

Portrait of equity risk premium in Indonesia capital market period 1990-2022

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Portrait of equity risk premium in Indonesia capital market period 1990 – 2022

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ABSTRACT

The Indonesia Stock Exchange has experienced high growth in its 32 years. The Composite Stock Price Index rose 1.012% in that period, or an average of 31.63% per year. This study analyzes the risk premium on the Indonesia Stock Exchange (IDX) in the last 32 years. In this study, we found the following facts. First, the risk premium at IDX is 2.24% per year if using annual data and 5.54% when using annualized monthly data. It seems that the risk premium in IDX is sensitive to the return calculation horizon used. Second, in the 1997-1998 economic and 2008 financial crises, the risk premium experienced a sharp decline but was followed by a sharp increase in the following months. Third, the macroeconomic variables of inflation and currency exchange rates significantly affect the risk premium, but the interest rate does not. The effect of macroeconomic variables on the risk premium is also sensitive to the horizon of the return calculation used. The results above are when using annual data. The three macroeconomic variables do not affect the risk premium when using monthly data.

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Introduction

The Indonesian capital market has developed quite high, from its inception until now. In May 1990, the Composite Stock Price Index (JCI) was at the position of 636.40 and in early April 2022, the JCI was at the level of 7,078.75. There is an increase of 10.12 times or 1.012% within 32 years. If calculated annually, the average increase in the JCI is 31.63% per year. The increase in the JCI is a reflection of the return received by investors on average, and a return of 31.63% per year is a fairly large return. Figure 1 in Finding and Discussion section illustrates the development of the JCI over the last 32 years.

Capital market performance is generally measured by the growth of its composite index. However, there is a more precise measure of capital market performance, namely the "risk premium". The risk premium is the additional stock return above the risk-free investment return. Initial studies related to risk premium can refer to the article written by Mehra and Prescott (1985). They used capital market data in the United States from 1889-1978 and found that the average risk premium for stocks in the United States was 6.18%. According to them, this figure is quite high, but they have not been able to find out what is the cause of the high-risk premium. They call it, as the article title suggests, A Puzzle. A number of key economic indicators that they use in their analysis cannot explain the size of the risk premium in the United States.

The next important study related to the risk premium was carried out by Fama and French (2002). They make a model to predict the risk premium using the company's micro variables, namely dividends and profit growth. Using capital market data in the United States from 1951-2000, they found an estimated risk premium of 2.55% for the dividend model and 4.32% for the profit growth model. This estimated figure is far below the real average stock return of 7.43%. They concluded that the average stock return in that period was indeed much higher than expected.

The latest study related to the risk premium was carried out by Casta (2022). Casta (2022) developed a future dividend-based risk premium model. Conceptually, the stock price is the present value of dividends to be paid in the future. In Casta's research period

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(2022), the United States capital market already provided derivative securities called dividend futures, so that he then used it as a risk-adjusted expectation of future dividends. Since there are no derivative securities available in Indonesia, the model used by Casta (2022) cannot be tested in Indonesia.

How is the risk premium study in Indonesia? The risk premium study has not been widely carried out in Indonesia. Even if it is done, in general, the duration of the observation is relatively short. Basri, Hamaji, and Kartinah (2018), for example, conducted research on the equity risk premium on the Indonesia Stock Exchange for the period 2007 to 2015 (eight years). Another study related to the equity risk premium in Indonesia was conducted by Calice and Lin (2021). They conduct research on equity risk premium in 45 countries, including Indonesia. Data taken from 2002 to 2018 (sixteen years). Miah and Altit (2020) also study the risk premium in 27 countries, including Indonesia, but their study is not about equity but about forward contracts. Kutuk and Barokas (2022) also examined cases in Indonesia, Mexico and Turkey, but the securities were money market products, certificate deposits (CDs).

This research will focus on stocks and will take a longer period of observation, which is 32 years, from 1990 to 2022.

Literature Review

Capital Markets and the Equilibrium Model

The study of finance, especially the capital market, underwent a methodological shift in the 1960s. Before the 1960s, the study of capital market finance was more normative. After the 1960s his studies were more positive. Starting with Modigliani and Miller (1958) with their irrelevant theory related to capital structure decisions and Miller and Modigliani (1961) on the irrelevant theory related to dividend policy, other theories emerged, including the capital market equilibrium theory, the Capital Asset Pricing Model (CAPM), which was developed by Sharpe (1964).

