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Comparative Analysis of the Influence of Systematic Risk, Idiosyncratic Risk, and Investor Sentiment on Stock Returns in Banking Companies Listed on the Indonesia Stock Exchange and the Malaysia Exchange

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ABSTRACT

Stock returns serve as key indicators reflecting investment performance and become the primary focus of investors in capital market decision-making, with the banking sector playing a strategic role in driving economic growth in Indonesia and Malaysia. This study aimed to analyze the impact of systematic risk, idiosyncratic risk, and investor sentiment on banking stock returns in the Indonesia Stock Exchange (BEI) and Bursa Malaysia. Employing a quantitative approach with explanatory research and comparative methods, the study examined 21 companies from BEI and 7 companies from Bursa Malaysia during 2020-2023. Through panel data analysis using EViews, findings revealed that in BEI, systematic risk significantly negatively influences stock returns by 10.74% (p-value 0.001), idiosyncratic risk shows a highly significant positive impact of 594.00% (p-value 0.000), while investor sentiment has no significant effect (p-value 0.331). In Bursa Malaysia, systematic risk significantly negatively affects stock returns by 14,11%% (p-value 0,0028), idiosyncratic risk shows a significant negative impact of 116,065% (p-value 0,0803), and investor sentiment significantly positively influences returns by 0,57% (p-value 0,0001). The research model explains 59.41% of stock return variations in BEI and 20.63% in Bursa Malaysia. Comparative analysis reveals no significant difference in systematic risk between the two exchanges and consistent combined data, but there are significant differences in idiosyncratic risk and investor sentiment which are inconsistent with the significance results of Bursa Malaysia with BEI and the combined data of the two exchanges.

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Introduction

The global capital market has exhibited significant volatility in recent periods, with stock return fluctuations influenced by various macroeconomic and microeconomic factors. Geopolitical tensions, monetary policy dynamics, and technological transformation have contributed to the complexity of the global investment environment (Baker et al., 2020). Zaremba et al. (2020) demonstrated that economic policy uncertainty has a substantial impact on stock market returns and volatility across countries, posing significant challenges for investors and policymakers in predicting and managing market risks. These complex dynamics highlight the multidimensional interconnections that influence stock return movements, particularly in emerging markets such as Southeast Asia (Apriani et al., 2024). The unique characteristics of capital markets in this region—marked by diverse economic growth levels and varying degrees of institutional development—create an investment landscape that requires in-depth and contextual analysis.

Stock return is a key metric in the capital market that reflects a company's performance and investment appeal. It is defined as the gain obtained from investing in stocks over a certain period, comprising both capital gains and dividend distributions (Jiang et al., 2020). Understanding stock return movements is crucial for investors to devise investment strategies and manage portfolio risks. For companies, stable

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and positive stock returns signal market confidence in their business prospects and financial performance (Liu et al., 2021). For policymakers, stock return analysis offers valuable insights into the health of the financial sector and the effectiveness of economic policies.

The Indonesia Stock Exchange (IDX), as one of the major capital markets in Southeast Asia, serves as a significant case in analyzing banking stock returns (Ismali et al., 2024). The banking sector on the IDX plays a substantial role in market capitalization and is often regarded as a barometer of national economic health. Hartono & Utami (2019) demonstrated that the fluctuations in banking sector stock returns on the IDX reflect the complex interplay between monetary policy, banking regulations, and Indonesia's macroeconomic conditions. Robiyanto et al. (2019) identified unique characteristics of the IDX that distinguish it from other exchanges in the region, including differences in market liquidity and efficiency. The importance of the IDX has grown in tandem with the rapid development of Indonesia's capital market. Widyawati et al. (2020) reported a market capitalization increase of over 30% in the past five years, indicating rising investor interest and the critical role of the capital market in national economic financing. Nugroho & Robiyanto (2021) revealed that the banking sector on the IDX demonstrated greater resilience compared to other sectors during the pandemic, highlighting the need for a comprehensive understanding of stock return dynamics in this sector.

Bursa Malaysia also provides an important perspective as one of Southeast Asia's primary capital markets. Reflecting Malaysia's economic conditions and regulatory environment, it offers a valuable comparative context for understanding stock return movements in the regional banking sector. Tan et al. (2021) found that factors such as market liquidity, investor sentiment, and macroeconomic conditions significantly influence stock returns on Bursa Malaysia. Furthermore, Aziz et al. (2022) emphasized the importance of recognizing structural differences between Malaysia's capital market and those of neighboring countries for more accurate comparative analysis. Aziz & Ibrahim (2023) highlighted the vital role of Bursa Malaysia in attracting foreign investment and driving regional economic growth, underscoring its significance in the broader ASEAN economic context.

The comparison between the IDX and Bursa Malaysia has become increasingly relevant in the context of ongoing ASEAN economic integration. Sukono et al. (2021) argued that understanding the dynamics of both capital markets is essential for formulating effective regional portfolio diversification strategies. Wahyudi et al. (2023) proposed that comparing banking sector stock returns on the IDX and Bursa Malaysia can yield valuable insights into the effectiveness of monetary policies and banking regulations in each country. Rahman & Ermawati (2022) stressed that a deep understanding of each market's unique characteristics is critical in analyzing and predicting stock return movements in Southeast Asia's banking sector. Therefore, a comprehensive study of banking stock returns on the IDX and Bursa Malaysia is not only significant for investors and policymakers in both countries but also contributes substantially to understanding capital market dynamics across the ASEAN region.

The comparison of stock returns between the Indonesia Stock Exchange (IDX) and Bursa Malaysia reveals significantly different patterns, reflecting the distinct characteristics of each market. Recent data indicate substantial variations in stock return movements across the two exchanges during the 2020–2023 period (Figure 1).

Figure 1 The Dynamics of Banking Stock Returns on the Indonesia Stock Exchange and Bursa Malaysia (2020–2023)

Source: idx.co.id; bursamalaysia.com

The comparison of stock returns between the Indonesia Stock Exchange (IDX) and Bursa Malaysia during the 2020–2023 period reveals highly intriguing dynamics. In 2020, both exchanges recorded relatively similar returns, with the IDX posting a return of 48.6% and Bursa Malaysia at 45.5%. Entering 2021, the IDX showed improved performance, rising to 51.4%, while Bursa Malaysia remained stable at 45.5%. The year 2022 marked a significant turning point for both markets: the IDX experienced a decline to 37.1%, whereas Bursa Malaysia saw a dramatic surge, reaching as high as 81.8%. However, in 2023, the dynamics shifted drastically—while the IDX demonstrated resilience with a recovery to 54.3%, Bursa Malaysia recorded a sharp decline to 18.2%. This movement pattern suggests that the IDX tends to exhibit more stable performance with moderate fluctuations, whereas Bursa Malaysia displays higher volatility, particularly evident in the sharp spike in 2022, followed by a steep drop in 2023. These contrasting characteristics indicate differing market dynamics between the two countries, potentially driven by various economic, policy-related, and local market factors.

The stock return patterns observed in the IDX and Bursa Malaysia reflect the complexity and diversity of capital market performance in both countries. The higher volatility in Bursa Malaysia, in contrast to the

relative stability of the IDX, indicates significant differences in the factors influencing market dynamics in each country. This phenomenon underscores the importance of examining the fundamental drivers behind the variation in stock returns across the two markets. Recent financial research has identified several key variables that may explain stock return fluctuations, particularly in emerging markets. Systematic risk and idiosyncratic risk (Jiaqi Da et al., 2022), along with investor sentiment (Junxiao Gui et al., 2022), have emerged as relevant theoretical concepts in capital market analysis. These factors form the foundational framework for understanding stock return dynamics by investigating how they manifest within the specific contexts of the Indonesian and Malaysian capital markets.

