Ekonomis: Journal of Economics and Business
Volume 7, No 2 (2023), September, 1303-1311
Online ISSN: 2597-8829, DOI: 10.33087/ekonomis.v7i2.912

Cryptocurrency Market Price Determinants: Analysis on Bitcoin

Ni Wayan Intan Saskara Wahyuni, Ni Luh Putu Mahyuni
Universitas Pendidikan Nasional, Denpasar
Correspondence: intansaskara42@gmail.com, mahyuniluhputu@undiknas.ac.id

ABSTRAK
Uang kripto (*cryptocurrency*) adalah manifestasi dari perkembangan teknologi uang virtual yang menjadi fenomena di masyarakat. Naik turunnya harga pasar *cryptocurrency* dipengaruhi oleh banyak faktor termasuk jumlah transaksi, jumlah pengguna blockchain, harga emas dan harga minyak Brent. Penelitian ini bertujuan untuk menganalisis faktor-faktor yang mempengaruhi harga pasar *cryptocurrency* melalui analisis pada bitcoin. Jenis penelitian ini menggunakan penelitian kuantitatif. Analisis data yang digunakan adalah analisis data time series yang diambil mulai dari 1 Januari 2021 hingga 1 Januari 2022 dengan model *error correction model* (ECM). Penelitian ini menyatakan bahwa jumlah transaksi memiliki efek positif pada harga bitcoin, jumlah pengguna dompet blockchain juga memiliki efek positif pada harga bitcoin, harga emas tidak berpengaruh pada harga bitcoin, harga minyak brent memiliki efek negatif pada harga bitcoin.

Kata kunci : *harga pasar, cryptocurrency, bitcoin.*

ABSTRACT
Crypto money (cryptocurrency) is a manifestation of technological development as virtual money is a phenomenon in society. The rise and fall of the cryptocurrency market price is influenced by many factors including the number of transactions, the number of blockchain users, the price of gold and the price of Brent Oil. This study aims to analyze the factors that affect the market price of cryptocurrency through analysis on Bitcoin. This type of research uses quantitative research. The data analysis used is a time series data analysis taken from January 1, 2021 to January 1, 2022 with Error Correction Model (ECM). Analysis tools used are computer program Eviews. This research fruits that the number of transactions had a positive effect on the price of Bitcoin, the number of blockchain wallet users also had a positive effect on the price of Bitcoin, the price of gold had no effect on the price of Bitcoin, the price of Brent Oil had a negative effect on the price of Bitcoin.

Keywords **:** *market price, cryptocurrency, bitcoin*

INTRODUCTION

As a virtual money, cryptocurrency is used as an alternative medium of exchange. This currency is generated and traded through a cryptographic process to carry out the process of sending data securely and exchanging digital tokens in a distributed manner. Everyone who uses cryptocurrency has an account number like a bank account called a 'Public Key'. The password to access it is called 'Stream Key'. Because of these two things, cryptocurrencies have a method called 'cryptography' that is so strong to secure financial transactions that it is almost impossible to hack by others. Cryptocurrency fluctuations in value are based on several conditions, one of which is due to availability or scarcity. However, sometimes its value also increases or decreases due to trust and use among its user community. In general, the rise and fall of the value of cryptocurrencies is influenced by market mechanisms. Unfortunately, the cryptocurrency market has a fairly high volatility or rate of change, so it is very volatile. If many people want the currency and its value is not too much, then its value will also increase. Other factors sometimes influence. The WannaCry attack indirectly contributed to the value fluctuation, because it forced users to make payments through cryptocurrency.

