

THE IMPACT OF INTEREST RATE POLICY ON BOND VALUATION IN FINANCIAL MARKETS: A SYSTEMATIC LITERATURE REVIEW

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Abstract. *This study aims to analyze the impact of interest rate policy on bond valuation through a systematic literature review (SLR) approach of various empirical studies. The review covers the relationship between interest rate changes, yield curves, market risk, and the response of fixed income instruments across various financial market contexts, including Indonesia. The SLR method follows the PRISMA procedure by examining articles from leading academic databases. The findings indicate that interest rate increases tend to lower bond prices through an increase in the discount rate, while interest rate decreases enhance bond values. The variation in empirical findings shows that bond valuation is also influenced by inflation, yield curve structure, tenor, instrument quality, liquidity, and market risk perception. Analytical models such as the sinusoidal Hull-White model and term structure covariation analysis enrich the understanding of bond dynamics. These findings confirm that interest rate policy is a primary determinant in bond market dynamics and serves as an important basis for investment decision-making and financial policy formulation.*

Keywords: *Bond Market; Bond Valuation; Interest Rate Policy; Monetary Policy; Systematic Literature Review*

1. INTRODUCTION

The dynamics of interest rate policy is one of the main factors affecting the stability and performance of financial markets, particularly in the valuation of bond instruments. Interest rates set by monetary authorities reflect the direction of macroeconomic policy aimed at controlling inflation, maintaining exchange rate stability, and promoting economic growth. Changes in interest rates have a close relationship with bond prices due to the basic characteristics of bonds as fixed income instruments that are highly sensitive to changes in the discount rate (Mishkin & Eakins, 2024).

Rising interest rates tend to lower bond prices because future cash flows are discounted at a higher rate, while declining interest rates increase bond values through the opposite mechanism. The complexity of this relationship highlights the importance of systematic analysis of various empirical studies in order to comprehensively understand how interest rate policy affects bond valuation under various economic conditions.

The development of empirical literature shows that the response of bond prices to changes in interest rates is not always homogeneous across different countries and time periods. Factors such as economic stability, inflation levels, fiscal policy, and global market conditions also affect the sensitivity of bonds to interest rate changes. In Indonesia, Bank Indonesia's benchmark interest rate policy has been proven to directly affect the valuation of bonds and stocks in the capital market (Kasnelly & Habibah, 2025). This study formulates the problem: how does interest

rate policy affect bond valuation based on the findings of various empirical studies, and what factors cause differences in research results?

The urgency of this research is increasing along with global economic dynamics in the post-pandemic era, marked by aggressive monetary tightening cycles by major central banks in 2022–2024, including the Federal Reserve's quantitative tightening policy that has had a wide impact on global bond markets (Bernanke et al., 2024). This study aims to analyze the influence of interest rate policy on bond valuation and to identify the factors that cause differences in research findings.

2. LITERATURE REVIEW

2.1 Interest Rate Policy and Bond Prices

The inverse relationship between interest rates and bond prices is a fundamental principle in financial theory. When interest rates rise, the present value of a bond's future cash flows falls, causing bond prices in the secondary market to decline as well. Conversely, declining interest rates increase the attractiveness of fixed-coupon bonds already in circulation (Mishkin & Eakins, 2024). Historical analysis of UK and US government bond data shows that real interest rates can move into negative territory and that the real yield curve can experience inversions for a considerable proportion of the time (Farmer et al., 2023).

2.2 Term Structure and Yield Curve

The yield curve provides a picture of the relationship between yield levels and the maturity period of bonds. This curve structure is an important indicator for reading market expectations about inflation, economic growth, and the direction of monetary policy. Schroers' (2024) research shows that the evolution of bond term structure is influenced by many factors and the volatility structure changes over time, so that single-factor models are often insufficient to explain the dynamics of the entire yield curve.

2.3 Islamic Fixed Income Instruments

Sukuk as an Islamic fixed income instrument also shows a response pattern to changes in interest rates, although it has different contractual characteristics from conventional bonds. Sukuk yield is not only influenced by macroeconomic conditions and interest rates, but also by instrument quality such as emission value, rating, risk level, and trading liquidity (Putri et al., 2024). This condition confirms that market risk in fixed income instruments involves the interaction between macroeconomic and instrument-specific factors.

