

Moderating Role of Activa Structure on Bond Prices of Manufacturing Companies on the Indonesia Stock Exchange

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ABSTRACT

The aim of this research is to explore and quantify the interplay among interest rates, inflation, and market risk factors concerning bond prices, with asset structure playing a moderating role. Employing an associative quantitative approach, the study focused on 32 companies that issued bonds on the IDX between 2019 and 2021. A saturated sample technique (Census) was utilized, encompassing all 128 data points (n) from the population. Data analysis employed Moderating Regression Analysis (MRA). The findings indicate that interest rates and inflation individually exert a significant influence on corporate bond prices on the IDX. However, market risk does not demonstrate a significant impact on bond prices individually. Nevertheless, collectively, interest rates, inflation, and market risk jointly affect bond prices. The moderation test results, including the residual test, reveal that asset structure does not moderate the relationship between interest rates, inflation, and market risk on bond prices.

Keywords:

Interest Rate;
Inflation; Market Risk;
Assets Structure and
Bond Price

INTRODUCTION

Debt securities, commonly known as bonds, represent a vital facet of the current financial landscape. These instruments, issued by companies, entail periodic coupon payments and the repayment of principal upon maturity. Bonds offer investors the advantage of steady fixed interest income through coupons, as well as the potential for future price appreciation, or capital gains. While bondholders may not directly partake in a company's growth, they are shielded from significant repercussions in the event of poor company performance, provided the issuer possesses the means to honor its obligations (Becker & Ivashina, 2015).

Bonds can provide investors with two potential benefits when investors hold them as part of their portfolio. Bonds provide investors with an income stream, and offset some of the volatility that investors may see from owning stocks. Bond valuation is inseparable from coupon and yield valuation (Pham, 2016). A bond's coupon is the interest rate paid by the bond. In most cases, this value will not change after the bond is issued. Meanwhile, yield is a measure of interest that takes into account fluctuating changes in bond value. There are various ways to measure yield, but the simplest is the bond coupon divided by the current price (Weber, Duffy, & Schram, 2018).

The relationship between bonds and investors is mutually beneficial and is established through buying and selling bonds in the financial market. In the context of bonds, investors act as lenders to the bond issuer, which is usually a company or government (Jobst, Kunzel, Mills, & Sy, 2008). Investors provide funds to bond issuers in the form of bond purchases, and the issuer returns these funds by paying interest and returning the principal value of the bonds at the end of a certain period. Investors gain from regular interest payments and/or bond price appreciation. However, they must also consider the risks associated with bond investments, including credit risk (the risk that the issuer will not be able to repay the loan),

interest rate risk (the risk that changes in interest rates will affect the value of the bond), and liquidity risk (the availability of the market to purchase or selling bonds). Bonds are an important instrument in diversifying an investor's portfolio. They can provide a stable, fixed income and help protect a portfolio from market fluctuations that occur in equity markets (Arif, Naeem, Farid, Nepal, & Jamasb, 2022). Investors can use bonds to achieve a variety of investment goals, including passive income, capital protection, risk diversification, or achieving long-term goals such as retirement funding. Investors can adopt various investment strategies with bonds, such as selecting bonds with varying levels of risk and maturity, allocating a portion of their portfolio to government or corporate bonds, or using derivative instruments such as convertible bonds or bonds that can be converted into shares. Thus, the relationship between bonds and investors reflects a relationship in which the investor provides capital to the bond issuer and receives compensation in the form of interest payments and principal returns, while the issuer takes a loan from the investor and pays interest and returns the principal at the end of the term.

For investors, bonds are a popular means of investing in securities issued by companies or other institutions that wish to obtain funds (Choi & Kronlund, 2018). Basically, when an investor purchases a bond, they are providing a loan to the bond issuer in the form of purchasing the bond. In exchange for the loan, the bond issuer promises to pay the principal amount of the bond to the investor at maturity, along with the promised interest payments. These interest payments are usually made periodically, for example every six months or once a year, depending on the bond payment structure. Thus, bonds provide investors with a steady stream of steady income in the form of interest payments, as well as a return of principal at maturity (Poufinas, 2022). This makes bonds an attractive investment instrument for investors looking for reliable, steady income as well as capital protection. In addition, bonds can also provide flexibility in terms of investment choices, as investors can choose from various types of bonds with different levels of risk and return according to their preferences and investment goals.

