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THE EFFECT OF TECHNICAL ASSET, FINANCIAL ASSET AND MACRO-ECONOMIC ON RETURN BITCOIN

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Abstract

This study uses research variables such as Trading Volume, Market Capitalization, S&P 500 Index, World Oil Price, Gold Price on Bitcoin Returns. The data source in this study is through internet media with the sites https://coinmarketcap.com/, https://finance.yahoo.com/, and other sites that support this research. The data used in this study are time series, and the target population for the data sample is 1,096 (3 years x 365) daily report data. The data were collected from January 1, 2020, to December 31, 2022, through the release of daily bitcoin transaction reports. Time series data analysis using Engel Granger's Error Correction Model is the method employed (ECM). The analysis tool used is the Econometric Views (Eviews) which is one of the computer econometric program. The results of this study where trading volume has a positive and insignificant effect on bitcoin returns. The impact of market capitalisation on bitcoin returns is both favorable and significant. Returns on bitcoin are positively and significantly impacted by S&P 500. The returns on bitcoin are negatively and insignificantly impacted by the price of world oil. Returns on bitcoin are positively and negligibly impacted by the gold price.

Keywords : ***Trading Volume , Market Capitalization, S&P 500 Index, World Oil Price, Gold Price, Bitcoin Returns, Engel Granger's Error Correction Model (ECM), Econometric Views (Eviews)***

1. INTRODUCTION

Since it is launched in 2009, cryptocurrency has become increasingly popular around the world. It has attracted so much attention from both regulators, the public, and investors due to its unique characteristic, possessing properties of both standard financial assets and speculative assets (Kristoufek, 2015).

Bitcoin is one of the digital currencies, which also comprises cryptocurrencies. Despite being a form of alternative currency, Bitcoin is also employed as a financial tool (Baur et al., 2018). A person using the alias Satoshi Nakamoto created Bitcoin in 2008 and made it known to the world in 2009. (Kurihara & Fukushima, 2018).

The highly volatile returns of bitcoin and most other cryptocurrencies attract speculators who hope to sell the digital assets, which they have bought now, at a higher price later. Figure 1.1 below illustrates the development of bitcoin (BTC) returns from 2009-2022.

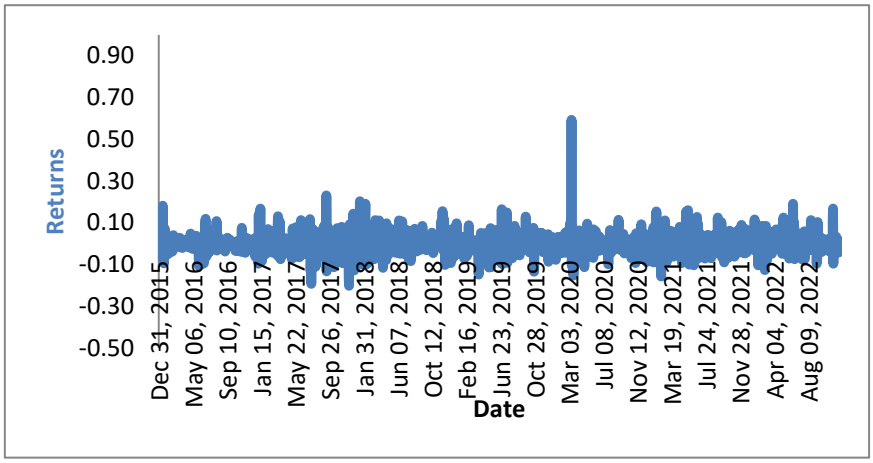

Figure 1.1 Return Bitcoin Fluctuations (BTC) at 2016-2022
Source : Processed (CoinMarket, 2022)

The technical asset factor variables used in research to capture the influence of the bitcoin market itself are market capitalization and trading volume on bitcoin returns (Bakas et al., 2022).

Furthermore, the financial asset factor variable, this study uses the price of the United States stock market index (S&P 500 index closing price). The index is based because the United States stock market is considered a representative measure of the performance of equity markets around the world (Bardgett et al., 2019).

Macro-economic variables are believed to largely have an impact on the cryptocurrency market. Therefore, the author includes world oil prices, and gold prices in the research model because they have the characteristics of both rare and expensive assets and can be used as an alternative safe investment instrument (safe heaven) when the bitcoin market is falling (Baur, 2018).

Based on previous studies above, most of the literature recognizes that the cryptocurrency market is increasingly efficient, characterized by great market interest. So this study uses research variables such as Trading Volume, Market Capitalization, S&P 500 Index, World Oil Prices, Gold Prices on Bitcoin Returns.