Based on empirical phenomena and existing gaps in the literature, this comparative study is crucial given the significant differences observed in the market dynamics of the two countries, which have not been fully explained by previous research. A thorough analysis of these factors in both markets can reveal unique mechanisms influencing stock returns in each capital market. The urgency of this research lies in its potential to bridge the gap in understanding capital market dynamics in Southeast Asian emerging economies. By directly comparing the IDX and Bursa Malaysia, this study can identify structural and behavioral differences that may require distinct approaches in investment analysis and management. This deeper understanding is not only academically important but also carries significant implications for developing more effective investment strategies and formulating more targeted policies in both countries.

Based on the problem formulation outlined, several research questions need to be addressed to understand the dynamics of stock returns in both capital markets:

1. How does systematic risk affect the stock returns of banking companies listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia?
2. How does idiosyncratic risk affect the stock returns of banking companies listed on the IDX and Bursa Malaysia?
3. How does investor sentiment influence the stock returns of banking companies listed on the IDX and Bursa Malaysia?
4. Is there a significant difference in the impact of systematic risk on stock returns between banking companies listed on the IDX and those listed on Bursa Malaysia?
5. Is there a significant difference in the impact of idiosyncratic risk on stock returns between banking companies listed on the IDX and those listed on Bursa Malaysia?
6. Is there a significant difference in the impact of investor sentiment on stock returns between banking companies listed on the IDX and those listed on Bursa Malaysia?

Literature Review

Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) is one of the fundamental theories in modern finance that measures the relationship between systematic risk and expected return. This model is built upon the foundation of modern portfolio theory developed by Harry Markowitz, which assumes that investors are rational and risk-averse. CAPM provides a theoretical framework explaining how assets should be priced under market equilibrium conditions, considering the relationship between systematic risk—measured by beta—and the expected rate of return on an investment (Ria, 2022).

CAPM has become a primary basis for evaluating investment performance and making asset allocation decisions in capital markets. The model posits that the expected return of an asset or portfolio can be predicted through its linear relationship with systematic risk. A fundamental principle of CAPM states that only systematic risk should be compensated with higher returns, as unsystematic risk can be eliminated through proper diversification. This makes beta a relevant measure of risk in determining the required return of an asset (Awaluddin, 2024).

Arbitrage Pricing Theory

The Arbitrage Pricing Theory (APT) provides a comprehensive conceptual foundation for explaining the relationship between idiosyncratic risk and stock returns in banking companies. Idiosyncratic risk is viewed not merely as a measure of volatility but as a critical component within multifactor asset pricing models. APT assumes that stock returns are influenced by various systematic risk factors as well as company-specific risks, including idiosyncratic risk, which potentially reflects a company's capacity to generate returns above market expectations (Miasary & Rachmawati, 2023).

From the APT perspective, idiosyncratic risk acts as a determinant of returns that investors may interpret as an indicator of a company's growth potential and competitive advantage. In the context of banking sectors in Indonesia and Malaysia, high idiosyncratic risk may reflect unique company characteristics, strategic strengths, and the ability to produce abnormal returns. This supports the argument that idiosyncratic risk has a positive relationship with stock returns (Miasary & Rachmawati, 2023).

Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) is a fundamental theory that explains how information is reflected in asset prices in capital markets. EMH assumes that markets are efficient, meaning stock prices fully reflect all available information, whether historical, public, or private. In the modern context, EMH has evolved to accommodate the role of

investor sentiment as a factor influencing stock price movements, especially in situations where available information is difficult to interpret (Faisal et al., 2021).

Over time, EMH has evolved to explain investor sentiment phenomena in the banking sector, which has unique characteristics. The banking sector is highly sensitive to public confidence and market sentiment due to its role as a financial intermediary. Modern EMH recognizes that investor sentiment can affect banking stock prices through changes in perceptions of systemic risk, asset quality, and growth prospects of the banking sector (Syamsu et al., 2021).

Stock Return

Stock return is a fundamental concept in investment that reflects the rate of return earned by investors from owning shares. This definition encompasses all economic benefits received by investors, both in the form of capital gains and dividends, over the investment period (Hartono, 2021). The concept of stock return is not only important for individual investors but also for investment managers, financial analysts, and economic policymakers. According to Bodie et al. (2018), stock return is viewed as a barometer of corporate performance and capital market efficiency. Stock return serves as a multidimensional indicator reflecting a company's historical performance and the market's expectations of its prospects. This makes stock return a complex yet crucial tool in investment decision-making.

Fama and French (2018) expanded the understanding of stock returns by integrating it into market efficiency theory. They argue that in an efficient market, stock returns should reflect all publicly available information. However, recent research by Liu et al. (2019) shows that market anomalies still frequently occur, raising questions about the true degree of market efficiency and its implications for the predictability of stock returns. Jiang et al. (2020) emphasize the importance of understanding stock returns in the context of risk management and asset allocation. They highlight how the variability of stock returns affects optimal portfolio composition and hedging strategies. This research reinforces Markowitz's (1952) argument on the importance of diversification while shedding light on new complexities in an increasingly interconnected global market.

Systematic Risk

Systematic risk, also known as market risk or non-diversifiable risk, is a type of risk inherent to the entire market or a specific market segment (Bodie et al., 2018). This risk reflects the uncertainty that affects all securities in the market, albeit to varying degrees. Unlike unsystematic risk, which can be mitigated through portfolio diversification, systematic risk cannot be eliminated by diversification (Berk & DeMarzo, 2022).

The concept of systematic risk is rooted in modern portfolio theory, developed by Harry Markowitz, and was later expanded in the Capital Asset Pricing Model (CAPM) (Fabozzi et al., 2022). In the investment context, understanding systematic risk is crucial because it influences asset allocation decisions and investors' risk management strategies (Hull, 2022).

Systematic risk is pervasive and impacts all market participants. This means that even well-diversified portfolios remain exposed to this type of risk. Therefore, investors and portfolio managers need to understand and measure systematic risk to manage return expectations and optimize investment performance effectively.

Idiosyncratic Risk

Idiosyncratic risk, also known as firm-specific risk or unsystematic risk, is a risk component unique to a particular company or industry (Berk & DeMarzo, 2022). This concept is an integral part of modern portfolio theory and plays a crucial role in understanding the risk-return relationship in investments. According to Bodie et al. (2018), idiosyncratic risk reflects factors that affect a company's performance without significantly impacting the overall market. These may include management decisions, product innovations, changes in cost structure, or specific events such as litigation or leadership changes.

Damodaran (2023) emphasizes that understanding idiosyncratic risk is vital for investors in the context of portfolio construction. Unlike systematic risk, which affects the entire market, idiosyncratic risk can be reduced or even eliminated through effective portfolio diversification. This principle forms the basis for investment strategies aimed at optimizing the risk-return trade-off. Furthermore, Fabozzi et al. (2022) explain that within the framework of the Capital Asset Pricing Model (CAPM), idiosyncratic risk is not priced by the market because it can be eliminated through diversification. However, recent empirical research has challenged this assumption, indicating that under certain market conditions, idiosyncratic risk may have a significant impact on stock returns.

