



Bitcoin and Blockchain to Indonesia's Economic Resilience: A Business Intelligence Analysis

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Abstract

Blockchain technology has been a phenomenal discovery since its use on Bitcoin, a crypto currency created by Satoshi Nakamoto. Featuring decentralization, it allows Bitcoin to escape the interference of third parties and governments. Departing from Keynesian Theory, this study used a mixed quantitative and qualitative approach. The econometric quantitative approach uses the Vector Error Correction Model (VECM) modeling to predict the impact of Bitcoin investment on Indonesia's transaction of capital. A qualitative approach is used to analyze the LOFT effects of Bitcoin on Indonesia's economic resilience. Unlike previous studies, this study attempts to provide an explanation from the standpoint of national resilience, especially in the field of economic resilience. VECM analysis found that Bitcoin had a significant positive effect on Indonesia's transaction of capital in both the short and long terms. Even though the magnitude of the influence of bitcoin is relatively small, it needs to watch out for macro performance through capital transactions. Qualitative data indicate that there is a change of Bitcoin function in Indonesia, from a payment method, into an instrument of investment. The finding explains that Bitcoin has the potential to weaken the resilience of the Indonesian economy through a reduction in the balance of payments, while Blockchain can be the main foundation of the financial industry revolution in Indonesia.

Key words : Bitcoin, Transaction Capital, Economic Resilience, Keynes Theory, VECM

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INTRODUCTION

The invention of the Internet holds an enormous impact to the history of human civilization by making geographical boundaries no longer meaningful. The virtual world created by the Internet has imitated the real world perfectly in all areas of social, political, and economic spheres. In the field of economics in particular, the existence of the Internet plays an important role in financial transactions, by making individuals, no matter where they are, able to be connected to each other quickly and easily.

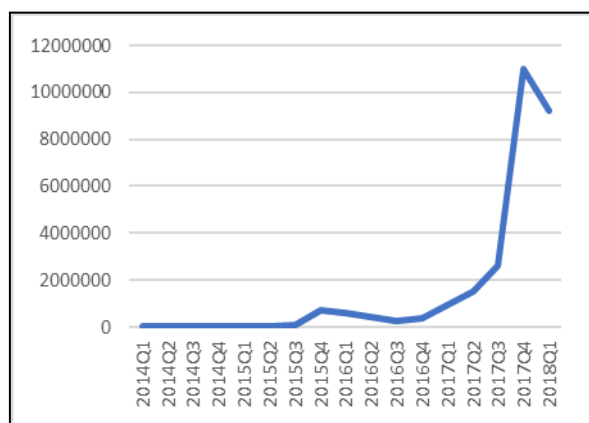
The possibility of ease of transaction then gave birth to the discourse to create crypto currencies (A crypto currency is a decentralized currency using cryptography to secure transactions and validate credit value), currencies that adopt the nature of conventional currency, but having a much different system. The initial discourse of crypto currency has emerged in 1983, started by an American academic named David Chaum (Bonneau, 2015), with his idea of making a payment method for cyberspace transactions, with the feature of being untraceable and moving based on a special system that enables a currency to be signed or validated by others openly and randomly, not centralized or controlled by a particular party. This system is driven by the technology, which later became known as blockchain. About a decade later, in 1994, "Smart Contracts" was first proposed by Nick Szabo, an American computer scientist who later invented the crypto currency named "Bit Gold" in 1998, ten years before the invention of Bitcoin. Szabo is later suspected to be hiding behind the name "Satoshi Nakamoto", a pseudonym used by the inventor of Bitcoin in a mailing list, however the identity has never been verified until now.

Further, Bitcoin is believed to have been first mined in 2009 and first used for a transaction in May 2010. Three years after its first transaction, in 2013 Bitcoin's exchange rate against the US dollar jumped to USD 1,200 per Bitcoin. At the end of 2017, Bitcoin again attracted the attention of the global community with a surge in the exchange rate, reaching USD 19,192.01 per Bitcoin. The fantastic spike in the exchange rate made Bitcoin, and also its technology, Blockchain, increasingly highlighted, and became known by the global community, both in developed and developing countries, including in Indonesia. Several studies have identified Indonesia as one of the countries with rapid technological development, only beginning to enter the Bitcoin market around 2013, with Indodax (previously PT Bitcoin Indonesia) founded in the same year, and presently has as many as 600,000 members, which according to Darmawan, the CEO of Indodax, the majority of whom are students and concentrated in West Java.

