Economic Impact of the South China Sea Dispute in China-Philippines Relations from 2012 to 2016

A DM-LFM analysis

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Abstract

The relationship between China and the Philippines has seen dramatic fluctuations in recent years, with the South China Sea dispute becoming increasingly prominent in bilateral relations. Grounded in the theoretical debate between realist-liberal International Relations (IR) theorists, this study seeks to empirically measure the economic impact of the South China Sea dispute between China and the Philippines from 2012 to 2016. To do so, we use the Dynamic Multilevel Latent Factor Model (DM-LFM) and monthly trade data between the two countries to quantitatively assess the impact of the dispute on bilateral trade. We found no significant negative treatment effect, either in the immediate aftermath of the conflict or in the long run. Additionally, by qualitatively analyzing the differing responses by the two countries and changes in attitudes over time, we attempt to offer some potential explanations behind the actions taken by the two countries amidst the conflict, which may explain the quantitative results. In sum, we argue that both theories are potentially limited in explaining the resilience of bilateral trade amidst the ongoing conflict. Contrary to liberal predictions, we propose that a combination of political and economic considerations may have motivated both countries to contain the spillover effect on bilateral economic activities. Future research can work on gathering more substantive evidence to prove this relationship.

1 Introduction

The relationship between China and the Philippines has experienced dramatic fluctuations in recent years. It transitioned from being "warm and cordial" under President Gloria Macapagal-Arroyo to a heightened confrontation during President Aquino III's tenure and then to rapprochement under President Duterte. This was followed by a return to confrontation under the newly elected President Marcos Jr. Central to these fluctuations is the enduring dispute over the South China Sea, which has gained increased prominence since the early 2000s. Although there have been few confrontations between the two countries, April 2012 marked a watershed moment in bilateral relations. On the 8th of April 2012, an intense confrontation occurred between China and the Philippines when a Filipino Naval ship attempted to arrest Chinese fishermen entering the Scarborough Shoal, a group of shoals and rocks claimed by both countries (De Castro 2016). As the confrontation escalated, both sides intensified their positions by deploying additional maritime surveillance and naval ships to the region. Despite the conclusion of the standoff in June 2012, tensions persisted, with confrontations frequently occurring between 2012 to 2016 (Green and Hicks 2017).

How profound are the negative economic externalities produced by severe political conflicts between states? Scholars from the two major schools of International Relations (IR) theory disagree on this crucial question. Realists argue that political conflicts, especially those concerning territorial integrity, produce substantial and enduring negative economic consequences (Waltz 1979; Mearsheimer 1990). Such conflicts incentivise states to reduce economic interdependence and deter private entities from continuing economic interactions (Gowa and Mansfield 1993). This is particularly so in the context of an increasingly nationalistic and assertive China from 2009 onwards (Callahan 2014). In contrast, liberal IR scholars believe that political tensions produce limited negative externalities on trade, as the potential gain from trade incentivises states to contain the spillover effect even if the dispute remains unresolved (Ikenberry 2023).

Grounded in the realist-liberal debate, this paper empirically investigates the impact of the recent South China Sea (SCS) conflict, beginning with the April 2012 Scarborough Shoal standoff, on China-Philippines bilateral trade and delves into the potential considerations guiding the actions of both states. The results provide evidence in contrast with previous studies on the topic as our model found no evidence of significant negative externalities produced by political conflict on both Filipino import and export to China. Furthermore, we suggest that the reason for the absence of negative impact might be due to political instead of economic considerations, as predicted by the liberal theory.

Our analysis offers four significant contributions. First, given the recent resurgence of the South China Sea dispute between the two countries at Scarborough Shoal due to policy shifts under Marcos Jr., this paper provides a timely evaluation of the impact of the previous round of bilateral contention. This will assist observers and analysts in understanding the dynamics between the two nations. Second, the paper employs the Dynamic Multilevel Latent Factor Model (DM-LFM), which is methodologically and mathematically superior to commonly used methods such as the Difference-in-Difference method (DiD) and the Synthetic Control Method (SCM). This enables us to present more accurate findings on whether political conflict can yield significant negative externalities when bilateral trade is at play. Third, despite not being primarily a theoretical paper, our analysis contributes to the realist-liberal theoretical debate by highlighting the ambiguity of the liberal theory when applied to non-liberal states like China. While the liberal school posits that economic considerations and lobbying by private actors drive governments to limit the negative effects on bilateral economic relations, our findings suggest that it might be an interplay of both economic and political considerations that motivates both states to restrain the spillover effect. Lastly, this paper aims to demystify China's foreign policy behaviours. As a rising geopolitical power often accused of intending to revise the existing international order, China's foreign policy is frequently viewed as a black box with political calculation at its core. However, our analysis reveals that both political and economic factors remain crucial in China's foreign policymaking. This insight can guide international actors in formulating a more balanced and tactical strategy to engage with a rising global power.

The paper proceeds as follows: Section two explores the existing theories that explain the relationship between bilateral trade and international conflict, as well as the contemporary scholarship that focuses on the subject. Section three provides a detailed account of the recent history of China-Philippines relations and the evolution of the territorial dispute. Section four presents the research method and the DM-LFM model. Section five, six and seven discusses the findings of our model and provides the interpretations of the results as well as the robustness checks. And finally, section eight

concludes the paper by summarising the findings and contributions of the paper.

2 Literature review

2.1 A Theoretical Debates Between the Liberal and the Realist IR Scholars

Bilateral political conflict, in its most straightforward form, refers to a "controversy, disagreement, quarrel or warfare between or among two or more nations or countries" , where economic, political, and military means are often mobilised by one or both parties involved in the conflict. According to Davis and Meunier (2011) and Yan et al. (2010), bilateral political conflict can broadly be categorised into four categories according to their severity, ranging from "an intense exchange of negative remarks" , "the use of threatening languages and actions" to "on the brick of war" and "war" . In simplified terms, an "exchange of negative remarks" involves disagreements between two countries, often marked by diplomatic protests and statements from high-level officials. "Threats" arise when unresolved issues escalate to potential military deployment or economic sanctions. A conflict that is on the brink of war is characterised by escalated military actions or minor confrontations. War itself signifies severe direct military clashes. Such conflicts can disrupt international trade and cooperation by increasing costs, trade uncertainty, and causing trade diversion. Currently, scholars across both disciplines concur that economic bilateral activities are sure to suffer when political relations deteriorate to the point of war and suffer little with low-level conflict (F. Wang 2015). However, in the contemporary era, where international law and influential organisations like the United Nations have largely discouraged war as a means to settle bilateral disputes, most political conflicts do not escalate to the extreme outcome of war. Hence, the impact of severe political conflicts, such as those characterised as "threatening" and "on the brink of war" on trade, are widely debated issues in the study of both the discipline of international relations and international political economies.

Classical realists like Waltz (1979), Morgenthau (1948), and Mearsheimer (1990) believe that severe political conflicts will have lasting negative effects on bilateral economic activity. At the state level, the realists perceive the international order fundamentally as inter-state competition for power between states under an anarchic order; economic factors, such as trade, are merely instruments to advance national interests (Mearsheimer 1990). Hence, when political conflict arises, states are incentivised to reduce trade with the adversary, fearing that the adversary's gains from trade will be "transformed into military use that places itself in a disadvantageous position" (Morgenthau 1948). Furthermore, in times of conflict, trade and investments are weaponised as means to serve the political goals of the respective states (Morrow 1999). This explains why political conflicts are frequently associated with the imposition of trade embargoes and sanctions (Glick and Taylor 2010). In addition, governments are not the only actors involved in times of political conflict. Pollins Brian has extended the realist logic to other units and proposed the "trade follows the flag" theory, indicating that private entities, including businesses and individuals, adjust their actions based on inter-state political tensions. According to Pollins, they consider not only the price and quality of goods but also the political relationship in their cost-benefit analysis. Simply put, "importers buy from friends; consumers punish foes" (Pollins 1989).

On the other hand, liberal IR scholars believe that political tensions produce limited negative externalities on trade. One major school of liberal theorists, such as (Ikenberry 2023; Copeland 2015), proposed the commercial peace theory to explain how interdependence and fear of loss from trade deter liberal states from getting into conflict in the first place. In contrast to realists who see economic relations as a mean to advance the national interest, they see bilateral economic relations as an essential aspect of national interest and assume that bilateral economic relation generates benefits for both parties. As the cost of trade disruption is very high, the rational calculation should motivate economically interdependent states to avoid political conflicts and disruptions of bilateral economic activities (Gartzke and Westerwinter 2016). Drawing from the commercial peace theory, Davis and Meunier (2011) introduce the "business as usual" model, arguing that major political conflicts between liberal states lead to only short-lived, minor trade disruptions. They believe countries aim to separate economic transactions from political disputes, ensuring continued trade despite political tensions. This highlights the strong economic ties and dedication to trade among liberal states, regardless of political hurdles. Furthermore, liberal IR scholars see actors within a country not just as extensions of government will but as actors capable of influencing governmental decisions. Thus, businesses that benefit from bilateral trade will maintain trade amidst political tensions and lobby against their governments

to contain the spillover effect on the economy (Copeland 1996). In sum, rational calculation should incentivize both governments and businesses delink economic decisions to political relations (Davis and Meunier 2011).

2.2 Previous Work Focused on China' s Trade Relationship

China has, in recent years, experienced several political disputes with its neighbouring countries as well as major powers, and the degree to which bilateral trade is affected varies on the level of conflict. Numerous scholarly studies have examined the influence of these conflicts on trade using different methods. Scholars such as Du et al. (2017) have applied an event study model to analyse the impact of political conflict between China and nine of its important trading partners from 1990 to 2013. They found that while political conflicts have a severe negative impact on bilateral trade in the immediate aftermath, their impact is short-lived, usually only within the initial few months of conflict. The same conclusion was also reached by Whitten et al. (2020), who analysed China's trade relations with its twelve major trading partners from 2009 to 2019. A significant limitation of these studies is their lack of differentiation between types of political disputes, treating them as having uniform effects. In practice, the severity of political conflicts can elicit varied responses from involved countries. For instance, territorial disputes are likely more disruptive to bilateral relations than tensions from events like the Dalai Lama's visit.

Another group of scholars pays specific attention to the impact of severe political conflicts such as those classified as "on the brink of war" , where military confrontation is imminent on bilateral trade. Davis and Meunier (2011) presented empirical evidence supporting the liberal thesis. Using quarterly bilateral trade data from 1990 to 2006, they showed that varying levels of political tensions in China–Japan relations had no adverse effects on these nations' trade and investment flows. In a rebuttal paper to Davis and Meunier, X. Li and A. Y. Liu (2017) found a visible disruption to bilateral trade across different sectors. Their finding is further supported by Y. Li et al.' s (2021) examination of the impact of the China-Japanese territorial dispute on bilateral trade in the same period. Both papers, however, offer limited counterarguments to Davis and Meunier's findings due to differing analysis periods. While the Senkaku island dispute predates 2010, post-2010 confrontations were notably intense (Manicom 2014), attributed to surging nationalism in China (Callahan 2014). This is especially the case for the August 2012 Senkaku Island confrontation, as it led to an unprecedented nationwide anti-Japanese boycott and demonstrations lasting for two months across China (Manicom 2014).

Research related to the impact of territorial conflict on bilateral trade between China and Southeast Asian (SEA) countries is relatively rare. One paper that closely resembles our topic is F. Wang (2015), which similarly assessed the impact of multiple conflict events among the South China Sea disputes on Sino-Filipino trade with an event-study design from 2009 to 2012. She has reached a conclusion similar to Du et al. (2017) and Whitten et al. (2020) that there was a severe negative impact on trade in the quarter after the bilateral conflict broke out, but the disruptive impact lasted only for one quarter. However, the accuracy of her findings is questionable due to several errors in her model. Firstly, her econometric model controls for *GDP and exchange rates*, which introduce *post-treatment bias* to the effect estimates since both exchange rates and GDP were subject to the conflicts between the two countries given China' s importance to the Philippines as a major trade partner (China is the largest trading partner of the Philippines). Moreover, F. Wang (2015) did not include a control group for comparison, which is common in difference-in-differences event study designs. This means that any *confounding events* that affected all trade partners of China could have contaminated her estimates. Neither did F. Wang (2015) report which standard errors were used in her results. In contrast, our synthetic difference-in-differences approach presents a superior design that accommodates these problems.

