

# The Impact of China Georgia Free Trade Agreement on China Georgia Import and Export Trade

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## Abstract

In recent years, the economic and trade relations between China and Georgia have steadily developed, and the bilateral trade volume has maintained rapid growth. According to data from Chinese customs, trade between China and Georgia is showing a continuous growth trend, with the total trade volume increasing from \$04 million in 2000 to \$1.408 billion in 2022. China has become Georgia's third largest trading partner. This article uses composite control method to empirically study the trade effects of China Georgia Free Trade Agreement on the two countries using data from 25 sample countries from 2001 to 2022. Research has found that China and Georgia face issues such as insufficient overall trade scale, structural imbalance, and trade imbalance; Through the analysis of the current implementation status of the China Georgia Free Trade Agreement, this article believes that the agreement reduces protective barriers, expands trade scale, and improves resource allocation efficiency; This article uses the composite control method to evaluate the impact of the China Georgia Free Trade Agreement on bilateral trade between the two countries. The study finds that the China Georgia Free Trade Agreement promotes the total bilateral trade between the two countries; Further exploration was conducted from both export and import perspectives, and it was found that free trade agreements can promote China's import and export trade with Georgia, and have a greater trade effect on exports. Finally, based on the research findings, relevant countermeasures and suggestions are proposed: leveraging comparative advantages, expanding channels for economic and trade cooperation, and expanding channels for enterprises to obtain information on free trade agreements.

## Keyword

China Georgia, Synthetic Control Method, Free Trade Agreements, Bilateral

## 1. Introduction

In recent years, the economic and trade relations between China and Georgia have steadily developed, and the bilateral trade volume has maintained rapid growth. According to Chinese customs data, China's exports to Georgia have shown a sustained growth trend, increasing from 0.02 billion US dollars in 2000 to 1.252 billion US dollars in 2022, with a huge increase. Imports are also increasing year by year, but the growth rate is not as high as exports. The total trade volume increased from \$04 million in 2000 to \$1.408 billion in 2022. The main categories of goods exported by China to Georgia include: non alloy steel flat rolled products, mechanical equipment, vaccines and other immune products, rubber tires, and automatic data processing machines. The main categories of goods imported by China from Georgia include copper ore and its concentrates, precious metal ore and its concentrates, medical instruments and equipment, wine, and unwrought aluminum.

In March 2015, China and Georgia launched a feasibility study for negotiating a free trade agreement. In August 2015, China and Georgia completed the joint feasibility study with positive conclusions. In December 2015, both sides announced the official start of negotiations. From February to October 2016, after intensive and arduous three rounds of formal negotiations and three rounds of informal consultations, the two sides substantially concluded the negotiations on the free trade agreement. On May 13, 2017, during the Belt and Road Forum for International Cooperation, Zhong Shan, Minister of Commerce of China, and Gaharia, Minister of Economy and Sustainable Development of Georgia, signed agreements on behalf of the two governments. On December 2, 2017, after fulfilling their respective domestic legal procedures, China and Georgia notified each other through diplomatic channels. According to the effective terms of the agreement, the China Georgia Free Trade Agreement will come into effect and come into effect on January 1, 2018.

The background of the signing of the Free Trade Agreement between China and Georgia is the common desire of both sides to strengthen economic and trade cooperation and deepen bilateral relations. The signing of free trade agreements helps to promote trade and investment liberalization and facilitation between the two countries, reduce trade barriers, expand trade scale, and improve trade efficiency. In addition, free trade agreements can also help promote cooperation between the two countries in other fields, such as infrastructure construction and cultural exchanges. For China, signing a free trade agreement with Georgia will help expand China's economic and trade cooperation in Central Asia, strengthen its ties with Central Asia, and promote the implementation of the "the Belt and Road" initiative. For Georgia, free trade agreements help attract

more Chinese investment and trade, promoting its own economic development.

Based on the above background, this article takes the China Georgia Free Trade Agreement as the core, systematically reviews and analyzes its implementation status and effectiveness, and further tests the implementation effect of the agreement through the composite control method. Finally, corresponding countermeasures and suggestions are proposed for the problems existing in the implementation of the China Georgia Free Trade Agreement, in order to further enhance the overall implementation effect of the free trade agreement. Deepening the bilateral economic and trade relations between China and Georgia is of great practical significance.

## **2. A Literature Review on the Impact of Free Trade Agreements on Import and Export Trade**

Traditional research literature often views free trade agreements as a policy “black box”, using binary “dummy variables” to measure the level of liberalization in free trade agreements, but fails to quantify the depth and heterogeneity of changes in specific provisions of free trade agreements. [Choi \(2020\)](#) pioneered the classification and measurement of depth clauses in existing regional trade agreements into WTO+ and WTO-X categories by implementing different coding strategies and identifying specific depth clauses. This laid the foundation for the classification and measurement of depth clauses in free trade agreements. Based on this, many subsequent scholars have conducted extensive research on it. [Dür et al. \(2014\)](#) identified the heterogeneity of content in regional trade agreements (RTAs) from five categories: agreement type, negotiation scope, negotiation depth, liberalization process, and regulatory mechanism, as well as 19 sub items, and constructed credible commitment indicators for RTAs that reflect overall and sub clauses. [Dür et al. \(2014\)](#) constructed a DESTA database based on 587 preferential trade agreements and measured the depth of trade agreements using exploratory factor analysis and summation methods.

[Fiorini and Lebrand’s \(2016\)](#) study constructed a database covering 296 trade agreements and calculated the coverage index of trade agreements using standardized valuation methods (ranging from 0 to 1). [Kohl et al. \(2016\)](#) provided a database on regional trade agreements, which not only covers policy indicators covered by traditional trade agreements, but also takes into account emerging e-commerce and dispute resolution mechanisms for clauses. [Baier et al. \(2016\)](#) established the first database that can intuitively reflect the number of provisions and legal enforceability of regional trade agreements. Based on the dynamic changes in the depth of the content of 279 regional trade agreements, they constructed multiple indicator systems such as the depth of core provisions of regional trade agreements. There are also scholars in China, such as Tie Ying, who rely on the standard classification system of WTO+ and WTO-X clauses and introduce the variable of the number of times free trade agreements have been renegotiated. Based on cases of multiple renegotiation such as NA free trade agree-

