REVIEW OF INTERNATIONAL GEOGRAPHICAL EDUCATION

ISSN: 2146-0353 ● © RIGEO ● 11(1), MARCH, 2021

www.rigeo.org

Research Article

Effect of Geogrpahic Enviironmetnal Natural Disaster, Non-Natural Disaster and Inflation on Jci 2010-2019

Vincentia Wahju Widajatun
Widyatama University
vincentia.wahju@widyatama.ac.id

Abstract
The rising composite stock price index indicates that there is increasing interest in investing in companies on the stock exchange. However, internal and external national geographic environmental natural and non-natural events those influence investors to invest in the Indonesian stock exchange. By using multiple regression analysis, the results show that the occurrences of non-natural disasters on the stock price index, natural disasters have no effect on the stock price index. While the inflation rate has no effect on the stock price index.The findings of the study could helped to the researcher to conduct their future research in future.

Keywords
JCI, natural disasters, non-natural disasters,

To cite this article: Widajatun, V, W (2021) Effect of Geogrpahic Enviironmetnal Natural Disaster, Non-Natural Disaster and Inflation on Jci 2010-2019. *Review of International Geographical Education (RIGEO), 11(1), 753-759. doi: 10.33403/rigeo. 800616*

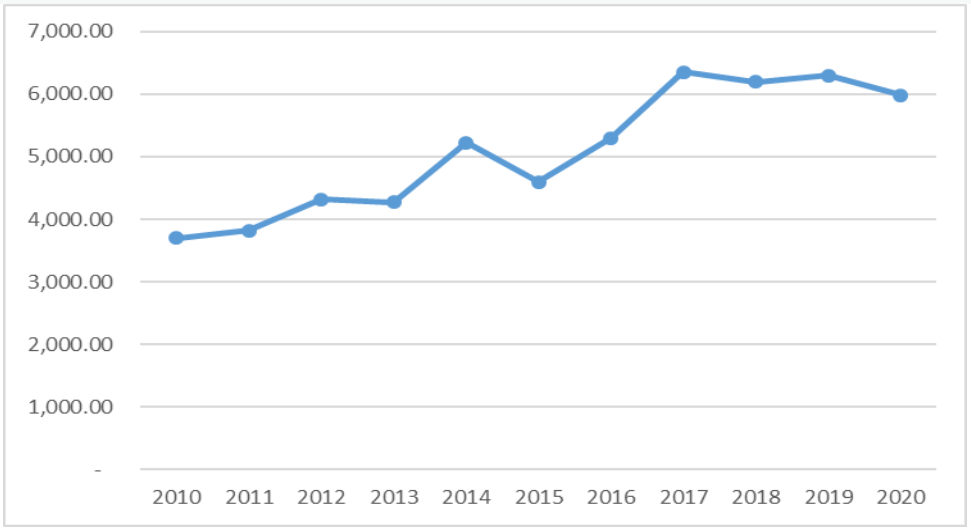
Submitted: 01-01-2021 ● **Revised:** 02-02-2021 ● **Accepted:** 05-03-2021

Background

The economic condition of a country can be seen from its financial performance in the form of a composite stock price index. The increase in the composite stock price index indicates that there is increasing interest in investing in companies on the stock exchange. Composite stock price index in Indonesia or JCI. JCI performance in 2016, 2017 and 2018 had a performance of 19.99%, 15.32% and -2.54% (CNBC, 2020). In 2018 there was a decline in performance as well as in 2020, due to a disaster in the form of the covid 19 pandemic. Many issues, both internal and external factors, influenced investors to invest in the Indonesian stock exchange. Internal issues are related to company management in achieving goals, while external issues are related to government policy factors, macroeconomic situations and unexpected situations such as disasters. Internal factors also includes the physical geography education that influences the JCI.

