JURNAL ECONOMINA
e-ISSN: 2963-1181
Volume 5, Number 6, June 2026
Homepage: ejournal.45mataram.ac.id/index.php/economina

Analysis of Determinants of Profitability of Insurance Companies in Indonesia Listed on the Indonesia Stock Exchange for the Period 2019-2024

Marjihad Luthfiyah Rahma[1*]
[1] Master of Financial Management Study Program, Faculty of Business Economics, University of Indonesia, Indonesia

**Corresponding Author: marjihad.luthfiyah41@ui.ac.id*

Article History
Received: 03-06-2026
Revised: 10-06-2026
Published: 30-06-2026

Keywords: Profitability, ROA, Insurance Firms, Premium Growth, Investment Yiel

ABSTRACT

This study examines profitability determinants of insurance companies listed on the Indonesia Stock Exchange during 2020–2023 using agency theory. Profitability is proxied by return on assets (ROA). Key explanatory variables include premium growth, investment yield, and loss ratio, with controls for firm age, expense ratio, firm size, and board size. Panel data regression is employed to test their effects on ROA. The study highlights that higher premiums and investment income do not necessarily translate into higher profits without cost efficiency and effective governance mechanisms that mitigate agency problems.

INTRODUCTION

One of the important parts of risk protection is insurance. Insurance helps reduce losses due to unexpected risks by providing financial protection to individuals and companies. According to Law No. 40 of 2014, insurance is defined as an agreement between the insurer and the insured to transfer risk in exchange for premium payments. The insurance industry not only provides protection against risk but also mobilizes funds for economic growth.

Insurance offers protection against uncertainty arising from harmful events affecting humans. According to Article 1 Number 1 of Law No. 2 of 1992, insurance is an agreement between two or more parties in which the insurer binds itself to the insured by receiving insurance premiums in order to provide compensation to the insured in the event of damage, loss, or loss of expected profits, or if property, health, or human life is lost or damaged. One of the main measures used to evaluate the financial performance of insurance companies is profitability.

The insurance sector in Indonesia faces various significant challenges, one of which is the issue of default involving several insurance companies such as Jiwasraya (2018), Bakrie Life (2008), and AJB Bumiputera (2018). Default refers to the inability of insurance companies to fulfill their claim obligations to policyholders as promised. This default problem not only harms customers but also affects the profitability of insurance companies, because the loss of public trust can reduce premium income and worsen the company's financial

position. According to Majid & Sumriyah (2023), default problems often arise due to errors in risk management, inaccuracies in premium determination, and investment returns that do not meet expectations.

One of the main factors leading to the failure of insurance companies is the inability to fulfill claim obligations due to errors in fund and risk management. The causes of default problems are very diverse. Among them are less prudent investment management, inability to control claim costs, and imbalance between investment returns and claim obligations that must be paid. This directly affects the profitability of insurance companies. When companies cannot fulfill claim obligations, they must bear higher operational costs and expenditures, which ultimately reduce the level of profit and profitability of the insurance company. Majid & Sumriyah (2023) emphasize that companies experiencing default tend to experience a decline in profitability in the long term due to increasing claim costs that cannot be covered by the income generated. This results in difficulties for insurance companies in maintaining financial stability even though the number of insurance companies in Indonesia continues to grow (OJK, 2024).

The phenomenon of default shows that the profitability and financial stability of insurance companies are strongly influenced by the company's ability to properly manage risk, premium income, claim ratios, and investment funds. The business model of insurance companies is to select risks through underwriting, reserve insurance premiums, and pay claims. Premiums received by insurance companies cannot be directly recognized as company profit. Based on PSAK 62, the recognition of insurance profit follows the coverage period and part of the premiums received must be deferred as technical reserves. The profitability of insurance companies can be recognized directly when the policy coverage period has ended (release of reserves). In addition to having a protection function, the insurance industry collects premiums and invests in investment instruments, thereby contributing to economic growth. Investment returns are one of the contributors to the profitability of insurance companies besides premiums.

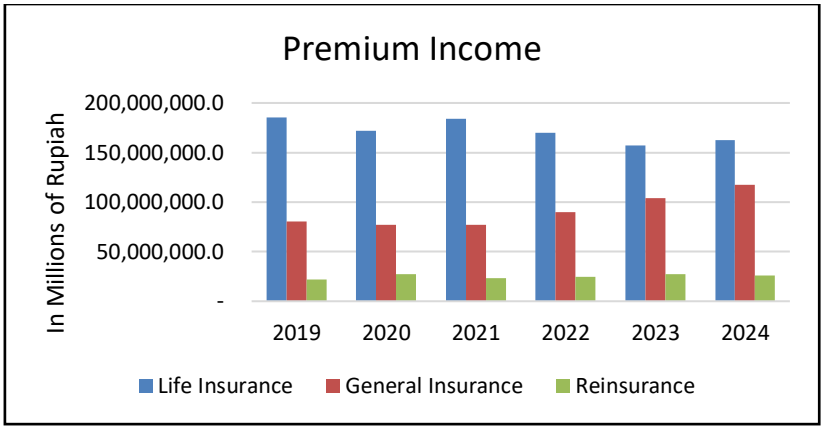

Figure 1. Premium Income
Source: ojk.go.id

Premium growth shows the company's ability to attract new customers and retain existing ones. Based on data from the Financial Services Authority (OJK) Insurance Statistics, premium income of the insurance industry in Indonesia during the 2019–2024 period shows different dynamics across business segments. In life insurance, premium income decreased from IDR 185.3 trillion in 2019 to IDR 171.9 trillion in 2020, reflecting the early impact of the Covid-19 pandemic on people's purchasing power and long-term insurance product sales. Although it increased in 2021, the life insurance premium trend weakened again until 2023 before showing signs of recovery in 2024. This pattern indicates that the life insurance segment is relatively more sensitive to macroeconomic conditions.

