

University of Public Service
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PhD Dissertation

Sino–US Trade Imbalance

Thesis Booklet

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1. Topicality of the issue

According to the "Balance of Payments Manual" devised by the International Monetary Fund, balance of payments refers to the international fund exchanges arising from trade, non-trade and capital transactions between a country or region and other countries or regions in the world, and thus, a kind of international income and expenses behavior occurs. The concept of the trade balance and imbalance comes from the balance of international payments. Trade imbalance means that the unequal total volume of domestic and foreign trade imports and exports of a country in a particular year occurs. Generally speaking, the government of a country should try maintaining the basic balance of import and export in foreign trade, with a slight surplus, which is conducive to the sound development of the national economy. According to a general survey in the foreign trade situation of governments worldwide, there is not much trade balance. However, the Sino-US trade imbalance is one of the most urgent economic imbalance issues today. The trade imbalance between China and the United States directly led to the Sino-US trade war that began in 2018, but the scale of the Sino-US trade imbalance is still growing. According to statistics from China Customs, the total volume of bilateral trade between China and the US reached a record high in 2018, with the total value of bilateral trade in goods reaching 633.52 billion US dollars and China's trade surplus in goods with the US reaching 323.33 billion US dollars. Increasingly close economic and trade cooperation has also made the issue of the Sino-US trade imbalance more prominent and eventually led to the trade war between the two countries. Sino-US trade is a crucial part of world economic and trade development. The world's trade deficit is mainly concentrated on the US, and the US current account deficit accounts for 70% of the world's total imbalance, and China is the largest trade deficit country against the US. Thus, taking the economic aggregate and the scale of trade imbalance between China and the United States into consideration, the issue of the Sino-US trade imbalance is not only the focus of the two countries, but also a hot topic of common concern to the whole world. The adjustment of the Sino-US trade imbalance is critical not only to the balance of the two economies, but also to the rebalance of the global economy. The Sino-US trade imbalance is an issue existing for a long time, which came into being with the establishment of the economic and trade relations between China and the United States and has become increasingly severe with the expansion of the trade scale between the two countries. The long-term trade imbalance not only leads to a series of economic problems, but also recently, the issue of trade imbalance between China and the United States has gradually evolved from an economic problem to a political one. Many scholars have also conducted relevant studies on this issue because of the severity and urgency of this practical problem, but they have

not reached a complete agreement on the reasons for the Sino–US trade imbalance. On the one hand, from the perspective of the industrial transfer, the root of the Sino–US trade imbalance has been analyzed, on which the academic circle has reached a consensus. With the transfer of the international division of labor and based on open trade policies and low labor costs, global resource allocation has been conducted in industries of developed countries and regions to keep down the costs. China has undertaken international industrial transfer, thus resulting in the scale expansion of China's exports. However, from the point of exchange rate, the reasons for the Sino–US trade imbalance vary.

2. Problem formulation

The governments of China and the United States respectively stick to their own arguments concerning the reasons for the Sino–US trade imbalance, and many scholars have conducted a large quantity of related studies on this issue, but they have not agreed on the reasons that produce the Sino–US trade imbalance, and in the meantime, they have not attached full importance to the research on the influence of the trade imbalance between China and the United States. The establishment and acceleration of the labor division system for international products has made the economic and trade relations among countries increasingly close. Studying the Sino–US trade imbalance must be conducted not only from a bilateral perspective but also to a higher degree, considering the impact of other countries brought to the Sino–US trade imbalance. China's position dominated by processing trade in the global value chain has made foreign investment in China objectively affect the Sino–US trade imbalance. Moreover, studying the Sino–US trade imbalance must be conducted not only from the perspective of microeconomics but also to a higher degree, that is, from the impact of macroeconomic on the Sino–US trade imbalance. The domestic economic imbalance in China and the United States, particularly the huge difference in the fields of savings and consumption between the two countries, has a profound impact on the Sino–US trade imbalance.

Generally, a country should not have a large quantity of foreign trade surplus for a long term as large trade surplus is inclined to cause friction with trading partners, and excessive trade surplus is dangerous, which means that the growth of its economy depends too much on the external market, and high external dependency makes the economy of a country easily affected by others. Besides, the Sino–US trade also provides unequal distribution of trade benefits. China's huge trade surplus against the United States objectively will enlarge the economic gap between China and the United

States. For a country, government authorities should try avoiding long-term trade deficit as huge trade deficit will result in the outflow of domestic resources and increase of foreign debts, which will bring adverse effects to the normal economic operation of a country. The Sino–US trade war , which began in 2018, reflects escalating frictions between the two sides, which has not only imposed a challenge on the economy and trade of the two countries, but also placed an impact on the economic development of other countries. Thus, it’s proper time to conduct an in-depth study of the Sino–US trade imbalance.

