CURRENCY DEVALUATION AND TRADE IMBALANCES: CHINESE EXPORT GROWTH AND UNITED STATES' TRADE DEFICIT

By

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A thesis submitted to the faculty of the University of Mississippi in partial fulfillment of the requirements for completion of the Bachelor of Arts degree in International Studies
Croft Institute for International Studies
The University of Mississippi

Oxford, Mississippi

May 2012

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2012

Citations adhere to the APA style.

Acknowledgments and Dedication

First, I would like to thank the Croft Institute for International Studies for giving me this great opportunity and helping me achieve my highest potential.

I owe a lot of gratitude to my thesis advisor, Dr. Susan Allen, for being such an amazing professor and guiding me through this process. I am grateful to my third reader, Dr. Ali Gungoraydinoglu for his efforts to help me even though he could not be present this semester. I also want to thank Dr. Gispen, who has always believed in my potential, as well as Dr. Schenck for his constant support and guidance.

I would also like to thank my friends and teammates, but most importantly, my coaches Mark Beyers and Jason Ontog, for being so understanding of my academic priorities and for their willingness to work with me to combine academics and athletics.

Finally, I want to thank my mom, dad, and sister, who have provided me with the focus and motivation throughout this process and have been key in my academic success. I dedicate this to my family.

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"*It's indisputable they (China) intervene heavily in currency markets…China has been very aggressive in gaming the trading system to its advantage and to the disadvantage of other countries, particularly the United States"*

-Barack Obama, The Economic Times, 2011.

When Deng Xiaoping took over as leader of China in 1979, he began to implement several economic reforms that would change the future of the country. By opening up to foreign direct investment and increasing exports, China shifted away from having a completely closed economy towards market socialism. During that time, policymakers realized that, in order for China's economy to reach its full potential, it would have to make use of the exchange rate as a mean to influence the exporting market. This process marked the start of a series of currency devaluations, which have been key to helping China become the world's largest exporter.

In Articles of Agreement, The International Monetary Fund (IMF), responsible for questions concerning exchange rate issues, stated that "countries should seek, in their foreign exchange and monetary policies, to promote orderly economic growth and financial stability and they should avoid manipulation of exchange rates or the international monetary system to prevent effective balance of payments adjustment or to gain unfair competitive advantage over other members" (Sanford, 2011, p.1). Despite having the ability to influence a country's decision on how to conduct economy policy by offering expert's advice and facilitating negotiations, the IMF cannot order a country to follow a certain exchange rate system or to set any parameters regarding the value of its currency.

Recently, the United States has reached the conclusion that China is potentially

violating these international terms regarding exchange rate policy. The American government claims that the Renminbi's devaluation has caused large trade imbalances between the two countries and has given Chinese exporters an unfair advantage in trading. By keeping the value of the Renminbi low, China's exports become cheaper in the world market, while American exports increase in price. Since China is then able to export considerably more goods and the U.S. in turn imports more, the trade imbalance between the two countries continues to increase, ultimately favoring the Chinese. President Obama has repeatedly asked the Chinese government to revalue the Renminbi, but little significant change has been made ("China Very Aggressively Gaming," 2011).

According to members of the United States government, the two main areas that have suffered the most from the current trade deficit are GDP per capita growth rates and unemployment rates. Federal Reserve Chairman Ben Bernanke stated recently that the manipulation of the Remninbi is "blocking what might be a more normal recovery process" for the American economy (Gagnon, 2012). In Addition, Senator Charles Shumer argued that the increase in trade deficit with China has cost the state of New York alone 160,000 jobs (Schumer, 2011).

This thesis aims to analyze the current debate over Chinese exchange rates and the United States trade deficit by:

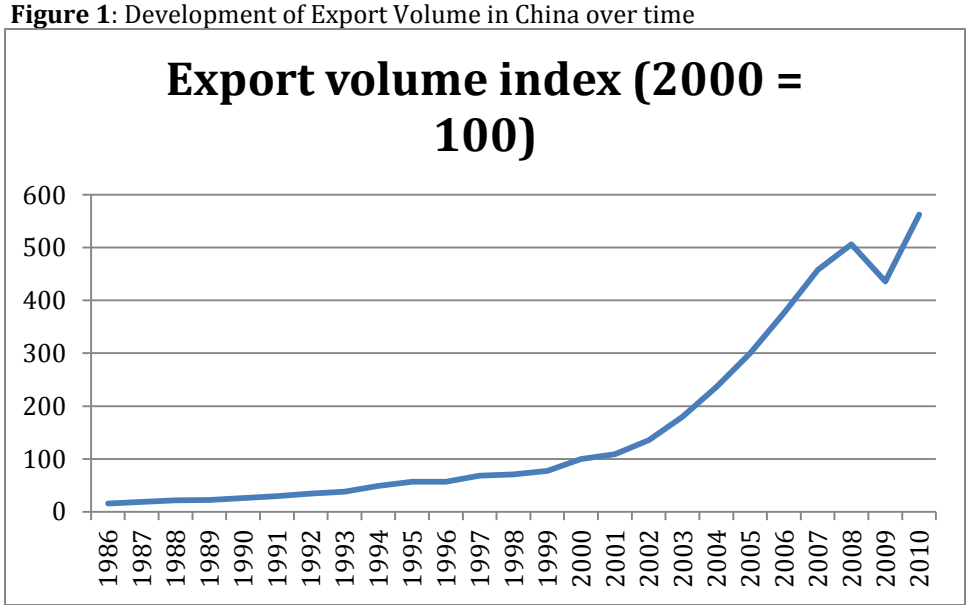
- Understanding how the phenomenon of currency devaluation can be used to manipulate export-led growth;
- Verifying the validity of the claims being made by the United States' in terms of the negative effects of trade deficit;
- Predicting the future of economic relations between the two countries in light of

the current actions being taken by the United States.

Research Questions

China has only recently become part of the international trading system, but yet it has already made a huge impact on foreign markets. By deviating away from their conservative communist past, the Chinese have managed to successfully open up their economy without giving in to political reform. Figure 1 shows the progression of the volume of exports in China over a period of time[1]:

Figure 1: Development of Export Volume in China over time



Source: World Bank

The graph shows that the volume of exports in China has increased considerably over time. It increased at a somewhat constant rate for the first 10 years, and then made a jump after 2000 with a significant increase. The export volume index considers both the amount

[1] Export volume indexes are derived from UNCTAD's volume index series and are the ratio of the export value indexes to the corresponding unit value indexes. Unit value indexes are based on data reported by countries that demonstrate consistency under UNCTAD quality controls, supplemented by UNCTAD's estimates using the previous year's trade values at the Standard International Trade Classification three-digit level as weights Export values are the current value of exports (f.o.b.) converted to U.S. dollars and expressed as a percentage of the average for the base period (2000) (World Bank, "Database, Indicators").

of exports as well as its value in the market. In this case, I am interested in pointing out how there has been an increase in trade for China rather than explaining its magnitude.

In 1988, trade in China corresponded to about 30 percent of its GDP, and that value increased to as high as 70 percent of China's GDP IN 2006. For the past 30 years or so, the Chinese have benefited immensely from trade, mainly relying on export-led growth. It climbed to the top of ranking in terms of exports, becoming the world's largest exporter of goods (IMF, "Data and Statistics"). The question many have been pondering is: how does a developing country that before participated in close to no foreign trade becomes one of the main actors in the world economic market in less than fifty years? Researchers claim that the Chinese were able to do so by manipulating their currency and making their goods cheaper and more attractive to the foreign market (Morrison and Labonte, 2011, p.1). This thesis will first attempt to explain the effects that currency devaluation has on boosting export-led growth, and how China has used exchange rate policy to gain advantage in the international trading market.

Based on general knowledge of financial operations, it is hard to imagine that a mere currency policy could have such a huge effect on something as complex and of such magnitude as a foreign trading market. If countries could generate instant growth by simply depreciating their currencies, wouldn't everyone respond by manipulating their own exchange rates? If that were to happen, trade balances all over the world would spiral into surpluses and deficits. Based on this assumption, I will investigate what else could be affecting trade balances, specifically the United States trade deficit with China.

To the United States, the deficit with China has led to negative repercussions to its economy and its population, by delaying the country's economic recovery and taking away

jobs from the American people. The main purpose of this thesis is to determine if the U.S. has a right to blame the trade deficit with China for its domestic troubles; in other words: is there a significant relationship between the trade deficit with China and United States' economic growth and unemployment?

When determining the relationship of these variables, other questions will arise. What can be done to improve the current situation based on the empirical evidence? Regardless of the results, the United States has already taken action against China concerning the trade deficit, even without knowing if this trade imbalance is truly the factor behind all the economic problems the Americans face. This thesis will further analyze these actions being taken by the United States and what kind of implications can come from different reactions. Is the United States' response to China's undervalued currency the appropriate approach to battle the trade deficit? What could happen if tensions emerged between the two countries due to economic disputes?

Finally, this thesis will provide enough information so that suggestions can be made in regards to future economic policies to be conducted by the United States and China. It will aim to find solutions to the current trade deficit and ways for the United States to address their domestic issues without disrupting the international market or the country's relationship with its biggest trading partner, China.

Importance of Study

The United States possesses the world's largest economy, with a GDP of roughly $15.04 trillion in 2011 (CIA, "World Fact Book). For several decades the U.S. been the world's leading economy, and despite all the economic hardships, it still stands strong in

first place. China on the other hand, is the world's leading exporter, exporting a total of $1.898 trillion in goods and services in 2011 (CIA, "World Fact Book"). These two countries represent the largest and dominating actors in the international economy at the moment, and any changes in their respective financial markets could lead to major changes all over the world[2]. When both countries with such economic magnitudes become involved in a dispute such as the current one, clearly the rest of the world will turn its eyes to the situation in hopes that no damage is done and the economic system continues to flow properly and smoothly.

Having recently suffered from the 2007 financial recession, the United States and most of the rest of the world find themselves in a volatile financial environment, where uncertainty still haunts investors in several countries and economic instability has become an everyday fear in numerous people's lives. The last thing the financial world needs is tension between two of the main players in the international market. There are several consequences that could arise from this current hostility between China, and most of them are not of a positive nature. Therefore, it is very important that the issue of currency devaluation and trade deficit between the United States and China be carefully reviewed and addressed.

One of the main issues that has been in the forefront of economic policy-making in the United States in the past few months has been the U.S. foreign debt and the decision to raise the debt ceiling. China is directly involved with this development, since it holds a significant amount of U.S. treasury securities ("Debt Ceiling Skyrockets," 2012). Any dispute with

[2] This phenomenon was shown to be true during the most recent financial recession that occurred in the United States in 2007. At first it began as an internal crisis, but the effects quickly spread to the rest of the world (Rude 2009).

