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The Sino-US Trade Dispute and Its Impacts on the Global Supply Chain

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for the Bachelor of Science in Finance

by

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Abstract

The Sino-US trade war is a hot problem nowadays. The trade war has lots of negative things for people and government, such as increasing the prices of imports and costs of international companies, the dynamic market, and the structural change of the global supply chain. This paper is aimed at helping readers to understand this trade war and to foresee the dynamically global market. This paper explains the reasons why the trade war breaks out and its impacts on the global supply chain. The change in the supply chain of smartphones is regarded as an example to infer the change of structures for the global supply chain. We will use the Ricardo-Viner model to help us analyze whether companies related to the supply chain of smartphones will gain benefits or suffer loss because of influences of trade war. Finally, we conclude that the Sino-US trade has big negative impacts on the global supply chain. It will cause a huge structural change in the global supply chain. Consumers and companies may also bear the cost of this trade war.

Keywords: Trade war, Trade deficit, Import tariff, Allocative efficiency, Globalization, Supply chain, Supply chain of smartphones

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I. Introduction

a. Introduction

The Sino-US trade war has been sharp now. On March 22, 2018, Present Donald Trump imposed tariffs on 50 billion worth of Chinese goods and claimed that it was a response to the unfair trade practices of China in a few years. And then, the US also suffered equal retaliation from China. So the Sino-US trade war broke out. The United States Trade Representative continuously imposed tariffs on different numbers of and kinds of Chinese goods. These behaviors also suffered equal retaliation from the Ministry of Commerce of the People's Republic of China.

The direct reason for this trade dispute is the trade deficit between China and the US. The data from the U.S. Census Bureau shows that the U.S. trade in goods with China in 2018 is $-419,527.4 million. What's more, due to the fast development of China high technology industries and the implication of *Made in China 2025* policy, China has shown a tendency of competing with western countries in high technology industries (*Liu, 2018*). The US government tries to implement some sanctions on China's high technology industries to stop its development, such as restrictions on Huawei and DJI. Because of the increase in import tariffs, most supply chains in China have been also affected, such as the supply chain of mobile phones. We will give the example of Apple Inc. to analyze how the trade war affect the supply chain.

Besides, this article also tries to help readers to know the risks of globalization and to predict the variable market. The companies' major business will be analyzed to find the relationships between trade war and companies. Trade war will increase the cost of global companies and change managers' decisions about where the manufactory should locate. Trade war has negative effects on the global supply chain because it increases lots of costs and risks of uncertainty. However, some US local corporations will also benefit from the trade war because these companies are not affected by the tariff, such as Intel, Qorvo, and Flex. These companies can easier seize more market shares from their Asia competitors.

Because of the policies of the US government, lots of companies may decide to build manufactories in other Asia countries, such as the Philippines. China will also try to implement better policies to attract investors and to support local companies. So, the whole global supply chain will change and the market will be more dynamic. In this paper, we will try to infer the trends of change for the supply chain and global market by analyzing the supply chain of mobile phones.

This paper includes three parts. First, the reasons and impacts of the Sino-US trade war. Second, due to globalization and nation's protectionism behaviors, this article explains how the supply chain of mobile phones is affected. Third, the forecasts for impacts on the related companies in the supply chain of smartphones and consumers' responses. The structural change in the global supply chain will also be discussed in this part.

Finally, this paper will conclude how the supply chain of smartphones is affected by the

trade war. It will help to analyze the trends of the global market, to predict the uncertainty of the global supply chain, and to decrease the risk of investment market.

b. Thesis statement

This paper will talk about the reasons for the Sino-US trade war and its impacts on the global supply chain. This paper is aimed at helping readers to know the risks of globalization under the trade war and to predict the variable market.

The hypothesis is the Sino-US trade war has negative impacts on the whole supply chain of mobile phones.

II. Literature Review

After Present Donald Trump decided to increase the tariffs on $50 billion worth of Chinese goods in March 22, 2018, trade war became a hot topic. Trade war is an economic war between countries (*Bhuimali & Chakraborty, 2018*). It is not same as the traditional war. Trade war uses economic weapons such as Tariffs, Quotas, Anti-dumping orders, and many other trade barriers rather than military forces. Both Bhuimali and Chakraborty think that the reasons of this trade war are the nation's financial interests and protectionist behaviors. The country, which launching trade war firstly, may want to protect domestic industries but it also will lead to suffer retaliation from other countries. Some examples have improved that trade war causes some damages for employment and domestic products.

In the last few years, the US trade deficit with China has been the largest in the world.