Capital market equilibrium theory has an important contribution to helping us understand the behavior of stock prices. The CAPM, for example, states that the expected return of a stock is determined by the magnitude of the risk-free investment return and the risk premium. This risk premium is determined by the elasticity (covariance) of stock's return with capital market returns. The higher the covariance (known as Beta) of a stock, the higher the risk premium, so the expected return of the stock is also higher.

This initial CAPM equilibrium model was later developed by several financial scientists. Black (1972) developed the CAPM in the absence of a risk-free interest rate and Merton (1973) developed the CAPM for the multi-period case. In addition to those who develop, some oppose the CAPM. The opponent is Ross (1973) who considers that the CAPM model is too excessive because it only uses one factor, namely beta, to determine stock returns. He created a multi-factor-based model which he named Arbitrage Pricing Theory (APT). APT argues that stocks that have the same characteristics (risk factors) must have the same price. If not, then there will be an arbitrage process that makes the stock price go to equilibrium so that the price becomes the same

Ross's (1973) APT model is still a conceptual model because the model has not determined how many risk factors and what the factors are. A fairly successful empirical APT model was developed by Fama and French (1993). The model, which became known as the 3-factors model, identifies three risk factors that determine return expectations, namely market returns, stock size (market capitalization), and the ratio of the book value of equity to stock prices. Later, Fama and French (2015) developed the model into 5 factors by adding two risk factors, namely profitability and investment value.

Risk Premium

If the equilibrium model calculates the overall stock return expectations, the risk premium places more emphasis on additional returns above the risk-free interest rate. If the investment is risk-free, the return requested by the investor is equal to the risk-free interest rate, if the investment is risky, the investor asks for an additional return (premium) due to the emergence of the risk. Initial studies related to risk premium can refer to the paper of Mehra and Prescott (1985). Using capital market data in the United States, they found the average risk premium for the period 1889-1978 was 6.18% with a standard deviation of 16.67%. Meanwhile, during the same period, the average risk-free interest rate was 0.8% with a standard deviation of 5.67%. By using a mathematical approach based on per capita consumption growth, they have not found a risk premium pattern in the American capital market. The risk (equity) premium is still an enigma. They do not question why the average return on equity is quite high, but rather why the average risk-free interest rate is too low.

The next important study was carried out by Fama and French (2002). They used data on the United States capital market from 1872-2000. The average risk premium in that period was 5.57%. They also divide the data into two periods and the results in the 1972-1950 period the average risk premium is 4.40% and in the 1951-2000 period the average risk premium is 7.43%. One of the reasons for the high-risk premium in the 1951-2000 period was the low risk-free interest rate during that period, which averaged 2.19%, while in the previous period it was 3.90% on average. Fama and French (2002) also estimate the risk premium. While Mehra and Prescott (1985) used macroeconomic data, Fama and French (2002) used company micro economic data, namely dividend growth and profit growth. It turns out that the model created by Fama and French (2002) is also inaccurate, especially for the period 1951-2000. The dividend model estimates a risk premium of 2.55% and the profit model estimates 4.32%. In fact, the average risk premium is 7.43%. This Fama and French (2002) model was later improved by Donalson, Kamstra, and Kramer (2020) by using the dividend

yield, return volatility and realized excess return variables which were made into a joint distribution. They claim the model is more accurate than the previous risk premium models.

The development of risk premium studies is influenced by the availability of financial instruments and data availability. The availability of a derivative securities instrument called dividend future makes Casta (2022) able to create a risk premium estimation model based on the instrument. If the initial risk premium study only discussed the risk premium for stock securities, subsequent developments have also been carried out to examine the risk premium for other risky securities such as Miah and Aliti (2020) who studied the risk premium on a forward contract and Kutuk and Barokas (2022) who studied the risk premium on a certificate of deposit. In Indonesia, Hartini and Hanggraeni (2021) researched the liquidity risk premium on Indonesian government bonds.

