRE8AQ19V20121128

[14] Fred Bergsten talks about "fighting fire with fire on the renminbi", see: https://www.ft.com/content/070e525c-cf1d-11df-9be2-00144feab49a

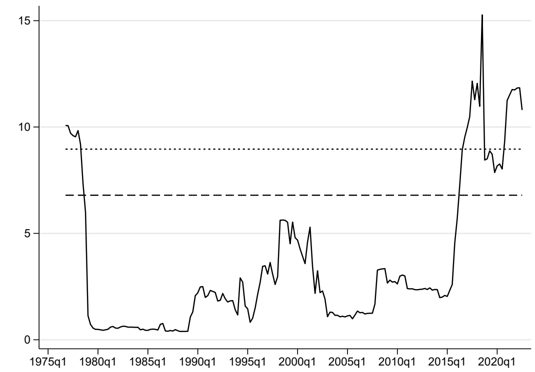
[15] For an interesting investigation of the behavior of the Chinese real effective exchange rate around some particular events—including China's accession to WTO—see Gao et al. (2022).

Figure 5: Time-varying causality for China and the US

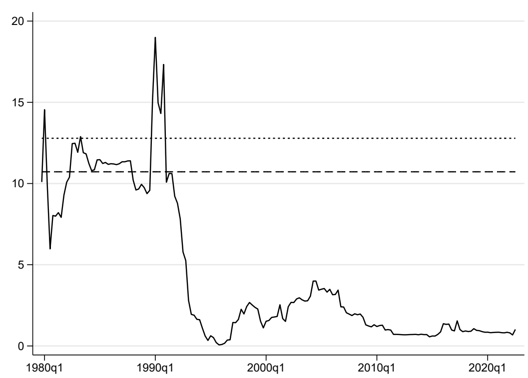
(a) $PRI \xrightarrow{\text{GC?}} CNY/USD$



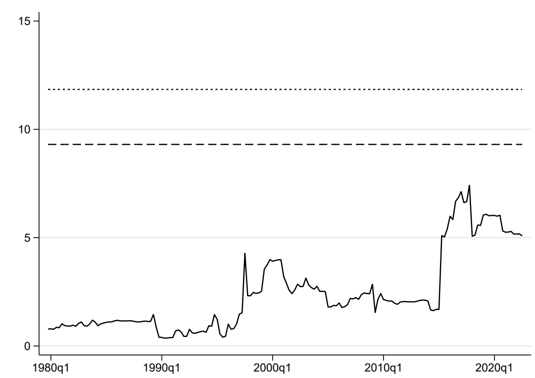
(b) $CNY/USD \xrightarrow{\text{GC?}} PRI$



(c) $PRI \xrightarrow{\text{GC?}}$ Current account



(d) Current account$\xrightarrow{\text{GC?}} PRI$



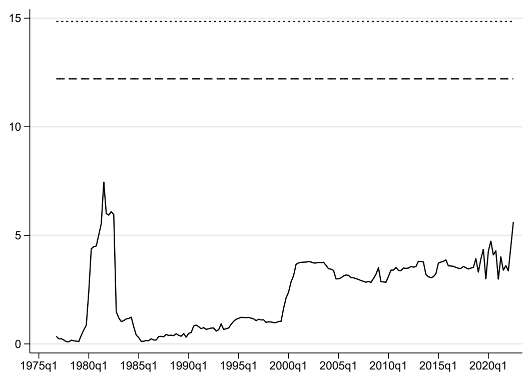
Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. We present the results of the RE window at the 5 and 10 percent levels for readability purposes. Source: author's calculations.

Merkel did not change this 'Realpolitik'.

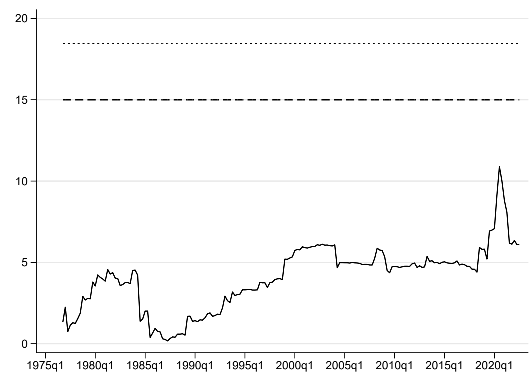
On the whole, our findings show that Montesquieu's "doux commerce" view is not always validated for the US and UK and never for Germany. According to this theory, causality should run from trade to political relations, as trade partnerships should produce more peaceful relationships between individuals and nations. We find that both the "doux commerce" and the "trade follows the flag" views are supported by empirical evidence over different times for the US and the UK, illustrating the relevance of a time-varying specification. The most striking result is that "trade always follows the flag" for Germany and China: we reject the null hypothesis of non-causality running from political relations to macroeconomic variables, while the null of non-causality from political relations to macroeconomic variables is not rejected. This illustrates that good political relationships were a prerequisite to the expansion of trade between China and Germany.

Figure 6: Time-varying causality for China and the UK

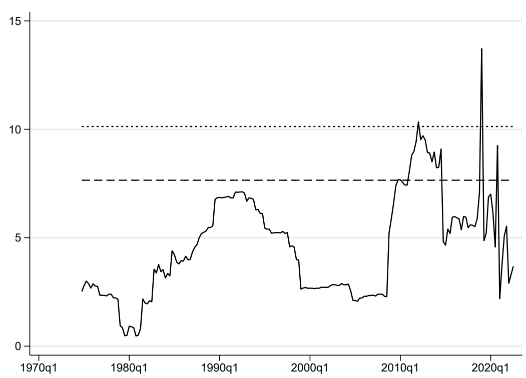
(a) $PRI \xrightarrow{\text{GC?}} GBP/USD$



