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What Influences on Stock Prices Have Occurred Due to the U.S.-China Trade Dispute?

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ABSTRACT

The U.S.-China trade dispute occurred in 2008. It was an economic conflict lasting about two years. This study examined the stock prices not only the U.S. and China but also other economies. There results indicate that impacts of the trade dispute on stock markets including the U.S. are significantly positive, however, since China is one party of the trade dispute, there is some possibility that its stock markets faced a decline along with other stock markets. When the tensions on international trade from statements made by the U.S. or China increase, their measures carried over to other economies.

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Introduction

The U.S.-China trade war had been an ongoing economic conflict. Before and just after President Trump took office, the conflict had been increasing. Under the administration of President Obama, the U.S. decided to participate in TPP (Trans-Pacific Partnership). U.S. President Donald Trump did not accept this and decided to withdraw the U.S. from the TPP. It seems in general that almost all of the problems that President Trump's administration has demanded against China - protection of intellectual property rights (or counterfeit production ban), a ban on forced technology transfer in investing and making the same competitive conditions especially against state-owned companies in China - were included in the TPP. However, not only WTO (World Trade Organization) but also TPP could not solve the conflict effectively.

There might have been a significant amount of negotiations for several years; however, the conflict became much tougher in 2018. President Donald Trump in January 2018 began imposing tariffs and other trade barriers on China with the purpose of coercing it to make drastic changes to what the U.S. regards as unfair trade practices and intellectual property rights theft as mentioned above. Around that time, the word trade 'war' entered the general vernacular. President Trump also suggested that these measures by the Chinese administration might have been the cause of the U.S.'s trade deficit with China. Against the U.S.'s trade policies, the Chinese government accused president Trump of domestic protectionism and conducted retaliation measures. The war continued through 2019; however, the two sides reached a phase one agreement on January 15, 2020.

The escalation of the trade dispute between the U.S.-China on the economies may be quite huge. The trade conflict surely adversely influenced both countries. For the U.S., it has been reported again and again that the conflict had caused higher costs for firms, as they could not import cheap manufacturing parts and so on. The situation had led to a rise in consumer prices. Also, they could not have exported products to China. For China, the trade conflict had led to declining exports to the U.S. The decreasing imports from the U.S. were associated with the declining exports. Surely, economic growth, industrial production, which had already been increasing, declined. On the other hand, the trade war has also caused economic damage in other countries.

Therefore, it is necessary to examine the effect of the trade conflict on other economies and sectorial fields. For example, many U.S. firms have shifted supply chains to Asian countries, with the fear of the trade war becoming much more severe and lasting longer. This study focuses on these aspects by seeing the movements of stock prices.

This study is structured as follows. Following this section, section 2 reviews existing studies. Section 3 explains the empirical methods to examine the effects of stock prices via the U.S.-China trade conflict. In section 4, empirical results are reported and analyzed. Finally, a brief summary is presented for this study.

Existing Studies

There have been a lot of studies presented to examine the impacts of the U.S.-China trade conflict. Of course, almost all the studies are concentrated on the years of 2019 and after, however, the number of studies is large even for a long period.

Indicated that the U.S. caused a trade dispute with China to decrease its international trade deficit with China, to stop unfair trade practices, for example, violations of intellectual property rights [1]. It showed that the U.S. may succeed for the second one, however, didn't succeed for the first one. Indicated that the apparent policy strategies of China were successful [2, 3]. showed

that both countries increased its tariffs on the other economy to almost 20 percent higher than pre-trade war levels, including newly introduced tariffs. The counter-tariffs covered over 50% of their bilateral trade [4]. Guessed the effects of the trade war on the economies. It showed that the trade war reduced GDP in China and the U.S. by -1.41% and -1.35% respectively. Also, it indicated that the trade war reduced many sectoral imports and outputs in both countries. There are some studies that the U.S. has achieved some objectives in part, however, it would be difficult to decide which country won in the long-run. There is some possibility that the dispute has ended without any winners. Surely, both the U.S. could get something but it might lose something, on the other hand.