In contrast, general insurance shows a premium income trend that tends to increase consistently since 2021, from IDR 76.9 trillion to IDR 117.7 trillion in 2024. This increase is in line with the recovery of economic activity after the pandemic, increased mobility, and rising demand for protection of assets, vehicles, and business risks. Meanwhile, reinsurance premium income is relatively stable with limited fluctuations. Overall, total premium income of the insurance industry increased from IDR 287.4 trillion in 2019 to IDR 306.3 trillion in 2024, indicating recovery and expansion of the industry as a whole.

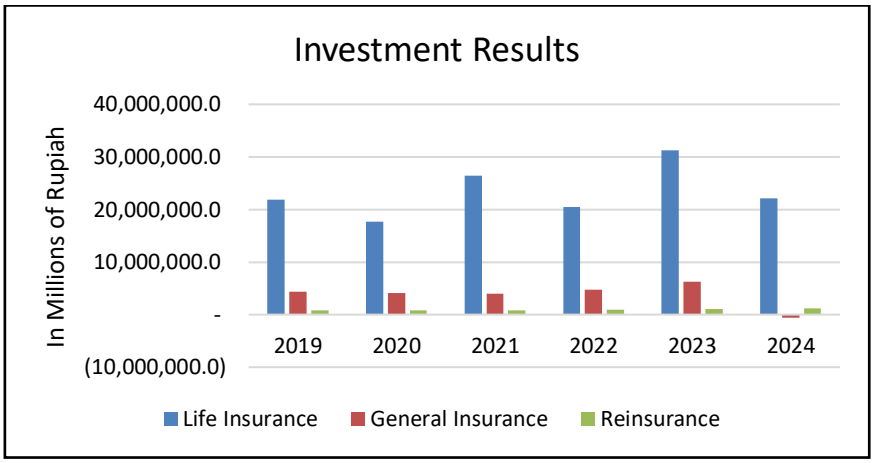

Figure 2. Investment Returns

Source: ojk.go.id

Based on the investment return graph for the period 2019–2024, it can be seen that life insurance consistently has the highest investment returns compared to general insurance and reinsurance. The value of life insurance investment returns shows a fluctuating pattern, with a decrease in 2020, an increase in 2021, a decline again in 2022, reaching its highest point in 2023, and then decreasing again in 2024. Nevertheless, throughout the observation period, life insurance investment returns remain far above the other two segments, indicating its dominant role in forming overall industry investment returns.

Meanwhile, general insurance investment returns are at a lower level and show quite significant variations between periods. From 2019 to 2023, general insurance investment returns tend to be positive and increased in 2023, but in 2024 the graph shows a loss in investment returns. Reinsurance companies record relatively small investment returns but

show a gradual increasing trend from year to year, without extreme fluctuations as seen in the other two segments. These differences in patterns between segments indicate that investment performance in the insurance industry is not homogeneous but varies across lines of business.

Overall, investment returns in the insurance industry are fluctuating and do not show a consistent increasing trend throughout the observation period. Variations in investment returns from year to year, including sharp declines in certain segments, indicate that investment performance is a dynamic factor that has the potential to influence the financial stability of insurance companies.

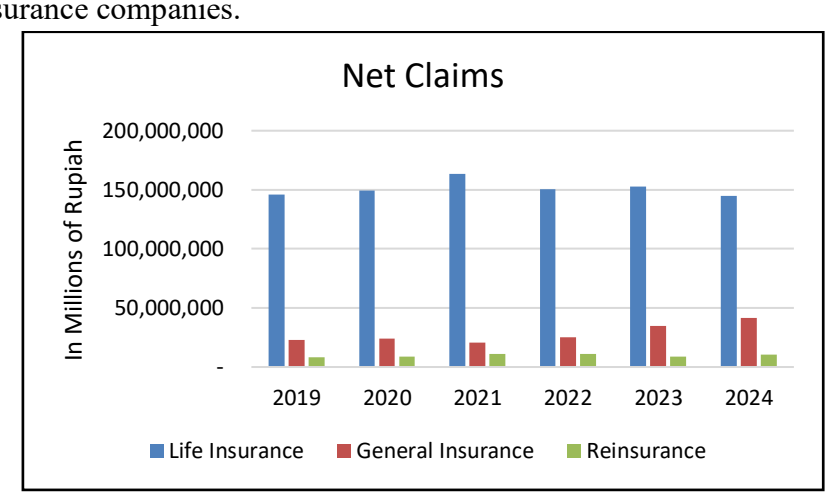

Figure 3. Net Claims

Source: ojk.go.id

Based on the net claims graph for the period 2019–2024, the recorded net claims in life insurance are consistently higher than those in general insurance and reinsurance. The value of net claims in life insurance is relatively high and fluctuates across periods, with an increasing trend from 2019 to its peak in 2021, followed by a decline in 2022. After that, net claims increased again in 2023 before declining once more in 2024. This pattern indicates that net claims in the life insurance segment are fluctuating and dominate the total industry claims throughout the observation period.