Furthermore, while much of the prevailing research concentrates on pre-2012 conflicts, shifts in China's domestic politics since the late Hu Jintao's presidency have seen its foreign policy take a more nationalistic and assertive stance, which may invalidate the conclusion reached by F. Wang (2015) and Du et al. (2017). Firstly, there has been an evolution in the perception of China's top leadership regarding its capabilities in the late Hu Jintao era. As Callahan (2014) notes, the country's resilient economic performance during the 2008 Global Financial Crisis (GFC) reinforced the belief among Chinese leaders that "China was ascending while the West was waning," enabling them to shape events in Asia more influentially. Additionally, China's adept handling of the GFC, combined with the triumphant launch of the 2008 Beijing Olympics, bolstered nationalism within the country.

Consequently, the Chinese populace grew increasingly assured of their nation's prowess and became more inclined towards using force to "reprimand those perceived to slight the motherland" (Johnston 2017). In this context, the China-Philippines standoff in April 2012 and the China-Japan Senkaku island standoff later in June became the erupting point of nationalism and confidence accumulated within Chinese society (Burcu 2021), and it's argued that these events signal a more realist shift in Chinese foreign policy (ibid). This might have made negative implications on bilateral economic relations much more long-lasting as compared to the previous era, hence invalidating the findings of the previous research. Hence, drawing on the interaction of the two countries in the Scarborough Shoal Standoff, this research attempts to examine if the increasing assertiveness in China's foreign policy approach has made economic interests less important in the country's foreign agenda.

3 Overview of China-Philippines Relations from 1990 to Present

Scholars examining China-Philippines relations describe the overall relationship as asymmetric, marked by frequent political fluctuations but steadily growing economic ties (Yamazaki and Osawa 2021). The asymmetry is evident in the stark differences between the two countries in terms of economy, population, territorial size, and their influence on the global stage. This view is also reflected in the speeches of leaders and citizens of the two nations. In China, officials and netizens openly labelled the Philippines as "a small country (xiao guo)" when confrontations broke out in April 2012 (Yamazaki and Osawa 2021). Similarly, President Duterte often refers to the power disparity, labelling China as a big country in various speeches to justify his appeasement approach to China (ibid). The fluctuating nature of the relationship between the two countries is evident in the changing dynamics under various administrations over the years, with the enduring South China Sea dispute being a central factor influencing these shifts in attitudes. Philippines-China relations have undergone drastic changes, transitioning from a "golden age" (Embassy of the People' s Republic of China in the Republic of the Philippines 2005) to "Asia's most toxic bilateral relationship" and then to a new "springtime" (Heydarian 2019). While President Maria Gloria adopted a friendly attitude towards China, President Aquino III took a notably confrontational approach. In contrast, President Duterte pivoted towards a more conciliatory stance, prioritizing economic collaborations over territorial disagreements. However, despite expectations of continued amicable relations under President Marcos Jr., recent tensions have strained bilateral ties, surprising many observers.

In contrast, the economic relations between the two states seem to be steadily growing and resilient to the SCS dispute. From 1995 to 2022, bilateral trade expanded 65 times, from 1.25 billion USD to 80.5 billion USD. In 2022, China' s exports to the Philippines amounted to US$59.2 billion, while the Philippines' exports to China reached US$21.2 billion. The top exports from the Philippines to China included digital monolithic integrated circuits, nickel ores, cathodes, refined copper, and semiconductor devices (China Briefing Team 2023). Conversely, the Philippines primarily imported petroleum lubricants, semiconductor device components, and automobiles from China. While the Philippines represents only 1% of China' s total trade, making it China' s 19th largest trading partner, China has been the Philippines' top trade partner since 2016, accounting for nearly 30% of its total trade in 2022, its third-largest export destination (largest if Hong Kong is included), and its primary source of imports (ibid).

3.1 China-Philippines Relations Since the 1990s

From the 1990s to the early 2000s, the relationship between China and the Philippines was "harmonious". Maria Gloria Macapagal-Arroyo, the fourteenth president of the Philippines who served from 2000-2009, adopted a friendly gesture towards China with an emphasis on economic cooperation (De Castro 2016). She was extremely supportive of China' s increasing economic influence both in the Philippines and ASEAN, as evident in her support for the establishment of the China-ASEAN Free Trade Area. During President Jiang Zemin's state visit to the Philippines in 1996, leaders of the two countries agreed to "Shelve disputes and go in for joint development" (Embassy of the People' s Republic of China in the Republic of the Philippines 2009). Under her presidency, the Philippines' trade with China grew faster than its trade with the rest of the world—with exports to China growing at an average of 17% annually from 1996 to 2008.

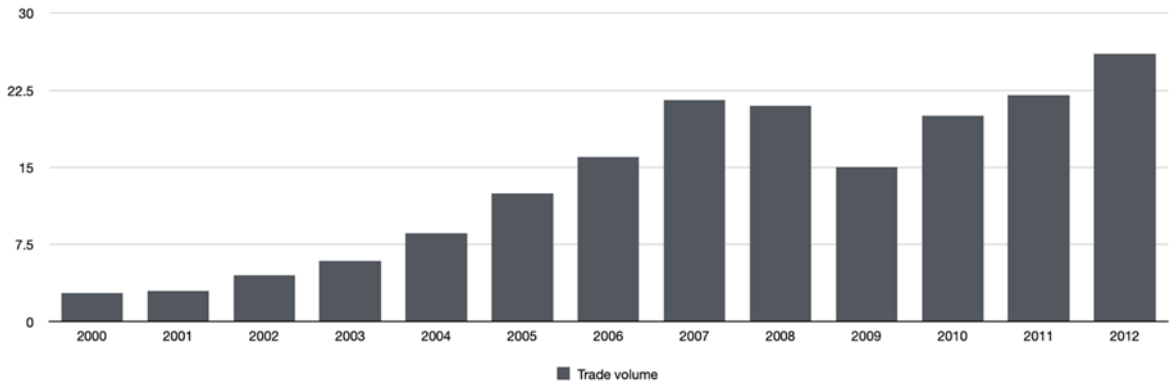

Figure 1: China-Philippines Trade Volume from 2000 to 2012 (Billion USD) (Source: The Authors)

However, the situation changed dramatically from 2010 onwards due to domestic political changes in both countries. In conjunction with the rising nationalism in China since 2008 (Callahan 2014), there was widespread anti-Arroyo and anti-China sentiment in the Philippines due to accusations that the Arroyo administration was "trading the Philippines' territorial sovereignty with China for personal economic benefits" (Ortuoste 2013). Aquino III, who came to power by taking advantage of the anti-Arroyo sentiments during his presidential campaign, had consciously adopted an anti-China image and saw the use of the SCS dispute as a strategic means to maintain his popularity. For example, in his speech during the 113th anniversary of the Filipino Department of Foreign Affairs in 2011, Aquino III criticised Arroyo's China policy and highlighted that he "will not trade Filipino sovereignty for economic benefits" (Baviera 2014). In addition, the increasing support from the US to the Philippines, as manifested in Barrack Obama's "Pivot to Asia" policy in 2010, had further boosted Aquino III's confidence to confront China (Ortuoste 2013). Thus, the rising nationalism in China and the growing anti-China sentiments within Filipino society paved the way for the intensive and long-lasting conflict in 2012.

Confrontations and standoffs occurred a few times in 2011 before the 2012 Scarborough Shoal standoff. For example, in early 2011, two incidents occurred as the Filipino oil exploration vessels reported that their operation within the Filipino Exclusive Economic Zone (EEZ) had been interfered with by Chinese civilian and maritime police ships. However, these incidents did not produce severe consequences due to the low-intensity nature of the confrontations (F. Wang 2015). In July 2011, tensions in the SCS were eased when China and ASEAN member states agreed to adopt the Guidelines for implementing the Declaration on Conduct (DOC) (Secretariat n.d.). Since then, both sides have backed down on their territorial claims, and no clashes have taken place until the Scarborough Shoal Standoff.

3.2 The Scarborough Shoal Stand-off and its Aftermath (2012-2016)

The 2012 Scarborough Shoal Standoff was the tipping point of China-Philippines relations that occurred amidst the rising nationalism in China and anti-Chinese sentiment in the Philippines. The Scarborough Shoal, a group of islands, rocks and shoals located near the Philippines, is believed to be rich in resources, such as fish, oil and gas (De Castro 2015). The standoff began on the 10th of April 2012, when the Philippine Naval ships tried to arrest eight Chinese fishing boats anchored inside the Scarborough Shoal. However, two Chinese maritime surveillance vessels arrived and prevented the arrest of the Chinese fishermen. This marked the beginning of a standoff, as both sides increased their military presence in the area. The standoff eventually ended in June 2012, when both sides agreed to withdraw their vessels from the area and engaged in negotiations to resolve the dispute (Ortuoste 2013).

However, confrontations continued as negotiations failed to reach an agreement satisfactory to both sides. From 2012 to 2016, there were many instances of tension between the two countries, bringing diplomatic relations to their lowest point since they were established in June 1975 (De Castro 2015).

Figure 2: the Scarborough Shoal (Source: BBC 2012)

These include:

1. Economic responses from China: In May 2012 alone, China not only denied 150 containers of bananas from entering its markets, citing that the bananas were "crawling with insects". In addition, the Chinese government encouraged all travel agencies in China to voluntarily refrain from offering services to Chinese tourists travelling to the Philippines. Owing to the decrease in Chinese travellers, the majority of the air flights to Manila by Chinese airlines were cancelled (Zhang 2020).

2. Incidents involving Coast Guard and fishing vessels: There were several incidents in 2013, 2014, and 2015 where clashes between the Coast Guard and fishing vessels both took place in the disputed waters, leading to increased tensions between the two countries.

3. Confrontation on the International Stage: In January 2013, the Philippines submitted its claims of the SCS islands to the Permanent Court of Arbitration in the Hague, challenging China's territorial claims in the South China Sea. This has dramatically angered China, prompting it to take steps to reinforce its presence in the region (Hong 2016).

4. Increased military presence in the region: Since 2012, both China and the Philippines have increased their military presence in the region. For the Philippines, Aquino III viewed engaging the US in the conflict as the best strategy to counterbalance the threat from China. In April 2014, the Philippines signed the Enhanced Defense Cooperation Agreement with the USA, a legal arrangement that allowed the presence of the US military and the facilitation of joint activities on Philippine soil. Since then, the US Navy has conducted numerous Freedom of Navigation Operations in the disputed region (Kim 2016). For China, in addition to building artificial islands, China's Southern Theater Command Navy has tripled the frequency and intensity of its "regular military exercises" in the region to showcase its military strength and presence (Cordesman, Burke, and Molot 2019).

3.3 Hypotheses

As discussed previously, the economic relationship between China and the Philippines is an asymmetric one where the Philippines did not really impose any trade restrictions on Chinese exports to the Philippines, nor did we find any evidence of long-lasting consumer boycott of Chinese goods in the

country. Hence, this paper will examine the effect of the conflict on bilateral trade with a special focus on the effect on Filipino exports to China.

Hypothesis 1: *The territorial dispute between China and the Philippines produced a significant negative treatment effect on Filipino exports to China in the aftermath of the conflict.*

Previous works on the topic have often found that severe political tension often produces a significant negative externality on bilateral trade in the immediate aftermath of the dispute. Immediately after the conflict, reports inundated media platforms of both countries about the Chinese import ban on Filipino imports, which caused a significant reduction in Filipino agricultural exports. This fits the realist perspective that China has weaponised bilateral trade to punish the Philippines. In addition, there were also reports such as consumer boycotts and businesses withholding their investments in China (Higgins 2012). Hence, we expect the territorial dispute between China and the Philippines to have a detrimental effect on Filipino exports to China in the immediate aftermath of the conflict. Building on previous scholarships, immediate aftermath is defined as the first six months after the conflict.

Hypothesis 2: *The negative treatment effect caused by territorial disputes is persistent throughout the whole duration of the dispute.*

While previous found that political conflict does not fundamentally alter the direction of economic relations as the negative impact is short-lived (Du et al. 2017; F. Wang 2015; Whitten et al. 2020), the increasing nationalistic China since early 2012 might have changed this conclusion as China might have adopted a more realist approach. Hence, this paper expects that the treatment effect of trade caused by territorial disputes would be persistent throughout the entire duration of the dispute from 2012 to 2016.

Both hypotheses will be tested in the next section using the DM-LFM model.

