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MEASURING THE RISK AND RETURN OF INDONESIA'S AND UNITED STATES STOCK INDEX

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ABSTRACT

This research investigates the relationship between the returns of selected Indonesian and US stock market indexes and their risks so as to guide new investors on how to choose their investments wisely. A quantitative descriptive method was used using performance data from three Indonesian and three US stock indexes over ten years to calculate an average return. The Sharpe Index was used to measure each index's risk. The results show that the average stock return for each index in the US is higher than the Indonesia indexes, while the level of risk in the US, on average, is lower. Investors are advised to invest in index categories with higher returns and low risk to increase the chance of gaining better returns while managing their risk to be as low as possible.

Keywords: return; risk; Sharpe Index; US, Indonesia

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INTRODUCTION

Stock returns in a particular country are affected by several factors, including macroeconomic conditions, industry-specific variables (Lettau and Pelger, 2020); returns on equity, dividend yields (Chhajer et al., 2020), the price of oil (Khan et al.; O., 2023; Kim Quoc Trung, 2022); and military conflicts (Martins et al., 2023). These factors, particularly the price of oil and the various economic factors have different levels of impact from one country to another (Zhang, 2021). Moreover, economic, financial, and political risks significantly impact stock predictability and volatility (Hasan et al., 2003). For example, data from the United States show that there is a negative relationship between stock returns and inflation (Fama, 1981; Fama and Schwert, 1977).

The COVID-19 pandemic caused worldwide economic crises throughout 2020, affecting developing and low-income countries as well as developed ones. Stock markets rapidly reacted with different response levels across countries depending on the stage of the outbreak (Ashraf et al., 2020). Nonetheless, the pandemic had another unexpected side: it increased stock

investors significantly. In Indonesia, for example, according to a press release from The Indonesian Central Securities Depository (PT. Kustodian Sentral Efek Indonesia or "KSEI"), there was a 92,7% increase in the number of Indonesian stock investors in 2021, from 3.8 million to 7.48 million by the end of December 2020. In 2023, the number of investors in Indonesia reached 12.2 million investors. In the US, according to data published by Gallup (2023), the number of stock investors rose continuously from 2016 to 2023, reaching a level of 61% (see Figure 2).

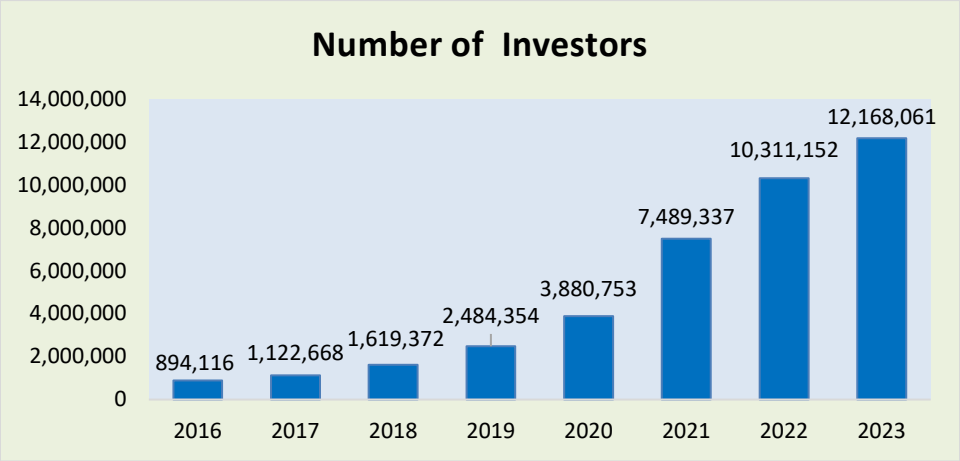

Figure 1: Number of Stock Investors in Indonesia
Source: KSEI (2024)

While the number of individual stock investors in Indonesia increased dramatically, as a percent of the total population, stock ownership is far below that in the US. In 2023, the 10.6 million people who owned stock represented only 3.88% of the total population of 273.52 million. The smaller percentage of investors in Indonesia is likely due to the fact that Indonesian citizens started to be aware of the capital market in 1977, while in the US, it has been known for more than 100 years.