ments, they have constructed horizontal and vertical deepening indicators for free trade agreements from two perspectives: clause coverage and agreement renegotiation. The research on the impact of free trade agreements on value-added trade is gradually increasing. Nilsson (2018) found that deep free trade agreements promote global value chain trade through statistics on component trade under the BEC classification. DeRosa and Gilbert (2022) scholars used the PPML model and found that deep free trade agreements affect global value chain integration by promoting intermediate goods trade. Based on distinguishing the total depth, core depth, and principal component depth used in free trade agreements, empirical results showed that adding a clause to the free trade agreement would increase bilateral component trade by 0.29%. The WTO-X clause is a key factor in promoting GVC related trade in deep free trade agreements, and the promotion effect of free trade agreements on high value-added intermediate goods trade is more obvious. The study of the effects of free trade agreements based on the perspective of value-added trade can fully utilize international input-output data, accurately classify various types of GVC trade, and obtain more accurate research conclusions. However, the disadvantage is the limitation of data samples. Leka et al. (2022) used the OECD input-output table for the first time and found that free trade agreements between countries with different levels of economic development have an asymmetric impact on value-added trade. Meanwhile, Chinese scholars have also paid attention to this issue. Looking at previous research literature, we have found that in recent years, research on the trade effects of free trade agreements has made breakthroughs in the construction of free trade agreement indicators. The construction method of free trade agreement liberalization indicators has gradually shifted from the initial “black box” virtual variable assignment to the current continuous, dynamic, and heterogeneous assignment. According to the vertical depth differences of free trade agreement clauses, more and more literature is paying attention to the issue of heterogeneity in free trade agreements.

In recent years, with the continuous advancement of the development process of free trade pilot zones, the economic effects of the construction of pilot zones have received widespread attention from the academic community. Miyagiwa (1986) proposed that the establishment of free trade zones would bring special preferential policies from the government, which would increase the welfare of the location and enhance the agglomeration of production factors. Yin Hua and Gao Weiwei (2017) used panel data policy evaluation method to compare and analyze the counterfactual economic benefits of not establishing the Shanghai Pilot Free Trade Zone with the real economic situation after the establishment of the pilot free trade zone. They concluded that the establishment of the pilot free trade zone promoted the growth of Shanghai’s total economy and export trade, bringing about “institutional dividends”. Disdier et al. (2019) studied the impact of international regulatory cooperation (IRC) on trade flows, with a particular focus on sanitary and phytosanitary (SPS) and technical barriers to trade (TBT)

clauses. Research has found that incorporating the IRC mechanism into preferential trade agreements (PTAs) can significantly and positively impact trade flows. Among them, the legal compulsion of the IRC mechanism has the most significant and robust impact on trade flows. Even after considering the regulations and dispute resolution procedures related to the World Trade Organization (WTO), this result still holds, emphasizing the importance of binding commitments for maximizing trade flows after PTA. In addition, the research findings also indicate that the impact takes some time to manifest, which is of great significance for evaluating the effectiveness of deep IRC mechanisms. This study emphasizes the importance of transparency and cooperation in increasing trade and provides useful insights for policymakers on how to improve regulatory cooperation to promote trade. Research has found that a decrease in trade costs may lead to trade transfer, while preferential tariff reductions may have a negative impact on welfare in some cases. This emphasizes the need for appropriate regulation and policies to ensure that preferential trade liberalization has positive welfare effects for all countries, especially when considering cartel behavior and market interaction. [Wüthrich & Elsig \(2021\)](#) focused on the design of international institutions, particularly in the field of trade. Research has found that countries' experience in multilateral trade disputes can influence their design choices in preferred trade agreements (PTAs). If a country has participated in complaints against a potential PTA partner, this experience can have spillover effects in the design of future PTAs, resulting in greater flexibility and lower enforcement levels. This discovery is of great significance for understanding the design and operation of international institutions, especially in the field of global trade.

Regarding the economic effects of the construction of a single free trade pilot zone, studies by [Tan Na et al. \(2015\)](#), [Xiang Houjun and He Kang \(2016\)](#), [Wang Lihui and Liu Zhihong \(2017\)](#), [Huang Qicai \(2018\)](#), [Li Shijie and Zhao Tingru \(2019\)](#), using the Shanghai Free Trade Pilot Zone as an example, based on the Synthetic Control Method (SCM) or counterfactual model, have shown that the establishment of a free trade pilot zone has an impact on the local economy. Import and export, fixed assets investment, attracting foreign capital, industrial structure, finance, capital flow and so on have a significant role in promoting. [Wang Peng and Zheng Jingyu \(2017\)](#) used the Guangdong Pilot Free Trade Zone as an example to analyze the impact of its establishment on the transformation of trade patterns. The study found that the establishment of the pilot free trade zone would promote the transformation of processing trade to general trade. Regarding the economic effects of the construction of multiple free trade pilot zones, [Ye Xiuqun \(2018\)](#) and [Nie Fei \(2019\)](#) both used provincial-level panel data from China. Based on the four free trade pilot zones established in the first two batches (Shanghai, Guangdong, Tianjin, and Fujian) as quasi natural experiments, they analyzed the impact of the construction of free trade pilot zones on economic growth, manufacturing structure, and cross-border capital

flow using composite control or double difference methods. The study showed that, the construction of free trade pilot zones can effectively promote economic growth, rationalization of manufacturing structure, and two-way flow of international capital.

In summary, firstly, existing literature has extensively explored the impact of free trade agreements on bilateral trade. Numerous studies support that free trade agreements can promote trade growth between contracting parties. However, the effectiveness of free trade agreements varies depending on country differences. Secondly, research on the effects of free trade agreements signed by China mainly focuses on the situation of China with major countries or major trading partners, while research on signing agreements with small countries such as Georgia is relatively scarce, especially with fewer literature using quantitative methods. Based on the research status and literature gap mentioned above, this article describes the characteristics of China Georgia economic and trade relations and uses the composite control method to conduct quantitative evaluation, empirically testing the impact of the China Georgia Free Trade Agreement on bilateral trade. The research results not only enrich empirical research in the field of China Georgia trade, but also provide important references for evaluating the effectiveness of China's free trade agreements with other countries, which is a beneficial supplement to existing literature. In the future, research methods can be further deepened and expanded to more fields to further strengthen our understanding of China Georgia economic and trade cooperation.