Bonds pay interest regularly to bondholders. It offers a stable and reliable fixed income over the term of the bond (Gelpert, Gulati, & Zettelmeyer, 2019). These interest payments are usually made periodically, for example every six months or once a year, depending on the bond payment structure. This fixed income can be a source of passive income that investors hope for. In addition to the fixed income provided through interest payments, bond prices can also fluctuate. If interest rates fall after a bond is issued, the value of the bond may increase due to the market's desire to hold bonds with higher interest rates. Conversely, if interest rates rise, the value of the bond may fall. Therefore, investors may also benefit from potential capital appreciation, although this is not guaranteed and depends on market conditions. The combination of stable, fixed income and the potential for capital appreciation makes bonds an attractive option for investors who are looking for diversification in their portfolio and want to earn a stable income while protecting their capital from the larger market fluctuations that may occur in equity markets.

Several factors influence bond prices, including liquidity, pricing, inflation, interest rates, credit ratings, and market activity. These characteristics can potentially offer hazards when investing in bonds. There are ways to monitor factors that can influence an investor's bond investment, such as the issuer's credit rating. Liquidity refers to the ability to buy or sell a bond easily without experiencing a

significant decline in price. Less liquid bonds tend to have larger bid-ask spreads and allow for difficulty in executing trades, which can result in investors getting less favorable prices when buying or selling bonds. Bond prices can be affected by a variety of factors including the balance between supply and demand in the market, monetary policy, and overall economic conditions. Changes in bond prices can affect the value of an investor's bond portfolio. Inflation can reduce the purchasing power of the fixed income paid by bonds, because the value of money effectively decreases over time (Bagus, Howden, & Gabriel, 2014). This can cause bonds to provide lower than expected real returns, especially if the rate of inflation exceeds the interest rate paid by the bond. Changing interest rates can have a significant impact on bond prices. When interest rates rise, bond prices tend to fall because existing bonds with lower interest rates become less attractive compared to new bonds offered with higher interest rates, and vice versa. A lower credit rating of a bond issuer can increase credit risk, which refers to the possibility that the issuer will be unable to repay its debt. Bonds with lower credit ratings tend to provide higher yields to compensate for the higher risk.

Market activity, including market volatility and liquidity conditions, can affect bond prices (Wang & Wu, 2015). Rapid changes in market activity can result in sharp price fluctuations, which can result in losses for investors. The risks associated with investing in bonds include credit risk, interest rate risk, inflation risk, liquidity risk, and market risk, among others. It is important for investors to understand these factors and how they can affect the price and value of bonds and manage the risks associated with their bond investments. Portfolio diversification and a good understanding of investment objectives and risk tolerance are also important to reduce the risks associated with investing in bonds. An overview of the phenomenon can be seen from the fluctuations in bond prices which can be seen below.

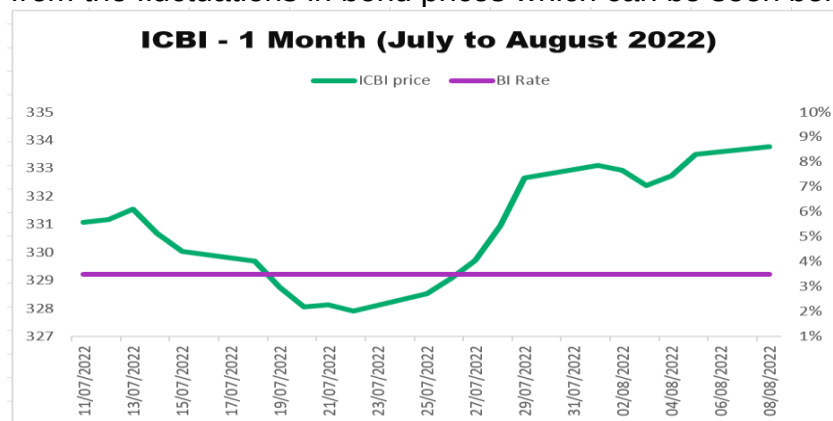


Figure 1: Bond price fluctuations July-August 2022

The data graph illustrates that the price of bonds sold on the Ekef Exchange fluctuated sharply in 2022. Researchers aim to understand the elements that can influence bond prices, such as discount vs premium pricing. Investors acquire bonds with the expectation of receiving coupon payments. Coupon payments are typically made semi-annually, though the frequency varies depending on the bond.