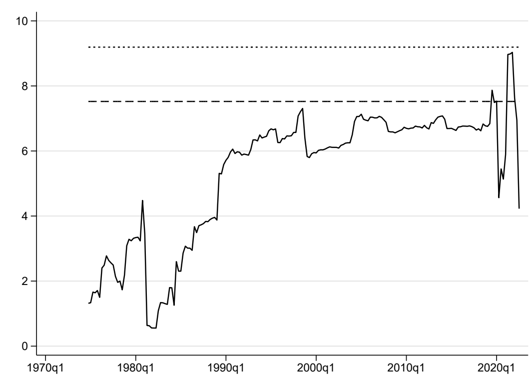
(b) $GBP/USD \xrightarrow{\text{GC?}} PRI$



(c) $PRI \xrightarrow{\text{GC?}}$ Current account



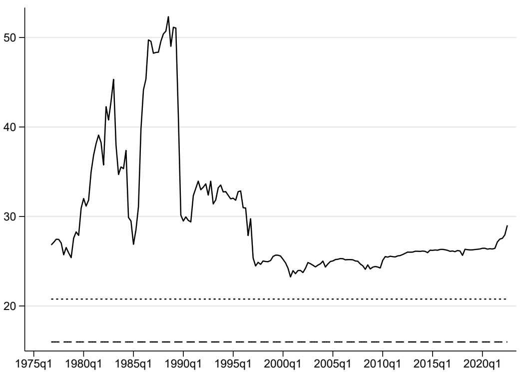
(d) Current account $\xrightarrow{\text{GC?}} PRI$



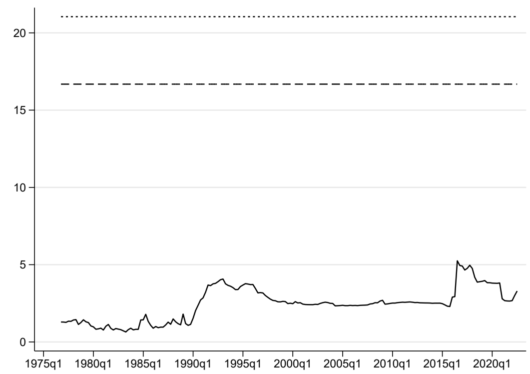
Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. We present the results of the RE window at the 5 and 10 percent levels for readability purposes. Source: author's calculations.

Figure 7: Time-varying causality for China and Germany

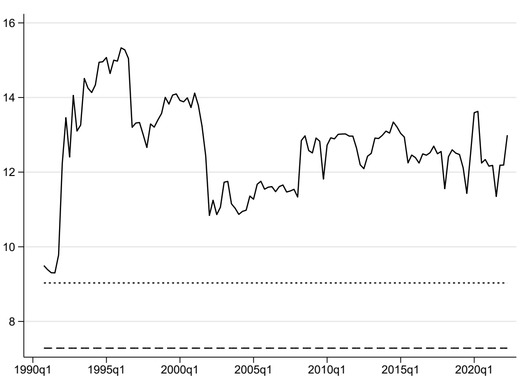
(a) $PRI \xrightarrow{\text{GC?}} EUR/USD$



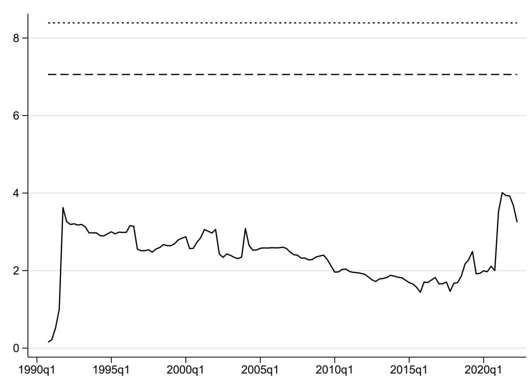
(b) $EUR/USD \xrightarrow{\text{GC?}} PRI$



(c) $PRI \xrightarrow{\text{GC?}}$ Current account

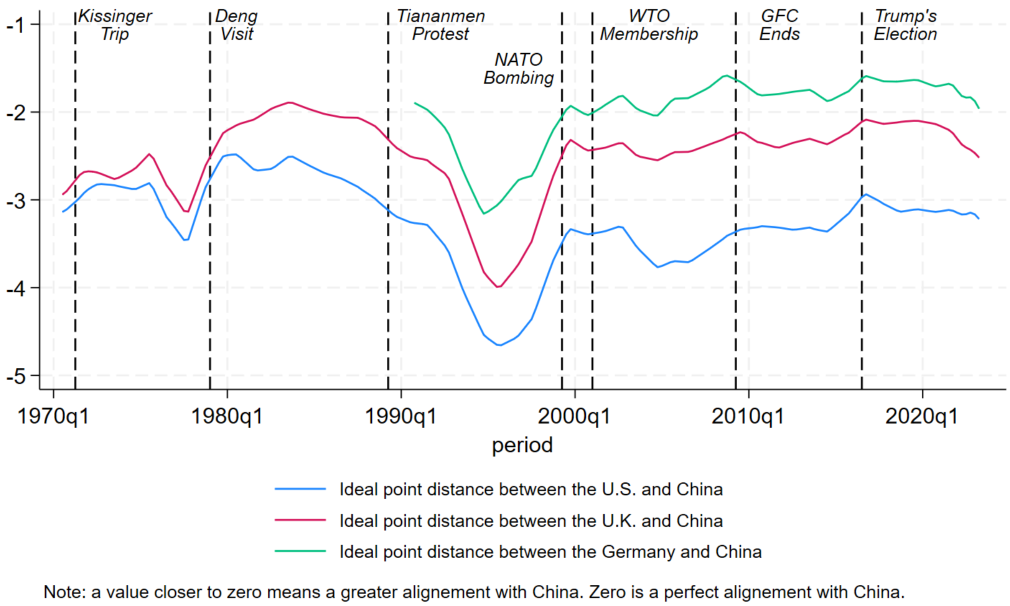


(d) Current account $\xrightarrow{\text{GC?}} PRI$



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. We present the results of the RE window at the 5 and 10 percent levels for readability purposes. Source: author's calculations.