### **3. An Empirical Study on the Trade Effects of the China Georgia Free Trade Agreement**

#### **3.1. Theoretical Model**

This article uses the composite control method to evaluate the impact of the Free Trade Agreement (FTA) between China and Georgia on bilateral trade. The selection of this method is mainly based on the following considerations:

Firstly, compared to traditional evaluation methods such as difference method and gravity model, composite control method can better identify the net effect of bilateral FTA policy intervention itself (Abadie et al., 2019). It constructs a hypothetical "non FTA scenario" as a control group to strip away the impact of other coincidental factors on trade, making the results more inherently persuasive.

Secondly, bilateral trade between China and Georgia exhibits a rapidly growing non-stationary time series characteristic. The synthetic control method can better handle this dynamic scenario by modeling the time trends and fluctuations of each country. In contrast, traditional methods often require making steady-state assumptions. Again, the synthetic control method is less sensitive to model specifications and parameter selection, and can integrate various relevant information to reduce the limitation of assumptions. Considering the small sample size of bilateral trade between China and Georgia, this advantage can reduce the bias caused by excessive assumptions.

Finally, the synthetic control method utilizes multiple “control countries” to construct a synthetic control group, which can improve the robustness of the estimation. At the same time, it can also perform robustness tests such as placebo tests, making the results more reliable. Recent relevant literature also indicates that this method can effectively address the challenges of FTA impact assessment.

The specific principle is as follows:

When we cannot directly observe the changes in China Georgia import and export trade without the implementation of free trade agreements, we can estimate these changes by constructing a composite control group. The composite control group was created by combining import and export trade data from countries or regions with similar economic characteristics to Georgia but without signing a free trade agreement with China. Compare the changes in import and export trade between the treatment group (China and Georgia) and the synthetic control group after the implementation of the free trade agreement. This can estimate the actual impact of the free trade agreement on the import and export trade between China and Georgia.

Assuming  $Y_{it}$  represents the trade indicators (export value, etc.) of reporting country  $i$  in period  $t$ ,  $T_0$  is the time of intervention occurrence. The reporting country is China, and the composite control group is a weighted average of a group of similar countries. The model is:

$$Y_{it} = \delta_t + \theta_t D_{it} + \epsilon_{it}$$

$$Y_{0t} = \delta_t + \epsilon_{0t}$$

Among them,  $\delta_t$  represents the common time effect,  $D_{it} = 1$  when  $t \geq T_0$ , after intervention,  $\theta_t$  is the intervention effect. Predictive value  $Y$  for composite control group  $Y_{0t}$  can be expressed as:

$$Y_{0t} = \sum_{j=2}^J w_j Y_{jt}$$

Weight  $w_j$  is determined by matching the characteristics of each country during the expected period.

### 3.2. Variable Selection and Data Sources

This article uses panel data for research, selecting a total of 25 countries, including Georgia, as the research sample. The selected sample period is from 2001 to 2022. The other 24 countries in the sample are Japan, India, Saudi Arabia, Kazakhstan, Kyrgyzstan, Bangladesh, Uzbekistan, Germany, the United Kingdom, Ireland, Austria, Portugal, Russia, South Africa, Nigeria, Egypt, Congo, Brazil, Ukraine, Ecuador, Argentina, the United States, and Canada. The control group countries selected in this article are all within the top 100 in bilateral trade with China and have not signed free trade agreements with China. The sample countries cover Asia, Europe, Africa, South America, and North America.

The dependent variables in the model are the import, export, and bilateral trade volume between China and Georgia, all of which are sourced from the

United Nations Comtrade statistical database.

The specific explanatory variables are as follows, and the relevant data is sourced from the World Bank database:

1) *GDP*. GDP is an indicator of a country's total economic output, reflecting its economic strength and production capacity. The higher a country's GDP, the more likely it is to become a source of trade exports and imports, as it has more goods and services to export and can more easily import goods and services from other countries. In addition, a country's GDP can also reflect its market size. The larger the market size, the greater the consumer demand in the country, which can attract more international trade. Therefore, using a country's GDP as an explanatory variable in the model to explain the generation and scale of trade between different countries, measured logarithmically.

2) *Distance*. Distance as an explanatory variable can explain the spatial distribution of trade and the impact of geographical factors on trade. Specifically, distance reflects the geographical and transportation conditions between different countries, including transportation costs, logistics costs, tariffs, and other factors that can have an impact on trade. Firstly, distance can reflect the logistics costs between different countries. Logistics costs include various costs such as transportation, storage, loading and unloading, which have a significant impact on the cost and efficiency of trade. The farther the distance, the higher the logistics cost, which may reduce the frequency and scale of trade. Secondly, distance can also reflect factors such as transportation costs and tariffs between different countries. In cross-border trade, imported and exported goods need to be transported by sea, land, air and other transportation methods, which will generate certain transportation costs and tariffs. The farther the distance, the higher the transportation cost, which may increase the cost and difficulty of trade, thereby affecting the scale and frequency of trade. Finally, distance can also reflect factors such as cultural and linguistic differences between different countries. The cultural and linguistic differences between different countries may increase the cost and difficulty of trade, thereby affecting the scale and frequency of trade. For example, differences in laws, trade terms, business practices, and other aspects between different countries may increase the costs and risks of trade.

Use the straight-line geographical distance between the Chinese capital Beijing and various countries and take the logarithm as the measurement method.

3) *Population*. Population size is also one of the factors affecting trade. The larger the population size of a country, the larger its market size and corresponding consumer demand, which may attract more international trade. Therefore, population size is used as the explanatory variable and measured as the logarithm of the total population.

4) *Open*. The degree of dependence on foreign trade refers to the importance of a country or region's foreign trade, usually expressed as the ratio of annual commodity trade data to the total GDP of that year. The higher this proportion, the greater the importance of the country or region's foreign trade. The higher

the dependence of a country on foreign trade, generally speaking, the greater the trade volume between the country and other countries. This is because countries highly dependent on import and export trade must actively seek external markets in order to meet their own production and consumption needs. On the other hand, the higher the degree of economic openness of a country, the fewer trade barriers it usually sets up, making it easier to import related products. Therefore, this article takes trade dependence (Open) as the explanatory variable and uses the ratio of the annual commodity trade data to the total GDP of that year multiplied by 100 and the logarithm as the measurement method. The basic descriptive statistics of each variable are shown in **Table 1**.