2.LITERATURE REVIEW

2.1. Trading Volume

Trading volume is the number of active trades on a coin at any given time. In general, the greater the trading volume, it indicates that the better the cryptocurrency asset is because it makes the asset easier to trade (coinvest, 2021).

2.2.Market Capitalization

Market capitalization, often known as market cap, is a metric or a measure that represents the market worth of an item. The value of different digital assets, such as stocks or cryptocurrencies, is measured and calculated using market capitalization (Sihombing S et al, 2021).

2.3.Return bitcoin

Return is the rate of profit obtained by investors on the investment made. It can be concluded that return is the result obtained from investment (Umam and Herry, 2017: 182).

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2.4.S&P 500 Index

The S&P 500 is one of the indices that is a leading indicator of the movement of the US stock market. It contains 500 stocks issued by 500 major issuers. Meanwhile, the S&P 500 Index variable is used by Gunasekarage et, al. (2004) as a proxy for global macroeconomic variables to explain Index price movements. Gunasekarage et, al (2004) revealed that much of the literature suspects that the capital market in the United States exerts a significant influence on most capital markets in the world.

2.5.World Oil Price

The West Texas Intermediate (WTI) crude oil price, also referred to as light sweet oil, is the benchmark for the global price of oil. According to research by Dennis van Wijk (2013), Analysis of the effect of oil prices on the value of bitcoin, long-term fluctuations in world oil prices, specifically, have the power to influence Bitcoin's price.

2.6.Gold Price

Gold is a form of investment that tends to be risk-free (Sunariyah, 2006). The limited amount of gold makes its price always increase in the long run. Similarly, bitcoin has a limited supply.

3.CONCEPTUAL FRAMEWORK AND HYPOTESIS

3.1.Conceptual Framework

So this study uses research variables such as Trading Volume, Market Capitalization, S&P 500 Index, World Oil Prices, Gold Prices on Bitcoin Returns. The conceptual framework in this study can be seen as follows:

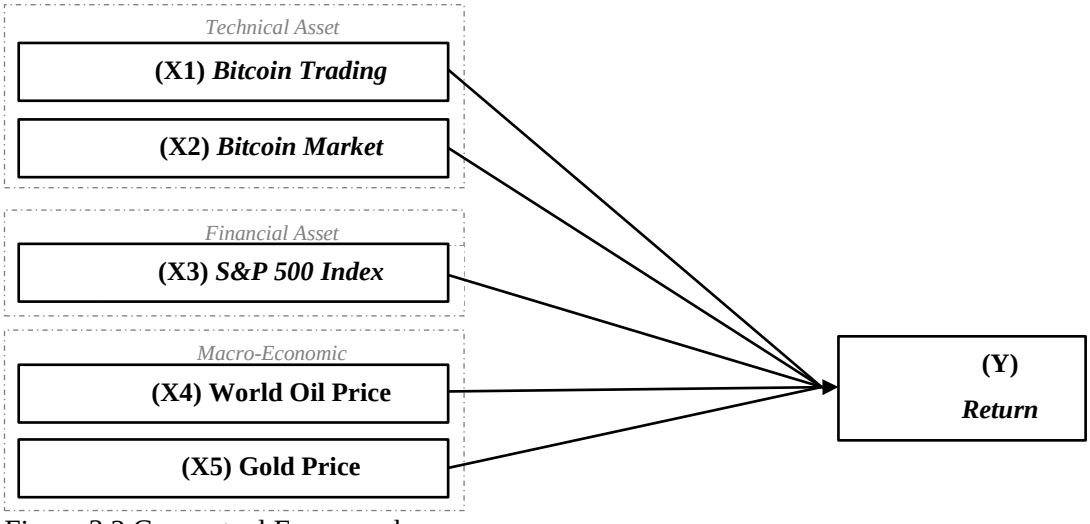


Figure 3.2 Conceptual Framework

3.2.Hypothesis

1. The supply of bitcoins has a favorable and large impact on bitcoin returns.
2. The income generated by bitcoin miners has a negative and large impact on returns on bitcoin.
3. Bitcoin returns are negatively and significantly impacted by the S&P 500 index.
4. The returns on bitcoin are significantly and negatively impacted by global oil prices.

5. The return on bitcoin is significantly and negatively impacted by the price of gold.
6. The amount of trading has a favorable and large impact on bitcoin returns.
7. Market capitalization significantly and favorably influences bitcoin returns.

4.RESEARCH METHOD

This research uses a quantitative approach that uses numbers, statistical processing with the aim of testing predetermined hypotheses (Sugiyono, 2016). So this research will be able to describe how the relationship between technical assets, financial assets and macro-economics on bitcoin returns.

