International Journal of Business and Management Invention (IJBMI)
ISSN (Online): 2319-8028, ISSN (Print):2319-801X
www.ijbmi.org || Volume 9 Issue 2 Ser. I || Feb. 2020 || PP 01-08

Market Reaction To The LQ-45 Index On The Indonesia Stock Exchange (IDX) To The Trade War Phenomenon Between United States And China Period Of February 2018 To January 2019

Kania Alma Tiara[1], Irni Yunita[2]
[1,2] *School of Economics and Business, Telkom University*

ABSTRACT:*Trade war phenomenon between U.S and China become endless topics. The U.S and China big role in world economy made every economy regulations that implemented in their countries give positive nor negative impact to countries around the world including Indonesia. This research aims to examine the effect of one trade war phenomena which is on July 6th, 2018 Trump officially imposed an additional import duty of 25% for 818 Chinese products and China gives 25% for 659 US products. This mutual revenge made the global economic situation more uncertain.As result, investors' concerns increased. Secondary data used from LQ-45 sampling with terms that companies are listed consistently on LQ-45 for two periods (February- July 2018 and August 2018 - January 2019)and didn't do corporate actions on t-3 - t + 3. Average Abnormal Return (AAR) and Cumulative Average Abnormal Return (CAAR) were used to measure and compare data before, at the moment, and after the phenomenon of trade war. Market-adjusted model used for 3 days before until 3 days after the phenomenon. The Kolmogorov-Smirnov test results show that the data are normally distributed. Then using One-Way ANOVA influence on AAR is significant while CAAR is not significant.*

KEY WORD*:Event Study, Average Abnormal Return, Cumulative Average Abnormal Return, LQ-45, Macroeconomy, Trade War Phenomenon.*

Date of Submission: 18-01-2020 Date of Acceptance: 06-02-2020

I. INTRODUCTION AND LITERATURE REVIEW

The object of this research is the LQ-45 Index on the Indonesia Stock Exchange (IDX) because it is the most liquid index. According to Hartono LQ45 Index formed for most actively traded 45 stocks in IHSG. The sample period is divided into three periods which are before the phenomenon of Trade War (three days before July 6, 2018), at the moment (July 6, 2018) and after the phenomenon of Trade War (after July 6, 2018). The sample of this research consists of 26 companies that is consistent listed in LQ-45 for two periods (February 2018-July 2018; August 2018-January 2019) and didn't do any dividend announcement.

Every regulation that implemented by these countries, especially the US and China, will influence many countries around the world, including Indonesia. According to M. AyhanKose, Csilla Lakatos, Franziska Ohnsorge and Marc Stocker writing for Vox EU, the growth of surge in the world's largest economy could influence global activity in a positive way, it could boost global activity. Unfortunately, the US policies could give a negative effect.

The U.S and China trade war is one of the phenomena that impact the world economically. According to a U.S Economy expert and president of WorldMoneyWatch.com, Kimberly Amadeo writing on her article for thebalance.com, the implementation of tariffs is meant to protect the local industry, because it gives leverage for local manufacturers to have a lower price in contrast with the imported ones. However, tariffs implementation tends to trigger a trade war. In a long term, trade war resulting in depreciation even inflation for all countries involved. The trade war phenomenon also has an impact to the Asian stock market. According to an article written on kontan.co.id, the trajectory of the trade war between the United States (US) and China was beaten on July 6, 2018. This makes some indices in Asia become depressed in trading today.

Figure 1: LQ-45 condition when trade war happened

Source: https://finance.yahoo.com

As shown in Figure 1.1 the LQ-45 index has fluctuation for three days before trade war phenomenon occurred, at the moment, and after trade war phenomenon occurred. The methods that used in this research to analyze efficient market hypothesis is the event study. Event studies is a method used to examine the half-strong market hypothesis, that has an intention to observe how announcement leverage the market securities (Tandelilin, 2001, p. 115-116). Usually, event studies hook with how swift is announcement reflected stock price. Hartono (2010) states that an efficient market condition is if the market reacts quickly to achieve a new equilibrium price that fully reflects available information. There are three forms of EMH (Bodie, Kane, Marcus, 2014: 353), namely: (1) Efficient in weak form (weak form) the market is classified as a weak form if the stock price fully reflects all information based on price, sales volume, or past (historical) profits. (2) Efficient in half strong form, the market is classified as a semi-strong form if all available public information is reflected in market prices. This information can be in the form of past prices, company fundamental data, profit predictions, and accounting practices. If investors get the public information, it will be reflected at market prices. (3) Efficient in strong form (strong form) The market is classified as a strong form if the price fully reflects all information, both historical data, public information and private information. There are several methods to calculate abnormal return: Mean Adjusted Model, Market Model, and Market Adjusted Model.

