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BEST PERFORMING CRYPTO ASSETS 2020-2023
ASET KRIPTO DENGAN KINERJA TERBAIK 2020-2023

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ABSTRACT
This study aims to analyze the performance of crypto assets in the period 2020 to 2023. This research is quantitative descriptive research, with the sampling method using saturated sampling. During the observation period, 1440 monthly closing data were collected from 30 crypto assets with the largest market capitalization in the world that became the population. The results show that crypto assets are highly volatile and unpredictable, high-risk assets such as Fantom (FTM) and Thorchain (RUNE) tend to offer higher returns, but with significant fluctuations in value. Meanwhile, lower-risk assets like Leo Token (LEO) offer greater stability but with more limited growth potential. These findings can be taken into consideration for investors in making decisions regarding their investment in crypto assets.
Keywords : Cryptocurrency, Investment, Performance, Return, Risk

ABSTRAK
Penelitian ini bertujuan untuk menganalisis kinerja aset kripto pada periode 2020 hingga 2023. Penelitian ini merupakan penelitian deskriptif kuantitatif, dengan metode pengambilan sampling jenuh. Selama periode pengamatan, terkumpul 1440 data harga penutupan bulanan dari 30 aset kripto dengan kapitalisasi pasar terbesar di dunia yang menjadi populasi. Hasil penelitian menunjukkan bahwa aset kripto sangat fluktuatif dan tidak dapat diprediksi, aset-aset dengan risiko tinggi seperti Fantom (FTM) dan Thorchain (RUNE) cenderung menawarkan imbal hasil yang lebih tinggi, namun dengan fluktuasi nilai yang signifikan. Sementara itu, aset berisiko lebih rendah seperti Leo Token (LEO) menawarkan stabilitas yang lebih besar tetapi dengan potensi pertumbuhan yang lebih terbatas. Temuan ini dapat menjadi bahan pertimbangan bagi investor dalam mengambil keputusan terkait investasi mereka di aset kripto.
Kata kunci : Aset Kripto, Investasi, Kinerja, Return, Risiko

1. Introduction

Investment is the allocation of resources to assets that are expected to generate economic gains or profits in the future. With the development of financial literacy and technology, investment activities are becoming increasingly accessible through the purchase of financial assets such as stocks, bonds, mutual funds, government securities, and crypto assets, even with relatively affordable funds. Indonesian people are currently very interested in investing in crypto assets, as evidenced by data released by the Ministry of Trade, in March 2024 there were 19 million crypto investors in Indonesia (Binekasri, 2024). This development is extraordinary, investment in crypto assets in Indonesia was only recognized approximately five years ago, but the number of investors can already outperform the number of Indonesian capital market investors, this is evidenced by the statistical data of the Indonesian Central Securities Depository (KSEI) March 2024 which reports that the number of capital market investors in Indonesia is only 12.63 million investors (KSEI, 2024). On the official website of the Ministry of Trade, Bapebti targets crypto transactions in 2024 to reach 800 trillion rupiah (RI, 2024). The development of the crypto asset market in Indonesia also contributed 580 billion rupiah in tax revenue, this total was collected from 2022, 2023 to March 2024 (Wildan, 2024).

With the development of cryptocurrencies as an alternative investment instrument, various problems have arisen. Some mass media in Indonesia are known to have reported large losses that resulted in criminal acts related to cryptocurrency investment. Reporting from detik news, there have been criminal acts of murder due to losses in crypto investment (Fadilah, 2023). Not only that, crypto assets have also been recorded as the object of investment fraud in Indonesia (Marjaya, 2019; Pahlevi, 2019). One solution to solve these problems is to increase literacy to the wider community regarding the risks and potential of cryptocurrency investment (Gideon, 2019). Until now, research on cryptocurrencies that discusses the returns, risks, and performance of cryptocurrencies is still difficult to find and very limited. Some research in Indonesia focuses on the legal review of crypto assets, such as research (Ausop & Aulia, 2018; Rinaldi & Huda, 2016; Siswantoro et al., 2020).

Based on the description above, it shows that there are relevant phenomena and research gaps regarding the return, risk and performance of cryptocurrencies, so a study is needed to assist investors in making investment decisions. What investors need to do before making an investment decision is to understand the potential benefits and risks in their investment. According to (Hartono, 2022), investment decisions must be made carefully, with the two main factors that need to be considered in investment decisions are the rate of return and risk. The effectiveness of an investment instrument can also be assessed based on its performance; the higher the performance of an investment, the more effective it is. The Sharpe Index is a common and widely used method to evaluate investment performance (Hamdika et al., 2022; Henriques & Sadorsky, 2018; Lumbantobing & Sadalia, 2021; Setyowati & Husnurrosyidah, 2021). The novelty provided in this study compared to previous studies is the focus on measuring the performance of 30 crypto assets with the highest market capitalization with a time span of 2020-2023. This research was made with the aim of analyzing the return, risk and performance of crypto assets. It is hoped that this research can provide important information for investors to make their investment decisions.

