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The Effect of DER, ROA, and ROE on Profit Growth in Insurance Companies Listed on the Indonesia Stock Exchange in 2023-2025 Period

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A B S T R A C T

This study examines the way the Debt to Equity Ratio (DER), Return on Assets (ROA), and Return on Equity (ROE) affect the profit growth of insurance companies listed on the Indonesia Stock Exchange during 2023-2025. Using a quantitative panel data approach in E-Views 14, the analysis covered 16 companies selected from a population of 19 through purposive sampling, which yielded 48 company-year observations drawn from audited financial statements. The Chow, Hausman, and Lagrange Multiplier tests identified the Random Effect Model (REM) as the best-fitting specification. Partial testing (t-test) shows that DER has a positive and significant effect on profit growth, whereas ROA and ROE have no significant partial effect. Even so, the F-test reveals that the three variables are jointly significant, with an R-squared of 20.93% and an Adjusted R-squared of 15.54%. These results suggest that, for insurance firms, funding structure matters more to profit growth than profitability ratios based on assets or equity. The study contributes to the literature on funding structure and profitability in Indonesian insurance companies and may serve as a reference for management, investors, and regulators

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INTRODUCTION

An insurance company is a business entity that gathers funds from the public (policyholders) in the form of premiums and then manages those funds to compensate for losses, damage, or lost profits that policyholders may suffer from uncertain events, as regulated in Law Number 40 of 2014 on Insurance (Purwaningsih & Catur, 2023). In addition to transferring risk, insurers also function as institutional investors, since a portion of the premium funds is placed in various investment instruments; consequently, their earnings stem from three principal sources: premium income, underwriting results, and investment returns (Anam & Noviani, 2025). To sustain their operations, insurers must consistently record healthy profit growth, because steady and rising profits reflect the firm's capacity to fulfil its obligations to policyholders while preserving investor confidence (Hasan & Tampubolon, 2025). Strong profit growth also sends the market a signal that the company is in good health, which shapes investors' interest in committing capital and policyholders' long-term trust in the continuity of the company's business.

Nevertheless, empirical evidence shows that the profits of Indonesia's insurance industry in recent years have not always been steady and tend to vary from one period to the next. For instance, the Indonesian General Insurance Association (AAUI, 2024) reported that the general insurance industry's profit in Q1 2024 fell by 2.3% relative to the same quarter of the previous year. This drop also weighed on Return on Assets (ROA), which went from 1.17% to 0.97%, and Return on Equity (ROE), which went from 3.15% to 2.54%, even though over the same period the industry's equity rose by 21.3% to IDR 90.2 trillion and total assets grew by 17.4% to IDR 234.6 trillion (AAUI, 2024). At the wider industry level, official data from the Financial Services Authority (OJK, 2025) as of November 2025 point to a comparable pattern. Life insurance premium income stood at IDR 163.88 trillion, down slightly by 0.75% year-on-year, whereas premiums in general insurance and reinsurance increased by 3.03% to IDR 109.83 trillion. At the same time, investment returns in life insurance climbed 8.05% to IDR 585.45 trillion, and general insurance investments grew 9.28% to IDR 139.27 trillion, while the industry's total commercial assets expanded 7.49% to IDR 971.22 trillion, supported by a strong risk-based capital adequacy ratio of between 342.88% and 488.69%, far above the regulator's minimum of 120% (OJK, 2025). Notably, solid capital and relatively high asset growth have not always been matched by proportional profit growth in every line of business. In the researchers' view, this indicates that large capital and assets alone do not necessarily drive profit growth, so structural factors such as funding structure and the efficiency with which assets and capital are used are suspected of either restraining or boosting the profit growth of insurance companies. To examine this assumption, the study employs three widely used financial ratios for assessing a company's financial condition: the Debt to Equity Ratio (DER), which represents the funding structure, and Return on Assets (ROA) and Return on Equity (ROE), which represent profitability efficiency in generating profits from the company's assets and capital (Astuti & Fhitri, 2026). These three ratios were selected because they complement one another conceptually: DER describes how

a company finances its activities, while ROA and ROE describe how efficiently those assets and capital are used to produce profits. It is therefore worthwhile to test empirically the effect of all three on the profit growth of insurance companies.

A considerable number of earlier studies have investigated how DER, ROA, and ROE relate to company profit performance. Muntamah et al. (2025) found that DER and operating cash flows influence the profitability of insurance companies listed on the IDX, while Astuti and Fhitri (2026) reported that, in the same subsector, DER has a negative and significant effect on ROA. In the cement subsector, Windiani and Priyanto (2026) found instead that DER has a positive and significant effect on profit growth, and Hutabalian et al. (2024) showed that ROA and ROE, individually and jointly, have a positive and significant influence on profit growth in the banking sector. Marni and Lestari (2026) further explain that ROA and DER are linked to changes in insurance company stock prices that mirror market expectations, and Karlina and Lestari (2026) point out the fluctuations in ROA as well as the inconsistent findings of earlier research on insurance companies.