There are several previous research regarding event study, one of them has same phenomenon which is Trade War but the method used are different, some of them used same method but different event. To find the best previous research, the researcher try to used eight international article with consideration. Below are few of the previous research that become references of this research.

(Huang, et. al, 2018) This paper assesses the financial implications of policy shocks for global networks of development. They use the U.S. and Chinese governments ' declarations of tariff hikes on a broad range of goods in 2018-2019 as occurrences, beginning with the Trump administration's presidential memorandum released on March 22, 2018, to research the effect of trade policy surprises on the results of global stock markets. Using different novel data sets, they found that the stock market reactions of firms to the reports are defined by their degree of direct exposure to U.S.-China exchange and indirect exposure across global value chains. Generally, U.S. companies that are more reliant on exports to and imports from China have lower stock returns and higher default risk during notification times. In contrast, lower import demand from China has a limited impact on businesses. We often consider consistent patterns in Chinese companies ' stock market reactions. Two reversal studies in 2019 further demonstrate how the complex structure of global trade forms stock market responses to policy changes.

(Vargas, 2016) Businesses are gaining more influence through globalization, as consumers ' expectations for ethical and socially responsible actions (CSR) are dramatically increasing. Ethically behaving from a sense of social responsibility is a competitive advantage, which in the long term increases the financial performance of an organization economically. This chapter analyse the interaction between the activities and financial performance of a company focused on ethical / corporate social responsibility (CSR) behaviour-cantered on share price valuation based on public disclosure of ethical / CSR engagement. This research used event study along with efficient markets and the market model. Results show a propensity to raise and decrease share value, but these shifts are not important in the light of CSR-related public information.

1.2 Research Objectives

1) To know the average abnormal return of the LQ-45before, after and during the trade war phenomenon
2) To know that the performances of most liquid stock in Indonesia before, after and during the trade war phenomenon.

1.3 Research Methodology and Data Analysis

a. Define event window or event period

This research is aimed to examine the effect of trade war phenomenon to 26 companies that consistently listed in LQ-45 for two periods which is first period is February 2018-July 2018 and second period is August 2018-January 2019. The event window of this research is 7-days which is 3 days before trade war, at the moment, and 3 days after trade war.

b. Calculate return

$$ARi,t = Ri,t - E[Ri,t]$$

Source: Hartono (2015:648)

Notation:

ARi,t = abnormal return securities number-i in an event period number-t.
Ri,t = actual return that occur for securities number-i in an event period number-t.
E[Ri,t] = expected return securities number-i in an even period number-t.

To calculate expected return, use the estimation model which are mean- adjusted model, market model, and market-adjusted model. (Brown and Warner, 1985 as cited in Hartono, 2015)

c. Calculate Average Abnormal Return

$$\text{AARt} = \frac{1}{N}\sum_{t=1}^{k} ARi,t$$

Source: Ma et al. (2009)

Where: N stands for the number of merger and acquisition announcement
AARt= Average abnormal return on –t time.
ARi,t = Abnormal return of i-securities on –t time. k = Amount of securities that affected by event.
k = Amount of securities that affected by event.

d. Calculate Cumulative Average Abnormal Return

$$\text{CAARt} = \sum_{i=1}^{k} AARt$$

Source: Hartono (2015:596)

CAARt = Cumulative Average abnormal return of i-securities on –t time .
AARt = Average abnormal return of i-securities on –t time.
K = Amount of securities that affected by event.