China that affects this creditor-borrower relationship could lead to instability in the economic markets and cause further difficult problems involving both countries. Whatever happens between the United States and China right now could affect where both countries will be in the near future regarding their status as economic powers and major players in the world economy.

Thesis Outline

The ultimate goal of this thesis is to determine if the United States has the right to criticize China in regards to its economic policies and to predict the outcome of the current actions being taken by the U.S. government in relation to the future relationship of both countries. Newspapers and articles all over the internet are reporting recent speeches by members of the United States government criticizing China for their exchange rate policies and demanding currency reform. However, this thesis will show that although the American government is arguing against China and the trade deficit, previous research suggests that devaluation is not the only cause of the trade deficit and that other factors should be addressed.

After the Introduction, I will go over the historical background regarding the progression of the Remninbi as China's currency and the history of the trade deficit in Chapter II. I will also discuss what the United States' argument is in relation to the current trade imbalance with China and what it plans on doing regarding the deficit.

In Chapter III, I will rely on primary source texts that explain the economic relationship between trade deficit and exchange rates, explaining how currency devaluation increases the trade deficit. These sources will also provide further

understanding of what other factors influence trade balances. Research shows that while currency devaluation does cause trade balances to become uneven, there are other factors that have been responsible for the widening of the U.S.-China trade imbalance.

Chapter IV examines the relationship between trade deficit and GDP per capita growth rates in the United States, as well as correlation between the U.S.-China trade deficit and American unemployment rates. The simplest way to test the relationship between two variables is by using the multiple regression analysis model, which will determine the significance between the variables being analyzed. I will run two separate regressions that will test the relationship between trade deficit against both U.S. GDP per capita and unemployment rates, to determine if the claims being made by the American government are valid. The results of the test show that there is in fact no significant relationship between the trade deficit and GDP per capita growth, meaning it is not possible to determine changes in economic growth from changes in the trade deficit value. In addition, there is also no significant relationship between the trade deficit with China and U.S. unemployment rates, showing that the United States' argument that the deficit is taking away American jobs finds no true evidence behind it.

Chapter V analyzes the current actions being taken by the United States and relies on current newspaper accounts to describe the reactions of different players in regards to current measures being adopted to address the trade deficit issue. It also investigates through previous research what type of consequences the world should expect to endure if the dispute between the United States and China continues to progress. Based on the findings, the outcomes produced by recent measures taken by the United States' government in light of the situation will prove to be inefficient and inadequate in solving

the trade deficit issue, if not damaging to the rest of the international economic environment.

Lastly, in Chapter VI I will combine the results obtained from the regression models and recent literature to suggest possible actions that could be beneficial to the United States' in dealing with the trade deficit with China. I will propose ways in which the U.S. government can address its domestic economic and social issues while maintaining a healthy and mutually beneficial relationship with China. If by the end of this thesis evidence shows that demanding reform of Chinese exchange rate policy might not be the best way to improve U.S. economic and employment statistics and the trade deficit with China, then the United States' government should shift focus away from China and towards internal economic adjustments.

Chapter II: Historical Background

It is critical to review the historical background of Chinese monetary policy to understand the current conflict between the two countries regarding the manipulation of currency and the trade deficit. This chapter aims to give the reader a clearer understanding of the development of the trade deficit and to further explain the recent claims being made by both governments in regards to currency manipulation. Mainly, it highlights the different economic policies conducted by the Chinese government over the past 30 years, while also addressing the changes in size and magnitude of the trade deficit between the two countries.

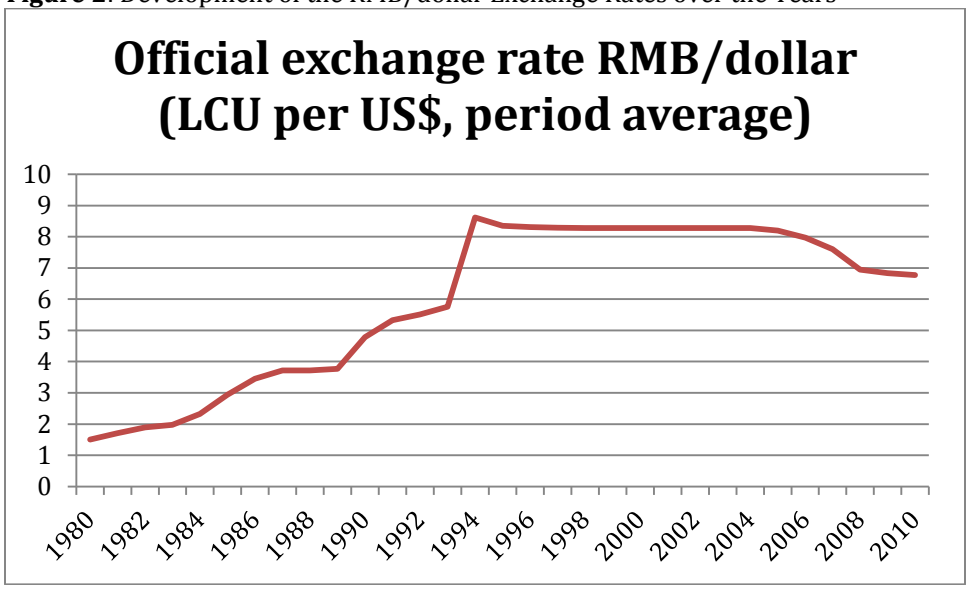
The Renminbi

The Renminbi was introduced as China's currency shortly after the communist government took over in 1949 ("The Renminbi," 2006). Because of its political regime, China kept its currency at a stable value to fight off domestic hyperinflation without considering its value against western currencies. In 1978 however, Deng Xiaoping took over as the new leader of the Communist Party, implementing several economic reforms that involved greater participation in the international market. When China decided to open up its economy, it adopted a policy that would allow the government to control exchange rate reform, adjusting the nominal rate in small steps. From 1980 to 1990, the Renminbi suffered several rounds of devaluations, and its value went from 2.80 RMB per US dollar in 1981 to 5.22 RMB per U.S. dollar in 1990 (Chou and Shin, 2001, p. 166). In 1991, the government adopted a managed floating exchange policy, which lasted for about four years when the Chinese decided to peg the Renminbi to the dollar and adopt a fixed

exchange rate system[3]. During the next decade, the Chinese currency would remain at a set value, 8.28 RMB per U.S. dollar.

Figure 2 shows the movement of the RMB/dollar exchange rates between the years of 1980 and 2011:

Figure 2: Development of the RMB/dollar Exchange Rates over the Years



Source: World Bank Database

The graph shows the increase in the RMB/dollar exchange rate from 1980 to 1994. In 1994, it shows how the peg to the dollar froze the exchange rate at a constant rate of 8.28 up until 2005, where it starts to revalue slowly. It was not until 2005 that China announced it would remove the dollar peg and appreciate the Renminbi, mainly due to international pressure. Instead of having a fixed exchange rate system, the RMB would then be managed in relation to a basket of currencies rather than just the dollar (Goldstein and Lardy, 2006, p. 422). Despite going back to the fixed regime in 2008 in response to the

[3] A fixed exchange-rate system occurs when a government pre-determines a set value of its currency, in relation to another currency, usually the dollar. Its value does not change, and the government controls shifts in supply and demand by buying or selling foreign currency to keep the same rate of exchange. In a system of floating exchange-rates, the currency fluctuates according to supply and demand in the international market. The value of the currency automatically adjusts depending on the movement of the market (Frankel, 2006).

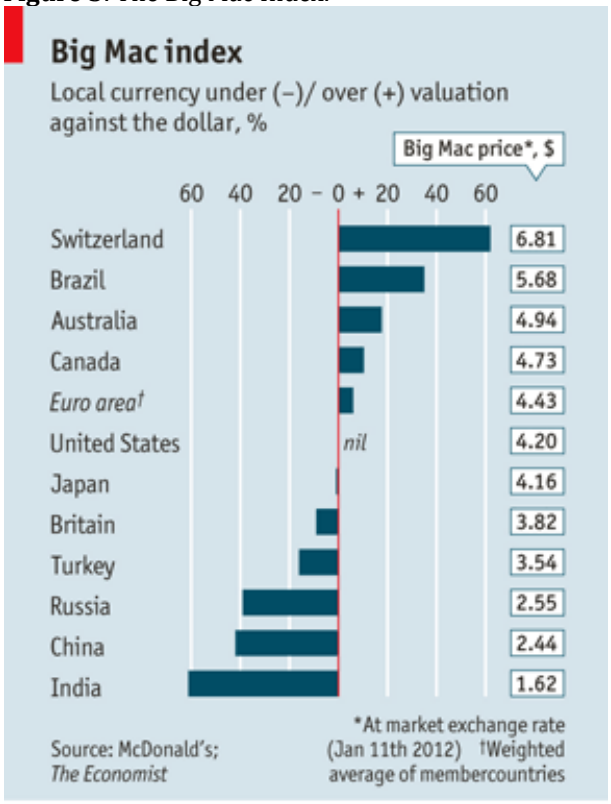
United States financial crisis, the Renminbi continues to slowly revalue, even though economists claim these appreciations have been too small to be considered of significant change.

Is the Renminbi undervalued?

After analyzing how the Chinese government managed to control the exchange rate through the years and what the actual rates really are, the next step is to determine if the RMB is in fact, undervalued. Researched showed that the exchange rate remained at 8.28 RMB/dollar for most of the past decade, but what does that mean in terms of relative prices?

The easiest way to describe the concept of the change in values of currencies all over the world is through the Big Mac Index, a measured generated by *The Economist* (2012). The theory is based on the concept of purchasing power parity which shows that "exchange rates should adjust to equal the price of a basket of goods and services in different countries." The basket is one McDonald's Big Mac, and the index compares the price of this good in different countries related to the average price in the United States. Figure 3 below exemplifies the relationship:

Figure 3. The Big Mac Index.



According to the figure, the Swiss franc is about 61% overvalued; a Big Mac in Switzerland would cost around $6.81. China's currency is shown to be around 41% undervalued; its Big Mac is worth only $2.44. This simple representation of how exchange rates work show that whenever a currency is undervalued, you can buy more of the same good. So in China, one could buy approximately the equivalent of two Big Mac's in the United States. That being said, the index suggests that the Chinese currency is undervalued compared to the dollar.

