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How the impact of the US-China trade war affect on the stock market

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by

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Abstract

The US-China trade war has caused the global economy to become more turbulent since the trade war has started. In this study, I will research what are the reasons to cause the trade war, the factors that will affect on the stock market and how the countries in the world need to do to reduce the risk of the trade war. To exam the factors that would affect the stock market performance, I will use the multiple regression analysis and correlation analysis in this study. After using these models, the results show that the US market and the Chinese market will move together during the US-China trade war. Also, the GDP of the US is an important factor to influence the US stock market and the import amount from China to the US. The exchange rate will change the stock market performance and the bilateral trade volume. However, the transport cost of the goods does not have a significant impact on the market.

Introduction

After World War I and World War II in the twentieth century, governments around the world had established the world order gradually since 1945. They built the United Nations (UN) to maintain international peace and security. In the economy, they found the World Bank, International Monetary Fund and WTO to encourage all participating countries to have a rapid growth in GDP. Because of people hating to have the war anymore, it is much more difficult for the countries to use military power to solve the conflict between them. Therefore, a new form of warfare — trade war — appeared and many countries used different kinds of ways to sanction the countries they had conflict within the economy field.

On July 6th, 2018, The US Customs and Border Protection (CBP) begin collecting a 25 percent tariff on 818 imported Chinese products valued at US\$34 billion – giving effect to the first round of tariffs, which were revised and announced on June 15, 2018. (Wong & Koty, 2019) After that China also take some actions against the US government. In this article, it will help you to find the US-China trade war is the product of some factors, as the US government wants to reverse the trend that America is losing the dominant status in the world.

Compared with previous trade war in the world, the US-China trade war is the biggest and its impact is large: this competition is between the world's two largest economies, the United States and China. Many people will be curious about what will the trade war bring. Many countries in different areas suffer loss or find some opportunities from it. For example, because of the high tariff between the US and

China, East Asia gets more proportion of export goods to the US. (Cali, 2018)

As the protagonist of the trade war, China and the US also suffer some constraint in their high-technology companies, such as Huawei and ZTE, their supply chain depending on the foreign countries, they need to change their strategy to maintain their status and profit. (Babones, 2018) On the other hand, the US chip companies will reduce sales because they cannot find enough customers to replace Chinese tech companies. (Waters, 2019a)

For the US and China, they need to consider how to win the war and get more initiative in the negotiation. For other countries, what they need to do is relieving the bad effect of the war and explore more opportunities to develop themselves. This passage will provide several measures about some countries that have done, and it can be used for reference for other countries.

The US-China trade war will have a big effect on the stock market performance which may hinder the global economy and it will also become people's trouble because of the uncertain exchange rate. Therefore, my study will concentrate on the trade war between the US and China and try to dig out the factors that caused the trade war to happen and the effect on the different markets as well as high-tech companies in the world. Moreover, how should the countries do, solve the dilemma about the turbulent economy? In this study, I will use the multiple regression to analyse the relationship between the stock performance, bilateral trade volume and some factors such as GDP.

Literature review:

On July 6th, 2018, The US Customs and Border Protection (CBP) chose 818 imported Chinese products to collect 25 percent tariff which valued at \$34 billion. China also decided to take a 25 percent tariff on the 545 originated U.S. product which was worth \$34 billion. (Koty & Wong, 2019) The announcement marks the beginning of a trade war between China and the United States. Since then, it is a hard time for both China and the US to suffer the large loss from the trade war.

2.1 The factors for the trade war

After the Chinese reform in 1978, the rapid development of GDP has become the synonym of China and it surpassed Japan to become the world's second-largest economies in 2010 compared to the 11th economies in 1978. Because of the cheaper labor cost in China, more and more companies came to China for reducing their cost and China became the largest factory in the world. (Chossudovsky, 2018) In the America market, US consumers also preferred to purchase imported Chinese goods which had a low price than domestic goods. Gradually, the trade deficit between these two countries appeared and according to the report, the amount in 2014 exceeded \$342 billion. (Chi, 2016) President Trump announced that the trade deficit is an existential threat to the U.S. and many manufacturing jobs have been lost in America.