The following figure shows the movement of the JCI from 2010 to 2020

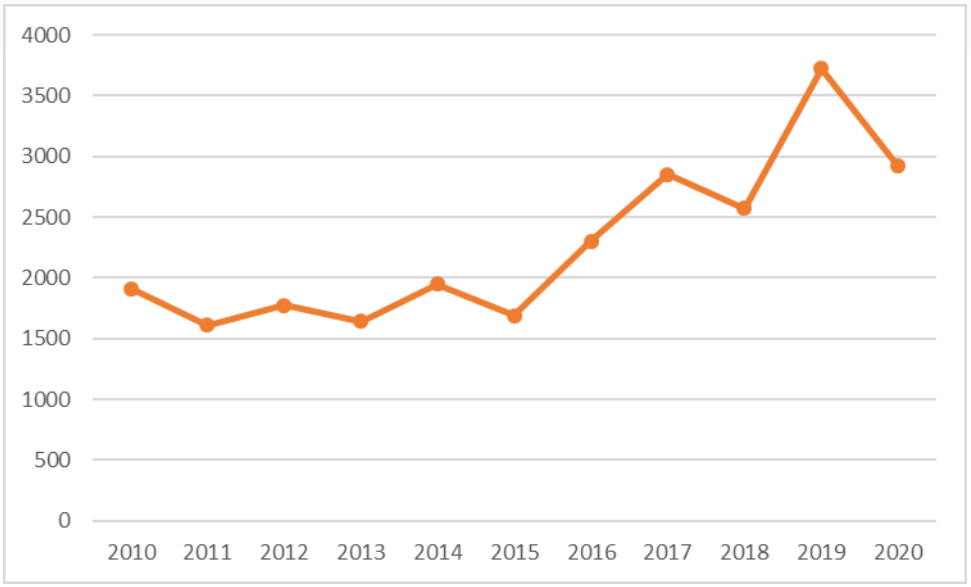
.



Source (Yahoo Finance, 2020) (processed)

Figure 1 The movement of the composite stock price index in 2010-2020

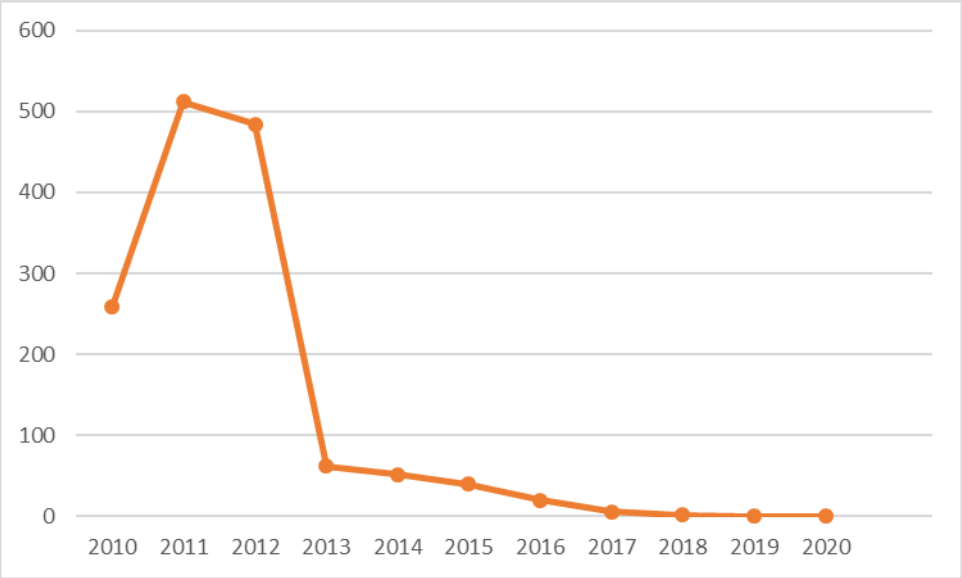
Figure 1 illustrates the fluctuation of stock price movements in 2010-2020. From 2010 to 2016 there was an upward trend, while in 2017 to 2020 there was a downward trend.