Present Donald Trump thinks this is a bad sign for the US economy. Therefore, he launched a trade war with China in 2018. Trade deficit is imbalanced of trade where the value of imports is higher than exports (*Ezeonu, 2018*). Some economists think trade deficit is good for economy and employment. Obviously, political analysts have different opinions about trade deficit. In this Sino-US trade war, a large trade deficit is the direct reason why Donald Trump wants to launch this war and increasing the import tariff is the major instrument. An import tariff is the tax imposed on import goods. Usually, there are two counteracting effects for increasing import tariffs without retaliation. One is that consumers will pay a higher price for import goods. Another is that the country can use less value of export to gain a given value of import, which is the effect of terms of trade (*Lechthaler & Mileva, 2018*). However, the country often suffers the equal retaliation from its trade partners, such as the Sino-US trade war. There would be no winner in this situation because both import prices increase.

Some people also think President Trump's tariffs target is the items in *Made in China 2025*. Made in China 2025 is the first industry policy to facilitate the development of industries. Liu thinks this policy shows China is interested in grabbing the global market share in high technology industries dominated by western countries (*Liu, 2018*). This is a key step if China wants to develop its high-tech industries and to compete with western countries. So, the US government also tries to stop the development of China's high technique industries by launching a trade war. However, a paper shows that both the US and China will lose in the trade war but the welfare loss is small for China and large for America (*Guo et al., 2018*). Some countries which are not related to this

trade may also benefit from this.

Welfare loss is very important that the government cannot ignore. To consider welfare loss, allocative efficiency is a keyword. Allocative efficiency means that resources are used for producing the most necessary combination of goods and services for society. However, the greater protectionism will cause the worse of allocative efficiency in the US, and then it will lead to the loss of welfare. As for China, the loss of welfare caused by the loss of terms of trade (*Carvalho, Azevedo & Massuquetti, 2019*). The change of allocative efficiency not only does change society welfare, but also leads to the changes in manufacture industry and the supply chain of products.

So, how will the manufacture industry change under the trade war? To discuss this, we also need to consider globalization. After the collapse of the Bretton Woods System, the Dollar Standard System and the floating exchange rate system become the major characters of the international financial regime. These two systems lead to reorganizations of the global manufacturing and liberalization of the financial sectors (*Li, 2019*). So the manufacturing industry has become international. The whole process of producing and selling a product will be separated into different segments which will be allocated to companies in various countries by comparing their competitive advantages. It will facilitate to assemble and sell the final good at the lowest cost and highest quality (Osgood*, 2018*). This is also another example of the supply chain under globalization. However, increasing tariffs in trade war will hurt these global supply chains.

The Ricardo-Viner model's interpretation of trade politics holds that it is good for trade if industries are export competing and it is bad for trade if industries are import competing (*Pencea,*

2019). If we want to analyze the supply chain of smartphones in Sino-US trade war, this model will help to analyze if companies will gain benefits or suffer loss. And then we can predict how the supply chain of smartphones will change in the future because of the effects of the Sino-US trade war. Besides the Ricardo-Viner model, Yoonsun, Oh and Jungsuk, Oh also claim that smartphones manufacturers are the most strongly influenced by critical incidents in the supply chain of mobile phones (*Oh & Oh, 2017*). This also means that consumers are so sensitive to the changes in prices. What's more, increasing tariffs on Chinese goods will lead to an increase in the cost of US international companies and commodity prices because the strong influences of Chinese goods in America are so strong. Therefore, consumers and international companies need to pay extra money for the cost of trade war. And the retaliation from China also causes huge negative effects on related industries, such as farming and animal husbandry. Obviously, nobody is willing to pay more money for the cost of the trade war.

These findings we mentioned show some reasons why the Sino-US trade war broke up. These also show some predictions about how the companies may change because of the effects of the trade war. Nevertheless, analyzing the specific examples of the supply chain about mobile phone and market trends of related companies is still important, which helps to decrease the risks of investment for investors. What's more, knowing consumers' responses to the possibility of increasing prices can help companies to make their strategic decisions.

III. Methodology

4.1 Research Design

This study will use the explanatory research design to better explain the reasons of the Sino-US trade dispute and how it affects the global supply chain. We also try to the new field of the supply chain of smartphones. The explanatory research design can be easier to facilitate our research model and to explain all aspects of the study, such as the structural changes in the supply chain, the behaviors of consumers, and the decisions of related corporations' managers.

4.2 Study Design

4.2a Data

The data will be collected from Bloomberg and the U.S. Census Bureau. All data we used in this survey is secondary data and publicly available data.

The data of the U.S. trade in goods with China in 2016, 2017, 2018, and 2019 will be collected from the U.S. Census Bureau. Import, export and trade deficit will be analyzed and compared. To predict consumers' responses to and the impacts of the trade war, the employment rate and CPI may also be collected from the U.S. Census Bureau.