Figure 8: Ideal point distance to China



3.3. Robustness checks

3.3.1. Geopolitical measures

We assess the robustness of our findings to the measure retained for political tensions. To this end, we consider (i) geopolitical distance as in Bailey et al. (2017), and (ii) the Geopolitical Risk Index (GPR) introduced by Caldara and Iacoviello (2018). It should, however, be mentioned that since China has been a member of the United Nations since the beginning of 1970 and the vote of the UN resolution 2758, data on geopolitical distance is only available from 1970 onwards. Consequently, we have fewer observations than for PRI. The same problem applies to the country-specific GPR, which starts in January 1985.

To calculate the ideal distance to China, we collect the ideal points computed by Bailey et al. (2017) and extend the ideal point values between two series. The series are smoothed using a moving average including a 24-month window. The ideal distance to China is the distance between the ideal point of China and that of the respective partner.

Figure 8 reports the ideal point distance we obtain between China and the three considered countries. This alternative measure does not outperform the PRI in capturing the deterioration of the bilateral relationship between China and the other countries, as shown during the Trump presidency for the relationship between the US and China.

To assess the robustness of our findings to the choice of the measure for political tensions, we implement the time-varying causality tests using geopolitical distance (see Figures C2, C3, and C4 in Appendix Appendix C). Regarding the US, the results are globally similar to those obtained with the PRI. Turning to the UK, the findings are also in line with the previous ones, the null hypothesis of non-causality being, however, more often rejected when considering the relationship with the trade balance. The most significant differences appear in the German case, where the results using geopolitical distance are more nuanced than those resulting from using PRI. Specifically, both the "doux commerce" and the "trade follows the flag" views seem to be at play depending on the period considered. It should, however, be mentioned that the sample for Germany is significantly shorter, which may affect the robustness of the conclusions.

Let us now consider the GPR measure. As noticed by Mignon and Saadaoui (2024), PRI and GPR can be seen as complementary measures. Considering the case of US-China relationships, the bilateral GPR does not focus on the relationship between the United States and China, but provides an overall picture of the geopolitical uncertainty for China. For example, the Sino-Japanese dispute over the Diaoyu/Senkaku Islands could be included in the GPR index specific for China as well as in the Sino-Japanese PRI, but not in the PRI between the US and China, which is focused on the bilateral relationship between the two countries. The results of the time-varying causality tests using GPR are displayed in Figures C5, C6, and C7 in Appendix C. As shown, the findings are globally similar to those obtained using PRI, except for Germany where the "trade follows the flag" view holds for some sub-periods. This is especially true after the 1990s and the entrance of China into WTO.

3.3.2. Controlling for volatility

As other global factors can move financial variables like the exchange rate volatility, we assess the robustness of our findings by including the VIX as a control in our LA-VAR specification. As shown in Figures C8, C9, and C10 in Appendix C,[16] the findings are globally in line with those reported in the paper. In the US case, the PRI causes the exchange rate after the election of Donald Trump. Besides, the VIX causes the exchange rate during the Global Financial Crisis (GFC) in both the US and the UK cases. Finally, political relations between China and Germany cause the EUR/USD exchange rate even after controlling for the VIX, and the latter causes the EUR/USD exchange rate after the start of the COVID-19 pandemic.

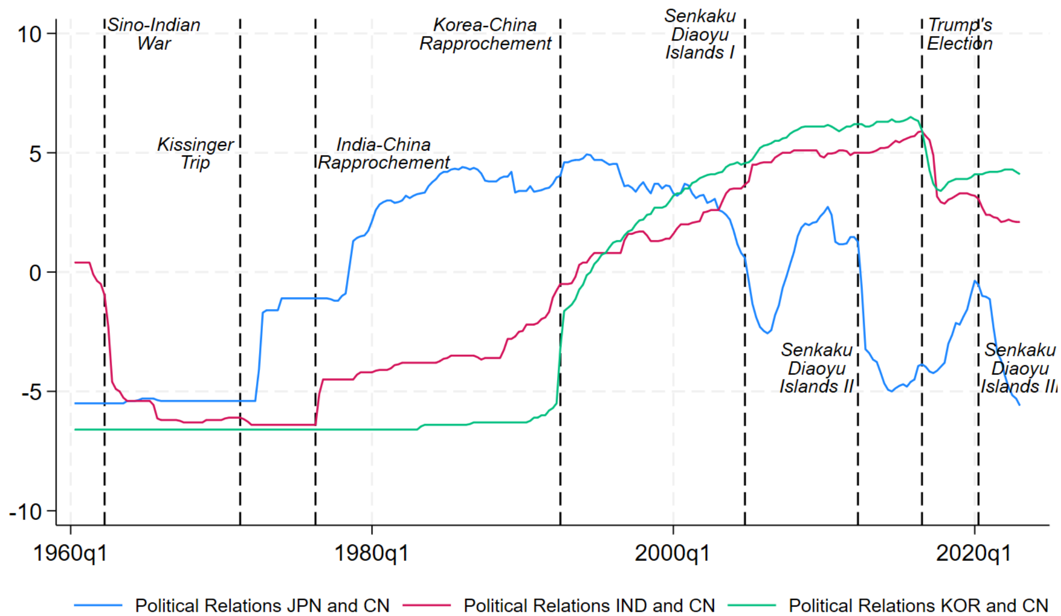
3.3.3. Extending the sample of countries

Although our paper focuses on the main non-Asian trading partners of China, we have extended our analysis by including three Asian countries which have close ties with China, namely Japan, India, and South Korea. The relevance of the time-varying framework is also highlighted for those China's Asian partners. The relevance of the time-varying framework is also highlighted for China's Asian partners. Indeed, as shown by Figures C11, C12, and C13 in Appendix Appendix C,[17] although there is no causality from the PRI to the exchange rate most of the time, it is significant at specific periods where particular events were at play. Sino-Japanese relations have globally followed an increasing trend until the beginning of the 2000s (Figure 9) and warmed significantly after Shinzo Abe—and later Yasuo Fukuda—became Prime Minister of Japan in September 2006. A strong dispute between the two countries has concerned the territoriality of the Senkaku (Diaoyu) Islands, which has accentuated the tensions. This deterioration of the Sino-Japanese relations has affected the yen exchange rate, as illustrated by the significant causality observed in Figure C11. Turning to Sino-Indian and Sino-Korean relations, they have improved throughout the period, explaining why causality from the PRI to exchange rates is most of the time non-significant. The significant causality observed during the mid-1990s for the Indian case can be explained by border

[16]For the sake of parsimony, we only report the results related to exchange rates. The VIX series comes from Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis.