### 3.3. Empirical Results and Analysis

In this article, we used the synthetic control method to evaluate the trade effects of the China Georgia Free Trade Agreement. Specifically, the construction of the synthetic control group is a crucial step in this method. The synthetic control group is a virtual comparison group composed of a series of “control countries”, all of which have similar economic characteristics as Georgia, but have not signed a free trade agreement with China. We calculated the similarity weights between these countries and Georgia, weighted their trade data with China, to construct a composite Georgia that can simulate the transaction situation between China and Georgia if they do not sign a free trade agreement. That is to say, without the signing of a free trade agreement, according to its economic fundamentals, the trade situation between Georgia and China should be similar to the actual trade situation between synthetic Georgia and China. In reality, due to the signing of a free trade agreement between the two sides, the actual trade situation between Georgia and China will be different from that of synthetic Georgia. By comparing the trade data of actual Georgia and synthetic Georgia before and after the free trade agreement, we can assess the impact of the free trade agreement on bilateral trade and more accurately evaluate the economic effects of the free trade agreement.

**Table 1.** Descriptive statistics.

VarName	Obs	Mean	SD	Min	Median	Max
trade	575	4.14	1.66	0.36	4.17	7.76
import	575	2.98	1.803	0.04	3.07	7.09
export	575	3.7	1.563	0.08	3.56	7.05
gdp	575	21.58	1.551	17.95	21.53	24.48
distance	575	8.92	0.114	8.66	8.92	9.18
population	575	16.38	1.233	14.09	16.16	18.8
open	575	4.39	0.459	3.34	4.39	5.23

**Table 2** lists four countries, namely Ecuador, Egypt, Austria, and Kazakhstan. These countries were selected as members of the composite control group to construct a control group similar to Georgia.

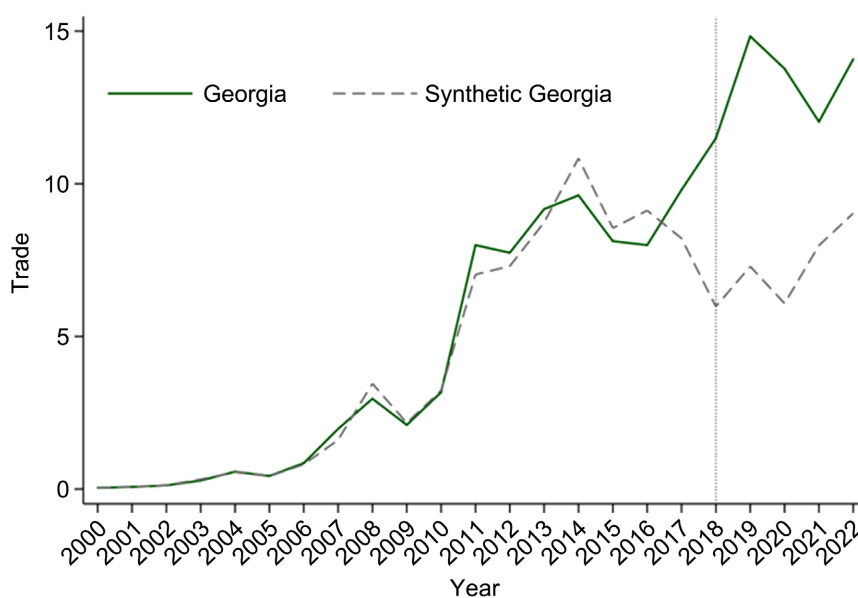
Each country has a corresponding weight value. The weight represents the contribution of each country to the final result in the composite control group. In this table, Ecuador's weight is 0.765, Egypt's weight is 0.112, Austria's weight is 0.012, Kazakhstan's weight is 0.215, and the weight of the remaining 20 control group countries is 0. These weights are used to construct a composite control group. In the formation process of the composite control group, the import and export trade data of each country will be multiplied by the corresponding weights, and then added up. Through this weighted synthesis method, we can obtain a composite control group that reflects the simulated situation in Georgia and serves as a benchmark for comparison.

### 3.3.1. Total Bilateral Trade Volume

The fitting diagram of the total bilateral trade volume between China, Georgia, and synthetic Georgia is shown in **Figure 1**. The solid line represents the total bilateral trade volume between China and Georgia, while the dashed line represents the total bilateral trade volume between China and synthetic Georgia. The vertical dashed line in the figure corresponds to 2018, indicating the effective date of the China Georgia Free Trade Agreement. Through the changes in

**Table 2.** Weights of synthetic Georgia (total bilateral trade).

Country	Ecuador	Egypt	Austria	Kazakhstan
weight	0.765	0.112	0.012	0.215



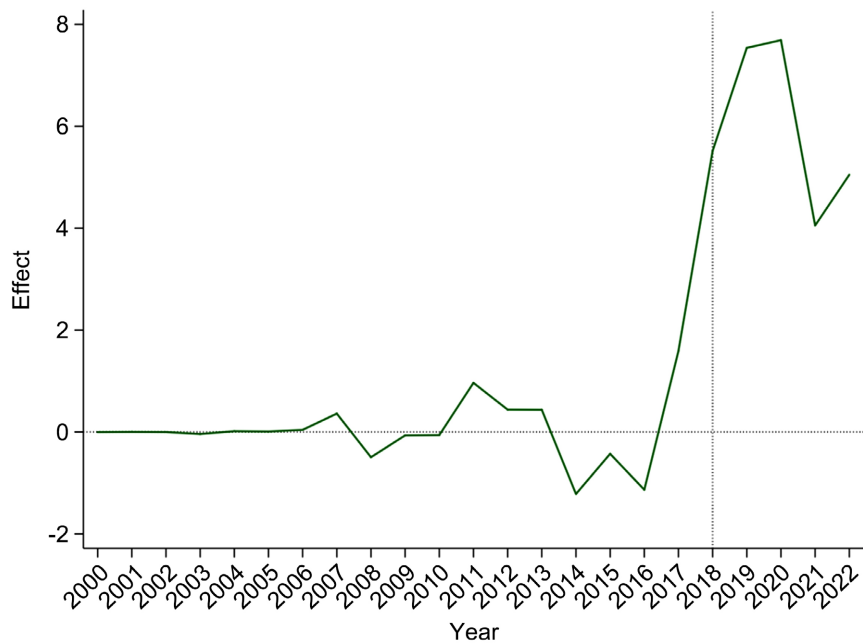
**Figure 1.** Fitted graph of China's bilateral trade volume with Georgia and synthetic Georgia.