(Rushe, 2019) The president wanted to use rising tariffs to reduce the trade deficit with China. (Chossudovsky, 2018)

In addition, after the collapse of the Bretton Woods system, the liberal international economic order has changed and America has the threat to lose its absolute discourse power in the world. (Yukon Huang, 2019a) Moreover, with China becoming stronger, a new type of partnership is emerging---The China-led Regional Comprehensive Economic Partnership. The establishment of the Belt and Road Initiative and the Asian Infrastructure Investment Bank may also strengthen the power of China and weaken the US from changing the regional economic and institutional landscape. (Dollar, Lundsager, Pillsbury& Taeho Bark&Bradford Ward, Bark, & Ward, 2019) To reverse this trend, the US government attempts to use economic sanctions to press China to make a compromise.

The US government also announced that China is the currency manipulator in the market and the US companies cannot compete with the Chinese companies which have the government subsidy to support them. (Rushe, 2019) They also mentioned that the closed Chinese market and Chinese unfair competition strategy will make a huge loss for the US companies. (Mourdoukoutas, 2019)

Another reason is the American party's concerns that China will weaken U.S. international standing. President Trump accused that China steals hundreds of billion dollars on intellectual property. (Rushe, 2019) Also, the rapid growth of China in the high technology field threat the denominated status of the US and they need to take action to limit the development of China.

2.2 The effect on the market and high-tech companies

2.2.1 The effect on the market

Since the trade war began, the US government raise the total tariff to US\$450 billion and the Chinese government also raise the tariff to response it. (C. Huang, 2018) The additional tariff caused the US consumer and the companies to pay more than 3 billion dollars on the tax cost and lose additional \$1.4 billion dollars in deadweight welfare loss per month. (Amiti, Redding, & Weinstein, 2019) Because of the trade war, many famous indexes, such as S&P 500, the Dow Jones and the blue-chip index, went down with the time going by and many technology companies suffered a big loss in the stock market. EU market and the Chinese market also had a bull market. (Zarrolì, 2019)

In the U.S., President Trump asked all US companies to leave China. Many companies have suffered several losses on stock price such as Nvidia has lost 40 percent of their market in the trade war. However, some companies do not obey the president and they make huge profits by expanding their brand in China market. (Marino, 2019) The US firm's exported sales will reduce according to the rising tariff, and if the firms cannot find enough customers from other countries to cover the lost sales in China, the decreasing future cash flow will hurt the stock price of the company. (Yi Huang, Lin, Liu, & Tang, 2019)

In China, the service industry will also be influenced by the trade war. Although

most services did not have a direct relationship with the tariff, the tariff on the goods will affect the service that related to these goods and some services like tourism and education will have some reductions because of the war. (Prazeres, 2019)

In other countries, the trade war will also affect them, the action of Trump to raise tariff will encourage to pursue of protectionism in other parts of the world and the function of the WTO will be weakened and increase the possibility of rising tariffs in other countries. (Dixon, 2017) the countries in East Asia which have a similar export structure with China, can instead China become the supplier for the US and they can gain more proportion in the market. (Cali, 2018)

2.2.2 The effect on high-tech companies

As the most competitive filed between China and the US, the high-tech industry suffers the most serious loss during the trade war. ZTE, a famous high-tech company in China, is based on U.S. suppliers for about 80 percent of technology and components. The restriction from the US will cause damage to their supply chain and a sharp decline in their profit, which may cause a large number of people to lose their jobs. (Babones, 2018) Another company called Huawei which have the second-largest sales about the phone in the world has serious restriction on bidding some contract with some foreign countries because some countries regard Huawei as a company is controlled by the Chinese government. (Mascitelli & Chung, 2019) Although DJI provides 80 percent of the drones for the US and China, the US Department of

Homeland Security has already noticed American companies pay attention to the security risk by using the Chinese-made drones. (Zhang, Zheng, & Chen, 2019).