Meanwhile, net claims in general insurance are at a lower level compared to life insurance but show a fairly clear increasing trend from 2022 to 2024, while net claims in reinsurance are relatively small and tend to be stable throughout the observation period, although they still show variations each year. This indicates that the volatility of net claims is more prominent in the life insurance and general insurance segments compared to reinsurance.

In addition to the main variables directly related to underwriting and investment performance, the profitability of insurance companies can also be influenced by internal company characteristics that act as control factors. In this study, the control variables include company age, expense ratio, company size, board size, and solvency ratio to capture fundamental differences between companies that may affect Return on Assets (ROA). Company age reflects the level of experience and maturity of business processes, including

risk selection and claims management. The expense ratio represents the efficiency of operational and acquisition costs that directly affect profit. Company size reflects the scale and resource capacity that may influence risk diversification and efficiency, while board size reflects the quality of corporate governance and the supervisory function of management in reducing conflicts of interest as emphasized in agency theory. By including these control variables, the analysis is expected to produce more accurate estimates of the effects of the main variables and reduce bias due to firm heterogeneity.

Indonesia, as a developing country, has an insurance market that is still growing. Based on data from the Financial Services Authority (OJK), the level of insurance penetration in Indonesia remains around 2.72% of Gross Domestic Product (GDP), which is lower than that of Malaysia, Thailand, and Singapore (OJK, 2025), with different challenges in terms of market penetration, regulation, and government policies in managing the insurance sector. This study aims to investigate the factors affecting the profitability of insurance companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. This period is important to analyze as it includes the post-Covid-19 pandemic phase, which brought significant changes in consumer behavior and the performance of insurance companies. Public behavior during the pandemic may have changed due to the need for insurance and purchasing power.

From the literature perspective, there is still a relevant research gap in the Indonesian context. Most empirical evidence on the determinants of insurance profitability comes from African or non-Indonesian Asian markets, while studies based on IDX-listed companies remain limited. This study aims to analyze the effect of premium growth, investment returns, and loss ratio on the ROA of insurance companies listed on the IDX during 2019–2024, while controlling for firm characteristics and period effects. Academically, this study provides recent evidence from a developing market in both pre- and post-Covid-19 periods. Practically, the findings are expected to provide insights for management and investors on key factors to improve profitability sustainably, as well as offer references for regulators in evaluating the effectiveness of insurance industry policies.

RESEARCH METHOD

This study uses a quantitative approach with a causal associative research design to analyze the effect of premium growth ratio, investment yield, and loss ratio on profitability (ROA) of insurance companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period, with control variables consisting of firm age, expense ratio, firm size, board size, and Risk Based Capital (RBC). The data used are secondary data derived from audited annual financial reports of 17 insurance companies, resulting in 102 firm-year observations selected through purposive sampling, and analyzed using panel data regression. ROA is measured as net income divided by total assets, while the independent and control variables are calculated using financial ratios and natural logarithm transformations where required. Data analysis is conducted through descriptive statistics, classical assumption tests

(normality, multicollinearity, heteroskedasticity, and autocorrelation), and model selection using Chow and Hausman tests to determine the most appropriate panel data model (CEM, FEM, or REM). Hypothesis testing is performed using the t-test for partial effects, the F-test for model feasibility, and the coefficient of determination (R^2) to measure the explanatory power of the model. The regression model used is $ROA_{it} = \alpha + \beta_1 GROWTH_{it} + \beta_2 YIELD_{it} + \beta_3 LR_{it} + \beta_4 AGE_{it} + \beta_5 EXP_{it} + \beta_6 SIZE_{it} + \beta_7 BOARD_{it} + \beta_8 RBC_{it} + \varepsilon_{it}$, with all variables tested at a 5% significance level to examine their effect on insurance company profitability.

RESULT AND DISCUSSION

Sample Selection Results

This study employs a purposive sampling method in determining the research sample. The population consists of all insurance companies listed on the Indonesia Stock Exchange during the 2019–2024 period, totaling 18 companies. Sample selection was carried out based on specific criteria to ensure that the data obtained aligns with the research objectives.

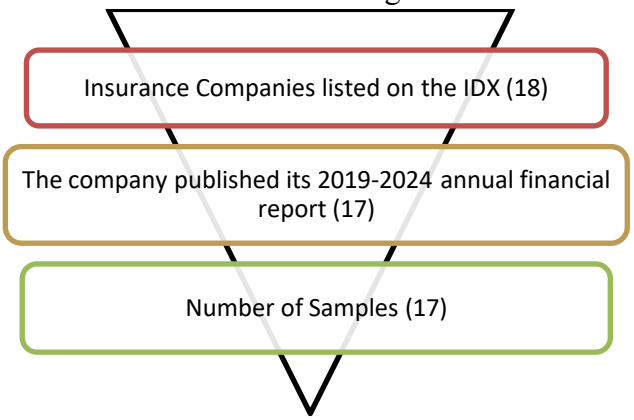

Figure 4. Sample Selection Scheme

Source: Processed by the Researcher (2026)

The criteria used in this study include insurance companies listed on the Indonesia Stock Exchange that provide complete annual financial reports throughout the observation period. Based on this selection process, one company could not be included as a sample, namely Panin Financial Tbk (PNLF), due to the unavailability of complete financial reports for the 2019–2024 period from the data sources used in this study.