The daily abnormal return will be averaged over the event window to derive the average abnormal return (AAR). Meanwhile, the daily abnormal return are summed over the event window to derive the cumulative average abnormal return (CAAR). In this section, the 7 days event period will be analyse is from t-3 to t+3.

f. Null Hypothesis (H0) and Alternative Hypothesis (Ha) Formulation

H01 : There is no significant difference in average abnormal return of 26companies listed in LQ-45 for two periods before trade war happened, when trade war happened and after trade war happened.
Ha1 : There is significant difference in average abnormal return of 26companies listed in LQ-45 for two periods before trade war happened, when trade war happened and after trade war happened.
H02 : There is no significant difference in cumulative average abnormal return of 26 companies listed in LQ-45 for two periods before trade war happened, when trade war happened and after trade war happened.
Ha2 :There is significant difference in cumulative average abnormal return of 26 companies listed in LQ-45for two periods before trade war happened, when trade war happened and after trade war happened.

g. Determine significant level

The conclusions of the data to be sampled have the opportunity for errors and truths which are expressed as a percentage. This opportunity for error and truth is called the significance level. So significant is the ability to be generalized with specific errors (Sugiyono, 2013: 149). The significance level (α) used is 5%, or with a confidence level of 95%.

h. Normality Distribution Testing

According to Indrawati (2015:190), statistical testing that can be used in a normality test is a non-parametric statistical test.In this research, the author use Kolmogorov-Smirnov to know whether the data is normally

distributed or not. Normality Distribution Testing to test normality data, this research use Kolmogorov-Smirnov (K-S Testing), that is comparing asymptotic significance (2-tailed) with α = 0,05. The criteria to define data normality as below:

1. If Asymp. Sig. (2-tailed) ≤0.05, data is not normally distributed
2. If Asymp. Sig. (2-tailed) >0.05, data is normally distributed

i. Homogeneity Variance Test

If significance <0.05 it means that H0 is rejected and H1 is accepted. This means that data variance of the data groups in this research is difference (heterogeneous). Otherwise, if significance >0.05 it means that H0 is accepted and H1 is rejected. This means that data variance of the data groups in this research tends to be the same (homogeneous).

H0: The data variance of the data groups being compared tends to be the same (homogeneous).

H1: The data variance of the data groups being compared tends to be difference (heterogeneous).

If the variance homogeneity test shows homogeneous results, then the multiple comparison test will be carried out using the Tukey HSD test method. Whereas if the variance homogeneity test shows heterogeneous results, then the multiple comparison test will be carried out using the Games-Howell test method. \

j. Hypothesis Testing

Average Abnormal Return

1) If significance (P value) t< 0,05, so H01 rejected and Ha1 accepted. It means there is a significant difference between abnormal return 26 companies listed in LQ-45 for two periods before trade war happened, when trade warhappened and after trade war happened.

2) If significance (P value) t > 0,05, so H01 accepted and Ha1 rejected. It means there is no significant difference between abnormal return on 26 companies listed in LQ-45 for two periods before trade war happened, when trade war happened and after trade war happened.

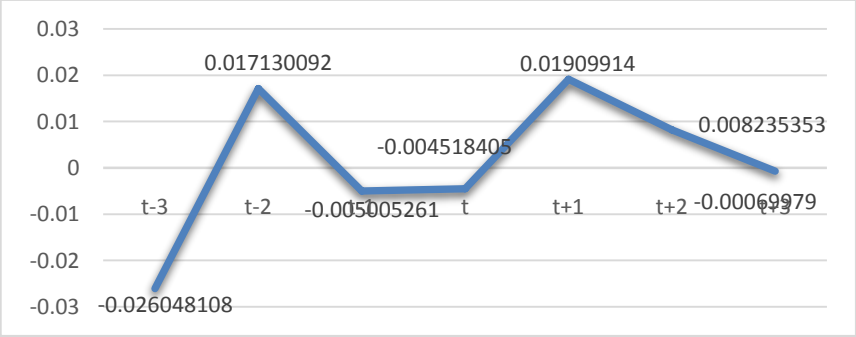
Cumulative Average Abnormal Return (CAAR)

1) If significance (P value) t< 0.05, so H02 rejected and Ha2 accepted. It means there is a significant difference of cumulative average abnormal return on 26 companies listed in LQ-45 for two periods before trade war happened, when trade war happened and after trade war happened.

2)If significance (P value) t > 0,05, so H02 accepted and Ha2 rejected. It means there is no significant difference of cumulative average abnormal return on 26 companies listed in LQ-45 for two periods before trade war happened, when trade war happened and after trade war happened.