Numerous studies have investigated the bond factor (Weber et al., 2018). Tufano (2003) believes that after the dramatic shifts in financial innovation in the 1970s and 1980s, we should expect more gradual developments in the years ahead. In this

setting, bonds have emerged as a method of financing investment projects. When an investor buys a bond, they are entitled to a portion of the coupon payable from the trade settlement date until the next coupon payment date. The bond's former owner is entitled to a share of the coupon payment from the last payment date to the trade settlement date.

METHOD

The research design employed in this study aligns with quantitative research principles, which emphasise numerical analysis, logical reasoning, and an impartial standpoint. Quantitative research prioritises fixed, numerical data and precise, convergent logic over exploratory thinking (Hass, 2017). The primary objective of this study is to demonstrate the impact of interest rates, inflation, and market risk on bond prices, with the moderating influence of asset structure. The study's target population consists of all companies listed on the IDX that issued bonds, totaling 32 firms within the timeframe of 2019 to 2021. Employing a saturated sampling technique (Census), all units within the population were included as research samples, resulting in a dataset of 128 observations (n).

Table 1: Operational Limitations and Variable Indicators

Variable	Definition	Indicator	Measuring Scale
Interest Rate (X_1)	An interest rate is a value expressed as a percentage, representing the amount of the bond. Interest bonds and debentures pay interest every six months. The interest rate for a particular security is determined at the outset.	prevailing bond interest rates	Ratio
Inflation (X_2)	Inflation is a rise in the price of goods and services. The Consumer Price Index (CPI) is the most well-known indicator of inflation, measuring the percentage change in the prices of a basket of goods and services used by households.	the inflation rate that occurs	Ratio
Market Risk (X_3)	Market risk is the possibility of a decline in the market price of stocks and bonds. The risk occurs due to a fall in the market price of a bond, usually due to an increase in market interest rates.	the level of risk of the bond market as measured by beta	Ratio
Asset structure (M)	Asset structure is the composition of assets used for the company's operational activities. The asset structure will sometimes determine the long-term and short-term liability structure of a company.	existing asset structure in the company	

Variable	Definition	Indicator	Measuring Scale
Bonds Price (Y)	Bond Price is a specific unit of measure of a bond instrument that reflects a specific price. Bond prices usually fall, and when interest rates fall, bond prices usually rise. This is the basic principle of bond investment, which exposes investors to interest rate risk- the risk that the value of an investment will fluctuate due to changes in interest rates.	Closing price	Ratio

The data analysis technique in this research uses moderating regression analysis (MRA). The moderating regression model in this study uses the dependent variable, namely bond prices and independent variables, namely interest rates, inflation and market risk with the following formulation:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon$$

Description :

Y_{it}	= dependent variable
X_{it}	= independent variable
i	= period
α	= constant
β_{1-3}	= coefecient
t	= time series
ε	= error term

RESULT AND DISCUSSION

1. Descriptive Statistics

The following shows general statistical data from all data used, as shown in table 2 below:

Table 2: Descriptive Statistics of Research Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Interest Rate	128	3.50	5.50	4.50	0.89
Inflation	128	1.68	5.51	2.94	1.54
Market risk	128	.00	.42	0.11	0.09
Assets structure	128	.27	92.51	17.56	22.59
Bonds price	128	71.42	13707.92	2274.91	2964.48
Valid N (listwise)	128				

Source: Data Processed, 2024

The number of data N is 128 data used from 32 companies listed on the IDX during the 4-year period (2019 - 2022). The average Interest Rate is 4.5 with a standard deviation of 0.89 indicating that the distribution of Interest Rate data is relatively homogeneous and spreads between a maximum value of 5.50 and a minimum value of 3.50. The average inflation is 2.94 with a standard deviation of 1.54 indicating that the distribution of inflation data is relatively homogeneous and spreads between a maximum value of 5.51 and a minimum value of 1.68. The average market risk is 0.11 with a standard deviation of 0.09 indicating that the

distribution of market risk data is relatively homogeneous and spreads between a maximum value of 0.42 and a minimum value of 0.00. The average assets structure is 176.56 with a standard deviation of 22.59 indicating that the distribution of assets structure data is relatively homogeneous and spreads between a maximum value of 92.51 and a minimum value of 0.27. The average bonds price is 2274.91 with a standard deviation of 2964.48 indicating that the distribution of bonds price data is relatively heterogeneous and spreads between a maximum value of 13707.92 and a minimum value of 71.42.