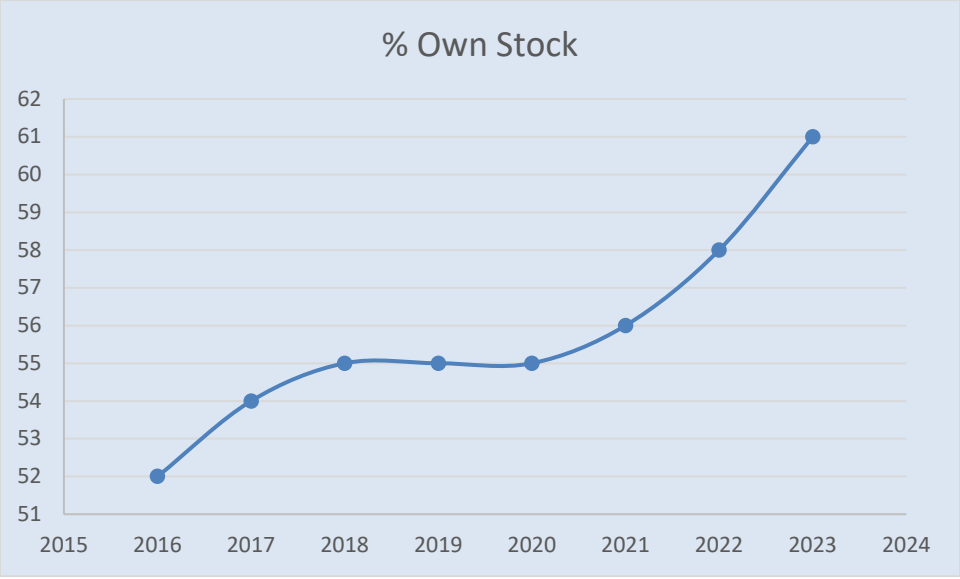

Figure 2: Percentage of Stock Investors in the US
Source: Gallup (2023)

Table 1: Indonesian Stocks Investor Based on Age Groups (KSEI)

NO	AGE	2023	2022	2021	2020	2019
1	<= 30	58.39 %	59.72 %	60.02 %	54.79 %	44.65 %
2	31 – 40	22.63 %	21.92 %	21.46 %	22.55 %	24.43 %
3	41-50	10.95 %	10.53 %	10.45 %	11.91 %	16.42 %
4	51-60	5.25 %	5.08 %	5.16 %	6.56 %	9.62 %
5	>60	2.79 %	2.75 %	2.91 %	4.19 %	4.88 %

Sources: KSEI (2023)

Investor demographic in Indonesia, as published by KSEI, and a comparison of the years from 2019 until 2023 is shown in Table 1. It is clear from Table 1 that the most significant proportion of Indonesian stock market investors are millennials below the age of 30. In contrast, investors in the US stock market investors are dominated by those over the age of 55, with the smallest group under the age of 35 (see Table 2).

Table 2: US Stocks Investor Based on Age Groups

No	Age	Percentage
1	Under 35	1.4 %
2	35 - 44	8.3 %
3	45 - 54	18 %
4	55 - 64	29 %
5	65 - 74	27 %
6	75 or older	16 %

Sources: Federal Reserve (2023)

According to Soegoto, H. (2021), a large number of beginning investors do not comprehend ideal investing and are only tempted by people's success stories, as well as by a couple of market incentives with an easy way of getting a lot of money at once in just a short duration. As a result, beginners make several mistakes, such as having no objectives, being influenced by other people, lacking the basic knowledge needed, having a misconception about investing, giving up easily, forgetting risks, investing emotionally, and using the wrong technique. As noted by Soegoto, H. (2021), stock investors who had an 85% loss in their first year of investing will likely choose to stop investing. The purpose of this research, therefore, is to use data from 2012 to 2022 to analyze the performance of and risks in the Indonesian and US stock markets in order to improve new investor experiences in them.

METHODOLOGY

We have used a quantitative descriptive analysis method in this study.

The main index of market prices used are those that are available from Indonesian and US stock exchanges between January 2013 and December 2022. This data was used to calculate a year-to-year return for each index from 2013 to 2022. Three Indonesian and three US stock indexes were used to compile the main index for the study. The three Indonesian indexes, along with their launch dates, are displayed in Table 4. The indexes used for the US are the Standard & Poor's 500, NASDAQ Composite, and Dow Jones Industrial Average (DJI).

Table 3: Risk and Return Measurement

Variable	Variable Description	Indicator	Scale
Return	Profits that are obtained by companies, individuals, and institutions from the results of investment policies that have been carried out.	$Capital\ gain = \frac{P_t - P_{t-1}}{P_{t-1}}$	Percent
Sharpe Index	An index that bases its calculations on the concept of the capital market line as a benchmark by dividing the portfolio risk premium by its standard deviation.	$S_p = \frac{(R_p - R_f)}{\sigma TR}$	Ratio

The Sharpe Index also was used. The Sharpe index can be used to rank several portfolios based on their performance. It is calculated by dividing the portfolio risk premium portfolio by its standard deviation. The higher the Sharpe index of a portfolio, the better the performance. Using the Sharpe index is simple, and it is easy to build a stock portfolio from it (Sangeetha et al., 2021).

Table 4: List of Stock Indexes in Indonesia that Became Research Sample

No	Index name	Launching date
1	Jakarta Stock Exchange (JKSE)	04/04/1983
2	LQ45	01/02/1997
4	KOMPAS100	13/07/2007

RESULTS AND DISCUSSION

Table 5 displays the return of the three stock indexes that are listed in Indonesia's stock exchange in 2013 – 2022.