This next study focuses on not only the U.S. but also other countries [5]. Found that EU countries encouraged their linkages with the U.S. and EU integration to strengthen as a result of the trade dispute that occurred between the U.S. and China [6]. Analyzed the impacts of trade dispute between the U.S. and China and it indicated that whether Latin America economies would obtain profits or not if this trade dispute continued and it showed that it would cause some results, risks and opportunities for the area from the view of their international relations with the U.S. and China. Except for these studies, this study indicated the relocation of production bases from China to other Asian countries in the previous section. Some companies surely had made profits through the trade dispute between the U.S. and China. However, it would be difficult and might be impossible to judge which country had won.

More concretely, there are some studies that analyze the impacts on exchange rates [7]. Revealed that Chinese Yuan had not been greatly changed and the current account has maintained a surplus. On the other hand, the U.S.'s current account has maintained a deficit. Current account/trade account has been paid much attention especially from the U.S., however, the one of the biggest concerns from the U.S. has not changed greatly, even now. President Trump repeatedly said the Yuan's undervalues [8]. Indicated that three propositions of the dispute that the Chinese Yuan is under-evaluated against the U.S. dollar that the U.S.'s international trade deficit against China is brought by its currency undervaluation. It also suggested that Chinese trade and exchange rate policies were illegal or immoral in part. The basic problem is that undervaluation which the U.S. considers, tends to promote Chinese exports and shrink imports.

This next study examines the stock markets all over the world [9]. Found that stock prices moved in correlation before the trade dispute period, but showed adverse movements and heavy sentiments during the dispute. In general, the trade dispute had damaged the stock prices and might attack some economies.

There are some studies to examine the two giant stock markets prices [10]. Found that compared with the Chinese stock market, the U.S. stock market could have impacts and be affected by the shipping freight markets in a more sensitive manner. Additionally, contagion risk between the two markets increases in most cases due to a decrease in the volume of the U.S.-China international trade [11]. showed that the U.S. markets are largely unaffected by the rising trade tensions between the U.S. and China while the same shock negatively affects stock market indices in emerging economies and China.

This study empirically examines the impacts on the U.S., China, and other countries' stock markets. The next section provides the empirical methods to answer this question.

Empirical Methods

To examine the impacts of trade dispute between the U.S. and China, daily data of stock prices in the world is used for estimation. The estimated equation is the following (1).

$$\text{STOCK PRICE}_{it} = \alpha_0 + \alpha_1 \text{DATE}_t + \alpha_2 \text{STOCK PRICE}_{it-1} + \varepsilon_{it} \quad (1)$$

In this equation, i denote country; t denotes time (daily). ε means error term. DATE means the date that the U.S. and China's new trade measures and announcements were conducted from the year of 2018 to the one of 2021. The lists are in Table 1.

Table 1: Major trade measures and announcements of the U.S. and China

DATE	CONTENTS
January 22, 2018	President Trump announced tariffs on solar panels and washing machines.
March 22	President Trump directed the U.S. trade representative (USTR) to examine when applying tariffs on U.S.$50-60 billion worth of Chinese products. Over 1,300 categories of imported products from China were listed for tariffs; they included aircraft parts, batteries, flat-panel televisions, medical devices, satellites, and various weapons.
April 2	Ministry of Commerce of China took countermeasures by imposing tariffs on 128 kinds of products; they included aluminum, airplanes, cars, pork, and soybean.
April 3	The office of the USTR published a candidates list of over 1,300 kinds of Chinese products to impose levies on; they included products like flat-screen televisions, weapons, satellites, medical devices, aircraft parts and batteries.
July 6	The U.S.'s tariffs on $34 billion of Chinese products were conducted in reality. Against this measure, China imposed retaliatory tariffs on the U.S. products about the same amount.
August 8	USTR's office of the U.S. published its finalized list of 279 Chinese products, which values $16 billion, to be managed to a 25% tariff from August 23. Against the U.S.'s measure, China imposed the same 25% tariffs; about$16 billion of products from the U.S.
August 5, 2019	China commanded state-owned companies to stop purchasing the U.S. agricultural products against the President Trump's statements about imposing tariffs.
January 13, 2021	President Trump administration banned imports of cotton and tomato products originating in China; they included products manufactured outside of China but using cotton and tomatoes from China due to the forced labor allegations which the U.S. considered.