Investor Sentiment

Investor sentiment is an important concept in behavioral finance that reflects the collective attitudes, feelings, and expectations of investors toward the stock market or specific securities. Huang et al. (2021) define investor sentiment as a speculative tendency that can influence the relative demand for speculative securities versus safer assets. In the context of modern financial markets, investor sentiment is viewed as a psychological factor that can affect investment decisions and, consequently, asset prices. This concept challenges the assumption of full rationality in classical financial theory by acknowledging that emotions and cognitive biases can play a significant role in market dynamics. Shefrin (2008) expands the understanding of investor

sentiment by linking it to the concept of "noise trading." From this perspective, investor sentiment can cause price deviations from their fundamental values, creating arbitrage opportunities as well as additional risks for rational investors.

Investor sentiment can be either bullish (optimistic) or bearish (pessimistic). Bullish sentiment is generally associated with expectations of rising prices and a tendency to buy, while bearish sentiment is linked to expectations of falling prices and a tendency to sell. Understanding investor sentiment has become increasingly important in the digital information era. Social media, online trading platforms, and rapid access to news have intensified the speed and magnitude of sentiment changes, presenting new challenges and opportunities for market participants and regulators.

Conceptual Framework

This conceptual framework enables a comparison of the influence of independent variables on stock returns between banking companies listed on the Indonesia Stock Exchange (BEI) and Bursa Malaysia. This comparative analysis is important considering the differing characteristics of the two capital markets, such as liquidity levels, regulations, and market structure (Tran & Tran, 2019). Such a comparison can provide insights into how the same factors may have different impacts across two distinct markets, as well as important implications for investors, portfolio managers, and policymakers in both countries. The proposed conceptual framework in this study can be illustrated as follows:

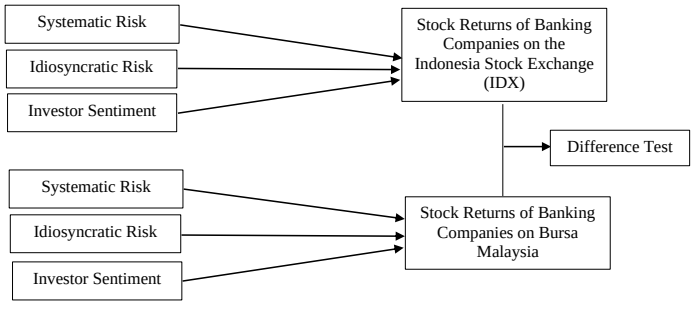

Figure 2 Conceptual Framework

Methodology

Type of research

This study uses a quantitative approach with an explanatory research design. According to Sekaran & Bougie (2016), explanatory research aims to explain causal relationships between variables through hypothesis testing. In this context, the study seeks to analyze the influence of systematic risk, idiosyncratic risk, and investor sentiment on the stock returns of banking companies listed on the Indonesia Stock Exchange (BEI) and Bursa Malaysia.

The method employed is a comparative method, which allows the researcher to compare the effects of independent variables on the dependent variable between two different stock markets (Creswell & Creswell, 2018). This approach is suitable for addressing the research questions posed, especially in identifying significant differences between the two exchanges.

Research Location and Time

This study was conducted in Medan with a sample of Generation Z e-commerce platform users from various age groups, genders, educational backgrounds, and professions.

Population and Sample

The population in this study consists of all banking companies listed on the Indonesia Stock Exchange (IDX/BEI) and Bursa Malaysia during the research period. The sampling technique used is purposive sampling, in which samples are selected based on specific criteria that align with the objectives of the study (Etikan et al., 2016). The criteria used for sample selection are as follows:

1. Conventional (non-Sharia) banking companies that were continuously listed on the IDX or Bursa Malaysia during the 2020–2023 period.
2. Companies with complete and accessible stock price data during the research period, necessary for calculating stock returns and systematic risk.
3. Companies with complete stock trading volume data throughout the research period, needed for measuring investor sentiment.
4. Complete market index data must be available for each exchange (IDX Composite for BEI and KLCI for Bursa Malaysia) during the research period.
5. Companies that did not experience prolonged trading suspensions (more than three consecutive months) during the research period.
6. Companies that did not conduct significant corporate actions, such as stock splits, reverse stock splits, or rights issues, that could have an extreme impact on stock prices during the research period.

The number of samples will be determined after screening the population based on the criteria above. The use of purposive sampling enables the researcher to focus on companies with relevant and consistent data, thereby increasing the internal validity of the study (Sharma, 2017). The sample selection process based on the above criteria is presented in Table 2.

This study uses a sample of conventional banking companies listed on the Indonesia Stock Exchange (IDX/BEI) and Bursa Malaysia during the 2020–2023 period. Through a rigorous screening process, 26 companies from BEI and 11 companies from Bursa Malaysia were selected, having met all the established criteria. With a four-year observation period, the total number of analysis units reached 148,

consisting of 104 units from BEI and 44 units from Bursa Malaysia. The selection criteria included conventional bank status, completeness of stock price and trading volume data, absence of prolonged trading suspension, no significant corporate actions, and availability of complete data for all research variables. The difference in the number of samples between the two exchanges reflects the characteristics of each market and the availability of data that met the research requirements. This selection process ensures consistency and relevance of the data for in-depth analysis of the variables being studied. The required data for the research variables were obtained from various market data sources, including stock prices, trading volumes, and market indices during the specified period.

Table 1 Research Sample Screening

Description	BEI	MYX
Banking companies listed consecutively during the period 2020-2023	36	14
Islamic banking company **(Criterion 1)**	(3)	(3)
Number of conventional banking companies	**33**	**11**
Does not have complete stock price data **(Criterion 2)**	(0)	(0)
Does not have complete stock trading volume data **(Criterion 3)**	(2)	(0)
Experiencing a prolonged trading suspension **(Criterion 4)**	(2)	(0)
Carrying out significant corporate actions **(Criterion 5)**	(3)	(0)
The data needed to calculate the research variables is not completely available **(Criterion 6)**	(0)	(0)
Number of research samples	**26**	**11**
Year of research observation	4	4
Number of analysis units (number of samples × years of observation)	**104**	**44**

Source: Data processed (2024)

Data Analysis Method

Data analysis in this study uses EViews software to process panel data, which combines time series and cross-sectional data. The first stage of the analysis involves estimating three panel regression models: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). After estimating these three models, tests are conducted to determine the best model using three types of tests: the Chow Test (comparing CEM and FEM), the Hausman Test (comparing FEM and REM), and the Breusch-Pagan LM Test (comparing CEM and REM) (Muthahharah & Hafid, 2024). Once the best model is selected, the next step is to conduct a goodness-of-fit test to evaluate how well the model explains the variation in the dependent variable. This includes analysis of the Coefficient of Determination (R^2), which measures the ability of the independent variables to explain the variation in the dependent variable, and the Adjusted R^2, which adjusts R^2 based on the number of independent variables. An F-test is also conducted to assess the overall model fit. The final stage is hypothesis testing using a t-test to examine the partial influence of each independent variable on stock returns. A comparative test (difference test) is then performed to compare the stock returns between BEI and Bursa Malaysia to determine whether there is a significant difference between the two exchanges.

Results

Respondent Characteristics

Estimation Model Approach for Combined Panel Data of Indonesia and Malaysia

There are three estimation model approaches that can be used in panel data analysis to examine the influence of systematic risk, idiosyncratic risk, and investor sentiment on banking stock returns. These three approaches are the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Each model has distinct characteristics and assumptions in estimating the relationships between variables. The following presents the estimation results of the three model approaches for the combined data of Indonesia and Malaysia.

Pooled Least Squares or Common Effect Model

This method uses the Ordinary Least Squares (OLS) approach to estimate the panel data model.