The high-tech companies in the US also get into trouble with they cannot sell their product to the China market as before. For example, Broadcom has a high trade volume with telecom equipment company around \$900 million in 2018, because of the uncertainty from the trade war and the expected cyclical recovery for the chip industry, they cannot have an accurate prediction in next year. (Waters, 2019) Another company, Cisco, its sales fell down more than 25 percent in July and this phenomenon shows that the anti-U.S. sentiment is increasing which may hurt other companies with great exposure to China. (Kim, 2019)

2.3 The measures that the countries should take

The trade war has caused the turbulent economy in some counties and other countries' stock markets also be influenced by this event. After suffering the loss from the trade war, the affected countries need to take some necessary measures to protect themselves.

The Chinese government decides to open the market to foreign companies gradually. They have set a timetable for canceling the limits in some important industries such as automotive, banking, aircraft manufacturing industries. Also, they Intensify efforts to support the development of the private economy. (Tse, 2019)

For the EU, another huge market in the world, it is an important part that we

cannot ignore. The trade war is going to the stage of stalemate, the attitude of the EU will determine the trend of this war. EU has involved in the plate in the Asia-Pacific: they had concluded bilateral agreements with some countries in this area and negotiates with other countries. (Plummer, 2019) and they can also revive discussion with China on the stalled EU China bilateral investment treaty which is a better way to solve the problem in the trade rather than using tariffs to punishing others. (Yukon Huang, 2019)

For other countries, like the countries in the Comprehensive and Progressive Agreement on Trans-Pacific Partnership (CPTPP), they formed the alliance to help them strengthen their effort and they can make some voice in the world. This alliance is becoming bigger and bigger and attract more countries to come in. (Plummer, 2019)

As the neighborhood of the US, Canada is always influenced by US policy, and if they want to have more liberty on the economy, they need to find another partner to counterbalance the US. Canada can seek a positive win-win trade arrangement on a progressive trade agreement with both the US and China. China and Canada have spent lots of time negotiating with a free trade agreement and it is the time to make the agreement now, as it states that Canada would fully exercise its sovereign rights for itself. (Ciuriak, 2018)

Methodology and data

My topic is how the US-China Trade War affects the stock market in China and the US. Based on the literature review, I plan to build and test the relationship between the Stock Index, export and import amount about the two countries with the exchange rate, GDP of the two countries and the transport cost of the goods.

3.1 Discussion and Explanation of Dataset:

In my study, I will focus on how the economic environment affects the stock market. Using some hypotheses to test the relationship. I find that some factors have a connection with the stock market situation. First, I use the S&P 500 index to reflect the US stock market and the SSE Composite Index to show the China stock market. Both are the market index about the companies in the US market and the Chinese market and its fluctuations mirror whether the market is good or bad. Then I collect the GDP of two countries to reflect the performance of the economy. I also use the exchange rate to give information about the change of the international competitiveness and relative economic outlook of the countries. Then, I collect the export and import amount between the two countries to show whether the trade war impairs the trade between the US and China. Finally, I collect the CIF/FOB ratio to show that the proportion of the transport cost with the value of the goods.

To analyze the relationship between the stock market Index and the US-China trade war, I use the S&P 500 index, the SSE Composite Index and the export and import amount between the US and China. These will be the dependent variable. The other factors like GDP, exchange rate and CIF/FOB ratio will be the independent variable. To accurate my test, I will use quarterly data to match the different data. All my data comes from Bloomberg, National Bureau of statistic of China and China Briefing.

3.2 Discussion of Sample:

The data I used to test what factors can affect the stock market is the data from 2009 to 2009 (the dataset is in the appendix) because The GDP of China only has the quarter data and I have to expand my research period to get enough dataset. Then, I am going to establish a multiple regression analysis to test the relationship of the Stock Market Index with the factors that could be measured through linear regression.

3.3 Discussion and Explanation of Your Methodology:

First, I will use the correlation analysis to calculate whether the movement of the US market and China market together or not. Then I will use the multiple regression analysis to test whether the dependent variables (S&P 500, SSE Composite Index and the export and import amount between the US and China) will be affected by the independent variables (GDP, exchange rate and tariff changes).