This study intends to address how the Chinese and US governments resolve the issue of trade imbalance by using national economic policies. It adopts the approach of economic analysis, dissects the dominating reasons and influence of the Sino–US trade imbalance, and seeks possible solutions on this basis. Meanwhile, this study took the case of the Sino–US trade imbalance to analyze some inapplicable circumstances of the classical trade theory. For instance, with regard to the issue of trade imbalance between China and the United States, certain one-sidedness exists in the theory of mercantilism: China's huge trade surplus against the US does not narrow the economic gap between China and the United States. Some situations cannot be applied for the law of the comparative advantage and factor endowment theory when it comes to the Sino–US trade, as Sino–US trade policies place an objective impact on the Sino–US trade structure.

3. Main Hypotheses

The dissertation aims to analyze the main reasons and influences of the Sino–US trade imbalance, further explore the possibility of potential national economic policies to solve the Sino–US trade imbalance, and propose approaches to resolving the Sino–US trade imbalance at the bilateral level. The central issue of this paper mainly focuses on analyzing the current situations of Sino–US trade imbalance and proposing a series of effective possible measures to solve the Sino–US trade imbalance in avoidance of such severe trade disputes like the Sino–US trade war. On the one hand, I mean that the economic policies of the Chinese and US governments do affect dealing with the Sino–US trade imbalance, in terms of adjusting trade policies and adjusting domestic economic imbalances, which is the basis for my thinking as a PhD student. However, I will be dedicated to proving a growing understanding of the Sino–US trade imbalance in both China and the United States shows that the repositioning of Sino–US trade imbalance conducted by the two countries in the relationships between China and the United States requires multiple rounds of negotiations and consultations to provide proper consideration of the next steps.

Hypothesis 1: *The high saving ratio in China is the main reason for Sino–US trade imbalance, which is exacerbated by foreign direct investment in China.*

Many factors are affecting Sino–US trade imbalance. In this study, China's high saving ratio is considered the main reason for Sino–US trade imbalance, and exchange rate is also one of the main factors affecting trade imbalance, which has been widely discussed in the academic circle. Savings and exchange rates are included in the same econometric model for research in this study to verify that the high savings ratio in China is the main reason for Sino–US trade imbalance. Previous studies on Sino–US trade imbalance focused on the impact that the US investment in China brings to Sino–US trade imbalance. In fact, with the in-depth development of globalization and international division of labor, China has sustained industrial transfer from various developed countries. From the perspective of foreign investment in China, the study verifies that the increasing foreign direct investment in China brought by globalization and international division of labor is the aggravating factor for Sino–US trade imbalance.

Hypothesis 2: *While maintaining a surplus in Sino–US trade, China objectively enlarges the economic gap with the US. Notwithstanding that the US suffers from a trade deficit with China, the Sino–US trade has promoted the development of the US economy.*

Despite China maintains a large trade surplus in Sino–US trade, as the two sides are going through different stages of economic development, China is at disadvantage in the distribution of trade benefits between China and the United States, thus enlarging the economic gap between China and the United States. Notwithstanding that the United States keeps a trade deficit with China, China provides the United States with daily consumer goods at low prices, and China's trade surplus is applied to hold large US dollar reserves and US government bonds, and it objectively promotes the economic development of the United States.

Hypothesis 3: *The Sino–US trade between is not conducted based on its own comparative advantages, which is determined by the trade policies implemented by the two countries.*

China's export-oriented trade and US policies of restrictions on high-tech exports to China have both distorted the Sino–US trade structure and aggravated the Sino–US trade imbalance in an objective way.

I shall therefore reflect predominantly on these challenges and seek to suggest adequate recommendations thereto.

4. Research questions and objectives

The current study comes up with measures to deal with the Sino–US trade imbalance. To provide an answer, this study also should figure out the main factors of trade imbalance, as well as the consequences of the Sino–US trade imbalance.

Factors of Sino–US trade imbalance vary, figuring out the main factors of Sino–US trade imbalance is a significant way to find a solution. At present, there are debates over the main factors of Sino–US trade imbalance in the academic circle, and I try adopting the method of positive economics to demonstrate that among the elements of macroeconomic, savings have a greater impact on Sino–US trade imbalance than the exchange rate. And the foreign investment in China enlarges the size of the Sino–US trade imbalance in an objective way.

Note that, only by comprehensively analyzing and studying the existing situation of the Sino–US trade imbalance, can we properly respond to this study's objectives. I focus on what the governments can do to improve the existing situation of Sino–US trade imbalance, how national economic policies influence the development of trade balance between China and the United States, what kind of adjustment mechanism for the Sino–US trade friction can work, what influence the Sino–US trade imbalance brings to the two countries, what the influence factors of Sino–US trade imbalance are, and whether Compared with the exchange rate factor, the saving factor is the main reason for the Sino US trade imbalance.

I will give an explanation that while China has a huge trade surplus with the United States; it has objectively enlarged the economic gap between China and the United States. I will also demonstrate that despite the United States runs a significant trade deficit with China, the Sino–US trade has objectively contributed to the GDP growth of the United States.