[17]As for the VIX, to avoid too many figures, we only display the results related to exchange rates. Exchange rate data are extracted from the International Financial Statistics database provided by the IMF.

Figure 9: Bilateral political relation indices (PRI)



Note: The political relation indexes (PRI) are extracted from:
http://www.tuiir.tsinghua.edu.cn/imiren/info/1091/1320.htm

issues and India's nuclear tests, while it notably results from tensions linked to severed diplomatic ties Taipei and Seoul in 1983. Regarding the reverse causality, for the exchange rate to the PRI, it is especially significant in the 1990s for India, corresponding to a period of a sharp depreciation of the rupiah coming from current account deficits and a loss of investor confidence.

4. Conclusion

In the context of the growing importance of China worldwide, this paper aims to assess the impact of Chinese bilateral political relations with three of its main trading partners—the US, Germany, and the UK—on their current account balances and exchange rates. Relying on the LA-VAR approach with time-varying Granger causality tests, our findings show that political relationships with China strongly matter in explaining the dynamics of its partners' current accounts and exchange rates.

Specifically, we find that political relationships cause the evolution of the bilateral exchange rate (except in the UK) and the current account, and that these causal links are time-varying for the US and the UK. Regarding Germany, the causality running from its political relationship with China is observed over the entire period. Overall, although both the "doux commerce" and the "trade follows the flag" views are supported by empirical evidence over different times for the US and the UK, "trade always follows the flag" in the German-Chinese case, underlining that good political relationships were a prerequisite to the expansion of trade between China and Germany.

These findings suggest that policymakers should account for bilateral political relationships to understand the global macroeconomic consequences of political tensions and international politically relevant decisions.

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Appendix A. Data description

Appendix A.1. Descriptive statistics

Table A1: Descriptive statistics (1960Q1 – 2022Q4)

Involved variables	(1) Obs.	(2) Mean	(3) SD	(4) Min	(5) Max
CNY/USD exchange rate	264	4.768	2.523	1.472	8.704
GBP/USD exchange rate	264	0.558	0.136	0.355	0.870
EUR(DEU)/USD exchange rate	264	1.212	0.494	0.640	2.149
Political Relations US and CN	291	-2.320	3.861	-8.300	3.300
Political Relations UK and CN	291	1.077	2.864	-3.300	5.700
Political Relations GER and CN	291	2.182	3.182	-3.000	7.000
Current Account US	251	-1.666	1.843	-6.300	1.214
Current Account UK	270	-1.419	2.007	-7.667	3.806
Current Account GER	206	2.768	3.350	-2.542	9.211

Source: authors' calculations.

Appendix A.2. The Political Relation Index (PRI)

The Political Relation Index (hereafter PRI) is an index built by the Institute of International Relations at Tsinghua University to measure the political relationships between China and its major trading partners (see Yan (2010) for a discussion). This index, 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 like the Goldstein scale (Goldstein, 1992). Each month, bad or good events appearing in People's Daily and on the Chinese Ministry of Foreign Affairs website are included to update the index according to the following formula:

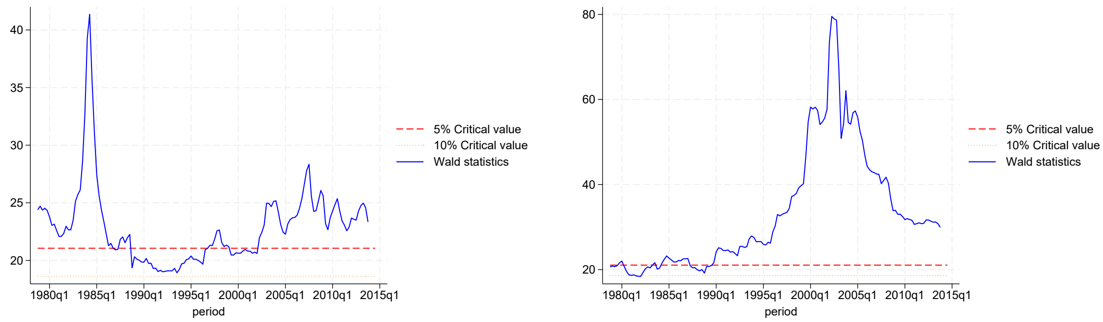
$$PRI_t = \frac{\frac{N-PRI_{t-1}}{N}EV^+ + \frac{N+PRI_{t-1}}{N}EV^-}{5} + PRI_{t-1} \tag{A.1}$$

where N denotes the half of the range of the PRI index, EV^+ is the level of good events, and EV^- is the level of bad events during the current month, respectively. The first term after the equal sign is rounded to the smallest increment 0.1. The methodology is fully transparent and the interested reader can replicate the index by selecting other sources for the events. It is worth mentioning that Mignon and Saadaoui (2024) have explored the complementarity between PRI and another index, namely the Geopolitical Risk Index (hereafter GPR) introduced by Caldara and Iacoviello (2018). They find similar spikes around major events related to the relation between the US and China, such as for the election of Donald Trump.

Appendix B. Alternative approach

Figure B1: Wald statistic sequence for the QLR* test

(a) $PRI \xrightarrow{\text{GC?}} EUR/USD$ **(b)** $PRI \xrightarrow{\text{GC?}}$ Current account



Source: authors calculations.