Table 5: Indonesian Stocks Index Return 2013 - 2022

Year	IDX Composite JKSE	LQ45	Kompas100
2013	-1.00%	-3.30%	-3.80%
2014	22.30%	26.40%	25.80%
2015	-12.10%	-11.90%	-13.80%
2016	15.30%	11.70%	13.20%
2017	20.00%	22.00%	20.30%
2018	-2.50%	-9.00%	-6.30%
2019	1.70%	3.20%	1.50%
2020	-5.10%	-7.80%	-5.50%
2021	10.10%	0.40%	-3.40%
2022	2.80%	-0.58%	-2.03%
10 Years Average Return	5.15%	3.11%	2.60%

Table 5 shows that over the last ten years, the Jakarta Stock Exchange had the highest average return, 5.15%, with LQ45 and Kompas100 returning 3.11% and 2.60%, respectively.

Table 6: US Stocks Index Return 2013 - 2022

Year	Percentage Return		
	NASDAQ	S&P 500	DJI
2012	16%	13%	7%
2013	38%	30%	27%
2014	13%	11%	8%
2015	6%	-1%	-2%
2016	8%	10%	13%
2017	28%	19%	25%
2018	-4%	-6%	-6%
2019	35%	29%	22%
2020	44%	16%	7%
2021	21%	27%	19%
2022	-33%	-19%	-9%
Average return	24%	16%	15%

Source: Macrotrends (2024)

Table 6 displays the returns for the three US indexes. NASDAQ had the highest average, 24%, followed by the S&P 500 (16%) and DJI (15%). Based on the comparative results between the US and Indonesia, the average returns were better in the US than in Indonesia.

Apart from considering the stock's return, the level of risk also needs to be evaluated. One of the methods to measure stock risk research is the Sharpe Index. Using the Sharpe Index makes it easier to build a stock portfolio (Claransia and Sugiharto, 2021). The average return, standard deviation, and risk-free rate are needed to analyze performance using the Sharpe Index. There are several key aspects that one should pay attention to in the measurement of the Sharpe Index, however. The first is the size of the excess return from each portfolio for each total risk unit. The other is that the bigger the score, the better is the portfolio performance. Table 7 displays the risk measurements using the Sharpe Index for the three Indonesian indexes.

Sharpe Index scores for the US indexes are displayed in Table 8, and it shows that, as with the Indonesian indexes, there is a direct relationship between average returns and the Sharpe Index score. Table 8 also shows that investing in the US stock market yielded a higher level of return with lower risk compared to the Indonesian stock market.

Table 7: Indonesia Stock Index Risk Measurement using Sharpe Index

Year	JKSE	LQ45	Kompas100
2013	-0.47	-0.58	-0.6
2014	2.29	2.61	2.37
2015	-1.29	-1.01	-1.11
2016	0.82	0.34	0.49
2017	1.89	1.72	1.59
2018	-0.93	-1.24	-1.05
2019	-0.57	-0.36	-0.47
2020	-0.45	-0.45	-0.39
2021	0.38	-0.52	-0.78
2022	-0.11	-0.37	-0.5
Average	0.156	0.014	-0.045

Just as JKSE had the highest average return, so did it have the highest Sharpe Index score, 0.156. LQ45 and Kompas100 follow with scores of 0.014 and -0.045, respectively. These results are consistent with the direct relationship between the Sharpe Index and performance.

Table 8: US Stock Index Risk Measurement using Sharpe Ratio

Year	NASDAQ 100	S&P 500	DJI
Average Sharpe Ratio	1.09	0.78	0.36

This result is in line with previous research, such as that done by Demetrescu et al. (2022), who concluded that investors could predict price movements in both the short and long term. Research by Dai et al. (2020) found that stocks from companies with small market capitalization are easier to predict rather than companies with a large market capitalization. Aang & Bekaert (2007), however, found that short-term returns strongly negatively predict overall returns. Overall, the risk in a stock market is the main factor **in** setting yield return, and, as Jurison (2019) noted, it is human nature that keeps one from taking further and **more significant** risks that are more than those in the stock market. Empirical evidence from Bhowmik (2020) affirmed that expected return is not directly linked to the movement of stock prices; **instead**, it is the other way around - risk and return bring a positive relationship. Bacilar (2019) also found a direct connection between risk and return in a stock market. This

relationship between risk and return was seen by Aloysius Edward (2020), who noted the two primary and most essential factors in curating a portfolio. However, some contrary views about the connection between risk and return do exist. Thampanya et al. (2020) noted that there are many other factors to consider when investing in stocks than return when analyzing the performance of a portfolio. As indicated by Tandelin (2020), using a risk-adjusted return reveals a high return does not always cover the existing risk, so a risk-adjusted return should be used.

CONCLUSION

This study has found that the Indonesian stock indexes with the highest return and lowest risk over the period 2013 to 2022 were JKSE, LQ45, and Kompas100, respectively. In the US, the indexes with the highest return and lowest risk were the NASDAQ 100, S&P 500, and DJI, respectively. It also found that the returns were higher and levels of risk (as measured by the Sharpe Index) were lower for the US indexes than the Indonesian ones. Because of this relationship between return and risk, it is recommended that investors in stock markets, particularly new investors, should invest in stocks that offer high returns with low risk.

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