Table 2 Common Effect Model

Dependent Variable: Y
Method: Panel Least Squares
Date: 06/05/25 Time: 09:12
Sample: 2020 2023
Periods included: 4
Cross-sections included: 29
Total panel (unbalanced) observations: 112

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.093204	0.027955	-3.334035	0.0012
X2	5.348109	0.510608	10.47399	0.0000
X3	0.000816	0.001166	0.699166	0.4860
C	-0.357790	0.060465	-5.917293	0.0000

R-squared	0.564301	Mean dependent var	0.129057
Adjusted R-squared	0.552198	S.D. dependent var	0.667476
S.E. of regression	0.446662	Akaike info criterion	1.261031
Sum squared resid	21.54674	Schwarz criterion	1.358120
Log likelihood	-66.61774	Hannan-Quinn criter.	1.300423

Source: Data processed (2024)

Based on the Common Effect Model estimation, the value of Prob. (F-statistic) is less than α (0.05), which means it can be concluded that H_1 is accepted, indicating that the simultaneous influence of the predictor variables on the dependent variable is statistically significant.

Fixed Effect Model

The Fixed Effect Model assumes that differences between individuals can be accommodated through differences in their intercepts. To estimate the Fixed Effect Model with varying intercepts across individuals, the dummy variable technique is used.

Based on the Fixed Effect Model estimation, the Prob. (F-statistic) value is less than α (0.05), which indicates that H_1 is accepted, meaning the simultaneous influence of the predictor variables on the dependent variable is statistically significant.

Table 3 Fixed Effect Model

Dependent Variable: Y
Method: Panel Least Squares
Date: 06/05/25 Time: 09:26
Sample: 2020 2023
Periods included: 4
Cross-sections included: 29
Total panel (unbalanced) observations: 112

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.128651	0.034675	-3.710204	0.0004
X2	6.500957	0.611044	10.63911	0.0000
X3	0.001711	0.001287	1.329915	0.1873
C	-0.449958	0.061903	-7.268742	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.715907	Mean dependent var	0.129057
Adjusted R-squared	0.605820	S.D. dependent var	0.667476
S.E. of regression	0.419066	Akaike info criterion	1.333382
Sum squared resid	14.04934	Schwarz criterion	2.110096
Log likelihood	-42.66939	Hannan-Quinn criter.	1.648520
F-statistic	6.503144	Durbin-Watson stat	2.511558
Prob(F-statistic)	0.000000		

Source: Data processed (2024)

Random Effect Model

In principle, the Random Effect Model differs from the Common Effect and Fixed Effect models, primarily because it does not use the Ordinary Least Squares (OLS) method but instead employs the Maximum Likelihood or Generalized Least Squares (GLS) approach.

Table 4 Random Effect Model

Dependent Variable: Y
Method: Panel EGLS (Period random effects)
Date: 06/05/25 Time: 09:28
Sample: 2020 2023
Periods included: 4
Cross-sections included: 29
Total panel (unbalanced) observations: 112
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.093204	0.028063	-3.321297	0.0012
X2	5.348109	0.512567	10.43398	0.0000
X3	0.000816	0.001171	0.696495	0.4876
C	-0.357790	0.060697	-5.894685	0.0000

Effects Specification

	S.D.	Rho
Period random	1.43E-08	0.0000
Idiosyncratic random	0.448375	1.0000

Weighted Statistics

R-squared	0.564301	Mean dependent var	0.129057
Adjusted R-squared	0.552198	S.D. dependent var	0.667476
S.E. of regression	0.446662	Sum squared resid	21.54674
F-statistic	46.62579	Durbin-Watson stat	1.880389
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.564301	Mean dependent var	0.129057
Sum squared resid	21.54674	Durbin-Watson stat	1.880389

Source: Data processed (2024)

Based on the estimation of the random effect model, the Prob. (F-statistic) value is less than α (0.05), which means that H1 is accepted, indicating that the simultaneous effect of the predictor variables on the dependent variable is statistically significant.

Selection of the Multiple Linear Regression Model for Combined Panel Data of Indonesia and Malaysia

Chow Test

The Chow test is used to determine whether the Common Effect Model or the Fixed Effect Model is the most appropriate to use in panel data analysis.

Table 5 Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.524708	(28,80)	0.0743
Cross-section Chi-square	47.896701	28	0.0110

Source: Data processed (2024)

Based on Table 5, the Cross Chi-square probability value is 0.011 < α (0.05); therefore, the selected estimation model is the Fixed Effect Model.

Hausman Test

When the result of the Chow test indicates the Fixed Effect Model, the next step is to perform the Hausman test.

Table 6 Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	2.176327	3	0.5366

Source: Data processed (2024)

Based on Table 6, the Hausman test results show that the cross-sectional random effect has a significance value of 0.5366 > 0.05, so the estimation model used is the Random Effect Model (REM). According to Gujarati (2005), if the estimation model is already based on Generalized Least Squares (GLS), then classical assumption tests such as Normality, Heteroskedasticity, Multicollinearity, and Autocorrelation are not required. This is because the GLS estimation model inherently meets the requirements of the classical assumption tests.

Joint Hypothesis Testing for Indonesia and Malaysia

Simultaneous Test (F-test)

Table 7 F-Test with the Random Effect Model (REM)

Dependent Variable: Y
Method: Panel EGLS (Period random effects)
Date: 06/05/25 Time: 09:28
Sample: 2020 2023
Periods included: 4
Cross-sections included: 29
Total panel (unbalanced) observations: 112
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.093204	0.028063	-3.321297	0.0012
X2	5.348109	0.512567	10.43398	0.0000
X3	0.000816	0.001171	0.696495	0.4876
C	-0.357790	0.060697	-5.894685	0.0000
	Effects Specification			
			S.D.	Rho
Period random			1.43E-08	0.0000
Idiosyncratic random			0.448375	1.0000
	Weighted Statistics			
R-squared	0.564301	Mean dependent var		0.129057
Adjusted R-squared	0.552198	S.D. dependent var		0.667476
S.E. of regression	0.446662	Sum squared resid		21.54674
F-statistic	46.62579	Durbin-Watson stat		1.880389
Prob(F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	0.564301	Mean dependent var		0.129057
Sum squared resid	21.54674	Durbin-Watson stat		1.880389

Source: Data processed (2024)

In Table 7, the sample size (n) is 112 observations and the number of parameters (k) is 4, resulting in degrees of freedom df1 = 4 – 1 = 3 and df2 = 112 – 4 = 108. At a significance level of α = 0.05, the critical F value (F table) is 2.688. Based on Table 4.8, the calculated F value (F count) is 46.625, which is greater than the F table (2.688), and the significance value (0.00) is less than α (0.05). This means that the variables Systematic Risk, Idiosyncratic Risk, and Investor Sentiment simultaneously have a significant effect on Stock Returns.

Partial Test (t-test)

The t-test is conducted to determine whether the independent variables—Systematic Risk, Idiosyncratic Risk, and Investor Sentiment—have a significant direct effect on the dependent variable, Stock Return. The t-test is performed using the Random Effect Model as recommended by the Chow and Hausman tests.