3.4 Discussion and Explanation of Your Model and Hypotheses:

Model 1: to test the relationship between the US market and China market (correlation test)

$$r_{xy} = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$$

Where:

r_{xy} – the correlation coefficient of the linear relationship between the variables x and y

x_i – the values of the S&P 500 Index in the sample

\bar{x} – the mean of the values of the S&P 500 Index in the sample

y_i – the values of the SSE Composite Index in the sample

\bar{y} – the mean of the values of the SSE Composite Index in the sample

Model 3: to test what factors would affect the stock market

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + e_i$$

Where:

$y = S\&P\ 500\ Index$

$x_1 = GDP\ of\ the\ US$

$x_2 = exchange\ rate$

$x_3 = CIF/FOB\ ratio$

$e_i = Error\ term$

Hypotheses:

All the factors did not have any significant impact on the stock market.

Hypothesis:

The S&P 500 has no relationship with the SSE Composite Index

Model 2: to test what factors would affect the stock market

$$y_1 = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + e_i$$

$$y_2 = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + e_i$$

Where:

$y_1 = \text{export amount to china}$

$y_2 = \text{import amount to china}$

$x_1 = \text{GDP of China}$

$x_2 = \text{GDP of the US}$

$x_3 = \text{exchange rate}$

$x_4 = \text{CIF/FOB ratio}$

$e_i = \text{Error term}$

Hypotheses:

All the factors did not have any significant impact on export and import amount

between China and the US.

Analysis and findings

Based on some professional articles I have mentioned in the literature review part, many experts think there are several reasons that the US-China trade war would happen: first, the trade deficit between the two countries is becoming larger; Second, the US loses its absolute discourse power in the world since China has been stronger than before. Third, the Chinese government's subsidy to the Chinese firms is not fair to the American firms to compete with them. Last, the US government accused China has stolen a large amount of intelligent property. Some experts also hold the view that the US-China trade war may cause the two countries to suffer a big loss in the economy and the stock market of these two countries will become more fluctuated based on the news about the US-China trade war.

4.1 Descriptive analysis of the factors to cause the US-China trade war

Entering the 21st century, the development of China goes fast based on its large labor ability and several generation's research on top cutting-edge technology. Its discourse power in the world becomes larger and larger. On the other hand, the US is losing its absolute power of speech when other economies develop well in previous decades. The largest threat to the US is from China which is the second-largest economy after 2010. Therefore, the US government needs to take some actions to

sanction China and to slow the development of China to maintain its status in the world.

Also, the trade deficit between the US and China become larger and larger. The reason is the cheap labor cost in China can provide a lower price than the similar goods made in the US so that they can get an advantage on the price which may cause difficulties to the firms in the US. To reverse this situation, the US government has to add the tariff on the Chinese goods to compel the Chinese good's price goes up and loses the comparative advantage in price with the US goods.

President Trump also announced that China has stolen a large amount of intellectual property from the US every year. Nowadays, intellectual property is one of the most important and most valuable properties in the world. It can create huge profits from patents. If China steals a large amount of intellectual property from the US, the US government will lose huge profit and the Chinese government can earn the profit from the intellectual property from the US.

4.2 data analysis of the factors will influence on the stock market

This study wants to test whether the US-China trade war has a significant impact on the stock market. Therefore, I used second data about the US and China from 2009 to 2019. All of the data are from Bloomberg or the government website.

The dependent variables are the following: The SSE Composite index reflects the Chinese market performance and the S&P 500 index shows the American market

performance. The bilateral freight flow data (the export amount and import amount between the US and China) shows the size of the trade amount between the two countries, the more bilateral freight means the more trade between them.

The following factors will test whether they have some relationship with the dependent variables: The gross domestic product (GDP) measures real income levels of the US and China. The transaction cost can be determined by the CIF/FOB ratio which is the ratio of import border to export boarder. The exchange rate will affect the transaction cost. If one currency appreciates against another, its transaction cost will be lower than before and vice versa.