There are several other ways to estimate the value of a currency, but these methods are extremely complex and can produce different results. Research shows that when it comes to estimating devaluation, results vary extensively depending on assumptions or

calculations, as well as different methods. For the purpose of this study, there is a need to determine is the Chinese currency is in fact undervalued of not, regardless of the magnitude of such measure. Some of the main estimates found in recent research tell us that:

- The RMB is 25% undervalued according to Dani Rodrik of Harvard University;
- The RMB is 40.2% undervalued according to William Cline and John Williamson of the Peterson Institute for International Economics;
- The RMB is 50% undervalued according to Niall Ferguson of Harvard University and Moritz Schularick of Free University of Berlin (Morrison and Labonte, 2011, p.17).

These results show that the Chinese currency is in fact undervalued in relation to the dollar. In this case, I show 3 different accounts that have determined the magnitude of such devaluation, all showing significant values. The fact that the RMB is undervalued though does not tell us the whole story regarding causes of the trade deficit. There are several other currencies in the world that are undervalued in comparison to the dollar, such as the Indian Rupee or the Mexican Peso ("World's Most Undervalued Currency," 2012), both countries being major trading partners to the United States. Yet, we have not heard of such resistance when it comes to their economic policy. The relationship between China and the United States is a special one because of its magnitude, which is discussed in detail in the next section.

Winners and Losers of RMB devaluation

Another important concept that needs to be addressed regarding currency devaluation is who wins and who loses from such monetary practices. When China

devalues its currency, its exports become more inexpensive, while U.S. exports to China increase in price. So the obvious assumption is that Chinese exporters gain from this action while U.S. exporters lose. Because Chinese exports are cheaper in the international market, U.S. consumers can buy more of the same goods for a lesser price. Therefore, consumers in theory can gain from a devaluation of the RMB. Also, some sectors of the American economy that produce more advanced goods which require Chinese imports can gain from an undervalued RMB, since they can import those parts for less and then increase their domestic output by using those less expensive inputs (Morrison and Labonte, 2011, p. 26). Despite the fact that some players in the international market can gain from this process of currency devaluation, the United States argues that as a whole the country would be better off if China revalued the RMB and the trade deficit decreased.

The U.S.- China Trade Deficit

The reason why current research has not been successful in determining the actual size of the trade deficit and how big of a influence it has in each country's economy is that both the United States and China report very different numbers when it comes to their trade practices.

In a study conducted by Robert Feenstra from the National Bureau of Economic Research (1998), it was found that the U.S. reported the bilateral trade deficit to be around $34 billion in 1995, while China's figures show only a $9 billion deficit (p.1). Clearly this makes a huge difference, since if the American figure is considered to be the correct one, it puts China as the second highest bilateral deficit with the United States. If China's figure is considered the correct one, Feenstra stated that "the China bilateral trade is lower than

that the US bilateral trade deficits with Canada, Mexico, Germany, and Taiwan" (p. 1). This discrepancy makes it even harder for any side to make accusations when it comes to demanding a change in monetary policy.

Table 1 below shows the discrepancy between numbers reported by the United States and China, which has made predictions regarding determinants of the trade inaccurate:

Table 1: Trade Deficit reported by the United States and China (Yange and Bajeux-Besnainou, 2006, p. 119)

Year	Trade Deficit (As Reported by the U.S.)*	Trade Deficit (As reported by China)*
1985	-6	2,862.50
1986	-1,664.70	2,085.50
1987	-2,796.30	1,805.20
1988	-3,489.30	3,234.30
1989	-6,234.30	3,450.00
1990	-10,431.00	1,277.10
1991	-12,431.00	1,812.30
1992	-18,309.00	303.90
1993	-22,777.00	-6,343.70
1994	-29,505.10	-7,444.70
1995	-33,789.50	-8,620.70
1996	-39,520.20	-10,551.70
1997	-49,625.50	-16,454.10
1998	-56,927.40	-21,003.30
1999	-68,677.10	-22,514.40
2000	-83,833.00	-29,787.10
2001	-83,096.10	-28,080.50
2002	-103,064.90	-42,720.50
Sources: U.S. Data from U.S. Department of Commerce, China Data from the IMF and Commerce Ministry of China. *All figures are in Millions of U.S. Dollars		

This thesis will use numbers reported by the U.S. Census Bureau, which are the same numbers considered when the U.S. government made claims that the trade deficit would be affecting their domestic economy. The most important factor to consider is that regardless of how big the deficit really is, the bilateral trade balance between the United

States and China has increased considerably over the last 30 years, and will continue to do so if all else remains the same.

The United States' Argument

The recent critiques being made by the United States concerning the actions being taken by the Chinese government are based on the fact that by keeping the value of the Renminbi low, Chinese exports to the U.S. become cheaper, while U.S. exports to China become more expensive. According to the United States government, this would not happen if the international market and the laws of supply and demand determined the exchange rate (Morrison and Labonte, 2006, p. 5). While the undervalued currency causes these distortions in exporting and importing, the trade balance between the two countries deviates away from equilibrium, and trade deficit occurs. They further argue that the deficit negatively affects U.S. production, as well as employment opportunities (especially in the manufacturing sector). Other economists and policymakers criticize Chinese currency policy based on the fact that it has induced other Asian countries to keep their currencies weak, so that they can stay competitive in the international market.

Many well known figures have openly criticized the Chinese in the issue of the trade deficit, most of them using slow domestic economic growth and higher unemployment rates as main reasons why the government should step in and challenge the Chinese to pursue monetary reform. Some of the current statements being made by members of the government and other influential actors in our economy include:

"They continue to try to game the system to their advantage and our disadvantage…I think it's appropriate and fitting and timely for us to be standing up and saying, 'This is not acceptable.'" – Hilary Clinton, Secretary of State (Oct 2011) ("U.S. Must Stand Up," 2011).

"And the Chinese are smiling all the way to the bank, taking our currency and taking our jobs and taking a lot of our future. And I'm not willing to let that happen." – Mitt Romney, Presidential Candidate (Oct 2011) (Warren, 2011).

"A more normal, more balanced recovery would have some more demand being shifted away from the emerging markets towards the industrial economies. The Chinese currency policy is blocking that process. And so it is, to some extent, hurting the recovery process"- Ben Bernanke, Federal Reserve Chairman (Oct 2011) (Bowman, 2011).

"They (China) take our money, and then they loan it back to us and we pay them interest and we have a $16 trillion deficit… everyone knows they are a currency manipulator" Donald Trump, Businessman (Dec 2011) (Reisner, 2011).

The two main areas in which the United States is the most concerned about are economic growth and unemployment. After suffering significantly from the recent financial crisis in 2008, the United States argues that the increase in trade deficit has been slowing down the process of economic recovery for the country, affecting GDP growth. Furthermore, according to the American government, the shift of manufacturing production from the U.S. to China has caused millions of jobs to be lost domestically. The Economic Policy Institute estimates that number to be around 2.8 million jobs between 2001 and 2011, mostly in the manufacturing, textiles and apparel industry (Scott, 2011).

Again, because it is difficult to estimate the correct deficit and because there are different methods and views on the subject, it is difficult to be sure that these arguments being made have enough evidence behind them. In this paper, I attempt to analyze the validity of the United States argument concerning the effects of the trade deficit in regards to GDP growth and unemployment. In other words, is there a significant correlation between the deficit and those other two variables? If the United States government is right, we should find that trade deficit has had a significant impact in determining economic growth and unemployment rates. Chapter IV will study these claims and determine the true relationship between these two factors while also considering other variables that could be

affecting GDP per capita growth and unemployment rates.

Chapter III: "The Trade Deficit": Reasons Behind It

In the previous chapter, the history of the Chinese currency was briefly described, as well as the development of the trade deficit. Chapter III now aims to discover the real reasons for the trade imbalance occurring between the two countries, so that later on there is enough information on how out to improve it. First, it is important to understand how the Chinese have used currency devaluation to their advantage, and how much this type of monetary policy has influenced the trade balance. Second, I will go into further detail explaining other factors that should be taken into account when estimating the deficit. Research will show that currency devaluation is not the only reason behind the trade deficit, and that while it contributes to growing imbalances, there are other factors that should be addressed when it comes to formulating trade policy.

Currency Devaluation: How it works

When the Chinese decided to peg their currency to the dollar in 1994, they adopted a fixed exchange rate system. Under this system, the government pre-announces a certain rate in which their currency is to be traded in the international market relative to another currency, the dollar. In the Chinese case, the government set it at 8.28 RMB per U.S. dollar, as stated in Chapter II. The higher the exchange rate, the lesser its value in relation to the other currency, so in this case the government is making their currency artificially less valuable. Because the international market is constantly changing, floating currencies adjust their value to the different supply and demand. In a fixed exchange system however, the exchange rate does not adjust to the market-clearing rate; instead, the government has to control the supply of currency in order to bring supply back in equilibrium with market

demand, and it does so by controlling foreign exchange reserves. The following equation clarifies the relationship (Morrison and Labonte, 2011, p. 5):

Current Account Balance = Capital Account Balance

Which translates into:

[(Exports - Imports) + Net Investment Income + Net Unilateral Transfers][4]

=

[(Private Capital Outflow – Inflow) + Change in Foreign Exchange Reserves]

Net investment income and net unilateral transfers are too small to make a significant impact, which means that the current account balance is mainly composed of exports minus imports, which represent trade balance (Morrison and Labonte, 2011, p.5). This means that when net exports or net private capital inflows increase, foreign exchange reserves must increase by the same amount to keep the exchange rate peg. The logic becomes clearer if China is considered as an example: with the Renminbi pegged to the dollar at a high rate (8.28 RMB/dollar), there is excess demand for the Chinese currency since its value is so low. To maintain the peg at the same rate, the Chinese government is forced to buy more dollars to increase its foreign reserve. In turn, the longer the RMB keeps

[4] Current Account Balance corresponds to amount of exports minus imports, plus net investment income, plus net unilateral transfers. Net investment income is the income received from investment such as bonds and stocks. Net unilateral transfers are the amount of economic transactions between residents of two nations.
Capital Account Balance corresponds to amount of private capital outflow minus the inflow, plus the change in foreign exchange reserves. Net private capital inflows are the amount of money from foreign sources coming into the country. Change in foreign exchange reserves correspond to the amount of foreign currency held by a country.

its low value, the more they export, and the more dollars they are going to buy. Table 2 shows the increase in foreign exchange reserves over the years:

Table 2: China's Foreign Exchange Reserves (Morrison and Labonte, p. 7)

Year	Cumulative Foreign Exchange Reserves*
1990	29.6
1991	43.7
1992	20.6
1993	22.4
1994	52.9
1995	75.4
1996	107
1997	142.8
1998	149.2
1999	157.7
2000	168.3
2001	215.6
2002	291.1
2003	403.3
2004	609.9
2005	818.9
Sources: Economist Intelligence Unit, International Monetary Fund, and People's Bank of China. *Figures are in Billions of U.S. dollars	

When China buys dollars from the U.S., it accumulates foreign currency reserves, which means that it is a holder of U.S. debt. So in reality, the United States becomes more and more dependent on China, and vice versa. The Chinese government reportedly holds about $1.5 trillion in U.S. debt, and is the United State's biggest creditor (Barboza, 2011). This makes their relationship even more fragile, since any conflict between the two countries could cause a major economic breakdown that would affect the entire world economy.