2. Normality Test

The data normality test is very important in parametric statistical analysis so that the regression model is free from prediction errors. The following is a test of data normality results in the form of histogram graphs and P-P Plots curves as shown in Figure 3 below:

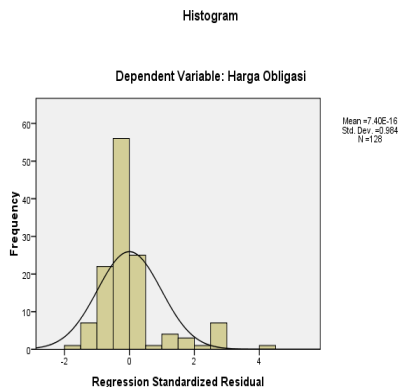


Figure 2: Histogram Graph before Data Transformation

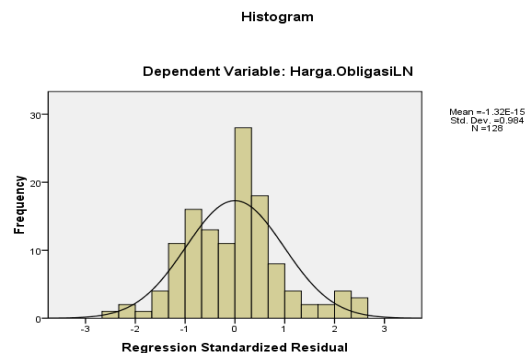


Figure 3: Histogram Graph After Data Transformation

Based on the histogram graph in Figure 2, it can be concluded that it is not normally distributed because it is not proportional so it is necessary to transform the data using natural logarithm (LN). The test results after data transformation in Figure 3 show that the data is normally distributed.

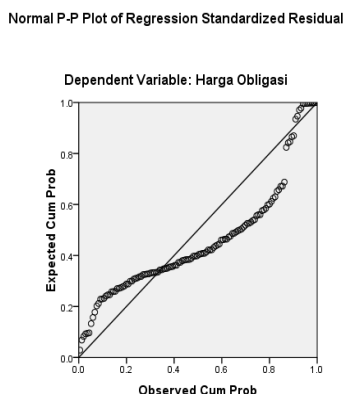


Figure 4: Kruva PP-Plots before Data Transformation

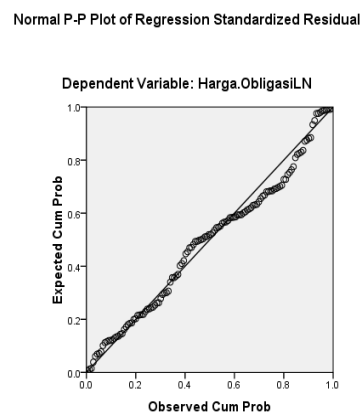


Figure 5: After PP-Plots Curves Data Transformation

Based on the PP-Plos curve in Figure 4, it can be concluded that the curve is not normally distributed because the data spread away from the diagonal line. The test results after data transformation in Figure 5 show that the data is normally distributed. This can be seen in the normal *PP-Plots* curve where the points spread close to the diagonal line.

3. Multikolinearity Test

The results of the multicollinearity test can be seen in the following table:

Table 3: Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Interest Rate	.328	3.046
	Inflation	.334	2.995
	Market risk	.948	1.055

Source: Data Processed, 2024

From the test results above, it can be seen that the tolerance numbers of all independent variables are > 0.10 and the VIF is < 10 . This indicates that there is no multicollinearity among the independent variables in the regression model in this study.

4. Heteroskedasticity Test

The heteroscedasticity test compares the residual variance of one observation period to another. The scatterplot graph test is used for analyzing heteroscedasticity. Heteroscedasticity can be determined by examining specific patterns on a scatterplot graph; if there are points that spread above and below the number 0 on the Y axis but do not form a pattern, there is no heteroscedasticity. The scatterplot graph is shown in the following figure:

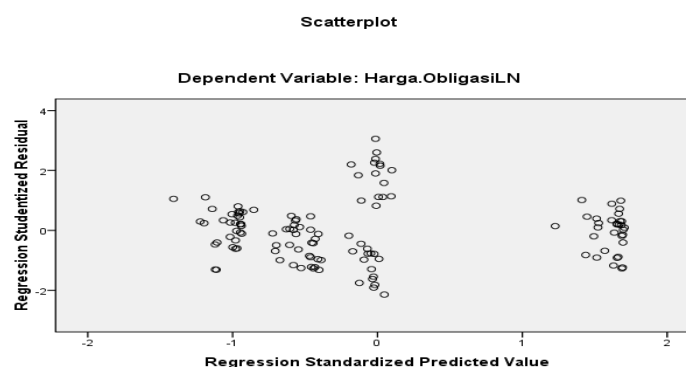


Figure 6: Heteroscedasticity test

Source: Data Processed, 2024

From the *scatterplot* image above, it can be seen that the points spread randomly and do not form a certain or irregular pattern. This indicates that there is no heteroscedasticity in the regression model so that the regression model is suitable for use.