4 Identification Strategy

4.1 The Dynamic Multilevel Latent Factor Model (DM-LFM)

Regarding the binary treatment (territorial dispute) and Time-Series Cross-Sectional (TSCS) nature of our data, we employ the Dynamic Multilevel Latent Factor Model (DM-LFM) proposed by Pang, L. Liu, and Xu (2021) to estimate the causal effect. The DM-LFM is a Bayesian alternative to Synthetic Control (SCM) for estimating treatment effects in comparative case studies by calculating the predicted treated counterfactual.

The DM-LFM is suited for this study for several reasons. First, unlike the common Difference-in-Differences (DID) framework, the DM-LFM does not rely on the parallel-trends assumption, which is likely violated in our case. Secondly, its uncertainty measure (credible intervals) is easier to interpret than, for example, SCM placebo tests. Thirdly, it provides more precise estimates even when the number of units is low (in this case, 9). Fourth, it accounts for unobserved latent factors in the model which are likely present in our data.

Notwithstanding the benefits of the DM-LFM, we use the SCM as a robustness check for the main results.

4.2 Assumptions

In this section, we discuss what the assumptions of the DM-LFM proposed by Pang, L. Liu, and Xu (2021) mean for our empirical case.

Assumption 1: *Cross-sectional stable unit treatment value (SUTVA).*

The treatment and control groups must be independent and not influenced by each other. This means that the countries in the control group must not have spillover effects or contamination between the two groups. In our case, countries in the donor pool must not be affected by the territorial dispute between China and the Philippines.

Assumption 2: *No anticipation.*

We assume the Chinese and Filipino people did not anticipate the standoff in 2012 or adjusted to that expectation before 2012, so that the Filipino exports prior to treatment did not depend on the treatment.

Assumption 3: *Individualistic assignment and positivity.*

We assume that the treatment (standoff between China and the Philippines in 2012) did not depend on the potential outcomes of trade of other countries with China or their conflicts with China. We assume that every country in the donor pool has some chance of getting into conflict with China.

Assumption 4: *Latent ignorability.*

We assume that conditional on the latent variables, the treatment assignment mechanism (whether/when to get involved in a dispute with China) of a country is independent of any missing or observed untreated outcomes (exports to China unaffected by disputes) for that country.

Assumption 5: *Feasible data extraction.*

We assume that the unobserved factors of each country can be approximated by two lower-rank matrices. See page 275 in Pang, L. Liu, and Xu (2021) for more details.

4.3 Population of Interest, Donor Pool Selection Criteria, Time Span and Data Sources

4.3.1 Time Span

The time span of interest for this research is April 2012 to June 2016. As explained previously, April 2012 is used as the starting point as it was the starting point of the direct clashes between China and the Philippines in the Scarborough Shoal. It ended in June 2016 as the new President of the Philippines, Rodrigo Duterte, came into office and took steps to de-escalate the tension.

4.3.2 Donor Pool Selection Criteria

Unlike linear regression models that favour large sample sizes, the DM-LFM model requires a donor pool of comparison units that bear certain similar characteristics. Hence, this precludes conventional ways of sampling (such as random sampling) and requires careful selection by the researcher according to certain criteria.

Based on the assumptions above, we adopt three criteria for the donor pool of comparison units:

- First, units affected by the intervention of interest or similar interventions should be excluded from the pool.
- Second, units with idiosyncratic shocks during the study period should be excluded from the pool.
- Thirdly, the size of the donor pool should be relatively small to avoid overfitting.

4.3.3 Countries Selected for the Donor Pool

In the paper analysing the impact of the SCS dispute on bilateral trade between China and ASEAN trade, Imam and Panennungi (2021) used all other ASEAN countries that do not have a territorial dispute with China as the control group. This is because the authors believed that as they are neighbouring countries within the same region and organisation, they are likely to resemble the Philippines closely (Imam and Panennungi 2021). Hence, this paper similarly chose all other ASEAN countries that did not have a direct confrontation with China as my donors. However, this paper has included three claimant countries, Malaysia, Brunei and Indonesia, in the donor pool for two reasons. Firstly, since the treatment of our study is the outbreak of a direct confrontation with long-lasting effects across the two countries, the disputes that have taken place between the three countries are in no way comparable to our treatment, as there was no outbreak of major conflict between China and these three states within the period of analysis. Moreover, F. Wang (2015)'s paper has proven that

low-level conflicts, such as diplomatic complaints and verbal exchanges between the two governments (for instance, the disputes that took place between China and the Philippines in 2009 and 2011) do not assert a significant impact on bilateral economic activities. Hence, these countries are included in the donor pool, although they are claimant countries.

Table 1: List of Donor Pool Countries.

Thailand	Myanmar	Cambodia
Singapore	Indonesia*	Laos
Brunei*	Malaysia*	

4.3.4 Data Sources

The data sheet contains the monthly trade data between China and nine Southeast Asian countries. The monthly bilateral trade (current US dollars) data are sourced from the custom database from China, the Philippines and the respective countries in the control group.

4.4 Treatment and Predictors

The treatment/intervention of interest is the "direct clashes between China and the Phillippines in the Scarborough Shoal" in April 2012. The time of treatment (April 2012) constitutes the cut-off point (T_0) in the model between the pre-treatment period $(1, \cdots, T_0)$ and the post-treatment period$(T_0+1, \cdots, T)$.

The predictors for the trade volumes of the "synthetic bilateral trade" (control unit) are the quarterly bilateral trade (current USD) of the donor pool.

4.5 Dependent Variable/Outcome Measurement

The dependent/outcome variable (Y) is the (logged) monthly volumes of bilateral trade, i.e. the treated and control unit countries' exports to China and their imports from China between April 2012 and June 2016. This is measured in USD at current exchange rates. Here we provide some summary statistics of the trade volumes by country:

Table 2: Summary statistics for exports to China.

	Exports to China				Log(Exports from China)			
Country	Mean	SD	Min	Max	Mean	SD	Min	Max
C-Philippines	1 453 981.83	313 136.25	547 368.00	2 083 903.00	14.16	0.24	13.21	14.55
C-Brunei	27 848.08	44 115.49	23.00	312 055.00	8.47	2.33	3.14	12.65
C-Cambodia	30 275.67	46 524.65	1210.00	327 639.00	9.67	1.19	7.10	12.70
C-Indonesia	1 939 496.98	689 239.64	450 223.00	3 462 172.00	14.41	0.39	13.02	15.06
C-Laos	73 939.90	49 884.63	5363.00	224 798.00	10.93	0.85	8.59	12.32
C-Malaysia	4 223 222.37	1 048 640.46	1 423 514.00	5 905 882.00	15.22	0.29	14.17	15.59
C-Myanmar	306 150.33	607 381.37	27 016.00	4 865 550.00	11.95	1.03	10.20	15.40
C-Singapore	2 166 501.24	453 499.73	984 362.00	3 194 596.00	14.56	0.23	13.80	14.98
C-Thailand	2 887 948.44	560 801.49	1 108 314.00	3 968 467.00	14.85	0.22	13.92	15.19

5 Results

The results from the DM-LFM are presented in Figures and tables below. Figure 3 and Figure 4 show the actual and predicted counterfactual trends for Filipino exports to and imports from China, respectively. Contrary to our Hypothesis 2, the estimated effect of the SCS dispute on Filipino trade with China was statistically indistinguishable, as suggested by the counterfactual trend intertwined with the actual observed trend throughout the post-treatment period. Table 4 formalises this result and suggests that both 95% and 90% credible intervals for the average treatment effects on the treated

Table 3: Summary statistics for imports from China.

	Imports from China				Log(Imports from China)			
Country	Mean	SD	Min	Max	Mean	SD	Min	Max
C-Philippines	1 452 370.89	611 299.49	436 021.00	2 931 038.00	14.10	0.44	12.99	14.89
C-Brunei	81 275.04	65 864.66	6390.00	297 445.00	10.84	1.09	8.76	12.60
C-Cambodia	213 937.90	121 260.37	40 291.00	751 096.00	12.11	0.60	10.60	13.53
C-Indonesia	2 439 885.61	783 107.83	677 678.00	3 754 814.00	14.65	0.37	13.43	15.14
C-Laos	76 312.32	59 843.23	11 267.00	304 190.00	10.98	0.74	9.33	12.63
C-Malaysia	2 823 113.77	971 225.93	908 260.00	4 738 941.00	14.79	0.37	13.72	15.37
C-Myanmar	482 973.46	260 377.81	125 533.00	1 425 617.00	12.93	0.58	11.74	14.17
C-Singapore	3 387 774.48	826 023.16	1 586 598.00	5 549 283.00	15.01	0.25	14.28	15.53
C-Thailand	2 285 104.47	792 441.70	699 917.00	3 682 118.00	14.57	0.40	13.46	15.12

(ATT) straddle zero. This implies no statistical evidence for Hypothesis 2. More importantly, the ATT estimates are positive, ruling out the possibility of underpowered nulls.

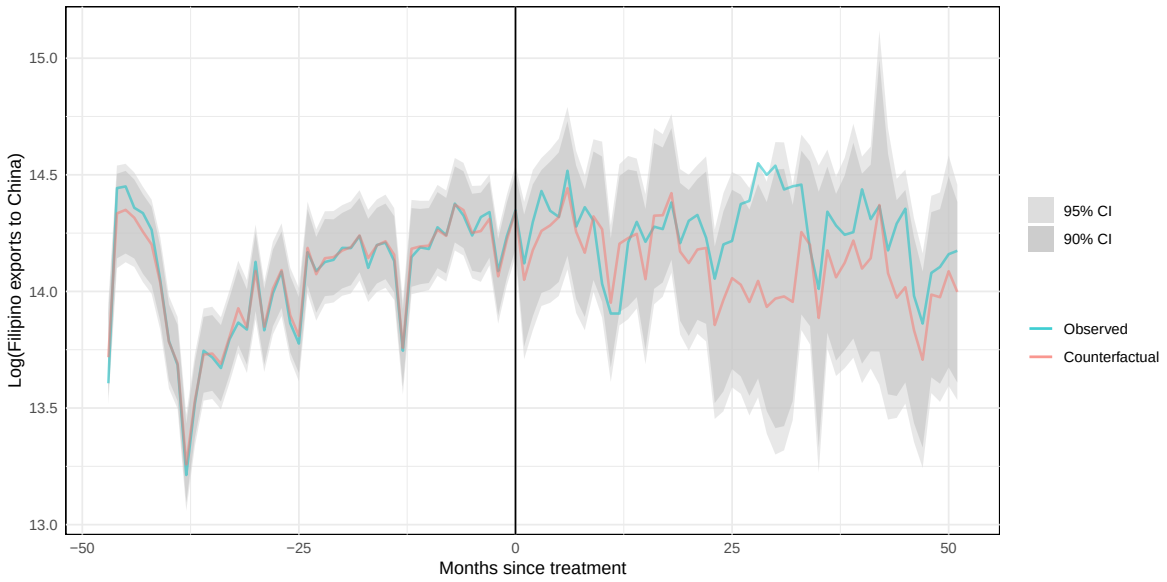

Figure 3: Plot for the actual trend of Filipino exports to China and the counterfactual trend without the SCS dispute predicted by the DM-LFM (Credible Intervals in grey).

Table 4: Main Analysis Result table for the DM-LFM.

	Exports to China		**Imports from China**	
	95% CI	90% CI	95% CI	90% CI
ATT	0.146 [−0.102, 0.398]	0.146 [−0.058, 0.357]	0.063 [−0.057, 0.183]	0.063 [−0.035, 0.162]
Observations	891	891	891	891
Treated Units	1	1	1	1
Control Units	8	8	8	8

Equal-tailed Credible Intervals in square brackets.