Apple's some special fluctuation in equities may be selected from Bloomberg because of this Sino-US trade dispute. The changes of stock price will be a data we need. These data will better help us to infer and prove our predictions. Besides, we will also collect the equities changes of Foxconn and Inventec to analyze the effect of trade war on smartphones industry by

using event study.

More information about companies will be collected from the Internet and quarterly reports of corporations. Their manager decisions and strategic plans will be consider as an important index to predict the trends of the global market.

Table I and Table II come from the U.S. Census Bureau and Table III comes from the Bureau of Labor Statistics. Table IV comes from www. cpiinflationcalculator.com.

Table 1

US trade in goods with China in 2019			
Month	**Exports**	**Imports**	**Trade deficit**
Jan-19	7,134.30	41,603.80	-34,469.50
Feb-19	8,433.60	33,194.40	-24,760.80
Mar-19	10,426.50	31,175.70	-20,749.10
Apr-19	7,896.30	34,798.90	-26,902.60
May-19	9,074.50	39,269.10	-30,194.60
Jun-19	9,034.70	39,002.30	-29,967.60
Jul-19	8,733.70	41,508.70	-32,775.00
Aug-19	9,430.60	41,187.30	-31,756.60
TOTAL 2019	**70,164.30**	**301,740.30**	**-231,576.00**

Table 2

US trade in goods with China in 2018			
Month	**Exports**	**Imports**	**Trade deficit**
Jan-18	9,902.60	45,765.60	-35,863.10
Feb-18	9,759.90	39,020.60	-29,260.70
Mar-18	12,652.10	38,327.60	-25,675.50
Apr-18	10,503.80	38,303.90	-27,800.10

May-18	10,428.20	43,965.70	-33,537.50
Jun-18	10,860.10	44,612.10	-33,752.00
Jul-18	10,134.60	47,120.60	-36,986.00
Aug-18	9,285.90	47,869.20	-38,583.30
Sep-18	9,730.00	50,015.00	-40,285.00
Oct-18	9,139.90	52,202.30	-43,062.50
Nov-18	8,606.20	46,500.80	-37,894.60
Dec-18	9,144.90	45,972.10	-36,827.20
TOTAL 2018	**120,148.10**	**539,675.60**	**-419,527.40**

Table 3

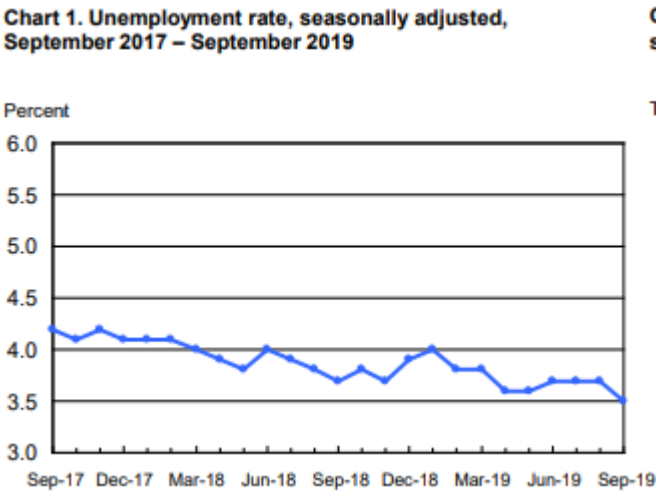
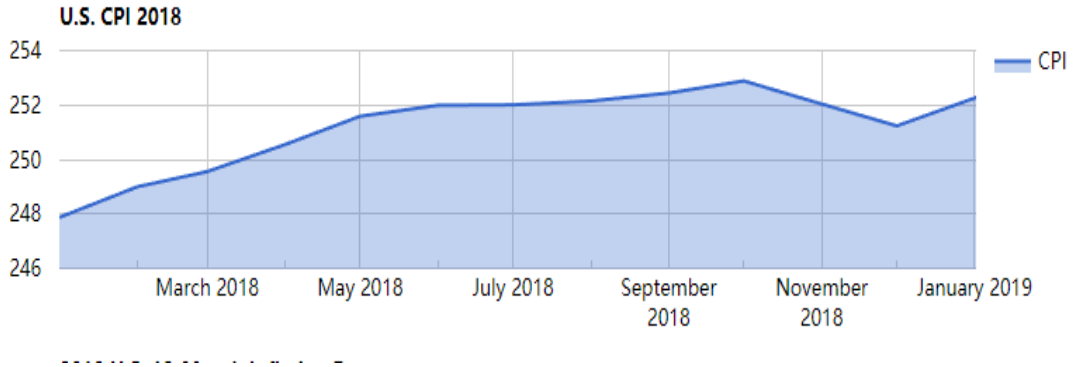


Table 4



4.2b Selecting Data

The trade deficit between the US and China will also be considered to find the impacts of increasing tariffs.