Research and Methodology

This study uses data from 1990 to 2021 for annual data and data from May 1990 to April 2022 for monthly data. There are five variables analyzed in this study, namely: stock market returns, risk-free interest rate, inflation, rupiah exchange rate against the US dollar, and risk premium. Stock market returns are calculated based on data from the Composite Stock Price Index (JCI), risk-free interest rates refer to data on average deposit rates for a period of 1 month published by Bank Indonesia, inflation takes data published by the Central Bureau of Statistics (BPS), and the dollar to rupiah exchange rate is taken from *investing.com*. Meanwhile, the risk premium is the difference between the stock market return and the risk-free interest rate.

There are two analyzes to be carried out in this study. The first is the analysis of the amount and pattern of risk premium using annual data and monthly data. Second, analyze the effect of macroeconomic variables, namely interest rates, inflation, and currency exchange rates, on the risk premium with annual and monthly data. The regression equation below is used to test whether these macroeconomic variables affect the risk premium

$$RISKP_t = c + \beta_1 Rf_t + \beta_2 INFL_t + \beta_3 USD_t$$

where,

$RISKP_t$ = risk premium at year(month) t

Rf_t = risk-free rate at year (month) t

$INFL_t$ = inflation rate at year (month) t

USD_t = exchange rate at year (month) t

Findings and Discussions

Risk Premium Size and Pattern

The Indonesian capital market has developed quite high. There is an increase of 10.12 times or 1.012% in Jakarta Composite Index (JCI) within 32 years. If calculated annually, the average increase in the JCI is 31.63% per year. Figure 1 illustrates the development of the JCI over the last 32 years. In the figure, it appears that the growth of the JCI rose significantly starting in 2004-2005. Before that period, the increase in the JCI was not significant enough.

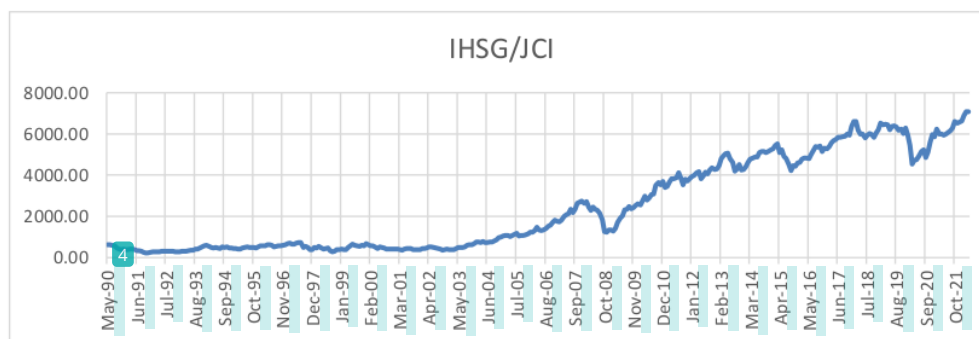


Figure 1: JCI Growth during May 1990 – April 2022

The annual stock market return based on a rough calculation of the JCI in early 2022 and 1990, is 31.63%. However, the results of a more detailed calculation of market return, by calculating the stock market return every year, show a much lower market return, which is only 13.69%, as shown in table 1 below. The amount of stock market returns is very volatile. Stock market returns, at one time, ever increased to the highest achievement, up to 114.6%. However, once the value fell to the lowest level of up to -50.63%.

Table 1: Annual Market Return, Risk-Free Interest Rate and Risk Premium

	RM	RF	RISKP
Mean	0.136902	0.114422	0.022480
Median	0.097445	0.080767	-0.040484
Maximum	1.146133	0.473800	1.034016
Minimum	-0.506375	0.031183	-0.624519
Std. Dev.	0.380403	0.083412	0.399368
Skewness	0.606441	2.682267	0.405973
Kurtosis	3.231718	11.82747	2.955512
Observations	32	32	32