2. Literature Review

2.1. Prospect Theory

Prospect theory was first formulated by Kahneman in his paper "Prospect Theory: An Analysis of Decision under Risk" (Kahneman & Tversky, 1979). Prospect theory explains that investment choices tend to be evaluated based on gains and losses. Therefore, investors will seek as much information as possible to make investment decisions. Investors' understanding of the value of risk and return affects investment success. Investment decisions are a long and continuous process, from setting investment goals to periodic valuations. Appropriate measures of risk, return, and performance must be determined in investment decisions and evaluations (Andaresta & Purwanto, 2023).

2.2. Crypto Assets

Cryptocurrencies are digital currencies that can be used as a means of payment. Although used as a means of payment, cryptocurrencies tend to be more widely explored as investment assets (Almeida & Gonçalves, 2022; Blau, 2017; Li et al., 2021). Cryptocurrencies have become a popular asset class in global financial markets, with the cryptocurrency market experiencing rapid development spreading across the globe, including both developed and developing countries (Białkowski, 2020; Fang et al., 2021). In Indonesia, cryptocurrencies are not yet recognized as a legal currency, but are known as an investment alternative (Meiryani, 2023). This fact is also supported by (Ram, 2019) who states that bitcoin as one of the cryptocurrencies can be an alternative investment instrument.The list of the most valuable cryptocurrencies is always changing, just like stocks. Since cryptocurrencies are more volatile than stocks, cryptocurrency value rankings can change quickly. However, there are also some cryptocurrencies that consistently outperform other cryptocurrencies (Zohuri et al., 2022).

2.3. Return & Risk

Return is the level of profit earned from an investment, while risk relates to the level of uncertainty and potential loss associated with the investment. Return and risk have a close relationship, especially a one-way relationship. In this context, a one-way relationship signifies that when the risk of an investment vehicle increases, the rate of return also increases, and vice versa, when the risk decreases, so does the rate of return (Trianti et al., 2022). Investors can achieve higher returns by paying attention to the risks they take. The relationship between risk and return is linear: the higher the risk, the greater the return (Tandelilin, 2017).

2.4. Evaluation of Investment Performance

Evaluating investment performance is the process of analyzing the returns and risks of an investment portfolio to determine its effectiveness in achieving investor objectives. Performance evaluation involves comparing portfolio performance to a benchmark, such as a market index, as well as analyzing each security and its contribution to overall performance (Yunita, 2023). To understand which portfolios perform better when compared to each other, it is important to ascertain whether the constructed portfolio can increase the likelihood of achieving investment objectives (Ruma & Tawe, 2023). The Sharpe Index, also known as the Sharpe Ratio, was introduced by William F. Sharpe in 1966. The Sharpe ratio is used to assess whether an investment provides a favorable return in relation to the associated risk. A higher Sharpe ratio indicates that an investment generates a higher rate of return relative to its risk (Yunita, 2023). The Sharpe method, or Reward to Volatility Ratio (RVAR), is a method used to compare portfolio performance using the concept of Capital Market Line (CML) or, more commonly, as Reward to Variability Ratio (RVAR) (MUTIASALISA et al., 2021).

3. Research Methods

This study uses a population of crypto asset monthly closing price data for the period 2020 to 2023. Research variables include rate of return, risk and Sharpe index. The secondary data used in this study was obtained from the information provider website - coingecko.com. The data collected consists of numerical values, which can also be referred to as quantitative data. Descriptive analysis is the analytical technique used in this study. To obtain the values of each variable, data processing was done using the Microsoft Excel program. The closing price of each crypto asset and the BI 7 days reverse repo rate data, which serves as the return for risk-free assets, were prepared for processing. The sampling method used is purposive sampling, with the criteria of crypto assets with the largest market capitalization listed on coingecko.com from 2020 to 2024 excluding stable coins. Based on these criteria, 30 crypto assets were selected which resulted in 48 data for each crypto asset, with a total of 1440 observations. The following is a list of crypto assets that meet the criteria:

Table 1. List of Cryptocurrency 2020-2023

No	Code	Name of Assets	No	Code	Name of Assets
1	BTC	Bitcoin	16	CRO	Cronos
2	ETH	Ethereum	17	XLM	Stellar
3	BNB	BNB	18	ATOM	Cosmos Hub
4	XRP	XRP	19	OKB	OKB
5	DOGE	Dogecoin	20	VET	VeChain
6	ADA	Cardano	21	MKR	Maker
7	TRX	Tron	22	AR	Arweave
8	BCH	Bitcoin Cash	23	XMR	Monero

No	Code	Name of Assets	No	Code	Name of Assets
9	LINK	Chainlink	24	FET	Fetch.ai
10	MATIC	Polygon	25	THETA	Theta Network
11	LTC	Litecoin	26	FTM	Fantom
12	LEO	Leo Token	27	RUNE	Thorchain
13	ETC	Ethereum Classic	28	ALGO	Algorand
14	HBAR	Hedera	29	QNT	Quant
15	STX	Stacks	30	NEO	NEO

Source: coingecko.com, data reprocessed.