Based on Table 8, the panel data estimation model using REM yields the following multiple linear regression equation for the combined data of Indonesia and Malaysia:

$Y = -0.357 - 0.093X_1 + 5.348X_2 + 0.0008X_3$

Based on Table 9, with (n) = 112, number of parameters (k) = 4, degrees of freedom df = (n–k) = 112 – 4 = 108, and at a significance level α = 0.05, the t-table value obtained is 1.982. The results are as follows:

1. The constant value is −0.357 units, meaning that if Systematic Risk, Idiosyncratic Risk, and Investor Sentiment are assumed to be constant or zero, the Stock Return will be −0.357.
2. The regression coefficient for Systematic Risk (β_1) = −0.093 < 0, with t-count (−3.321) < t-table (−1.982) and significance (0.0012) < α (0.05). This indicates that the Systematic Risk variable has a negative and significant effect on Stock Return, meaning that every one-unit increase in Systematic Risk will significantly decrease Stock Return by 0.093.
3. The regression coefficient for Idiosyncratic Risk (β_2) = 5.348 > 0, with t-count (10.433) > t-table (1.982) and significance (0.000) < α (0.05). This shows that the Idiosyncratic Risk variable has a positive and significant effect on Stock Return, meaning that every one-unit increase in Idiosyncratic Risk will significantly increase Stock Return by 5.348.
4. The regression coefficient for Investor Sentiment (β_3) = 0.0008 > 0, with t-count (0.696) < t-table (1.982) and significance (0.487) > α (0.05). This indicates that the Investor Sentiment variable has a positive but not significant effect on Stock Return, meaning that every one-unit increase in Investor Sentiment does not significantly increase Stock Return, which rises by 0.0008.

Table 8 t-test with REM (Random Effect Model)

Dependent Variable: Y
Method: Panel EGLS (Period random effects)
Date: 06/05/25 Time: 09:28
Sample: 2020 2023
Periods included: 4
Cross-sections included: 29
Total panel (unbalanced) observations: 112
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.093204	0.028063	-3.321297	0.0012
X2	5.348109	0.512567	10.43398	0.0000
X3	0.000816	0.001171	0.696495	0.4876
C	-0.357790	0.060697	-5.894685	0.0000
	Effects Specification			
			S.D.	Rho
Period random			1.43E-08	0.0000
Idiosyncratic random			0.448375	1.0000
	Weighted Statistics			
R-squared	0.564301	Mean dependent var		0.129057
Adjusted R-squared	0.552198	S.D. dependent var		0.667476
S.E. of regression	0.446662	Sum squared resid		21.54674
F-statistic	46.62579	Durbin-Watson stat		1.880389
Prob(F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	0.564301	Mean dependent var		0.129057
Sum squared resid	21.54674	Durbin-Watson stat		1.880389

Source: Data processed (2024)

Estimation Model Approach for Panel Data of the Indonesian Stock Exchange

There are three estimation model approaches that can be used in panel data analysis to examine the effect of systematic risk, idiosyncratic risk, and investor sentiment on banking stock returns. These approaches are the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Each model has different characteristics and assumptions in estimating the relationships among variables. The following presents the estimation results of the three model approaches for Indonesian data.

Common Effect Model (CEM)

The estimation results using the Common Effect Model for Indonesian data are presented in Table 9.

Table 9 Estimation Results of the Common Effect Model for IDX Data

Dependent Variable: Y
Method: Panel Least Squares
Date: 04/28/25 Time: 22:00
Sample: 2020 2023
Periods included: 4
Cross-sections included: 21
Total panel (balanced) observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.104150	0.031545	-3.301595	0.0014
X2	5.827216	0.600538	9.703324	0.0000
X3	0.001134	0.001316	0.861618	0.3915
C	-0.466276	0.080871	-5.765673	0.0000

R-squared	0.595817	Mean dependent var	0.163437
Adjusted R-squared	0.580660	S.D. dependent var	0.766309
S.E. of regression	0.496235	Akaike info criterion	1.482914
Sum squared resid	19.69993	Schwarz criterion	1.598667
Log likelihood	-58.28237	Hannan-Quinn criter.	1.529445
F-statistic	39.30998	Durbin-Watson stat	1.833975
Prob(F-statistic)	0.000000		

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Fixed Effect Model (FEM)

The estimation results using the Fixed Effect Model (FEM) for the Indonesian data are presented in Table 10.

Table 10 Estimation Results of the Fixed Effect Model for IDX Data

Dependent Variable: Y
Method: Panel Least Squares
Date: 04/28/25 Time: 22:00
Sample: 2020 2023
Periods included: 4
Cross-sections included: 21
Total panel (balanced) observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.129164	0.039464	-3.272949	0.0018
X2	6.569418	0.696428	9.433021	0.0000
X3	0.001918	0.001470	1.304648	0.1970
C	-0.536989	0.082300	-6.524785	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.723589	Mean dependent var	0.163437
Adjusted R-squared	0.617632	S.D. dependent var	0.766309
S.E. of regression	0.473855	Akaike info criterion	1.579124
Sum squared resid	13.47229	Schwarz criterion	2.273643
Log likelihood	-42.32320	Hannan-Quinn criter.	1.858315
F-statistic	6.829050	Durbin-Watson stat	2.492692
Prob(F-statistic)	0.000000		

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Random Effect Model (REM)

The estimation results using the REM for Indonesia data are presented in Table 11 as follows.

Table 11 Estimation Results of the Random Effect Model for BEI Data

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 04/28/25 Time: 22:01
Sample: 2020 2023
Periods included: 4
Cross-sections included: 21
Total panel (balanced) observations: 84
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.107430	0.031466	-3.414213	0.0010
X2	5.940028	0.591853	10.03633	0.0000
X3	0.001264	0.001292	0.978302	0.3309
C	-0.477887	0.082276	-5.808317	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.118738	0.0591
Idiosyncratic random	0.473855	0.9409

Weighted Statistics

R-squared	0.608778	Mean dependent var	0.146115
Adjusted R-squared	0.594107	S.D. dependent var	0.754937
S.E. of regression	0.480968	Sum squared resid	18.50642
F-statistic	41.49580	Durbin-Watson stat	1.923910
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.595588	Mean dependent var	0.163437
Sum squared resid	19.71107	Durbin-Watson stat	1.806330

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Goodness of Fit Test for Indonesia Stock Exchange Data

After selecting the best estimation model, the goodness of fit (GoF) test is conducted. The results of the GoF analysis for the Indonesian data are presented in Table 12.

Table 12 Results of Model Goodness of Fit Test for Indonesia Stock Exchange Data

R-squared	0.608778	Mean dependent var	0.146115
Adjusted R-squared	0.594107	S.D. dependent var	0.754937
S.E. of regression	0.480968	Sum squared resid	18.50642
F-statistic	41.49580	Durbin-Watson stat	1.923910
Prob(F-statistic)	0.000000		

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

The results of the model goodness of fit test for the Indonesian data show an Adjusted R^2 value of 0.594107, confirming that after accounting for the number of independent variables, the model can still explain 59.41% of the variation in stock returns. The F-statistic value of 41.49580 with a probability of 0.000000, which is less than the significance level of 0.05, indicates that the REM model for the Indonesian data is statistically significant and well-fitted to explain the relationship between the variables. This implies that collectively, systematic risk, idiosyncratic risk, and investor sentiment have a substantial influence on the stock returns of banking companies in Indonesia.