The size of the risk premium depends on the size of the stock market return and the risk-free investment return. Risk-free investment return actually has many proxies, ranging from interest rates for 1-, 3-, 6-, and 12-month term deposits, to government bond coupons. Government bonds that can be used as an alternative investment for the general public only became available in 2006, namely with the issuance of Indonesian Retail Bonds (ORI) series 001. Therefore, ORI coupons were not used as a risk-free interest rate proxy in this study. The author chooses a one-month deposit because among the time deposit options, the one-month period is the most in demand because the risk of withdrawal is the lowest. Table 1 shows that the average risk-free interest rate is 11.44%. This average value is quite high due to the high interest rate during the 1997 and 1998 economic crises, whose deposit interest rates reached more than 47%. The risk premium is the difference between stock market returns and risk-free investment returns. Table 1 shows that the average risk premium is 2.24% but the standard deviation is quite high, at 39.9%. What is interesting about the risk premium finding is that the median is negative. Indeed, when we look at the detailed data, over a period of 32 years, there is more negative risk premium (17 years) than positive (15 years). Negative risk premium means that the return from stock investment is generally lower than the deposit interest rate. There are even 11 cases (out of 17 years) where the stock market return itself is negative. Figure 2 below shows a comparison of stock market returns and risk-free investment returns, as measured by the 1-month time deposit rate.

From Figure 2 it can be seen that the highest stock market return (Rm) occurred in 1993 (ie 114.6%) and the lowest occurred in 2008 (ie -50.6%). From the graph, it can also be seen that the fluctuations of stock market returns tend to be high in the period 1990 – 2011 and relatively less fluctuating in the period 2012-2021. Meanwhile, the risk-free investment return (Rf) is relatively stable. Figure 3 illustrates the size of the risk premium. The highest risk premium occurred in 1993, which was 103.4%. This happened in the same year when the stock market return (Rm) also reached its highest value. The lowest risk premium (ie -62.4%) also coincided with the lowest stock market return in 2008.

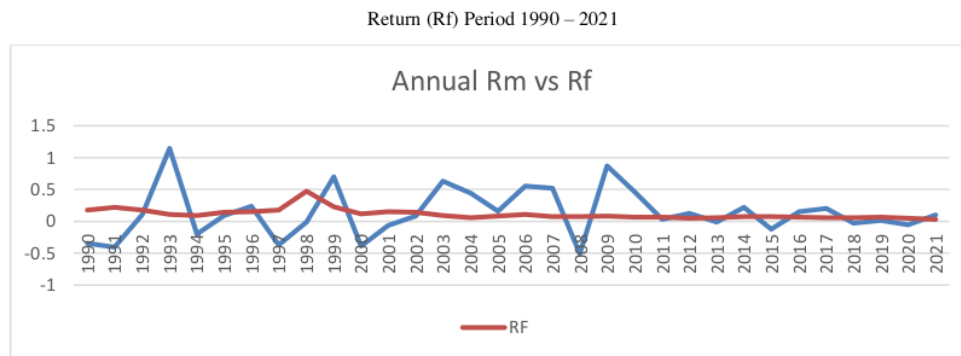


Figure 2: Comparison of Annual Stock Market Return (Rm) and Risk-Free Investment



Figure 3: Annual Risk Premium for the Period 1990 – 2021

When the period is changed to monthly, it turns out that stock market returns, risk-free interest rates, and risk premiums have different sizes and patterns. Table 2 below describes the descriptive statistics of these variables. The average monthly stock market return is 1.06% or 12.72% annually. This figure is lower than the average annual stock return of 3.69%. Meanwhile, the average monthly risk-free interest rate is 0.6386% or an annualized 7.66%, this value is also lower than the average annual risk-free interest rate of 11.44%. Meanwhile, the average monthly risk premium is 0.45% or 5.4% annually. This figure is above the average annual risk premium of 2.24%.

Table 2: Monthly Market Return, Risk-Free Interest Rate and Risk Premium

Period May 1990 – April 2022

	RF	RM	RISKP
Mean	0.006386	0.010614	0.004507
Median	0.005571	0.013632	0.008197
Maximum	0.013825	0.201315	0.193907
Minimum	0.002033	-0.314219	-0.322044
Std. Dev.	0.002508	0.059624	0.059709
Skewness	1.085047	-0.634302	-0.694654
Kurtosis	3.777718	6.224924	6.276160
Observations	268	268	267

The size of the stock market return seems to tend to be lower when the period used is shorter. When using a period of 32 years, the average annual return is 31.63%, using annual data the average annual return is 13.69%, and when using monthly data, the return is 12.72% per year. The same pattern applies to risk-free investment returns. However, for the risk premium, the pattern is the opposite. The shorter the period, the higher the risk premium. When using annual data, the average risk premium is 2.24%, but when using monthly data, the average risk premium is 5.4% (annualized).