The number of companies that meet the sample criteria is 17. Since this study uses panel data with a 6-year observation period, the total number of observations used in this study is 102 observations.

Descriptive Statistics

The summary of the descriptive statistical analysis results is as follows:

Table 1. Descriptive Statistics

	ROA	GROWTH	YIELD	LR	AGE	ER	SIZE	BOARD	RBC

Mean	0,095994	0,266482	1.000000	0,727958	3,645959	0,604965	26,99867	1,371975	5,161021
Median	0,007784	0,075907	0.960301	0,603770	3,761200	0,441575	26,62925	1,386294	3,611400
Maximum	1,817783	12,05401	22.75118	9,636668	4,276666	4,525358	30,73095	1,945910	25,27750
Minimum	-1,636114	-0,998935	-17.46274	0,191697	0,693147	0,039587	24,27048	0,693147	1,280000
Std. Dev.	0,587046	1,246857	2.917917	0,931854	0,762933	0,653374	1,659661	0,269135	4,604513
Skewness	0,335623	8,444123	1.596529	8,698366	-2,166503	3,728724	0,792243	0,161014	2,044900
Kurtosis	3,455787	79,97144	46.93273	83,55930	6,961154	20,73269	2,975076	1,939824	7,188567
Jarque-Bera	2,797833	26391,72	8246.192	28867,90	146,4791	1572,762	10,67268	5,217619	145,6499
Probability	0,246864	0,000000	0.000000	0,000000	0,000000	0,000000	0,004813	0,073622	0,000000
Sum	9.791347	27.18117	102.0000	74.25175	371.8878	61.70644	2753.865	139.9414	526.4241
Sum Sq. Dev.	34,80690	157,0200	859.9384	87,70348	58,78881	43,11663	278,2018	7,315819	2141,355
Observations	102	102	102	102	102	102	102	102	102

Source: Researcher Processing, (2026)

Table 2. Descriptive Statistics (Winsorize)

	ROA	GROWTH	YIELD	LR	AGE	ER	SIZE	BOARD	RBC
Mean	0,095994	0,266482	0,970448	0,727958	3,645959	0,604965	26,99867	1,371975	5,161021
Median	0,007784	0,075907	0,960301	0,603770	3,761200	0,441575	26,62925	1,386294	3,611400
Maximum	1,817783	12,05401	4,123051	9,636668	4,276666	4,525358	30,73095	1,945910	25,27750
Minimum	-1,636114	-0,998935	-1,836591	0,191697	0,693147	0,039587	24,27048	0,693147	1,280000
Std. Dev.	0,587046	1,246857	0,793061	0,931854	0,762933	0,653374	1,659661	0,269135	4,604513
Skewness	0,335623	8,444123	0,038068	8,698366	-2,166503	3,728724	0,792243	0,161014	2,044900
Kurtosis	3,455787	79,97144	9,752544	83,55930	6,961154	20,73269	2,975076	1,939824	7,188567
Jarque-Bera	2,797833	26391,72	193,8112	28867,90	146,4791	1572,762	10,67268	5,217619	145,6499
Probability	0,246864	0,000000	0,000000	0,000000	0,000000	0,000000	0,004813	0,073622	0,000000
Sum	9.791347	27.18117	102.0000	74.25175	371.8878	61.70644	2753.865	139.9414	526.4241
Sum Sq. Dev.	34,80690	157,0200	63,52355	87,70348	58,78881	43,11663	278,2018	7,315819	2141,355
Observations	102	102	102	102	102	102	102	102	102

Source: Researcher Processing, (2026)

This study uses panel data sourced from audited annual financial reports of 17 insurance companies listed on the Indonesia Stock Exchange during the 2019–2024 period, resulting in a total of 102 firm-year observations. All research variables have undergone a data completeness check prior to further analysis to ensure that there are no missing values that could lead to panel imbalance and bias the estimation results. In addition, this study applies a winsorizing procedure to the investment yield (YIELD) variable at the 1st and 99th percentiles to address extreme values that may distort estimation results. This winsorizing procedure is carried out by replacing observations outside the 1st and 99th percentile thresholds with the respective percentile boundary values, without removing observations from the dataset, thereby maintaining the full sample size of 102 firm-year observations while reducing distortion caused by extreme outliers.

Before winsorizing, the YIELD variable exhibited highly extreme values, with a minimum of -17.46 and a maximum of 22.75, which could substantially distort regression coefficient estimates and reduce the reliability of statistical inference. After applying the winsorizing procedure, the minimum YIELD value becomes -1.8366 and the maximum

becomes 4.1231, resulting in a more reasonable range that better reflects economically relevant variation in investment yield among the sampled insurance companies. This winsorizing procedure is a common and widely accepted practice in empirical finance research for handling outliers without sacrificing the number of observations, as recommended by Ghozali (2018) in the context of panel data analysis of financial firms.