Trade deficit = Export – Import

Event study:

Abnormal return=Observed return – Expected return

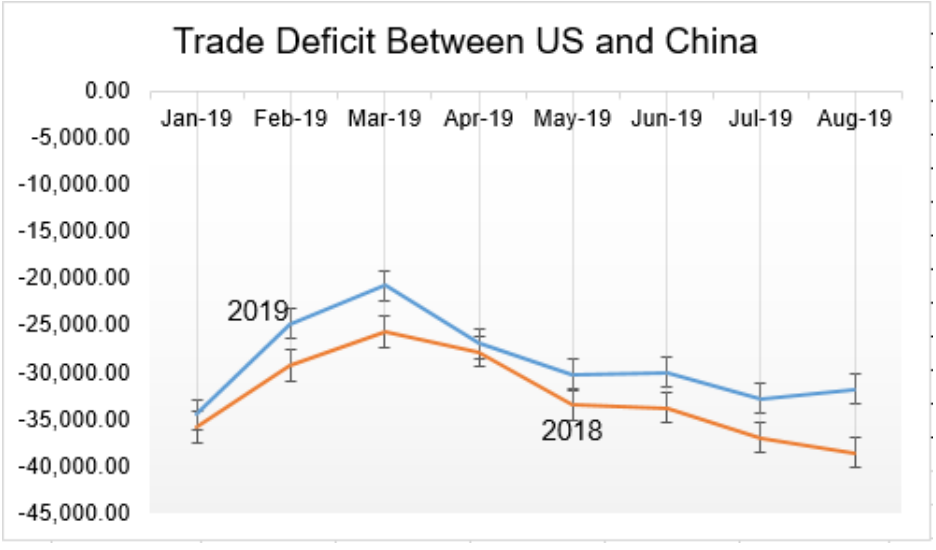
Cumulative abnormal return is the sum of abnormal return

We will use the Ricardo-Viner model to predict if the related companies in the smartphone industries will gain or loss. Regarding the IPhone as an example, its components' cost of IPhone will be considered. Once the taxes increased or the supply chain changed, we can make predictions about the final goods' prices and consumers' responses.

4.2c Analyzing Data

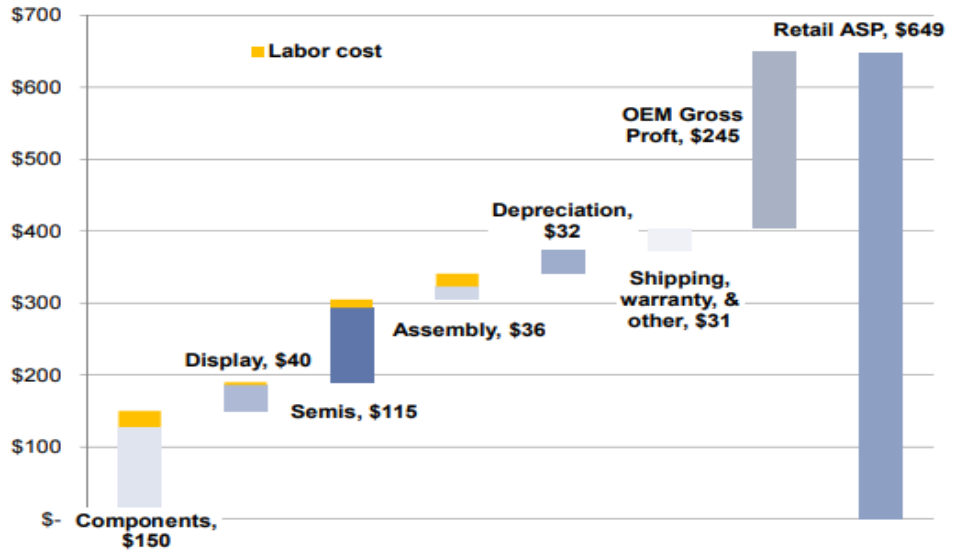
A line chart will show how the trade deficit decreases from 2018 to 2019.

Table 5



In order to study the supply of smartphones, we will collect some information of IPhone from Internet. Table 6 is the components' cost of IPhone. Table 7 is the overview of global companies tied to the smartphone supply chain. Table 8 the the overview of Apple company's stock change in recent two years.