Academic studies of Bitcoin and Blockchain have been done through several approaches and perspectives including cultural, legal, and economic approaches. Of the three perspectives, the majority of the studies support the development of Bitcoin and Blockchain, as it is positively regarded to offer many opportunities for a change to a better economic system (Raymaekers, 2014; Reuter, 2015) without involving third parties but still producing a positive and constructive impacts (Wright & De Fillippi, 2015; Espinel, 2015; Yermack, 2017). In addition, to support these technological developments it is necessary to make regulations or endorsements (Giancaspro, 2017), because the potential of Bitcoin and Blockchain can play an important role in economic development and poverty alleviation in developing countries with a corrupt government tendency (Dwyer, 2015; Ammous, 2015; Dibrova, 2016). However, Bitcoin and

Blockchain have not escaped the criticism of some academic studies, which mention that Bitcoin is a utopian technology that will never change the established financial and monetary system (Dodd, 2017).

The high volatility of the exchange rate is also considered as one of the weaknesses of Bitcoin, which results in its never going to be endorsed by the government, and even becoming a concern for the government, because it can disrupt the stability of the world economy through the payment system and monetary system (Murphy, Murphy & Seitzinger, 2015; Böhme et al., 2015).



Source: bitcoin.com 2019

Figure 1. Trend of Bitcoin Volume Transaction

Despite existing studies, the authors have found a gap in studies geographically focused in Indonesia, with its economy that is relatively vulnerable to shocks. Returning to Darmawan's statement regarding the majority of Indodax members being students, it becomes interesting, considering Indonesia will get the demographic bonus, which, according to the authors' assumption, will have an impact on Indonesia's economic resilience, both immediate and long term. Departing from these assumptions, this study aims to explain statistically the influence of Bitcoin investments on the movement of Indonesia's balance of

payments figures by also including several other macroeconomic variables that include current transactions, capital transactions, financial transactions, interest rates, gross domestic products, and inflation rate. A statistical analysis is needed to observe the real and measurable relationship and impact of Bitcoin investments on Indonesia's economic resilience, which in this study can be defined through Indonesia's balance of payments. However, realizing that Bitcoin and Blockchain are entirely new phenomena, an in-depth analysis through interpretation and meaning becomes the second goal of this study, in order to observe the indirect impacts as the implications of Bitcoin and Blockchain investments in the form of shifting values in the society related to economic resilience.

Previous studies on Bitcoin and Blockchain can be categorized into three perspectives: cultural, legal, and economic. The cultural perspective explains the focus on changes in values and behavior, such as the research conducted by Raymakers (2014) and Reuter (2015) who found that Bitcoin has many advantages – secrecy, low transaction cost, flexibility, and multi-signature transaction – as a new way to transfer ownership of value. Not only that, fundamentally the presence of Bitcoin and Blockchain has the potential to eliminate the financial system chain of authorization that currently tends to be manipulative, due to the presence of third parties (Wright & De Fillippi, 2015; Espinel, 2015; Yermack, 2017). Further research also found that with its advantages, Bitcoin and Blockchain will produce innovation and transformation, not only in financial or economic processes but also in governance values in general (Ølnes, Ubacht & Janssen, 2017). However, many academics are pessimistic about the development of Bitcoin, and argue that Bitcoin cannot be categorized as currency, and only as a payment network (Kubát, 2015). With its many advantages and disadvantages,

some consider that Bitcoin is merely a utopian technology that will never alter existing and established financial and monetary systems (Dodd, 2017). On the other hand, it cannot be denied that there is a pressing need for a crypto currency (ElBahrawy et al., 2017).