The sites https://coinmarketcap.com/, https://finance.yahoo.com/, and other research-supporting websites were used to perform this study in Indonesia. The type of data used in this study is time series data, which was gathered from a target population of 1,096 (3 years x 365) daily report data for the sample data from January 2020 to December 2022 through documentation research on the release of daily bitcoin transaction reports.

The data analysis used is time series data analysis with Engel Granger's Error Correction Model (ECM). The analysis tool used is the Econometric Views (Eviews) which is one of computer econometric program.

5.RESULT AND DISCUSSION

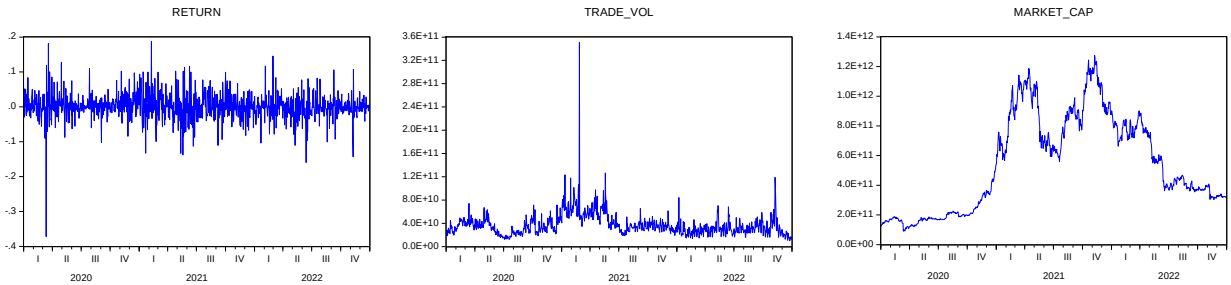
5.1.Descriptive Statistics

The research period from January 1, 2020 to December 31, 2022 resulted in 1096 observations. The results of descriptive analysis in this study are as follows:

Table 5.1 Descriptive Statistics Results

	RETURN	TRADE_VOL	MARKET_CAP	SNP	WTI	GOLD
Mean	0.0014	3.67E+10	5.44E+11	3863.528	3.9095	1790.601
Median	0.0008	3.30E+10	4.46E+11	3916.015	3.7100	1795.750
Maximum	0.1874	3.51E+11	1.27E+12	4889.170	9.3200	2051.500
Minimum	-0.3717	9.74E+09	9.08E+10	2237.400	1.0900	1442.400
Std. Dev.	0.0379	1.89E+10	3.23E+11	551.7150	1.6387	102.468
Observations	1096	1096	1096	1096	1096	1096

Source : Output Eviews (2023)



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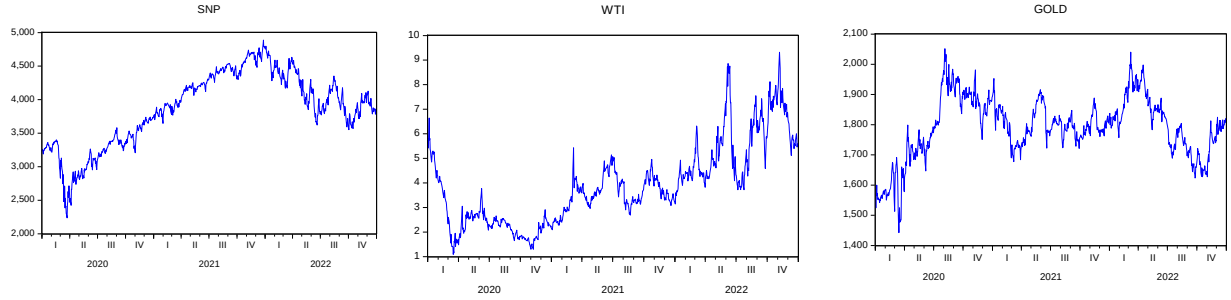

Figure 3.2 Variable Change Graph

5.2.Stasionerity Test

The use of non-stationary data requires special treatment to avoid spurious regression where an estimated regression equation has good significance, but is essentially meaningless. The Augmented Dickey Fuller test is utilized by the unit root test (ADF test). The study's variables demonstrate that the data are not level-stationary. To check for stationarity, the data must be differenced once.