Table 1 presents a summary of descriptive statistics for all research variables. It can be observed that the ROA variable has an average value of 9.59%, with the maximum ROA of 1.81% recorded by Asuransi Ramayana in 2020, while the minimum ROA of -1.63% was recorded by Asuransi Harta Aman Pratama in 2019. The premium growth variable (GROWTH) has an average of 26.6%, with a maximum value of 1205% from Asuransi Bina Dana Arta in 2021 and a minimum value of 99% from Paninvest Tbk in 2024. The investment yield variable (YIELD) has an average value of 97%, with a maximum value of 2275% recorded by Asuransi Maximus in 2022, while the minimum value of -1746% was recorded by the same company in 2021. The Loss Ratio (LR) variable has a maximum value of 964% from PT MSIG Life Indonesia in 2019, while the minimum value of 19% was recorded by Asuransi Dayin Mitra in 2024.

Classical Assumption Test Analysis

Normality Test

The normality test is conducted to determine whether the observations are normally distributed or not. The results of the normality test can be seen in the table below.

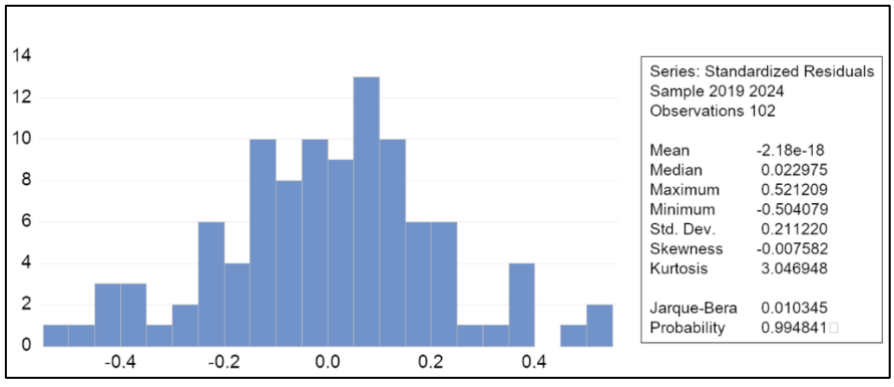

Figure 5. Normality Test Results

Source: Researcher Processing, (2026)

Based on the normality test results presented in Figure 5, the Jarque-Bera statistic yields a value of 0.010345 with a probability value of 0.994841. The Jarque-Bera probability value of 0.9948, which far exceeds the 5% significance level, indicates that the null hypothesis stating that the residuals are normally distributed cannot be rejected at any conventional significance level. In other words, there is no sufficient statistical evidence to conclude that the residuals of the panel regression model deviate from a normal distribution. The fulfillment of this normality assumption provides a strong foundation for the validity of all inferential statistical tests used in this study.

Multicollinearity Test

Table 3. Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centralized VIF
C	0,242933	423,4325	NA
GROWTH	0,000470	1,101280	1,043129
YIELD	0,001047	2,736855	1,017522
LR	0,000869	1,867320	1,064272
AGE	0,002188	52,32740	1,636639
EXP	0,002171	2,671821	1,286816
SIZE	0,000488	621,5478	2,067186
BOARD	0,012876	43,53347	1,287832
RBC	5,03E-05	3,847328	1,513720

Source: Researcher Processing, (2026)

Based on Table 3, all independent variables in this research model show centered VIF (Variance Inflation Factor) values well below the critical threshold of 10. The highest centered VIF value is observed in the SIZE variable at 2.0672, which is still far below the threshold of 10. The AGE variable has a centered VIF of 1.6367, followed by RBC at 1.5137, BOARD at 1.2878, EXP at 1.2868, LR at 1.0643, GROWTH at 1.0431, and YIELD at 1.0175, which is the lowest centered VIF value. The range of centered VIF values, which only spans from 1.0175 to 2.0672, indicates that the linear correlation among the independent variables in this model is very minimal and does not pose any serious multicollinearity issues.

Heteroskedasticity Test

Table 4. Heteroskedasticity Test Results (Glejser Test)

Variable	Coefficient	Std. Error	*t*-Statistic	Probability
C	0,360661	0,231928	1,555060	0,1240
GROWTH	-0,000217	0,010199	-0,021310	0,9831
YIELD	0,022894	0,015229	1,503359	0,1368
LR	-0,002397	0,013875	-0,172782	0,8633
AGE	-0,024870	0,022010	-1,129958	0,2620
EXP	-0,024395	0,021926	-1,112607	0,2693
SIZE	-0,003528	0,010390	-0,339509	0,7352
BOARD	-0,006986	0,053396	-0,130837	0,8962
RBC	-0,000994	0,003336	-0,297868	0,7666

Source: Researcher Processing, (2026)

Based on Table 4, the results of the Glejser test show that none of the independent variables in the model have probability values lower than the 5% significance level. The GROWTH variable has a probability value of 0.9831, YIELD is 0.1368, LR is 0.8633, AGE is 0.2620, EXP is 0.2693, SIZE is 0.7352, BOARD is 0.8962, and RBC is 0.7666. The t-

statistics for all variables in the Glejser test equation are very small (far from the critical value of ±1.96), indicating that the variation in the absolute residual values cannot be significantly explained by any independent variable in the model. Therefore, the null hypothesis of homoskedasticity cannot be rejected, and it can be concluded with a high level of statistical confidence that this research model is free from heteroskedasticity problems.