the two curves, it can be seen that before the implementation of the China Georgia Free Trade Agreement in 2018, the bilateral trade growth paths between China and “synthetic Georgia” and real Georgia basically overlapped, with a high degree of fitting, indicating that before the implementation of the China Georgia Free Trade Agreement, The bilateral trade volume curve between China and “Synthetic Georgia” accurately depicts the real trade situation of China’s exports to Georgia, and is more suitable as a control group to analyze the policy effects of China Georgia’s free trade agreement. Between 2009 and 2022, after the implementation of the policy, China’s bilateral trade volume with “synthetic Georgia” and real Georgia fluctuated and increased, while there was also a gap that continued to widen. Moreover, China’s export curve to real Georgia was higher than that of “synthetic Georgia”.

In order to observe the impact of the implementation of the China Georgia Free Trade Agreement on the total bilateral trade volume between China and Georgia more clearly, this article depicts the trend of the trade balance (processing effect) between China and real Georgia and China and “synthetic Georgia” over time, as shown in **Figure 2**.

The trade effect of the China Georgia Free Trade Agreement can be determined by the difference in bilateral trade values between real Georgia and “synthetic Georgia”  $\theta_t$ . To reflect this, the magnitude of the difference can intuitively demonstrate the size and positive or negative nature of the trade effects generated by the implementation of the China Georgia Free Trade Agreement.

In **Figure 2**, the horizontal dashed line 0 represents the reference line. It is not difficult to see that before 2018, this difference value fluctuated around 0, with

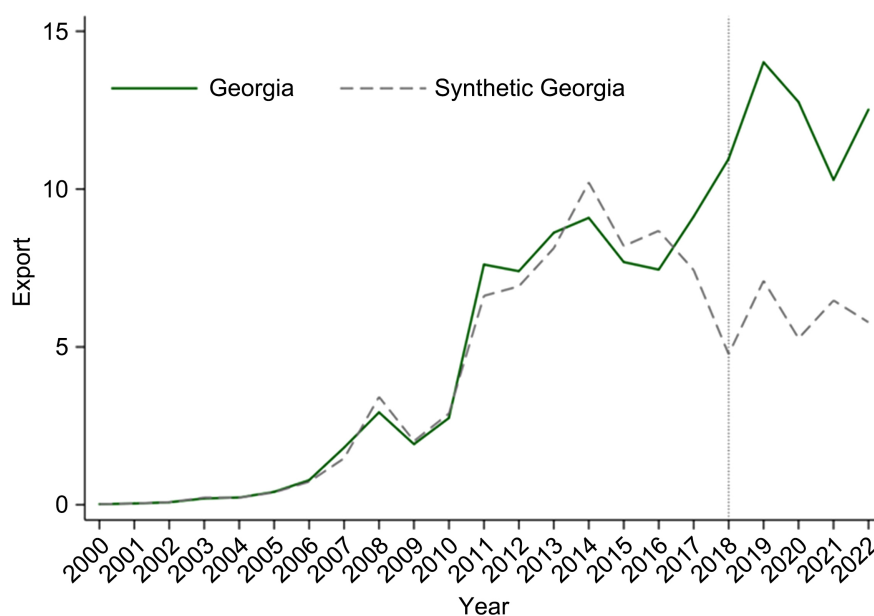


**Figure 2.** Changes in trade balance between China and real Georgia and “synthetic Georgia”.

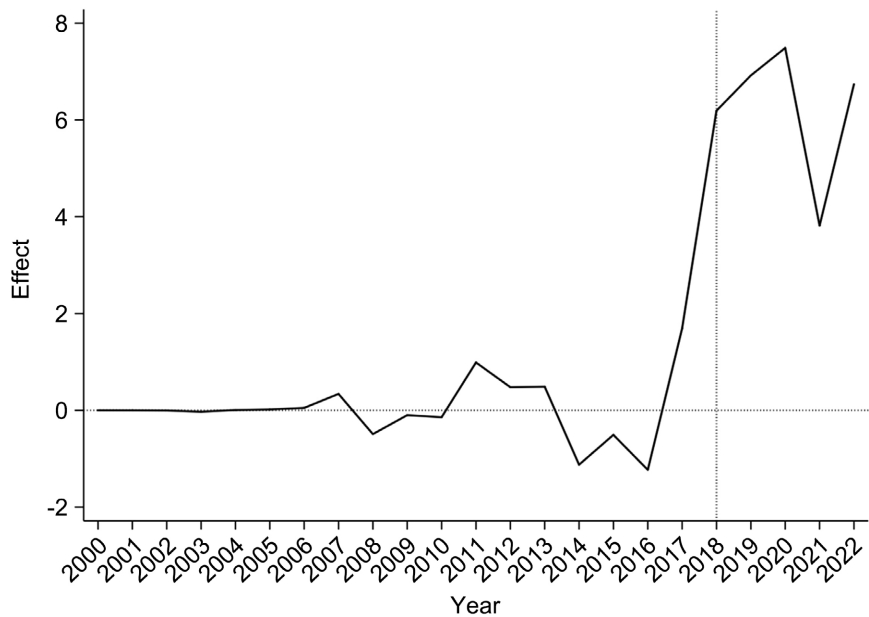
no obvious trend or positive or negative distinction, and the fluctuation range was very small; After the implementation of the China Georgia Free Trade Agreement (2018), this difference value broke through the original fluctuation range and gradually increased, reaching nearly 600 million US dollars in 2018. This indicates that the implementation of the China Georgia Free Trade Agreement has increased the total bilateral trade between China and Georgia by about 600 million US dollars, indicating that the implementation of the agreement has had an important impact on bilateral trade between the two countries. This difference value is greater than 0 and shows a fluctuating upward trend, indicating that the implementation of the China Georgia Free Trade Agreement has produced a significant positive trade effect, effectively improving the level of import and export trade between the two countries.