Tabel 5.2 Stationerity Test Results

	Stationer Test on Level		Stationer Test on First Different	
Variabel	**Probability**	**Stationerity**	**Probability**	**Stationerity**
Return Bitcoin	0.0000	Stationer	0.0000	Stationer
Trading Volume	0.0002	Stationer	0.0000	Stationer
Market Capitalization	0.5543	Non Stationer	0.0000	Stationer
Indeks S&P 500	0.4121	Non Stationer	0.0000	Stationer
World Oil Price	0.1811	Non Stationer	0.0000	Stationer
Gold Price	0.0089	Stationer	0.0000	Stationer

Source : Output Eviews (2023)

5.3. Cointegration Test

The test developed by Johansen can be used to determine the cointegration of a number of variables (Unrestricted Cointegration Rank Test Trace). A long-term link between the independent variable and the dependent variable is examined by the cointegration test.

Based on the results above, it indicates 2 cointegration with trace statistic value > critical value which means that cointegration occurs. Then the tested equation has a long-term relationship.

5.4.Classical Assumption Test

According to the findings of the multicollinearity testing, there are no signs of multicollinearity between the independent variables. The VIF value is 10, which is why (Ghozali, 2013).

The Harvey test can be used to determine whether heteroscedasticity exists. It may be concluded that there is no heteroscedasticity issue based on the data processing results of the heteroscedasticity test, where the value is more than = 5% and the chi-square probability of Obs * R-Squared is 0.8460.

The short-term equation did not exhibit autocorrelation symptoms, as indicated by the Obs * R-Squared probability value of 0.8296, which was calculated based on the results, and which is more than the level of significance = 5%.

5.5.Regression Test Error Correction Model

Tabel 5.3 Tabel Regresi Error Correction Model

Variable	Coefficient	t-Statistic	Prob.
D(TRADE_VOL)	6.06E-14	0.781321	0.4348
D (MARKET_CAP)	1.37E-12	24.72541	0.0000
D(SNP)	9.01E-05	3.339664	0.0009
D(WTI)	-0.001236	-0.204302	0.8382
D(GOLD)	1.51E-05	0.219688	0.8262
RESID01_ECT (-1)	-0.248101	-8.416260	0.0000
C	-0.000268	-0.209478	0.8341
R-squared	0.420585		
F-statistic	131.5051		
Prob(F-statistic)	0.000000		
Durbin-Watson stat	1.988530		

The form of the research regression analysis equation is as follows:

dY = -0.0002568 + 6.06edX1 + 1.37edX2 + 9.01edX3 – 0.001236dX4 + 1.51edX5 – 0.248101ECT(-1) μ

Describtion :

d(Y) = First different Return Bitcoin
dX1 = First different Trading Volume
dX2 = First different Market Capitalization
dX3 = First different variabel S&P 500 Index
dX4 = First different World Oil Price
dX5 = First different Gold Price
ECT = Residual Variabel From Long-term Regretion
μ = Residual value

5.6.Discussion of Research Results

According to the findings of this study, at a significance level of 5%, Trade Volume has a negative and minor impact on Bitcoin Return. The findings of this study are consistent with those of studies by Dimitrios Bakas, Georgios Magkonis, Eun Young Oh, and Priti Dubey (2022), which found a positive and substantial relationship between trading volume and bitcoin returns. Nevertheless, this runs counter to the findings of a 2014 study by Glaser, Zimmermann, et al., which claim that volume has no bearing on returns but instead reveals useful data on Bitcoin trading activity that supports the idea of cryptocurrency as a volatile financial asset.

According to the findings of this study, at a significance level of 5%, Market Capitalization has a favorable and significant impact on Bitcoin Returns. The findings of this analysis concur with those of studies by Dubey (2022), Sovbetov (2018), Momtaz (2021), and Bakas et al (2022), which discovered a highly substantial positive link between market capitalization and bitcoin returns. This, however, goes against the findings of Shen et al. (2020) and Adriansyah & Fachrudin (2021), who claimed that Market Capitalization had little to no impact on bitcoin returns.

The S&P 500 Index has a favorable and substantial impact on Bitcoin Returns at the = 5% significance level, according to the findings of this study. The findings of this analysis are consistent with those of studies by Bakas (2022), Ünvan, (2021), Sovbetov (2018, Kjaerland et al (2018), and Canoz & Dirican (2017), who discovered a substantial inverse association between the returns on the S&P 500 Index and those of bitcoin. This, however, contradicts claims made by Poyser and Perdiguero (2017) and Gil-Alana et al. (2020) that the S&P 500 Index significantly boosts bitcoin returns.

According to the findings of this study, the Global Oil Price has a small negative impact on Bitcoin returns. The findings of this analysis are consistent with those of Poyser and Perdiguero's (2017) study, and Panagiotidis et al2018 .'s study discovered a substantial inverse association between bitcoin returns and world oil prices. Adebola et al. (2019), who claim that the Global Oil Price had little to no impact on bitcoin returns, are in disagreement with this.