3. RESEARCH METHODS

This study uses a systematic literature review (SLR) approach aimed at identifying, evaluating, and synthesizing various scientific literature related to the impact of interest rate policy on bond valuation. The SLR process follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) procedure, which includes four stages: identification, screening, eligibility, and inclusion.

Data collection was conducted through article searches in academic databases including Google Scholar, Scopus, Web of Science, ScienceDirect, Emerald Insight, Taylor & Francis, and ProQuest. Keywords used include interest rate policy, bond valuation, bond pricing, fixed income securities, yield to maturity, monetary policy, and their variations in the Indonesian language. Inclusion criteria include peer-reviewed articles that discuss the relationship between interest rates and bond prices, bond yields, interest rate risk, or bond market responses to monetary policy. Articles that only discuss stocks, inflation, or macroeconomic policy without a direct connection to bonds were excluded. The analysis process uses thematic synthesis by grouping the literature into main themes.

4. RESULTS AND DISCUSSION

4.1 Systematic Literature Review Analysis

Based on the PRISMA selection process, there are 10 articles that meet the inclusion criteria and serve as the primary source of synthesis. Table 1 presents a summary of the SLR analysis from these studies.

Table 1. Systematic Literature Review (SLR) Analysis

Authors/Year	Country	Methodology	Data Analysis	Findings/Variables
Farmer et al. (2023)	UK, USA	Empirical bond modelling study	Real interest rate estimation, Ornstein-Uhlenbeck model, Fourier transform	Real interest rates often negative; long-term discount rate 1.7% (UK) and 2.2% (USA). Variables: historical bond prices, real interest rates, inflation, yield curve.
Jha (2025)	USA	Quantitative modelling	Nelder-Mead calibration, Monte Carlo, Fourier analysis	Sinusoidal Hull-White more accurate than standard model (RMSE 0.12% vs 0.14%). Variables: interest rate dynamics, mean reversion, yield curve.
Schroers (2024)	Germany	Nonparametric empirical & theoretical	Realized covariation analysis, PCA, factor analysis	Multiple factors needed to explain term structure; volatility changes over time. Variables: bond prices, yield curve, volatility.
Kasnelly & Agustia (2025)	Indonesia	Qualitative with secondary data	Theoretical and descriptive empirical analysis	Interest rate increase reduces bond prices; 2025 rate cut drives valuation recovery. Variables: benchmark rate, bonds, monetary policy.
Kasnelly & Habibah (2025)	Indonesia	Qualitative based on empirical literature	Descriptive-analytical review	Bank Indonesia monetary policy and interest rates affect bond and stock valuations. Variables: monetary policy, interest rate, bond valuation.
Dewi & Suk (2024)	Indonesia	Quantitative research	Johansen cointegration test	Bonds, stocks, gold, and real estate are cointegrated with inflation; bitcoin is not. Variables: inflation, bonds, stock market, gold, bitcoin.
Putri et al. (2024)	Indonesia	Descriptive quantitative	Multiple linear regression (SPSS 27), t-test, F-test	Sukuk value, rating, and risk significantly affect sukuk yield; liquidity not significant. $R^2 = 0.767$. Variables: sukuk value, rating, risk, liquidity, yield.
Safitri et al. (2025)	Indonesia	Systematic & thematic literature review	Empirical literature synthesis and secondary data analysis	Bond refinancing influenced by financial, regulatory, and managerial factors. Impact: reduced interest costs, improved capital structure. Case: PT Semen Indonesia.
Mishkin & Eakins (2024)	USA	Theoretical and applied empirical study	Bond market analysis, IS-LM model, historical Fed data	Fed interest rate policy significantly affects all bond tenor spectra. Duration and convexity are primary risk management tools. Variables: Fed funds rate, bond duration, yield spread.

Authors/Year	Country	Methodology	Data Analysis	Findings/Variables
Bernanke et al. (2024)	USA	Quantitative macroeconomic modelling	VAR model, impulse response function, panel data	Quantitative tightening impacts bond prices more slowly and uncertainly than conventional rate hikes. Variables: Fed balance sheet, Treasury yield, term premium.