Hypothesis Testing Results for the Indonesia Stock Exchange (IDX)

Hypothesis testing analysis on the Indonesia Stock Exchange (IDX) uses the Random Effect Model (REM). The t-test results for IDX are presented in Table 13 as follows:

Table 13 T-test Results

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 04/28/25 Time: 22:01
Sample: 2020 2023
Periods included: 4
Cross-sections included: 21
Total panel (balanced) observations: 84
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.107430	0.031466	-3.414213	0.0010
X2	5.940028	0.591853	10.03633	0.0000
X3	0.001264	0.001292	0.978302	0.3309
C	-0.477887	0.082276	-5.808317	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.118738	0.0591
Idiosyncratic random	0.473855	0.9409

Weighted Statistics

R-squared	0.608778	Mean dependent var	0.146115
Adjusted R-squared	0.594107	S.D. dependent var	0.754937
S.E. of regression	0.480968	Sum squared resid	18.50642
F-statistic	41.49580	Durbin-Watson stat	1.923910
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.595588	Mean dependent var	0.163437
Sum squared resid	19.71107	Durbin-Watson stat	1.806330

Source: Data processed (2024)

Based on the statistical analysis results in Table 13, the hypothesis testing at the Indonesia Stock Exchange (IDX) can be interpreted as follows:

1. Systematic risk has a significant negative effect on stock returns with a coefficient of -0.107430, a t-statistic of -3.414213, and a probability of 0.0010 (< 0.05). This indicates that every one-unit increase in systematic risk will decrease stock returns by 0.107430 units.
2. Idiosyncratic risk has a highly significant positive effect on stock returns with a coefficient of 5.940028, a t-statistic of 10.03633, and a probability of 0.0000 (< 0.05). This means that every one-unit increase in idiosyncratic risk will increase stock returns by 5.940028 units.
3. Investor sentiment does not have a significant effect on stock returns, with a coefficient of 0.001264, a t-statistic of 0.978302, and a probability of 0.3309 (> 0.05). This indicates that investor sentiment does not significantly impact changes in stock returns at IDX.

Panel Data Estimation Model Approach for Bursa Malaysia Data

There are three estimation model approaches that can be used in panel data analysis to examine the influence of systematic risk, idiosyncratic risk, and investor sentiment on banking stock returns. These three approaches are the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Each model has different characteristics and assumptions in estimating the relationships between variables. The following presents the estimation results from the three model approaches for Malaysian data.

Common Effect Model (CEM)

The estimation results using the Common Effect Model for Malaysian data are presented in Table 14.

Table 14 Estimation Results of the Common Effect Model for Malaysian Data

Dependent Variable: Y
Method: Panel Least Squares
Date: 04/29/25 Time: 09:38
Sample: 2020 2023
Periods included: 4
Cross-sections included: 7
Total panel (balanced) observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.166316	0.062952	-2.641950	0.0143
X2	-1.466512	0.854635	-1.715951	0.0991
X3	0.005710	0.002316	2.465010	0.0212
C	0.205408	0.080374	2.555654	0.0174

R-squared	0.294463	Mean dependent var	0.002948
Adjusted R-squared	0.206271	S.D. dependent var	0.135138
S.E. of regression	0.120397	Akaike info criterion	-1.264483
Sum squared resid	0.347890	Schwarz criterion	-1.074168
Log likelihood	21.70276	Hannan-Quinn criter.	-1.206301
F-statistic	3.338879	Durbin-Watson stat	2.869192
Prob(F-statistic)	0.036116		

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Fixed Effect Model

Estimation results using the Fixed Effect Model for Malaysian data are presented in Table 15.

Table 15 Fixed Effect Model Estimation Results for Malaysian Data

Dependent Variable: Y
Method: Panel Least Squares
Date: 04/29/25 Time: 09:39
Sample: 2020 2023
Periods included: 4
Cross-sections included: 7
Total panel (balanced) observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.148150	0.065662	-2.256249	0.0348
X2	-2.242172	1.196002	-1.874723	0.0748
X3	0.004749	0.002513	1.890083	0.0726
C	0.239185	0.096894	2.468509	0.0222

Effects Specification

Period fixed (dummy variables)

R-squared	0.390694	Mean dependent var	0.002948
Adjusted R-squared	0.216606	S.D. dependent var	0.135138
S.E. of regression	0.119610	Akaike info criterion	-1.196835
Sum squared resid	0.300440	Schwarz criterion	-0.863784
Log likelihood	23.75569	Hannan-Quinn criter.	-1.095018
F-statistic	2.244237	Durbin-Watson stat	2.722420
Prob(F-statistic)	0.078824		

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Random Effect Model (REM)

Estimation results using the Random Effect Model for Malaysian data are presented in Table 16.

Table 16 Random Effect Model Estimation Results for Malaysian Data

Dependent Variable: Y
Method: Panel EGLS (Period random effects)
Date: 04/29/25 Time: 09:39
Sample: 2020 2023
Periods included: 4
Cross-sections included: 7
Total panel (balanced) observations: 28
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.166316	0.062541	-2.659320	0.0137
X2	-1.466512	0.849052	-1.727234	0.0970
X3	0.005710	0.002301	2.481217	0.0205
C	0.205408	0.079849	2.572457	0.0167
Effects Specification			S.D.	Rho
Period random			0.000000	0.0000
Idiosyncratic random			0.119610	1.0000
Weighted Statistics				
R-squared	0.294463	Mean dependent var		0.002948
Adjusted R-squared	0.206271	S.D. dependent var		0.135138
S.E. of regression	0.120397	Sum squared resid		0.347890
F-statistic	3.338879	Durbin-Watson stat		2.869192
Prob(F-statistic)	0.036116			
Unweighted Statistics				
R-squared	0.294463	Mean dependent var		0.002948
Sum squared resid	0.347890	Durbin-Watson stat		2.869192

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Model Selection for Estimation of Bursa Malaysia Data

Chow Test

The Chow Test for Bursa Malaysia was conducted to choose between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). This test aims to identify whether there are significant differences among banking companies that require a fixed effect approach. The results of the Chow test for Bursa Malaysia companies are presented in Table 17.

Table 17 Chow Test Results for Bursa Malaysia Data

Redundant Fixed Effects Tests
Equation: Untitled
Test period fixed effects

Effects Test	Statistic	d.f.	Prob.
Period F	1.105545	(3,21)	0.3690
Period Chi-square	4.105871	3	0.2503

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Based on the analysis results, the Cross-section Chi-square statistic value is 5.275307 with a probability of 0.2503. This probability value is greater than 0.05, which means the null hypothesis (H0) is accepted. Therefore, the Common Effect Model (CEM) is proven to be more appropriate for analyzing Bursa Malaysia data compared to the Fixed Effect Model (FEM).

Lagrange Multiplier (LM) Test

The Lagrange Multiplier test for Bursa Malaysia is conducted to compare the Common Effect Model (CEM) and the Random Effect Model (REM), to test whether the variation between individuals can be considered random or not significant. The hypothesis tested remains the same, where the null hypothesis (H0) states that the Common Effect Model (CEM) is more appropriate to use. The results of the LM test for Bursa Malaysia data are presented in Table 18.

Table 18 Results of the LM Test for Bursa Malaysia Data

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	1.418096	0.111926	1.530022
	(0.2337)	(0.7380)	(0.2161)
Honda	-1.190838	-0.334554	-1.078615
	(0.8831)	(0.6310)	(0.8596)
King-Wu	-1.190838	-0.334554	-0.960693
	(0.8831)	(0.6310)	(0.8316)
GHM	--	--	0.000000
	--	--	(0.7500)

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

The test results show a Breusch-Pagan (Both) value of 0.2161, cross-section probability of 0.2337, and time probability of 0.7380. All probability values are greater than 0.05, indicating that the variation between individuals is not significant. Therefore, the Lagrange Multiplier test confirms the selection of the Common Effect Model (CEM) as the best estimation model for Bursa Malaysia data. Subsequently, the Common Effect Model (CEM) is adjusted with Generalized Least Squares (GLS) properties to meet classical assumption standards. According to Gujarati (2005), when the estimation model already employs Generalized Least Squares, it is not necessary to conduct classical assumption tests such as Normality, Heteroskedasticity, Multicollinearity, and Autocorrelation, because the GLS estimation model inherently satisfies these classical assumption requirements.