Poyser (2017) shows that deciders of crypto prices can be grouped into internal and external factors. Supply and demand cryptocurrency is the main internal factor that has a direct impact on its market price. On the other hand, attractiveness (popularity), legalization (adoption), and some macro-financial factors (interest rates, stock market, gold prices) can be considered as external price determinants. Bitcoin which is one of the virtual currencies is often juxtaposed with gold, bitcoin is the result of cryptography and is considered a commodity because it is much sought after as an investment alternative. Whereas, to get it, it needs to be mined by solving complex mathematical codes. Bouoiyour & Selmi (2016) tested the interconnection of precious metals and Bitcoin with

volatility in financial markets. They found that the viability of gold, silver and Bitcoin as hedges and safe havens is not constant all the time, but in particular, Bitcoin acts as a weak safe haven in the short term, and as a quickset in the long term. Bitcoin and gold dynamics tend to be moderately interdependent. Such dependence is expected as both assets are considered safe havens in times of turmoil.

Based on the regulatory side, the Commodity Futures Trading Commission (CFTC) has also officially declared virtual money as a commodity, just like the world's crude oil or gold (Klein et al., 2018). Cryptocurrency market capitalization reported from news Beritasatu.com (9/3/2020) stated that, in addition to gold prices, world oil prices caused cryptocurrency market capitalization to plummet following the correction in world crude oil prices and stock selling on world exchanges. The market capitalization of the entire cryptocurrency evaporated by US$ 26.43 billion compared to yesterday. The sell-off appears to be getting worse as the day progresses. Bitcoin, the largest cryptocurrency by value, has lost 10 percent in the past 24 hours. Based on the description above, I consider it necessary to conduct research focusing on the factors that determine the price of the cryptocurrency market, especially the price of Bitcoin. To that end, researchers will conduct a study with the title cryptocurrency market price determinants: analysis on Bitcoin. In line with the background of the problem and the identification of the problem described above, this study is limited to the determining factors of the Bitcoin price, namely the number of transactions, the number of blockchain wallet users, the price of gold, and the world oil price (brent oil) period January 1, 2021-January 1, 2022.

METHODS

This study aims to determine the influence of factors that determine the price of Bitcoin in the cryptocurrency market. The dependent variable used is the price of Bitcoin. While the independent variables used are the number of transactions, the number of blockchain wallet users, the price of gold, and the price of brent oil. The study period from January 1, 2021 to January 1, 2022 resulted in 365 observations. This research data is in the form of time series data sourced on blockchain websites https://www.blockchain.com and https://www.investing.com. The analysis in this study uses an associative quantitative approach. Associative research is research that aims to determine the relationship between two or more variables (Sugiyono, 2017). In this study, the dependent variable is the price of bitcoin, while the independent variables in this study were the number of transactions, the number of Blockchain Wallet users, the price of gold and the price of Brent Oil.

Definition of Variable Operations

1. Bitcoin Price in the Cryptocurrency Market. The Bitcoin price is the amount you have to pay to get 1 Bitcoin (BTC). In this study the price of Bitcoin uses market prices which are derived from price consolidation from crypto exchange market data.
2. Transaction amount. The number of transactions is the number of Bitcoin transactions that occur each day, units in times that occur in each day. This Data presents the existence of buying and selling bitcoin that occurs every time
3. Number of Blockchain Wallet users. The number of users of a blockchain wallet is the number of users who store Bitcoin money in a digital wallet on the blockchain, the unit of which is the person or user.
4. Gold price. The price of gold is the amount that must be paid to obtain gold units in USD.
5. Brent Oil price. The price of Brent Oil is the amount that must be paid to get the world's crude oil 'Brent Oil', units in USD.

The Data used is secondary data, namely time series data from January 1, 2021 to January 1, 2022 resulting from blockchain.com and investing.com. The author decided to start the data from January 1, 2021 because from that date, users began to use Bitcoin wallets on the blockchain. The analysis method used to determine the relationship of independent variables with dependent variables is Error Correction Model (ECM) and is assisted by software Econometric Views (Eviews) version 10.