Figure 4 below compares monthly stock market returns and monthly risk-free investment returns. In general, it can be seen that both have the same pattern, including during the 1997-1998 crisis. During the crisis period, stock market returns and monthly risk-free interest rates both increased. This pattern is not seen in the annual data in graph 2. In the 2008 crisis, the pattern was different. At that time, the monthly stock market returns fell drastically but the risk-free interest rate did not decline. This pattern is the same as the annual data pattern.

Period May 1990 – April 2022

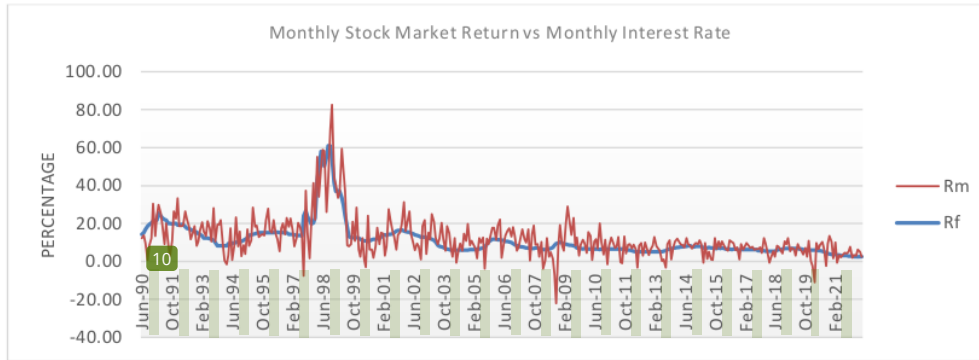


Figure 4: Comparison of Stock Market Return and Monthly Risk-Free Investment Return

Figure 5 illustrates the risk premium using monthly data. Risk premium fluctuations in the normal period are relatively uniform. High fluctuations occurred during the crisis period, namely 1997-1998 and 2008. What is interesting is that there is a pattern, that after the risk premium fell sharply during the crisis, it would be followed by a sharp increase in the risk premium. In the 1997-1998 crisis the pattern was as follows. There was a sharp decline in the risk premium in August 1997 (-33.52%) followed by a sharp increase in the risk premium in January 1998 (+19.27%). In 1998 there was another sharp decline in August (-33.49%), followed by a sharp increase in November 1998 (+23.92%) and in April 1999 (+23.02%).

During the 2008 crisis, the risk premium decreased in October 2008 (-32.2%) and then increased in April 2009 (+19.39%). At the time of the emergence of the covid-19 pandemic, there was also a significant decrease in risk premium in March 2020 (-17.24%) but was not followed by a significant increase in risk premium in the following months. The increase in risk premium during the covid-19 pandemic is accumulative. After falling sharply in March 2020, the risk premium increased in October (+4.95%), November (+9.11%), and December (+6.22%). The increase in three consecutive months if accumulated is 20.28%.

Risk Premium, Interest, Inflation, and Currency Exchange Rate

Mehra and Prescott (1985) used macroeconomic variables; risk-free interest rates and gross domestic product (GDP) growth rates, to predict the size of the risk premium but they did not succeed. The risk premium is closely related to the performance of the economy because the risk premium is also a measure of the company's performance. Therefore, the risk premium should also be influenced by economic performance.