The model I will use first is a correlation model to test whether the trend of the US market performance has a relationship with the Chinese market performance

r_{xy}

$$= \frac{\sum(SSE \text{ composite index}_i - \overline{SSE \text{ composite index}})(S\&P \text{ 500 index}_i - \overline{S\&P \text{ 500 index}})}{\sqrt{\sum(SSE \text{ composite index}_i - \overline{SSE \text{ composite index}})^2 \sum(S\&P \text{ 500 index}_i - \overline{S\&P \text{ 500 index}})^2}}$$

Then I will use a multiple regression model to test whether the factors will have some effect on the dependent variables. This model is adapted from the article called "Exchange rate and transport cost sensitivities of bilateral freight flows between the US and China"(Chi, 2016)

$$S\&P \text{ 500 index} = \beta_0 + \beta_1 \text{GDP of the US} + \beta_2 \text{ exchange rate} + e_i$$

Export amount from the US to China

$$= \beta_0 + \beta_1 \text{GDP of the US} + \beta_2 \text{GDP of the China} \\ + \beta_3 \text{ exchange rate} + \beta_4 \text{CIF/FOB ratio} + e_i$$

Import amount from the US to China

$$= \beta_0 + \beta_1 \text{GDP of the US} + \beta_2 \text{GDP of the China} \\ + \beta_3 \text{ exchange rate} + \beta_4 \text{CIF/FOB ratio} + e_i$$

4.2.1 Hypothesis 1

First, I use the daily data of the SSE Composite Index and S&P 500 Index from June 1st, 2018 to November 8th, 2019 to test the null hypothesis: the US stock market and the Chinese stock market will not move together. And the alternative hypothesis is the US stock market and the Chinese stock market will move together. Using Excel Data analysis, we can get the table following:

Output	S&P 500 Index
Input	SSE Composite Index
R Square	0.4132
P-value	5.03E-41
Coefficients	0.4574

Table 1-Regression analysis of two market index

According to figure 1, the data present the P-value of the dataset is 5.03124E-41, which is much smaller than the $\alpha=0.1$, which means the null hypothesis should be rejected and the two markets will move together. And the R Square shows that the two markets have a positive relationship, which means if the US stock market goes up, the Chinese stock market will also go up. The potential reason is that globalization has become more apparent so that one economy may cause obvious significance to another economy. Moreover, the trade war will affect both sides and if the US wants to use some measures to sanction China, it may lose some existing profit to achieve the goals. When they have some negotiation on the US-China trade war, both sides can expand their trade without so many barriers when the trade war lasting.

4.2.2 Hypothesis 2

Then, using the data of US GDP, exchange rate and the S&P500 index to test the second hypothesis. The null hypothesis is the S&P 500 Index does not have a relationship with the GDP and exchange rate and the Excel helps to create the following Chart:

		P-value	Coefficients
Input	GDP of the US	4.56E-11	2.1024
	Exchange rate	0.3065	-158.6394
	CIF/FOB ratio	0.4178	606.364

Output	S&P 500 Index		
R Square	0.8914		

Table 2-Regression analysis of S&P500 Index with GDP, exchange rate and CIF/FOB ratio

Based on figure 2, we can get the result that the P-value of GDP is $4.56E-11$, the P-value of the exchange rate is 0.3065 and the P-value of CIF/FOB ratio is 0.4178, which means that the GDP's P-value rejects the null hypothesis and the exchange rate and the transport cost's P-value does not reject the null hypothesis. Therefore, we can get the conclusion that the GDP will affect the stock market, but the exchange rate and transport cost will not. The R Square of the regression analysis is 0.89 and it means they have a high correlation between US GDP and S&P 500 Index. The GDP represents the real income level of the US people, when the income level goes up, it may stimulate the stock market and many people will invest their money in different fields so that the stock index will also go up.