In the researchers' view, it is quite understandable that the direction and size of the effects of DER, ROA, and ROE differ across these studies, since each uses different sectors, time periods, and dependent variable definitions: some analyze the effect on ROA, some on stock prices, and only a few look at profit growth in the insurance sector specifically. According to the researchers, this inconsistency is the reason those findings cannot be generalized directly to the profit growth of insurance companies in Indonesia. A renewed test aimed specifically at this sector, with all three ratios entered together in a single model, is therefore still needed to obtain a more accurate picture.

Insurance companies differ considerably in their operating characteristics from other financial sectors or from manufacturing, chiefly because most of their liabilities are made up of technical reserves and claim obligations to policyholders rather than funding debt in the conventional sense. Consequently, the effects of DER, ROA, and ROE on profit growth in this sector may follow a different pattern from that found in more frequently studied sectors. This distinctiveness motivates the choice of insurance companies as the research subject, while the 2023-2025 period was chosen because it is the most recent timeframe and also displays the profit fluctuation trends visible in the AAUI and OJK data above.

The population consists of all insurance companies listed on the Indonesia Stock Exchange (IDX) during the 2023-2025 period, totaling 19 companies. Purposive sampling, based on whether financial reports were complete enough to calculate DER, ROA, ROE, and profit growth, yielded 16 qualifying companies; with three years of observation, this gave 48 observations as the basis for analysis. Against this background, the aim of this study is to examine the effect of the Debt to Equity Ratio (DER), Return on Assets (ROA), and Return on Equity (ROE) on the profit growth of insurance companies listed on the IDX during 2023-2025, both partially and simultaneously. Theoretically, the results are expected to enrich the financial management literature on how funding

structure and profitability ratios relate to profit growth, while practically they are expected to serve as input for management, investors, and regulators in assessing and managing the financial performance of insurance companies in Indonesia.

LITERATURE RIVIEW

1. Agency Theory

This research is grounded in agency theory, developed by Jensen and Meckling (1976), which describes the potential for conflicts of interest between owners (principals) and management (agents) within a company. Management, which is responsible for running the company, does not always act wholly in the owners' interest, which gives rise to agency costs comprising monitoring costs, bonding costs, and losses resulting from suboptimal managerial decisions. In insurance companies, comparable conflicts can arise between management and policyholders as well as shareholders, since management handles large pools of premium funds and investments on their behalf.

Agency theory helps clarify why DER, ROA, and ROE should be examined in relation to profit growth. A high DER signals that a company depends heavily on external funds; from an agency standpoint, this may prompt creditors to monitor the company more closely and raise debt-related agency costs, so management has to use those funds productively to avoid putting pressure on profits. ROA and ROE, in turn, reflect how well management handles the principals' assets and capital to produce profits, and both can therefore be viewed as indicators of how far management's interests are aligned with those of owners and policyholders. On this basis, testing the influence of DER, ROA, and ROE on the profit growth of insurance companies in this study can be viewed as an attempt to assess how far the management of funding structure and managerial efficiency actually serve the owners' interest, namely the growth of company profits. The relevance of agency theory to company performance is also apparent in the findings of Aristiowati et al. (2022): earnings management, a form of agent behavior aimed at presenting certain performance to principals, was found to have a positive effect on company performance, whereas other mechanisms such as political connections and foreign ownership had no significant impact. This finding supports the view that the way management handles and reports financial performance, including through ratios such as DER, ROA, and ROE, is closely tied to the dynamics of the agency relationship between management and owners.

2. Debt to Equity Ratio (DER)

Debt to Equity Ratio (DER) is a ratio that compares a company's total debt with its total equity, indicating the extent to which the company's activities are funded by debt as opposed to shareholders' funds. A higher DER implies a heavier financial burden and greater risk for the company, as funding from external sources then clearly outweighs equity (Astuti & Fhitri, 2026).

The interpretation of DER for insurance companies differs somewhat from that in the non-financial sector, because most insurance liabilities are technical reserves and claim obligations to policyholders rather than debt financing in the usual sense. Nonetheless, DER remains relevant as an indicator of how much a

company relies on external funding to run its operations. In a study of insurance companies listed on the IDX, Muntamah et al. (2025) found that DER influences company profitability, suggesting that the management of funding structure also contributes to a company's capacity to generate profit.

Astuti and Fhitri (2026) presented more specific findings, namely that DER has a negative and significant effect on ROA among insurance sub-sector companies listed on the IDX, because the greater the share of debt relative to equity, the larger the financial burden, which ultimately squeezes profitability. These results underline the importance of keeping external and internal funding in balance so that the capital structure does not end up dragging down the company's earnings performance.

$$\text{DER} = \frac{\text{Liabilities}}{\text{Equity}} \times 100\%$$

3. Return on Asset (ROA)

Return on Asset (ROA) is a ratio that evaluates a company's capacity to generate profit from all of the assets it owns. The ratio reflects how efficiently management uses the company's resources, both current and fixed assets, to earn a profit (Karlina & Lestari, 2026).