Source: (BNPB, 2020) (processed)

Figure 2 Number of natural disaster events in 2010 -2020

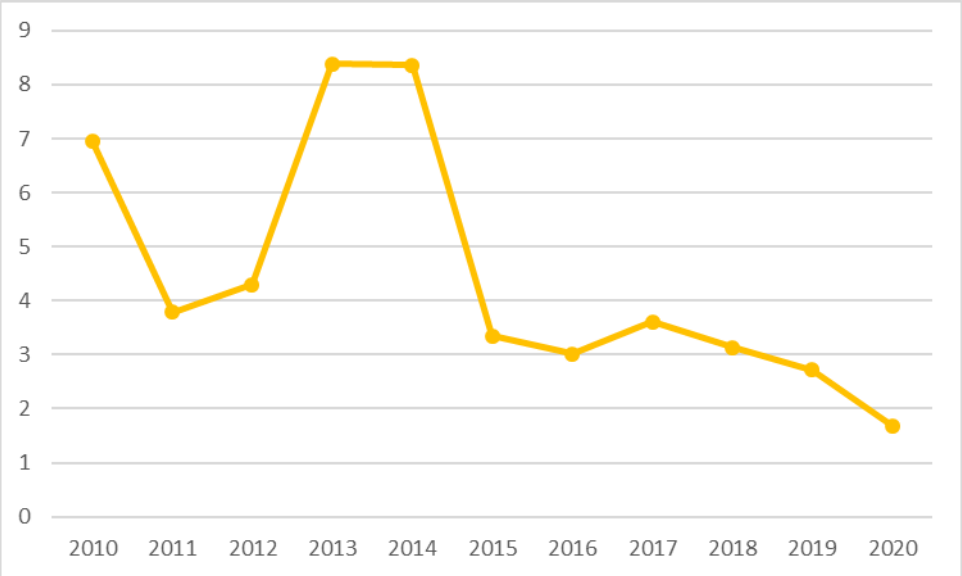
Figure 2 shows an increasing trend of disasters. An increase in the number of disaster events can affect the economic condition of a country, in this study, as revealed in a study conducted by Hosono, namely the effect of an earthquake on banking in Japan (Hosono et al., 2016).



Source: (BNPB, 2020) (processed)

Figure 3 Number of non-natural disaster events in 2010-2020

Figure 3 shows a decrease in the number of non-natural events. There is a short-term pandemic effect on the economic (Verikios, McCaw, McVernon, & Harris, 2012).



Source: (Central Bureau of Statistics, 2020) (processed)

Figure 3: inflation rate in 2010-2020

Figure 3 shows the inflation rate fluctuated and tended to decline. Research reveals that the increase in inflation has a positive and significant effect on the JCI (Taufiq & Kefi, 2015). However, in other studies, it is known that the inflation rate has no effect on the JCI (Kewal,

2012).
Based on this situation, the researcher intends to examine the effect of natural disasters, non-natural disasters and inflation on the JCI.