In sum, currency devaluation causes goods to become cheaper, increasing exports. When an economy is following a fixed exchange rate system, a cheaper currency means

more exports and higher demand for the local currency. To counter the increase in demand and exports, the central government is forced to increase foreign exchange reserves by buying dollars in the international market and thus keeping its valued pegged at the same rate. By buying foreign securities, the country becomes a holder of foreign debt, and in the case of China, the numbers have increased significantly over the years.

There is significant evidence that currency devaluation contributes to an increase in trade deficit, but researchers also argue that that is not the only reason. In the next section, I will argue that other factors such as domestic savings and shifting of production to China are also big elements determining the trade deficit.

Other Determinants of Trade Deficit

While most economists and American policymakers choose to blame the weak Chinese currency as the main cause of the U.S.-China trade deficit, there are many other factors that should be considered when accusing the exchange rate of being the main determinant in the equation. In this section, I will explain how two different factors have contributed to the increase in the trade deficit and deserve full attention from the United States if there is a desire for change. The factors are: domestic savings and shift in production to China.

Domestic Savings Rates

Earlier this chapter, I mentioned that research shows that the current account balance is mainly determined by the trade balance (exports minus imports). Current account can also be represented through savings and investment behavior. In other words, a country's current account balance can be determined as either exports minus imports, or

savings minus investments. If a country is saving more than it is investing, it is running a current account surplus; if it is investing more than it is saving, and it runs a deficit. The following identity represents the relationship (Feenstra 1996, p. 23):

$$CA = (S\text{-}I)^{private} + (S\text{-}I)^{SOE} + (S\text{-}I)^{govt}$$

Where CA= current account, S= savings, I= investment

For the purpose of this analysis, I focus on *private* savings and investment. After China decided to go through economic deregulation in 1978, it created many opportunities for investment and production within the country. But politically, China is still a communist country with several regulations, one of which is that private businesses cannot easily obtain investment since banks are state-owned and work under a monopoly, making the loaning process difficult. The same happens when trying to borrow from foreign financial institutions. Because there is a big gap between the allocations from bank's private savings to private investors, the only way for a businessman in China to start a business is to accumulate a high amount of personal savings. Robert Freenstra (1996) from the National Bureau of Economic Research sums up the phenomenon by saying that "in an economy that is open to trade but closed to private capital movements, the failure of the domestic banks to match the available private saving flow with desired private investment creates the twin phenomena of a high private saving rate, and a persistent current account surplus" (p.23).

The analysis above shows how the political regime of China influences its trade balance by forcing its people to save more. Furthermore, social programs and demographics have also influenced the country's national savings rate. Feenstra (2006) notes that there is a higher incentive for the Chinese to save more and prepare for

retirement since there is an absence of pensions and health insurance. Also, the majority of the population is at an age where the labor force is at its highest level and thus have to start saving for retirement in the near future. The one child policy[5] also enables families to save more since there is usually only one child to raise (p. 24). All of these factors contribute to China's high savings rate, which has been estimated to be about 50% of China's GDP (McKinnon and Schnald, 2011, p,.15).

Compared to China, the United States has far fewer incentives to save. In fact, current low interest rates actually encourage consumption and private dissaving in the U.S. The real estate bubble that bust in 2007 is a prime example of American overspending, which only leads to higher current account deficits. As Americans keep consuming, there will be less savings, which force the government to keep borrowing from foreign actors to avoid a domestic crisis. Because China is a constant buyer of U.S. securities, the U.S. will keep reaching out to them to finance its deficit; these actions will lead to an increase in Chinese foreign reserves therefore fueling Chinese export-led growth. Consequently, the cycle begins again and the trade deficit widens. It is arguable that no matter what China does about their exchange rate, the deficit could continue to increase if China keeps their domestic savings rates high and the United States in turn keeps consumption at a high level.

[5] In 1979, the Chinese government introduced the One-Child policy, which only allowed urban families to have one child. The policy was introduced in hopes that population containment would lead to economic growth and improved living standards. Even though it was introduced as a short-term measure, the policy is still applied today and it has changed the culture of family-planning in China (Hesketh and Xing, 2005).

Shift in Production to China

Another main factor that has influenced the trade balance between the United States and China has been the shift of production of certain U.S. imports from other countries to China. In other words, companies that were producing goods in newly- industrialized countries such as Hong Kong, Singapore, South Korea, and Taiwan shifted their production to China, most likely due to cheaper labor and lower production costs. This means that the trade deficit that the United States had with those other countries was transferred to the U.S.- China balance, making it even more unbalanced. So even though the U.S. argues that their bilateral trade deficit with China has increased, it was merely a transfer of deficit from other bilateral balances to the Chinese one (Feenstra, 1996, p. 26).

Lower wages in China have also encouraged firms to move production from developed countries to the Chinese, which has aided the increase in exports. It is no secret that cheap labor in China has attracted a huge amount of investment into the country, as manufacturers can produce more at lower costs. Ann Harrison and Margaret McMillan (2006) from the National Bureau of Economic Research argue that in developing countries, when employment increased, real wages declined, which encouraged US multinationals abroad to shift their operations (p.40)[6]. Unfortunately, the reality is that developing countries have the luxury of paying lower wages to a poorer and less educated population, and in a globalized and competitive world that we live in today, multinational firms will do anything to maximize profit, even if that means outsourcing. The United States government complains about having a declining manufacturing industry, but the reality is that its own

[6] This happened because the increase in employment in developing countries happened in the low-skilled labor sector, which allowed wages to decline since the newly created jobs required little experience or human capital.

American firms are reaching out to China because there is little incentive to maintain production within the U.S. As long as China provides cheap labor, production will continue to shift east and the trade imbalance will continue to grow due to high levels of exportation.

The Central Intelligence Agency's World fact book reports that the top exporting goods for China are: electrical and other machinery, apparel, textiles, iron and steel, and optical and medical equipment. For the United States, the top exporting goods are: agricultural products, industrial supplies (organic chemicals), and capital goods (transistors, aircraft, motor vehicle parts, and computers). When analyzing the kind of goods being exported by each country, it becomes visible that the United States tends to produce higher-tech goods, while China focuses on producing lower-tech goods. According to the Ricardian Model and the concept of comparative advantage, countries that are capital intensive (such as the United States) should produce and export high-tech goods, while countries that are labor intensive (such as China), should produce lower-tech goods (Krugman and Obstfeld, 2009, p. 28). By looking at the distribution of goods produced, it seems like the concept applies to both countries. So no matter what changes occur in the American economy, or how much the Chinese manipulate their currency, manufacturing companies will continue to move production east to take full advantage of lower costs. Because China has the comparative advantage at producing lower-tech goods, it can also export more of them at lower prices. The demand for clothes and other related goods is much higher than the demand for more sophisticated goods in the international market, which hurts the U.S. and helps China.

Overall Comments

In this chapter it has been determined that while currency devaluation has allowed China to increase exports and accumulate large reserves of foreign currencies, the manipulation of the Renminbi is not the only reason for the trade deficit between the United States and China. High domestic savings rates in China are contributing to an continuous increase in its current account balance, while significant domestic spending in the U.S. has only led to higher debt and budget deficits. It is not merely China's currency policy that has put it ahead of the United States in the trading game, but rather a combination of political and social systems that promote saving and allow the government to enjoy a huge current account surplus. Meanwhile, low interest rates in the U.S. and a culture of over spending discourage savings, which ends up affecting its current account balance.

Furthermore, developing countries like China have the ability to pay lower wages since their workers are less educated and its sectors of production require lower skills. This encourages multinational companies to shift operations and maximize profits by lowering costs. All of a sudden, U.S. factories moved production to China, lowering manufacturing opportunities in the United States and thus depressing quantity of goods available to export. On top of that, other companies that held operations in other developing countries such as Singapore and Taiwan also shifted operations to China, transferring deficit from other countries to the Chinese-U.S. bilateral trade balance.

This chapter has analyzed how the Chinese have used several policies in their own advantage to become the world's leading exporter. It has determined that currency devaluation is not the only cause of the trade deficit. Earlier, Chapter II described the

United States' recent critiques of China and the trade deficit, but now I move on to analyzing how the trade imbalance has affected the U.S. directly. The American government says that the deficit is affecting the U.S. economy and unemployment, but how much of it is the deficit's to blame?

Chapter IV: Verifying the United States' Claims

China has been constantly criticized over the past couple of years for its monetary policies, especially by the United States. As stated before in chapter II, the American government has made claims that China's manipulation of currency is further widening the trade deficit, and in turn that deficit is negatively affecting the U.S. in terms of economic performance and job production. Even though this study has determined that the devaluation of the Renminbi is not the only factor behind the trade deficit, it still does not change the fact that the United States has continued to push China to pursue monetary reform on the basis that this unfair distribution of trade has caused millions of Americans to lose their jobs and has caused their economy to stagnate. Federal Reserve Chairman Ben Bernanke has been the main actor in accusing China of slowing down economic growth, and several U.S. senators have accused the Chinese from stealing their jobs (Bowman, 2011). This study digs deep into these claims being made to discover if there is any validity to these accounts.

To verify if the trade deficit is in fact affecting U.S. economic growth and unemployment rates, I will test the correlation between the variables, and attempt to find a significant relationship that will either confirm or deny the U.S.'s claims. By using the method of multiple regression analysis, I will be able to identify the significant determinants of GDP growth and unemployment.

The Method

The most common way to test the relationship between two variables is by using the Multiple Regression Model. This study aims to analyze two things: how trade deficit and

GDP growth affect each other, and also the relationship between trade deficit and unemployment. When dealing with regression analysis, there are at least two different variables: a dependent variable and an independent variable. The dependent variable is denoted by Y, and represents the factor we are trying to explain. The independent variable is an explanatory variable, and denoted by X. In this case, we have two dependent variables: GDP per capita growth, and unemployment rates. This study's independent variable is the trade deficit. In other words, it is trying to observe if a change in trade deficit (which changes independently), would cause a change in either GDP per capita growth or unemployment rates (which according to the U.S. are dependent of the trade deficit). Because there are two separate dependent variables, there will be two different models; two tests will be run to determine each independent relationship.