1.3.1 Data Analysis to examine whether Average Abnormal Return before, at the moment and after Trade War Phenomenon

Figure 2:Average Abnormal Return



Source: Proceed by author

Figure 2 shows that the graph of abnormal return does not indicate a significant incline or decline. However, average abnormal return is increasing with the value on (t+1) after the event. Despite that, after (t+1) it tends to decline on (t+3) that had negative value meanwhile it has a positive value on (t+2).

Table 1: Average Abnormal Return Descriptive Statistics

	N	Minimum	Maximum	Mean
AAR_Before	3	-.1641026	.08933002	.0046411
AAR_Atm	1	-.0344828	.02622951	.0045184
AAR_After	3	-.0382353	.07446809	.00887823

Source: Proceed by author

After trade war phenomenon happened give a positive impact on 26 companies that consistently listed on LQ-45 index for two periods (February 2018-July 2018 and August 2018-January 2019).

Table 2: Average Abnormal Return Normality Test

		AAR pre	AAR atm	AAR post
N		26	26	26
Normal Parameters [a,b]	Mean	-,0046	-,0045	,0089
	Std. Deviation	,01971	,01795	,01252
Most Extreme Differences	Absolute	,192	,128	,103
	Positive	,159	,128	,055
	Negative	-,192	-,112	-,103
Kolmogorov-Smirnov Z		,978	,653	,525
Asymp. Sig. (2-tailed)		,295	,788	,945

a. Test distribution is Normal.

b. Calculated from data.

Source: Proceed by author

Through the table 2 it can be seen that the entire p-value of Kolmogorov-Smirnov Z normality abnormal data return value is greater than 0.05, both in the group before the trade war (0.295> 0.05), during the trade war (0.788> 0.05), and after the trade war (0.945> 0.05). Based on testing the hypothesis and testing criteria, then H0 is accepted and H1 is rejected. Or in other words, all of the Average Abnormal Return data has been normally distributed. Thus comparative testing between groups of data can be done using parametric statistics, in this case One-Way ANOVA.

Table 3: Homogeneity of AAR Variances Test

Source: Proceed by author

Levene Statistic	df1	df2	Sig.
1,858	2	75	,163

Based on the results of the Levene Test Average Abnormal Return data presented through the table above obtained a Levene statistical value of 1.858. Variance between groups of data compared statistically tends to be the same (homogeneous), where the probability value obtained is greater than the level of significance set (0.163> 0.05). Thus, the multiple comparison test between Average Abnormal Return data groups will then be performed using the Tukey HSD test method.

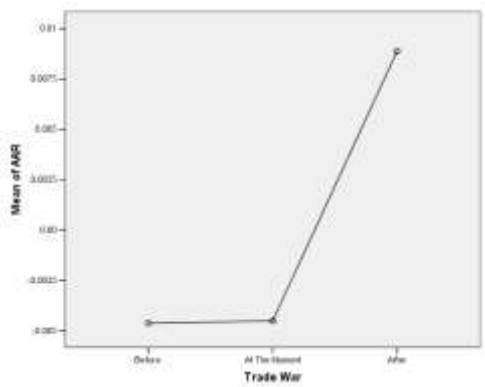
Table 4: AAR One-Way ANOVA

Source: Proceed by author

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,003	2	,002	5,429	,006
Within Groups	,022	75	,000		
Total	,025	77			

Figure 3: AAR Value Diagram

Source: Proceed by author



Based on the results of statistical tests using the One-Way ANOVA method presented in the table above itvalue obtained is less than the specified significance level (0.006 <0.05). Thus the null hypothesis is rejected, meaning that there are significant differences in Average Abnormal Returns between before the trade war, at the moment trade war phenomenon, and after the trade war. In more detail, the following are the results of multiple comparison tests between 3 (three) data groups using the Tukey HSD test method.

Table 5: Multiple AAR Data Comparison Test Results

			Subset for alpha = .05	
	Trade War	N	1	2
Tukey HSD[a]	Before	26	-,0046	
	At The Moment	26	-,0045	
	After	26		,0089
	Sig.		1,000	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 26,000.