The analysis of cryptocurrencies performance data was conducted by evaluating the performance using Sharpe Ratio. The following are the stages of performance evaluation, along with a description of the research variables:

1. Determine returns
2. Determine standard deviation
3. Determine risk-free interest rate
4. Calculate the Sharpe ratio

Table 2. Variable Description

Variable	Description	Formula
Return	Monthly asset gain/loss rate	$R = \frac{P_t - P_{t-1}}{P_{t-1}}$
Risk	Monthly asset risk level	$\sigma_i = \sqrt{\sum_{j=1}^{n} (R_{ij} - E(R_i))^2 . P_j}$
Sharpe Performance	Monthly asset performance based on sharpe ratio	$Si = \frac{R_p - R_f}{SD_i}$

Source: (Hartono, 2022; Yunita, 2023)

4. Results and Discussions

The results of the calculation of the crypto asset investment rate of return are presented in table 3 below:

Table 3. Annual Crypto Asset Return Ranking 2020-2023

Rank	2020		2021		2022		2023	
	Code	Return	Code	Return	Code	Return	Code	Return
1	RUNE	45,79%	FTM	106,60 %	ETC	3,53%	STX	28,92%
2	THET A	40,26%	DOGE	85,21%	QNT	3,19%	FET	27,21%

Rank	2020		2021		2022		2023	
	Code	Return	Code	Return	Code	Return	Code	Return
3	AR	30,28%	MATIC	76,94%	RUNE	2,13%	RUNE	18,75%
4	LINK	26,11%	AR	59,35%	OKB	1,80%	FTM	13,49%
5	ADA	22,06%	BNB	48,06%	LEO	1,23%	BCH	12,98%
6	ETH	19,80%	FET	39,27%	XMR	-0,83%	MKR	12,37%
7	FTM	19,02%	CRO	34,86%	TRX	-1,64%	LINK	10,63%
8	VET	18,79%	HBAR	34,81%	DOGE	-3,42%	ADA	10,37%
9	XLM	18,33%	ADA	34,57%	LTC	-4,18%	HBAR	9,53%
10	HBAR	17,63%	QNT	33,70%	BNB	-4,37%	VET	9,43%
11	STX	17,16%	RUNE	33,25%	XRP	-4,41%	NEO	9,16%
12	FET	15,08%	THETA	27,89%	MATIC	-4,92%	BTC	8,84%
13	BTC	14,61%	STX	25,43%	ETH	-5,43%	OKB	8,13%
14	LTC	14,32%	ETC	25,38%	ATOM	-6,04%	AR	6,83%
15	XMR	13,57%	OKB	24,69%	FET	-6,13%	XRP	6,81%
16	QNT	12,74%	ATOM	23,66%	BTC	-6,80%	XLM	6,75%
17	OKB	12,44%	VET	23,30%	LINK	-7,95%	THETA	6,64%
18	BNB	11,08%	MKR	23,00%	VET	-8,55%	CRO	6,63%
19	XRP	10,93%	XRP	21,13%	NEO	-8,68%	ETH	5,98%
20	ETC	10,29%	ALGO	19,55%	BCH	-8,70%	TRX	5,98%
21	ALGO	10,21%	ETH	17,72%	XLM	-8,92%	ALGO	4,96%
22	DOGE	9,35%	TRX	13,93%	MKR	-9,79%	MATIC	3,96%
23	CRO	9,22%	XLM	12,67%	THETA	-11,40%	ETC	3,81%
24	TRX	8,67%	NEO	12,62%	ADA	-11,51%	QNT	3,70%
25	NEO	8,49%	LINK	9,59%	AR	-12,27%	DOGE	3,34%
26	ATOM	8,44%	LEO	9,57%	HBAR	-13,90%	BNB	3,26%
27	BCH	8,29%	BTC	6,71%	CRO	-14,62%	ATOM	2,37%
28	MATIC	7,03%	XMR	6,44%	ALGO	-14,97%	LTC	1,57%
29	MKR	5,57%	BCH	4,44%	FTM	-15,33%	XMR	1,53%
30	LEO	4,67%	LTC	3,51%	STX	-15,83%	LEO	1,24%