4.2.3 hypothesis 3

Next, the null hypothesis 3 is the export amount from the US to China does not have any relationship with the Chinese GDP, the US GDP, the exchange rate and the transport cost. The alternative hypothesis is these factors have an impact on the export amount. Then based on the Excel regression analysis, we can get the following results:

		P-value	Coefficients
Input	GDP of China	0.2203	1.3127
	GDP of the US	0.9225	0.2336
	Exchange rate	0.0041	-2176.5936
	CIF/FOB ratio	0.9515	-82.3356
Output	Export amount from the US to China		
R Square	0.4744		

Table 3- Regression analysis of the export amount from the US to China

The chart shows that the P-value of the Chinese GDP, the US GDP, and the transport cost are bigger than 0.1 and they cannot reject the null hypothesis. The exchange rate's P-value is smaller than 0.1 so that it can reject the null hypothesis and support that the exchange rate will affect the export amount from the US to China. The coefficients of the exchange rate are negative and the multiple R is 0.47 which means that when the exchange rate goes up the export amount from the US to China will go down. There is an explanation to account for it: when the exchange rate goes up which means the US dollar appreciates compared with the Chinese Yuan, and Chinese people do not have enough consumption power than before so that the export amount to China will decrease.

Also, there is a similar hypothesis to the previous one. The null hypothesis is the import

amount from China to the US does not have any relationship with the Chinese GDP, the US GDP, and the transport cost. The alternative hypothesis is these factors have an impact on the import amount from China to the US. Excel helps us to get the following figures.

		P-value	Coefficients
Input	GDP of China	0.8542	0.6752
	GDP of the US	0.0629	15.8366
	Exchange rate	0.0153	-6258.5200
	CIF/FOB ratio	0.5063	7622.3793
Output	import amount from the US to China		
R Square	0.6454		

Table 4-Regression analysis of the import amount from China to the US

The figure gives the P-value of the Chinese GDP and the transport cost is bigger than 0.1 which means the two factors will not have a relationship with the import amount from China to the US. However, the US GDP and the exchange rate will reject the null hypothesis because their P-value is smaller than 0.1. Based on the coefficients, there is a conclusion that the US GDP has a positive relationship with import amount from the US to China and the exchange rate will have a negative relationship with it.

The reason may be that the US represents the real income of the US people and when the US GDP goes up, their real income level will also go up which can help them to import more goods from other countries. The exchange rate has an abnormal impact on the import amount, the possible reason is that there are some other factors influence the import amount that the effect of the exchange rate will be covered.

4.2.4 analysis on the impact of tariff

In the analysis of hypothesis 3, the data shows that the CIF/FOB ratio does not have a relationship with the export amount.

Based on the data from Pile charts and Yahoo Finance, the S&P 500 Index has some relationship with tariff. When the tariff is added from July to November in 2018 and from July to September in 2019, the S&P 500 index also decreased during this period.