One thing that is important to be noted is that both dependent variables, GDP per capita growth and unemployment rate, are very complex variables, meaning many different things influence change in both economic growth and unemployment rates. One cannot assume that trade deficit is the only factor used to determine both GDP growth and unemployment. Because of that, other independent variables are added to the model so that we collect a basket of factors that could be influencing our Y variables (more detail on these independent variables will follow). The basic of the regression model is as follows (Dielman 2004):

$$E(Y) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_n x_n$$

In this equation, E(Y) represents that dependent variable. The value α is an unknown constant, the intercept. The values for β_1, β_2, and etc are constants of x, measuring the change in Y in respect of x, holding all other factors fixed. This study generates two

different equations, one where Y= GDP per capita growth and another where Y= unemployment.

The model works in a simple way: an alpha level is set that allows for a small degree of error (in our case α=.05). If an independent variable's value falls within the designated area of significance, then it is considered statistically significant. In other words, we consider a variable significant if its p-value is less than .05. If the independent variable is considered statistically significant, then it is assumed that a change in x would indeed cause a change in Y, and we can therefore reject the null hypothesis of no relationship between the two variables. In other words, if the p-value of our independent variable (trade deficit) is less than .05, than it is assumed that a change in trade deficit would cause a significant change in GDP per capita growth (or unemployment), making it statistically significant.

The Independent Variables

Even though most economic models are limited due to data availability, I have tried to represent certain factors in the best way possible. It has been already determined that our two dependent variables are GDP per capita growth and unemployment rates, since those are the two variables that are trying to be explained. Previous research has showed that the following variables are also used to determine our dependent variables:

I. For Y= GDP per capita Growth[7]

a. Trade Deficit Growth[8]: The United States claims that trade deficit is delaying GDP growth. To test this assumption, trade deficit growth is used as an independent

[7] GDP per capita growth (annual %): Annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources (World Bank, "Database, Indicators").

variable since both variables need to be represented in percentage terms. The expected relationship between the two variables is a negative one, meaning, as trade deficit growth gets bigger, GDP per capita growth should become smaller.

b. Real Interest Rates[9]: Interest rates are directly connected to investment. Government controls interest rates to either stimulate or contract the economy. As interest rates are lowered, investment increases which stimulates growth. Therefore, the relationship between these two variables is expected to be a negative one (as interest rates rise, GDP growth should fall) (Kudlacek, p. 7)

c. Gross Domestic Savings (% of GDP)[10]: Some recent research has showed that rate of domestic savings is positively related to economic growth in most developing countries, while not so much in developed countries (Aghion, Comin and Howitt, 2006, p. 26). I include this variable in the model to test for the significance of savings in regards to determining economic growth in the U.S.

d. Population Growth[11]: In most developed countries, we expect that an increase in population could cause a negative impact on economic growth. Therefore, it is used as an independent variable and it is expected to have a negative impact on GDP growth (Petrakos, 2007, p. 11).

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[8] Trade deficit growth: ratio of amount of trade deficit between the United States and China (imports from China minus exports from the United States) from current year to previous year. (United States Census Bureau, "Trades in goods with China").

[9] Real interest rate (%): Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator (World Bank, "Database, Indicators").

[10] Gross domestic savings (% of GDP): Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption) (World Bank, "Database, Indicators").

[11] Population growth (annual %): Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, which are generally considered part of the population of the country of origin (World Bank, "Database, Indicators").

e. General Government Consumption Expenditure[12]: Studies show that lower government consumption leads to higher rates of economic growth. This makes sense when thinking of overspending in terms of debt. When governments' expenditures are high, they have to allocate money from investment to paying off their debt, slowing down GDP growth (Barro, p. 1).

f. Gross Enrollment Ratio[13]: This variable is introduced to represent an element of education into the model. It is expected that education and GDP growth have a positive relationship, meaning the higher the human capital, or gross enrollment ratio, in this case, the higher growth should be.

II. For Y= unemployment rates

a. Trade Deficit: Once again, I use trade deficit as an independent variable to determine its impact on unemployment, one of the United States' claim against China.

b. Inflation[14]: Research shows that the relationship between unemployment and inflation rates is a negative one. Based on the Phillips Curve[15], high unemployment

[12] General government final consumption expenditure (annual % growth): Annual percentage growth of general government final consumption expenditure based on constant local currency. Aggregates are based on constant 2000 U.S. dollars. General government final consumption expenditure (general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security, but excludes government military expenditures that are part of government capital formation (World Bank, "Database, Indicators").

[13] Gross enrolment ratio, all levels combined (except pre-primary): total enrollment within a country in all levels of education (except pre-primary), regardless of age, expressed as a percentage of the population in the official age group corresponding to this level of education (United Nations, "Database").

[14] Inflation, consumer prices (annual %): Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly (World Bank, "Database, Indicators").

[15] The Phillips Curve was developed by economist William Phillips in 1958. It is the most famous concept in macroeconomics that suggests an inverse relationship between inflation rates and unemployment rates. It states that the lower unemployment, the higher the rate of inflation (Mankiw 2007).

is related to low inflation rates and vice versa. It is assumed that there is a strong negative relationship between inflation rates and unemployment rates (Leeson, p. 145)

c. Population Growth: In the short run, when population increases, there will be more people searching for the same amount of jobs. Since it takes a while for the economy to adjust, population growth can lead to short-turn increases in unemployment rates. The relationship between the two variables should be a positive one (Rafiq et al, p. 21)
d. Foreign Direct Investment Inflows[16]: It is suggested that FDI and unemployment have a negative relationship. FDI inflows mean investment is being pumped into the economy, which should increase production and create jobs. So the higher the FDI inflow, the lower unemployment rates should become (Rafiq et al, 19).
e. GDP per capita growth: Studies suggest that higher growth rates lead to lower unemployment. It is known that when a country suffers from unemployment, governments aim to stimulate growth in order to create jobs. In this sense, it is expected that the relationship between GDP per capita growth and unemployment should be a negative one (as GDP per capita growth goes up, unemployment rates should go down) (Hussain, Siddiqi, and Iqbal, 2010, p. 332)
f. Gross Enrollment Ratio: Another variable is added that will represent levels of education, which could be related to unemployment rates. For a country like the

[16] Foreign direct investment, net inflows (% of GDP): Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP (World Bank, "Database, Indicators").

United States where the level of human capital is already high, it is expected that gross enrollment ratio should have a positive relationship with unemployment rates, meaning, the more people graduating from school, the bigger the labor force for the same amount of jobs.

The Data and Specification of the Models

All the data used in the model was collected from the World Bank online database, except for the trade deficit variable. The data regarding the trade deficit was obtained from the United States Census Bureau online database. The annual data ranges from year 1986 through 2009 for the unemployment regression, and from 1986 through 2010 for the GDP per capita growth regression. These dates were chosen because they mark the beginning of the widening of the trade balance between the United States and China, which started to occur around 1985.

After collecting the data and adding all the independent variables that make up our model, the following identities are created[17]:

I. ($GDP\ per\ capita\ Growth) = \alpha + \beta_1(trade\ deficit\ growth) + \beta_2(real\ interest\ rates) + \beta_3(gross\ domestic\ savings) + \beta_4(population\ growth) + \beta_5(government\ consumption\ expenditure) + \beta_6(gross\ enrollment\ ratio)$

[17] equations are simplified in sake of clearer understanding.

II. *(Unemployment Rate) = α + β_1(trade deficit growth) + β_2(inflation) + β_3(population growth) + β_4(foreign direct investment inflows) + β_5(GDP per capita growth) + β_6(gross enrollment ratio)*

It is important to point out that the variables used are of extreme complexity, and that data at times are flawed, which can lead to an imperfect representation of the model. Nevertheless, the following results are as close as possible to a realistic representation of the true model that determines both dependent variables.

Results

The study shows that in both models, trade deficit appears not to be statistically significant in determining either GDP per capita growth or unemployment rates for the United States. A description of the results is as follows:

GDP Per Capita Growth as the Dependent Variable:

The model used to determine the significance of trade deficit in determining GDP per capita growth appears to be significant as a whole, with an R^2 of approximately 71.8%.

Table 3: Significance of the Overall Model

Regression Statistics	
Multiple R	0.8473827
R Square	**0.7180574**
Adjusted R Square	0.6240765
Standard Error	1.0968449
Observations	25

The value of R^2 represents the coefficient of determination, meaning how much of the dependent variable can be explained by the combination of independent variables used. In this case, 71.8% of the change in GDP per capita growth can be explained by the combination of change in the variables: real interest rates, gross domestic savings, trade deficit growth, population growth, gross enrollment ratio, and general government consumption expenditure. This does not mean that all variables are individually significant, it just tells us that the model is valid and that when you combine all these variables, one can predict about 71.8% of the change in the dependent variable.

Looking at the individual results however, the p-value for trade deficit growth is higher than .05, at around .262, meaning the trade deficit growth variable cannot be considered statistically significant.

Table 4: Significance of Individual Variables.

	Coefficients	***Standard Error***	***t Stat***	***P-value***
Intercept	-15.41636	12.2340	-1.2601	0.223718
Real interest rate (%)*	-0.582922	0.27135	-2.1482	0.0455624
Gross domestic savings (% of GDP)***	1.691305	0.32463	5.2098	5.909E-05
Trade Deficit Growth (annual %)	**-1.987981**	**1.71561**	**-1.1588**	**0.261696**
Population growth (annual %)***	-9.298094	2.11859	-4.3888	0.000354
Gross enrolment ratio. All levels combined (except pre-primary). Total	0.046685	0.11436	0.4082	0.687937
General government final consumption expenditure (annual % growth)	-0.317059	0.18710	-1.6946	0.1073837

***p<0.001, **p<0.01, *p<0.05 (two-tailed tests) Confidence Interval: 95%

From the table above we can derive our multiple regression equation using the variables that are marked as significant:

GDP per capita growth = -0.59(real interest rate) + 1.7(gross domestic savings) – 9.2(population growth)

These results show no significant relationship between trade deficit and GDP per capita growth, meaning it is impossible to predict changes in economic growth based on changes in trade deficit between China and the United States. The numbers suggest that the United States' argument that the trade deficit is delaying its economic recovery process, and mainly directly affecting its economic growth rates, is not valid according to the evidence shown above. To accuse the Chinese of directly affecting domestic economic growth in the United States is a misinterpretation of how trade balances are affecting the economy. This study therefore suggests that trade deficit is not directly affecting the United States' economic performance. The results demonstrate that there is no reason for one to believe that there is any direct significant relationship between U.S. - China trade deficit and the United States GDP per capita growth.