### 3.3.2. Export

In order to further analyze the impact of the implementation of the China Georgia Free Trade Agreement on bilateral trade between the two countries, this paper used the composite control method to evaluate the impact of the agreement on China's exports to Georgia. The results are shown in **Figure 3** and **Figure 4**. From **Figure 3**, it can be seen that before the implementation of the agreement, the export values of Georgia and "synthetic Georgia" were highly consistent, indicating a good fitting effect. "Synthetic Georgia" can well reflect the counterfactual development trend of export volume. After the free trade agreement came into effect, China's actual exports to Georgia were higher than its exports to "synthetic Georgia," and there was a significant difference between the two. This indicates that the implementation of the free trade agreement has increased China's export volume to Georgia.



**Figure 3.** Fit of China's exports to Georgia and synthetic Georgia.



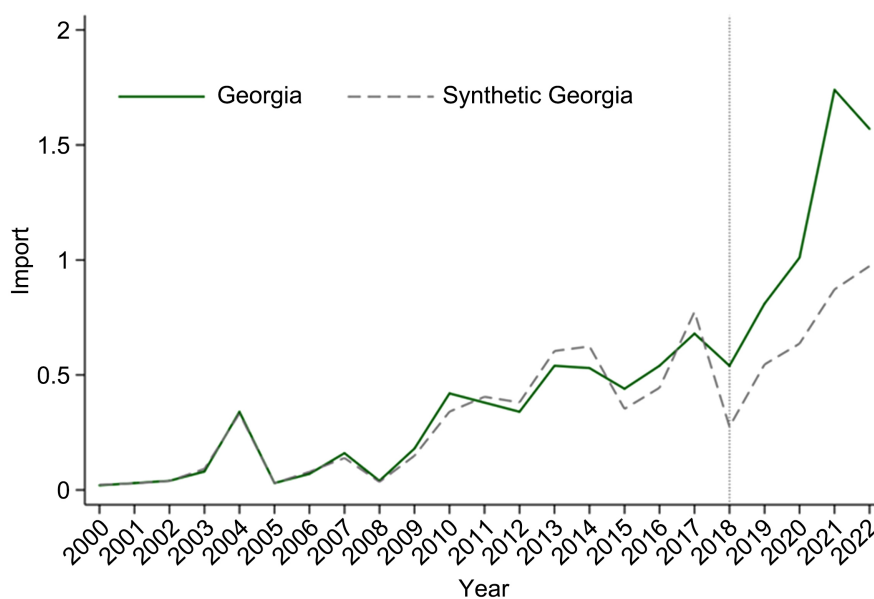
**Figure 4.** China's export trade balance with Georgia and synthetic Georgia.

**Figure 4** more intuitively illustrates the trade balance between China's exports to real Georgia and China's exports to "synthetic Georgia," i.e. the processing effect. It can be observed that before the implementation of the free trade agreement, the export gap fluctuated slightly around 0; After implementation, the overall difference showed a trend of increasing over time and remained positive. This indicates that the implementation of the China Georgia Free Trade Agreement has had a positive impact on China's exports to Georgia, and this effect gradually strengthens over time.

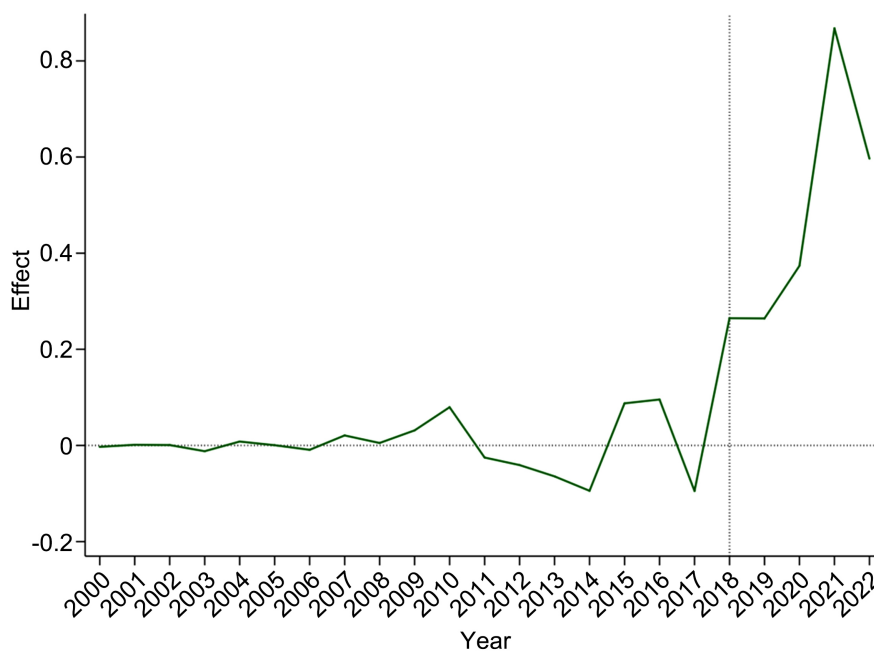
### 3.3.3. Import

**Figure 5** and **Figure 6** show the impact of the implementation of the China Georgia Free Trade Agreement on China's imports from Georgia. Before the implementation of the agreement, the import volume of Georgia was highly consistent with that of "Synthetic Georgia", which could well reflect the counterfactual development trend of import volume. After the implementation of the agreement, China's actual imports from real Georgia were higher than those from "synthetic Georgia," and there was a significant difference between the two. This indicates that the implementation of the free trade agreement has increased China's import volume from Georgia.

According to **Figure 6**, it can be observed that before the implementation of the free trade agreement, the import gap fluctuated slightly around 0; After implementation, the overall difference showed a trend of increasing over time and remained positive. This indicates that the implementation of the China Georgia Free Trade Agreement has had a positive impact on China's imports from Georgia, which gradually increases over time. **Figure 6** shows that the implementation of the free trade agreement has increased China's imports from Georgia.