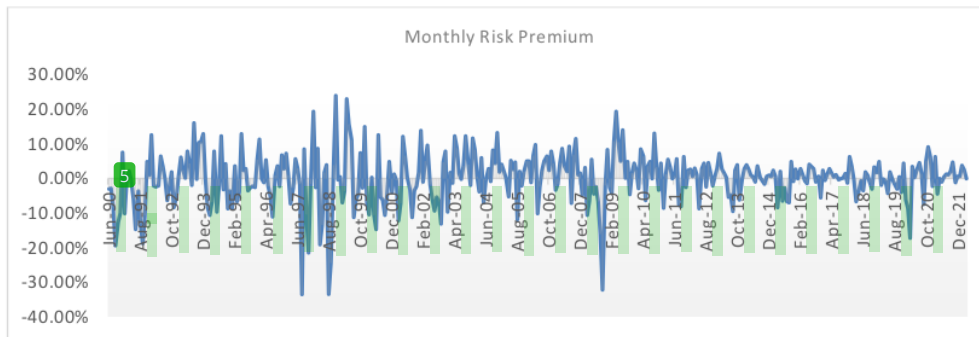


Figure 5: Monthly Risk Premium Period May 1990 – April 2022

In this study, the authors analyze the effect of interest rates, inflation and currency exchange rates on the risk premium. For the context of developing countries such as Indonesia, the issue of inflation, currency exchange rates, and interest rates is an important issue because the values of these three indicators are highly volatile in developing countries, besides their magnitudes are also higher than those of the three indicators in developed countries.

Table 3 below shows the results of the test of the effect of interest rates, inflation, and the exchange rate of the rupiah to the US dollar on the risk premium. The results show that interest rates do not affect the risk premium, inflation has a positive effect on the risk premium and the rupiah exchange rate has a negative effect on the risk premium. In the univariate test (not attached), interest rates actually affect the risk premium. Thus, the effect of interest rates on the risk premium has been hindered by the influence of other

variables. Inflation greatly affects interest rates because people are reluctant to save if the value of their money is eroded by higher inflation than interest rates. It is probable that the effect of interest rates has been blocked by the effect of inflation.

Table 3: Test Results for the Effect of Interest Rates, Inflation, and Exchange Rates on Risk

Premium (annual data)

Dependent Variable: RISKP				
Method: Least Squares				
Sample: 1 32				
Included observations: 32				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.074466	0.126801	0.587265	0.5617
RF	-1.662214	1.337581	-1.242702	0.2243
INFL	2.675543	1.520754	1.759353	0.0894
D	-0.780126	0.325215	-2.398798	0.0234
R-squared	0.262852	Mean dependent var		0.022480
Adjusted R-squared	0.183872	S.D. dependent var		0.399368
S.E. of regression	0.360789	Akaike info criterion		0.915420
Sum squared resid	3.644716	Schwarz criterion		1.098637
Log likelihood	-10.64671	Hannan-Quinn criter.		0.976151
F-statistic	3.328078	Durbin-Watson stat		2.180637
Prob(F-statistic)	0.033779			

How do these three macroeconomic variables affect the risk premium when using monthly data? The monthly risk premium pattern and characteristics are different from the annual data as described above. The results of the test of the effect of interest rates, inflation, and exchange rates on monthly risk premium data also produce different findings. Table 4 below displays the results.

Table 4: Test Results for the Effect of Interest Rates, Inflation, and Exchange Rates on Risk Premium (monthly data)

Dependent Variable: RISKP				
Method: Least Squares				
Date: 07/26/22 Time: 20:17				
Sample (adjusted): 2 267				
Included observations: 266 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.009932	0.011215	0.885553	0.3767
INFL	0.050802	0.101868	0.498705	0.6184
RF	-1.166023	1.472720	-0.791748	0.4292
D	-0.057963	0.113447	-0.510924	0.6098
R-squared	0.004173	Mean dependent var		0.004914
Adjusted R-squared	-0.007230	S.D. dependent var		0.059448
S.E. of regression	0.059663	Akaike info criterion		-2.785292
Sum squared resid	0.932629	Schwarz criterion		-2.731405
Log likelihood	374.4438	Hannan-Quinn criter.		-2.763643
F-statistic	0.365943	Durbin-Watson stat		1.611223
Prob(F-statistic)	0.777648			

Table 4 shows that interest rates, inflation, and currency exchange rates do not affect the risk premium. Judging from the statistical aspect, the more data there are, the greater the probability that a variable has a significant effect. However, in this test, with more data (267 monthly data versus 32 annual data), the three variables had no significant effect.