Besides, I have also predicted the development trend of Sino–US trade imbalances and reviewed the history of Sino–US trade friction, trying to demonstrate that if both countries do not change the current situation of trade imbalance, sustaining negative effects on trade and even the economic development of the two countries will occur.

5. Research methodology

The quantitative empirical research method is adopted in this research, and the purpose is to work out the main factors and effects of the Sino–US trade imbalance and the solutions. To achieve this goal, I have adopted extensive and multiple research methods. Meanwhile, I have considered the econometric model in the research process to compare the two factors in Sino–US trade imbalance: the exchange rate and savings. The initial stage of the research includes literature research, of which the purpose is to know the previous research findings and opinions on this issue, so that I can have an in-depth understanding of the existing situation and deficiencies in the research of Sino–US trade imbalance. Thus, I have reviewed the articles and opinions on this issue from researchers in China and the United States and other countries worldwide and presented my view on the current situation of the research. During the process, I also regularly share the main findings of my research with my supervisors and expert colleagues, and I also share the main research findings at domestic and foreign academic conferences, to obtain some constructive suggestions for my research and avoid potential bias.

Quantitative research method is adopted to quantify the main factors and influences, as well as the trend, of the Sino–US trade imbalance, which uses methods of statistical analysis and econometric analysis to analyze the main factors and influences of Sino–US trade imbalance through statistics from governments and international organizations. For instance, among the macroeconomic factors of Sino–US trade imbalance, the method of empirical analysis is mainly adopted to examine the influence that the changes of saving ratio and exchange rate bring to the Sino–US trade imbalance, and based on EVIEWS software, the least square method is adopted to conduct regression analysis for the influence model of savings and exchange rate on the balance of Sino–US trade, in which balance analysis and cointegration analysis are involved. While when it comes to data selection, China Statistical Yearbook, China Customs Statistics Yearbook, the website of the US Department of Commerce and the website of the US Bureau of Economic Analysis contain some variables concerning the characteristics of Sino–US trade and Sino–US trade imbalance, which is available for this. Processing the secondhand data and establishing the database of this research is an important step to verify the hypothesis of this research. The stationarity test of the time series data, and the factors affecting the Sino–US trade imbalance, such as the proportion of import and export commodities, are converted into data that can reflect the research content through one or two calculations, which are the preliminary work done in this research to verify the hypothesis.

Furthermore, I have conducted extensive desk research. I have collected secondary data on Sino–US trade

history and the history of Sino–US trade frictions by virtue of books, academic literature and online resources and reviewed experience and views from other people, which contribute to the challenges of understanding and addressing the Sino–US trade imbalance.

5.1. Research model setting

5.1.1. Macroeconomic factors of Sino–US trade imbalance

In order to analyze the impact of the exchange rate and the difference in the savings rate between China and the United States on the Sino–US surplus, this study selected China’s surplus with the United States (denoted as SC) in Sino–US trade from 2000 to 2018, and the actual exchange rate of RMB against the US dollar (denoted as R), the difference in savings rate between China and the United States (denoted as QC), trying to use a multiple linear regression model, using Eviews8.0 software to analyze the relationship between China's surplus with the United States (SC), the exchange rate of RMB against the US dollar (R), and the difference in savings rate between China and the United States (QC), further using the model to empirically analyze whether the reduction of the difference in national savings rate between China and the US and the appreciation of RMB can reduce the Sino–US trade surplus

The established model is

$$LNSC = \beta_0 + \beta_1 LNR + \beta_2 LNQC + \varepsilon$$

Among them, β_0 is a constant term, β_1 is the influence coefficient of the exchange rate on the surplus between China and the United States, β_2 is the influence coefficient of the difference in the saving rate of the Chinese and American people on the surplus between China and the United States, and ε is the residual term.

5.1.2. The foreign direct investment factors of the Sino–US trade imbalance

To use empirical analysis to test the relationship between foreign direct investment in China and Sino–US import and export trade from the perspective of time series, the main method used is the co-integration analysis method, using Eviews8.0 software to analyze the relationship between foreign direct investment in China and Sino–US import and export trade, through empirical tests,

verifying the influence and extent of foreign direct investment in China on Sino–US trade. This study selects annual time series data from 1983 to 2019. The data used are mainly from wind and statistics from the National Bureau of Statistics of China, which is obtained through the author’s collation.

The established model is

$$LNEX = \alpha_1 + \beta_1 LNFDI + \varepsilon_1$$

$$LNIM = \alpha_2 + \beta_2 LNFDI + \varepsilon_2$$

$$LNTN = \alpha_3 + \beta_3 LNFDI + \varepsilon_3$$

Among them, FDI means foreign direct investment in China, EX means China’s export trade volume to the United States, IM means China’s import trade volume to the United States, and TN means China-US import and export trade volume. To reduce the impact of heteroscedasticity fluctuations on the test, all variables are logarithmically transformed before the empirical test. It becomes LNFDI after FDI processing, LNEX after EX processing, LNIM after IM processing, and LNTN after TN processing.