Table 6



Source: Company data, Goldman Sachs Global Investment Research

Table 7

iPhone parts	Production Location	Supplier origin	Company
Case	China	Taiwanese, American	Hon Hai, Catcher, Jabil
Display	Korea, Japan	Korean, Japanese	LGD, JDI, Sharp, Samsung
Controller	Taiwan	American	Apple, Qualcomm
Camera	Korea, Japan, Taiwan	Taiwanese, Korean, Japanese	LG Innotek, Sony, Alps, Largan, Genius
Memory - DRAM	Korea, USA, Japan, Taiwan, China	Korean, American	Samsung, Hynix, Micron (Inotera, Elpida)
Memory - NAND	Korea, USA, Japan, Singapore, China	Korean, American, Japanese	Samsung, Hynix, Micron, Toshiba, WD, Intel
Cellular	Taiwan	American	Qualcomm, Intel
SENSOR	Taiwan, Europe	American	Invensense, STMicro, etc..
PCB	China	Taiwanese	ZDT, Flexium
Communication	Taiwan	American	Broadcom
Small Components	China	Taiwanese	Hon Hai
Connector	China	Taiwanese	Hon Hai, Luxshare, Bizlink
Audio	China	Chinese	AAC, Goertek
Antenna	China	American, Taiwanese	Amphenol, Molex, Luxshare
Motor	China, Japan	Chinese, Japanese	AAC, Nidec
Assembly	China	Taiwanese	Hon Hai, Pegatron, Wistron