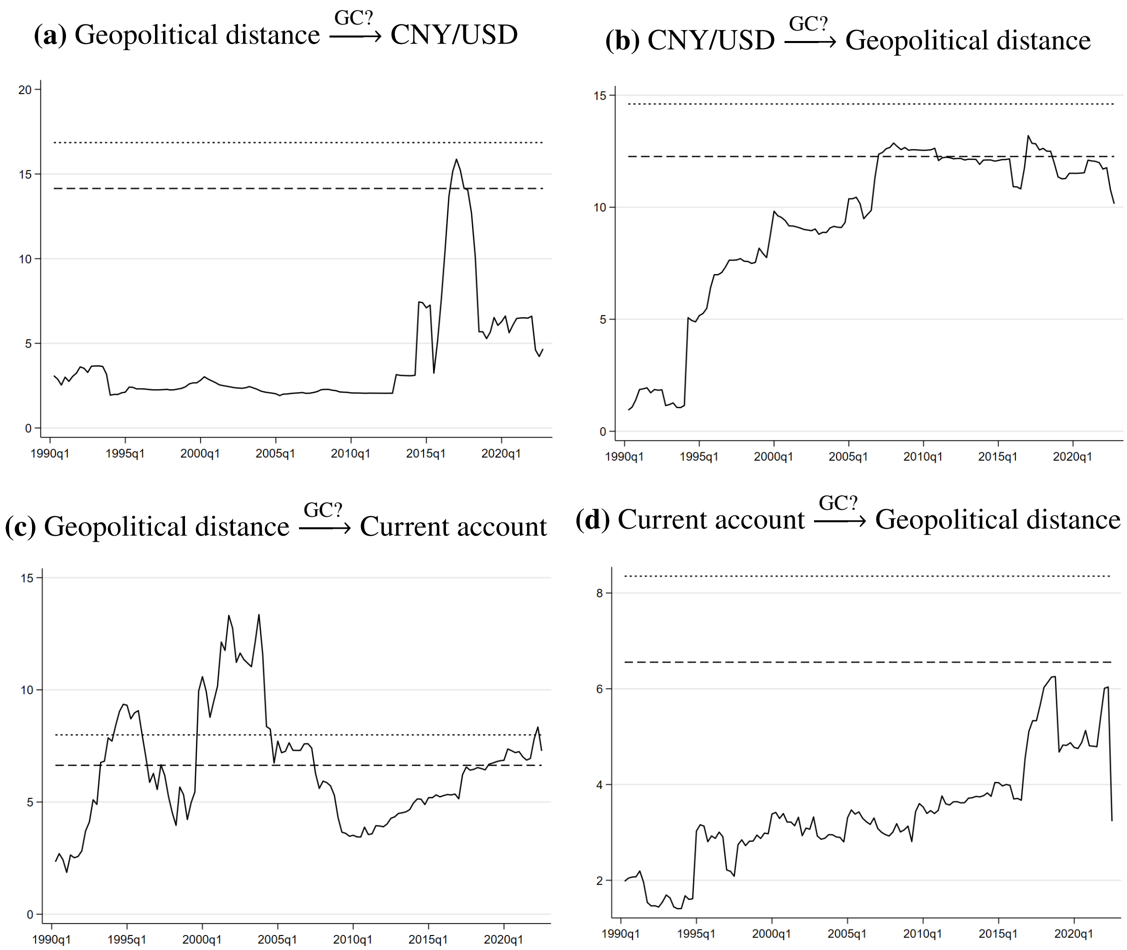
Table B1: Robust Granger causality tests

	ExpW*	Mean W*	Nyblom*	QLR*
$PRI \xrightarrow{\text{GC?}} EUR/USD$: Test statistics	16.11	23.13	20.11	41.35
p-value	0.00	0.00	0.00	0.00
$PRI \xrightarrow{\text{GC?}}$ Current account: Test statistics	35.70	33.47	12.61	79.52
p-value	0.00	0.00	0.00	0.00

Note: This table reports p-values of the statistics of the robust Granger causality tests (see Rossi, 2005): ExpW* (exponential Wald test), MeanW* (mean Wald test), Nyblom* (Nyblom test), and QLR* (Quandt likelihood-ratio test). We use a reduced form VAR; similar results are obtained with a VAR-LP. Source: authors' calculations.

Appendix C. Robustness checks

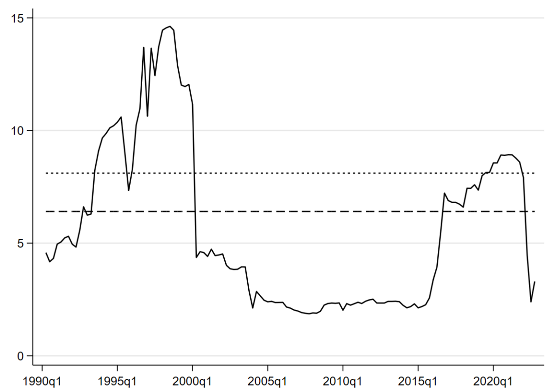
Figure C2: Time-varying causality for China and the US (geopolitical distance)



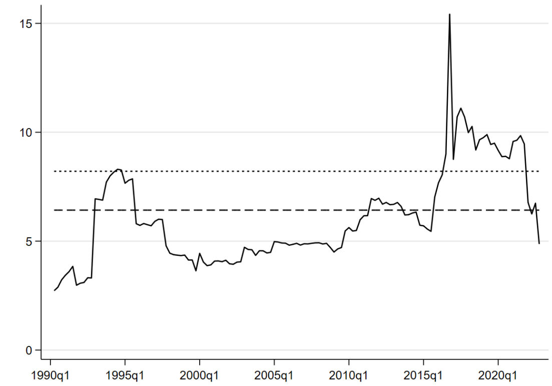
Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used.
Source: author's calculations.