**Figure 5.** Fitting of China's import value to Georgia and synthetic Georgia.



**Figure 6.** China's import trade balance with Georgia and synthetic Georgia.

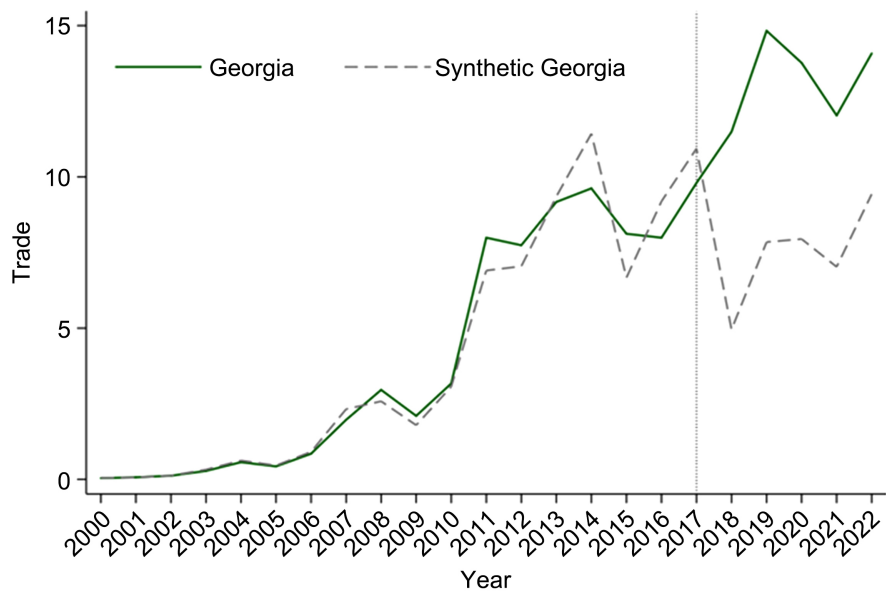
### 3.3.4. Robust Test

The number of control group countries selected in this article is not large, so when conducting robustness tests on the composite control method, the large sample theory should not be used for statistical testing. The placebo test is mainly used to estimate policies by changing the treatment group or policy implementation time. If the regression results of the estimated variables still maintain significance under different fictitious methods, it indicates that the empirical results of the composite control method are likely to be biased, possibly due to the in-

fluence of other policy changes or random factors that cause changes in the dependent variable.

This article changes the timing of the implementation of the China Georgia Free Trade Agreement and conducts a placebo test. The purpose of this approach is to eliminate the randomness and artificiality of the timing of economic events, in order to ensure that the intervention of China Georgia Free Trade Agreement policies has produced the aforementioned trade effects. Randomly select the time point of implementation of the China Georgia Free Trade Agreement. If the conclusion drawn at this random time point proves that the trade effect will not change with the intervention time point, it indicates that the trade effect is brought about by the implementation of the China Georgia Free Trade Agreement, excluding the possibility of other accidental factors. Set the implementation time of the China Georgia Free Trade Agreement as 2017, combined with bilateral trade volume data between China and Georgia, and use Stata17's Synth program to depict statistical charts, the results are shown in **Figure 7**.

**Figure 7** shows the timing of the implementation of the China Georgia Free Trade Agreement in 2017, and the synthesis of the total bilateral trade between China and Georgia using the counterfactual analysis method. It can be seen that after changing the implementation time of the China Georgia Free Trade Agreement, the bilateral trade growth between China and Georgia can also be accurately predicted, and the time point of the trade effect of the China Georgia Free Trade Agreement policy is consistent with **Figure 1**, both around 2018. This can exclude the possibility that the above empirical results are influenced by other accidental factors.



**Figure 7.** Changes in bilateral trade volume between China and real Georgia and “synthetic Georgia” after changing the implementation time of the agreement.

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## 4. Research Conclusions and Policy Recommendations

### 4.1. Research Conclusion

The economic and trade relations between China and Georgia have steadily developed, and the bilateral trade volume has maintained rapid growth. The free trade agreement signed by the two countries officially came into effect on January 1, 2018. In this context, this article selects 25 countries in Asia, Europe, Africa, South America, and North America from 2000 to 2022 as research samples, and uses composite control method to empirically study the trade effects of the China Georgia Free Trade Agreement on the two countries. The main research conclusions are as follows: This article uses the composite control method to evaluate the impact of the China Georgia Free Trade Agreement on bilateral trade between the two countries. The study finds that the China Georgia Free Trade Agreement promotes the total bilateral trade between the two countries; Further exploration was conducted from both export and import perspectives, and it was found that free trade agreements can promote China's import and export trade with Georgia, and have a greater trade effect on exports. The research results have verified the positive role of free trade agreements in reducing trade barriers and promoting trade development. Chinese enterprises have made more use of preferential policies in the agreement to expand their exports to Georgia, while Georgia's export growth to China is relatively small, which is related to the economic strength gap between the two sides. Overall, the free trade agreement has promoted the rapid development of bilateral trade between China and Georgia, especially with a significant increase in China's exports to Georgia. This provides new growth points for economic cooperation between the two countries.

### 4.2. Countermeasures and Suggestions

The China Georgia Free Trade Agreement has a positive promoting effect on the development of bilateral trade. Therefore, it is necessary to continuously improve the implementation of this free trade agreement and further enhance its effectiveness. This is of great significance for promoting the further development of bilateral trade between China and Georgia and deepening the economic and trade cooperation between the two countries. Therefore, this article proposes the following countermeasures and suggestions based on the research conclusions and possible issues in the implementation of the China Georgia Free Trade Agreement:

- 1) Utilize comparative advantages

From the perspective of geographical location, China and Georgia are at both ends of the "the Belt and Road", which is a natural extension of the "Silk Road Economic Belt". As a strategic channel connecting Europe and Asia, Georgia's "Europe Asia Intermediate Corridor" plan is highly consistent with the "the Belt and Road". This provides an important geopolitical foundation for trade cooperation between the two countries.

Considering the difference in market capacity between the two countries, the

scale of bilateral trade is still relatively small compared to the total economic output of the two countries. Compared to major trading partners such as China, ASEAN, and the European Union, the complementarity and strategic value of trade between China and Georgia have not been fully utilized. Given the complementarity between the two countries in traditional industries, infrastructure, digital economy, and other fields, there is broad space for future trade cooperation between China and Georgia. Chinese companies can open up channels to the European market by investing in Georgia. Georgia can also rely on China's industrial chain and financial strength to enhance its competitiveness. Fully utilizing the geographical advantages of the strategic alignment between the two countries, expanding trade cooperation areas, and enhancing trade scale is the direction that both sides should strive for.