Model Goodness of Fit Test for Malaysia (Bursa Malaysia)

The results of the Goodness of Fit analysis for the Malaysian data are presented in Table 19 as follows:

Table 19 Results of Model Goodness of Fit Test for Malaysia Data

Dependent Variable: Y
Method: Panel EGLS (Cross-section weights)
Date: 06/08/25 Time: 10:14
Sample: 2020 2023
Periods included: 4
Cross-sections included: 7
Total panel (balanced) observations: 28
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.141176	0.042409	-3.328882	0.0028
X2	-1.160527	0.635527	-1.826085	0.0803
X3	0.005088	0.001126	4.520848	0.0001
C	0.165985	0.038391	4.323596	0.0002
Weighted Statistics				
R-squared	0.547569	Mean dependent var		0.029410
Adjusted R-squared	0.491016	S.D. dependent var		0.169618
S.E. of regression	0.117091	Sum squared resid		0.329046
F-statistic	9.682267	Durbin-Watson stat		2.536267
Prob(F-statistic)	0.000226			
Unweighted Statistics				
R-squared	0.286998	Mean dependent var		0.002948
Sum squared resid	0.351571	Durbin-Watson stat		2.876518

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

The results of the model goodness of fit test for the Malaysian data show an R^2 value of 0.4910, indicating a more limited explanatory power of the model after accounting for the number of independent variables. Nevertheless, the F-statistic value of 9.682 with a probability of 0.0002, which is below the significance level of 0.05, indicates that the CEM-GLS model for the Malaysia data can still be considered fit to explain the relationships among variables, although its explanatory strength is considerably lower compared to the model for Indonesia.

Hypothesis Testing Results for Bursa Malaysia

Hypothesis testing analysis for Bursa Malaysia uses the CEM-GLS model. The t-test results for Bursa Malaysia are presented in Table 20 as follows.

Table 20 T-test Results for Bursa Malaysia

Dependent Variable: Y
Method: Panel EGLS (Cross-section weights)
Date: 06/08/25 Time: 10:14
Sample: 2020 2023
Periods included: 4
Cross-sections included: 7
Total panel (balanced) observations: 28
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.141176	0.042409	-3.328882	0.0028
X2	-1.160527	0.635527	-1.826085	0.0803
X3	0.005088	0.001126	4.520848	0.0001
C	0.165985	0.038391	4.323596	0.0002

Weighted Statistics

R-squared	0.547569	Mean dependent var	0.029410
Adjusted R-squared	0.491016	S.D. dependent var	0.169618
S.E. of regression	0.117091	Sum squared resid	0.329046
F-statistic	9.682267	Durbin-Watson stat	2.536267
Prob(F-statistic)	0.000226		

Unweighted Statistics

R-squared	0.286998	Mean dependent var	0.002948
Sum squared resid	0.351571	Durbin-Watson stat	2.876518

Sumber: Data Sekunder Diolah (2025)

Source: Data processed (2024)

Based on the statistical analysis results in Table 20, the hypothesis testing for Bursa Malaysia can be interpreted as follows:

1. Systematic risk has a significant negative effect on stock returns with a coefficient of -0.1411, t-statistic of -3.328, and a probability of 0.002 (< 0.05). This indicates that every one-unit increase in systematic risk will decrease stock returns by 0.1411 units.
2. Idiosyncratic risk has a significant negative effect on stock returns with a coefficient of -1.1605, t-statistic of -1.826, and a probability of 0.08 (< 0.10). This indicates that every one-unit increase in idiosyncratic risk will decrease stock returns by 1.1605 units.
3. Investor sentiment has a significant positive effect on stock returns with a coefficient of 0.005, t-statistic of 4.520, and a probability of 0.0001 (< 0.05). This indicates that every one-unit increase in investor sentiment will increase stock returns by 0.005 units.

Difference Test (Comparison Between Stock Exchanges)

This study uses a dummy variable to distinguish between the two stock exchanges in the comparative analysis. The dummy variable for the exchange is assigned a value of 1 for the Indonesia Stock Exchange (BEI) and 2 for Bursa Malaysia. The use of the dummy variable allows for a statistical analysis of the differences in the characteristics of each variable between the two exchanges. The following is a comparative analysis using Multi Group Analysis to examine the influence of each variable on the stock returns of banking companies listed on BEI and Bursa Malaysia:

Table 21 Multi-Group Analysis

Path	Koefisien (Gabungan Indonesia dan Malaysia)	P_{value} (Gabungan Indonesia dan Malaysia)	Koefisien (Indonesia)	P_{Value} (Indonesia)	Koefisien (Malaysia)	P_{Value} (Malaysia)
X1 → Y	-0,0932	0,0012 < 0,05	-0,1074	0,0010 < 0,05	-0,1411	0,0028 < 0,05
X2 → Y	5,3481	0,000 < 0,05	5,9400	0,000 < 0,05	-1,1605	0,08 < 0,01
X3 → Y	0,0008	0,4876 > 0,05	0,0012	0,3309 >0,05	0,0050	0,000 < 0,05

Source: Data processed (2024)

Based on the table above, it can be seen that the Systematic Risk variable in the combined data from the Indonesia Stock Exchange and Bursa Malaysia has a negative and significant effect on Stock Returns. This is consistent with the individual tests on each exchange, where Systematic Risk negatively and significantly affects Stock Returns. Therefore, it can be concluded that there is no significant difference in the influence of Systematic Risk on stock returns between the Indonesia Stock Exchange and Bursa Malaysia.

The Idiosyncratic Risk variable in the combined data from the Indonesia Stock Exchange and Bursa Malaysia has a positive and significant effect on Stock Returns. This is consistent with the test results for the Indonesia Stock Exchange, where Idiosyncratic Risk positively and significantly affects Stock Returns. However, this differs from Bursa Malaysia, which shows that Idiosyncratic Risk has a negative and significant effect on Stock Returns. Therefore, it can be concluded that there is a significant difference in the influence of Idiosyncratic Risk on stock returns between the Indonesia Stock Exchange and Bursa Malaysia.

The Investor Sentiment variable in the combined data from the Indonesia Stock Exchange and Bursa Malaysia has a positive but not significant effect on Stock Returns. This result is consistent with the Indonesia Stock Exchange, which shows a positive and significant influence of Investor Sentiment. However, it differs from Bursa Malaysia, where Investor Sentiment has a significant effect on stock returns.

Discussion

Effect of Systematic Risk on Stock Returns

The combined data test results show that systematic risk has a significant negative effect on stock returns in the combined data from the Indonesia Stock Exchange (BEI) and Bursa Malaysia, with a coefficient of -0.093, a t-statistic of -3.321, and a probability of 0.0012 (< 0.05).

Based on the statistical test results conducted separately for each exchange, there is evidence that systematic risk negatively and significantly affects stock returns, both at the Indonesia Stock Exchange (coefficient -0.107430; t-statistic -3.414213; probability 0.0010) and at Bursa Malaysia (coefficient -0.1411; t-statistic -3.328; probability 0.0028).

The combined data test confirms that systematic risk has a significant negative effect on stock returns. This finding is consistent with the statistical test results for each exchange, showing that systematic risk negatively and significantly influences stock returns on both BEI and Bursa Malaysia.

Effect of Idiosyncratic Risk on Stock Returns

Based on the combined data test results, idiosyncratic risk has a positive and significant effect on stock returns in the combined data from BEI and Bursa Malaysia, with a coefficient of 5.348, a t-statistic of 0.5125, and a probability of 0.0000, which is less than the significance level of 0.05.