A higher ROA indicates that a company is more capable of converting its assets into profit, which is why this ratio is often a key benchmark for investors and creditors in assessing management effectiveness. In the insurance industry, ROA also indicates how well a company manages its investment and operational assets while continuing to cover policyholder claims. Astuti and Fhitri (2026) found that the Debt to Asset Ratio has a positive and significant effect on ROA in the insurance sub-sector; this implies that debt-financed assets can still support profit generation when managed productively, whereas DER, by contrast, has a negative effect on ROA.

In other financial sectors, Hutabalian et al. (2024) showed that ROA has a positive and significant effect on bank profit growth, both individually and jointly with ROE. This finding offers a basis for suggesting that a similar pattern may also occur in insurance companies, given that ROA is likewise used to measure how efficiently assets are utilized to generate profits.

$$\text{ROA} = \frac{\text{Net Profit After Tax}}{\text{Total Assets}} \times 100\%$$

4. Return on Equity (ROE)

Return on Equity (ROE) is a ratio that gauges how much profit a company can produce from the equity invested by shareholders. It indicates how effectively management uses equity to maximize owners' profits and is frequently used as a key indicator of a company's investment appeal (Muntamah et al., 2025).

A high ROE is commonly read by the market as a positive signal, since the company appears able to obtain maximum returns from a relatively small capital

base. For insurance companies, ROE is an important indicator because it reflects the company's ability to stay attractive to shareholders while satisfying capital adequacy and solvency requirements. Hutabalian et al. (2024) found that ROE, both partially and jointly with ROA, has a positive and significant effect on profit growth, while Muntamah et al. (2025) showed that equity-based profitability in the insurance sector is also affected by the company's funding structure, including DER and operating cash flow.

$$ROE = \frac{\text{Net Profit After Tax}}{\text{Total Equity}} \times 100\%$$

5. Profit Growth

Profit growth describes the increase or decrease in profits from one period to the following one, and it is commonly used to evaluate a company's financial performance and prospects (Windiani & Priyanto, 2026). In practice, profit growth is computed by taking the difference between the current year's profit and the previous year's profit and dividing it by the previous year's profit, which gives the year-to-year percentage change in profit.

In an insurance company, profit growth reflects not only the results of underwriting activities on premiums received but is also shaped by how efficiently the funding structure is managed and by the productivity of assets and equity, as captured in ratios such as DER, ROA, and ROE. Marni and Lestari (2026) show that ROA and DER are associated with the market performance of insurance companies listed on the IDX, which in turn helps form investors' expectations of the company's future profit growth. The profit growth of insurance companies can therefore be regarded as the outcome of the interplay between funding policy and operational efficiency, which makes it appropriate to study using an approach that includes DER, ROA, and ROE together.

$$\text{Profit Growth} = \frac{\text{Net Profit t - Net Profit t-1}}{\text{Net Profit t-1}} \times 100\%$$

6. Previous Research

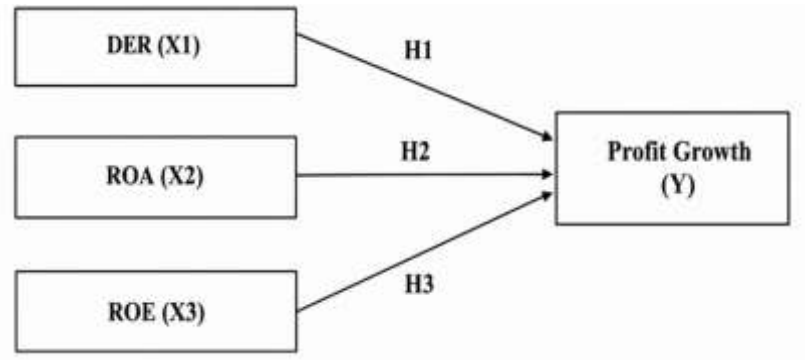
Several earlier studies have investigated the relationship of leverage ratios and profitability ratios with company profit growth, but their results are not entirely consistent and even tend to point in opposite directions. Muntamah et al. (2025) found that DER and operating cash flow influence the profitability of insurance companies listed on the IDX, and Astuti and Fhitri (2026) confirmed that in the same sub-sector, DER has a negative and significant effect on ROA. Conversely, in the cement sub-sector, Windiani and Priyanto (2026) found that DER has a positive and significant effect on profit growth, although when combined with TATO and CR the effect was not significant. The opposite direction of DER's effect in these two sectors indicates that findings on funding structure cannot be generalized across sectors and must be tested specifically in the insurance sector.

From the standpoint of profitability ratios, Hutabalian et al. (2024) showed that ROA and ROE, individually or jointly, have a positive and significant effect on banking profit growth, while a study by Marni and Lestari (2026) on insurance companies found that ROA and DER are related to stock price movements that reflect the market's expectations of future profits. Karlina and Lestari (2026) expressly noted fluctuations in ROA and inconsistent earlier findings on the factors influencing ROA in insurance companies, and therefore concluded that retesting with newer periods and samples is needed. The part played by profitability in company behavior and performance has also been shown to be substantial in other sectors; for example, Frianto et al. (2024) found that profitability has a negative and significant effect on accounting prudence in construction companies listed on the IDX, meaning that the more profitable a company is, the less likely it is to be conservative in its financial reporting. These findings reinforce the notion that profitability ratios such as ROA and ROE are related not only to the amount of profit but can also influence several aspects of a company's financial behavior, so their effect, including on profit growth in the insurance sector, merits further testing.