Further, in the legal perspective, Plassaras (2013) in his research found that the International Monetary Fund (IMF), despite being one of the world's organizations authorized to regulate Bitcoin, until now has not been able to interfere in it. In addition, much of the innovative technology of Bitcoin and Blockchain attract special attention of academics on many fronts such as Smart Contracts, which can be categorized as legal contracts and the issue of copyright, in which Blockchain has the potential to revolutionize copyright-related regulations in the virtual world (Savelyev, 2016; 2017). Regulations seem to have an effect on Bitcoin market prices such as Know Your Customer (KYC) regulation, where service providers adhering to such regulations tend to have better prices than those who do not (Pieters & Vivanco, 2017). From the consumer side of Bitcoin users, the legitimacy of digital currencies like Bitcoin needs to be translated into consumer protection efforts, increasing the industry and bringing legitimacy to the crypto currency itself (Lim, 2014; Mandjee, 2016). Policy-making and regulation also require the involvement of various stakeholders from the financial, economic, government, and community sectors as users (Tu & Meredith, 2015; Weber & Studer, 2016). When the regulation has been created, it will directly increase commercial efficiency to be easier, cheaper, and more transparent (Giancaspro, 2017). In Indonesia itself, a recent study by Wardhana (2018) found that in Indonesia, existing regulations of Bitcoin use and investment is limited to the form of consumer protection in the application of

KYC to anticipate money laundering and terrorism financing.

Finally, from the economic point of view, previous research has found that Bitcoin is likely to grow and can play an important role in economic development and poverty alleviation (Dwyer, 2015; Ammous, 2015; Dibrova, 2016). In addition, Blockchain technology itself has the ability to reduce the number of crime in cyberspace, such as data manipulation and other related parties (Kshetri, 2017). Thus, Bitcoin and Blockchain technologies provide tremendous potential for people's prosperity (Seetharaman et al., 2017; Pazaitis, De Fillippi & Kostakis, 2017). Only a small number of scholars disagree with the capability of the new technology for economic development such as Böhme et al. (2015), who argue that Bitcoin will disrupt the existing payment system and even the monetary system.

METHOD

This research uses both quantitative and qualitative methods (mixed-methods). The quantitative approach in this research will use the technique of secondary data analysis obtained from data sources with open access such as Statistics Indonesia, Bank Indonesia, and Financial Services Authority. The analysis of time series data in this research will be done with the Vector Error Correction Model (VECM) modeling using Eviews 10 Student Lite software. Further VECM analysis will use a 90 percent confidence interval as the amount of analyzed data is low (less than 60) and the phenomenon is relatively new.

VECM (Vector Error Correction Model) is a method used to discuss long-term and short-term relationships in one time-series data with other time-series data. The long-term relationship will analyze through the cointegration equation on the VECM test results. Before deciding to use VECM, the Testing Unit Root Test and Johansen's Co-

integration Test carried out using the statistical application EViews. Then, the results of the VECM test regression equation intended to determine the short-term relationship using the Wald Statistics test and Portmanteau test. The vecm model follows the following equation :

$$\Delta TC_t = \alpha_0 + \alpha_1 \Delta TC_{t-1} + \alpha_2 \Delta BOP_{t-1} + \alpha_3 \Delta BTC_{t-1} + \varepsilon_t \tag{1}$$

Variable used are : (1) Balance of Payment (BOP); (2) Capital Transaction (TC); (3) Bitcoin (BTC). The data have a time-series nature, with a time range from 1st quarter of 2014: to the 1st quarter of 2018 (quarterly data).

The results of quantitative analysis are focused on the impact of bitcoin on macroeconomic stability. A qualitative approach takes after the effects of the impact of bitcoin on macroeconomic stability. Qualitative analysis uses business intelligence theory from Martinussen (1997) which aims to analyze national resilience strategies by assessing the results obtained from VECM analysis in the form of luck, opportunity, frustration, and threats.

The qualitative approach is used through in-depth interviews of key informants consisting of informants in the form of Bitcoin and Blockchain practitioners, economic and technological observers, and informants from the government. Data were also obtained through field observation of several seminars and workshops related to Bitcoin and Blockchain held in several regions of Indonesia.

RESULTS AND DISCUSSION

The cointegration test performed first to determine whether the time series model includes the VECM model. The Cointegration test results show in table 1.