Autocorrelation Test

Table 5. Autocorrelation Test Results

Statistic	Value
Root MSE	0,210182
Dependent Variable Mean	0,095994
Dependent Variable Standard Deviation	0,587046
Akaike Info Criterion	0,208515
Schwarz Criterion	0,851891
Hannan-Quinn Criterion	0,469040
R-squared	0,870542
Adjusted R-squared	0,830192
Standar Error Regresi	0,241909
Sum of Squares of Residuals	4,506021
Log Likelihood	14,36574
F-statistic	21,57453
Prob. (F-statistik)	0,000000
Statistik Durbin-Watson	2,269656

Source: EViews Output, 2026

Based on Table 5, the Durbin-Watson statistic obtained from the Fixed Effect Model estimation is 2.2697. This value falls within the range of 1.5 to 2.5, which is commonly used as a benchmark indicating no autocorrelation in panel data analysis. The DW value of 2.2697, which is close to 2, suggests that there is no serious first-order serial autocorrelation in the model residuals. More specifically, a DW value slightly above 2 but not too far from it indicates a very weak tendency toward negative autocorrelation, which is generally not considered a substantial issue in econometric analysis. Therefore, it can be concluded with reasonable confidence that the model residuals do not suffer from significant serial autocorrelation and that the assumption of independence among residuals is satisfied.

Regression Model Selection

Chow Test

Table 6. Chow Test Results

Effect Test	Statistic	*d.f.*	Probability

Cross-section F	12,634881	(16, 77)	0,0000
Cross-section Chi-square	131,373232	16	0,0000

Source: EViews Output, 2026

Based on Table 6, the Chow Test produces a Cross-section F-statistic of 12.6349 with degrees of freedom (16, 77) and a probability value of 0.0000, as well as a Cross-section Chi-square statistic of 131.3732 with 16 degrees of freedom and a probability value of 0.0000. Both probability values are far below even the 1% significance level, indicating that the null hypothesis stating that all cross-sectional fixed effects are equal or identical is strongly rejected. The very large F-statistic value of 12.6349 suggests that there are highly significant intercept variations among the 17 insurance companies in the sample. Therefore, the Fixed Effect Model (FEM) is statistically superior to the Common Effect Model (CEM), and the analysis proceeds to the next stage to compare FEM with REM using the Hausman Test.

Hausman Test

Table 7. Hausman Test Results

Test Summary	**Statistik Chi-Kuadrat**	***d.f.***	**Probability**
Cross-section random	58,958112	8	0,0000

Source: EViews Output, 2026

Based on Table 7, the Hausman Test produces a chi-square statistic of 58.9581 with 8 degrees of freedom (corresponding to the number of independent variables in the model) and a probability value of 0.0000. This probability value, which is far below even the 1% significance level, indicates that the null hypothesis stating that the firm-specific effects are not correlated with the independent variables is strongly rejected. The chi-square statistic of 58.9581, which greatly exceeds the critical chi-square value with 8 degrees of freedom at the 1% significance level (20.09), provides compelling evidence that there is a significant correlation between firm-specific effects and the independent variables in the model. Therefore, the Fixed Effect Model (FEM) is statistically more appropriate and consistent than the Random Effect Model (REM) in estimating the relationship between independent variables and the profitability of insurance companies in Indonesia.

Hypothesis Testing Results

Based on the results of a series of formal tests conducted, the Fixed Effect Model (FEM) is selected as the most appropriate estimation model to describe the relationship between independent variables and the profitability of insurance companies in this study. The FEM with cross-section fixed effects allows each insurance company to have a unique and distinct intercept (firm-specific intercept), which implicitly controls for all time-invariant and unobserved characteristics specific to each firm. Meanwhile, the slope coefficients are assumed to be homogeneous and identical across all companies, meaning that the marginal effect of each independent variable on ROA is assumed to be the same for all insurance companies in the sample.

The panel regression model with Fixed Effects estimated in this study can be expressed as follows:

$$\mathbf{ROA_{it} = \alpha_i + \beta_1 GROWTH_{it} + \beta_2 YIELD_{it} + \beta_3 LR_{it} + \beta_4 AGE_{it} + \beta_5 EXP_{it} + \beta_6 SIZE_{it} + \beta_7 BOARD_{it} + \beta_8 RBC_{it} + \varepsilon_{it}}$$

Where α_i represents the firm-specific intercept capturing all fixed and unobserved effects unique to firm i, β_1 to β_8 are slope coefficients assumed to be homogeneous across firms, and ε_{it} is the error term assumed to be normally distributed with a mean of zero and constant variance.