Data Analysis Techniques

1. Integration Degree Test. The degree of integration test is performed when the stationary test shows that the data is non-stationary. It is intended to obtain indirect regression results. Data stationarity is done by doing DF test or ADF test on the difference of one level or one degree of integration. A probability value that does not exceed the significance level (5%) indicates that the null hypothesis of the existence of a unit root test can be rejected.
2. Cointegration Test. The existence of cointegration is a condition of using the Error Correction Model (ECM). A set of variables is said to have cointegration if it has an equilibrium relationship in the long term (Gujarati & Porter, 2010). The purpose of this test is to detect the long-term relationship between the independent variable and the dependent variable. This study uses a cointegration Test Engel Granger method that detects cointegration through a stationary test on the residual value (error) regression results. In order to detect cointegration, Augmented Dickey-Fuller (ADF) test was performed on the residual (series) regression results between variables. From this residual result is then tested with ADF.
   Ho: there is a cointegration between the independent variable and the dependent variable.
   Ha: there is no cointegration between independent and dependent variables.
   Decision-making is done with the criteria: (a) if ADF absolute value is higher than critical value (1%, 5%, or 10%), then H0 is rejected. It means that there is no cointegration between an independent variable and its dependent; (b) if ADF absolute value is less than critical values (1%, 5%, or 10%), then H0 is accepted, i.e the cointegration exists.
3. Test Classical Assumptions
   a. Normality Test. Data normality testing is examining the normality of data distribution (Santosa & Ashari, 2005). Normality testing is conducted with the intention to see whether or not the analyzed data is normal. A good regression model has a normal or near-normal distribution of data. The residual value is said to be normally distributed if most of the residual values are close to the average value. The value of the crunch (kurtosis) and the slope coefficient (skewness).
   b. Multicollinearity Test. Multicollinearity test is intended to determine whether there is a linear relationship between the independent variables in multiple regression. Multicollinearity testing in this context is using a client detection method. This test looks at the relationship individually between one independent variable with another independent variable. Client detection compares the auxiliary coefficient of determination (r2) with the coefficient of determination (R2) of the original regression model. If r2 is smaller than R2 then avoid the symptoms of multicollinearity (Widarjono, 2005).
   c. Homoscedasticity Test. This test is a characteristic test to test whether the regression model has differences from the residuals. A good model is a model that is homoscedasticity in which the variance and residual values between protections are the same so that they fulfill insurance. Tests to detect heteroscedasticity use Harvey Heteroscedasticity (Gujarati & Porter, 2010).
   d. Linearity Test. Linearity test is used to see whether the specification of the model used is correct or not. This test can be done with the Ramsey RESET test.
      H0: models avoid specification errors
      Ha: the model has a specification error
      Decision making with criteria: (1) if the value of F > 0.05 then H0 is accepted, the model is spared specification error; (2) f the value of F < 0.05 then H0 is rejected, the model there is a specification error.
   e. Model Stability Test. Stability test using Cusum test. This test is based on the stability test using recursive residuals with estimated standard deviation in the observations used. If the resulting plot exceeds the test significance limit, then the parameters in the observed model are unstable.
4. Hypothesis Testing
   a. Partial Test (Statistical Test t), Regression coefficients are used to determine the effect of partially independent variables on dependent variables. Testing of regression results is done by using the t test on the degree of confidence of 95% or (2) =5% with the following

conditions: H0: if the probability of t-Statistics is < 0.05 then H0 is rejected; Ha: if the probability of t-Statistics > 0.05 then Ha is rejected.

b. Stimulation Test (Statistical Test F). F test aims to determine the effect of all independent variables simultaneously to the dependent variable. The F test is also called the model feasibility test which is used to identify regression models that are estimated to be feasible or not. Feasible here means that the estimated model is feasible to be used to explain the influence of independent variables on dependent variables. If the probability value F count < significance level 0.05 then it can be said that the estimated regression model is feasible.
c. Coefficient Of Determination (R2). The small value of adjusted R2 means that the ability of independent variables in explaining the dependent variable is very limited (Ghozali, 2012). The fit of the model is said to be "better " if the value of adjusted R2 is closer to 1.