In the equation (1), DATE is a dummy variable, when the content listed in the Table 1 occurs, it takes 1, and 0 otherwise, respectively. The sample period is from the beginning of 2018 to the end of 2021.

Stock markets' indexes which this study analyzes are as follows. NYDOW (the U.S.), S&P (the U.S.), SSE (Shanghai), CAC40 (France), DAX (Germany), FT100 (United Kingdom), NIKKEI225 (Japan), ASX (Australia), BVSP (Brazil), TAIEX (Chinese Taipei/

Taiwan), HKHSI (Hong Kong), KOSPI (Korea), KLCI (Malaysia), RTS (Russia), SENSEX30 (India), ST (Singapore), and VN (Vietnam).

Some days are included for specific factors which stock indexes fluctuate largely, so common days that all of the data can be obtained are only employed for estimations. Moreover, it would be necessary to include time lag between the announcement day and stock prices because of the time difference, however, some markets are open for 24 hours in reality and most announcements were already in on the announcement days, so the used days of stock prices and the announcement days are the same. Finally, all of the data are from NIKKEI TELECOM (Japanese Newspaper Company).

Empirical Results

The data from the year of 2005 to 2020 in developed and developing economies are examined. Table 1 is the statistical description of stock prices. Also, Table 2 is the regression results of the equation (1).

Table 2: Statistical description of stock prices

	mean	medium	maximum	minimum	std.dev.	skewness	kurtosis
NYDOW	27280.11	26313.65	35084.53	18591.93	3213.27	0.87	3.23
S&P	3143.05	2961.79	4419.15	2237.40	503.44	1.00	2.92
SSE	3076.66	3004.93	3696.16	2483.08	303.45	0.11	1.89
CAC40	5432.66	5425.90	6666.26	3754.84	527.93	0.056	3.33
DAX	12686.06	12550.82	15790.51	8441.71	1360.89	0.26	3.47
FT100	6968.46	7123.27	7788.44	4993.89	581.86	-0.91	3.19
NIKKEI225	23318.74	22512.53	30216.75	16552.83	2917.11	0.91	3.02
ASX	6461.47	6351.90	7704.00	4564.10	566.47	-0.040	2.89
BVSP	98624.87	98834.59	130125.80	63569.62	15484.54	0.11	2.11
TAIEX	12057.62	110005.84	18034.19	8681.34	2323.97	1.27	3.33
HKHSI	27497.38	27688.64	32966.89	21696.13	2110.47	-0.04	2.60
KOSPI	2369.28	2232.56	3305.21	1457.64	407.00	0.98	3.03
KLCI	1631.66	1609.33	1895.18	1219.72	120.31	-0.07	3.56
RTS	1296.12	1262.69	1679.02	832.26	167.78	0.40	2.53
SENSEX30	39437.26	37930.77	53158.85	25981.24	5914.87	0.88	2.96
ST	3091.03	3166.94	3615.28	2233.48	295.05	-0.75	2.82
VN	1004.63	976.35	1420.27	659.21	140.31	0.77	3.68

Table 3: Regression results

	NYDOW (U.S.)	S&P (U.S.)	SSE (Shanghai)	CAC40 (France)	DAX (Germany)
C	145.122 (0.902)	1.764 (0.136)	36.011* (1.785)	43.377 (1.177)	81.149 (1.057)
DATE	51.319 (0.364)	2.653 (0.172)	-4.068 (-0.273)	44.790* (1.678)	72.681 (1.183)
STOCK PRCE (-1)	0.995*** (169.929)	1.000*** (244.261)	0.988*** (151.411)	0.992*** (147.015)	0.993*** (165.119)
Adj.R2	0.981	0.990	0.976	0.974	0.980
F-statistic (probability)	14444.45 (0.000)	29845.54 (0.000)	11483.90 (0.000)	10812.80 (0.000)	13632.75 (0.000)
D.W.	2.274	2.332	1.905	1.824	1.881