The results also provide additional information on possible determinants of GDP per capita growth. That is, we can only use the three significant variables to forecast a change in GDP per capita growth. As the table shows, real interest rates, gross domestic savings, and population growth are all individually statistically significant. Additionally, the coefficients represent the magnitude of the relationship as well as its direction. In the case of interest rates, there is a negative relationship between interest rates and GDP per capita growth, just as previously predicted. What the numbers suggest is that for a one percent decrease in the real interest rate, GDP per capita growth will go up by .582 percent annually. Also, gross domestic savings rates show a very strong relationship to GDP per

capita growth. Results suggest that for every one percent increase in gross domestic savings, GDP per capita growth will increase by 1.691 percent annually. Lastly, a p-value of .0003 shows that population growth is statistically significant when determining GDP per Capita growth. The coefficient of around -9.29 suggests that for a one percent increase in population growth, GDP per capita growth would decrease by 9.29%[18].

What the model has shown is that not only the trade deficit is not significant in predicting changes in GDP per capita growth, but also that there are other variables that should be addressed if the United States really is concerned about their economic performance. I will further discuss these issues in the last chapter.

Unemployment Rate as the Dependent Variable:

The model as a whole is again significant, meaning the combination of independent variables chosen is valid in determining changes in the U.S. unemployment rate. R^2 is relatively high:

Table 5: Significance of the Overall Study (Y= Unemployment)

Regression Statistics	
Multiple R	0.883903
R Square	**0.781284**
Adjusted R Square	0.70409
Standard Error	0.645732
Observations	24

[18] The magnitude of the coefficient for the population growth is high because by using GDP per capita as the dependent variable, change in population causes de denominator of the dependent variable, (per capita), to increase even more. In this case, the effect is almost doubled because an increase in population is counted twice in regards to GDP per each person. For the purpose of this study, this result can be ignored since no realistic policy would be implemented to change population growth numbers.

From the data one can estimate that about 78.1% of the distribution in Unemployment rates can be explained by the combination of the following independent variables: inflation, trade deficit growth, population growth, foreign direct investment, gross enrollment ratio, and GDP per capita growth. At this point there is no knowledge of which individual variables are significant, but what is known is that when all of them are put together, this combination of variables can predict about 78.1% of the change in unemployment.

Analysis of the individual data however demonstrates that the U.S.-China trade deficit is once again not statistically significant in relation to U.S. unemployment rates. The table below demonstrates the lack of significant relationship:

Table 6: Significance of Individual Variables (Y= unemployment)

	Coefficients	***Standard Error***	***t Stat***	***P-value***
Intercept	19.8666087	6.719623	2.9565	0.0088363
Inflation, consumer prices (annual %)* **	-0.4162911	0.134249	-3.100	0.0064921
Trade Deficit Growth (annual %)	-0.117322	1.03586	-0.1132	0.9111508
Population growth (annual %)	1.05645224	0.909456	1.1616	0.2614362
Foreign direct investment, net inflows (% of GDP) **	-0.5735043	0.21907	-2.6179	0.0180002
Gross enrolment ratio. All levels combined (except pre-primary). Total	-0.138623	0.06972	-1.9882	0.0631288
GDP per capita growth (annual %)* **	-0.3693165	0.085182	-4.335	0.0004492

***p<0.001, **p<0.01, *p<0.05 (two-tailed tests) Confidence Interval: 95%

From the table above we can derive the multiple regression equation with the following significant variables:

Unemployment rate = -0.41(inflation) – 0.57(foreign direct investment inflow) – 0.37(GDP per capita growth)

The results above show that there is no significant relationship between trade deficit growth and unemployment rates. To say that the U.S.-China trade deficit is directly responsible for changes in the United States' unemployment rates is a very inaccurate statement that should take other factors into account. It is not realistic to say that by knowing the amount a change in the trade deficit, one will be able to know how much unemployment rates would change. The United States claims that trade deficit is to blame for increased domestic unemployment, but it has no way to prove it. There are several other factors, including a national financial recession that could be pushing unemployment rates up. It is inaccurate for the government to assume that the trade deficit with China is the main cause of unemployment, as the results above suggest.

Other factors that are in fact significant in determining unemployment according to the model are: inflation, foreign direct investment, and GDP per capita growth. In the case of inflation, a one percent increase in the inflation rate decreases unemployment rates by .416 percent annually. Foreign direct investment also appears to be statistically significant, and results suggest that a one percent increase in FDI inflows lead to a .573 percent decrease in unemployment rates. At last, results show that GDP per capita growth is important when it comes to determining unemployment rates. When GDP per capita growth increases by one percent, unemployment rates decline by .369 percent.

Unemployment rates in the United States are influenced by several other reasons, including inflation, FDI inflows, and GDP per capita growth, but not trade deficit growth. There are so many factors that could force unemployment rates to go up and down, so it is

inaccurate to assume that by reducing the deficit, unemployment issues in the United States would disappear.

Making Sense of the Results

When looking closely at the results, logical thinking leads to a higher level of confidence regarding the validity of the study's outcome. The model shows that GDP per capita is not significantly affected by the trade deficit, at least not in the direct way. There is a certain logic behind it that can be explained by the following chain of events:

When a country runs a deficit, it needs to borrow money to finance domestic expenditure. It does so by selling its own securities in the open market, most likely to a country or foreign investors. In turn, the actors buying those securities become creditors, or owners of debt. The money they are lending to the country running the deficit is in fact investment coming in to finance operations. Investment is known as the main stimulator of growth, therefore providing an economic boost to the borrower. In this situation, China is buying U.S. securities therefore investing in the American economy. So it is not surprising that the deficit does not directly influence GDP per capita growth, since the debt is offset by new investment coming in from foreign lenders (Morrison and Labonte, 2011, p.33).

In the case of unemployment, there are a few reasons why the results show a lack of significance between trade deficit and unemployment rates. Sure, the increase in China's exports might have created a shift in production that took away low-skilled jobs from Americans, but a study conducted by Harrison and McMillan (2006) shows that those jobs lost were offset by job creation in the services sector (pp. 13). It is highly unlikely that if trade deficit goes down, the United States will shift back production to the low-skilled labor sector and produce textiles, for example, for exportation. Also, a study conducted by the

Federal Reserve Bank of San Francisco shows that for every dollar spent on a good that is labeled "Made in China," about 55 cents of it is absorbed by services located in the United States, such as transportation, retail, and wholesale (Morrison and Labonte, 2011, 24). This suggests that high levels of U.S. imports from China do not necessarily dislocate American workers; some sectors can even gain from higher imports. This rationale leads to a belief that it is not so surprising that the model showed no significant relationship between trade deficit and unemployment.

Why Blame China?

If the trade deficit is not the main cause of the slowing down of the American economy and the higher unemployment rates, than why would the government be so adamant about blaming China for its domestic problems? Economist Ronald McKinnon (2011) argues that it is convenient for the United States to look for someone to blame rather than to address internal issues regarding their own economy. Politically, it is too difficult for the government to pursue the certain policies that could be helpful such as an increase in taxes or a decline in domestic consumption. Rather, he argues, it becomes "far easier to look for a foreign villain- and the RMB/dollar rate was (and is) a politically convenient scapegoat" (p. 2).

There is a certain possibility that the trade deficit is in some indirect way affecting the United States in terms of economic prosperity and job creation, but not in the direct way in which the United States is pointing out to be. The study conducted above suggests that the trade deficit is not directly significant in determining the other two variables, so demanding the Chinese to change their currency policy to instantly reduce deficit is not the

answer to the Americans' domestic problems. There is a possibility that the United States government is trying to shift attention away from domestic issues by artificially creating this possible conflict with China. In the next chapter, I examine the actions being taken by the United States and what kind of economic implications they could have for both countries as well as the rest of the world.

Chapter V: U.S. Actions: Future Implications

In the previous chapter, it has been determined that United States' GDP per capita growth rate does not seem to be influenced directly by the trade deficit with China. The same applies in relation to unemployment, where trade deficit appeared to be statistically insignificant. At the same time, the United States' government continues to criticize China and demand reforms, pursuing trade policies that could actually be detrimental to its own country. The next sections will be dedicated to analyzing the possible economic and political implications that could arise if tensions continue to exist between the two countries.

Even though the study shows that the trade deficit is not the main cause of American unemployment and economic stagnation, there is still an incentive for the U.S. to try and lower the trade deficit with China to avoid further increasing of its national debt with foreign countries. If a country consistently runs a current account deficit, it needs to continue to borrow money from foreign actors to finance its expenditures. In the long run however, too much debt can become an issue, especially if a country (like the United States) finds itself at a position to have to default on its debt. If the United States defaults, Chinese investors (who as previously stated hold over one trillion dollars worth in American securities) would suffer incredible losses. If two of the major economic actors in international trade collapse, the world economy could turn into complete chaos! So if the United States is considering a future complication with its foreign debt, then it does in fact have an incentive to reduce the deficit, regardless of it is directly affecting its domestic economic and social issues. The U.S. government might be mistaking the reasons why it

should address the trade deficit, but nonetheless it should still be part of its agenda for the next few years. The question remaining is, are the actions being taken by the United States right now effective in fighting the deficit or should the government turn its focus to other factors that could be widening the U.S.-China trade balance? The following sections aim to analyze the current U.S. actions being taken and how they could help/hurt the future of the United States as well as the future of American-Chinese relations.

Will Revaluing the RMB help?

The first issue to be dealt with in this conflict is that the United States seems to be mistaking the true causes of the trade deficit by putting all the blame on the Chinese exchange rates. As mentioned before in Chapter III, while currency devaluation has helped China increase its exports and enhance domestic production, other factors such as domestic savings rates and shifts of operations due to lower costs of production abroad have had a part in determining current trade balances. If the United States puts too much emphasis on reforming China's exchange rate, it is setting aside other possible policies that could also lead to an improvement in the trade balance without causing international conflict and damaging foreign relations with China. Still, the government seems to be relentless in its pursuit for currency reform in China. Studies, however, show that revaluing the Renminbi is not the best answer to solving the trade deficit.