Table 1. Cointegration Test

Hypothesized No of CE(s)	Eigenvalue	Trace Statistic	Critical value (0,05)
None*	0.756063	43.0109	42.9152
At most 1	0.636635	21.8482	25.8721
At most 2	0.358665	6.66305	12.5179

Source: Output of Eviews

The trace statistic value from the cointegration test results in the table above shows that it is higher than the critical value, which is 43.0109 > 42.915. It means accept Ho that there is a cointegration or long-term relationship between BOP, BTC, and TC. An asterisk of one indicates the number of cointegration lags. These results suggest that the VECM model is used to explain the attachment between BOP, BTC, and TC.

Furthermore, the VECM model must test for a series of residual correlations aimed at assessing the feasibility of the VECM model used and ensuring that there are no autocorrelation problems in the VECM model. It results obtained from the Portmanteau test, which is shown by the Q-Stat value at six lags.

Table 2. Portmanteau Tests For Autocorrelations

Lags	Q-stat	Prob
1	8.302597	NA*
2	18.96356	0.2706
3	26.31138	0.3911
4	32.47944	0.5422
5	38.69158	0.6585
6	42.22676	0.8313

Source: Output of Eviews

The Q-stat probability value from lag two to lag six is higher than the alpha value of five percent. It means that the data used do not have autocorrelation between time. In other words, the VECM model is appropriate.

Granger causality test results intended to determine the relationship between variables, namely one-way or reciprocal links. An F-stat value higher than F-table or Prob value smaller than 0.05 indicates a null hypothesis. It means that there is a relationship between variables, both one-way and reciprocal relationships.

Table 3. Granger Causality Test

No	Null Hypothesis (Lag-1)	F-Stat	Prob
1	BTC does not Granger Cause TC	33.9007	6.E-05
	TC does not Granger Cause BTC	1.26275	0.2815
2	BOP does not Granger Cause TC	0.39851	0.5388
	TC does not Granger Cause BOP	1.60402	0.2276
3	BOP does not Granger Cause BTC	0.61019	0.4487
	BTC does not Granger Cause BOP	2.60272	0.1307

Source: Output of Eviews

The probability value shown by the results of the granger causality test for BTC against TC shows an alpha number less than 5%, 6. E-05. But on the contrary, for the relationship between TC and BTC, the Probability value is smaller than 5%. It means reject H_0 ; there is a one-way relationship between BTC and TC. In this case, BTC acts as an independent variable that affects TC as the dependent variable. For the reciprocal relationship between BOP and TC in the short term, there is no significant relationship. Likewise, between BTC and BOP, there was no meaningful reciprocal relationship, with both Prob values higher than 5%. The result of Granger causality is used as a reference to determine the independent and dependent variables. The TC variable or Capital Transaction acts as the dependent variable. Whereas BTC or bitcoin

acts as an independent variable in the short term.

The results of the VECM analysis are explained in two estimates, namely the short run and the long run. The estimation results in the short term show there is a short-term relationship between the independent variable, the lag variable dependent on the dependent variable, and the existence of a balance correction factor in the long run.

Table 4. Results of VECM Estimation
in Short-Run

Variable	Coefficient	T-statistics
D(TC(-1),2)	0.369568	0.65760
D(BTC(-1),2)	2.24E-05	2.39039**
D(BOP(-1),2)	-0.002282	-1.50703
EC((1)	-2.186394	-2.14833

** sig 5% (t-table: 2.262)

Estimation results show that there is a statistically significant lag of the first lag of bitcoin on capital transactions. It means that when an increase in the volume of bitcoin investment in the previous quarter will have an impact on the rise in the value of capital transactions. The implication, in the short term, Bitcoin is used not only as a transaction tool but also functions as an investment. EC (1) is a short-term imbalance correction value with a cointegration one. Signs negative and significant indicate an adjustment or correction of imbalances in the short term to balance in the long run.

There are differences in the results of the Long-term and short-term VECM estimates. The long-term estimation results show in table 4. There is the influence of the first BTC lag on TC with a positive sign of 6.83E-06 and significant at five percent significance level. The magnitude of the effect of BTC on TC is somewhat smaller than the short-term impact. It means that the response of the volume of bitcoin transactions in the short term is more significant than the long run, with a difference of 30.49%. The small impact of bitcoin

transactions on increasing the value of capital transactions also illustrates the need to increase the volume of bitcoin transactions up to 100 thousand times to have a large enough impact on additional capital inflow.