5.1.3. The impact of the Sino–US trade imbalance on the Sino–US economic gap

To empirically test the correlation between China’s exports to the United States and the economic gap between China and the United States, this study believes that if the regression coefficient between China’s exports and the Sino–US economic gap is positive, it means that China’s exports have widened the Sino–US economic gap, the distribution of trade benefits is not good for China, and vice versa. Here, the use of China’s exports to the United States instead of China’s total imports and exports to the United States considers that the exported goods contain domestic elements and resources and the imported goods contain foreign elements and resources. This substitution can make the analysis more representative and realistic. Simultaneously, since the measurement method used in this paper is co-integration, and the co-integration relationship between two variables does not affect the co-integration relationship between other variables and these two variables; therefore, this substitution is also reasonable in measurement theory.

Additionally, according to the formula for calculating national income using the expenditure method, $GDP=C+I+G+(NX)$, that is, in addition to trade, factors affecting a country's economic

development include consumption, investment, and government purchases. The GDP difference between China and the United States is

$$GDPB = GDP_A - GDP_C = (C_A - C_C) + (I_A - I_C) + (G_A - G_C) + (NX_A - NX_C)$$

If a regression model is established, consumption, investment, government purchases and net exports should all be included in the regression model. However, this chapter discusses the distribution of trade benefits, and the result of the distribution of benefits is reflected in the effect of exports on economic development. Moreover, during the analysis period from 1983 to 2019, the trade structure between China and the United States did not change much, indicating that their respective consumption, investment, and government purchases have not yet had sufficient impact on the trade structure. Therefore, when building the model, consumption, investment, and government purchases are deemed constant, and only the relationship between exports and economic disparity is discussed.

Based on the above explanation, this paper intends to establish the following model and use Eviews8.0 software to test the relationship between China's exports to the United States and the economic gap between China and the United States:

$$GDPB = c + \alpha \times EX$$

Among them, GDPB represents the economic gap between China and the United States, which is defined as the total GDP of the United States minus the total GDP of China, EX represents China's exports to the United States, and c is a constant term. EX is used as an explanatory variable to estimate regression parameters. If the coefficient α of China's exports to the United States is significantly positive, it means that exports have widened the economic gap between China and the United States (because $GDPB = US\ GDP - Chinese\ GDP$); If the coefficient of exports is significantly negative, it means that exports have reduced the economic gap between China and the United States.

5.1.4. The impact of the Sino-US trade imbalance on the US economy

To quantitatively study the impact of Sino-US trade imbalance on the US economy, this study uses two variables of US GDP and US imports from China and Eviews8.0 software to analyze and establish the model as follows:

$$\text{LnGDP} = a + b * \text{LnIMP} + e$$

Among them, LnGDP is the natural logarithm of US GDP, LnIMP is the natural logarithm of US imports from China, a is a constant term, B is the influence coefficient to be measured, and e is the residual.

5.1.5. Prediction of the unbalanced development trend of Sino–US trade

Based on the data of Sino–US import and export trade from 1983 to 2019, this study uses a time series regression analysis method and uses Eviews8.0 software to establish an econometric model, which fits China’s exports to the United States, China’s imports from the United States, and the Sino–US trade balance and forecast trend.

The theoretical formula for trend forecast is as follows:

$$Y1 = \alpha + \beta X$$

$$Y2 = \alpha + \beta X$$

Among them, Y1 represents China’s exports to the United States; X represents the time series in years; Y2 represents China’s imports from the United States; α is the intercept; β is the coefficient of the time series, indicating the direction and amount of change, linear regression fitting was performed for Y1 and Y2 respectively.

5.2. Robustness Test

The results obtained from the empirical analysis are consistent with the theoretical expectations of this study, but the empirical results are likely to be affected by the samples selected in this study. Therefore, this study will perform multiple regressions on different samples, lagging variables of independent variables, and new data sources into the model to test the robustness of the empirical results.

First, change the sample size method. When verifying the causes and effects of Sino–US trade imbalances, most of the data used in this study are from 1983 to 2019, mainly considering that China and the United States officially established diplomatic relations on January 1, 1979, at the beginning of the establishment of diplomatic relations between China and the United States, the

United States had a trade surplus with China, but since 1983 it has had an uninterrupted trade deficit and continued to grow. Selecting data from 1983 to 2019 can better study the causes and effects of the Sino–US trade imbalance, that is, the continued US deficit and China's continued surplus. China joined the WTO in December 2001, and on December 17 of the same year, the United States announced the granting of permanent normal trade relations (PNTR) to China. In the robustness test of this study, the Sino–US trade data samples before China's accession to the WTO were removed, and only the Sino–US trade data samples after China's accession to the WTO were retained, and a new sample was formed and re-regression was performed to test the robustness.

Second, add the lagged variable method. The endogenous problem is to be considered in this study. Because the factors and influences of the Sino–US trade imbalance have a time lag in the impact of the Sino–US trade balance, this paper incorporates the one-period lagging explanatory variables into the model to solve the endogenous problem verify the robustness of the model.