Source: reprocessed secondary data (2024)

Table 3 shows that the annual return of crypto assets varies each year. A positive value indicates that the investment has made a profit, a negative value indicates that the investment has suffered a loss. The return value of crypto assets for the 2020-2023 period is recorded in the range of -15.83% to 106.60%. The highest return in 2020 was achieved by Thorchain (RUNE) with a value of 45.79% while the lowest figure was achieved by Leo Token (LEO) with 4.67%. In 2021, the highest return was achieved by Fantom (FTM) with a value of 106.60% and Litecoin (LTC) in the last position with a value of 3.51%. Ethereum Classic made the highest return in 2022 with a value of 3.53% while Stacks (STX) got the biggest loss with a value of -15.83%. The next period, 2023, Stacks (STX) caught up and managed to lead in the first rank with a return value of 28.92% and Leo Token (LEO) in the last position with a value of 1.24%.

Table 4. Crypto Asset Average Return Rankings 2020-2023

Rank	Average		Rank	Average	
	Code	**Return**		**Code**	**Return**
1	FTM	30,95%	16	LINK	9,59%
2	RUNE	24,98%	17	ETH	9,52%
3	DOGE	23,62%	18	CRO	9,02%
4	AR	21,05%	19	XRP	8,62%
5	MATIC	20,75%	20	MKR	7,79%
6	FET	18,86%	21	XLM	7,21%
7	THETA	15,85%	22	ATOM	7,11%
8	BNB	14,51%	23	TRX	6,73%
9	STX	13,92%	24	BTC	5,84%
10	ADA	13,87%	25	NEO	5,40%
11	QNT	13,33%	26	XMR	5,18%
12	HBAR	12,02%	27	ALGO	4,94%
13	OKB	11,76%	28	BCH	4,25%
14	ETC	10,75%	29	LEO	4,18%
15	VET	10,74%	30	LTC	3,81%

Source: reprocessed secondary data (2024)

Table 4 shows the average return of crypto assets for 4 years from 2020 to 2023. Fantom (FTM) is ranked first with a value of 30.95%, Thorchain (RUNE) is in second place with a value of 24.98% and Dogecoin (DOGE) is recorded in third place with a return value of 23.62%. The lowest average return is occupied by Bitcoin Cash (BCH), Leo Token (LEO) and Litecoin (LTC) with return values of 4.25%, 4.18% and 3.81% respectively.

Table 5. Annual Crypto Asset Risk Level Ranking 2020-2023

Rank	2020		2021		2022		2023	
	Code	**Risk**	**Code**	**Risk**	**Code**	**Risk**	**Code**	**Risk**
1	AR	0,95296	FTM	1,99219	RUNE	0,76278	STX	0,69564
2	RUNE	0,66862	DOGE	1,82117	ETC	0,55776	FET	0,55557
3	FTM	0,64681	AR	1,15308	QNT	0,40858	FTM	0,43902
4	THETA	0,62418	BNB	1,14105	FET	0,37550	RUNE	0,42925
5	FET	0,60360	MATIC	1,12545	MATIC	0,33228	BCH	0,35540
6	HBAR	0,56355	THETA	0,90079	VET	0,32872	AR	0,26141
7	ETC	0,52071	ADA	0,83087	DOGE	0,32181	MKR	0,26034
8	XLM	0,51913	FET	0,75648	AR	0,31686	ALGO	0,25372
9	XRP	0,50847	RUNE	0,75295	ETH	0,26835	ADA	0,24526
10	LINK	0,47761	HBAR	0,74026	ATOM	0,24437	HBAR	0,24063

11	VET	0,40139	CRO	0,73306	OKB	0,24242	VET	0,23874
12	ADA	0,40059	OKB	0,71558	THETA	0,23892	NEO	0,23256
13	ATOM	0,38791	MKR	0,57606	XRP	0,23858	THETA	0,20803
14	ALGO	0,35714	ETC	0,53599	NEO	0,23650	MATIC	0,20652
15	STX	0,33209	VET	0,52358	BCH	0,23584	CRO	0,20126
16	LTC	0,31758	XRP	0,51919	XMR	0,22781	XRP	0,20095
17	MATIC	0,31252	QNT	0,51163	LEO	0,22134	LINK	0,19428
18	NEO	0,30400	STX	0,49468	ALGO	0,21632	XLM	0,18946
19	BCH	0,30203	ATOM	0,47991	CRO	0,21182	OKB	0,18735
20	CRO	0,29993	XLM	0,45175	LINK	0,20911	QNT	0,17663
21	ETH	0,29025	NEO	0,42190	LTC	0,20607	ATOM	0,16016
22	OKB	0,27637	LINK	0,35575	FTM	0,20454	BNB	0,15433
23	XMR	0,24196	ALGO	0,35352	MKR	0,20281	DOGE	0,14565
24	MKR	0,24126	TRX	0,32737	ADA	0,19098	LTC	0,13697
25	TRX	0,23644	ETH	0,29753	HBAR	0,18762	ETC	0,13208
26	QNT	0,23367	XMR	0,28352	STX	0,18506	BTC	0,13160
27	BTC	0,23146	BCH	0,25587	BNB	0,18021	XMR	0,09855
28	DOGE	0,22307	BTC	0,22916	BTC	0,16898	ETH	0,09764
29	BNB	0,21163	LTC	0,21415	XLM	0,16837	TRX	0,07460
30	LEO	0,03796	LEO	0,14270	TRX	0,16371	LEO	0,05703