Table 5. Results of VECM Estimation

in Long-Run		
Variable	Coefficient	T-statistics
D(BTC(-1))	6.83E-06	3.53526*
D(BOP(-1))	-0.002123	-11.0792**

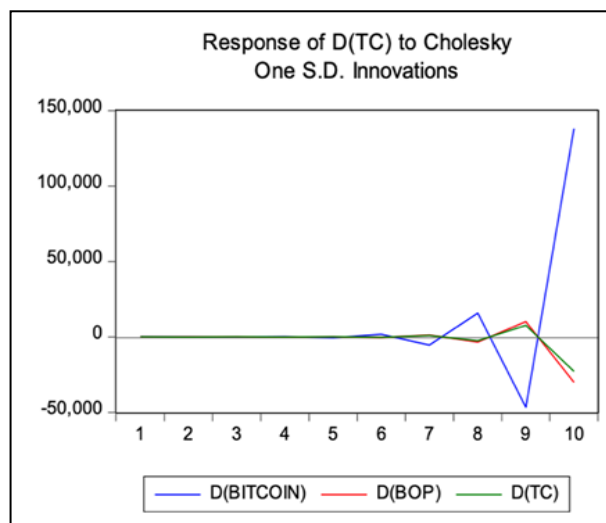
** sig 5% (t-table: 2.262)

The implication of the VECM estimation results explains that the impact of the addition of the volume of bitcoin transactions in Indonesia is less able to encourage an increase in capital transactions in large numbers. It means that the effects arising from bitcoin transactions are not enough to be able to determine changes in capital transactions in Indonesia.

Estimation results for the influence of BOP on TC are show negative and significant signs. It means that when an increase in the first BOP lag of one million USD will have an impact on a decrease in capital transactions of -0.002123. The implication of this result shows that the better the balance of payments performance will affect the decline in capital transactions, or in other words, the trade balance dominates the production of the balance of payments in Indonesia.

The Impulse Response Function (IRF) analysis is used to observe the effect of a standard deviation to the innovation on current time values and future values. Thus, IRF analysis serves to explain whether the shock that occurs in one variable will directly affect the variable and whether other variables will be affected or not, through a dynamic structure. IRF is the result of

estimation that can be described with graphs or tables, such as the following table.



Source: Output of Eviews

Figure 2. Impulse Response of TC to Bitcoin and BOP

Based on the impulse response graph in graph two shows the response of capital transactions on changes in BOP, Bitcoin, and TC lag differs from one another.

Capital transactions require a long time to respond to changes in BOP, first TC lag, and Bitcoin. It shows the turbulent trend in three years after there was a change in the three variables. Changes in the volume of bitcoin transactions have the most impact in the short term changes in capital transactions in Indonesia. But it took almost two years for capital transactions to increase. This impact occurred only in the first quarter of the second year; then, there was a decrease in the value of capital transactions, the amount of which was higher than the increase in the first quarter of the third year. It is what causes TC imbalances in the short term. In the second quarter of the third year, the value of capital transactions again improved to a sharp increase.

The TC changes occur in the fourth quarter of the second year with a positive impact. But starting in the first quarter of the year, TC continues to decline. It means that the

existence of Bitcoin, although the effect is still relatively small, needs to be watched out for Indonesia's macro performance, especially for the production of capital transactions.

The decomposition variant functions to find out which variable is most important in explaining changes in a variable. In this case,

which variable is the most important to explain differences in capital transactions. Analysis of variance decomposition is often also referred to as forecast error decomposition variance (FEDV) analysis. The results of the FEDV study for ten quarters of each variable can show in Table 6.