One may wonder if the ATT varied over time, specifically, if there was indeed a negative treatment effect on bilateral trade in the immediate aftermath of the as predicted in Hypothesis 1. Therefore,

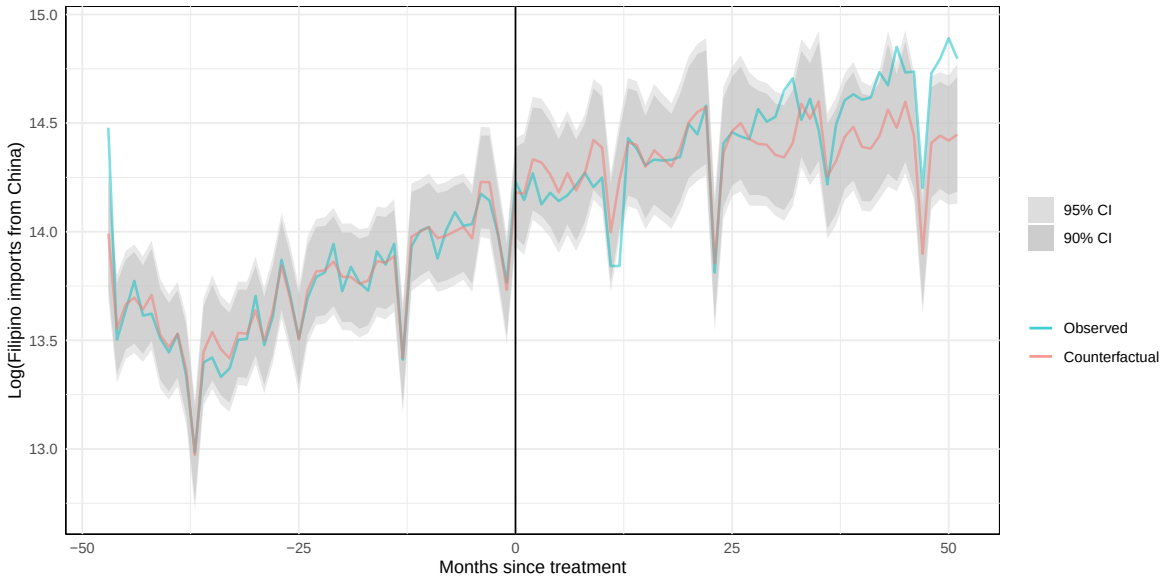

Figure 4: Plot for the actual trend of Filipino imports from China and the counterfactual trend without the SCS dispute predicted by the DM-LFM (Credible Intervals in grey).

we provide two effect curve plots for the ATT with 90% and 95% credible intervals in Figure 5 and Figure 6. They are accompanied by a result table (Table 5). Again, we found no significant impact on trade in the immediate aftermath (six months) of the outbreak of the conflict.

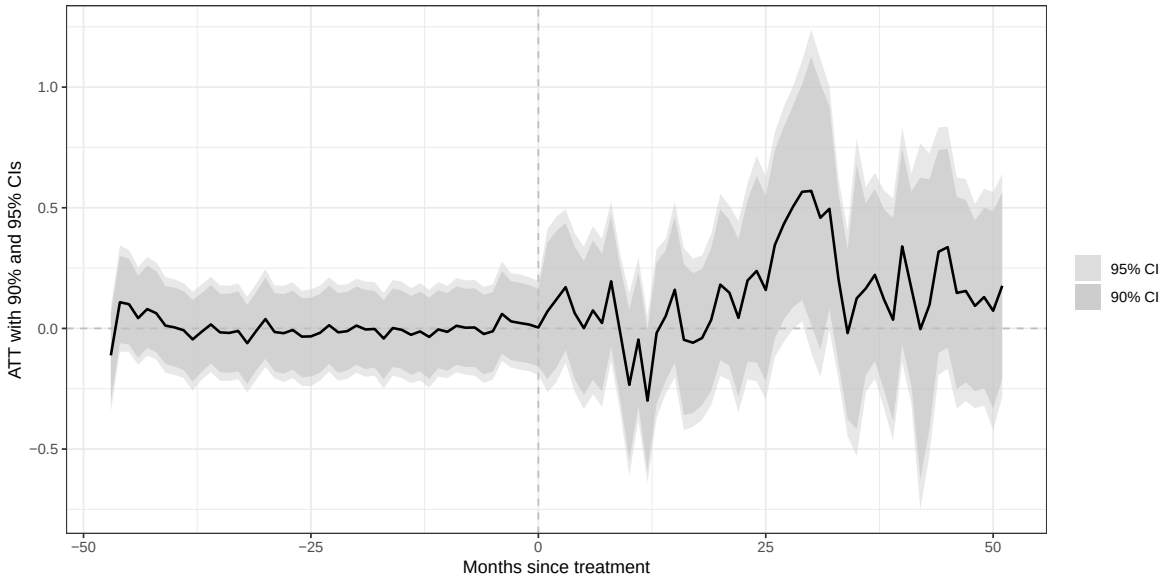

Figure 5: Event-Study style plot for the ATT on Filipino exports to China over time.

6 Robustness Checks

6.1 Placebo Tests

The robustness of the DM-LFM relies on whether its assumptions are violated. A common way of assessing this is a placebo test whereby the pre-treatment period is divided into two halves; the DM-LFM model is then trained on the first half to predict the second half. The alignment of the predicted

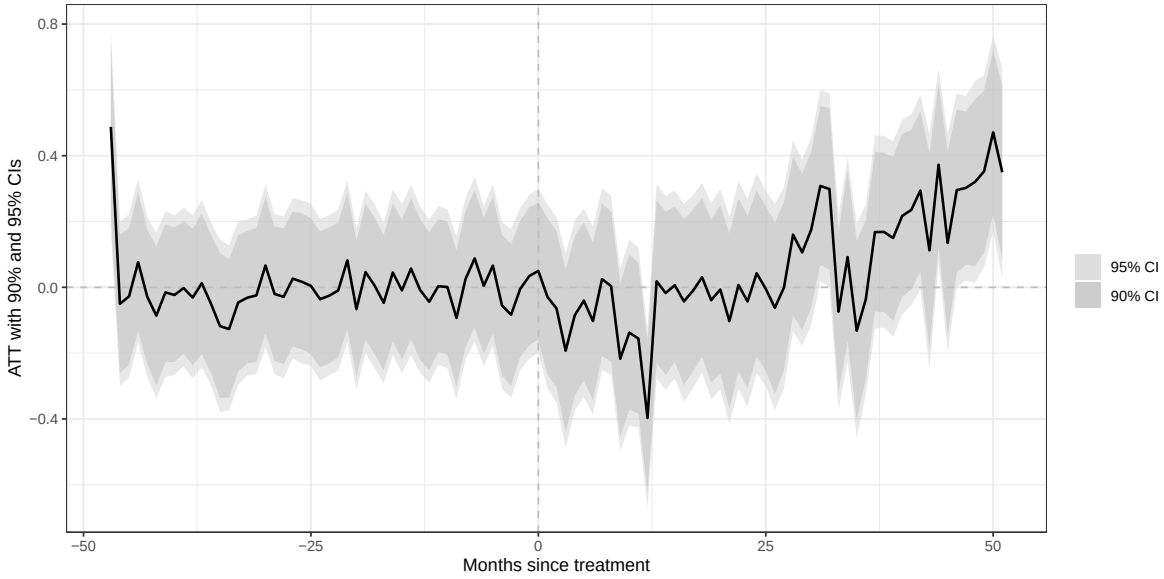

Figure 6: Event-Study style plot for the ATT on Filipino imports from China over time.

Table 5: Result table for the ATT over time.

	Exports to China		**Imports from China**	
	95% CI	90% CI	95% CI	90% CI
0	0.004	0.004	0.050	0.050
	[−0.193, 0.198]	[−0.158, 0.165]	[−0.199, 0.299]	[−0.159, 0.257]
1	0.071	0.071	−0.029	−0.029
	[−0.264, 0.411]	[−0.210, 0.357]	[−0.306, 0.253]	[−0.266, 0.210]
2	0.121	0.121	−0.064	−0.064
	[−0.223, 0.465]	[−0.161, 0.404]	[−0.352, 0.213]	[−0.303, 0.172]
3	0.171	0.171	−0.193	−0.193
	[−0.142, 0.493]	[−0.090, 0.437]	[−0.488, 0.103]	[−0.441, 0.053]
4	0.063	0.063	−0.085	−0.085
	[−0.263, 0.395]	[−0.210, 0.338]	[−0.375, 0.205]	[−0.329, 0.156]
5	0.001	0.001	−0.040	−0.040
	[−0.335, 0.339]	[−0.276, 0.279]	[−0.333, 0.239]	[−0.285, 0.198]
6	0.075	0.075	−0.103	−0.103
	[−0.273, 0.423]	[−0.213, 0.365]	[−0.387, 0.183]	[−0.342, 0.136]
Observations	891	891	891	891
Treated Units	1	1	1	1
Control Units	8	8	8	8

Equal-tailed Credible Intervals in square brackets.

trend with the actual trend would imply the robustness of the model. In this case, we divide the pre-treatment period of 48 months into two 24-month periods, with the placebo treatment date being April 2010.

The visualization of the placebo tests can be found in Figure 7 and Figure 8. Such plots suggest that the predicted trends match the actual trends reasonably well. As shown in Table 6, the estimated placebo treatment effects of 0.078 and 0.278 are fairly close to zero and not statistically distinguishable from 0. The results indicate that the DM-LFM estimator is robust for this study.

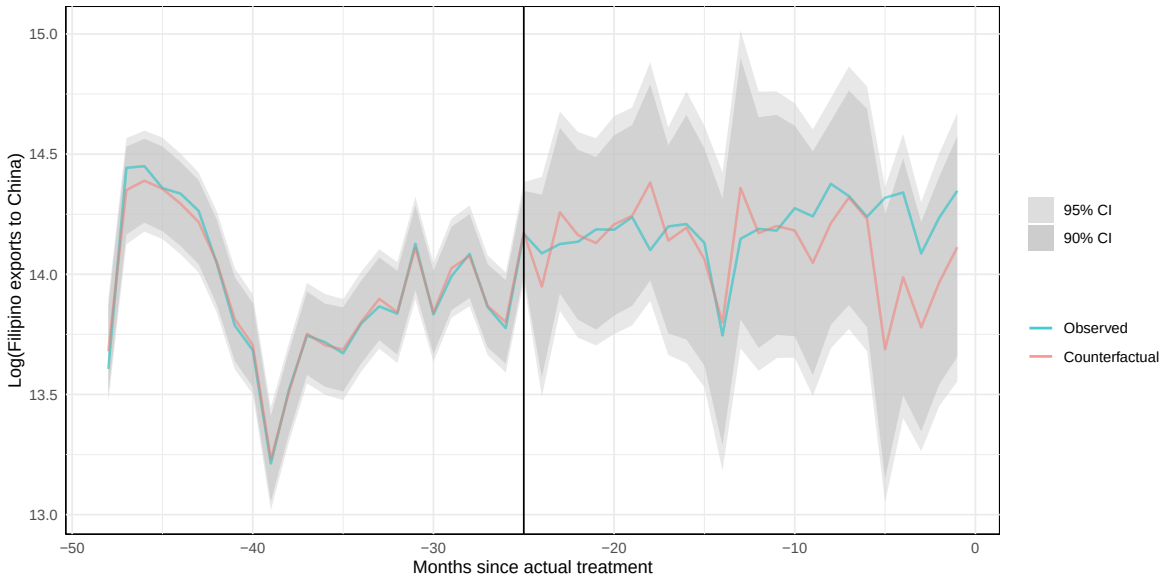

Figure 7: DM-LFM plot for the actual and predicted pre-treatment exports. (Placebo treatment at period -24).

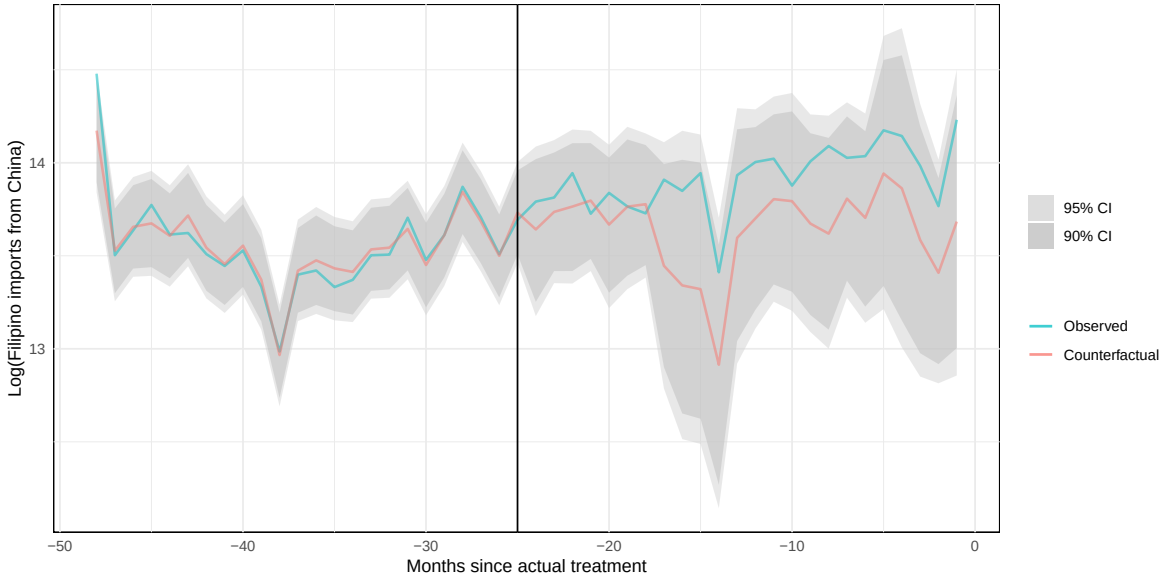

Figure 8: DM-LFM plot for the actual and predicted pre-treatment imports. (Placebo treatment at period -24).