Source: reprocessed secondary data (2024)

Table 5 shows that the annual risk level of crypto assets varies every year. A high risk value indicates that the investment has a high level of risk or has high price fluctuations. For example, with a standard deviation value of 1.5, this indicates that the price of the crypto asset tends to fluctuate around 1.5 times its average value. The risk value of crypto assets for the 2020-2023 period is recorded in the range of 0.03796 to 1.99219. The highest risk in 2020 was in Arweave (AR) with a value of 0.95296 while the lowest number was achieved by Leo Token (LEO) with 0.03796. In 2021 the highest risk is on Fantom (FTM) with a value of 1.99219 and Leo Token (LEO) in the last position with a value of 0.14270. Thorchain (RUNE) has the highest risk in 2022 with a value of 0.76278 while Tron (TRX) has the lowest risk with a value of

0.16371. The next period is 2023 Stacks (STX) gets the highest risk value with a value of 0.69564 and Leo Token (LEO) is in the last position with a value of 0.05703.

Table 6 shows the average risk level of crypto assets for 4 years from 2020 to 2023. Fantom (FTM) is ranked first with a value of 0.82064, Arweave (AR) is second with a value of 0.67108 and Thorchain (RUNE) is listed third with a risk value of 0.65340. The lowest average risk was occupied by Tron (TRX), Bitcoin (BTC) and Leo Token (LEO) with risk values of 0.20053, 0.19030 and 0.11476 respectively.

Table 6. Crypto Asset Average Risk Rankings 2020-2023

Rank	Average		Rank	Average	
	Code	**Risk**		**Code**	**Risk**
1	FTM	0,82064	16	OKB	0,35543
2	AR	0,67108	17	QNT	0,33263
3	RUNE	0,65340	18	XLM	0,33218
4	DOGE	0,62792	19	MKR	0,32012
5	FET	0,57279	20	ATOM	0,31809
6	MATIC	0,49419	21	LINK	0,30919
7	THETA	0,49298	22	NEO	0,29874
8	ETC	0,43664	23	ALGO	0,29518
9	HBAR	0,43301	24	BCH	0,28729
10	STX	0,42687	25	ETH	0,23844
11	BNB	0,42180	26	LTC	0,21869
12	ADA	0,41692	27	XMR	0,21296
13	VET	0,37311	28	TRX	0,20053
14	XRP	0,36680	29	BTC	0,19030
15	CRO	0,36152	30	LEO	0,11476

Source: reprocessed secondary data (2024)

Table 7 shows that the annual performance of crypto assets varies each year. High performance values indicate that crypto assets have good performance. The performance of crypto assets for the 2020-2023 period was recorded in the range of -1.07161 to 0.65233. The best performance in 2020 was achieved by Thorchain (RUNE) with a value of 0.62121 while the lowest performance was achieved by Maker (MKR) with 0.05459. In 2021, the highest performance was in Polygon (MATIC) with a value of 0.65233 and Litecoin (LTC) in the last position with a value of -0.00049. Ethereum Classic (ETC) has the highest performance in 2022 with a value of -0.00841 while Stacks (STX) has the lowest performance with a value of -1.07161. The next period, namely 2023, Fetch.ai (FET) gets the highest performance value with a value of 0.38521 and Leo Token (LEO) is in the last position with a value of -0.80196.