The inconsistent results across sectors, together with the limited number of studies that examine all three ratios simultaneously in the Indonesian insurance sector, provide the basis for this research to re-examine the effect of DER, ROA, and ROE on profit growth in 19 insurance companies listed on the IDX during the 2021-2025 period.

7. Hypothesis

Drawing on theories and the findings of earlier research, the hypotheses proposed in this study are as follows:



Picture 1. Conceptual Framework

H1: DER significantly affects the profit growth of insurance companies listed on the Indonesia Stock Exchange during the 2021-2025 period.
H2: ROA significantly affects the profit growth of insurance companies listed on the Indonesia Stock Exchange during the 2021-2025 period.
H3: ROE significantly affects the profit growth of insurance companies listed on the Indonesia Stock Exchange during the 2021-2025 period.

METHODOLOGY

This is a quantitative study with an associative approach, meaning it is used to test the relationships and effects among liabilities, equity, and investment on insurance company profits during the 2023-2025 period. The analytical technique is panel data regression, following the study by Fahlevi et al. (2023), and in this study it is extended by adding investment as a third independent variable.

1. Population and Sample

The population in this study comprises all insurance companies listed on the Indonesia Stock Exchange (IDX) from 2023 to 2025, which according to IDX data total 19 companies. The sample was drawn through purposive sampling, that is, the selection of samples on the basis of specific criteria suited to the research objectives. The criteria used are: (1) insurance companies that remained listed on the Indonesia Stock Exchange (IDX) throughout the 2023-2025 observation period; (2) companies that published complete annual financial statements and had them audited during that period; and (3) financial statements containing all the items required to measure the research variables, namely DER, ROA, ROE, and Profit Growth. Companies failing to satisfy any of these criteria are excluded from the sample.

Table 1. Sample Result

No.	Sample Selection Criteria	Amount
1	Insurance companies listed on the IDX throughout the research period	19
2	Companies with incomplete financial reports, meaning the data required to compute DER, ROA, ROE, and Profit Growth are not fully available	(3)
3	Total companies that meet the criteria and were used as research samples	16

The sample selection process found that 16 of the 19 insurance companies in the population met the criteria. Two companies could not be included in the sample, namely Asuransi Jiwa Syariah Jasa Mitra Abadi Tbk. and Maskapai Reasuransi Indonesia Tbk., because their financial reports did not fully contain the items required to calculate the Debt to Equity Ratio (DER), Return on Assets (ROA), Return on Equity (ROE), and Profit Growth, and they were therefore removed from the sample. The observation period covered three years, from 2023 to 2025. The total number of observations in this study is thus 48, obtained by multiplying 16 companies by three years of observation.

2. Types and Techniques of Data Collection

The study uses secondary data, taken from the annual reports and financial statements that each company publishes via the official Indonesia Stock Exchange website (www.idx.co.id) and the companies' own official websites. Data were gathered by the documentation method, which entailed accessing and downloading the audited financial reports for 2023, 2024, and 2025.

3.. Data Analysis Technique

Data are analyzed quantitatively with E-Views 14 software. Before estimation, the most appropriate panel data regression model is identified through three tests: the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test.

The Chow test serves to select the more suitable model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM): if the cross-section Chi-square probability is below 0.05, FEM is selected and the analysis proceeds to the Hausman Test; conversely, if the value exceeds 0.05, CEM is selected and the analysis proceeds to the Lagrange Multiplier Test. The Hausman Test then serves to choose between FEM and the Random Effect Model (REM): if the cross-section random probability is below 0.05, FEM is selected, while a value above 0.05 leads to the selection of REM. The Lagrange Multiplier (LM) Test, for its part, is used to compare CEM with REM when the Chow Test indicates that CEM is more suitable: if the Breusch-Pagan probability is below 0.05, REM is selected, whereas if it is above 0.05, CEM is selected. Once the most suitable panel data regression model has been determined, the next stage is the classical assumption tests, which ensure that the model satisfies the Best Linear Unbiased Estimator (BLUE) criteria. These tests comprise the normality, multicollinearity, and heteroscedasticity tests. The normality test checks whether the residuals are normally distributed; the multicollinearity test ensures there is no strong correlation among the independent variables; the heteroscedasticity test examines whether the residual variance is constant across all observation units; and the autocorrelation test checks whether the residuals of one period are correlated with those of the preceding period.

Next, the panel data regression is estimated with the selected model (CEM, FEM, or REM) to determine how strongly the independent variables—liabilities (X1), equity (X2), and investment (X3)—influence the dependent variable, namely profit (Y), both partially and simultaneously. The panel data regression model used is specified as follows:

$$Yit = \alpha + \beta 1X1it - \beta 2X2it - \beta 3X3it + \varepsilon it$$

Explanation: Yit denotes the profit growth of company i in year t; X1it is DER, X2it is ROA, and X3it is ROE of company i in year t; α is a constant; β1, β2, and β3 are regression coefficients; and εit is the error term. The influence of each independent variable on the dependent variable is tested partially with the t-test, while the simultaneous influence of liabilities, equity, and investment on profit is tested with the F-test. In addition, the contribution of the three independent variables to profit is measured by the coefficient of determination, which in panel data regression is generally represented by the Adjusted R-squared of the selected model.