This finding gives us an understanding that the pattern of risk premium and how the influence of macroeconomic variables on the risk premium is influenced by the duration of the return used. This study finds that inflation and currency exchange rates have a significant effect on the risk premium when using annual data but both have no effect on the risk premium when using monthly data. Meanwhile, interest rates have no effect on the risk premium both when using annual data and when using monthly data.

Conclusions

This study aims to create a portrait of the risk premium of stocks in the Indonesian capital market. Using data from 1990 to 2022, we find that the amount of risk premium shares in Indonesia is sensitive to the duration of the return used. When using annual data, the average risk premium is 2.24% and when using monthly data, the average risk premium is 0.45% per month or 5.4% when annualized. The highest risk premium occurred in 1993 at 103.4% and the lowest occurred in 2008 at -62.4%.

With monthly data, fluctuations in the risk premium occurred during the crisis years, namely 1997/1998 and 2008. Using monthly data, we found a pattern of risk premium that fell sharply but was followed by an increase in the risk premium in the next few months. In August 1997, the risk premium decreased by -33.52%, followed by an increase of 19.27% in January 1998. We also find that, with annual data, inflation rate has a positive effect on the risk premium, currency exchange rates have a negative effect on the risk premium, while interest rates have no significant effect on the risk premium. However, by using monthly data, the three macroeconomic variables have no significant effect on the risk premium.

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Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Basri, B, B. Harnaji, dan K Kartinah, (2018), *The Effect of Inflation Rate and Rupiah Currency Exchange Rate Fluctuation toward Stock Risk at Indonesia Capital Market*, Proceedings of the International Conference on Banking, Accounting, Management, and Economics (ICOBAME 2018)
- Black, F. (1972), Capital Market Equilibrium with Restricted Borrowing, *Journal of Business*, 45, 444-455
- Calice, G and Ming-Tsung Lin, (2021), Exploring risk premium factors for country equity returns, *Journal of Empirical Finance*, 63 (2021) 294–322
- Casta, Martin, (2022), Deriving equity risk premium using dividend futures, *North American Journal of Economics and Finance*, 60 (2022), 1-11
- Donalson, R. G., M. J. Kamstra, dan L. A. Kramer (2020), Estimating the Equity Premium, *Journal of Financial and Quantitative Analysis*, 45(4) Aug.2020, 813-845
- Fama, E. F. and K. R. French, (1993), Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics*. 33: 3–56
- Fama, E. F. and K. R. French, (2002), The Equity Premium, *Journal of Finance*, Vol 57 No.2, 637-659
- Fama, E. F. and K. R. French, (2015), A five-factor asset pricing model, *Journal of Financial Economics*, 116 (2015) 1–22
- Hartini, E.R.M. dan D. Hanggraeni, (2021), Determinant Factors of Liquidity Risk Premium on Indonesia Government Bonds, *Indonesian Capital Market Review*, 13 (2021), 61-70]
- Kutuk, Y. and Lina B.s, (2022), Multivariate CDS risk premium prediction with SOTA RNNs on MI[N]T countries, *Finance Research Letters*, 45 (2022), 1-8
- Mehra, R and E.C. Prescott, (1985), The Equity Premium: A Puzzle, *Journal of Monetary Economics*, 15 (1985), 145-161
- Merton, R.C. (1973), An Intertemporal Capital Asset Pricing Model, *Econometrica*, 41, 867-888
- Miah, F. and Omar A. (2020), Risk premium or irrational expectations? An investigation into the causes of forward discount bias across 27 developed and developing economies forward rates, *North American Journal of Economics and Finance*, 51 (2020), 1-22
- Miller H. M. and F. Modigliani, (1961), Dividend Policy, Growth, and the Valuation of Shares, *the Journal of Business*, XXXIV, 4, 411-433
- Modigliani, F and M H Miller, (1958), The Cost of Capital, Corporate Finance, and the Theory of Investment, *The American Economic Review*, XLVIII, 3, 453-487
- Ross, S. A., (1973), The Arbitrage Theory of Capital Asset Pricing, *Journal of Economic Theory*, 13, 341-360
- Sharpe, W. F. (1964), Capital Asset Prices- A Theory of Market Equilibrium Under Condition of Risk, *Journal of Finance*. XIX (3): 425–442

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