Table 7. Annual Crypto Asset Performance Ranking 2020-2023

Rank	2020		2021		2022		2023	
	Code	Sharpe	Code	Sharpe	Code	Sharpe	Code	Sharpe
1	RUNE	0,62121	MATIC	0,65233	ETC	-0,00841	FET	0,38521
2	THETA	0,57690	QNT	0,58990	QNT	-0,01978	STX	0,33223
3	ETH	0,53562	FTM	0,51743	RUNE	-0,02450	RUNE	0,30131
4	LINK	0,45761	AR	0,48422	OKB	-0,09092	MKR	0,25179
5	BTC	0,44763	ETH	0,47733	LEO	-0,12533	LINK	0,24773
6	ADA	0,44461	FET	0,47262	XMR	-0,21208	BTC	0,23024
7	STX	0,38870	ALGO	0,45328	DOGE	-0,23070	BCH	0,20177
8	XMR	0,38503	DOGE	0,44853	MATIC	-0,26839	ADA	0,18572
9	QNT	0,36328	STX	0,44284	FET	-0,26985	FTM	0,17497
10	VET	0,36226	CRO	0,42746	TRX	-0,34425	HBAR	0,15453
11	BNB	0,32283	LEO	0,42401	ETH	-0,35135	VET	0,15164
12	LTC	0,31711	HBAR	0,42266	XRP	-0,35237	NEO	0,14377
13	OKB	0,29628	ATOM	0,41967	VET	-0,38191	OKB	0,12381
14	AR	0,27314	ETC	0,40780	LTC	-0,39683	XRP	0,04958
15	XLM	0,27117	RUNE	0,39483	ATOM	-0,41099	XLM	0,04927
16	HBAR	0,23736	BNB	0,39034	BNB	-0,46429	CRO	0,04061
17	DOGE	0,22874	VET	0,37771	AR	-0,51350	THETA	0,03963
18	FTM	0,22843	ADA	0,37372	NEO	-0,53612	AR	0,03890
19	TRX	0,18687	XRP	0,33916	BCH	-0,53831	TRX	0,02217
20	FET	0,17936	MKR	0,33820	LINK	-0,57130	ETH	0,01751
21	ALGO	0,16683	TRX	0,31786	BTC	-0,63926	ALGO	-0,03355
22	CRO	0,16574	OKB	0,29576	THETA	-0,64437	MATIC	-0,08977
23	NEO	0,13940	THETA	0,27048	MKR	-0,68001	QNT	-0,11943

Rank	2020		2021		2022		2023	
	Code	Sharpe	Code	Sharpe	Code	Sharpe	Code	Sharpe
24	BCH	0,13364	NEO	0,21570	XLM	-0,76738	ETC	-0,15138
25	XRP	0,13141	XLM	0,20259	ADA	-0,81222	BNB	-0,16545
26	ETC	0,11593	LINK	0,17059	ALGO	-0,87695	DOGE	-0,17006
27	LEO	0,11147	BTC	0,13909	CRO	-0,87914	ATOM	-0,21477
28	ATOM	0,10792	XMR	0,10301	FTM	-0,94495	LTC	-0,30963
29	MATIC	0,08889	BCH	0,03596	HBAR	-0,95388	XMR	-0,43503
30	MKR	0,05459	LTC	-0,00049	STX	-1,07161	LEO	-0,80196

Source: reprocessed secondary data (2024)

Table 8. Crypto Asset Performance Ranking in 2020-2023

2020-2023					
Rank	Code	Sharpe	Rank	Code	Sharpe
1	RUNE	0,29972	16	HBAR	0,14657
2	FET	0,23626	17	ETC	0,13266
3	QNT	0,23562	18	XRP	0,10398
4	MATIC	0,23449	19	TRX	0,10254
5	FTM	0,22742	20	CRO	0,10118
6	AR	0,20295	21	MKR	0,09098
7	DOGE	0,19209	22	ATOM	0,07568
8	STX	0,19062	23	XLM	0,07386
9	THETA	0,18965	24	BTC	0,06873
10	ETH	0,18857	25	XMR	0,03380
11	ADA	0,18385	26	NEO	0,03134
12	OKB	0,17482	27	ALGO	0,01653
13	BNB	0,16167	28	BCH	-0,00471
14	VET	0,15623	29	LEO	-0,01557
15	LINK	0,14786	30	LTC	-0,02481

Source: reprocessed secondary data (2024)

Table 8 shows the crypto asset performance ranking for 4 years from 2020 to 2023. Thorchain (RUNE) is ranked first with a value of 0.29972, Fetch.ai (FET) is second with a value of 0.23626 and Quant (QNT) is listed third with a performance value of 0.23562. The lowest performance over 4 years is occupied by Bitcoin Cash (BCH), Leo Token (LEO) and Litecoin (LTC) with performance values of -0.00471, -0.01557 and -0.02481 respectively.