RESULTS

This study determines the sample using a purposive sampling technique using some criterias as follows : (a) data on the number of transactions, the number of blockchain wallet users, the price of gold, the price of Brent Oil, and the price of Bitcoin in the cryptocurrency market are used in the form of closing data on Monday-Friday' and (b) Data on the number of transactions, the number of blockchain wallet users, the price of gold, the price of Brent Oil, and the price of Bitcoin in the cryptocurrency market are taken from the last 1 year, starting from January 1, 2021 - January 1, 2022. From these criteria the research data obtained as many as 216 time series data. The Data used have different units so that the LOG(N) must be done to equate the units of the variables X and Y.

The degree of integration test is performed when the stationary test shows that the data is nonstationary. The results of the stationary test showed that the variables Bitcoin price (HB_Y) and Brent Oil price (HBO_X4) are not stationary at the level, so the degree of integration test was carried out. Based on Table 1, it is known that the variable number of transactions (JT_X1), the number of Blockchain Wallet users (JPD_X2), the price of gold (HE_X3) and the price of Brent Oil (HBO_X4) and the price of Bitcoin (HB_Y) have probability values of 0.000 < 0.05, this indicates that the five variables used in the study have been stationary at the level of degree of integration 1.

Table 1
Degree Of Integration Test Results

Variabel	Prob	Conclusion
HB_Y	0.0000	Stationer
JT_X1	0.0000	Stationer
JPD_X2	0.0000	Stationer
HE_X3	0.0000	Stationer
HBO_X4	0.0000	Stationer

Source: Data processed

Cointegration test is performed to detect the long-term relationship between the independent variable and the dependent variable. If the variables are cointegrated, then the independent variable and the dependent variable have a stable relationship in the long run. Cointegration test in the study was conducted using the ADF test (Augmented Dickey-Fuller) with the following decision-making criteria : a) if the value of prob.ADF > significance level 5% then H0 is rejected, meaning that the data is not cointegrated, so that the independent variable and the dependent variable does not have a stable relationship in the long term; b) if the value of prob.ADF < significance level 5% then H0 is accepted, meaning that the data has been cointegrated, so that the independent variable and the dependent variable have a stable relationship in the long term. Based on Table 2, it is known that the probability value of 0.0258 < 0.05, then H0 is accepted which means the data has been cointegrated, so that the independent variable and the dependent variable have a stable relationship in the long run.

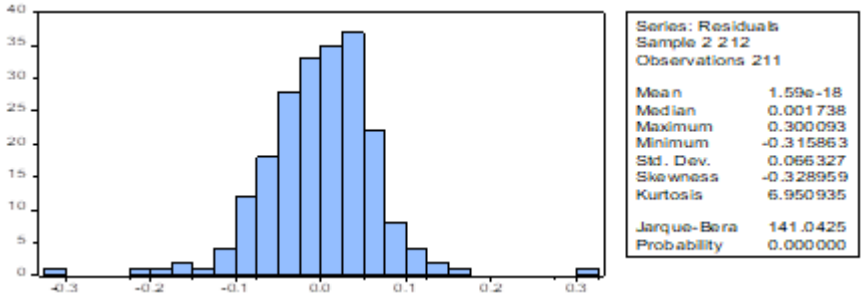
Table 2
Cointegration Test Results

ECT	t-Statistic	Prob	Conclusion
Augmented Dickey-Fuller test statistic	-3.1313	0.0258	Data Has Cointegration

Source: Data processed

Normality test is performed to test whether the regression model dependent variable and independent variable is normally distributed or not. The normality test is performed using the Jarque-Bera test. The test criteria are: a) Normality distributed Data, if probability value JB (Jarque-Bera) count > alpha level 0.05 or b) Distributed Data is not normality, if the probability value of JB (Jarque-Bera) count <0.05 alpha level.

Based on figure 1, it is known that the value of prob. JB count of 0.0000 < 0.05, this indicates that the residual is not normally distributed. This study does not meet the assumption of normality, but the results of the data can still be used to test the hypothesis, because it is based on the central limit theorem, where the central limit theorem is a theorem that states that the sampling distribution curve (for a sample size of 30 or more) will be centered on the value of the population parameter and will have all the properties of a normal distribution, in other words the research conducted has been normally distributed. In addition, according to (Rohmatul et al, 2017).