6.2 Leave-One-Out Test

One may also wonder how sensitive our results are to the composition of the donor pool. We therefore iteratively remove one different unit at a time from the donor pool and compare the different counterfactual trends in Figure 9 and Figure 10, with different effect curves in Figure 11 and Figure 12. They indicate that the estimates are not much dependent on any control unit.

6.3 Alternative Estimator: SCM

We use the conventional Synthetic Control Method (SCM) proposed by Abadie and Gardeazabal (2003) as a robustness check for our main results. Although the first SCM trend plot (Figure 13) seems to

Table 6: Placebo result table for the DM-LFM.

	Exports to China		**Imports from China**	
	95% CI	90% CI	95% CI	90% CI
ATT	0.078 [−0.214, 0.362]	0.078 [−0.166, 0.313]	0.278 [−0.192, 0.743]	0.278 [−0.113, 0.660]
Observations	891	891	891	891
Treated Units	1	1	1	1
Control Units	8	8	8	8

Equal-tailed Credible Intervals in square brackets.

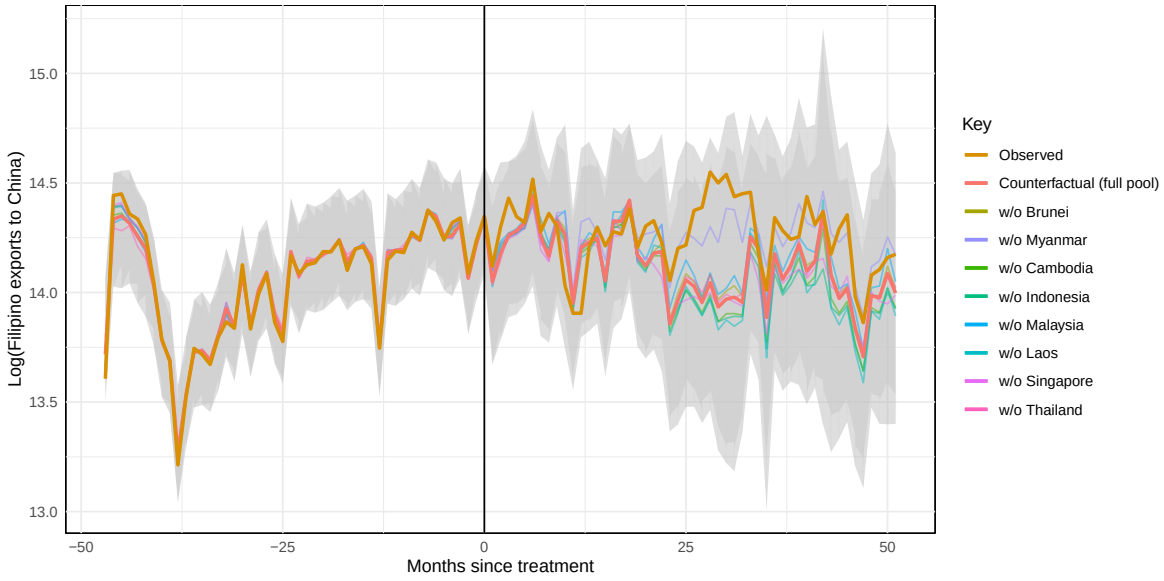

Figure 9: Trend Plot for leave-one-out tests on exports with DM-LFM (90% and 95% CIs in grey).

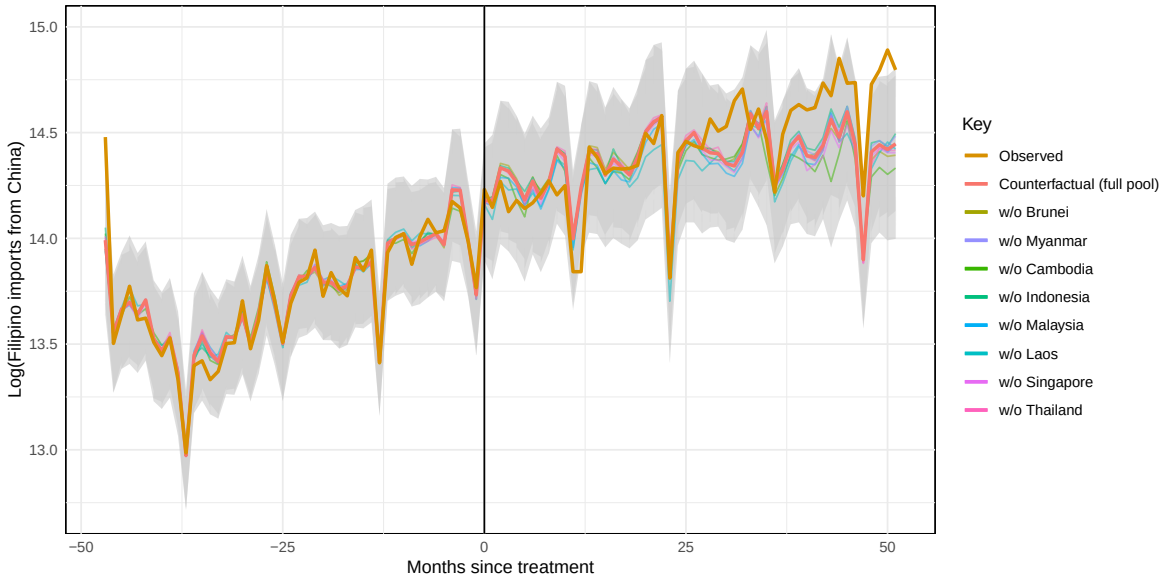

Figure 10: Trend Plot for leave-one-out tests on imports with DM-LFM (90% and 95% CIs in grey).

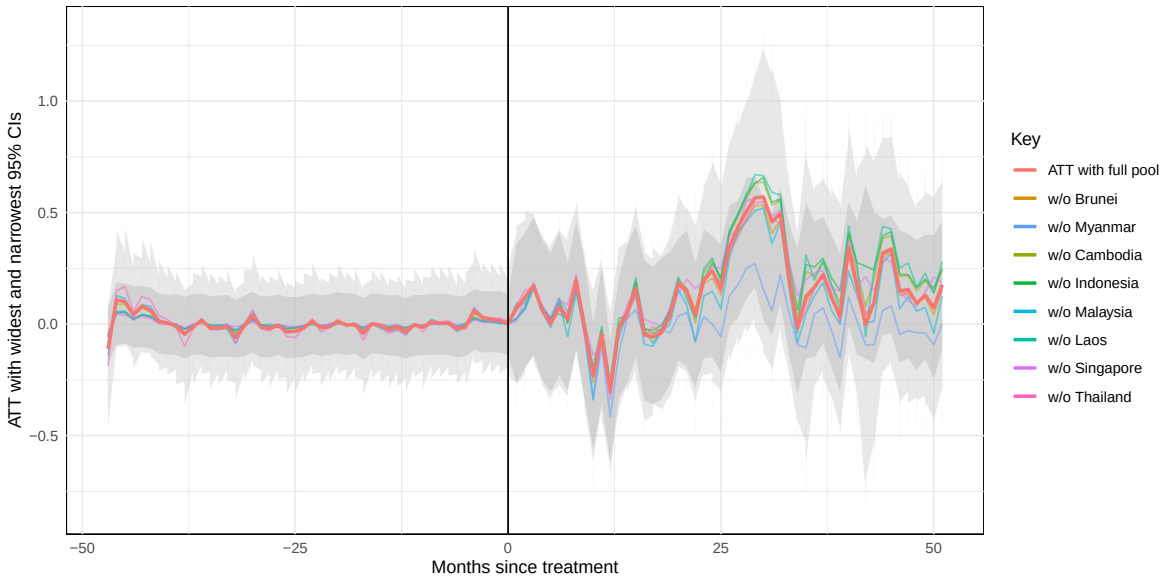

Figure 11: Effect Curve for leave-one-out tests on exports with DM-LFM (90% and 95% CIs in grey).

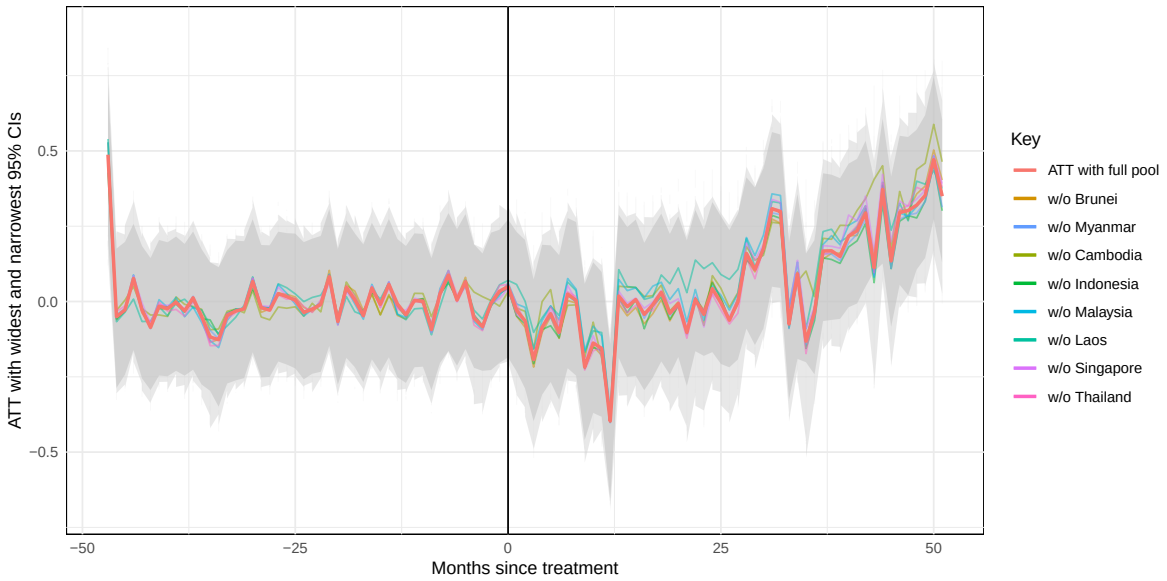

Figure 12: Effect Curve for leave-one-out tests on imports with DM-LFM (90% and 95% CIs in grey).

show a negative treatment effect of the SCS dispute on Filipino exports to China, this estimate is very far from being statistically significant ($p = 0.575$)[1], as suggested by Table 7. The estimate for the ATT on imports (0.037) is not even negative. To more intuitively understand the uncertainty in these negative estimates, we iteratively reassign treatment to every donor pool unit, rerun the SCM and calculate the ratio of the post-treatment Root Mean Square Prediction Error (RMSPE) to pre-treatment RMSPE. The results are visualized in Figure 15 and Figure 16. It can be seen that for both exports to and imports from China, the Philippines ranks only the third out of the nine units, confirming our previous null result.

[1]The confidence intervals and p-values are calculated using the Placebo Variance Estimation in Arkhangelsky et al. (2021). See Algorithm 4 on page 29 of that paper for more details.