According to the findings of this study, at a significance level of 5%, the Gold Price has a positive but small impact on Bitcoin Return. The study's findings concur with those of Oey Laurensia Dewi Warsito, who found that pricing has no bearing on bitcoin returns. Yet, Priti Dubey's research from 2022 indicates that the price of gold has a negative impact on the returns of bitcoin.

6.CONCLUSION AND RECOMMENDATIONS

6.1.Conclusions

The following can be drawn as a conclusion from the research and discussion's findings:

1. The supply of bitcoins has a favorable and large impact on bitcoin returns.
2. The earnings from mining have a negative and large impact on bitcoin.
3. Bitcoin returns are significantly and favorably impacted by S&P 500.
4. The returns on bitcoin are negatively and insignificantly impacted by global oil prices.
5. Bitcoin returns are positively and negligibly impacted by the gold price.
6. The amount of trading has a small but positive impact on bitcoin returns.
7. Market capitalization significantly and favorably influences bitcoin returns.

6.2.Recommendations

Following are some recommendations that can be made based on the findings of the research:

1. Since the research's findings indicate that the bitcoin supply variable has a favorable impact on returns, it is hoped that the company will be able to keep the price of bitcoin stable. A falling price indicates a decline in demand for bitcoin, and consistent production of coins will increase demand and encourage more investors to purchase bitcoin.
2. The results showed that the miner revenue variable had a negative effect on bitcoin returns, so it is hoped that investors before starting mining, should calculate potential profits using one of the crypto mining profitability calculators that can be done online and join a mining pool which contains a group of miners who work together and share rewards. Individual miners can join mining pools to compete with mining farms. This can speed up the mining process, while lowering the difficulty of mining, making it more profitable and rewarding.
3. The results showed that the S&P 500 variable and world oil prices had a positive influence on bitcoin returns, it is hoped that the company will continue to maintain the stability of the bitcoin price so that investors do not divert their investments to other markets.
4. The results showed that the market capitalization variable had a positive effect on bitcoin returns, it is hoped that the company can strengthen assets and is not vulnerable to market

manipulation by a group of people who use pump and dump schemes, so as to increase transactions which indicate that public confidence in bitcoin is increasing and keep asset capitalization higher, so that when the market capitalization of bitcoin increases, it will have an attraction for investors and trigger positive sentiment leading to increased demand among investors which shows positive prospects for future assets.

5. The results showed that the variables of World Oil Price, Gold price and trading volume did not have an influence on bitcoin returns, it is hoped that companies can evaluate in justifying other variables because there are several variables that do not have a significant effect on bitcoin returns, one of which is the variable world oil price, gold price and trading volume so that other variables can be considered to increase bitcoin returns.

REFERENCES

Amihud, Y. (2002), "Illiquidity and stock returns: cross-section and time-series effects", Journal of Financial Markets, Vol. 5 No. 1, pp. 31-56.

Adebola, S.S., Gil- Alana, L.A. and Madigu, G. (2019), "Gold prices and the cryptocurrencies: evidence of convergence and cointegration", Physica A, Vol. 523, pp. 1227-1236, doi: 10.1016/j.physa.2019. 04.123.

Adriansyah, & Fachrudin, K. A. (2021). Analysis of Factors Affecting Cryptocurrency Return During the Covid-19 Pandemic. International Journal of Economic, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS), 1(2), 199–210. https://doi.org/10.54443/ijebas.v1i2.66

Akhtaruzzaman, M., Sensoy, A., & Corbet, S. (2020). The influence of Bitcoin on portfolio diversification and design. Finance Research Letters, 37(October). https://doi.org/10.1016/j.frl.2019.101344

Balcilar, M., Bouri, E., Gupta, R., & Roubaud, D. (2017). Can volume predict Bitcoin returns and volatility? A quantiles-based approach. Economic Modelling, 64(August 2016), 74–81. https://doi.org/10.1016/j.econmod.2017.03.019

Bariviera, A. F., & Merediz-Solà, I. (2021). Where Do We Stand in Cryptocurrencies Economic Research? a Survey Based on Hybrid Analysis. Journal of Economic Surveys, 35(2), 377–407. https://doi.org/10.1111/joes.12412

Baur, D. G., Hong, K. H., & Lee, A. D. (2018). Bitcoin: Medium of exchange or speculative assets? Journal of International Financial Markets, Institutions and Money, 54, 177–189. https://doi.org/10.1016/j.intfin.2017.12.004