Finally, I replace the new data source method. The different statistical methods of trade volume between China and the United States caused the differences in the statistical data on trade volume between China and the United States. To enhance the robustness of the research conclusions, after using data from China for regression, this study re-estimated the main regression of this paper by using data from the United States.

The robustness test results of this research have been given in each model, and the detailed verification process is also listed in the appendix of this research. In summary, this study has conducted multiple robustness analyses on samples, explanatory variables, and data sources. The robustness test results show that they are almost consistent with the original empirical results, providing further evidence support for the robustness of the original empirical results.

6. Structure of the dissertation

To substantiate the content, the work comprises 7 major parts.

Chapter One introduces the topicality of the issue, thesis outline, reasons for choosing the Subject, research questions, research objectives, research hypothesis, as well as the contribution and

significance of the research.

Chapter Two studies and analyzes the history of international trade in world economic history, especially the history of Sino–US trade, and to figure out the reasons and possible solutions for the existing Sino–US trade imbalance and even the Sino–US trade war from the historical perspective. This chapter is mainly divided into three parts. International trade during the world economy is introduced in the first part. First, the world economy is divided into stages, then changes to the course of the world economy brought by international trade and the role that China plays during world economy is introduced. Why China turns to a path of trade development that is different from that of European countries is explored from a historical perspective. Finally, the influence of international trade on scientific and technological breakthrough is analyzed. In the second part, US foreign trade policy is presented. First, it analyzes the academic research on US foreign trade policy, and then divides the US foreign trade policy into three historical stages for analysis and research on the basis of the landmark events. The history of Sino–US trade is shown in the third part. It systematically analyzes the Sino–US trade from 1784 to 2017 and studies the Sino–US trade in different periods based on major historical events such as World War II and the establishment of diplomatic relations between China and the US, as well as the changes of the US presidents.

Chapter Three focuses on critical reviews of previous studies and different theories related to Sino–US trade imbalance and trade war. In the first part, reviews of theories related to trade wars and Sino–US trade war and Sino–US trade imbalance, are conducted. In reviewing theories of trade wars and the Sino–US trade war, the chapter mainly introduces the history of trade wars, reasons for initiating a trade war between countries and consequences brought by a trade war, as well as the Sino–US trade war at present and relevant studies. Meanwhile, this chapter states that trade war involves various systems and aspects such as economy, law, society, and politics, and third-party arbitrament, especially WTO, can play a greater role in dealing with modern trade war. While reviewing the theories of Sino–US trade imbalance, the chapter first gives a definition for the balance of payments according to the "Balance of Payments and International Investment Position Manual" devised by the International Monetary Fund and introduces the content of trade balance and trade imbalance. The relevant theories of trade imbalance mainly include mercantilism theory, neo-mercantilism theory, theories of the absolute cost advantage and a comparative advantage, factor endowment theory, free trade theory, free trade and environmental conservation, theory of trade protectionism, theory of reciprocal demand, elastic method, and

absorption approach and monetary analysis method.

Chapter Four introduces the research design and methodology. First, this chapter introduces the research process and technical route in detail. To obtain accurate and meaningful results, the researchers determined that this study mainly adopts the quantitative empirical method in the quantitative analysis method, adopts the quantitative analysis method and the software analysis method and combines various quantitative methods. Second, this chapter discusses how the research is conducted, establishing an econometric model based on economic theory and verifying the model with a co-integration method. Processing the secondhand data and establishing the database of this research is an important step to verify the hypothesis of this research. The stationarity test of the time series data, and the factors affecting the Sino–US trade imbalance, such as the proportion of import and export commodities, are converted into data that can reflect the research content through one or two calculations, which are the preliminary work done in this research to verify the hypothesis. Thirdly, this chapter also introduces the co-integration test method; the model established in this research and the results of the robustness test in detail. Finally, this chapter explains the difficulties and limitations of the research.

Chapter Five. This study assumes that savings have a greater impact on Sino–US trade imbalance than the exchange rate. The academic discussion on Sino–US trade imbalance mainly focuses on which is the main reason for Sino–US trade imbalance: savings or exchange rate. In this chapter, an econometric model is established, and savings and exchange rates are included in the same model for comparison and study. Foreign direct investment in China exacerbates the Sino–US trade imbalance. Many academic studies have explored the influence of US direct investment in China on Sino–US trade imbalance. With the in-depth development of economic globalization, foreign investment in China from various countries will also aggravate Sino–US trade imbalance. This chapter first introduces that US direct investment in China aggravates the Sino–US trade imbalance, and by analyzing the fact that the international industrial transfer has intensified the Sino–US trade imbalance, it verifies that the Sino–us trade imbalance is not concerned with the two countries, but jointly aggravated by countries involved in global industrial division of labor, thus establishing an econometric model to examine the relationship between all foreign direct investment in China and the Sino–US trade imbalance. This study assumes that China and the US do not export to each other based on their comparative advantages, which is caused by the trade policies of the two countries. The chapter will conduct statistical analysis on trade China's structure and the US to verify that the Sino–US trade is not conducted on the basis of their own

comparative advantages. Meanwhile, the chapter will analyze the choice of trade policy choice made by China and the US to verify that the trade policy is an important factor for the current situation of the bilateral trade structure.