Figure C3: Time-varying causality for China and the UK (geopolitical distance)

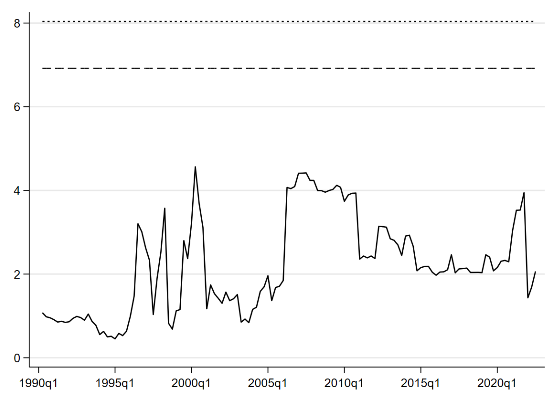
(a) Geopolitical distance $\xrightarrow{\text{GC?}}$ GBP/USD



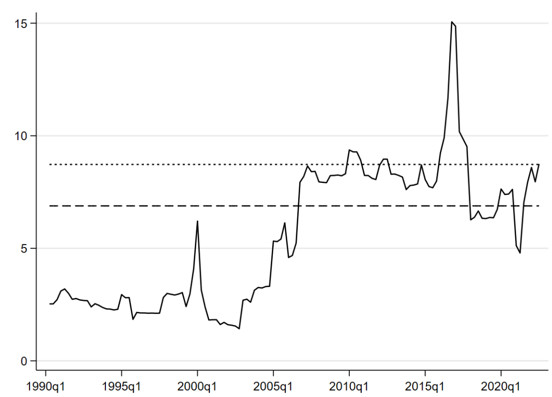
(b) GBP/USD $\xrightarrow{\text{GC?}}$ Geopolitical distance



(c) Geopolitical distance $\xrightarrow{\text{GC?}}$ Current account



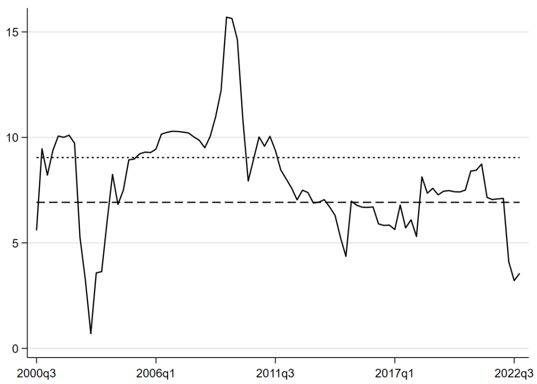
(d) Current account $\xrightarrow{\text{GC?}}$ Geopolitical distance



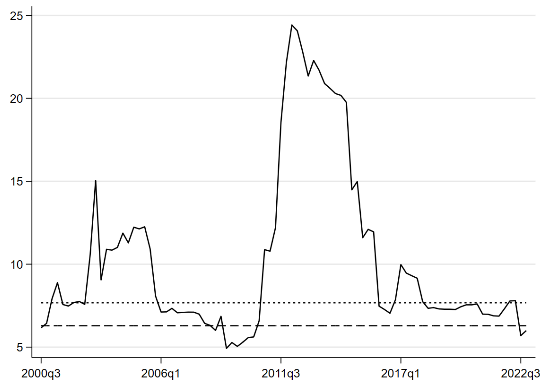
Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used.
Source: author's calculations.

Figure C4: Time-varying causality for China and Germany (geopolitical distance)

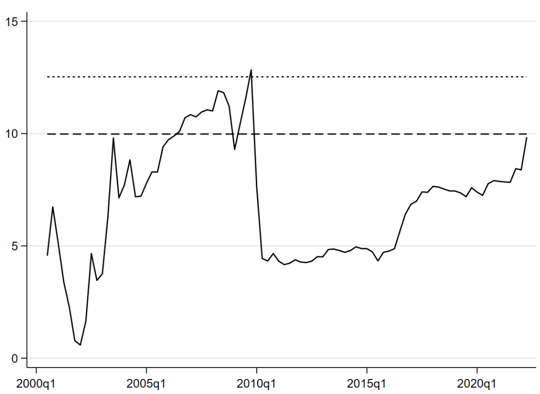
(**a**) Geopolitical distance $\xrightarrow{\text{GC?}}$ EUR/USD



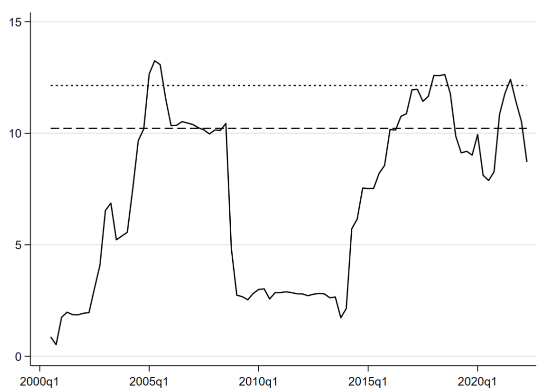
(**b**) EUR/USD $\xrightarrow{\text{GC?}}$ Geopolitical distance



(**c**) Geopolitical distance $\xrightarrow{\text{GC?}}$ Current account



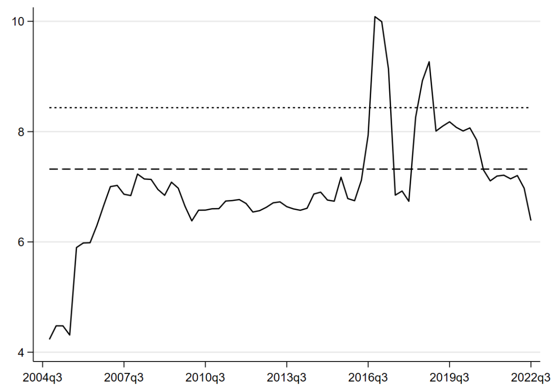
(**d**) Current account $\xrightarrow{\text{GC?}}$ Geopolitical distance



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used.
Source: author's calculations.