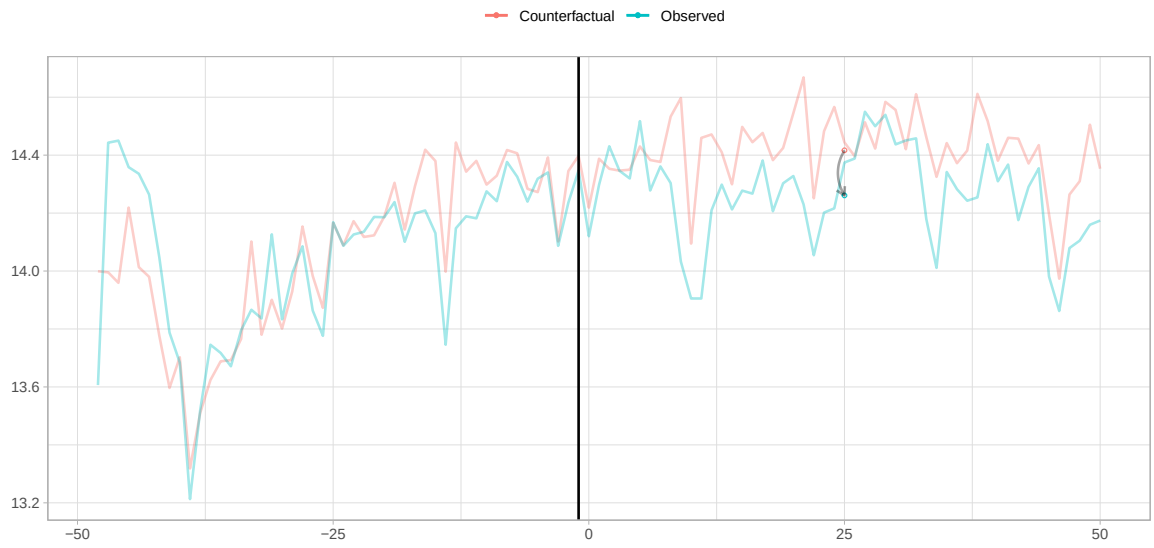

Figure 13: Plot for the actual trend of Filipino exports to China and the counterfactual trend without the SCS dispute predicted by the SCM (estimate ATT in arrow).

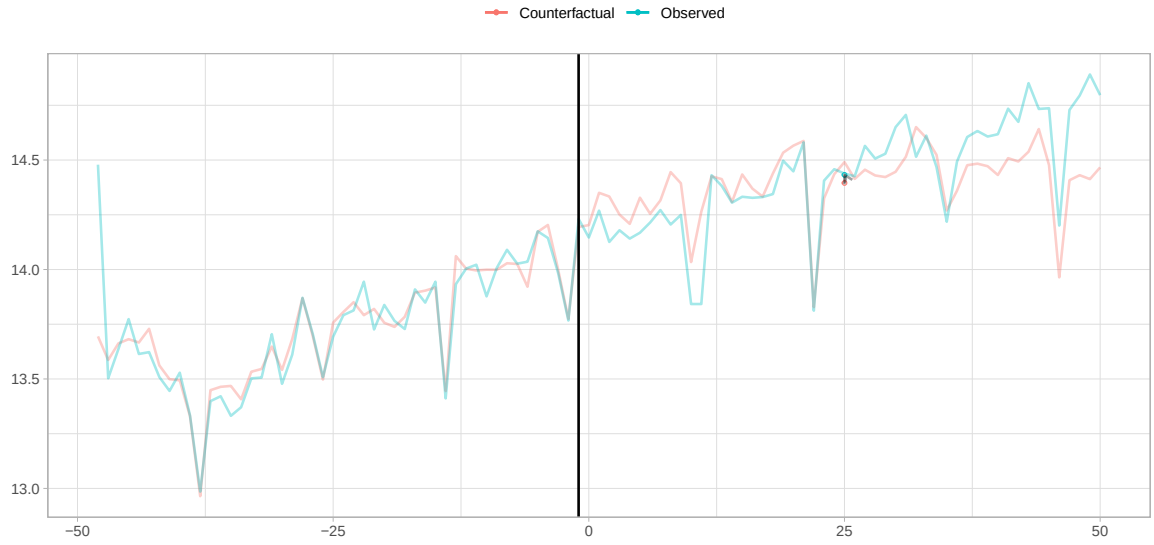

Figure 14: Plot for the actual trend of Filipino imports from China and the counterfactual trend without the SCS dispute predicted by the SCM (estimate ATT in arrow).

7 Discussion

The estimated coefficients for the 2012 clash (see Table 4) are positive and not statistically significant. One possibility is that our estimates are imprecise with noise, in which case the results are false negatives; the other explanation is that the clash truly had no discernible effects on Filipino exports and imports to China between 2012 and 2016. We argue that the latter is more likely.

The primary evidence against the Type I error explanation is that the estimated coefficients for ATT on *exports*, in the first six months, which we expect to have been "affected" more than imports due to the asymmetrical power, are positive, as shown in Table 5. This indicates that, according to the DM-LFM estimator, Filipino exports to China did not fall below the synthetic counterfactual trend in the immediate aftermath of the 2012 clash. Furthermore, the synthetic and actual trends display

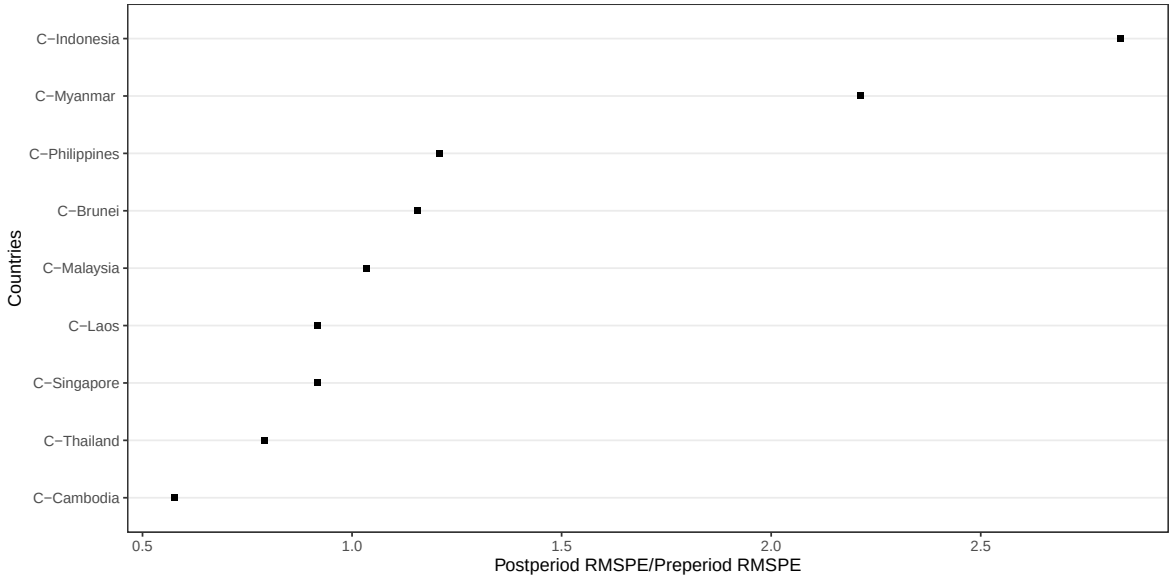

Figure 15: Ratios of post-treatment RMSPE to pre-treatment RMSPE for all units in SCM (exports).

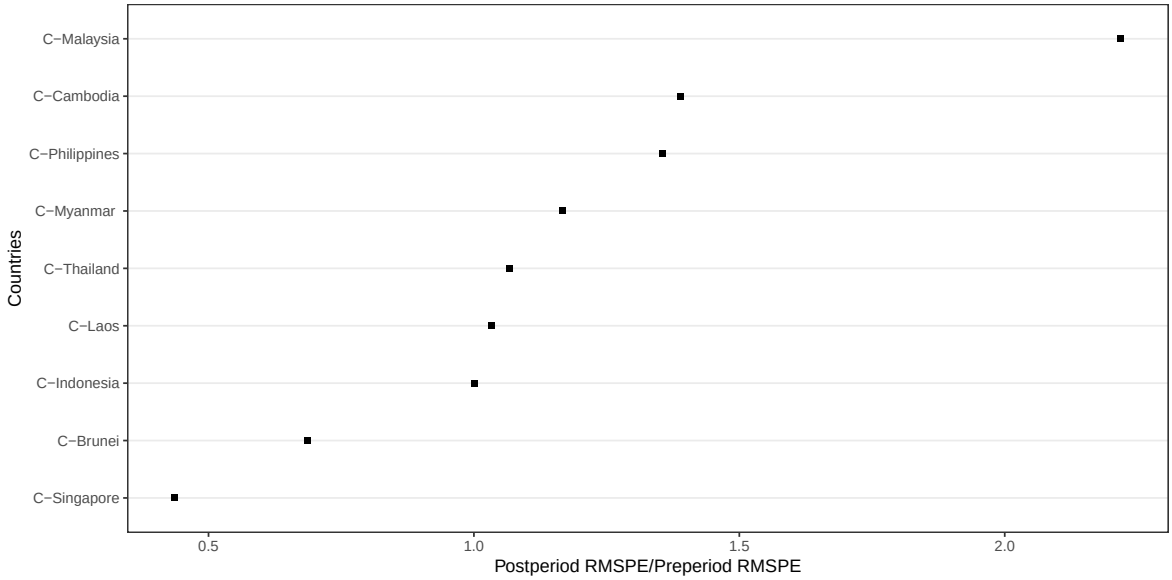

Figure 16: Ratios of post-treatment RMSPE to pre-treatment RMSPE for all units in SCM (imports).

similar patterns after the immediate post-treatment period (from 2013 to 2016). This aligns with previous scholarship (Du et al. 2017; F. Wang 2015).

What, then, accounts for the resilience of bilateral trade amid the intense ongoing conflict? Did both countries follow the liberal logic and minimise negative impacts on bilateral trade because of economic considerations? In this section, we aim to offer some potential explanations for the actions taken by the two countries during the conflict. By analysing the responses and actions taken by both nations and understanding their motivations, we suggest several potential factors that might explain this resilience at various levels.

Firstly, it is crucial to recognise that during the conflict, the Filipino government did not implement any economic measures against Chinese imports. Two potential reasons can be identified. The first might be that Chinese imports, such as petroleum lubricants, semiconductor device components, integrated circuits, and automobiles (top imports from 2012-2016), are highly price competitive, and the Philippines might be reliant on China for these products. In fact, for the majority of the years from

Table 7: Result table for the ATT estimated by SCM.

	Exports to China	Imports from China
ATT	−0.156 (0.575)	0.037 (0.417)
	[−1.773, 1.462]	[−0.308, 0.381]
Observations	891	891
Treated Units	1	1
Control Units	8	8

p-value in parentheses; 95% CI in square brackets.

2012-2016, the Philippines ran a trade deficit against China. In 2013, 20% of the Philippines' electronic products came from China. Another explanation could be that the Aquino III administration, recognizing the vast economic disparity between China and the Philippines, chose to counter China's assertiveness politically rather than economically. Since the April 2012 clashes, the Filipino government has been actively involving regional actors, namely ASEAN, and international actors, namely the US, Japan, and others, to counterbalance China. Regionally, Aquino III has called on ASEAN to take more action on the issue on multiple occasions. At the 21st ASEAN summit in November 2012, President Aquino III raised the issue of South China Sea tensions, pressing ASEAN to express concern on the issue. Before departing for the Association of Southeast Asian Nations (ASEAN) leaders meeting in Myanmar in November 2014, Aquino III addressed the Filipino press, stating, "ASEAN must address China's sea claims. Maritime territorial disputes with China affect the security of the entire region." Internationally, in January 2013, the Philippines submitted its claims of the SCS islands to the Permanent Court of Arbitration in The Hague, challenging China's territorial claims in the South China Sea. Since 2012, Aquino's government has intensified talks with the Obama administration about expanding the U.S. military presence in the Philippines. In April 2014, the Philippines signed the Enhanced Defense Cooperation Agreement with the USA, a legal framework that welcomed the presence of the US military and the execution of joint activities on Philippine soil. It also increased the frequency of joint military exercises with the US and Japan and arms purchases, mainly naval and air force equipment, from the two countries. Hence, the absence of disruption of Chinese exports to the Philippines might be due to 1) the Philippines having an inelastic demand for Chinese imports and 2) the different strategies adopted.

Secondly, in the short run, despite widespread war calls online and stern warnings from Chinese netizens and Chinese media outlets like the Global Times and China Daily towards the Philippines, the only concrete actions from China were an import ban on Filipino bananas and group tourism to the country. In May 2012 alone, China not only denied 150 containers of bananas from entering its markets, citing that the bananas were "crawling with insects", but also cancelled all tourist groups to the Philippines (Higgins 2012). The decision was interpreted as China's attempt to punish the Philippines economically. Filipino banana exporters are highly dependent on the Chinese market, as China consumed nearly 85% of Filipino bananas in 2011. However, it only constituted 1.23% of Filipino exports to China in the same year (Philippine Statistics Authority 2016), which might not have affected the overall trend and flows of bilateral trade between the two countries. Despite the signalling effect of the banana and tourist ban, in the absence of direct sanctions, it is likely that businesses in the two countries did not simply follow the flag but waited to see how the conflict developed. Additionally, earlier studies like the one by (X. Li and A. Y. Liu 2017) have identified a lag time of between one to two quarters before the impact of bilateral conflicts becomes noticeable on trade flows, as the market needs time to react to changes in political relations. Thus, the combination of these factors might be able to explain why there was no significant negative impact between the two countries as predicted by Hypothesis 1.