The results from each stock exchange show a striking difference in the effect of idiosyncratic risk on stock returns between the two exchanges. At BEI, idiosyncratic risk has a very significant positive effect (coefficient 5.940028; t-statistic 10.03633; probability 0.0000), whereas at Bursa Malaysia, it shows a significant negative effect (coefficient -1.1605; t-statistic -1.8266; probability 0.08).

Based on the combined data test, idiosyncratic risk positively and significantly affects stock returns. This result is consistent with the findings from BEI, where idiosyncratic risk has a significant positive effect on stock returns, but differs from Bursa Malaysia, where the effect is negative and not significant.

Effect of Investor Sentiment on Stock Returns

The combined data test results from both stock exchanges show that investor sentiment has a positive but not significant effect on stock returns in the combined data from BEI and Bursa Malaysia, with a coefficient of 0.0008, a t-statistic of 0.696, and a probability of 0.487, which is greater than the significance level of 0.05.

However, in each stock exchange, this study found that investor sentiment has different effects. At BEI, investor sentiment shows a positive but not significant effect (coefficient 0.001264; t-statistic 0.978302; probability 0.3309), whereas at Bursa Malaysia, investor sentiment has a positive and significant effect on stock returns (coefficient 0.005710; t-statistic 4.520; probability 0.0001).

The combined data test results indicate that investor sentiment has a positive but not significant effect on stock returns. This result is consistent with BEI's findings, where investor sentiment shows a positive but not significant effect, while at Bursa Malaysia, investor sentiment has a significant positive effect.

No Significant Difference in the Effect of Systematic Risk on Stock Returns

Based on the results of the Multi-Group Analysis presented in Table 4.24, systematic risk in the combined data from the Indonesia Stock Exchange (IDX) and Bursa Malaysia has a negative and significant effect on stock returns. This result is consistent with the individual tests for each exchange, where systematic risk also negatively and significantly affects stock returns. Thus, it can be concluded that there is no significant difference in the effect of systematic risk on stock returns between IDX and Bursa Malaysia.

The absence of a significant difference can be explained from several perspectives. First, both countries are developing nations in the ASEAN region with relatively similar economic characteristics, which means that stocks in both exchanges may have comparable sensitivity to market risk factors (Loang, 2023). Second, both countries are similarly exposed to global systematic risk factors, such as changes in global interest rates, commodity price fluctuations, and geopolitical uncertainties, which can result in beta values that are not significantly different (Yang et al., 2021).

Although there is no significant difference in the magnitude of systematic risk itself, this study has shown that the effect of systematic risk on stock returns in both exchanges is consistently negative and significant. This suggests that, while market sensitivity levels are relatively similar, investors in both markets similarly respond to systematic risk. This phenomenon may reflect a common degree of risk aversion among investors in both markets (Rizani et al., 2023).

Differences in the Effect of Idiosyncratic Risk on Stock Returns

Based on the results of the Multi-Group Analysis presented in Table 21, the Idiosyncratic Risk variable in the combined data of the Indonesia Stock Exchange (IDX) and Bursa Malaysia has a positive and significant effect on stock returns. This is consistent with the results from the IDX, where Idiosyncratic Risk has a positive and significant effect on stock returns. However, it differs from the findings in Bursa Malaysia, where Idiosyncratic Risk has a negative and significant effect on stock returns. Therefore, it can be concluded that there is a significant difference in the effect of Idiosyncratic Risk on stock returns between the IDX and Bursa Malaysia.

This significant difference can be explained by several factors. First,

the level of transparency and quality of information disclosure differ between the two markets. Bursa Malaysia is generally considered to have higher standards of corporate disclosure and governance compared to the IDX, which can reduce the idiosyncratic risks associated with information asymmetry (Fujianti, 2023). Second, differences in corporate ownership structures between the two countries may play a role, with Indonesian companies often having more concentrated ownership, potentially increasing idiosyncratic risk (Subastian & Setiawan, 2022). In addition, differences in the level of business diversification between firms in both countries may also contribute. Indonesian firms may have higher business concentration or greater exposure to specific sector volatility, while Malaysian firms may be more operationally diversified (Haron et al., 2021).

Differences in the Effect of Investor Sentiment on Stock Returns

The results of the Multi-Group Analysis presented in Table 21 indicate that the Investor Sentiment variable in the combined data of the Indonesia Stock Exchange (IDX) and Bursa Malaysia has a positive but insignificant effect on stock returns. This result is consistent with findings from the IDX, where investor sentiment shows a positive and significant influence. However, this differs from the results in Bursa Malaysia, where investor sentiment has a significant effect on stock returns. Therefore, it can be concluded that there is a difference in the effect of investor sentiment on stock returns between the IDX and Bursa Malaysia.

This significant difference may be influenced by several factors. First, the demographic characteristics of investors differ between the two markets. Indonesia's capital market has a higher proportion of retail investors, who tend to be more influenced by sentiment and rely less on fundamental analysis compared to institutional investors (Sari et al., 2022). Second, differences in market infrastructure and ease of access to information can affect how sentiment is formed and spreads among investors (Semenya & Ogujiuba, 2024).

Conclusions

Based on the in-depth analysis conducted, this study yields several key conclusions:

1. Systematic risk has a significant negative effect on the stock returns of banking companies on both the Indonesia Stock Exchange (IDX) and Bursa Malaysia. This finding indicates that an increase in market risk tends to decrease banking stock returns in both countries.
2. Idiosyncratic risk shows differing effects between the two exchanges. On the IDX, idiosyncratic risk has a significant positive effect on stock returns, while on Bursa Malaysia, it has a significant negative effect. This suggests that investors in Indonesia respond positively to firm-specific risks, whereas investors in Malaysia tend to react negatively.
3. Investor sentiment exhibits different characteristics in each market. In Bursa Malaysia, investor sentiment has a significant positive impact on stock returns, while in the IDX, it does not show a significant effect. This reveals the complexity of market responses to investor sentiment, with the Malaysian market being more sensitive to sentiment than the Indonesian market.
4. Comparative analysis using Multi-Group Analysis reveals no significant difference in the level of systematic risk between banking companies on the IDX and Bursa Malaysia. Both capital markets show similar response patterns to market risk, with relatively equal levels of systematic risk.
5. Comparative analysis reveals a significant difference in the level of idiosyncratic risk between banking companies in Indonesia and Malaysia. The level of idiosyncratic risk on the IDX is significantly higher than that on Bursa Malaysia, indicating that Indonesian banking firms carry greater firm-specific risks.
6. Comparative analysis also reveals a significant difference in the magnitude of investor sentiment between banking companies on the IDX and Bursa Malaysia. Investor sentiment in the IDX is significantly higher than in Bursa Malaysia, reflecting markedly different investor characteristics and market dynamics between the two countries.

Based on the conclusions drawn from the above research, the following suggestions can be made:

1. Developing the research model by incorporating macroeconomic variables that can interact with systematic risk to provide a more comprehensive picture of the factors influencing stock returns.
2. Examining the underlying factors that cause differences in the characteristics of idiosyncratic risk between the two exchanges, including an in-depth analysis of corporate governance structures and levels of corporate transparency.
3. Further exploring the components that shape investor sentiment in each country to better understand why investor sentiment is significantly higher on the Indonesia Stock Exchange (IDX) compared to Bursa Malaysia.
4. Expanding the research scope by including other industry sectors to obtain a broader market perspective and test the generalizability of the findings across different sectors.
5. Conducting longitudinal studies over longer periods to analyze the consistency and stability of the observed patterns across economic cycles.

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