FT100 (United Kingdom)	NIKKEI225 (Japan)	ASX (Australia)	BVSP (Brazil)	TAIEX (Taiwan)	HKHIS (Hong Kong)
100.514** (2.081)	122.036 (1.050)	52.577 (1.246)	849.023 (1.552)	-9.285 (-0.240)	647.040*** (2.638)
29.702 (0.982)	260.074** (2.400)	16.177 (0.585)	-77.689 (-0.122)	101.837* (1.857)	42.316 (0.299)
0.985*** (142.712)	0.994*** (201.245)	0.992*** (152.512)	0.992*** (181.227)	1.001*** (318.084)	0.976*** (109.760)

0.973	0.986	0.976	0.983	0.994	0.956
10183.41 (0.000)	20251.56 (0.000)	11633.88 (0.000)	16457.12 (0.000)	50589.17 (0.000)	6032.784 (0.000)
1.916	1.950	2.242	2.156	1.975	2.061
KOSPI (Korea)	**KLCI (Malaysia)**	**RTS (Russia)**	**SENSEX30 (India)**	**ST (Singapore)**	**VN (Vietnam)**
1.224 (0.139)	16.860* (1.785)	11.673 (1.356)	64.827 (0.391)	28.980* (1.750)	4.136 (0.765)
14.463 (1.293)	11.946** (2.287)	5.843 (0.705)	292.090 (1.586)	10.184 (0.860)	8.973 (1.601)
0.999*** (272.874)	0.989*** (171.267)	0.991*** (150.644)	0.999*** (240.421)	0.990*** (185.710)	0.996*** (186.890)
0.992	0.981	0.976	0.990	0.984	0.984
37253.67 (0.000)	14748.14 (0.000)	11363.27 (0.000)	28908.75 (0.000)	17246.19 (0.000)	17476.87 (0.000)
1.987	2.017	1.887	2.078	1.883	1.959

Note) Parentheses in the Table is t-value. *** denotes significant at 1%, ** 5%, and * 10% respectively.

There results indicate that impacts of the trade dispute on stock markets are significantly positive. However, some of them are negative, but are not significant. Since China is one party of the trade dispute, there is some possibility that its stock markets suffer losses which are different in degrees. It is interesting to note that most countries which are related with international trade with the U.S. experienced stock prices' rising. Market may think that the countries would replace China as an importer.

To protect domestic economy, announcements and measures were conducted. Such events had a significant impact on stock markets all over the world. While the trade tensions came from announcements made by the U.S. or China, their measures carried over to other economies.

Conclusion

The U.S.-China trade dispute was an unprecedented issue recently. It had lasted about two years and there would be some possibility that the world economy had been damaged. This study empirically examined stock prices of the U.S., China, and other major stock markets. There results indicate that impacts of the trade dispute on stock markets are significantly positive. However, some of them are negative, but are not significant. Since China is one party of the trade dispute, there is some possibility that its stock markets faced a decline of prices. Moreover, the trade tensions caused from announcements made by the U.S. or China, their measures carried over to other economies. They sometimes suffered losses.

Almost all of the empirical results were expected, however, some of the results did not show statistical significance. Markets may have already factored in announcements and measures. Moreover, when examining stock prices, sectorial analyzes may be necessary. For this point of view, production and demand structure related to China and the U.S. would be necessary. Further analysis is required.

The coronavirus has been prevailing. It also hit the U.S. and China. The turmoil of COVID-19 has had negative movements of globalization of economies and those of international supply chains. While some countries have already recovered, and a shortage of semi-conductors occurred, this turmoil will not disappear soon. Once the epidemic is finished, many economies will have to conduct measures to recover their domestic industries and sometimes will have to reduce their reliance on foreign suppliers/supply chains. The shortage of machinery parts, semi-conductors and so on have been ongoing, for example. Such phenomena would cause competition between the U.S. and China [12].

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