The United States expects that if China revalues the Renmibi, exports from China will become more expensive in the international market, which will lead to fewer countries buying goods from China; the amount of United State's imports would therefore decrease (even though this clearly hurts American consumers who buy cheap goods from China). But

research shows that there are several reasons why immediate appreciation the Chinese currency will not lead to instant trade deficit reduction. According to a study done by Nicolaas Groenewold, a 10% revaluation of the Renminbi will most likely only improve the trade balance by less than 10% (p. 6). A similar view is also supported by Morrison and Labonte (2011), who report that between 2005 and 2008, the U.S. trade deficit with China actually rose by 30.1% despite a 21% appreciation of the RMB (p. 21).

Furthermore, revaluing the RMB might cause little change regarding Chinese exports. Most goods exported by China to the United Stated are only assembled by the Chinese. China imports the components made elsewhere and assembles them for export. Robert Pozen (2010) reports that Chinese inputs constitutes no more than 10 percent of those exports, so even if the RMB appreciates by 20 percent prices would only increase by 2% at the most (p.4). In addition, an increase in the prices of Chinese goods would only shift production away from China to other countries such as Bangladesh and Vietnam. This would reduce the United States trade deficit with China but it would not change the overall amount of exports to the U.S., meaning the deficit would just transfer to another countries' balance (Pozen, 2010, p.4). Regardless of the effects of appreciation of the RMB, no significant change would happen without considerable exchange rate reform. The degree of devaluation is large enough so that it would take a long time to see any real changes in the trade balance. China's political leadership values stability and gradual progress, so any drastic changes in monetary policy are very unlikely to occur (Goldstein and Lardy, 2006, 425).

U.S. Actions: Ramifications

The United States has rejected the notion that currency revaluation might not be the right policy to go about solving trade balance issues, and it has taken action to confront the Chinese in regards to their exchange rate policy. On October 11, 2011, the Senate passed the Currency Exchange and Reform Act of 2011, which states that the United States has the right to impose tariffs on imports from countries that chose to maintain undervalued currencies (112th Congress, 1st session, Act S.1619: "Currency Exchange Rate Oversight Reform Act of 2011"). The Treasury Department is in charge of identifying such countries depending on their currency devaluation practices, and from then on the Department of Commerce decides what kind of tariffs to impose on certain goods. Obviously, this bill is aimed primarily at China, and the Chinese government has not taken it lightly.

When the United States imposes a tariff on a specific good (let's say, textiles) on a country like China, there is a rapid effect on the price of such goods that causes the market equilibrium to change. So for example, if there were not a tariff, market equilibrium would be at equal in both countries, at what is considered the world price for textiles. When the U.S. imposes the tariff, exporters are not willing to export textiles from China to the U.S. unless the U.S. price is higher than the Chinese price, causing a decrease in exports. Then, demand for textiles in the U.S. will increase because there is less of it available to consumers, while China will find itself holding excess supply of the good. This will lead to higher textile prices in the U.S. and lower prices in China, and eventually will cause the volume of trade to decline (Krugman and Obstfeld, 2009, Page). Considering the United States economic situation at the moment, making foreign goods more expensive to American consumers might not be a good idea. Savings rates are already low in the U.S.,

and if consumers are forced to spend even more to buy basic goods that were previously imported from China at a low price, than that number might decline even more. The result could be an even higher current account deficit!

Trade Wars: Repercussions and Consequences

The United States is trying to send a direct message to the Chinese by acting up against China's exchange rate practices, showing the rest of the world that the Americans are still the strongest force in the international market. The means by which it is doing so though could in the end not only hurt its domestic economy, but also cause distress in the international market and the economies of other countries. Furthermore, the Chinese response to the Senate bill might become worrisome to the United States, since it suggests that a possible trade war is about to happen. In response to the passing of the Currency Exchange and Reform Act of 2011, Vice Foreign Minister of China Cui Tiankai stated that "should the proposed legislation be made into law, the result would be a trade war and that would be a lose-lose situation for both sides. It would be detrimental to the development of economic ties and might have an adverse impact on bilateral relations" (Miks, 2011).

A trade war would mean that both sides would counter each other's policies with more and more protectionism, leading to a move away from free trade towards a closed economy. After all the past efforts made by most countries as well as international institutions such as the International Monetary Fund (IMF) and the World Trade Organization (WTO) to encourage free trade, a possible trade war could cause a backwards shift in globalization and economic development in the developing world. The consequences are alarming; House Speaker John Boehner added that "given the volatility in the world markets, given the uncertainty in the world economy, for the Congress of the

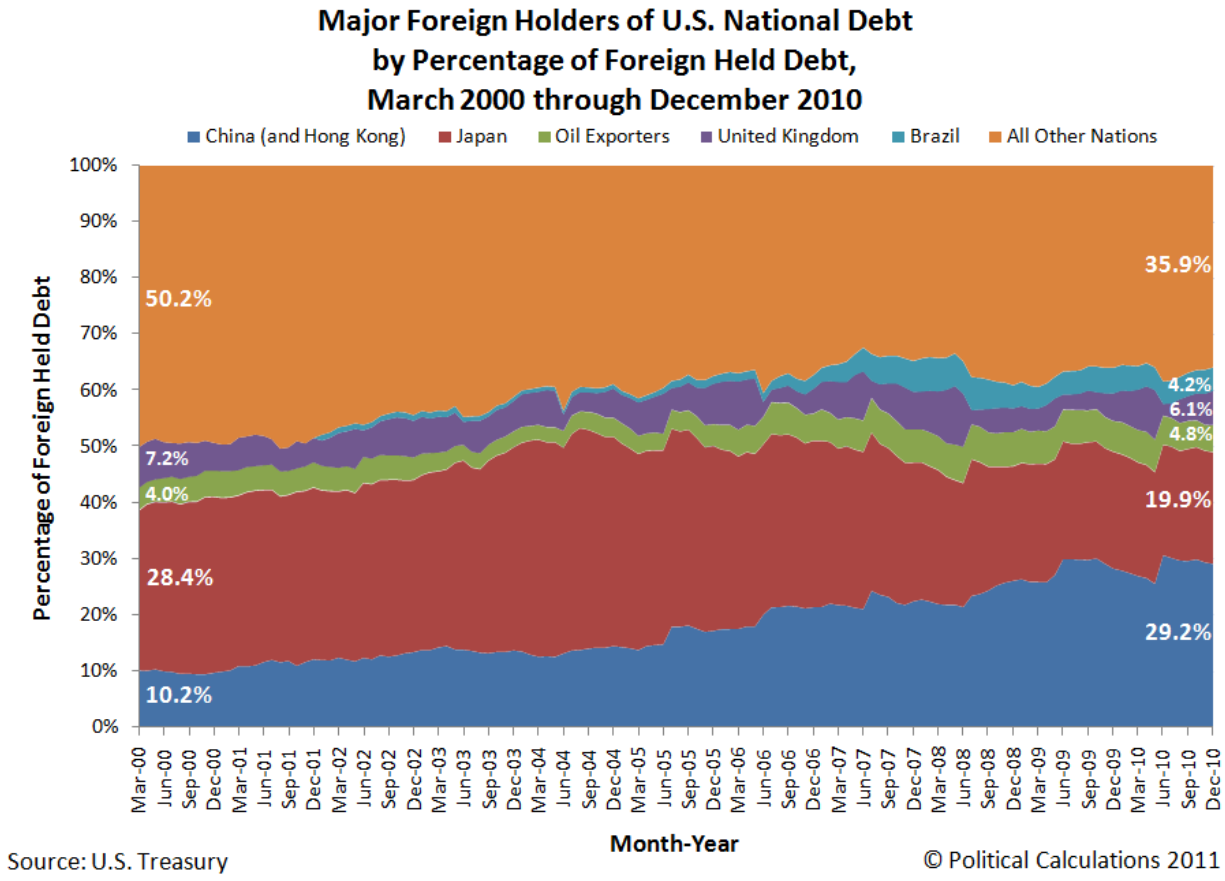
United States to be taking this step at this moment in time poses a very severe risk of a trade war and unintended consequences that could come as a result" (Mikz, 2011).

Not only could this move affect the diplomatic relationship between the U.S. and China, but there could be negative economic consequences to the American economy given certain WTO sanctions. Both countries are members of the World Trade Organization, meaning they have to abide by certain rules of trade. China has argued that by imposing what would consist of protectionist measures, the Currency Exchange and Reform Act could be violating certain WTO laws against trade competition (Mikz, 2011). According to former House Representative James Bacchus, the Chinese could potentially 'sue' the United States for such malpractices, and a loss could lead to huge and expensive economic sanctions to U.S. exports (Bacchus, 2009).

U.S. and China: Interdependency

Another main reason both countries have a special interest in keeping a somewhat diplomatic relationship is that they are hugely dependent of each other. China needs the Americans to buy all their exports and keep their production and employment levels high, while the U.S. needs China to keep lending them money. As mentioned earlier in Chapter III, China holds much of the United States' foreign debt, and the U.S. depends on China to finance its spending. Figure 3 shows that China alone holds about 29.2% of The United States National Debt:

Figure 4: Major Holders of U.S. National Debt



The figure shows that China (and Hong Kong) held 29.2 percent of United State's National Debt on December of 2010. This number has increased substantially over the years; in 2000 China held only 10.2 percent of U.S. National Debt. As shown by the blue area, China is currently the major holder of U.S. debt.

There is a certain degree of dependency between the two countries: China buys American securities to increase their foreign reserves and stimulate their export-led economy, while the United States borrows from China to finance their national account deficit. If anything were to happen between the two countries and these transactions diminished or ceased to exist, both the United States and China would suffer the economic consequences. In addition, the IMF reports China as being the world's leading exporter,

while the U.S. continues to have the largest economy in the world in terms of GDP. An economic collapse from such influential actors in the international financial markets could not only cause domestic recessions, but also spark a world-wide economic crisis of significant magnitude.

Chapter VII: Conclusions and Suggestions

The recent dispute between the United States and China has raised concerns all over the world regarding the future of relations between the two countries. While most literature written addresses the effects of currency manipulation and the impact that an appreciation of the Renminbi would have on the trade deficit, recent research fails to investigate the true relationship between the deficit and the United States' domestic problems. This thesis connects all the main concerns related to the U.S.-China trade dispute and brings them together to provide a clear and in depth analysis of why it has developed, what kind of claims can be accepted (or denied), and what implications this could have in the future of the world economy. The study also makes it possible for one to make suggestions on how both countries should proceed from now on to avoid further damage to their own economies. Although the quantitative models are limited by data availability and its simplicity in relation to the complexity of the variables being studied, more sophisticated research could achieve more detailed results that would help improve further recommendations of future monetary and trade policy-making. This Chapter will summarize the results and make suggestions on what the United States and China should do to maintain a healthy trading relationship that is so vital to the functioning of the world economy today.