Bustani, B., Khaddafi, M. ., & Nur Ilham, R. (2022). REGIONAL FINANCIAL MANAGEMENT SYSTEM OF REGENCY/CITY REGIONAL ORIGINAL INCOME IN ACEH PROVINCE PERIOD YEAR 2016-2020. *International Journal of Educational Review, Law And Social Sciences (IJERLAS)*, *2*(3), 459–468. https://doi.org/10.54443/ijerlas.v2i3.277

Canoz, I., & Dirican, C. (2017). the Cointegration Relationship Between Bitcoin Prices and Major World Stock Indices: an Analysis With Ardl Model Approach. Pressacademia, 4(4), 377–392. https://doi.org/10.17261/pressacademia.2017.748

Cheah, E. T., & Fry, J. (2015). Speculative bubbles in Bitcoin markets? An empirical investigation into the fundamental value of Bitcoin. Economics Letters, 130, 32–36. https://doi.org/10.1016/j.econlet.2015.02.029

Chen, T., Lau, C. K. M., Cheema, S., & Koo, C. K. (2021). Economic Policy Uncertainty in China and Bitcoin Returns: Evidence From the COVID-19 Period. Frontiers in Public Health, 9(March), 1–7. https://doi.org/10.3389/fpubh.2021.651051

Diniz, R., Prince, D. de, & Maciel, L. (2022). Bubble detection in Bitcoin and Ethereum and its

relationship with volatility regimes. Journal of Economic Studies, 2018. https://doi.org/10.1108/JES-09-2021-0452

Dubey, P. (2022). Short-run and long-run determinants of bitcoin returns: transnational evidence. Review of Behavioral Finance. https://doi.org/10.1108/RBF-02-2022-0040

Falahuddin, F., Fuadi, . F., Munandar, M., Juanda, R. ., & Nur Ilham, R. . (2022). INCREASING BUSINESS SUPPORTING CAPACITY IN MSMES BUSINESS GROUP TEMPE BUNGONG NANGGROE KERUPUK IN SYAMTALIRA ARON DISTRICT, UTARA ACEH REGENCY. *IRPITAGE JOURNAL*, *2*(2), 65–68. https://doi.org/10.54443/irpitage.v2i2.313

Geovani, I. ., Nurkhotijah, S. ., Kurniawan, H. ., Milanie, F., & Nur Ilham, R. . (2021). JURIDICAL ANALYSIS OF VICTIMS OF THE ECONOMIC EXPLOITATION OF CHILDREN UNDER THE AGE TO REALIZE LEGAL PROTECTION FROM HUMAN RIGHTS ASPECTS: RESEARCH STUDY AT THE OFFICE OF SOCIAL AND COMMUNITY EMPOWERMENT IN BATAM CITY. *International Journal of Educational Review, Law And Social Sciences (IJERLAS)*, *1*(1), 45–52. https://doi.org/10.54443/ijerlas.v1i1.10

Huang, J. Z., Huang, W., & Ni, J. (2019). Predicting bitcoin returns using high-dimensional technical indicators. Journal of Finance and Data Science, 5(3), 140–155. https://doi.org/10.1016/j.jfds.2018.10.001

Ilham, Rico Nur. *et all* (2019). Investigation of the Bitcoin Effects on the Country Revenues via Virtual Tax Transactions for Purchasing Management. International Journal of Suplly Management.Volume 8 No.6 December 2019.

Ilham, Rico Nur. *et all* (2019).. Comparative of the Supply Chain and Block Chains to Increase the Country Revenues via Virtual Tax Transactions and Replacing Future of Money. International Journal of Suplly Management.Volume 8 No.5 August 2019.

Kjærland, F., Khazal, A., Krogstad, E., Nordstrøm, F., & Oust, A. (2018). An Analysis of Bitcoin's Price Dynamics. Journal of Risk and Financial Management, 11(4), 63. https://doi.org/10.3390/jrfm11040063

Lasta Irawan, A. ., Briggs, D. ., Muhammad Azami, T. ., & Nurfaliza, N. (2021). THE EFFECT OF POSITION PROMOTION ON EMPLOYEE SATISFACTION WITH COMPENSATION AS INTERVENING VARIABLES: (Case Study on Harvesting Employees of PT. Karya Hevea Indonesia). International Journal of Social Science, Educational, Economics, Agriculture Research, and Technology (IJSET), 1(1), 11–20. https://doi.org/10.54443/ijset.v1i1.2

likdanawati, likdanawati, Yanita, Y., Hamdiah, H., Nur Ilham, R., & Sinta, I. (2022). EFFECT OF ORGANIZATIONAL COMMITMENT, WORK MOTIVATION AND LEADERSHIP STYLE ON EMPLOYEE PERFORMANCE OF PT. ACEH DISTRIBUS INDO RAYA. International Journal of Social Science, Educational, Economics, Agriculture Research, and Technology (IJSET), 1(8), 377–382. https://doi.org/10.54443/ijset.v1i8.41