Source: Proceed by author

Based on the results of multiple comparison tests presented through the table above, it appears that the average value of the Average Abnormal Return for 3 different periods can be categorized into 2 (two) groups (subset) that differ significantly. The average value in the same subset column shows that there is no significant difference, while the average value in the different subset columns indicates a significant difference in Average Abnormal Return between the periods compared.The average value before the trade war (-0.0046) is in the same subset column as the average value during the trade war (-0.0045), where it shows that the Average Abnormal Return in the two groups of periods is not significantly different. While the average value after the trade war (0.0089) is in a different subset column with the average value of the other period groups, where it shows that the Average Abnormal Return after the trade war is significantly different when compared to before and during the war trade.

1.3.2 Data Analysis to examine whether Cumulative Average Abnormal Return before, at the moment and after Trade War Phenomenon

1.3.3

Figure 4: Cumulative Average Abnormal Return

Source: Proceed by author

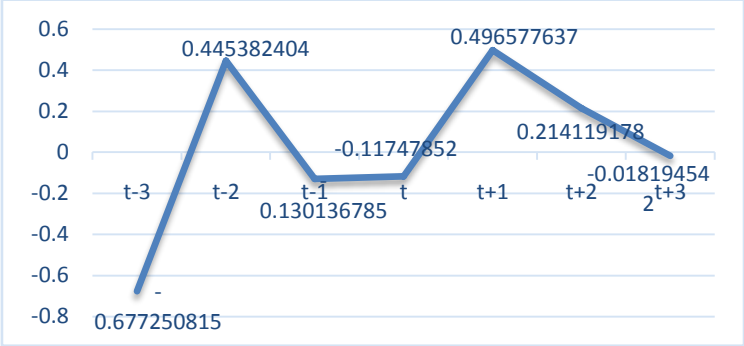


Figure 4 shows that graph of cumulative average abnormal return tends to incline after trade war between US-China phenomenon happened. The cumulative average abnormal return increase on (t+1) with positive value then it decline on (t+2) with positive value. The graph also shows that there is decline after the event on (t+3) with negative value.

Table 6: Cumulative Average Abnormal Return Descriptive Statistics

	N	Min	Max	Mean
CAAR_Before	3	-.6772508	.4453824	-.1206684
CAAR_Atm	1	-.0344828	.02622951	.1174785
CAAR_After	3	-.0181945	.49657764	.23083409

Source: Proceed by author

This can be conclude that trade war between US-China phenomenon gives a positive impact on 26 companies that consistently listed on LQ-45 index for two periods (February 2018-July 2018 and August 2018-January 2019).

Table 7: Cumulative Average Abnormal Return Normality Test

		CAR_pre	CAR_atm	CAR_post
N		26	26	26
Normal Parameters [a,b]	Mean	-,0139	-,0184	,0082
	Std. Deviation	,05914	,05506	,07075
Most Extreme Differences	Absolute	,192	,169	,155
	Positive	,159	,150	,119
	Negative	-,192	-,169	-,155
Kolmogorov-Smirnov Z		,978	,860	,790
Asymp. Sig. (2-tailed)		,295	,451	,560

a. Test distribution is Normal.

b. Calculated from data.

Source: Proceed by the author

Table 8: Homogeneity of CAAR Variances Test

Levene Statistic	df1	df2	Sig.
,925	2	75	,401

Source: Proceed by the author

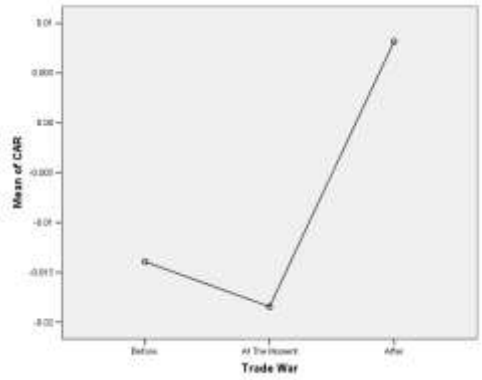
Based on the results of the Levene Cumulative Average Abnormal Return data presented through the table above, the Levene statistical value is 0.925. Variance between groups of data compared statistically tends to be the same (homogeneous), where the probability value obtained is greater than the level of significance set (0.401> 0.05). Thus, the multiple comparison test between the Cumulative Average Abnormal Return data groups will then be performed using the Tukey HSD test method.