Chapter Six selective analysis and discussion on the impact that Sino–US trade imbalance bring to the respective economies of China and the US, as well as the impact of Sino–US trade imbalance on the trade friction between China and the US, are conducted. Meanwhile, it also analyzes the impact of Sino–US trade imbalance on the environment, income gap, industrial upgrading, scientific and technological advancement, and employment. This study assumes that China objectively widens the economic gap with the US while maintaining a surplus in Sino–US trade. Despite the US runs a trade deficit with China, the Sino–US trade has accelerated the development of the US economy. In this chapter, an econometric model based on relevant economic theories will be established to verify this. China's foreign trade pattern mainly based on processing trade also explains why China is at a disadvantage in the distribution of trade benefits, and this reason will also be discussed in this chapter.

Chapter Seven summarizes the findings of this study and draw conclusions and policy implications of these findings. This chapter consists of two parts. The first part is a summary, and the second part is policy recommendations. The first part shows the research conclusions drawn from the quantitative empirical research results and discussions. The second part is based on the conclusions of this research and combined with relevant theories and literature discussions, and proposes policy recommendations to alleviate the Sino–US trade imbalance. Since the trade surplus in the Sino–US trade imbalance is increasing on the Chinese side, this chapter focuses on the policy recommendations that the Chinese side can use to alleviate the Sino–US trade imbalance.

In the Annex, first a Bibliography is offered to consult the exhaustive list of literature which was solicited throughout the research process. Second, a Glossary is provided to enhance readers' understanding of the terms applied throughout the thesis. Then a List of Tables and Figures includes the figures and tables which were applied in the thesis and then is an appendix, which shows the computer-generated results when this research uses eviews8 software to test the robustness of the model and finally a short biography and List of Publications by the author is provided, including all articles and studies that I published during my research.

7. Delimitations

The thesis has three substantial delimitations. First, the paper takes China and the United States as the survey region. My research focuses on China and the United States and involves how other countries invest in the two countries.

Second, this work mainly concerns the issue of Sino–US trade imbalance. Systematic research is conducted to study the issue of Sino–US trade imbalance, but in terms of time span, it will focus on the period from the 1970s until now. On the one hand, from the Sino–US trade history, we can see that bilateral trade did not occur from the 1950s to the 1970s because of political reasons. On the other hand, since the late 1970s, China started the opening-door policy and began to engage in the global division of labor and foreign trade; thus, the research period is mainly on the late 1970s until now, and during which the Sino–US trade imbalance since China’s accession to the WTO in 2000 is the top priority of my research.

Third, the Chinese government more likely can use national economic policies to improve the Sino–US trade imbalance, which this study more expressed.

8. Conclusions

The Sino–US trade imbalance runs through every historical stage of trade between China and the United States, becoming a prominent barrier to the trade and political relations between China and the United States. It is also the focus of the conflict of interest between the two countries, which also affects the differences in exchange rate reform and market opening of both countries. The trade imbalance is derived from the industrial transfer and economic development pattern of the United States and led by China's long-term strategy of promoting economic growth via investment and export. Properly dealing with the trade imbalance is the key to the normal development of Sino–US trade relations, which requires cooperative and long-term efforts from both sides. The Sino–US trade imbalance has laid a danger for the Sino–US trade war and confrontations in other areas. The Sino–US trade imbalance has directly resulted in the trade friction that the United States has brought to China. The Sino–US trade friction has been on the rise since China joined the WTO in 2001 and has escalated into a trade war in 2018, which has brought uncertainty to the Chinese and US economies, as well as the world economy. Based on the prediction in this paper, the Sino–US trade imbalance will persistently expand in the short run, which has laid hidden

dangers for the Sino–US trade war, economic friction and even wider confrontations.

The high national saving ratio in China is a vital reason for the Sino–US trade imbalance. A long-term cointegration relationship exists between the Sino–US trade surplus and the differences in the exchange rate and national savings ratio between China and the United States, which shows a stable development trend. Specifically, the real exchange rate of RMB against the US dollar plays a significant negative effect on the Sino–US trade surplus, indicating that the Sino–US trade surplus does not decrease with the relative appreciation of the RMB, and the scale of Sino–US trade imbalance enlarges. The difference in the national saving ratio between China and the US plays a significant positive effect on the Sino–US trade surplus, that is, the greater the difference in the national saving ratio between China and the United States, the greater the trade China's surplus with the United States. The difference in saving ratio between China and the United States is a significant cause for China's growing trade surplus with the United States in international trade.