Mahfud, M., Yudiana, I. K., & Sariyanto, S. (2022). HISTORY OF BANYUWANGI KALIKLATAK PLANTATION AND ITS IMPACT ON SURROUNDING COMMUNITIES. International Journal of Educational Review, Law And Social Sciences (IJERLAS), 3(1), 91–104. https://doi.org/10.54443/ijerlas.v3i1.492

Mahfud *et all* (2021). PEMANFAATAN TRADISI RESIK LAWON SUKU USING SEBAGAI SUMBER BELAJAR SEJARAH LOKAL PADA SMA DI BANYUWANGI. Media Bina Ilmiah Vol.16 No.3 Oktober 2021. http://ejurnal.binawakya.or.id/index.php/MBI/article/view/1294/pdf

Mahfud *et all* (2020). Developing a Problem-Based Learning Model through E-Learning for Historical Subjects to Enhance Students Learning Outcomes at SMA Negeri 1 Rogojampi. *IOP Conf. Series: Earth and Environmental Science 485 (2020) 012014* doi:10.1088/1755-1315/485/1/012014

Majied Sumatrani Saragih, M. ., Hikmah Saragih, U. ., & Nur Ilham, R. . (2021). RELATIONSHIP BETWEEN MOTIVATION AND EXTRINSIC MOTIVATION TO ICREASING ENTREPRENEURSHIP IMPLEMENTATION FROM SPP AL-FALAH GROUP AT BLOK 10 VILLAGE DOLOK MASIHUL. *MORFAI JOURNAL*, *1*(1), 1–12. https://doi.org/10.54443/morfai.v1i1.11

Nur Ilham, R. ., Arliansyah, A., Juanda, R., Multazam, M. ., & Saifanur, A. . (2021). RELATHIONSIP BETWEEN MONEY VELOCITY AND INFLATION TO INCREASING STOCK INVESTMENT RETURN: EFFECTIVE STRATEGIC BY JAKARTA AUTOMATED TRADING SYSTEM NEXT GENERATION (JATS-NG) PLATFORM. *International Journal of Economic, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS)*, *1*(1), 87–92. https://doi.org/10.54443/ijebas.v1i1.27

Nur Ilham, R., Heikal, M. ., Khaddafi, M. ., F, F., Ichsan, I., F, F., Abbas, D. ., Fauzul Hakim Hasibuan, A. ., Munandar, M., & Chalirafi, C. (2021). Survey of Leading Commodities Of Aceh Province As Academic Effort To Join And Build The Country. *IRPITAGE JOURNAL*, *1*(1), 13–18. https://doi.org/10.54443/irpitage.v1i1.19

Nur ilham, R., Likdanawati, L., Hamdiah, H., Adnan, A., & Sinta, I. . (2022). COMMUNITY SERVICE ACTIVITIES "SOCIALIZATION AVOID STUDY INVESTMENT" TO THE STUDENT BOND OF SERDANG BEDAGAI. *IRPITAGE JOURNAL*, *2*(2), 61–64. https://doi.org/10.54443/irpitage.v2i2.312

Nur Ilham, R., Arliansyah, A., Juanda, R. ., Sinta, I. ., Multazam, M. ., & Syahputri, L. . (2022). APPLICATION OF GOOD CORPORATE GOVERNANCE PRINCIPLES IN IMPROVING BENEFITS OF STATE-OWNED ENTERPRISES (An Emperical Evidence from Indonesian Stock Exchange at Moment of Covid-19). *International Journal of Economic, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS)*, *2*(5), 761–772. https://doi.org/10.54443/ijebas.v2i5.410

Nur ilham, R., Likdanawati, L., Hamdiah, H., Adnan, A., & Sinta, I. . (2022). COMMUNITY SERVICE ACTIVITIES "SOCIALIZATION AVOID STUDY INVESTMENT" TO THE STUDENT BOND OF SERDANG BEDAGAI. *IRPITAGE JOURNAL*, *2*(2), 61–64. https://doi.org/10.54443/irpitage.v2i2.312

Nur Ilham, R., Arliansyah, A., Juanda, R. ., Sinta, I. ., Multazam, M. ., & Syahputri, L. . (2022). APPLICATION OF GOOD CORPORATE GOVERNANCE PRINCIPLES IN IMPROVING BENEFITS OF STATE-OWNED ENTERPRISES (An Emperical Evidence from Indonesian Stock Exchange at Moment of Covid-19). *International Journal of Economic, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS)*, *2*(5), 761–772. https://doi.org/10.54443/ijebas.v2i5.410