US-China Trade War Tariffs: An Up-to-Date Chart

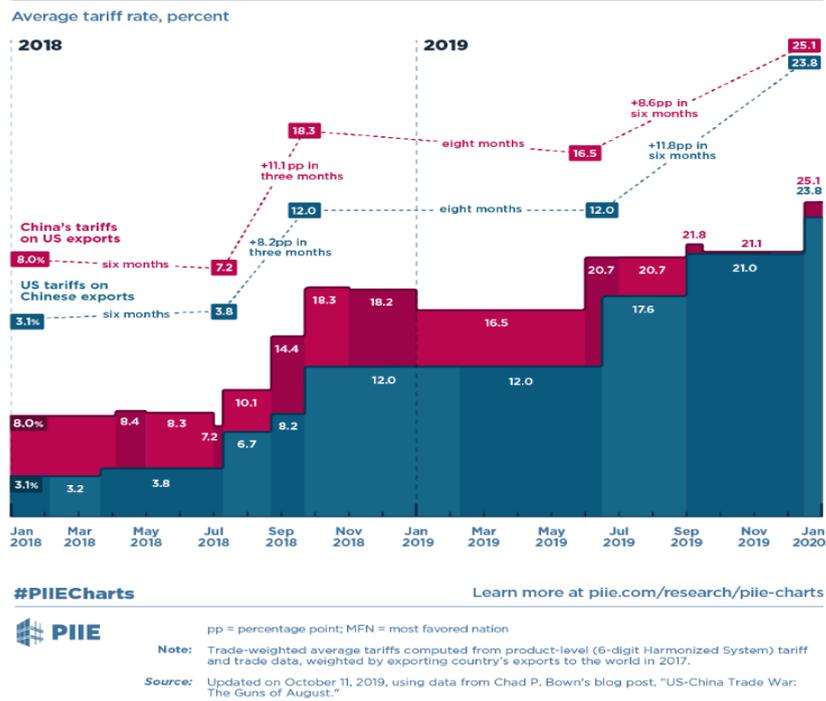


Figure 1: Tariff change

source: pile charts



Figure 2: S&p500 Index change

Source: Yahoo Finance

The following figures represent that if CIF/FOB ratio is the only independent variable on the import amount and the S&P 500 Index. The data shows that the P-value of the ratio is less than 0.1 and the ratio has a negative relationship with the

import amount from China to the US and S&P 500 Index.

Output	S&P 500 Index
Input	CIF/FOB ratio
R Square	0.3255
P-value	0.0003
Coefficients	-37824.3157

Table 5- Relationship between the S&P 500 Index and CIF/FOB ratio without other factors

Output	Import amount from China to the US
Input	CIF/FOB ratio
R Square	0.4626
P-value	5.0456E-6
Coefficients	-5480.1614

Table 6- Relationship between the import amount from China to the US and CIF/FOB ratio without other factors

Therefore, although the transport cost has a negative impact on the stock market and the import amount from China to the US, the effect will be covered by other factors like the GDP of the US.

4.3 Descriptive analysis of the measures that the countries should take

The effect of the US-China trade war is not only in the US and China, but it also causes a huge impact worldwide. Most countries in the world need to take some action to protect themselves.

First, some countries do not have enough power to make more profits for themselves. They can form a coalition and become a force to be reckoned with in the world. Like the countries in the Comprehensive and Progressive Agreement on Trans-Pacific Partnership (CPTPP), they formed the alliance to help them strengthen their effort and they can make some voice in the world.

Second, some dominate parts in the world such as the US, China, and EU, they need to find other partners to trade and distribute their trade amount into different countries so that if they have a bad relationship with one country, they will not lose a large amount of profit from it.

Third, China and the United States need to make concessions to each other in exchange for a smooth negotiation, because to maintain their status as major powers in the world, they can only gain by enhancing their own power, not by sanctioning other countries.

Conclusion

This study helps us to explore the reasons why the US-China trade war would happen. From this study, we can get the conclusion that the US wants to maintain its

status in the world and to reverse the situation that the trade deficit is becoming larger. Also, they are angry that China has stolen a large amount of intellectual property from their country. The countries in the world also need to create a union to protect themselves and to reduce the risk of the US-China trade war. They also need to find different patterns to diversify their trade.

The key contribution of this study is to examine whether different factors will have some effects on the stock market performance and the bilateral trade volume between the US and China. Based on the result we got from the dataset, we can get the following conclusions: (1) The US stock market performance will move together in one direction with the Chinese stock market performance. (2) The GDP of the US is the dominant factor that will affect the US stock market performance. (3) The exchange rate is the only factor that will influence the export amount from the US to China. (4) The import amount from China to the US is depended on the GDP of the US and the exchange rate. (5) The transport cost has an impact on the stock market and bilateral trade volume, but the impact will be covered by other factors such as the GDP of the US.

There are some limitations to this study. First, the GDP of China only has the quarter data so that I need to use other data in the quarter to match it and I need to use 10 years period to get more than 30 observations. The time before 2018 may do not have a significant relationship with the trade war which may cause the conclusion to have some differences. Second, some factors' effect may be weakened because they happened in one day and its impact in a quarter may not obvious than its impact in

one day.