Implications of Study

Results suggest that while China has made use of low exchange rates to stimulate national exports, it has also benefited from other factors that have been significant in distorting the trade balance with the United States. By devaluing their currency, the

Chinese were able to export their goods in the international market for lower prices, making their exports more attractive to foreign buyers. The United States in turn lost competitiveness in the exporting market, and instead began to import more of those cheaper goods from China, therefore importing more than exporting. However, these actions were not the only reason why the trade deficit widened significantly in the past thirty years. High domestic savings rates have been a major player in enlarging China's current account surplus, and most of it is due to their own communist political regime that discourages personal investment and fails to provide appropriate social safety nets, which in the end encourage the Chinese people to save more. In turn, the U.S. follows the opposite path, by keeping interest rates low and stimulating personal consumption, which leads to further deficits. Furthermore, the Chinese government has the ability to pay lower wages to a less qualified labor force, which encourages multinationals to shift production away from developed countries to countries like China. The United States, as a highly developed country, is forced to pay higher wages and therefore cannot afford to pay Americans workers a lot to produce cheap goods that require lesser skills.

The results of this study also show that while the U.S. government has repeatedly criticized China's policies for being the cause of their domestic problems such as slow economic growth and high unemployment rates, evidence suggests that the trade deficit has not been a significant force affecting those variables. There is no significant relationship between the trade deficit and U.S. GDP per capita growth rates, suggesting that the U.S. should not blame China for their poor economic performance over the past few years. The reason for this lack of relationship might lie in the trade-off that exists between debt and investment. The more deficits, the more the U.S. is forced to borrow, and those

loans are transformed into domestic investment, which are used by the United States to finance new infrastructure, research, social security, and other social benefits. Because there is high investment together with high debt, GDP continues to be high even though the government owes more.

There is also no significant relationship between trade deficit and unemployment. It can be suggested from the model that the increasing trade deficit with China does not directly affect the United States' unemployment rates. This could be due to the fact that many jobs lost in the manufacturing sector have been offset by jobs created in the service sector, and also that high levels of imports being brought in from China also lead to a boost in labor demand for certain sectors in the United States such as transportation and retail.

Lastly, this thesis estimates that the current actions being taken by the United States are less than effective in combating the trade deficit with China. First, revaluing the Renminbi might not be the right way to go about correcting the trade imbalance. Second, imposing tariffs on Chinese imports could hurt American consumers as well as damage relations with China. The effects of a possible trade war could be nothing but damaging to both countries as well as the rest of the world, given the volatility of the financial system at the moment and the magnitude of influence both China and the United States have in providing stability to the international market. However, it is important for appropriate actions to be taken to fight off the huge trade imbalance that exists today, since a possible default of the U.S. debt could cause the world economy to collapse.

What Should the United States Do?

The first action that needs to be taken by the United States should be diplomatic in nature, to avoid further tension between the two countries. Morrison (2011) suggests that the United States' government should continue its attempt to persuade China to reform is exchange rate policy, but not in such an aggressive way as it has. The U.S. should help and encourage China to engage in conversations with other East Asian economies to reach a consensus in exchange rate policy, so that China doesn't fear that if they revalue the Renmimbi they would lose all production to other Asian countries (p 35). Morrison adds that they need to convince China that "liberalization of its exchange rate system would serve China's long term economic interests and not lead to economic stability" (p. 35).

If all attempts to diplomacy fail, then the United States should then turn to the World Trade Organization to settle the conflict. It could file a case against China's currency manipulation and if results were favorable to the U.S., China would be obligated to follow the WTO's rules (Morrison, 2011, p. 36). This would be different than directly criticizing China because there would be an involvement of a third party (the WTO), that would smooth the negotiation and the United States' would not be viewed as the main villain.

However, it has been determined that simply reforming China's exchange rate policy would cause the deficit to slowly decline, but it will not make it disappear. Therefore, the United States needs to concentrate on its own economy to help fix the imbalance. The most important thing is for the government to address the high consumption issue. There needs to be a change in the American culture of consumption, and the United States needs to encourage its people to save more. Perhaps it would require the government to raise interest rates, or as Mckinnon (2011) suggests, increase tax revenues (p.2). Regardless of

the method, the United States has got to decrease personal and government consumption in order to alleviate the trade deficit. Also, increase in domestic savings rate would help stimulate GDP per capita growth, as shown in Chapter IV's model: A one percent increase in gross domestic savings could lead to a 1.6 percent increase in GDP per capita growth in the U.S.

Furthermore, if the United States is successful in pursuing these policies that will decrease the deficit and improve GDP per capita growth, it will consequently be helping lower unemployment rates. This is the case because as the regression model shows, GDP per capita growth is significant in determining unemployment. If the U.S. focuses on encouraging higher savings rates, growth would go up, thus affecting unemployment rates. A one percent increase in GDP per capita growth could lead to a .369 percent decrease in unemployment rates. In addition, by saving more, the current account deficit would lower, which means that the U.S. foreign debt would decrease. If the United States owes less money, it will become more attractive to foreign investors, who at the moment might fear that a deficit this large could lead to a default. As the model shows, foreign direct investment inflows are also significant in determining unemployment. A one percent increase in FDI inflows to the U.S. could cause unemployment rates to decrease by .57 percent, showing that the more investors the U.S. attract, the better off their unemployment rate will be.

By addressing all these domestic issues, the United States could effectively lower the trade deficit with China. Pozen (2010) also states that the U.S. should continue to support higher wages in China and a stronger safety net for Chinese workers, which would lead to an increase of Chinese consumption and a better balance of trade for both countries (p. 4).

Not only would these actions help reduce the U.S. trade deficit, but it will also help China improve the living standards of its people, something that the Chinese government has been attempting achieve (p.4). By successfully correcting domestic current account deficits and continuing to push China to reform in the appropriate way, the trade imbalance between the two countries could begin to adjust.

What Should China Do?

The first thing that China should do to help lower the deficit and smooth relations between the two countries is to slowly continue to revalue the Renminbi. Goldstein (2006) argues that a ten to fifteen percent revaluation could help reduce China's own current account surplus, therefore slowly contracting their trade balances with other countries. He adds that if China widens the band of the peg, it would provide the country with a higher degree of monetary policy independence, which would help markets to determine more stable exchange rates (p. 425). Most importantly, China should conduct fiscal expansion to offset some of the economic implications of a currency reform. This expansion should focus on government expenditure, by improving the country's social safety nets and providing the Chinese people with better health care, education, and pension plans. This will clearly lead to an increase in consumption, which will decrease China's current account surplus and therefore help the United States' correct its trade balance. Also, the Chinese government could encourage personal investment by establishing competitive domestic private banks, where the domestic population can easily obtain housing and education loans, and also invest in private businesses (Woo, p. 18). Revaluing the Renmimbi could also be beneficial to China regarding their status in international market. If consumption

increases, that means that domestic demand for imports would be higher, and other countries would start to export more to China. China would create a new relationship in which it is no longer the sole exporter, but also becomes and importer. All of a sudden, countries would start to depend on China to demand their exports so that their own economies could prosper.

All of these suggestions will serve to improve the U.S.-China trade deficit while also correcting trade distortions all over the world. The world has been shifting towards economic protectionism in light of recent financial recessions that have generated a lot of uncertainty and fear when it comes to trading. It is crucial that both the United States and China start collaborating in order to push for freer trade, not to move backwards towards autarky –like economic times. Numerous economic models state that every country is better off with free trade, so there is no reason to believe that a move towards protectionism by both major players in the international market would be beneficial to the rest of the world (Krugman and Ostfield, 2009). This is why it is crucial that the dispute between China and the United States over currency manipulation and trade deficit ends now, and efforts be made to improve the current trade imbalances. According to Woo (n.d.), the U.S. and China "must now work together to provide leadership to prevent the unraveling of multilateral free trade" (p. 20). If all of these attempts to avoid future conflict are successful, one can expect the fate of the international trading market to be a much more promising one, where both China and the U.S. can peacefully coexist in a system that could come to be beneficial to everyone.

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Appendix

1. Y=GDP per capita Growth

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.847383
R Square	0.718057
Adjusted R Square	0.624076
Standard Error	1.096845
Observations	25

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	55.15201	9.192002	7.640462	0.000345
Residual	18	21.65524	1.203069		
Total	24	76.807 25			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-15.4164	12.23403	-1.26012	0.223718	-41.1191	10.28639	-41.1191	10.28639
Real interest rate (%)	-0.58292	0.271359	-2.14816	0.045562	-1.15303	-0.01282	-1.15303	-0.01282
Gross domestic savings (% of GDP)	1.691305	0.324639	5.209809	5.91E-05	1.009265	2.373346	1.009265	2.373346
Trade Deficit Growth (annual %)	-1.98798	1.715611	-1.15876	0.261697	-5.59235	1.616383	-5.59235	1.616383
Population growth (annual %)	-9.29809	2.118593	-4.38881	0.000354	-13.7491	-4.8471	-13.7491	-4.8471
Gross enrolment ratio. All levels combined (except pre-primary). Total	0.046685	0.114367	0.408205	0.687938	-0.19359	0.28696	-0.19359	0.28696
General government final consumption expenditure (annual % growth)	-0.31706	0.187101	-1.69459	0.107384	-0.71014	0.076025	-0.71014	0.076025

2. Y= Unemployment

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.8839026
R Square	0.7812839
Adjusted R Square	0.7040902
Standard Error	0.6457324
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	25.32109	4.220181	10.12056	7.91E-05
Residual	17	7.088497	0.41697		
Total	23	32.40958			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	19.866608	6.719623	2.956506	0.008363	5.689443	34.04377	5.689443	34.04377
Inflation, consumer prices (annual %)	-0.41629	0.134249	-3.10089	0.004921	-0.69953	-0.13305	-0.69953	-0.13305
Trade Deficit Growth (annual %)	-0.11732	1.035866	-0.11326	0.911508	-2.30214	2.068152	-2.30214	2.068152
Population growth (annual %)	-1.05645	0.909456	-1.16163	0.261436	-2.97	0.862335	-2.97	0.862335
Foreign direct investment, net inflows (% of GDP)	-0.57350	0.219007	-2.61791	0.018064	-1.03577	-0.11131	-1.03577	-0.11131
Gross enrolment ratio. All levels combined (except pre-primary). Total	-0.13862	0.069722	-1.98828	0.063072	-0.28548	0.008474	-0.28548	0.008474
GDP per capita growth (annual %)	-0.36931	0.085182	-4.33556	0.000425	-0.54904	-0.18896	-0.54904	-0.18896