Literature Review

When the stock index moves up, it means that the prices of most of the stocks measured by the index move up. Conversely, if the stock index moves down, most of the index's constituent stocks move down. By looking at the movement of a stock index, investors can find out the general price performance of the shares they own. In addition, investors can also find out the general condition of the stock market in the event of a change in domestic or foreign policy. Inflation is an event that shows an increase in the price level in general and takes place continuously (Sargent, 2013). The increase in inflation has a positive and significant effect on the JCI (Taufiq & Kefi, 2015). However, in another study, it was found that the inflation rate, SBI interest rate and GDP growth had no effect on the JCI (Kewal, 2012).
In addition to inflation, another factor that influences investment decisions is the country's situation which is affected by unexpected events such as disasters. This is reinforced by research related to losses in the capital market in the form of a decrease in market value when a disaster occurs (Seetharam, 2017). Other studies reveal that there is a difference in the investment ratio in disaster areas which is lower than the investment ratio in other areas (Hosono et al., 2016). Global economic activity will be more affected by a pandemic with a high infection rate (Verikios, Sullivan, Stojanovski, Giesecke, & Woo, 2011). Disasters in Indonesia In accordance with Law Number 24 of 2007 concerning Disaster Management, the definition of disaster is (BNPB, 2020).
"An event or series of events that threatens and disrupts life and livelihoods. society caused by both natural and/or non-natural factors as well as human factors, resulting in human casualties, environmental damage, property losses, and psychological impacts." The National Disaster Management Agency divides the types of disasters, namely natural disasters are disasters caused by events or several events due to natural events, including earthquakes, tsunamis, volcanic eruptions, floods, droughts, hurricanes, and landslides. Non-natural disasters are disasters caused by non-natural events or events such as technological failures, modernization failures, epidemics, and disease outbreaks. And social disaster is a disaster caused by an event or several events due to human action which includes social conflicts between groups, between tribes or between communities, and terror.

Research Methods

The object of research is everything related to people, objects, or activities that have certain variations that are determined by researchers to be studied and draw conclusions from the results of their research (Sugiyono, 2017). While what is meant by population is a general area consisting of objects and subjects that have certain quantities and characteristics determined by the researcher to be studied and draw conclusions from the results of their research (Sugiyono, 2015). The population of this study is the composite stock price index on the Indonesia Stock Exchange for the 2018 period daily data.

Population and sample

The object of research is everything related to people, objects, or activities that have certain variations determined by researchers to study and draw conclusions from the results (Sugiyono, 2017). While what is meant by population is a general area consisting of objects and subjects that have certain quantities and characteristics determined by the researcher to be studied and draw conclusions from the results of their research (Sugiyono, 2015). The population of this study is the composite stock price index on the Indonesia Stock Exchange for the period 2010 - 2020. The data used are secondary data, namely the movement of the joint stock price index in 2010-2020, data *historical* in the form of closing price movements, data on natural disasters, incident data non-natural disasters and inflation data. The method of data analysis in this study is multiple regression analysis.

The results

The descriptive statistics are data presentations that include the calculation of the mean, mode, median, average calculation, maximum value calculation, minimum value calculation, standard deviation used to analyze the data by describing or providing an overview of the data that has been collected without making any conclusions applies in general (Sugiyono, 2014).

Table 1- Description of Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
JKE composite	11	3703.51	6355.65	5096.5273	1008.81177
natural disaster	11	1612.00	3721.00	2268.8182	678.42093
non natural disaster	11	.00	512.00	130.6364	196.04707
Inflation	11	1.68	8.38	4.4818	2.32053
Valid N (listwise)	11				

Source: processed data

The descriptive statistical results in table 2 above can be explained as the following: stock price index movement. The average value (mean) of the stock price index is 5096.5273 and the standard deviation is 1008.81177.
In this study, multiple regression analysis is used to prove how much influence natural disasters, non-natural disasters and inflation have on the movement of the composite stock price index.

Multiple linear regression equation is as follows:
$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$..... (1)
Description:
Y = Pergerakakan composite stock price index
α = constant
β = coefficient of the regression line
X1 = the number of natural disasters
X2 = the number of disaster events non-natural
X2 = inflation
X2 = physical geography education
ε = standard error

By looking at the data from the results of the t (Partial) statistical test, we can obtain the value of the constant parameter and the value of the estimator parameter to complete the regression model that has been formulated previously.
The Multiple Linear Regression Equation is:

Y = 3852.899+0. 808X1 + -2 087X2 + -70 750X3 + ε

Description:
Y = composite stock price index
α = constant
β =coefficient of the regression line
X1 = the number of natural disasters
X2 = the number of non-natural disaster events
X2 = inflation
ε = standard error