Source: Goldman Sachs Global Investment Research

Table 8

Table 9

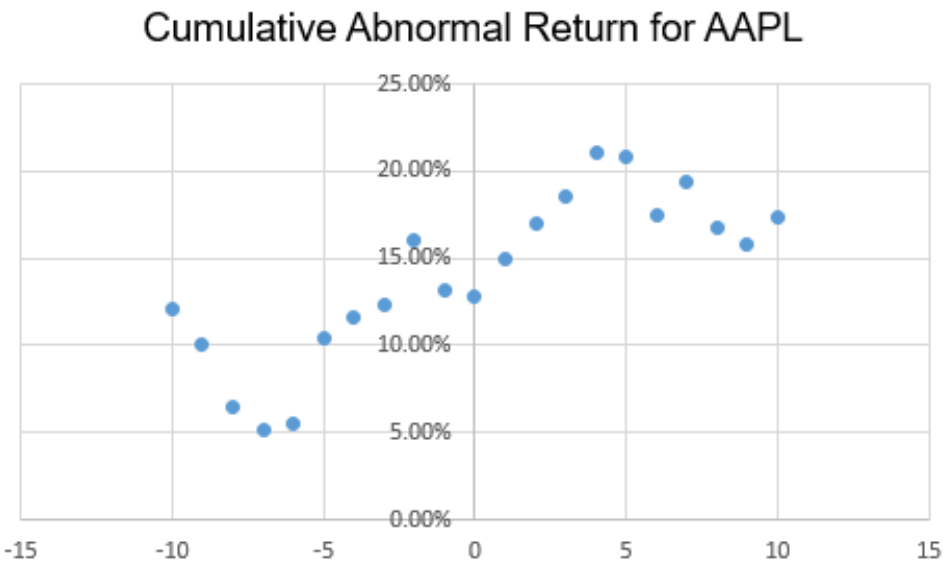


Table 10

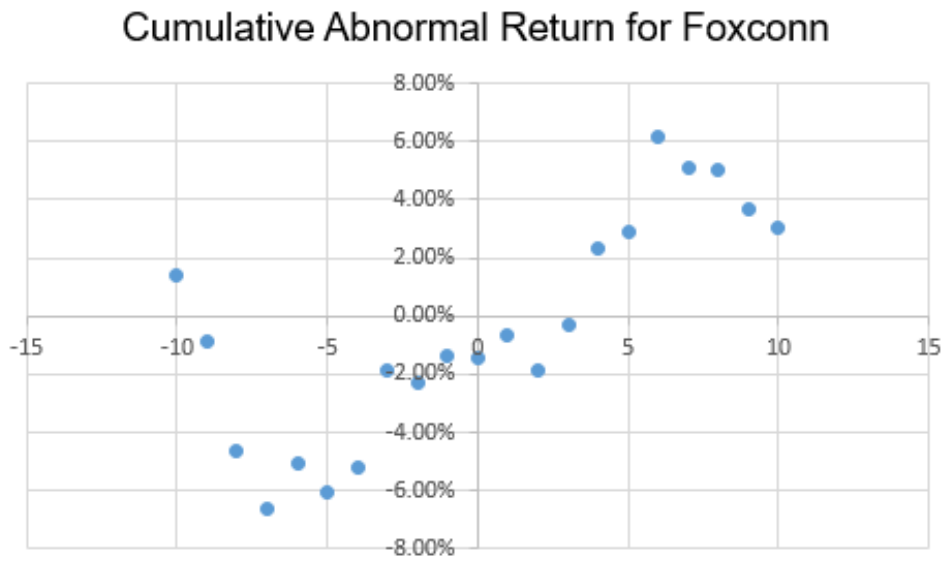


Table 11

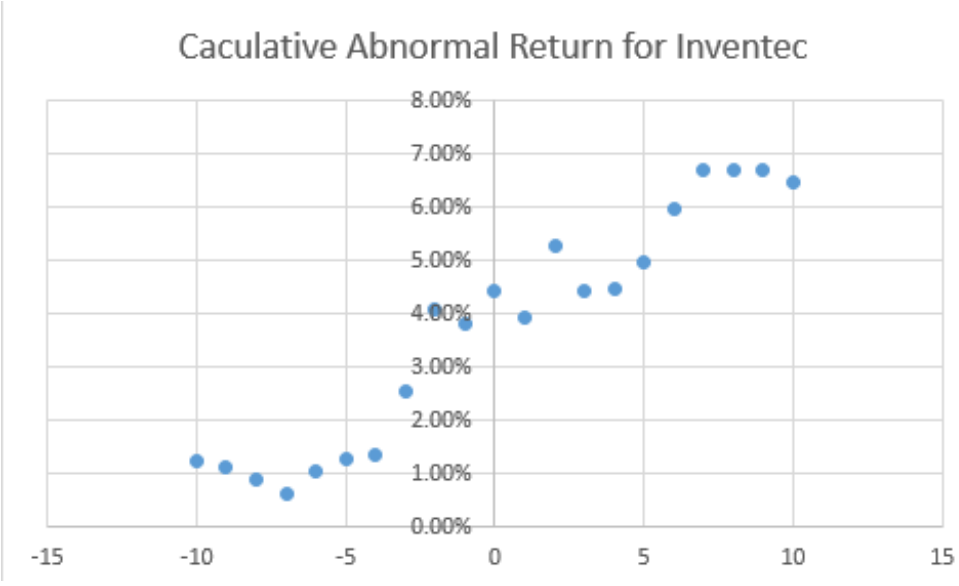


Table 12 a

Caculative Abnormal Return for Inventec				
Fake Time	CAR 1	CAR 2	CAR 3	Sum
10	1.61%	14.53%	1.17%	17.32%
9	-0.03%	15.09%	0.73%	15.79%
8	-0.65%	16.35%	1.09%	16.79%
7	0.54%	16.75%	2.10%	19.39%
6	-1.31%	16.35%	2.48%	17.52%
5	3.36%	15.27%	2.24%	20.86%
4	3.49%	16.06%	1.57%	21.12%
3	2.46%	15.20%	0.84%	18.50%
2	2.52%	15.39%	-0.85%	17.06%
1	0.71%	14.71%	-0.41%	15.01%
0	-1.60%	14.54%	-0.09%	12.85%
-1	-1.05%	13.79%	0.38%	13.12%
-2	1.99%	13.85%	0.25%	16.09%
-3	-2.19%	14.10%	0.47%	12.37%
-4	-1.89%	13.54%	-0.06%	11.58%
-5	-0.64%	10.80%	0.29%	10.45%
-6	-2.80%	8.64%	-0.31%	5.54%
-7	-3.78%	8.75%	0.16%	5.13%
-8	-5.62%	11.17%	0.89%	6.44%
-9	-0.34%	10.27%	0.07%	10.00%
-10	1.83%	9.14%	1.09%	12.06%

Table 12b

Caculative Abnormal Return for Inventec			
Fake Time	CAR 1	CAR 2	SUM
10	-0.11%	3.15%	3.04%
9	-0.18%	3.86%	3.69%
8	1.34%	3.66%	5.00%
7	0.48%	4.62%	5.10%
6	2.91%	3.25%	6.15%
5	1.42%	1.45%	2.88%
4	1.20%	1.12%	2.32%
3	-0.30%	-0.02%	-0.32%
2	-0.53%	-1.31%	-1.84%

1	0.21%	-0.85%	-0.63%
0	-2.13%	0.67%	-1.46%
-1	-2.35%	1.00%	-1.35%
-2	-2.42%	0.13%	-2.29%
-3	-1.51%	-0.34%	-1.85%
-4	-2.71%	-2.47%	-5.18%
-5	-4.44%	-1.59%	-6.02%
-6	-3.51%	-1.53%	-5.04%
-7	-4.07%	-2.55%	-6.62%
-8	-2.82%	-1.81%	-4.64%
-9	0.73%	-1.62%	-0.88%
-10	1.76%	-0.36%	1.40%