5. Autokorelation Test

The autocorrelation test is conducted to determine whether there exists a correlation between residual errors in period t and those in period $t-1$ in a linear regression model. When such a correlation is present, it indicates an autocorrelation issue. Autocorrelations occur due to the interdependence of successive observations over time, where residual errors are not independent from one another across observations. This phenomenon is commonly observed in time series data. The results of the autocorrelation test are presented in table 4 as follows:

Tabel 4: Uji Autokorelasi

Model	Durbin-Watson
1	1.735

Source: Data Processed, 2024

Based on Table 4, it shows that the Durbin-Watson value can be concluded that there is no positive or negative autocorrelation in the model used because the DW value (1.735) is between 1 and 2.

6. Hypothesis Testing

Multiple linear regression analysis testing aims to determine the direction of the relationship between the independent variable and the dependent variable. The results of multiple regression testing can be seen in Table 5.

Table 5: Multiple Linear Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.084	1.455		5.556	.000
	Interest Rate	-3.153	.415	-.752	-7.596	.000
	Inflation	3.006	.237	1.242	12.658	.000
	Market risk	-3.316	2.365	-.082	-1.402	.163

Source: Data Processed, 2024

The information displayed in the multiple regression results is a multiple regression equation between the independent variable (X) and the dependent variable (Y) which can be formulated in the form of the following equation:

$$Y = 8,084 - 3,153X_1 + 3,006X_2 - 3,316X_3 + e$$

Based on the multiple regression equation, it can be seen that the constant value of 8.084 means that if the bonds price variable is not influenced by the Interest Rate, inflation and market risk variables, the bonds price is 8.084 times. The Beta coefficient value for the Interest Rate variable is -3.153, meaning that every 1% increase in the Interest Rate variable will reduce the bonds price by 3.153 times, assuming other variables are considered constant. The Beta coefficient value for the inflation variable is 3.006, meaning that every 1% increase in the inflation variable, the bonds price will increase by 3.006 times, assuming other variables are considered constant. The Beta coefficient value for the market risk variable is -3.316, which means that every 1% increase in the market risk variable, the bonds price will decrease by 3.316 times, assuming other variables are considered constant.

7. Effect of Interest Rate on Bonds price

Based on Table 5, the results of testing the hypothesis of the effect of Interest Rate on bonds price obtained t-count value (-7.596) is smaller than the t-table (-1.999) with a significance of 0.000 (Sig.<0.05) then H_a is accepted and H_0 is rejected. This means that the Interest Rate has a significant effect on the bonds price of the Company on the IDX.

8. Effect of Inflation on Bonds price

Based on Table 5, the results of hypothesis testing on the effect of inflation on bonds price obtained t-count value (12.658) is greater than the t-table (1.999) with a significance of 0.000 (Sig.<0.05) then H_a is accepted and H_0 is rejected. This means that inflation has a significant effect on the bonds price of companies on the IDX.

9. Effect of Market risk on Bonds price

Based on Table 5, the results of testing the hypothesis of the effect of market risk on bonds price, the t-count value (-1.402) is greater than the t-table (-1.999) with a significance of 0.163 (Sig.> 0.05), so H_a is rejected and H_0 is accepted. This means that market risk has **no** significant effect on the bonds price of companies on the IDX.

10. Simultaneous Test

The results of the F statistical test (simultaneous test) on Leadership and Organizational Culture on Intuition can be seen in Table 6.

Table 6: F Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1056.550	3	352.183	62.267	.000 ^a
	Residual	701.341	124	5.656		
	Total	1757.891	127			

Source: Data Processed, 2024

Based on the results of testing the hypothesis of simultaneous influence of Interest Rate, inflation and market risk on bonds price obtained F-count value (62.267) greater than t-table (3.15) with a significance of 0.000 (Sig.<0.05) then H_0 is rejected and H_a is accepted. This means that Interest Rate, inflation and market risk simultaneously affect the bonds price.