Table 9: One-Way ANOVA Comparison of CAAR

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,011	2	,005	1,374	,259
Within Groups	,288	75	,004		
Total	,299	77			

Based on the results of statistical tests using the One-Way ANOVA method presented in the table above it appears that the F value of 1.374 is not statistically significant, where the probability value obtained is greater than the specified significance level (0.259> 0.05). Thus the null hypothesis is accepted, meaning that there are no significant cumulative average abnormal returns between before the trade war, during the trade war, and after the trade war. In more detail, the following are the results of multiple comparison tests between 3 (three) data groups using the Tukey HSD test method.

Figure 5:Cumulative Average Abnormal Return Average Value Diagram



Source: Proceed by Author

Based on the results of the multiple comparison test presented through the table above, it can be seen that the average Cumulative Average Abnormal Return value for 3 different periods can be categorized into 1 (one) group (subset) which is not significantly different. The average value in the same subset column shows no significant difference, while the average value contained in different subset columns shows significant differences in Cumulative Average Abnormal Returns between periods compared.

The average value during the trade war (-0.0184) is in the same subset column as the average value before the trade war (-0.0139) and the average value after the trade war (0.0083), in where this shows that the Cumulative Average Abnormal Return in the three groups of the period is not significantly different

II. FINDINGS AND INTERPRETATION

1. The mean of average abnormal return was decreasing when the trade war phenomenon happened but after trade war phenomenon occurred the mean of average abnormal return is increasing. This shows that trade war phenomenon gives a positive impact toward 26 companies that listed in LQ-45 consistently in two periods (February 2018-July 2018 and August 2018-January 2019).
2. The mean of cumulative average abnormal return at the moment was increased and after trade war phenomenon the mean of cumulative average abnormal return is increasing. This prove that trade war phenomenon gives a positive impact toward 26 companies that listed in LQ-45 consistently in two periods (February 2018-July 2018 and August 2018-January 2019).
3. Hypothesis test of average abnormal return and cumulative average abnormal return are using One-Way ANOVA test result show that average abnormal return with significant statistical difference result, however it has no significant differences with cumulative average abnormal return on 26 companies that listed in LQ-45 consistently in two periods (February 2018-July 2018 and August 2018-January 2019). Information that contained in the event has significant on the average abnormal return but has no significant effect on the stock market based on the cumulative average abnormal return.

BIBLIOGRAPHY

[1]. Amadeo, Kimberly. "Why Trade Wars Are Bad and Nobody Wins." The Balance, Kimberly Amadeo.
[2]. Hartono, J. (2016). TeoriPortofolio dan AnalisisInvestasi (10th ed.). Yogyakarta: BPFE.
[3]. Huang, Y., Lin, C., Liu, S., & Tang, H. (2012). Trade linkages and firm value: evidence from the 2018 us-china "trade war." SSRN Electronic Journal. Doi: 10.2139/ssrn.1988201
[4]. Indrawati. (2015). MetodePenelitianManajemen dan BisnisKonvergensiTeknologiKomunikasi dan Informasi, Bandung : Aditama.
[5]. Kose, M. Ayhan, et al. "Understanding the Global Role of the US Economy." Voxeu.org, 27 Feb. 2017.
[6]. LQ45 sudahturuntajam, investor bisaakumulasi. (n.d.). Retrieved from 5. https://investasi.kontan.co.id/news/lq45-sudah-turun-tajam-investor-bisa-akumulasi.
[7]. LQ45 Index (^JKLQ45) Charts, Data & News. (2019, October 21). Retrieved from https://finance.yahoo.com/quote/^JKLQ45?p=^JKLQ45.
[8]. Vargas, L. (2016). Corporate Social Responsibility and Financial Performance: GIC's Share Prices Value Impact – Event Study. Emerald Group Publishing Limited

Kania Alma Tiara." Market Reaction To The LQ-45 Index On The Indonesia Stock Exchange (IDX) To The Trade War Phenomenon Between United States And China Period Of February 2018 To January 2019." *International Journal of Business and Management Invention (IJBMI)*, vol. 09(01), 2020, pp 01-08.