Table 12c

Caculative Abnormal Return for Inventec			
Fake Time	CAR 1	CAR 2	SUM
10	5.43%	7.50%	6.47%
9	5.87%	7.53%	6.70%
8	6.31%	7.14%	6.72%
7	5.89%	7.56%	6.72%
6	4.36%	7.58%	5.97%
5	2.58%	7.40%	4.99%
4	2.14%	6.81%	4.48%
3	4.56%	4.32%	4.44%
2	4.79%	5.79%	5.29%
1	4.14%	3.70%	3.92%
0	3.93%	4.97%	4.45%
-1	4.16%	3.51%	3.84%
-2	4.83%	3.32%	4.08%
-3	2.61%	2.49%	2.55%
-4	1.03%	1.65%	1.34%
-5	1.27%	1.24%	1.26%
-6	0.84%	1.27%	1.05%
-7	1.30%	-0.02%	0.64%
-8	1.54%	0.22%	0.88%
-9	1.32%	0.89%	1.10%
-10	1.10%	1.34%	1.22%

Table 12d

Date	Price	Open	High	Low	Vol.	Change %	Fake time	Expected return	Abnormal return	Cumulative abnormal return
5-Sep-19	213.28	212	213.97	211.51	23.95M	1.96%	14	0.06%	1.90%	3.26%
4-Sep-19	209.19	208.39	209.48	207.32	19.22M	1.70%	13	0.06%	1.64%	1.36%
3-Sep-19	205.7	206.43	206.98	204.22	20.06M	-1.46%	12	0.06%	-1.52%	-0.28%
30-Aug-19	208.74	210.16	210.45	207.2	21.16M	-0.13%	11	0.06%	-0.19%	1.23%
29-Aug-19	209.01	208.5	209.32	206.66	21.01M	1.69%	10	0.06%	1.63%	1.42%
28-Aug-19	205.53	204.1	205.72	203.32	15.96M	0.67%	9	0.06%	0.61%	-0.21%
27-Aug-19	204.16	207.86	208.55	203.53	25.90M	-1.13%	8	0.06%	-1.19%	-0.83%
26-Aug-19	206.49	205.86	207.19	205.06	26.07M	1.90%	7	0.06%	1.84%	0.36%
23-Aug-19	202.64	209.43	212.05	201	46.88M	-4.62%	6	0.06%	-4.68%	-1.48%
22-Aug-19	212.46	213.19	214.44	210.75	22.27M	-0.08%	5	0.06%	-0.14%	3.20%
21-Aug-19	212.64	212.99	213.65	211.6	21.56M	1.08%	4	0.06%	1.02%	3.33%
20-Aug-19	210.36	210.88	213.35	210.32	26.92M	0.00%	3	0.06%	-0.06%	2.31%
19-Aug-19	210.35	210.62	212.73	210.03	24.43M	1.86%	2	0.06%	1.80%	2.37%
16-Aug-19	206.5	204.28	207.16	203.84	28.81M	2.36%	1	0.06%	2.30%	0.56%
15-Aug-19	201.74	203.46	205.14	199.67	27.88M	-0.50%	0	0.06%	-0.56%	-1.74%
14-Aug-19	202.75	203.16	206.44	202.59	36.55M	-2.98%	-1	0.06%	-3.04%	-1.18%
13-Aug-19	208.97	201.02	212.14	200.83	47.54M	4.23%	-2	0.06%	4.17%	1.85%
12-Aug-19	200.48	199.62	202.05	199.15	22.48M	-0.25%	-3	0.06%	-0.31%	-2.32%
9-Aug-19	200.99	201.3	202.76	199.29	24.62M	-1.20%	-4	0.06%	-1.26%	-2.01%
8-Aug-19	203.43	200.2	203.53	199.39	27.01M	2.21%	-5	0.06%	2.15%	-0.76%
7-Aug-19	199.04	195.41	199.56	193.82	33.36M	1.04%	-6	0.06%	0.98%	-2.91%
6-Aug-19	197	196.31	198.07	194.04	35.82M	1.89%	-7	0.06%	1.83%	-3.89%
5-Aug-19	193.34	197.99	198.65	192.58	52.39M	-5.23%	-8	0.06%	-5.29%	-5.73%
2-Aug-19	204.02	205.53	206.43	201.63	40.86M	-2.12%	-9	0.06%	-2.18%	-0.44%
1-Aug-19	208.43	213.9	218.03	206.74	54.02M	-2.16%	-10	0.06%	-2.22%	1.74%
31-Jul-19	213.04	216.42	221.37	211.3	69.28M	2.04%	-11	0.06%	1.98%	3.95%
30-Jul-19	208.78	208.76	210.16	207.31	33.94M	-0.43%	-12	0.06%	-0.49%	1.97%
29-Jul-19	209.68	208.46	210.64	208.44	21.67M	0.93%	-13	0.06%	0.87%	2.46%
26-Jul-19	207.74	207.48	209.73	207.14	17.62M	0.35%	-14	0.06%	0.29%	1.58%

Table 9 is the chart of Cumulative abnormal return for AAPL. I used three periods of stock, and each period is 21 days. The news announcement day is zero, May 29, 2018, August 15, 2019, and Nov. 7, 2019. The data of equities changes from March 1, 2018 to Dec. 1, 2019 is download from the website of *www.investing.com*. Then the expected return is equal the average of stock changes between the day before zero day and March 1, 2018. We get the abnormal return and cumulative abnormal return for AAPL. We can see that from Table 9, the news about trade war will affect Apple companies' stock.