Source: Data processed

Figure 1
Normality test

Multicollinearity test aims to determine whether in the regression model there is a correlation between one independent variable with another independent variable. Detection of multicollinearity is done by a client detection method. The test criteria are: a) Data does not occur multicollinearity, if the value of the coefficient R2 < R2 or b) Multicollinearity Data, when the value of the coefficient r2 > R2. Multicollinearity test results table 4.5, shows the coefficient of R2 independent variable number of transactions (JT_X1), the number of Blockchain Wallet users (JPD_X2), the price of gold (HE_X3) and the price of Brent Oil (HBO_X4) is smaller (<) R2, so it is concluded that the regression model and the four independent variables in the study did not occur multicollinearity problem.

Tabel 3
Multicollinearity Test

Variabel	R^2	r^2	Conclusion
JT_X1	0.3242	0.0045	Multicollinearity Does Not Occur
JPD_X2		0.1183	
HE_X3		0.2360	
HBO_X4		0.0640	

Source: Data processed

Autocorrelation test aims to test the linear regression model has an influence between the disruptive error in the period t with the error in the period t-1 (previous). To determine the presence or absence of autocorrelation disease can also be used Lagrange Multiplier test (LM Test) by comparing the probability of R-squared with (2) = 0.05. The test criteria are: a) Data does not occur autocorrelation problem, if the value of Prob.Obs* R-squared > 0.05 alpha level or b) Data has

autocorrelation problems, if the value of Prob.Obs*R-squared < alpha level 0.05. LM test results show that the value of prob.obs*r-squared of 0.1230 > 0.05, so it can be concluded that the data in this study does not cause an autocorrelation problem.

Table 4
Autocorrelation Test

F-statistic	2.056968	Prob. F(2,203)	0.1305
Obs*R-squared	4.191125	Prob. Chi-Square(2)	0.1230

Source: Data processed

Linearity test is performed to detect the form of empirical model that researchers use is correct or not and test whether a new variable is relevant or not included in the empirical model. Linearity test can use Ramsey RESET test with the test criteria are: a) The Data satisfies the linearity assumption, if the value of prob.F-statistic > alpha level 0.05 or b) The Data does not meet the linearity assumption, if the value of prob.F-statistic < alpha level 0.05. Linearity test results presented above show that the value of Prob. F count of 0.6359 is greater than 0.05 so it can be concluded that the regression model has met the linearity assumption.

Table 5
Linearity Test

	Value	**df**	**Probability**
t-statistic	0.474204	204	0.6359
F-statistic	0.224869	(1, 204)	0.6359
Likelihood ratio	0.232457	1	0.6297

Source: Data processed

Multiple regression analysis was conducted to determine the relationship between the number of transactions (JT_X1), the number of Blockchain Wallet users (JPD_X2), the price of gold (HE_X3) and the price of Brent Oil (HBO_X4) to the price of Bitcoin in the cryptocurrency market. The results of the cointegration test show that the data has been cointegrated, so that the independent variable and the dependent variable have a stable relationship in the long run. Based on Table 6, the equation model using the OLS method can be formulated as follows:

HB_Y = 6.198 + 0.017 JT_X1 + 1.726 JPD_X2-3.399 HE_X3 – 0.436 HBO_X4

Table 6
Regression Results of OLS Method

Variable	**Model OLS**			
	Coefficient	**Std. Error**	**t-Statistic**	**Prob.**
C	6.19791	8.02654	0.772178	0.4409
JT_X1	0.01719	0.01120	1.534253	0.1265
JPD_X2	1.72615	0.42539	4.057818	0.0001
HE_X3	-3.39924	0.45718	-7.43522	0.0000
HBO_X4	-0.43590	0.21706	-2.00822	0.0459
R-squared	0.32423			
Adjusted R-squared	0.31117			
F-statistic	24.8293			
Prob(F-statistic)	0.00000			