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SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.803337486							
R Square	0.645351116							
Adjusted R Square	0.59958997							
Standard Error	2793.445797							
Observations	36							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	4	440189479.9	110047370	14.10259942	1.15714E-06			
Residual	31	241903522	7803339.42					
Total	35	682093001.9						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	423.9601433	27822.82806	0.015237852	0.987940072	-56321.0718	57168.99208	-56321.0718	57168.99208
GDP of China	0.675230391	3.644500817	0.185273766	0.854221209	-6.75777803	8.108238812	-6.75777803	8.108238812
GDP of the US	15.83664668	8.208607592	1.929273206	0.062894464	-0.904918878	32.57821224	-0.904918878	32.57821224
exchange rate	-6258.51998	2436.979615	-2.568146218	0.015265191	-11228.77267	-1288.267288	-11228.77267	-1288.267288
CIF/FOB ratio	7622.379297	11336.42531	0.67237944	0.50632326	-15498.41255	30743.17114	-15498.41255	30743.17114

Table 5

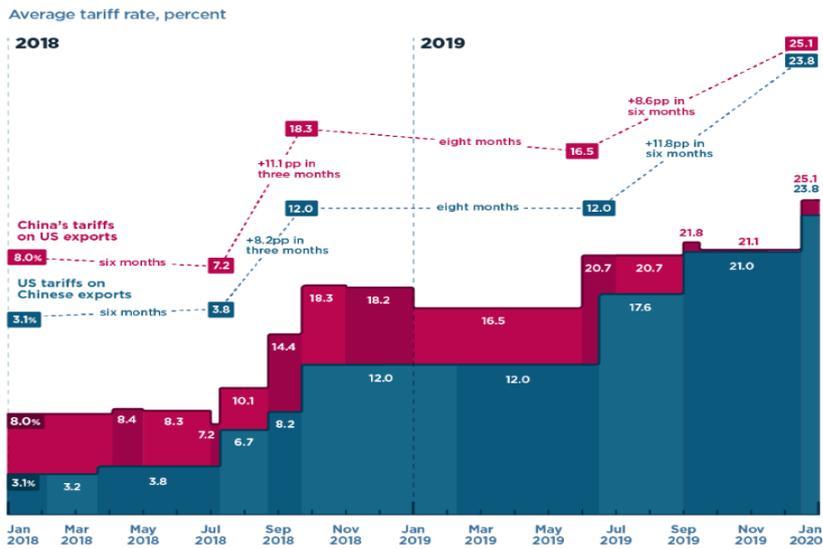
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.570563317							
R Square	0.325542499							
Adjusted R Square	0.305705514							
Standard Error	3678.405751							
Observations	36							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	222050260.4	222050260.4	16.41088571	0.000279684			
Residual	34	460042741.5	13530668.87					
Total	35	682093001.9						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	83638.72214	11125.12195	7.518004973	9.97099E-09	61029.75414	106247.6901	61029.75414	106247.6901
CIF/FOB ratio	-37824.31565	9336.950765	-4.05103514	0.000279684	-56799.28258	-18849.34873	-56799.28258	-18849.34873

Table 6

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.680119672							
R Square	0.462562768							
Adjusted R Square	0.446755791							
Standard Error	399.1048382							
Observations	36							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	4661179.479	4661179.479	29.26320169	5.04558E-06			
Residual	34	5415678.843	159284.6719					
Total	35	10076858.32						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	8486.407388	1207.069121	7.030589419	4.08748E-08	6033.347795	10939.46698	6033.347795	10939.46698
CIF/FOB ratio	-5480.161391	1013.05361	-5.409547273	5.04558E-06	-7538.934027	-3421.388755	-7538.934027	-3421.388755

Figure 1

US-China Trade War Tariffs: An Up-to-Date Chart



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pp = percentage point; MFN = most favored nation

Note: Trade-weighted average tariffs computed from product-level (6-digit Harmonized System) tariff and trade data, weighted by exporting country's exports to the world in 2017.

Source: Updated on October 11, 2019, using data from Chad P. Bown's blog post, "US-China Trade War: The Guns of August."

Figure 2