#### 2) Expand channels for economic and trade cooperation

There is enormous potential for economic and trade cooperation between China and Georgia, but currently the scale and level of bilateral trade do not match. In order to give better play to the complementary advantages of the two countries and achieve mutual benefit and win-win results, the two sides need to further expand economic and trade cooperation channels and build a long-term cooperation mechanism under the guidance of the "the Belt and Road" initiative. Firstly, Chinese enterprises should actively participate in international trade negotiations such as the Canton Fair and Import Expo held in China, directly connect with Georgian enterprises, deeply understand cooperation needs, and reach project cooperation intentions. At the same time, China should encourage and support more Chinese enterprises to establish regional operational headquarters in Georgia, which can not only drive the development of related service industries, but also more conveniently explore the Eastern European market and achieve resource matching. In addition, both sides should jointly develop cross-border e-commerce platforms for the Eurasian market, relying on China's e-commerce experience and technology to provide more trade opportunities for small and medium-sized enterprises in both countries. China can also consider cooperating with Georgia to establish a trade financing platform and provide financial support for bilateral trade.

#### 3) Expand channels for enterprises to obtain information on free trade agreements

The signing of free trade agreements plays an important role in promoting bilateral trade development, but whether the benefits of the agreement can be released depends on whether enterprises are aware of and can fully utilize the terms of the agreement. Therefore, it is crucial to broaden the channels for enterprises to obtain information about free trade agreements and improve their awareness of the agreements.

### **Conflicts of Interest**

The author declares no conflicts of interest regarding the publication of this paper.

## References

- Abadie, B., Hansen, B., Bernstein, A. et al. (2019). Likelihood of Spontaneous Cardioversion among Patients Presenting to the Emergency Department for Atrial Fibrillation at Short-Term Follow-Up. *Journal of the American College of Cardiology*, 73, 366-398. [https://doi.org/10.1016/S0735-1097\(19\)30974-X](https://doi.org/10.1016/S0735-1097(19)30974-X)
- Baier, S. L., Yotov, Y. V., & Zylkin, T. (2016). *On the Widely Differing Effects of Free Trade Agreements: Lessons from Twenty Years of Trade Integration*. CESifo Working Paper Series No. 6174. <https://doi.org/10.2139/ssrn.2885252>
- Choi, Y. (2020). Political Economy of Free Trade Agreements in China, Japan, and South Korea: Sectoral Politics of the FTA Wave, 1998-2016. *Japanese Journal of Political Science*, 21, 145-157. <https://doi.org/10.1017/S1468109920000031>
- DeRosa, D., & Gilbert, J. (2022). *Technical Appendix Quantitative Estimates of the Economic Impacts of US Bilateral Free Trade Agreements*. Jeffrey J Schott.
- Disdier, A.-C., Stone, S., van Tongeren, F. et al. (2019). *Trade and Economic Effects of IRC*. OECD Trade Policy Papers, No. 224.
- Dür, A., Baccini, L., Elsig, M. et al. (2014). The Design of International Trade Agreements: Introducing a New Dataset. *Review of International Organizations*, 9, 353-375.
- Fiorini, M., & Lebrand, M. (2016). *The Political Economy of Services Trade Agreements*. CESifo Working Paper Series No. 5927. <https://doi.org/10.2139/ssrn.2799601>
- Huang, Q. (2018). *Has the Establishment of Pilot Free Trade Zones Promoted an Increase in Foreign Direct Investment? A Study Based on Synthetic Control Method*. *Macroeconomics*.
- Kohl, T., Brakman, S., & Garretsen, H. (2016). Do Trade Agreements Stimulate International Trade Differently? Evidence from 296 Trade Agreements. *World Economy*, 39, 97-131. <https://doi.org/10.1111/twec.12272>
- Leka, D., Daku, S., & Jusufi, G. (2022). Regional Cooperation and Free Trade Agreements in Western Balkans: Opportunities and Obstacles. *International Journal of Sustainable Development and Planning*, 17, 2239-2246. <https://doi.org/10.18280/ijstdp.170724>
- Li, S., & Zhao, T. (2019). Has the Pilot Free Trade Zone Promoted Industrial Structure Upgrading? An Empirical Analysis Based on the China (Shanghai) Pilot Free Trade Zone. *Journal of Central University of Finance and Economics*, No. 8, 118-128.
- Miyagiwa, K. F. (1986). A Reconsideration of the Welfare Economics of a Free-Trade Zone. *Journal of International Economics*, 21, 337-350. [https://doi.org/10.1016/0022-1996\(86\)90045-0](https://doi.org/10.1016/0022-1996(86)90045-0)
- Nie, F. (2019). Has the Construction of Free Trade Zones Promoted the Upgrading of Manufacturing Structure? *Journal of Zhongnan University of Economics and Law*, No. 5, 145-156.
- Nilsson, L. (2018). Reflections on the Economic Modelling of Free Trade Agreements. *Journal of Global Economic Analysis*, 3, 156-186. <https://doi.org/10.21642/JGEA.030104AF>
- Tan, N., Zhou, X., & Lin, J. (2015). Research on the Economic Growth Effect of Shanghai Free Trade Zone: A Counterfactual Analysis Method Based on Panel Data. *International Trade Issues*, No. 10, 14-24.
- Wang, L., & Liu, Z. (2017). Research on the Impact of Shanghai Free Trade Zone on Regional Economy: Based on the Perspective of Counterfactual Thinking. *International Trade Issues*, No. 2, 5-17.
- Wang, P., & Zheng, J. (2017). How the Establishment of Pilot Free Trade Zones Affects

the Transformation of Trade Modes: An Empirical Study Based on Guangdong Pilot Free Trade Zones. *International Trade Issues*, No. 6, 73-84.

Wüthrich, S., & Elsig, M. (2021). Challenged in Geneva: WTO Litigation Experience and the Design of Preferential Trade Agreements. *Business and Politics*, 23, 344-363.  
<https://doi.org/10.1017/bap.2020.20>

Xiang, H., & He, K. (2016). The Impact of Free Trade Zones and Capital Flows: A Natural Experimental Study Using Shanghai as an Example. *International Trade Issues*, No. 8, 3-15.

Ye, X. (2018). Pilot Free Trade Zones and Economic Growth: An Empirical Study Based on Quasi Natural Experiments. *Economic Review*, No. 4, 20-32.

Yin, H., & Gao, W. (2017). Has the Pilot Free Trade Zone Generated an “Institutional Dividend” Effect—Evidence from Shanghai Free Trade Zone. *Financial Research*, No. 2, 50-61.