Table 2
Results of processing multiple regression analysis

Model		**Unstandardized coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	3852,899 1081,389.009				3,563	(Constant)
	natural disaster	.328 .543.043			2,462	.808
	non-natural disaster	-2 087	.953	-.406	-2 190	.065
	Inflation	-70 750	80 268	-.163	-.881	.407
a. Dependent Variable: JKE composite						

In the Multiple Linear Regression equation above, the following information can be obtained:

- The constant value of 3852,899 can be interpreted that if there is no influence of natural disasters, non-natural disasters and inflation, the value of the movement of the Composite Stock Price Index in the year is 3852,899.
- The value of the X1 variable of 0.808 can be interpreted that the variable of natural disasters has a positive effect on the value of the movement of the Composite Stock Price Index.
- The X2 variable value of -2.087 can be interpreted that the non-natural disaster event variable has no effect on the value of the movement of the Composite Stock Price Index.
- The value of the X3 variable of -70,750 can be interpreted that the inflation variable has no effect on the value of the movement of the Composite Stock Price Index.

Conclusion

One indicator of financial performance is the stock price index which provides an overview of company funding originating from the stock exchange. Non-natural disasters such as fires, epidemics, pandemics affect the stock price index, but natural disasters such as floods, landslides, earthquakes, tsunamis have no effect on the stock price index. Physical geography did not found to influence the stock investments. Likewise, the inflation rate has no effect on the stock price index.

References

BNPB. (2020). National Disaster Management Agency (BNPB). from https://www.bnpb.go.id/

Central Bureau of Statistics. (2020). Central Bureau of Statistics (BPS - Statistics Indonesia). from https://bps.go.id/

CNBC. (2020). Consumer News and Business Channel. from https://www.cnbcindonesia.com/

Hosono, K., Miyakawa, D., Uchino, T., Hazama, M., Ono, A., Uchida, H., & Uesugi, I. (2016). NATURAL DISASTERS, DAMAGE TO BANKS, AND FIRM INVESTMENT. *International Economic Review, 57*(4), 1335-1370. doi: https://doi.org/10.1111/iere.12200

Kewal, S. S. (2012). THE EFFECT OF INFLATION, INTEREST RATE, EXCHANGE, AND GDP GROWTH ON THE JOINT STOCK PRICE INDEX. *8*(1), 53-64. doi: https://doi.org/10.21831/economia.v8i1.801

Sargent, T. J. (2013). *Rational expectations and inflation*: Princeton University Press.

Seetharam, I. (2017). Environmental Disasters and Stock Market Performance. *Stanford University, Department ofEconomics*. doi: https://pdfs.semanticscholar.org/d90d/d0d2f6771d59f23aebfb605b3014d6242998.pdf

Sugiyono. (2014). Educational Research Methods Quantitative, Qualitative and R&D Approaches. *Bandung: Alphabeta*.

Sugiyono. (2015). Management Research Methods. *Bandung: Alphabeta*.

Sugiyono. (2017). Quantitative, Qualitative and R&D Research Methods. *Bandung: CV Alfabeta*.

Taufiq, M., & Kefi, B. S. (2015). THE EFFECT OF INFLATION, BI RATE AND EXCHANGE ON THE JOINT STOCK PRICE INDEX. *22*(38). doi: www.ejurnal.stiedharmaputra-smg.ac.id/index.php/JEMA/article/download/213/184

Verikios, G., McCaw, J. M., McVernon, J., & Harris, A. H. (2012). H1N1 influenza and the Australian macroeconomy. *Journal of the Asia Pacific Economy, 17*(1), 22-51. doi: https://doi.org/10.1080/13547860.2012.639999

Verikios, G., Sullivan, M., Stojanovski, P., Giesecke, J., & Woo, G. (2011). The Global Economic Effects of Pandemic Influenza. *14th Annual Conference on Global Economic Analysis*, 1-41. doi: https://ideas.repec.org/p/cop/wpaper/g-224.html

Yahoo Finance. (2020). Yahoo Finance - Stock Market Live, Quotes, Business & Finance News from https://finance.yahoo.com/