Figure C5: Controlling for GPR: Time-varying causality for China and the US

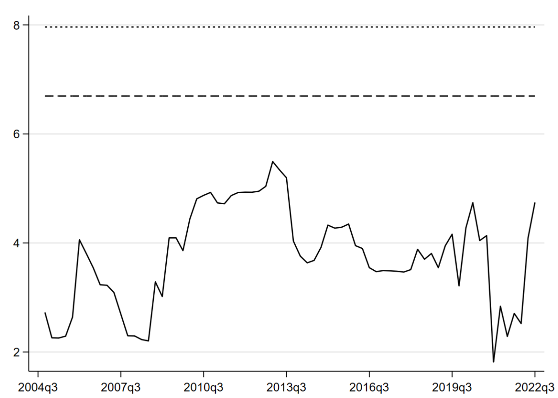
(a) $PRI \xrightarrow{\text{GC?}}$ CNY/USD **(b)** $GPR \xrightarrow{\text{GC?}}$ CNY/USD



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C6: Controlling for GPR: Time-varying causality for China and the UK

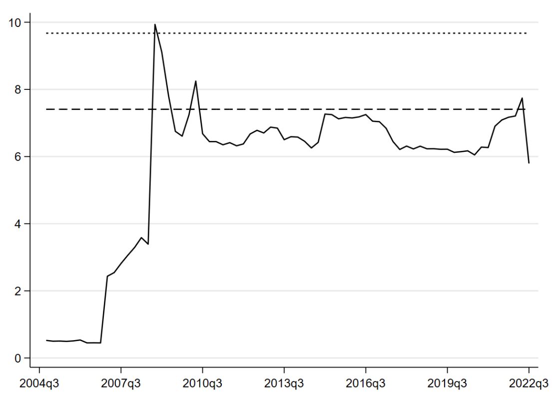
(a) $PRI \xrightarrow{\text{GC?}}$ GBP/USD **(b)** $GPR \xrightarrow{\text{GC?}}$ GBP/USD



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C7: Controlling for GPR: Time-varying causality for China and Germany

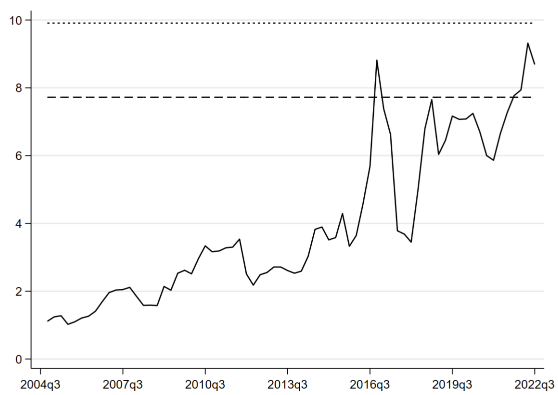
(a) $PRI \xrightarrow{\text{GC?}} \text{EUR/USD}$ **(b)** $GPR \xrightarrow{\text{GC?}} \text{EUR/USD}$



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C8: Controlling for the VIX: Time-varying causality for China and the US

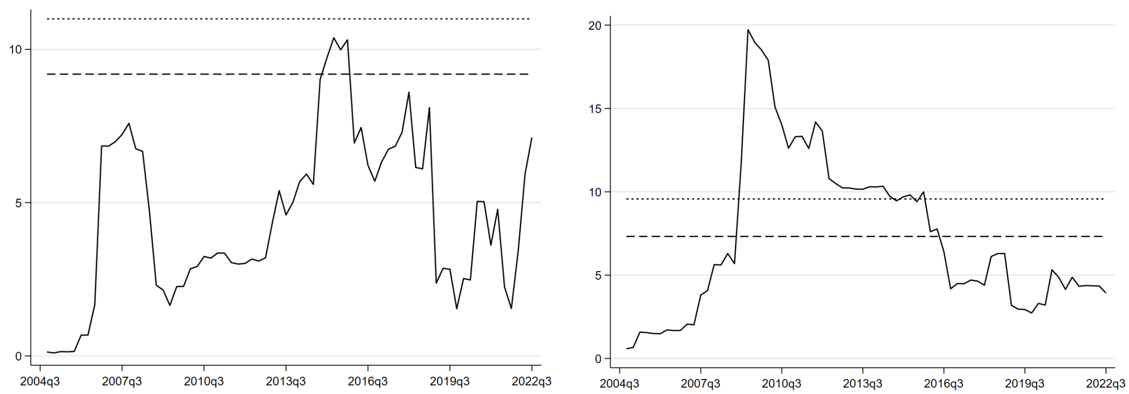
(a) $PRI \xrightarrow{\text{GC?}} \text{CNY/USD}$ **(b)** $VIX \xrightarrow{\text{GC?}} \text{CNY/USD}$



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C9: Controlling for the VIX: Time-varying causality for China and the UK

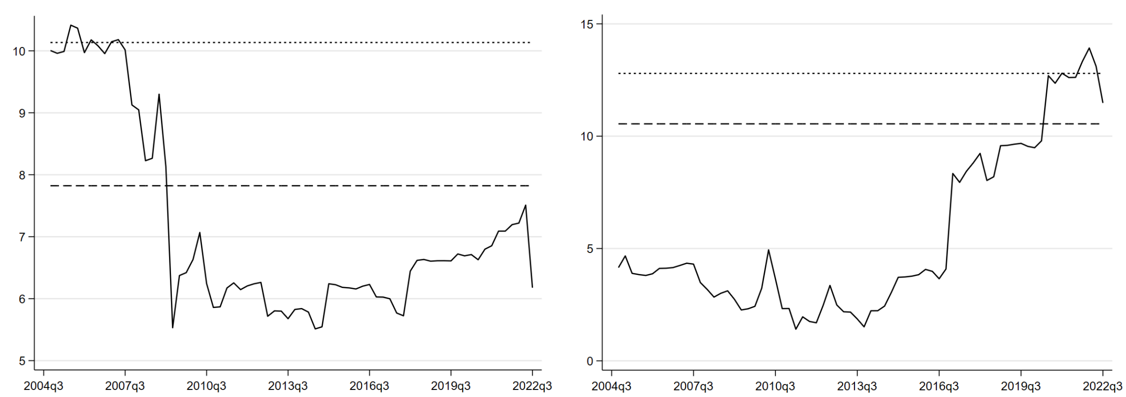
(a) $PRI \xrightarrow{\text{GC?}}$ GBP/USD **(b)** $VIX \xrightarrow{\text{GC?}}$ GBP/USD