These results illustrate the high fluctuation of crypto asset performance from 2020 to 2023, which includes aspects of return, risk, and overall performance. This result is supported by (Andrianto & Diputra, 2017; Tandelilin, 2017; Trianti et al., 2022) who stated that the relationship between risk and return is linear: the higher the risk, the greater the return. From the data analyzed, several important findings can be identified. Fantom (FTM) showed the highest annualized return in 2021 at 106.60%, standing out as the asset with the best average return over four years at 30.95%. In contrast, Leo Token (LEO) and Litecoin (LTC) often took the lowest positions in terms of annualized return, with the four-year average return among the lowest. Fantom (FTM) also stands out in terms of risk with the highest average risk value over four years with a value of 0.82064, showing a relationship between high risk levels and high return potential. On the other hand, Leo Token (LEO) consistently shows the lowest risk, indicating greater stability but with lower returns.

Thorchain (RUNE) recorded the best performance over four years with a performance value of 0.29972, despite having years of high risk. This shows that Thorchain is an effective asset to generate positive returns. On the other hand, Leo Token (LEO) and Litecoin (LTC) showed a negative four-year average performance, indicating the difficulty in consistently generating positive returns under variable market conditions.

5. Conclusion

From this research, it can be concluded that in a highly volatile and unpredictable crypto market, higher risk assets such as Fantom (FTM) and Thorchain (RUNE) tend to offer higher returns, but with significant fluctuations in value. Meanwhile, lower risk assets such as Leo Token (LEO) offer greater stability but with more limited growth potential. Investing in crypto assets requires careful consideration of an individual's risk tolerance and investment objectives, taking into account that high levels of risk can potentially provide greater returns, but can also lead to significant losses.

These results provide valuable insights for investors to consider their investments, taking into account the highest performance rankings. It is important to note that this research is limited to the 30 crypto assets with the largest market capitalization listed on coingecko.com from 2020 to 2023. It is recommended that future research include a larger number of crypto assets and a longer time period for a more comprehensive analysis.

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References

Almeida, J., & Gonçalves, T. C. (2022). Portfolio diversification, hedge and safe-haven properties in cryptocurrency investments and financial economics: A systematic literature review. *Journal of Risk and Financial Management*, *16*(1), 3.

Andaresta, E. F., & Purwanto, E. (2023). Alternatif Keputusan Investasi: Analisis Perbandingan Kinerja Cryptocurrency Bitcoin, Saham IDX 30, dan Emas. *SEIKO: Journal of Management & Business*, *6*(2), 213-223.

Andrianto, Y., & Diputra, Y. (2017). The effect of cryptocurrency on investment portfolio effectiveness. *Journal of finance and accounting*, *5*(6), 229-238.

Ausop, A. Z., & Aulia, E. S. N. (2018). Teknologi Cryptocurrency Bitcoin Dalam Transaksi Bisnis Menurut Syariat Islam. *Jurnal Sosioteknologi*, *17*(1), 74-92.

Białkowski, J. (2020). Cryptocurrencies in institutional investors' portfolios: Evidence from industry stop-loss rules. *Economics Letters*, *191*, 108834.

Binekasri, R. (2024, 2 April). Investor Kripto RI Capai 19 Juta, Transaksinya Rp 33,69 T. *CNBC Indonesia*. https://www.cnbcindonesia.com/market/20240402134338-17-527509/investor-kripto-ri-capai-19-juta-transaksinya-rp-3369-t

Blau, B. M. (2017). Price dynamics and speculative trading in bitcoin. *Research in International Business and Finance*, *41*, 493-499.

Fadilah, K. (2023, 05 Agustus). Mahasiswa UI Pembunuh Juniornya Rugi Investasi Kripto Rp 80 Juta. *Detik News*. https://news.detik.com/berita/d-6860160/mahasiswa-ui-pembunuh-juniornya-rugi-investasi-kripto-rp-80-juta

Fang, F., Chung, W., Ventre, C., Basios, M., Kanthan, L., Li, L., & Wu, F. (2021). Ascertaining price formation in cryptocurrency markets with machine learning. *The European Journal of Finance*, 1-23.

Gideon, A. (2019, 16 April 2019). Cegah Penipuan, Edukasi Cryptocurrency Perlu Ditingkatkan. *Liputan 6*, 3. https://www.liputan6.com/bisnis/read/3942809/cegah-penipuan-edukasi-cryptocurrency-perlu-ditingkatkan

Hamdika, M., Saragih, L., & Sinaga, M. H. (2022). Perbandingan Kinerja Cryptocurrency Bitcoin, Saham, Dan Emas Sebagai Alternatif Investasi Tahun 2017-2021. *Economic Education and Entrepreneurship Journal*, *5*(1), 91-105.

Hartono, J. (2022). *Portofolio Dan Analisis Investasi: Pendekatan Modul (Edisi 2)*. Penerbit Andi.

Henriques, I., & Sadorsky, P. (2018). Can bitcoin replace gold in an investment portfolio? *Journal of Risk and Financial Management*, *11*(3), 48.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, *47*(2), 263-292.