11. Coefficient of Determination

Statistical test of the coefficient of determination in this study the aim is to determine how far the model's ability to explain the variation in the dependent variable. The statistical test of the coefficient of determination can be seen in Table 7 below:

Table 7: Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775 ^a	.601	.591	2.37823

Source: Data Processed, 2024

Table 10 shows that the R Square value is 0.601 or 60.1%, which means that the percentage of the influence of the independent variables (Interest Rate, inflation and market risk) on the bonds price is equal to the coefficient of determination or

60.1%. While the remaining 39.9% is influenced or explained by other variables not included in this research model.

12. Moderating Test

This second model test is conducted to test the moderating variable used in the study, namely whether the assets structure can moderate the relationship between the Interest Rate, inflation and market risk variables with the dependent variable (bonds price). The requirement for testing the moderating hypothesis is that the t value must be negative to the *absolute* value of the *residual* with a significance of <0.05 . The results of the residual test equation in this study can be seen in Table 8.

Table 8: Moderating Analysis

Model		T	Sig.
1	(Constant)	9.706	.000
	Harga.ObligasiLN	.917	.361

Source: Data Processed, 2024

The residual test results show that the regression coefficient is positive (0.917) and significant $0.361 > 0.05$, it can be concluded that the effect of variable interest rate, inflation and market risk on variable bonds price cannot be moderated by variable assets structure. Or in other words, it can be concluded that the assets structure does not moderate the relationship between interest rate, inflation and market risk on bonds price.

Results and discussion

Based on the test results, it can be proven that the Bond Interest Rate hypothesis affects the Bonds price. This study supports the results of Pramono & Irawan (2017) which found that the relationship between *BI-Rate* has a significant effect on bonds price. The results of his research show a positive and significant influence between Interest Rate and *bonds price*. His research concluded that the increasing interest rate movement affects the increase in *bonds price*, while the decrease in interest rate affects the decrease in *bonds price*. Investors frequently use interest rates as a benchmark for the desired rate of return and to compare investment options. Interest rate reference in establishing the amount of bond prices, relates to the development of interest rates issued by Bank Indonesia (BI) (Arteta, Kose, Stocker, & Taskin, 2016).

Setyawan, Wibowo, & Kamal (2020) argues that investment in the form of deposits or Bank Indonesia Certificates (SBI) is an investment that generates risk-free interest so that management is very easy and tends to be safe. Meanwhile, investment in bonds contains various risks in its management such as the risk of losing more profitable investment opportunities (opportunity cost), failure to repay the principal or default on bond coupon payments. As a result, investors will anticipate bond prices to be higher than deposit or SBI interest rates in order to maintain profitability of the investment. As a result, when interest rates rise, the price demanded by investors also rises (Tilton, Humphreys, & Radetzki, 2011). Akhtar, Akhtar, Jahromi, & John (2017) found that the level of interest rates has a positive and considerable influence on the level of bond prices. In contrast, De Rezende, (2017) found that interest rates have a negative and small effect on bond prices.

The test findings show that the inflation hypothesis has an effect on the price of bonds. This study is consistent with the findings of Yusuf & Prasetyo (2019) and Siahaan & Panahatan (2020), which show that inflation has a large positive effect on bond prices. However, it is different from the results of research from Bakri & Utami (2021) and Ridwan (2022) which state that the results of research on inflation variables have a negative and insignificant effect on bonds price. Inflation that continues to increase causes an increase in overall prices, so that investment in securities such as bonds will be considered increasingly risky. As a result, investors will expect a higher *price* for their investment. This is possible because the inflation rate during the research period tends to fluctuate so that it can reduce people's purchasing power. Another possibility is that the inflation rate used in this study is predictable by the public. Increasing inflation also causes investment in foreign securities to be more attractive and profitable, so investors tend to choose to invest in foreign securities to get greater returns.

Based on the test results, it can be proven that the Bond Market risk hypothesis has no effect on Bonds price. This study does not support the results of research by Uddin, Kabir, Kabir Hassan, Hossain, & Liu (2022) which proves that market risk affects bonds price. Bond market risk, which can be interpreted as market risk and the frequency of transactions that occur in the capital market, will be able to affect the level of bonds price. This is because with a high bond market risk, the ease and speed of selling these assets at fair value in the market will be easier, which has an impact on the bond yield level.