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C10: Controlling for the VIX: Time-varying causality for China and Germany

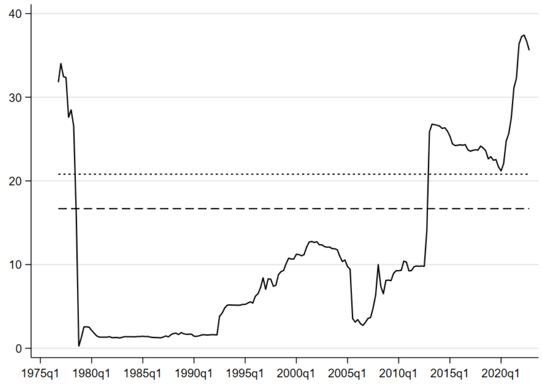
(a) $PRI \xrightarrow{\text{GC?}}$ EUR/USD **(b)** $VIX \xrightarrow{\text{GC?}}$ EUR/USD



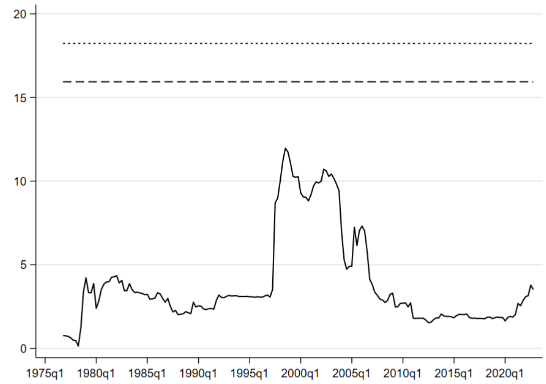
Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C11: Time-varying causality for China and Japan

(a) $PRI \xrightarrow{\text{GC?}} \text{JPY/USD}$



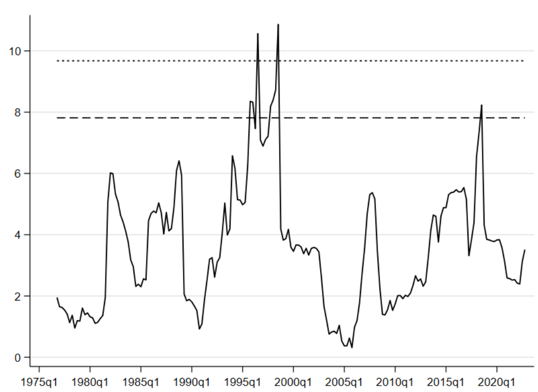
(b) $\text{JPY/USD} \xrightarrow{\text{GC?}} PRI$



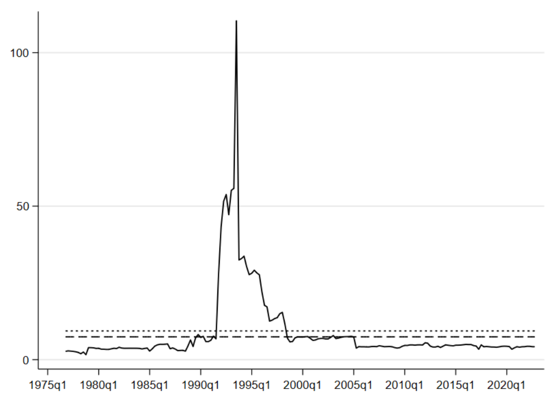
Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C12: Time-varying causality for China and India

(a) $PRI \xrightarrow{\text{GC?}} \text{INR/USD}$



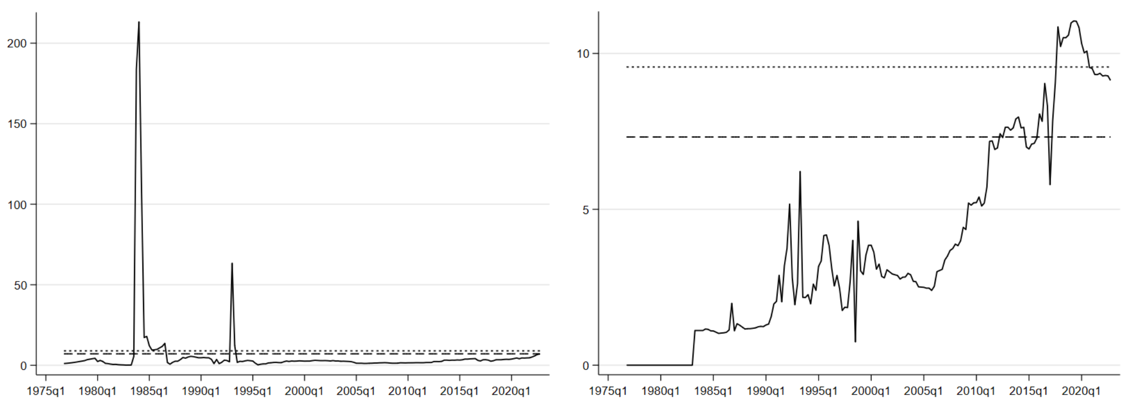
(b) $\text{INR/USD} \xrightarrow{\text{GC?}} PRI$



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.

Figure C13: Time-varying causality for China and Korea

(a) $PRI \xrightarrow{\text{GC?}} \text{KRW/USD}$ **(b)** $\text{KRW/USD} \xrightarrow{\text{GC?}} PRI$



Note: We select a minimum window size of 80 quarters. We include a trend in the underlying VAR model. The size of the tests is controlled during 20 quarters. These statistics are robust to heteroskedasticity. The dotted line indicates the 90^{th} (lower line) and 95^{th} (upper line) percentile of test statistics, where 499 bootstrap replications have been used. Source: author's calculations.