Based on the estimation results, the regression equation obtained is:

$$\mathbf{ROA = 4{,}178950 + 0{,}144498\ GROWTH + 0{,}487056\ YIELD - 0{,}202754\ LR - 0{,}031323\ AGE + 0{,}011665\ EXP - 0{,}162139\ SIZE + 0{,}015431\ BOARD + 0{,}003289\ RBC + \varepsilon}$$

Table 8. Fixed Effect Panel Regression Estimation Results

Variable	Coefficient	Std. *Error*	*t*-Statistic	Probability
C	4,178950	0,492882	8,478596	0,0000
GROWTH	0,144498	0,021675	6,666519	0,0000
YIELD	0,487056	0,032364	15,04944	0,0000
LR	-0,202754	0,029486	-6,876303	0,0000
AGE	-0,031323	0,046774	-0,669665	0,5051
EXP	0,011665	0,046596	0,250349	0,8030
SIZE	-0,162139	0,022081	-7,342843	0,0000
BOARD	0,015431	0,113474	0,135986	0,8922
RBC	0,003289	0,007090	0,463976	0,6440
R-sq	0,870542			
Adjusted R-sq	0,830192			
F-statistik	21,57453			
Prob. (F-statistik)	0,000000			
Statistik Durbin-Watson	2,269656			

Source: EViews Output, 2026

The Fixed Effect panel regression model produces an R-squared value of 0.8705 and an adjusted R-squared of 0.8302. The R-squared value of 0.8705 indicates that 87.05% of the variation in the ROA of insurance companies included in the sample during the 2019–2024 period can be jointly explained by all variables included in the model, namely premium growth ratio, investment yield, loss ratio, firm age, expense ratio, firm size, board size, and Risk Based Capital, including firm-specific fixed effects controlled through cross-section dummy variables. The remaining 12.95% is explained by other factors not included in the model, such as macroeconomic variables, regulatory changes, market competition conditions, or other idiosyncratic factors not covered in this study.

The adjusted R-squared value of 0.8302, which accounts for penalties due to the inclusion of independent variables and fixed effects in the model, still indicates a very high explanatory power. The relatively small difference between R-squared (0.8705) and adjusted R-squared (0.8302), amounting to 0.0403, suggests that the inclusion of independent variables

and fixed effects contributes substantively to the explanatory power of the model, rather than merely increasing the R-squared artificially due to the addition of irrelevant variables. This confirms that the model specification used in this study is efficient and appropriate, with each variable contributing meaningfully to the model's explanatory capacity.

The simultaneous F-test, which examines whether all independent variable coefficients are jointly equal to zero, yields an F-statistic value of 21.5745 with a probability value of 0.0000, which is far below the 1% significance level. This very large F-statistic provides strong evidence that the model as a whole has significant explanatory power for the variation in ROA. In other words, the combination of all independent variables included in the model provides a much better explanation than simply using the average ROA as a predictor. This condition confirms that the Fixed Effect panel regression model used in this study is statistically appropriate (goodness of fit is satisfied) and has a very strong ability to explain and predict variations in the profitability of insurance companies in Indonesia during the 2019–2024 period.

Partially, based on the results of the individual t-tests, there are four variables that have a significant effect on ROA at the 5% significance level, namely GROWTH (probability 0.0000), YIELD (probability 0.0000), LR (probability 0.0000), and SIZE (probability 0.0000). All four significant variables have probability values far below the 1% significance level, indicating a very high level of statistical confidence in the significance of their effects on ROA. Meanwhile, the other four control variables—AGE (probability 0.5051), EXP (probability 0.8030), BOARD (probability 0.8922), and RBC (probability 0.6440)—do not show a significant effect on ROA at conventional significance levels.

CONCLUSION

Based on all the testing results and analyses conducted, the following detailed research conclusions are presented:

1. Premium income growth (premium growth ratio) is proven to have a positive and significant effect on the profitability of insurance companies listed on the IDX during the 2019–2024 period. The GROWTH coefficient of 0.1445 with a probability of 0.0000 confirms that every one-unit increase in the premium growth ratio increases ROA by 0.1445. This finding reflects that a company's ability to consistently expand its premium base in a well-managed manner contributes significantly and positively to profitability. Premium growth that is managed prudently, by considering the quality of risk selection and actuarially sound pricing, has been shown to improve the profitability of Indonesian insurance companies during the observation period, and this finding is consistent with the results of studies by Detikson and Alemayehu (2021) as well as Opoku, Antwi, and Osei (2024).
2. Investment yield is proven to have a positive and highly significant effect on the profitability of insurance companies listed on the IDX during the 2019–2024 period. The YIELD coefficient of 0.4871 with a probability of 0.0000 is the largest among all

significant variables, indicating that investment returns are the main and most dominant determinant of profitability for Indonesian insurance companies. Every one-unit increase in investment yield increases ROA by 0.4871, reflecting the substantial contribution of investment income to company profitability. The ability to optimally manage investment portfolios within the regulatory framework of POJK Number 71/POJK.05/2016 and generate competitive returns is proven to be the most dominant factor in determining profitability, consistent with the findings of Andoh-Yamoah and Osei (2021) as well as Opoku, Antwi, and Osei (2024).