Rahmaniar, R., Subhan, S., Saharuddin, S., Nur Ilham, R. ., & Anwar, K. . (2022). THE INFLUENCE OF ENTREPRENEURSHIP ASPECTS ON THE SUCCESS OF THE CHIPS INDUSTRY IN MATANG GLUMPANG DUA AND PANTON PUMP. International Journal of Social Science, Educational, Economics, Agriculture Research, and Technology (IJSET), 1(7), 337–348. https://doi.org/10.54443/ijset.v1i7.36

Rico Nur Ilham, Irada Sinta, & Mangasi Sinurat. (2022). THE EFFECT OF TECHNICAL ANALYSIS ON CRYPTOCURRENCY INVESTMENT RETURNS WITH THE 5 (FIVE) HIGHEST MARKET CAPITALIZATIONS IN INDONESIA. *Jurnal Ekonomi*, *11*(02), 1022–1035. Retrieved from http://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/481

Sahoo, P. K., Sethi, D., & Acharya, D. (2019). Is bitcoin a near stock? Linear and non-linear causal evidence from a price–volume relationship. International Journal of Managerial Finance, 15(4), 533–545. https://doi.org/10.1108/IJMF-06-2017-0107

Sandi, H. ., Afni Yunita, N. ., Heikal, M. ., Nur Ilham, R. ., & Sinta, I. . (2021). RELATIONSHIP BETWEEN BUDGET PARTICIPATION, JOB CHARACTERISTICS, EMOTIONAL

INTELLIGENCE AND WORK MOTIVATION AS MEDIATOR VARIABLES TO STRENGTHENING USER POWER PERFORMANCE: AN EMPERICAL EVIDENCE FROM INDONESIA GOVERNMENT. *MORFAI JOURNAL*, *1*(1), 36–48. https://doi.org/10.54443/morfai.v1i1.14

Sinurat, M. ., Heikal, M. ., Simanjuntak, A. ., Siahaan, R. ., & Nur Ilham, R. . (2021). PRODUCT QUALITY ON CONSUMER PURCHASE INTEREST WITH CUSTOMER SATISFACTION AS A VARIABLE INTERVENING IN BLACK ONLINE STORE HIGH CLICK MARKET: Case Study on Customers of the Tebing Tinggi Black Market Online Store. *MORFAI JOURNAL*, *1*(1), 13–21. https://doi.org/10.54443/morfai.v1i1.12

Sinta, I., Nur Ilham, R. ., Authar ND, M. ., M. Subhan, & Amru Usman. (2022). UTILIZATION OF DIGITAL MEDIA IN MARKETING GAYO ARABICA COFFEE. IRPITAGE JOURNAL, 2(3), 103–108. https://doi.org/10.54443/irpitage.v2i3.467

Shen, D., Urquhart, A., & Wang, P. (2020). A three-factor pricing model for cryptocurrencies. Finance Research Letters, 34, 0–11. https://doi.org/10.1016/j.frl.2019.07.021

Spurr, A., & Ausloos, M. (2020). Challenging practical features of Bitcoin by the main altcoins. Quality and Quantity, October. https://doi.org/10.1007/s11135-020-01062-x

Wayan Mertha, I. ., & Mahfud, M. (2022). HISTORY LEARNING BASED ON WORDWALL APPLICATIONS TO IMPROVE STUDENT LEARNING RESULTS CLASS X IPS IN MA AS'ADIYAH KETAPANG. International Journal of Educational Review, Law And Social Sciences (IJERLAS), 2(5), 507–612. https://doi.org/10.54443/ijerlas.v2i5.369

Yusuf Iis, E., Wahyuddin, W., Thoyib, A., Nur Ilham, R., & Sinta, I. (2022). THE EFFECT OF CAREER DEVELOPMENT AND WORK ENVIRONMENT ON EMPLOYEE PERFORMANCE WITH WORK MOTIVATION AS INTERVENING VARIABLE AT THE OFFICE OF AGRICULTURE AND LIVESTOCK IN ACEH. *International Journal of Economic, Business, Accounting, Agriculture Management and Sharia Administration (IJEBAS)*, *2*(2), 227–236. https://doi.org/10.54443/ijebas.v2i2.191

Zhu, Y., Dickinson, D., & Li, J. (2017). Analysis on the influence factors of Bitcoin's price based on VEC model. Financial Innovation, 3(1). https://doi.org/10.1186/s40854-017-0054-0