RESULT

1. Choosing a Panel Data Regression Model

Before panel data regression is estimated, the most appropriate model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) is first determined using the Chow Test, Hausman Test, and/or Lagrange Multiplier (LM) Test, with the assistance of E-Views 14.

Chow Test

The Chow test is used to select between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). Data analysis in E-Views 14 generates a cross-section Chi-square probability that serves as the decision basis: if the value is < 0.05, the Fixed Effect Model (FEM) is selected and testing proceeds to the Hausman Test; if the value is > 0.05, the Common Effect Model (CEM) is selected and testing proceeds to the Lagrange Multiplier Test.

Table 2 Chow Test Results

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

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.539857	(15,29)	0.8953
Cross-section Chi-square	11.820644	15	0.6926

Source: Eviews 14 Processed Data

The Chow Test results in Table 2 show a Cross-section Chi-square probability of 0.6926. As this value is greater than the 0.05 significance level, the Common Effect Model (CEM) is selected. Model selection then proceeds to the Lagrange Multiplier (LM) Test to establish which of the Common Effect Model (CEM) and the Random Effect Model (REM) fits better.

Uji Hausman

The Hausman test is carried out when the Chow Test selects a Fixed Effect Model (FEM), in order to determine whether FEM or the Random Effect Model (REM) is more appropriate. The data analysis yields a random cross-section probability that forms the basis of the decision: if the value is < 0.05, the Fixed Effect Model (FEM) is selected; if the value is > 0.05, the Random Effect Model (REM) is select

Table 3 Hausman Test Results

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.146273	3	0.2461

Source: Eviews 14 Processed Data

As shown in Table 3, the Hausman test produces a random cross-section probability of 0.2461. This value exceeds the 0.05 significance level, so H_0 is accepted and the Random Effect Model (REM) is the selected model.

Lagrange Multiplier (LM) Test

The Lagrange Multiplier (LM) test is performed when the Chow Test indicates that the Common Effect Model (CEM) is more suitable, to determine whether CEM or the Random Effect Model (REM) is more appropriate. The data processing yields the Breusch-Pagan probability as the decision basis: if it is < 0.05, the Random Effect Model (REM) is selected; if it is > 0.05, the Common Effect Model (CEM) is selected.

Table 4 Lagrange Multiplier Test Results

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	4.667679 (0.0307)	0.120274 (0.7287)	4.787953 (0.0287)
Honda	-2.160481 (0.9846)	0.346805 (0.3644)	-1.282463 (0.9002)
King-Wu	-2.160481 (0.9846)	0.346805 (0.3644)	-0.415272 (0.6610)
Standardized Honda	-1.897806 (0.9711)	0.974422 (0.1649)	-4.938342 (1.0000)
Standardized King-Wu	-1.897806 (0.9711)	0.974422 (0.1649)	-2.923705 (0.9983)
Gourieroux, et al.	--	--	0.120274 (0.5998)

Source: Eviews 14 Processed Data

According to the Lagrange Multiplier (LM) Test in Table 4, the Breusch-Pagan probability in the Both column is 0.0287. Because this is smaller than the 0.05 significance level, H_0 is rejected and H_1 is accepted. This shows that a random effect exists in the panel data, so the Random Effect Model (REM) is more appropriate than the Common Effect Model (CEM). The LM Test results therefore establish the Random Effect Model (REM) as the selected model.

2. Classical Assumption Test

The classical assumption test is performed to ensure that the panel data regression model used satisfies the Best Linear Unbiased Estimator (BLUE) properties and is therefore suitable for further analysis.

Normality Test

The normality test is intended to determine whether the research data are normally distributed. In this study, the assessment relied on Skewness and Kurtosis values, under the rule that data are regarded as normally distributed if Skewness lies in the range of −2 to +2 and Kurtosis lies in the range of −7 to +7. This rule follows Kurnia and Akbar (2023), who used Skewness and Kurtosis as the basis for their normality test.