Discussion

1. Bonds

The bond price calculation process involves adjusting the coupon payment values and nominal value with market interest rates. The higher the market interest rate, the lower the discount rate applied to future cash flows, and as a result, the bond price will be lower. Conversely, the lower the market interest rate, the higher the discount rate and the higher the bond price will be. The basic concept of a bond, namely a loan of money with the promise of future repayment with interest, has been around since ancient times. Nations such as Ancient Rome and ancient Egyptian countries have used such financial instruments. During the Middle Ages, bonds became an important financial instrument in maritime trade. Venetian merchants, for example, used bonds to raise capital for their trading expeditions. In the 17th and 18th centuries, bonds became an important instrument in financing colonial expansion. European countries used bonds to finance their territorial expansion around the world. During World War I and World War II, government bonds became an important instrument for financing the war effort.

Governments issued war bonds to raise funds for military needs and war infrastructure. Post-World War II, the bond market underwent significant modernization. The development of corporate bond markets and government bond markets became more structured, and complex financial instruments such as derivative bonds began to emerge. With advances in technology and financial globalization, bond markets are becoming increasingly globally integrated. Companies and governments can access international bond markets to obtain funding sources at lower interest rates. Over time, the bond market has expanded to include many different types of bonds, including government bonds, corporate bonds, mortgage bonds, municipal bonds, and more. Each has different

characteristics and risks. The history of bonds reflects the evolution of financial markets and their important role in supporting economic activity, from ancient maritime trade to today's complex global financial system.

The history of bonds in Indonesia has a long and important development in supporting the country's economic development (Basri & Hill, 2020). During the Dutch colonial period, bonds were used as a funding instrument for infrastructure development such as roads, bridges and railways. One famous example is the issuance of bonds to finance the Dutch East Indies railway project. After Indonesian independence, the government continued to use bonds as a funding instrument to finance national development. In the early days of independence, bond issuance was often used to finance basic infrastructure projects, including roads, ports and housing. In the 1960s to 1990s, bonds became the main instrument in supporting government development programs, especially in the infrastructure sector.

During this period, the Indonesian government also issued international bonds to obtain funding sources from global markets. The financial crisis that occurred at the end of the 1990s had a significant impact on the Indonesian bond market. However, despite a temporary decline in market activity, the Indonesian government then took steps to improve the state of financial markets, including the bond market. Since the beginning of the 21st century, the Indonesian bond market has experienced rapid growth, driven by financial reforms and government policies that support capital market development. The government and private companies are increasingly active in issuing bonds to obtain funding sources for infrastructure and economic development.

The Indonesian bond market has also seen product diversification, including government bonds, corporate bonds, *sukuk* (bonds based on sharia principles), and other financial instruments. Along with developments in the global economy and financial markets, the Indonesian bond market continues to develop and becomes increasingly important in supporting economic growth and infrastructure development in this country. The role of the bond market in Indonesia will continue to change and develop in line with global and domestic economic dynamics. Indonesia has been active in the global bond market by issuing international bonds (global bonds) as part of its funding strategy and diversification of funding sources. This action opens up access to international investors and helps strengthen Indonesia's image in global financial markets. In this way, the existence of bonds in Indonesia currently reflects their very important role in supporting economic development, infrastructure development, and facilitating investment activities at the domestic and global levels. Fleckenstein, Longstaff, & Lustig (2014) explain that the dollar price of a bond represents a percentage of the bond's principal balance, otherwise known as the par value. A bond is simply a loan, and the principal balance, or face value, is the amount of the loan. So, if a bond is offered at \$98.90 and the Investor purchases a \$100,000 two-year Treasury bond, the Investor will pay ~\$98,900.

2. Bonds Factor Analysis

Bond factor analysis involves research and evaluation of various factors that can influence the value and performance of a bond. The following are several factors that are often analyzed in relation to bonds:

a. Interest rate

Changes in interest rates can have a significant impact on bond prices and values. When interest rates rise, bond prices tend to fall, and vice versa. This is

because existing bonds become less attractive compared to new bonds that offer higher interest rates.

b. Inflation

The inflation rate also affects the real value of interest payments and the principal value of bonds. With high inflation, the value of future bond payments tends to decrease, reducing the appeal of bonds that provide fixed payments.

c. Credit Rating

The credit rating of a bond by rating agencies such as Standard & Poor's, Moody's, and Fitch plays an important role in determining the credit risk of the bond. Bonds with higher credit ratings tend to be safer but may also have lower interest rates.