KSEI, P. K. S. E. I. (2024). *Data Statistik KSEI*. PT Kustodian Sentral Efek Indonesia. Retrieved 01 Mei from https://www.ksei.co.id/files/Statistik_Publik_Maret_2024_v2.pdf

Li, R., Li, S., Yuan, D., & Zhu, H. (2021). Investor attention and cryptocurrency: Evidence from wavelet-based quantile Granger causality analysis. *Research in International Business and Finance*, *56*, 101389.

Lumbantobing, C., & Sadalia, I. (2021). Analisis Perbandingan Kinerja Cryptocurrency Bitcoin, Saham, dan Emas sebagai Alternatif Investasi. *Studi Ilmu Manajemen Dan Organisasi*, *2*(1), 33-45.

Marjaya, D. (2019, 11/01/2019). Investasi Bitcoin 200 Warga Bangka Belitung Senilai Rp 89 Miliar Tak Jelas, Investor Lapor ke Polisi. *Tribunnews*, 3. https://bangka.tribunnews.com/2019/01/11/investasi-bitcoin-warga-babel-senilai-rp-89-milyar-lebih-tak-jelas

Meiryani, H., S. M, Annasya, Z, Purnomo, A, Salim, G, Angelus, M, Inasius, F. (2023). Analysis of Price and Market Capitalization of Alternative Coin as a Cryptocurrency Market Education Facility in Indonesia. *Journal of Theoretical and Applied Information Technology*, *101*, Article 8. www.jatit.org

MUTIASALISA, D., DEVIANTO, D., & HG, I. R. (2021). Pembentukan Portofolio Optimal Berdasarkan Indeks Kinerja Keuangan Pada Saham LQ-45. *Jurnal Matematika UNAND*, *10*(2), 177-186.

Pahlevi, A. (2019, 28/11/2019). Anggota TNI jadi pelaku penipuan Bitcoin Rp 9 miliar. *Tempo*, 1. https://bisnis.tempo.co/read/1277416/anggota-tni-jadi-pelaku-penipuan-bitcoin-rp-9-miliar

Ram, A. J. (2019). Bitcoin as a new asset class. *Meditari Accountancy Research*, *27*(1), 147-168.

RI, K. P. (2024). *Bappebti Targetkan Transaksi Kripto Rp800 Triliun pada 2024*. Kementerian Perdagangan RI. Retrieved 01 Mei from https://www.kemendag.go.id/berita/pojok-media/bappebti-targetkan-transaksi-kripto-rp800-triliun-pada-2024

Rinaldi, D. A., & Huda, M. K. (2016). Bitcoin sebagai Alat Pembayaran Online dalam Perdagangan Internasional. *Perspektif Hukum*, 122-138.

Ruma, Z., & Tawe, A. (2023). Analisis Kinerja Portofolio Saham Menggunakan Metode Sharpe, Treynor dan Jensen: Studi Kasus Indeks LQ45 Di Bursa Efek Indonesia Periode

2019-2022. *SINOMIKA Journal: Publikasi Ilmiah Bidang Ekonomi dan Akuntansi*, *1*(6), 1679-1690.

Setyowati, E. I., & Husnurrosyidah, H. (2021). Capm, Indeks Tunggal Dan Treynor Sebagai Analisis Portofolio Pada Saham Syariah. *Keunis*, *9*(1), 63-84.

Siswantoro, D., Handika, R., & Mita, A. F. (2020). The requirements of cryptocurrency for money, an Islamic view. *Heliyon*, *6*(1).

Tandelilin, E. (2017). Pasar modal manajemen portofolio & investasi. *Yogyakarta: PT Kanisius*.

Trianti, K., Aini, Y. N., Hakim, A. L., Millatina, A. N., & Djajanto, L. (2022). Pengukuran Kinerja Reksa Dana Syariah Berbasis pada Risiko dan Tingkat Pengembalian. *Jurnal Reviu Akuntansi dan Keuangan*, *12*(2), 472-482.

Wildan, M. (2024, 05 April). Pajak Transaksi Aset Kripto Kuartal I/2024 Senilai Rp112,93 miliar. *DDTC News*. https://news.ddtc.co.id/pajak-transaksi-aset-kripto-kuartal-i-2024-senilai-rp11293-miliar-1801818

Yunita, I. Y. (2023). Evaluasi Kinerja Saham Syariah menggunakan Indeks Sharpe, Treynor dan Jensen Periode 2021-2022. *Jurnal Ilmiah Ekonomi Islam*, *9*(1), 435-442.

Zohuri, B., Nguyen, H. T., & Moghaddam, M. (2022). What is the Cryptocurrency. *Is it a threat to our national security, Domestically and Globally*, 1-14.