Source: Data processed

Tabel 7
uji Statistik T Model ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.009853	0.005601	-1.759023	0.0801
D(JT_X1)	0.009002	0.003275	2.749009	0.0065
D(JPD_X2)	11.40725	2.889923	3.947249	0.0001
D(HE_X3)	-0.286997	0.486533	-0.589882	0.5559
D(HBO_X4)	-0.346998	0.167811	-2.067794	0.0399
ECT(-1)	-0.093379	0.026006	-3.590755	0.0004

Source: Data processed

Based on Table 7 the research hypothesis is hypothesis 1: the number of transactions has a positive effect on the price of Bitcoin in the Cryptocurrency market The probability value of the number of transactions (JT_X1) in the OLS > alpha 0.05 model of 0.1265 > 0.05 and the regression coefficient value of 0.017 indicate a positive direction, this indicates that in the long term the number of transactions does not affect the price of Bitcoin in the Cryptocurrency market in 2021. While the probability value of the number of transactions (JT_X1) in the ECM model < alpha 0.05 of 0.0065 < 0.05 and the regression coefficient value of 0.009 indicate a positive direction, this indicates that in the short term the number of transactions has a positive effect on the price of Bitcoin in the Cryptocurrency market in 2021. Based on these statistical results, the first hypothesis proposed by the author is rejected.

1. The probability value of the number of Blockchain Wallet users (JPD_X2) in the OLS model < alpha 0.05 of 0.0001 < 0.05 and the regression coefficient value of 1.726 indicate a positive direction, this indicates that in the long term Blockchain wallet users have a positive effect on the price of Bitcoin in the Cryptocurrency market in 2021. While the probability value of Blockchain Wallet users (JPD_X2) in the ECM model < alpha 0.05 of 0.0001 < 0.05 and the regression coefficient value of 11.407 indicate a positive direction, this indicates that in the short term the number of Blockchain Wallet users also has a positive effect on the Bitcoin price in the Cryptocurrency market in 2021. Based on the results of these statistics, the second hypothesis proposed by the authors is declared acceptable.
2. The probability value of the gold price (HE_X3) in the OLS model < alpha 0.05 of 0.000 < 0.05 and the regression coefficient value of -3.399 indicate a negative direction. This indicates that in the long-term the price of gold has a negative effect on the price of Bitcoin in the Cryptocurrency market in 2021. While the probability value of the gold price (HE_X3) in the ECM > alpha 0.05 model is 0.5559 > 0.05 and the regression coefficient value of -0.287 shows a negative direction, this shows that in the short term the price of gold has no effect on the price of Bitcoin in the Cryptocurrency market in 2021. Based on the statistical results, the third hypothesis proposed by the author is rejected.
3. The probability value of Brent Oil price (HBO_X4) in the OLS model < alpha 0.05 is 0.0459 < 0.05 and the regression coefficient value of -0.436 shows a negative direction, this indicates that in the long term the price of Brent Oil negatively affects the price of Bitcoin in the Cryptocurrency market in 2021. While the probability value of Brent Oil price (HBO_X4) in the ECM model < alpha 0.05 is 0.0399 < 0.05 and the regression coefficient value of -0.347 shows a negative direction, this shows that in the short term the price of Brent Oil negatively affects the price of Bitcoin in the cryptocurrency market in 2021. Based on the results of these statistics, the fourth hypothesis proposed by the authors is declared acceptable.

Based on Table 8, the probability value of F-statistic in OLS and ECM models is smaller than alpha (0.05) which is equal to 0.0000 < 0.05. This means that in the long term or short term the independent variables of the number of transactions, the number of blockchain wallet users, the price of Brent Oil and the price of gold simultaneously/jointly affect the price of Bitcoin in the cryptocurrency market in 2021. The results of the coefficient of determination in Table 9, showing the value of r square in the OLS model of 0.3242, this shows that in the long term the proportion of the influence of the number of transactions, the number of blockchain wallet users, the price of gold and the price of Brent Oil on the price of Bitcoin in the cryptocurrency market in 2021 is 32.42 percent while the remaining 67.58 percent (100 – 32.42 percent) is influenced by other variables not examined

in the study. While the value of r square in the ECM model is 0.1714, this shows that in the short-term the proportion of the influence of the number of transactions, the number of blockchain wallet users, the price of gold and the price of Brent Oil on the price of Bitcoin in the cryptocurrency market in 2021 is 17.14 percent while the remaining 32.86 percent (100 – 17.14 percent) is influenced by other variables that were not examined in the study.