d. Maturity Period

The time to maturity of the bond also affects the risk and performance of the investment. Bonds with longer maturities tend to be more sensitive to changes in interest rates and inflation than bonds with shorter maturities.

e. Liquidity

A bond's level of liquidity, or the ability to buy or sell a bond easily without disrupting market prices, is also an important factor. Less liquid bonds tend to have a higher liquidity risk premium.

f. Economic and Political Conditions

Macroeconomic conditions, monetary policy, political stability, and other factors can also influence bond prices and performance.

g. Company Structure

For corporate bonds, analysis of company structure such as debt ratios, cash flows, operational performance and business prospects is also important to understand risk and potential returns.

Analysis of these factors helps investors to make better investment decisions and understand the risks and potential returns associated with investing in bonds. This research is based on the results of previous studies related to the Bond problem. The following are the results of previous research which can be seen in table 9 below:

Tabel 9: Prior Research

No	Researcher	Title	Variable	Result
1	Widajati (2009)	Inflation and Interest Rates on the Price of Government Issued Retail Government Bonds.	Inflation, Interest Rate to Bond Price	The results of the f test inflation and interest rates have a significant effect on bond prices by 50.60%. This research provides important information for bondholders even in a stable economy. An increase in the inflation rate and a decrease in interest rates followed by an increase in bond prices has a positive influence on stock marketers, especially bond investors. For this reason, bondholders must hold their bonds until maturity.
2		Analysis of the factors of bond	Interest Rate, Liquidity, Dollar	The results of this study prove that interest rates, liquidity,

No	Researcher	Title	Variable	Result
	Pramono & Irawan (2017)	prices of financial companies on the Indonesian stock exchange.	Rate, Size, leverage and bond price	dollar rates, size and leverage simultaneously affect bond prices. Partial test results prove that interest rates have a significant effect on bond prices. Bond liquidity variables affect bond prices. Leverage has no significant effect on bond prices.
3	Rasudu (2021)	The impact of inflation, interest rates, exchange rates, coupon rates, and bond liquidity on the price of government bonds (state debt securities) in the 2014-2016 period.	Inflation, interest rates, currency rates, coupon rates, bond liquidity, and bond pricing.	The findings revealed that interest rates, currency rates, and coupon rates have a negative and considerable impact on government bond prices. On the other hand, inflation and bond liquidity have a positive but minor impact on government bond prices.

3. Conceptual Framework and Hypothesis

Researchers try to describe the relationship pattern of interest rates, inflation and market risk on bond prices moderated by asset structure. The following is a picture of the explanation of the existing conceptual framework:

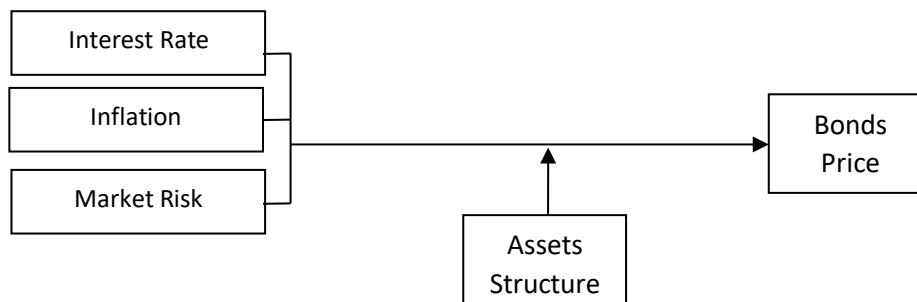


Figure 7: Conceptual Framework

The hypothesis proposed in the study can be described as follows:

- Interest rates affect bond prices.
- Inflation rate affects bond prices.
- Market Risk affects Bond Prices
- Interest rates, inflation rates and market risk simultaneously affect bond prices.
- Asset structure is able to moderate the relationship between interest rates, inflation rates and market risk on bond prices.

CONCLUSION

The results of this study prove that partially Interest Rate has a significant effect on the bonds price of companies on the IDX. The results of this study prove that partially inflation has a significant effect on the bonds price of companies on the IDX. The results of this study prove that partially market risk has no significant effect on the bonds price of companies on the IDX. The results of this study prove that simultaneously Interest Rate, inflation and market risk simultaneously affect the bonds price. The results of moderating testing with the residual test prove that asset structure does not moderate the relationship between interest rates, inflation and market risk on bonds price.

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