Foreign direct investment in China has contributed to the exacerbation of Sino–US trade imbalance. A unidirectional Granger causality relationship exists between foreign direct investment in China and China's export trade to the United States at a significant level of 10%, which indicates that the increase in foreign direct investment in China accelerates the development of China's export trade to the United States, thus enlarging China's trade surplus with the United States. The result shows that the trade balance between China and the United States is not only an issue of Sino–US trade substantially but also an issue of trade deficit transfer caused by enterprises that do foreign direct investment in China. The foreign-owned enterprises in China make the trade imbalance.

The export-oriented trade policies taken by China, the statistical difference between China and the United States, and trade China's pattern, which is dominated by processing trade are also the reasons for the trade imbalance between China and the United States.

The bulk of profit in the trade surplus that China has increased to foreigners. China only makes advantage of labor force to receive materials for simple assembly and processing but lacks core products and patented technologies. China's exports to the United States did enlarge the economic gap between both countries. When the export is increased by 1 unit, the economic gap is widened by 0.7144 units. Thus, although China's surplus is growing, the economic gap between China and

the United States is also enlarging.

China's trade surplus with the United States has alleviated domestic employment pressure to a certain extent and provided China with sufficient foreign exchange reserves to introduce international advanced technologies and process, thus providing an opportunity for China to improve its industrial structure and export product structure. Meanwhile, the constant development of domestic resources in China has laid a hidden danger for the subsequent economic development. China's foreign exchange reserve assets are mainly dominated by dollars, and when the US deficit is enlarging, the decline of China's assets will occur.

Facing the enlarging trade deficit with China, the United States has maintained the sustainable economic growth, suppressed the inflation, slowed down the depletion of resources and maintained a good ecological environment. Meanwhile, in the huge trade deficit with China, the domestic income gap in the United States has widened, the devaluation pressure of the US dollar has increased, and the operational risks of the US economy have also risen.

9. New scientific findings

9.1. Based on the trade volume and GDP between China and the US, according to the economic model in this study, it is proven that China participated in the trade with the US based on its comparative advantages. Although China can obtain certain trade benefits, the economic gap with the US cannot be narrowed.

9.2. It is shown that Sino–US trade has a tendency of mercantilism and is moving away from factor endowment theory. Through research and statistics on the trade structure between China and the US, it was shown here that technology-intensive and capital-intensive products in China's exports to the US are increasing, and this is not in line with the factor endowment of China. The US has formulated a series of restrictive measures on the export of high-tech products with its own comparative advantages to China and has conducted frequent anti-dumping investigations against products from China (reflecting the aforementioned mercantilism).

9.3. Some limitations of mercantilism theory have been demonstrated here. Examination of China's exports to the US and the gross domestic product of the United States established an economic model to prove that although the US has a huge trade deficit in Sino–US trade, it is still

conducive to US economic growth.

9.4. A comparison is drawn between savings and exchange rates, two factors that have always been discussed in academic circles and affect the imbalance of Sino–US trade. Using the economic model, it is shown that compared with exchange rate factors, the difference in the national savings rate between China and the US has a significant positive impact on the Sino–US trade surplus.

9.5. It has been shown here that analysing the factors of Sino–US trade imbalance only by focusing on US direct investment in China is insufficient. By establishing an economic model, I studied all the FDI in China, including the US, and found that the increase of FDI in China has promoted the development of China’s export trade to the US, thus increasing China’s trade surplus with the US.

9.6. An economic model to predict the trend of Sino–US trade imbalance in the short term was established, and it is found that the Sino–US trade imbalance will continue to expand in the short term.

9.7. By analysing the history of Sino–US trade, it is shown that Sino–US trade imbalance runs through all historical stages of Sino–US trade. At present, Sino–US trade imbalance has become a prominent obstacle in Sino–US trade and political relations.

9.8. By analysing the history of Sino–US trade disputes, it is shown that Sino–US trade imbalance is the direct cause of Sino–US trade disputes. The US side is the aggressor in trade disputes, and its trade protection measures are constantly escalating.

9.9. After analysing the ways in which different US presidents deal with Sino–US trade disputes, it is pointed out that there are great differences in the ways in which different US presidents handle trade disputes with China, and this is an uncertain factor for the stable development of Sino–US trade relations

9.10. Some suggestions to reduce the Sino–US trade imbalance are made, which will contribute to the development of trade relations between the two countries.

10. Recommendations

10.1. Japan's main measures to alleviate the US-Japan trade imbalance include the sharp appreciation of the Yen against the US dollar, voluntary export restrictions and the strategy of foreign direct investment. The sharp appreciation of the Yen did not reduce Japan's trade surplus with the United States, but the surplus continued to increase. The latter two measures are implemented mainly by Japanese domestic enterprises, the main body of Japanese export enterprises to the United States is domestic enterprises, and Japan's domestic FDI is relatively low. The most important enlightenment from Japan's experience for China is that the appreciation of RMB against the US dollar does not help to improve the China-US trade imbalance, and efforts should be made to adjust the economic structure of the two countries.