Why did the Chinese government, while putting up high rhetoric on the issue, adopt such a cautious attitude in taking further actions against the Philippines, especially in terms of furthering economic punishments towards the Philippines? Why did they not leverage its asymmetric power to pressure the Philippines? Two potential factors might explain the phenomena. Firstly, China might be concerned about intervention from the US. Since April 2012, the US has repeatedly involved itself in the dispute both diplomatically and militarily. Diplomatically, the US expressed its concern over the situation immediately after the confrontation and called on ASEAN to take more actions in addressing the

dispute and brokered an informal agreement for a withdrawal of both Chinese and Philippine vessels (Perlez 2012). During the Shangri-La Dialogue in May 2015, US Defense Secretary Ashton Carter condemned China's land reclamation activities in the Spratly Islands and introduced the Southeast Asia Maritime Security Initiative, aiming to equip and train Southeast Asian nations, including the Philippines. Militarily, the US has not only signed the Enhanced Defense Cooperation Agreement but also increased military experience with the Philippines and sent its warships to conduct Freedom of Navigations Operations (Kim 2016). These are signals that the US is actively involved in the issue that might have contained China' s aggression both militarily and economically. In addition, as China was preparing for its upcoming leadership renewal, it might not have wanted the negative repercussions of the conflict to persist to the 18th Party Conference that is going to take place in October in the same year. These factors might have provided some explanations for why there were no significant negative effects on Filipino exports in the short run.

From this viewpoint, it is possible that the selective import ban on Filipino bananas and tourist advisories primarily served a symbolic and performative purpose. It allowed the central government to demonstrate action in response to growing nationalist sentiments among its citizens while also acting as a caution to the Philippines rather than signalling the onset of widespread trade sanctions. In addition, the selection of the banana industry was seen as a strategic one, as bananas imported by China were the mainstay of the economy in the region around Davao City of Mindanao, which has undergone a series of Marxist insurgencies led by the New People' s Army (NPA) since the 1980s. Just as China issued the ban on bananas, the Philippine military was combatting a rising insurgency by Muslim extremists in the region (Higgins 2012). Bangoy, a banana grower near Davao City, stated that economic growth from bananas reduced the NPA guerrilla appeal in his region but warned they might return if Chinese import restrictions bankrupt growers (ibid). This strategic choice puts pressure on the Philippines government while not causing dramatic disruptions to bilateral economic activities. The act of targeting specific selected industries where pain will be felt, yet the spillover effect is limited, has also been observed in other instances of conflict with China. When political tension arose between China and Australia after Prime Minister Scott Morrison's accusation of China's human rights record and South China Sea policy, China similarly introduced an import ban on Australian coal imports in 2020. However, China-Australia bilateral trade remained largely unaffected, as the export of Australian coal constituted only 1% of its total exports to China (Peng 2023). By doing so, China can balance its need to warn the other party of the economic cost they might face if tensions continue to escalate while containing the spillover effect on the entire bilateral trade, which generates benefits for both parties.

In the long run, existing evidence suggests that efforts have been made by both governments to reduce the disruptive effect on bilateral economic activities, as both countries faced the dilemma of carefully balancing their territorial mandate with the need for economic cooperation. From the Chinese perspective, the increasing need to project its economic power abroad, especially since the launch of the Belt and Road Initiative (BRI) in 2013, and the realization of the amount of damage its actions caused to its image might have made it aware of the limits of its assertiveness on the international stage.

While the BRI appeals to many SEA nations facing significant infrastructure deficits that hinder regional economic growth (Ba 2019), numerous countries remain wary about fully endorsing the initiative. Scholars underscore the difficulties the Philippines and other SEA nations encounter when trying to balance economic interests with geopolitical concerns, given China's ascendancy and the escalating SCS conflict. Given the geopolitical apprehensions arising from China's perceived assertiveness, SEA nations, especially the other four claimant states, often view China's actions towards the Philippines as a reflection of its overarching foreign policy. Aggressive postures from China raise concerns among SEA nations that they might be coerced into acceding to China's political demands due to growing economic reliance on China, potentially discouraging them from forging closer economic ties with China (Nie 2016). This sentiment is encapsulated in the ASEAN 2012 statement, which, while expressing hope for enhanced China-ASEAN collaboration, also voiced concerns over developments in the SCS (Thayer 2012). Consequently, regional apprehensions, induced by its assertive strategies and potential negative impacts on BRI's promotion, might have prompted Chinese leadership to modulate their assertiveness towards the Philippines. From the Filipino side, President Aquino III recognized the power imbalance between the two nations. The stark infrastructure needs domestically and the absence of alternative funding avenues made both the BRI and the AIIB particularly attractive (Hu 2021), possibly deterring further escalation of tensions.

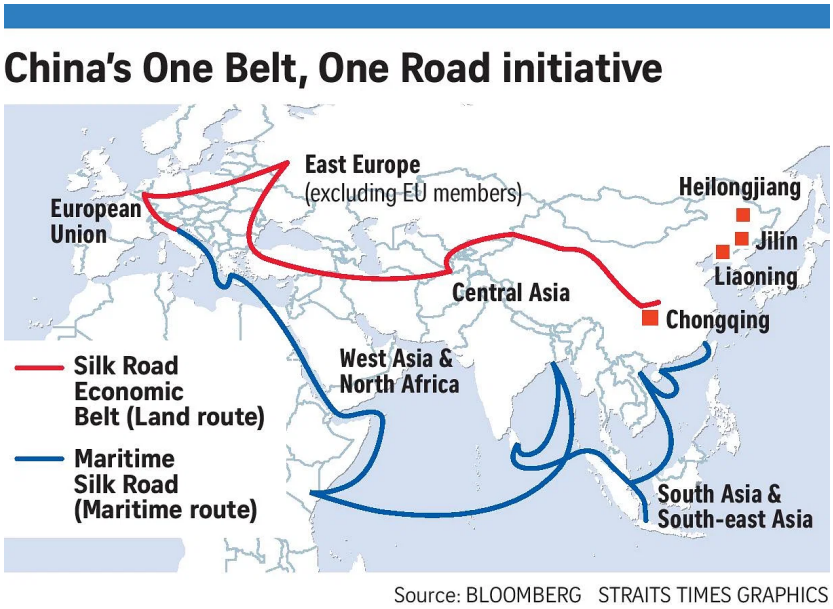

Figure 17: Map of the BRI. (Source: Straits Times 2016)

Efforts to curtail the repercussions of the territorial dispute have been noticeable since the conflict began. In 2013, the spokesperson for the Filipino Foreign Ministry stated that both nations concurred that "the South China Sea dispute shouldn't overshadow their entire relationship" and sought to "address the South China Sea dispute independently (Baculinao 2016)." President Aquino III echoed this sentiment during a brief interaction with President Xi in 2015, expressing a desire to "focus on initiatives beneficial to our citizens" (ibid). During this encounter, President Aquino III joined as the concluding founding member of the Asian Infrastructure Investment Bank (AIIB) in 2015, a decision contrary to US and Japanese warnings, catching many China-Philippines observers off-guard. China reciprocated this commitment, with President Xi underscoring a willingness for a "pragmatic approach," advocating for "sidelining differences to foster joint growth." He articulated aspirations for collaborative problem-solving during the 2014 presidential dialogue. Subsequently, the Chinese Embassy in Manila highlighted that "the Philippines remains central to China's BRI in Southeast Asia" (Vera Files 2014; Hu 2021), exemplifying mutual endeavours to restrict the territorial dispute's fallout to economic collaboration.

At the business and individual levels, some evidence of business lobbying can be found in the Philippines. This lobbying reportedly pressured the Filipino government into actions to minimize disruptions. Since 2012, Sergio Ortiz-Luis, president of the Philippine Exporters Confederation, has issued several warnings to the Filipino government. He stated that Filipino exporters are "extremely worried about the deterioration of bilateral relations" (Correspondent of Asia Sentinel 2012). He urged the Filipino government to find a "swift resolution to the month-long standoff with China to alleviate the losses experienced by Filipino exporters" (ibid). The Pilipino Banana Growers and Exporters Association echoed these concerns, warning that up to 200,000 banana farmers and associated workers could be jeopardized if resolutions aren't reached promptly (Landingin and Kwong 2012). No similar evidence was observed in China. Given the authoritarian characteristics of China's political system, it's improbable that business entities could influence the central government. Nonetheless, from 2013 onwards, businesspeople from both nations largely renewed their trade interactions. This renewal was especially notable after the Chinese vice minister of Commerce publicly stated in late 2013, "I can assure everyone that sanctions are not our national policy" (Staff 2016). Such governmental reassurances reportedly bolstered business confidence. This indicates that even if businesses can't sway governmental decisions, they don't strictly "follow the flag" and halt trade with adversarial nations. Rather, the allure of bilateral trade profits drives them to continue trading once governmental assurances are provided. On the individual front, while there were initial online calls in China to boycott Filipino products following the 2012 skirmish, these nationalistic sentiments were short-lived, with little evidence of such sentiments from 2013 onwards. The coordinated efforts of governments,

businesses, and individuals in both nations consequently account for the sustained growth of bilateral trade."

8 Conclusion

This study empirically examines the impact of the South China Sea dispute on bilateral trade between China and the Philippines from April 2012 to June 2016. We found no significant negative treatment effect, either in the immediate aftermath of the conflict or throughout the period, despite the ongoing conflict. While the liberal school and related studies typically attribute this to economic factors, we argue that it likely stems from a combination of both political and economic considerations between the two governments. This study contributes to the existing scholarship in several ways.

First, this paper is the first in the international political economy field to use the newly invented DM-LFM method to analyse the effect of political shock on bilateral trade flows. As explained in Section 3, this new method is mathematically superior to previously used methods such as SCM and DiD. Hence, this improves the accuracy of our results. Moreover, this paper contributes methodologically by combining quantitative methods with qualitative explanations. While mainstream quantitative research often focuses solely on constructing models, this study incorporates primary resources, such as speeches from political leaders, corporate representatives, and public reactions during the conflict, to explain the model's findings. By doing so, the paper addresses the limitations of existing quantitative research that often lacks a compelling explanation of the mechanisms driving the results. This combined approach provides a more comprehensive understanding of the interplay between political conflicts and economic activities and how they are influenced by various actors and public sentiments.

Second, this paper contributes theoretically by showing the applicability of liberal IR theory to a non-liberal state. As China is arguably an authoritarian country in its domestic political structure, our findings show that a different set of mechanisms might be at work to explain the phenomena of business-as-usual. Lastly, there are empirical contributions to this paper. Contrary to the commonly argued perspective that China has become more politically assertive in its foreign policy, this paper found that the disruptive effect on bilateral trade caused by the territorial dispute is minimal. This demonstrates that China's foreign policy is still driven by a rational calculation of costs and benefits rather than nationalistic fervour. This offers insights into how foreign policy is made in China and the considerations of the Chinese leadership in formulating foreign policies. With China's rapid rise on the global stage, its grand strategy seeks to project its economic, political, and military influence internationally (*China's Grand Strategy: A Roadmap to Global Power?* 2021). This is especially true for its immediate neighbours in East and Southeast Asia, which are the primary targets of China's influence Fisman, Hamao, and Y. Wang (2014). As many of them are engaged in various forms of territorial disputes with China, the uncertainty surrounding potential future conflicts generates apprehension amongst these nations Fisman, Hamao, and Y. Wang (2014). Therefore, by analysing one of the most severe and longest-lasting territorial disputes with China in recent years, our research assists China' s neighbours in better understanding China's behaviour concerning territorial disputes. This can also help international actors develop a more balanced and tactical strategy to engage with a rising great power.

There are two potential limitations of the paper. First, unlike the Philippines, where interviews and comments of various parties involved in the dispute (President Aquino III, government officials, businessmen and individuals) can be found on public platforms, similar evidence is limited in China due to the nature of its political system. Interviews or comments made by Chinese businesses are significantly lacking. Hence, it is unclear how exactly the conflict-affected Chinese businesses, especially the SOEs' activities. This is beyond the reach of this paper and would require an in-depth interview across businesses in China. Second, there is the question of the generalisability of the findings. As the focus of this research is exclusively on China and the Philippines from 2012 to 2016, it is unclear if the findings can be applied to other cases of conflict, such as the China-Vietnam SCS dispute from 2013 to 2017 and the China-India border conflict in 2020. A generalisable result would thus require a close comparison of all recent cases of territorial disputes that China is involved in, which is also beyond the scope of this research.