Table 5. Normalitas Test Results

	PERTUMB...	DER	ROA	ROE
Mean	3.181829	2.141964	66.02094	23.87303
Median	0.109951	1.624671	50.49891	19.51762
Maximum	64.48053	7.828366	467.0457	81.70263
Minimum	-24.06686	0.440171	-63.73162	-17.87594
Std. Dev.	15.77322	1.793435	74.10527	19.63411
Skewness	2.547631	1.701382	3.373716	0.961643
Kurtosis	9.551099	5.488094	19.14681	4.140927
Jarque-Bera	137.7572	35.53883	612.4947	10.00148
Probability	0.000000	0.000000	0.000000	0.006733
Sum	152.7278	102.8143	3169.005	1145.905
Sum Sq.	12179.30	371.3958	467325.5	45474.64
Sum Sq. Dev.	11693.35	151.1713	258104.8	18118.41
Observations	48	48	48	48

Source: Eviews 14 Processed Data

The normality test results indicate that the Growth variable has a Skewness of 2.547631 and a Kurtosis of 9.551099, so it fails to meet the normality criteria. DER has a Skewness of 1.701382 and a Kurtosis of 5.488094, so it satisfies the criteria. ROA has a Skewness of 3.373716 and a Kurtosis of 19.14681, so it fails to satisfy the criteria. ROE, meanwhile, has a Skewness of 0.961643 and a Kurtosis of 4.140927, so it satisfies the criteria. Hence, according to the Skewness and Kurtosis criteria, only DER and ROE are normally distributed, while Growth and ROA are not.

Multicollinearity Test

The multicollinearity test is carried out to check whether a high linear correlation exists among the independent variables in the model. The data processing results show that the correlation coefficients among the independent variables (ROA, ROE, and DER) are below the 0.80 threshold.

Table 5. Multicollinearity (Correlation Matrix) Test Results

	DER	ROA	ROE
DER	1.000000	0.173761	-0.267664
ROA	0.173761	1.000000	0.785354
ROE	-0.267664	0.785354	1.000000

Source: Eviews 14 Processed Data

The correlation matrix presents the correlation coefficients among the independent variables: 0.173761 between ROA and DER, 0.785354 between ROA and ROE, and -0.267664 between DER and ROE. All of these fall below the 0.80 threshold. It can therefore be concluded that the independent variables in the model show no sign of multicollinearity, so ROA, ROE, and DER can be used together in the regression analysis.

Heteroskedasticity Test

The heteroskedasticity test is performed with the Glejser Test to examine whether the residual variance differs across observation units. Based on the output, the model is regarded as free from heteroskedasticity if the probabilities of all independent variables are > 0.05.

Table 6. Heteroskedasticity (Glejser Test) Test Results

Dependent Variable: ABSRESID
Method: Panel EGLS (Cross-section random effects)
Date: 09/24/26 Time: 02:00
Sample: 2023 2025
Periods included: 3
Cross-sections included: 16
Total panel (balanced) observations: 48
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.547370	4.702713	1.179611	0.2445
DER	2.457077	1.316007	1.867069	0.0686
ROA	-0.023890	0.042974	-0.555917	0.5811
ROE	-0.049534	0.177307	-0.279368	0.7813

The Glejser test yielded probabilities of 0.0686 for DER, 0.5811 for ROA, and 0.7813 for ROE. All of these values exceed 0.05, so it is concluded that the regression model contains no heteroskedasticity. This indicates that the residual variance is relatively constant and that the model satisfies the assumption of freedom from heteroskedasticity for the subsequent regression analysis.

3. Model Feasibility Test Results

The panel data regression estimation results of the selected model, processed using E-Views 14, are presented in Table 7 below.

Table 7. Common Effect Model Results

Dependent Variable: PERTUMBUHAN_LABA
Method: Panel EGLS (Cross-section random effects)
Date: 09/24/26 Time: 01:28
Sample: 2023 2025
Periods included: 3
Cross-sections included: 16
Total panel (balanced) observations: 48
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.252543	6.128689	-1.020209	0.3132
DER	4.729601	1.741476	2.715858	0.0094
ROA	-0.076353	0.065598	-1.163967	0.2507
ROE	0.181990	0.253053	0.719179	0.4758

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	15.78713	1.0000

Weighted Statistics

R-squared	0.209291	Mean dependent var	3.181829
Adjusted R-squared	0.155379	S.D. dependent var	15.77322
S.E. of regression	14.49610	Sum squared resid	9246.030
F-statistic	3.882096	Durbin-Watson stat	2.339537
Prob(F-statistic)	0.015129		

Unweighted Statistics

R-squared	0.209291	Mean dependent var	3.181829
Sum squared resid	9246.030	Durbin-Watson stat	2.339537

Source: Eviews 14 Processed Data

The estimation yielded an F-statistic of 3.882096 with a Prob (F-statistic) of 0.015129. As this is smaller than the 0.05 significance level (0.015129 < 0.05), the regression model is considered appropriate for explaining the simultaneous influence of the independent variables on the dependent variable. In addition, an R-squared of 0.209291 means that DER, ROA, and ROE together account for 20.93% of the variation in profit growth, while the remaining 79.07% is explained by other variables outside the model. The Adjusted R-squared of 0.155379 indicates that, after adjusting for the number of independent variables and observations, the model's explanatory power for variation in profit growth is 15.54%. Given that the Prob(F-statistic) of 0.015129 < 0.05, the regression model is judged to be suitable and can be used for further analysis of the influence of DER, ROA, and ROE on profit growth.