Table 10 & 11 are the charts of Cumulative abnormal return (CAR) for Foxconn and Inventec. I used two periods of stock changes to calculate its CAR. Each period is 21 days. The news announcement day is zero, August 15, 2019 and May 29, 2018. The data of equities

changes from March 1, 2018 to Dec. 1, 2019 is download from the website of *www.investing.com*. Then the expected return is equal the average of stock changes between the day before zero day and March 1, 2018. We get the abnormal return and cumulative abnormal return for Foxconn and Inventec. We can see that from Table 10&11, the news about Sino-US trade war is obviously affect the Foxconn's and Inventec's equities.

Table 12a, 12b, and 12c are the part of CAR data we calculated. In the calculation, we used about two-years period of data to calculate its expected return. All Abnormal Return and Calculative Abnormal Return data we get based on more than 60 days data. Due to the frequency of news of Sino-US trade war and the effects of other information or events, we only use 21days in our chart to analyze. Table 12d is the process of calculating the APPL's CAR for the period of August 15, 2019.

IV. Findings

From previous analyzing and observations, there are some conclusions. Firstly, the increasing tariff and this trade war are effective for decreasing the trade deficit between the US and China for Present Donald Trump. This paper compared trade deficit from January to August in 2018 and 2019 in Table 1 and Table 2, we can easily find that the trade deficit is smaller and smaller. However, in the previous year, the trade deficit continuously increased from 2016 to 2018. In this period of Sino-US trade war, tax can help to decrease the trade deficit between US and China. However, with the cold of the Sino-US trade dispute nowadays, the trade deficit may also change back. This is also the reason why present Trump wants to ask the US companies' manufactories back.

Secondly, from the news, information, and the charts of Cumulative abnormal return (CAR), we can infer that the Sino-US trade dispute has huge effects on companies related to smartphone industry, such as Apple, Foxconn, and Inventec. By using Ricardo-Viner model, we can know that there is negative effects on Apple, Foxconn, and Inventec. However, some global corporations may also benefits from increased tariffs, such as Inter, Qurvo, and Flex. These companies' products or services will facilitate to decrease the cost of increasing tariff. What's more, competitors in other countries may also benefits from this trade dispute because there are negative effects on the smartphones companies in both countries. Increasing the competitors' competitive advantages and market shares are not good.

Thirdly, Sino-US trade dispute will affect the global supply chain. The structure of the supply chain in the world may change because of corporations' decisions. We can consider Table 6 and Table 7. In the supply chain of smartphones, if Apple wants to decrease the taxes and costs of goods made in China, their managers may want to move their manufactories to India or the Philippines. So, Foxconn and Inventec may also make the same decisions to get the commercial orders from Apple. And other small companies in this supply chain may also change and follow. So, the whole supply chain of smartphones may also change. This is only one case of all industries during the Sino-US trade war. Other supple chain may also change due to this trade dispute, which means the global supply will be affected.

Finally, from Table 3, we can know Present Trump's policies do work on decreasing the unemployment rates. But who will pay for the cost of the Sino-US trade war? Obviously, consumers and companies or suppliers (such as farmers) will bear the cost. Increasing the tariff will cause the price of import increases. In Table 4, CPI in 2018 in the US is continuously increased, which means the prices of consumption are higher.

If we know its impacts on us and the global market, we can decrease the risks of our investment and predict the trends of the market.

V. Significance of This Study

This study is aimed at helping readers to understand the political issue of Sino-US trade war. Firstly, readers can know the reasons why the Sino-US trade dispute broke out. Secondly, readers can predict the variable market and the structural changes of the global supply chain based on these findings from this study. Thirdly, this study will also show if the related corporations in the supply chain of smartphone will gain or suffer loss. So, small investors can benefit from this study and decrease their risks and uncertainty of investment.

VI. Limitations of This Study

There are also some limitations to this study. Firstly, companies' decision are not only based on the tariffs. The aggression effect, labor cost, resources, and capital in manufacturing industry also need to be considered. Secondly, the structural changes of the supply chain is only a prediction based on present conditions. It may have different changes or may not change when new policies come out from the US, China, or any other countries. Market is very dynamic. Thirdly, it is difficult to infer how the market will change without the trade war. The changes we inferred may still occur without trade war. What's more, past experience cannot be used because it is not reliable and market is always changing. It decreases the reliability of our study and conclusions.

VII. References

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