Data Availability Statement Replication files are available on the Harvard Dataverse.

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A Diagnostics for DM-LFM MCMC

Here, we provide some diagnostics for the Markov Chain Monte Carlo simulation results for the Average Treatment Effect on the Treated (ATT). Table 8 and Table 9 show the summary statistics for the MCMC simulations of the ATT.

As for visualization, Figure 18 and Figure 19 trace the MCMC simulations by iteration, and Figure 20 and Figure 21 shows the distributions of such simulation results by marginal density.

We then use the Geweke' s test to formally examine the convergence diagnostic for the Markov chain. We test the equality of the means of the first 10% and the last 50% of the chains, which give asymptotically normally distributed test statistics of -0.4534 (exports) and 0.2569 (imports), which correspond to p-values of 0.65 and 0.80, respectively. These results suggest that our Markov chains converge reasonably well. We also provide Geweke-Brooks plots (Figures 22 and 23), which divide the first half of the chains by 20 segments and repeatedly calculate the Geweke' s Z-scores as the segments are iteratively discarded. The plots also suggest that our burn-in is sufficient.

Table 8: Summary table for MCMC.

Trade	Mean	SD	Naive SE	Time-series SE
Exports	0.145672	0.127661	0.001277	0.003884
Imports	0.063187	0.060479	0.000605	0.001170

Table 9: Quantiles of MCMC simulations.

Trade	2.5%	25%	50%	75%	97.5%
Exports	-0.102049	0.059812	0.142404	0.230350	0.397887
Imports	-0.057053	0.023245	0.063988	0.102758	0.183197

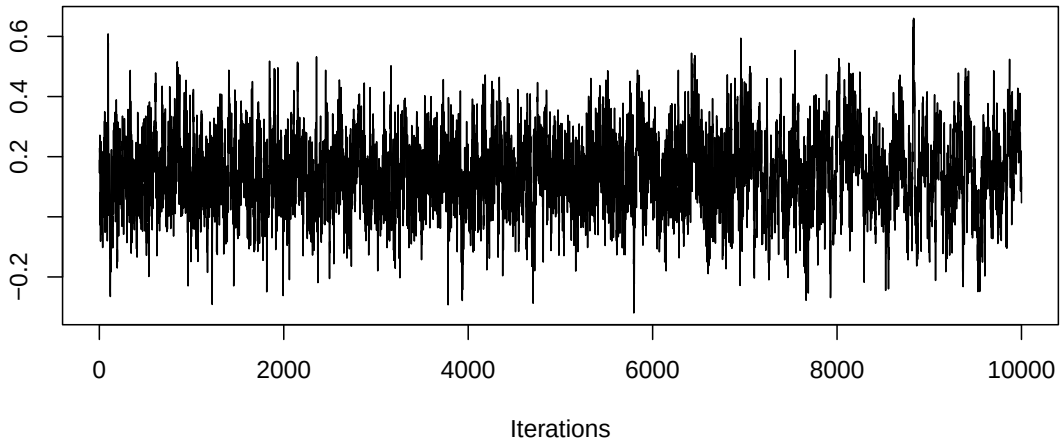

Figure 18: Trace plot for ATT MCMC simulations (exports).

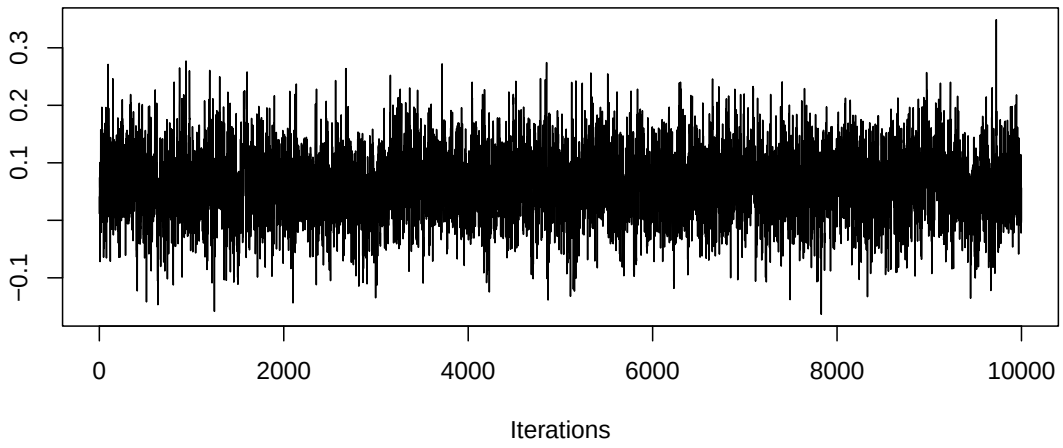

Figure 19: Trace plot for ATT MCMC simulations (imports).

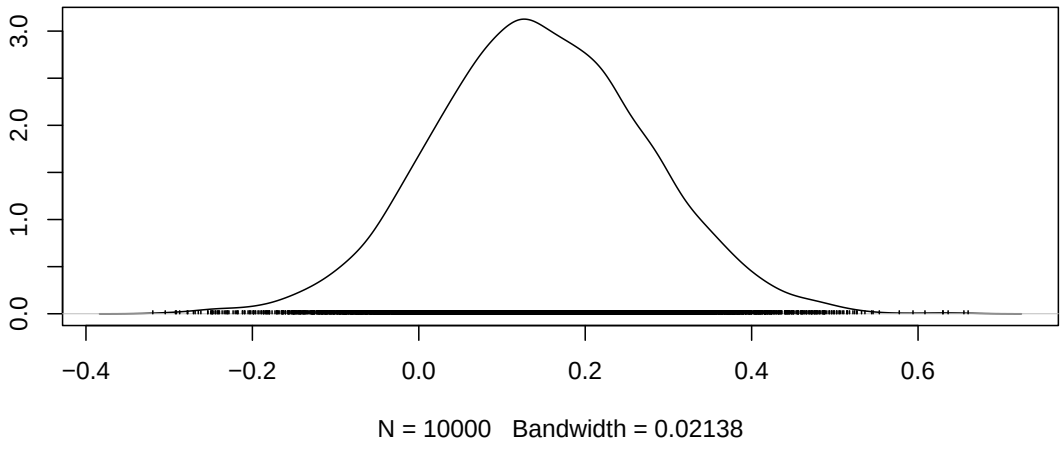

Figure 20: Density plot for ATT MCMC simulations (exports).

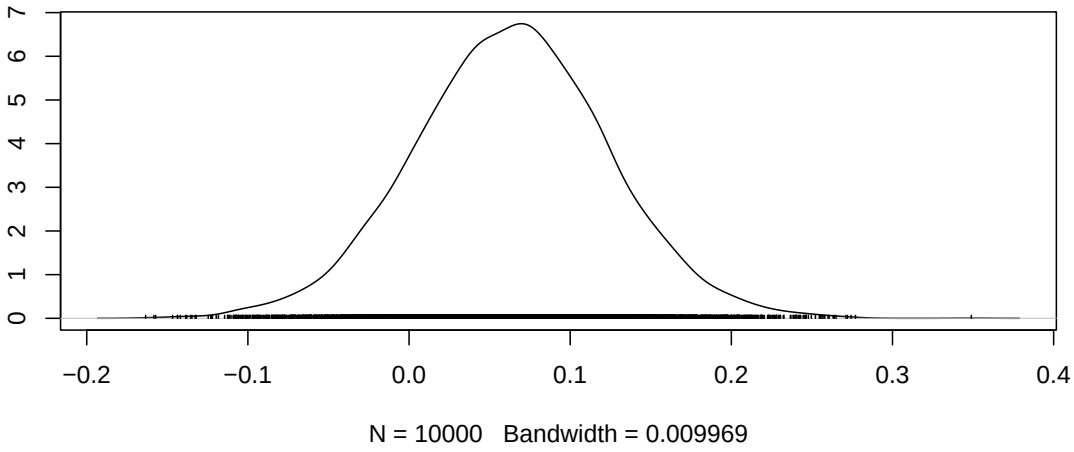

Figure 21: Density plot for ATT MCMC simulations (imports).

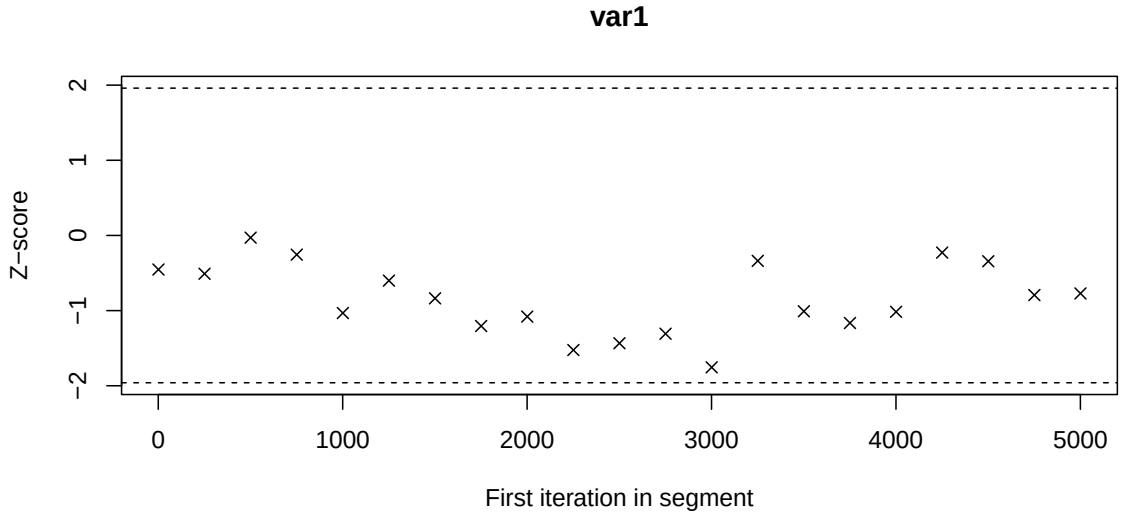

Figure 22: Geweke-Brooks plot for the ATT MCMC simulations (exports).

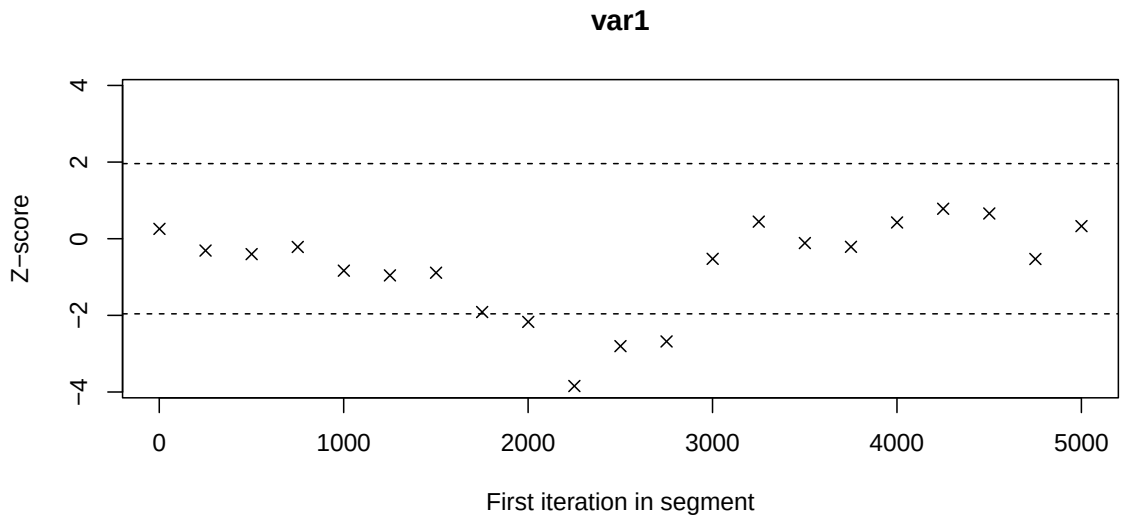

Figure 23: Geweke-Brooks plot for the ATT MCMC simulations (imports).