1. t-test (Partial)

The t-test results in Table 6 show that DER has a coefficient of 4.729601, a t-statistic of 2.715858, and a probability of 0.0094. As this probability is below 0.05, DER has a positive and significant effect on profit growth, so H1 is accepted. ROA has a coefficient of -0.076353, a t-statistic of -1.163967, and a probability of 0.2507; because this is above 0.05, ROA has no significant effect on profit growth, so H2 is rejected. ROE, meanwhile, has a coefficient of 0.181990, a t-statistic of 0.719179, and a probability of 0.4758, which is likewise above 0.05, so ROE has no significant effect on profit growth and H3 is rejected.

2. F Test (Simultaneous)

The panel data regression estimation yielded an F-statistic of 3.882096 with a probability (Prob F-statistic) of 0.015129, which is smaller than the 5% significance level (0.015129 < 0.05). This means that the Debt to Equity Ratio (DER), Return on Assets (ROA), and Return on Equity (ROE) have a significant simultaneous effect on profit growth. Put differently, the regression model is able to explain the simultaneous influence of DER, ROA, and ROE on the profit growth of insurance companies listed on the Indonesia Stock Exchange during the 2023-2025 period, and these three independent variables are, taken together, significantly associated with changes in profit growth over the study period.

3. Determination Coefficient (R^2)

The coefficient of determination (R-squared) is 0.209291, meaning that approximately 20.93% of the variation in profit growth can be explained jointly by DER, ROA, and ROE, while the remaining 79.07% is explained by other variables outside the model. The adjusted R-squared of 0.155379 shows that, after accounting for the number of independent variables and observations, the model explains 15.54% of the variation in profit growth. This figure suggests that the model reasonably captures part of the influence of funding structure and profitability on profit growth, although other factors outside the model still play a role.

DISCUSSION

1. The Effect of DER on Profit Growth

Hypothesis testing shows that the Debt to Equity Ratio (DER) has a positive and significant effect on the profit growth of insurance companies, with a regression coefficient of 4.729601 and a probability of 0.0094. Because this probability is below the 5% significance level (0.0094 < 0.05), DER has a significant effect on profit growth. The positive coefficient implies that a rise in DER is generally accompanied by a rise in profit growth, so the first hypothesis (H1) is accepted. Put differently, the higher an insurance company's DER, the higher the profit growth it experiences during the study period. This finding indicates that a larger proportion of liabilities to equity in insurance companies does not necessarily signal a condition that hinders profit growth. This positive relationship can be understood by considering the nature of insurance business activities, whose liability structure differs from that of companies in other sectors. In an insurance company, liabilities mainly relate to obligations to policyholders and to technical reserves arising from the collection of premiums and the provision of coverage to the insured. For this reason, a rise in liabilities does not always signify higher debt as it does in non-financial companies. The growth of these obligations can accompany business expansion, particularly when the company succeeds in collecting more premiums. Larger premium inflows give the company funds that can be managed and invested in various investment instruments or put to use in income-generating operations. Thus, the increase in DER in insurance companies within the context of this study may be connected to the expansion of business activities and higher premium volume, and does not merely indicate greater financing risk. If the rise in liabilities is accompanied by an ability to manage the collected funds effectively, this condition can lift income and ultimately support the company's profit growth. This can explain the positive direction of the relationship between DER and profit growth in this study.

Viewed through agency theory, the basis of this research, this relationship points to the importance of oversight mechanisms over how management handles company resources. In its operations, the management of an insurance company administers funds from policyholders and other parties, so it must do so responsibly and in compliance with applicable regulations. Regulatory supervision, including rules on the soundness and adequacy of an insurance company's capital, can encourage management to handle liabilities and pooled funds in a more prudent manner. Accordingly, a rise in liabilities does not automatically reduce profits; on the contrary, it can form part of business activities that, when managed effectively, support better company performance. These results are also consistent with the study by Windiani and Priyanto (2026) on cement subsector companies, which found that DER has a positive and significant effect on profit growth. This similarity shows that a rise in DER does not always go together with a decline in profit performance. When liabilities are managed effectively and used for productive activities, this additional source of funding can be associated with higher profits. However, liabilities in insurance companies are distinctive because they are closely tied to premium collection and

obligations to policyholders. On that basis, the positive and significant effect of DER on profit growth in this study shows that a higher DER among insurance companies during 2023-2025 is associated with higher profit growth. This finding suggests that DER in insurance companies should be interpreted in light of the liability structure and business model of the insurance industry, so an increase in DER cannot automatically be read as a growth in financial burden that harms profit growth.

2. The Effect of ROA on Profit Growth

The ROA coefficient is negative, at -0.076353, with a probability of 0.2507, which is above 0.05, so ROA has no significant effect on profit growth and H2 is rejected. In the researcher's view, this result is understandable because ROA measures the efficiency of asset use in aggregate and on an annual basis, whereas an insurance company's profit is strongly influenced by underwriting results, namely the difference between premium income and claim expenses, which fluctuate from year to year. A rise in ROA in a given period does not necessarily translate into profit growth in the same period, since it may be offset by a surge in claim expenses or changes in technical reserves that the ROA ratio does not capture. In addition, some of an insurance company's assets are placed in long-term investment instruments whose returns are realized only in the following period, so asset efficiency in the current year does not always show up immediately in profit growth for the same year. This finding is in line with Karlina and Lestari's (2026) observations on ROA fluctuations and the inconsistency of earlier research results on ROA in insurance companies. The researchers therefore suggest that ROA should not be the sole reference for predicting an insurance company's profit growth; it should be complemented by other operational indicators such as the claims ratio and underwriting results.