Source: Processed by the author (2025)

4.2 Interest Rate Dynamics, Yield Curve, and Bond Valuation

Interest rate dynamics is the key element in bond value formation because this instrument relies heavily on the discount rate used to assess future cash flows. Bond prices move in the opposite direction to interest rate changes, so rising interest rates will reduce the present value of coupon payments and principal. Studies in the Indonesian financial market show that increases in the benchmark interest rate push bond prices down and change investor preferences (Kasnelly & Agustia, 2025).

The sinusoidal Hull-White model demonstrates that interest rate movements can contain long-term periodic patterns reflected in US government bond yields. This model produces an RMSE of 0.12% compared to 0.14% for the standard model, showing that bond valuation requires an approach capable of reading changes in interest rate structure more realistically (Jha, 2025). The historical study by Farmer et al. (2023) also confirms that the estimated long-term discount rate is 1.7% for the UK and 2.2% for the US, with real interest rates often negative.

The quantitative tightening policy cycle implemented by the Federal Reserve during 2022–2024 placed significant pressure on global long-term bond prices. Bernanke et al. (2024) found that the impact of central bank balance sheet tightening is slower and more uncertain than conventional interest rate increases, thereby enriching the understanding of monetary policy transmission to bond markets.

4.3 Monetary Policy, Market Risk, and Fixed Income Instruments

Monetary policy plays a central role in shaping the direction of financial markets because changes in benchmark interest rates directly affect the expected rate of return, funding costs, and investor risk perception. Increases in benchmark interest rates typically lower prices of outstanding bonds because fixed coupons become less attractive compared to new instruments with higher yields. Declining interest rates, conversely, increase the attractiveness of existing instruments (Kasnelly & Habibah, 2025).

Inflation also occupies an important position in this relationship. Dewi & Suk's (2024) research using Johansen cointegration tests found that bonds have a long-term relationship with inflation in Indonesia, while bitcoin shows no cointegration relationship. This finding confirms that bonds can function as inflation hedging instruments over the long term. Regarding sukuk, Putri et al. (2024) demonstrated that sukuk value, sukuk rating, and sukuk risk have a significant effect on sukuk yield, while liquidity is not significant partially.

Corporate decisions to undertake bond refinancing cannot be separated from changes in monetary policy. Safitri et al. (2025) showed that declining interest rates provide opportunities for companies to issue new debt at lower costs, as evidenced in the case of PT Semen Indonesia (Persero) Tbk.

4.4 Analytical Models and Methods in Bond Studies

Research on interest rates and bonds has developed through a variety of analytical models and methods. Stochastic models such as the sinusoidal Hull-White model (Jha, 2025) expand the classical framework with periodic components in the mean reversion process. Schroers' (2024) nonparametric approach demonstrates the need for multiple factors to explain term structure evolution, confirming the inadequacy of single-factor models. Quantitative statistical methods

such as multiple linear regression and Johansen cointegration tests are the dominant choice in fixed income instrument research in Indonesia (Putri et al., 2024; Dewi & Suk, 2024). SLR and thematic synthesis approaches serve to consolidate dispersed research results into structured patterns, enabling the identification of research gaps and the development of more comprehensive conceptual frameworks.

CONCLUSION

Interest rate policy has a strong influence on bond valuation through changes in discount rates, yield curve structure, market risk perception, and investor expectations. Rising interest rates tend to reduce bond prices, especially on longer-maturity instruments, while declining interest rates increase bond values and strengthen the attractiveness of fixed income instruments. The systematic review results also show that this relationship is not simple, as it is influenced by inflation, market volatility, instrument quality, liquidity, and the characteristics of monetary policy in each country and period.

The experience of the Federal Reserve's quantitative tightening in 2022–2024 adds a new dimension in that central bank balance sheet tightening impacts bond prices more slowly and uncertainly than conventional interest rate increases. The diversity of methods used in various studies, ranging from stochastic models, covariation analysis, regression, cointegration tests, to systematic literature review, enriches the understanding of bond dynamics. A comprehensive understanding of these interactions is important for investors, academics, and policymakers in formulating investment strategies and maintaining financial market stability.

Future research is suggested to add variables such as investor financial behavior and market psychological factors to the analysis model, and to use longitudinal or mixed methods approaches to obtain a deeper understanding of bond market dynamics across various economic cycles.

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