Table 6. Hasil Varian Dekomposisi TC

Variance Decomposition of D(TC):				
Period	S.E.	D(TC)	D(BITCOIN)	D(BOP)
1	16.64300	100.0000	0.000000	0.000000
2	19.34824	75.33234	14.17274	10.49492
3	82.76779	4.460257	94.95750	0.582247
4	207.7109	0.714380	98.46143	0.824192
5	674.2722	0.083683	99.63818	0.278137
6	1949.238	0.027294	99.61913	0.353578
7	5843.708	0.019098	99.67234	0.308562
8	17273.49	0.019081	99.66022	0.320695
9	51296.06	0.018763	99.66529	0.315951
10	152080.4	0.018858	99.66367	0.317470

Source: Output of Eviews

The results of the decomposition variant in table 6 summarize the effect of the turmoil of BOP, Bitcoin, and itself (TC) on fluctuations in TC. In the short term, to be exact in the second quarter, the value of variance decomposition of 75.33234 due to turmoil from TC. It means that the shock to itself causes 75.33% fluctuations in capital transactions. Clashes to bitcoin in the same quarter resulted in 14.17% fluctuations in capital transactions. And, blows to the BOP result in 10.49% fluctuations in capital transactions.

However, in the 10th quarter, which classified as long term, it shows different results from the fluctuation of the three variables above. Bitcoin shocks result in increasing changes and are the most dominating capital transactions. The results of the decomposition variant show that bitcoin shocks in the 10th quarter resulted in 99.66% fluctuations in capital transactions.

External factors can intervene in the implication of macro indicators. So the government needs to be careful in responding to the existence of Bitcoin as a threat to Indonesia's macro stability.

Howson's LOFT concept (2008) explains how a company can succeed. 'Luck' refers to preparing a business plan tailored to the opportunity. It is also necessary to map 'Opportunity' as a prediction of business opportunities in the future. 'Frustration' is useful for mapping out the disadvantages when doing business or obstacles to business success. 'Threats' map out external weaknesses or constraints. In this section, the LOFT analysis will be split into three sectors based on the theory of development by Martinussen (1997), which states that in the development of a state, there is an interrelation between the state, market, and society.

The following section shows the LOFT analysis of the three sectors as mentioned

above. The data obtained are processed from in-depth interviews conducted on 15 informants consisting of Bitcoin investors (miners, traders, developers), regulator (Bank Indonesia), and economist.

In the Indonesian context, Bitcoin does not seem to have much luck or added value other than being an instrument of investment and speculation. As a means of payment used for financial transactions in Indonesia itself, Bitcoin has a very limited use, centered in Bali and some areas of West Nusa Tenggara, mostly done by foreign tourists who are visiting for vacation and not for financial transactions in daily activities. While the main function of Bitcoin in accordance with the protocol created by Nakamoto is primarily for financial transactions with a fast, cheap process, not requiring intermediaries, and not limited by geographical factors, due to its very high volatility, in Indonesia Bitcoin is more popular as an instrument of investment and speculation. While for some the price volatility, which is often unreasonable, is one of the risks and shortcomings of Bitcoin, the same volatility but it is considered by others to be the main attraction in making it as an investment instrument as a tradable commodity.

Furthermore, as initially Bitcoin was known due to its use in Silk Road, it became tarnished with a negative image, being of interest for illegal transactions for money laundering and terrorism financing. Thus this becomes a frustration for Bitcoin. Its pseudonymous nature also causes Bitcoin to have deficiencies for financial institutions, because Bitcoin is not suitable for credit use and can only be used for transactions if an individual has Bitcoin reserves in his account.

As for Blockchain, luck is on its side as the main foundation that drives Bitcoin. As a

technology, Blockchain is able to eliminate third party intervention in running the verification process of financial transactions. This means that in Blockchain technology, when applied in the financial and administrative sectors, will cut the costs otherwise incurred for third parties. But with the existence of this technology, verification activities in both the financial and administrative sectors will be done easily, cheaply and quickly. This is indeed the main goal of Nakamoto at the time of creating the technology and is now a major luck that deserves to be considered.

However, just like Bitcoin, Blockchain technology has its own frustrations. The idea as a technology that makes it possible to decentralize verification is considered to be one of the shortcomings of Blockchain, because then the public must entrust its transactions to the public as well. There are many parties that are potentially harmful as they can threaten the security of this system, although until now no one has been able to manipulate the verification of transactions made by Blockchain.