3. The Effect of ROE on Profit Growth

The ROE coefficient is positive, at 0.181990, with a probability of 0.4758, which is far above 0.05, so ROE has no significant effect on profit growth and H3 is rejected. In the researcher's view, this finding relates to the role of equity in insurance companies, which differs somewhat from that in other sectors. Most of an insurance company’s equity functions as a solvency buffer (risk-based capital) to ensure the ability to pay policyholder claims, rather than simply serving as working capital rotated to pursue short-term profits. When most of the equity is set aside to satisfy the capital adequacy requirements imposed by regulators, its efficiency in generating annual profits becomes less visible from the ROE ratio alone. This finding is consistent with Sa’adah & Widyastuti (2023), who studied insurance sub-sector companies listed on the Indonesia Stock Exchange during 2018-2022 and likewise found that ROE had no significant effect on profit growth. The consistency of these results across different research periods strengthens the suspicion that ROE is not a sufficiently sensitive indicator for explaining profit growth in the insurance sector, as also noted by Karlina and Lestari (2026) regarding the inconsistency of profitability ratio research results in this sector.

4. Overall Contribution of the Model

The F-test shows that DER, ROA, and ROE together have a significant impact on profit growth, with an F-statistic of 3.882096 and a probability of 0.015129. An R-squared of 20.93% and an Adjusted R-squared of 15.54% indicate that the model has fairly good explanatory power. Notably, even though only DER is significant individually, all three variables still contribute meaningfully to profit growth when combined. According to the researchers, this condition shows that funding structure and profitability ratios should be viewed as a unified whole that complement each other in portraying an insurance company's financial situation: DER acts as the main driver, while ROA and ROE serve as balancing factors that strengthen the overall model, even though the effect of each is not yet strong enough on its own. This finding is consistent with Muntamah et al. (2025), who showed that DER and operating cash flow influence an insurance company's profitability, as well as with Hutabalian et al. (2024), who demonstrated that ROA and ROE together have a significant effect on profit growth in the banking sector. Although the sectors differ, this similar pattern supports the idea that leverage and profitability ratios in combination are better examined simultaneously than separately when explaining profit growth in the financial services industry, including insurance.

CONCLUSIONS AND RECOMMENDATIONS

Based on panel data regression analysis using the Random Effect Model (REM) in E-Views 14 on 16 insurance companies listed on the Indonesia Stock Exchange for the 2023-2025 period, it is concluded that the Debt to Equity Ratio (DER) has a positive and significant effect on profit growth, so H1 is accepted. By contrast, Return on Assets (ROA) and Return on Equity (ROE) have no significant partial effect on profit growth, so H2 and H3 are rejected. All three variables, however, were found to have a significant simultaneous effect on profit growth, with an Adjusted R-squared of 15.54%. This conclusion also fulfills the research objective, which is to examine the partial and simultaneous effects of DER, ROA, and ROE on the profit growth of insurance companies listed on the Indonesia Stock Exchange for the 2023-2025 period.

These findings show that the funding structure represented by DER plays a more dominant role than asset-based and equity-based profitability ratios in explaining profit growth in the insurance sector. For insurance company management, this result can serve as an evaluation point, indicating that the management of funding structure, including the proportion of premiums and technical reserves, deserves greater attention in order to boost profit growth, without neglecting asset and equity efficiency. Investors and prospective investors are advised not to depend solely on ROA or ROE when assessing an insurance company's profit growth prospects, and to take funding structure and underwriting performance into account more comprehensively. For regulators, particularly the Financial Services Authority, these findings may provide input that supervision of insurance companies' funding structures remains important given its significant role in the industry's profit growth.

Future studies are advised to incorporate other relevant independent variables, such as liquidity ratio, premium growth, investment returns, and operational efficiency, which could help explain the profit growth of insurance companies. Researchers could also lengthen the observation period and enlarge the sample to make the results more comprehensive. Furthermore, other analytical methods or regression models could be applied as a comparison to test the consistency of findings on the effects of DER, ROA, and ROE on profit growth.

FURTHER STUDY

This study has a number of limitations. First, the independent variables only include three financial ratios (DER, ROA, and ROE), so the model can only explain about 15.54% of the variation in profit growth, while the rest is influenced by other factors outside the model, such as premium income, claim ratios, combined ratio, and investment returns. Second, the observation period is relatively short, just three years (2023-2025), so the results may not necessarily reflect long-term patterns. Third, life insurance and general insurance companies were analyzed in a single model without distinguishing their characteristics, even though the two subsectors have different risk structures and revenue patterns. Therefore, future research is recommended to add variables that are more specific to the insurance industry, such as claims ratio, combined ratio, or investment returns, to improve the clarity of the model, extend the observation period, and separate or compare life insurance and general insurance, so that the factors driving profit growth of insurance companies in Indonesia can be seen more clearly.

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