3. The loss ratio is proven to have a negative and highly significant effect on the profitability of insurance companies listed on the IDX during the 2019–2024 period. The LR coefficient of -0.2028 with a probability of 0.0000 confirms that every one-unit increase in the loss ratio decreases ROA by 0.2028. The higher the proportion of net claim expenses to net premium income, the lower the profitability of insurance companies. Effective management of the loss ratio through improved underwriting quality and claim control is proven to be a critical factor in maintaining and enhancing profitability, consistent with the findings of Almajali et al. (2012), Worku et al. (2024), and Opoku, Antwi, and Osei (2024).
4. Of the five control variables tested, only firm size (SIZE) has a significant effect on profitability, with a negative direction (coefficient -0.1621, probability 0.0000). The variables of firm age (AGE, probability 0.5051), expense ratio (EXP, probability 0.8030), board size (BOARD, probability 0.8922), and Risk Based Capital (RBC, probability 0.6440) do not have a significant effect on ROA. The negative effect of SIZE indicates the presence of diseconomies of scale in the Indonesian insurance industry, where larger firms face greater operational complexity and higher coordination costs that reduce efficiency and profitability. This finding implies that, in the context of Indonesian insurance companies listed on the IDX, profitability is more strongly determined by core operational performance rather than structural firm characteristics.

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to all parties who have contributed to this research. Our sincere appreciation goes to our colleagues for their valuable suggestions, support, and inspiration throughout the research process. We also extend our heartfelt thanks to all participants and respondents who generously dedicated their time to take part in this study. In addition, we would like to acknowledge the institutions and organizations that provided support and facilities for the implementation of this research. Every contribution and assistance provided has been highly meaningful to the smooth execution and successful completion of this study. We truly appreciate all the hard work and collaboration that have been established throughout this research.

REFERENCES

Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012). Factors Affecting the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange. Journal of Management Research, 4(2), 266-289. https://doi.org/10.5296/jmr.v4i2.1482

Andoh-Yamoah, M., & Osei, P. K. (2021). Reinsurance and Financial Performance of Non-Life Insurance Companies in Ghana. International Journal of Finance and Economics. https://doi.org/10.1002/ijfe.2332

Decree of the Minister of Finance No. 424/KMK.06/2003 dated September 30, 2003. Financial Soundness of Insurance and Reinsurance Companies. Jakarta, Indonesia: Ministry of Finance of the Republic of Indonesia.

Detikson, T., & Alemayehu, B. (2021). Factors Affecting Profitability of Insurance Companies in Ethiopia. Journal of Emerging Market Finance. https://doi.org/10.1177/09726527211034601

Financial Services Authority Regulation No. 71/POJK.05/2016. Financial Soundness of Insurance and Reinsurance Companies. Jakarta, Indonesia: Financial Services Authority.

Financial Services Authority. (2019). Circular Letter of the Financial Services Authority No. .../SEOJK.05/2019 concerning the Assessment of the Financial Soundness Level of Insurance Companies, Reinsurance Companies, Sharia Insurance Companies, and Sharia Reinsurance Companies. Jakarta: Financial Services Authority.

Ghozali, I. (2018). Multivariate Analysis Application with IBM SPSS 25 Program. Semarang: Diponegoro University Publishing Agency.

Indonesia Stock Exchange. (2023). List of Registered Insurance Companies. Retrieved from https://www.idx.co.id

Indonesian Commercial Code (KUHD), Chapter IX, Article 247. Insurance or Other General Indemnity Contracts.

Ismail, H., & Rahman, A. (2020). Financial Structure and Performance of Insurance Companies in Bangladesh. Asian Economic Journal, 34(2), 150-170. https://doi.org/10.1111/asej.12345

Law of the Republic of Indonesia No. 2 of 1992. Insurance Business. Jakarta, Indonesia: President of the Republic of Indonesia.

Law of the Republic of Indonesia No. 40 of 2014. Insurance. Jakarta, Indonesia: President of the Republic of Indonesia.

Menicucci, E., & Paolucci, G. (2016). The Determinants of Bank Profitability: Empirical Evidence from the European Banking Sector. Journal of Financial Reporting and Accounting, 14(1), 86-115. https://doi.org/10.1108/JFRA-05-2015-0060

Njatrinjani, R., Sutrisno, P. A., & Primastito, C. A. (2024). The Role of the Financial Services Authority (OJK) as a Supervisory Body in Addressing Insurance Policy Default Phenomena in Indonesia. Jurnal Pembangunan Hukum Indonesia, 6(2), 149-168. https://doi.org/10.14710/jphi.v6i2.149-168

Opoku, E., Antwi, K., & Osei, K. (2024). Unveiling Dynamics of Financial Performance in Insurance Companies. Journal of Innovation and Business Strategy, 13(4). https://doi.org/10.1002/jibs.2024

Regulation of the Minister of Finance of the Republic of Indonesia No. 53/PMK.010/2012. Financial Soundness of Insurance and Reinsurance Companies. Jakarta, Indonesia: Minister of Finance of the Republic of Indonesia.

Statement of Financial Accounting Standards (PSAK) No. 28. Accounting for General Insurance. Jakarta, Indonesia: Indonesian Institute of Accountants.

Sugiyono. (2022). Statistics for Research. Bandung: CV Alfabeta.

Worku, A. T., Bayleyegne, Y. W., & Tafere, Z. B. (2024). Determinants of Profitability of Insurance Companies in Ethiopia: Evidence from Insurance Companies from 2011 to 2020. Journal of Innovation and Entrepreneurship, 13 (4). https://doi.org/10.1186/s13731-023-00357-1