Indonesia, as a developing country, finds it difficult to accept the changes, especially in the form of technological innovations. This is reflected in the government's attitude related to the development of Bitcoin in Indonesia. Bank Indonesia's 2014 statement regarding the prohibition of financial transactions using Bitcoin seems to be the only unwritten regulation applicable in Indonesia, and a threat for Bitcoin from thriving in Indonesia. Since then, observers and investors are more interested in making Bitcoin a commodity invested through speculation rather than a means of payment that is obviously unusable in Indonesia. With regards to its initial function for financial transactions, this is seen as one of the threats for Bitcoin in Indonesia. This utilization is a violation of Law no. 7 of 2011 on Currency and Law no. 23 of 1999, which was

amended several times, most recently by Law no. 6 of 2009, making Bitcoin in Indonesia illegal to perform its main function, as it violates the rules applicable in Indonesia.

However, two years later, in 2016, BI again issued a statement related to the ban on the practice of buying and selling Bitcoin in Indonesia, because of its extreme volatility and risk. The second appeal was not very strong and did not have any form of enforcement, and in fact many people became even more interested in investing in Bitcoin and other crypto currencies. It can be seen from the growth of Indodax, which began as a market place for Bitcoin, and developing to other crypto currencies such as Ethereum and Ripple. Furthermore, findings in the field indicate that those who are interested in investing in Bitcoin are those who are unfamiliar with other investment instruments, or those who already feel discouraged and harmed by existing investment instruments such as stocks and bonds, and then switching to Bitcoin.

In addition, another threat that attracts the most attention is the practice of hacking Bitcoin wallet accounts that have occurred in foreign market places such as Mt. Gox in 2011 and Bithumb in 2018. These hacking incidents have a direct effect on Bitcoin price volatility: in 2011, the hacking of Mt. Gox caused Bitcoin's price to drop by 20 percent, while the Bithumb hacking reduced Bitcoin's price by 11 percent, and contributed in the total price decline of Bitcoin by as much as 53 percent in 2018. Although Indodax has not experienced cases such as hacking or anything detrimental to Indonesian investors, but if this happens, it can be predicted that interest in Bitcoin investments in Indonesia will decline.

Apart from the threats above, the potential for development of Bitcoin in Indonesia remains high, mainly focusing on the technology (Blockchain) rather than

Bitcoin itself. Bank Indonesia, in an interview with the researchers, has stated that it will be pay more focus and implement some studies on Blockchain technology. Although there has been no official statement from the government, Blockchain technology is believed to be able to develop Indonesian industry especially in finance. Therefore, Blockchain technology is believed to be an important part in the development of Indonesia's financial system, which currently has a tendency of being corrupt and unreliable. From the analysis of quantitative data, it can also be concluded that if Bitcoin investments are included as part of the range of official investments in Indonesia, it will increase the BOP of Indonesia because it is officially registered.

CONCLUSION

In this study, we made the analysis using the perspectives of Keynesian theory and Economic Resilience to Bitcoin investment and its effect on Indonesia's transaction of capital. It has been statistically proven that Bitcoin has a significant positive effect on Indonesia's transaction of capital in both short and long terms. It is proven that Bitcoin investments directly affect Indonesia's economic resilience through a positive in the transaction of capital. According to the authors, this has a theoretical implication for the development of Keynesian Theory and its application in the analysis of crypto currency such as Bitcoin in developing countries like Indonesia. Keynes, as the originator of general theory, in an attempt to provide criticism of the classical economic system, stated that consumption made by society would appear as income in another community at the same economic time. Keynesians assume that the free market system does not have a stabilizing mechanism, so to stabilize the market, it needs regulation through government intervention. However, based on government practices tending to

corruption, especially in third world countries, Nakamoto has issued Bitcoin as a new synthesis. Its relatively new existence – nine years globally, and four years in Indonesia (dating from the founding of Indodax) – causes much skepticism especially among governments because of its decentralized and anarchical system. According to the authors, a new antithesis to Bitcoin and Blockchain technology is the incorporation of both centralized and decentralized systems called pseudo-centralization. In the system, the government retains the authority to issue policies, but in practice the operations are run by a system with Blockchain technology. This is a critique of Keynes's theory, that due to the development of technology, government intervention to stabilize the market mechanism is no longer relevant. With Blockchain in this digital era, economic stabilization should be done with the help of technology that will impact on lower costs incurred, rather than conventional interventions such as state expenditure, monetary policy, fiscal policy, and others. With the application of Blockchain technology it can help the government to exercise control over economic stabilization in various sectors such as finance and public administration.

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