Table 8
Statistical Test Results F

Model	F-Statistic	Prob	Conclusion
OLS	24.82932	0.000000	Berpengaruh Simultan
ECM	8.484037	0.000000	Berpengaruh Simultan

Source: Data processed

Table 9
Coefficient Of Determination (R2)

Model	Koefisien Determinasi
OLS	0.324230
ECM	0.171450

Source: Data processed

According to the results of this analysis, the number of transactions has a positive effect on the price of Bitcoin because with increasing transactions, it indicates that people's trust in Bitcoin is increasing. Bitcoin, besides being practically used as a means of payment transactions through digital wallets on smartphones, it also can be used as a hedging tool when there is a crisis, and also speculation to make a profit. The more often Bitcoin is transacted, the existence of Bitcoin is always maintained and even increased. It is known that the number of blockchain wallet users has a positive influence on the price of Bitcoin. This is due to the bitcoin storage function in the use of blockchain wallets. Not only that, the number of cases of bitcoin theft in digital wallet companies is the cause of the increase in the use of blockchain wallets. As a new user, you will be more careful when choosing a digital wallet so that it is less likely to choose the one that has been attacked by hackers. Generally, the cause of the increasing number of Bitcoin users is the function of using blockchain wallets to store Bitcoin. Hence, if there are individuals who want Bitcoin, they must have a digital wallet.

The price of gold has a positive effect in the long term because gold and Bitcoin can both be used as an alternative to protect one's assets, especially in crisis time. While the price of gold does not have a significant influence in the short-term on Bitcoin because the increase in the price of gold is quite small every day. Unlike Bitcoin, which has high volatility in the short term. According to the results of the researcher's analysis, in the long term the price of Brent Oil has a negative effect on the price of Bitcoin because this rising oil price makes the price of fuel or gasoline increase which makes inflation increase. This rising oil price can cause multiple chaos because inflation rises due to the increased money supply.

CONCLUSION

Based on the results of the study I conclude that the number of transactions has a positive effect on the price of Bitcoin. The number of blockchain wallet users also has a positive effect on the price of Bitcoin. The price of gold has no effect on the price of Bitcoin, and the price of Brent Oil has a negative effect on the price of Bitcoin.

REFERENCES

Agus Widarjono. 2005. Ekonometrika Teori dan Aplikasi Untuk Ekonomi dan Bisnis. *Ekonisia Fakultas Ekonomi Universitas Islam Indonesia: Yogyakarta.*, 1–9.

Bouoiyour, J., & Selmi, R. 2016. Bitcoin: A beginning of a new phase? *Economics Bulletin*, *36*, 1430–1440.

Budi Purbayu Santosa dan Ashari. 2005. *Analisis Statistik dengan Microsoft Excel & SPSS*. Yogyakarta. :Andi Offset.

Ghozali, I. 2012. *Aplikasi Analisis Multivariate dengan Program IBM SPSS 20.* Semarang: UNDIP

Gujarati, D., & Porter, D. 2010. *Dasar-Dasar Ekonometrika terjemahan*. Salemba Empat. Jakarta

Investing.com. 2021. *Mata Uang Cryptocurrency di Dunia*.

Klein, T., Pham Thu, H., & Walther, T. 2018. Bitcoin is not the New Gold – A comparison of volatility, correlation, and portfolio performance. *International Review of Financial Analysis*, *59*, 105–116.

Poyser, O. 2017. *Exploring the determinants of Bitcoin's price: an application of Bayesian Structural Time Series*.

Sugiyono. 2017. *Metode Penelitian Kuantitatif, Kualitatif. R&D*. Bandung : Alfabeta,