10.2. Improve the Social Security System, Adjust the Income. First, The Chinese government also must reform and improve the endowment insurance and medical insurance system, ensure that all kinds of security cover not only urban residents, but also rural residents, and finally all Chinese residents. Only when the worries of the future are resolved, can Chinese residents feel confident in their consumption. Second, Chinese government should conduct adequate market research on the Chinese consumer market when promoting residents' consumption, rationally and effectively guide the improvement of residents' consumption structure and ensure the healthy and upward development of residents' consumption. Third, the Chinese government must further open the financial market, encourage financial innovations such as housing mortgage loans and consumer credit and provide a more effective financial support to increase residents' consumption.

10.3. Industrial Upgrading in China. At present, the industrial structure of China and the United States is still mainly complementary, that is, the United States is at the high end of the global industrial chain, while China is at the middle and low end of the global industrial chain. China should follow the laws of global industrial development and do well the following three aspects: First, for traditional competitive industries, such as the textile industry, metal manufacturing, plastics and rubber industries, etc., supply-side reforms should be adopted to upgrade the industry and reduce excess capacity. Second, China should promote the development of its domestic high-tech industries through independent R&D and the mastery of core knowledge and technology, and gradually reduce its dependence on the high-tech industries of the United States. Third, China should continue to deepen cooperation with countries and regions along the "Belt

and Road." Countries and regions should give full play to their respective comparative advantages based on their own development level and resource endowment and form an industrial cooperation mode with complementary advantages and mutual benefits and an industrial chain of high, middle and low-end cooperation.

10.4. China Shall Seek an International Trade Environment with Reasonable Distribution of Benefits. China is in a weak position in the distribution of benefits in China-US trade. To obtain a reasonable distribution of benefits in international trade, China can look for countries with similar development levels but different economic structures and different demand preferences for cooperation.

10.5. The United States Should Make Full Use of Its Comparative Advantages to Expand Exports to China to a Certain Extent. The continuous expansion of the scope of anti-dumping against Chinese goods by the United States will not fundamentally help the United States reduce imports, and it will even harm the interests of consumers in the United States. The United States should find ways to increase exports to China to reduce its trade deficit. Second, based on the theory of the comparative advantage, China tends to import high-tech products and technology patents. The United States should appropriately relax its control in this regard and appropriately increase the export of such products without endangering national security. Due to the huge value gap between such products and labor-intensive products such as electromechanical products, clothing and toys, the increase of such products is bound to effectively alleviate the trade deficit.

10.6. The United States Should Increase Savings Appropriately. If the United States implements a more stringent credit policy, it should be able to curb some irrational consumption and excessive consumption to a large extent. Moreover, raising interest rates is also an effective means of stimulating household savings.

10.7. In the choice of dispute settlement mechanism and in the dispute with the United States, China should resort to WTO dispute settlement mechanism more when its interests are damaged or difficult to resolve disputes through bilateral consultation.

10.8. China Should Gradually Cultivate Its Own Multinational Companies to Avoid a Series of

Trade Problems Caused By Single Export. Because the distribution of benefits in the internal trade of multinational companies is mainly completed internally, the huge trade surplus brought by the internal trade of multinational corporations in China has not generated many benefits. China's own multinational companies have not developed ideally, and they have relatively single exports. The relatively single export mode has not only greatly increased trade volume but also exacerbated the trade friction, bringing many economic and political problems. Therefore, cultivating and owning powerful multinational companies, improving and upgrading trade development methods, optimizing the trade structure, and continuously increasing the interest income and proportion in international trade are important issues that must be faced and solved at present.

10.9. International tax coordination and cooperation are necessary to reduce the improper transfer-pricing behavior of multinational corporations, and it is beneficial to protect the fair distribution of trade benefits. The existence of transfer pricing leads to the transfer of costs and profits among countries, and then the international flow of tax revenue, redistributing tax revenue and related resources. From the perspective of sovereign countries, this has caused many tax losses.

11. Catalog of Publications by the Author

Jiandong Shi. The Sky Won't Fall - The China–U.S. Trade War and Future Economic Relations, In *Financial and Economic Review*, 2020, Vol. 19, Issue 1

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Jiandong Shi. Analysis on China-United States Trade Imbalance from Trade Structure, Mode of

12. Curriculum vitae

Jiandong Shi was born in Henan on November 1, 1988, China. Jiandong Shi graduated from the Budapest Business School with a master's degree in International economy and business. He started studying in Doctoral School of Public Administration Sciences of the National University of Public Service of Hungary in September 2017 and his research area is economics. He worked a Consular Protection Liaison of Embassy of the People's Republic of China in Hungary between the years 2018- 2019. After that, he was appointed as the president of the Chinese Students and the Scholars Association in Hungary. He participated in several conferences like the Economic Turmoil in Contemporary Europe III Conference in 2018 in Poland, and In Service of the Nation Conference in Hungary.