

Determinants of Financial Distress of General Insurance Companies In Indonesia with Loss Ratio As a Moderator Variable

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Abstract:- The research carried out aims to obtain analysis results related to the determinants of financial distress in the general insurance industry which is licensed and registered with the Financial Services Authority in Indonesia by using variable indicators of financial performance ratios regulated in the POJK (Financial Services Authority Regulations), namely the Underwriting Ratio, Liquidity Ratio, Investment to Technical Ratio, Risk Based Capital (RBC), Premium Growth Ratio to potential Financial Distress with Loss Ratio as a moderator variable. There for Indonesian general insurance for the period 2020 to 2022 were used as a population and obtained a sample size of 33 general insurance companies. Use of Logistic Regression and Moderated Regression Analysis (MRA) methods as analysis techniques. The analysis results showed that the Underwriting Ratio, Liquidity Ratio, Risk Based Capital had a significant negative effect on the potential for financial distress and the Loss ratio had a moderating role (strengthening) the influence of the Underwriting Ratio, Liquidity Ratio, RBC on the potential for financial distress in general insurance companies in Indonesia.

Keywords:- Financial Distress, General Insurance, Underwriting Ratio, Liquidity Ratio, Investment to Technical Ratio, Risk Based Capital, Premium Growth, Loss Ratio.

I. INTRODUCTION

There are 136 insurance companies that have insurance business permits at the Financial Services Authority (OJK) in 2022. The Indonesian General Insurance Association (AAUI) study states that from 2019 to 2020, there was a drop in the financial performance of general insurance businesses, characterized by negative growth in underwriting. The number of business lines in general insurance companies has 14 business lines, of which in 2020 the total premium recorded from direct business was IDR 67 trillion. 75% of the premiums obtained came from the property line, 27% from the motor vehicle line, 22% from the credit insurance line, 15% from the personal accident (P.A) line & 11% from the health line. The property, motor vehicle and credit insurance business lines are the largest sources of business in the general insurance industry because these three products must be used to protect banking products, where the three in general insurance are closely related to the banking business which

can have a domino effect on the performance of the banking industry in particular. on credit performance.

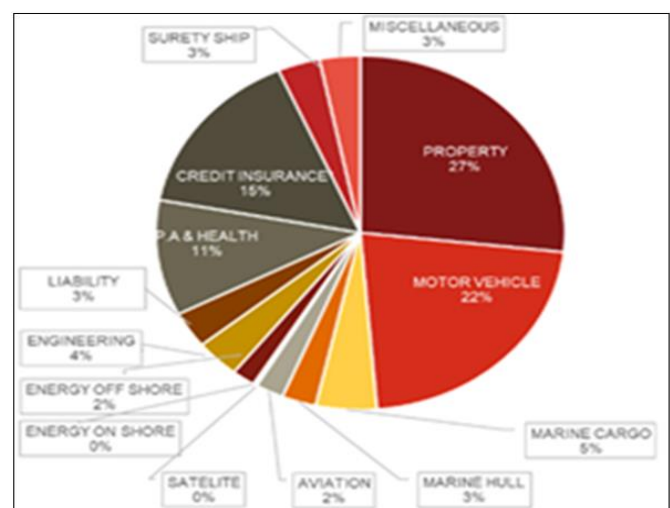


Fig 1 Market Share Per Business Line Based on Gross Premiums (Direct Business) in 2020.

Based on recorded data, starting in 2017, the loss ratio level in general insurance companies has continuously increased, with the highest data occurring in 2020 at 60%. This was triggered by a higher claim growth rate than premium growth. There are three biggest contributors to the increase in loss ratio, namely the property business line, motor vehicle business line and credit insurance. Data shows a significant increase in the loss ratio in the property business line, increasing by 27% to 60%, which was triggered by a soaring increase in claim costs due to the high number of flood disaster claims in the 2020 period. Meanwhile, the increase in the loss ratio in the credit insurance business line has increased to the level 85%. The decline in direct business premiums that occurred in 2020 was the main cause caused by the impact of weakening banking credit distribution due to the onset of the Covid-19 pandemic era in Indonesia. Based on data recorded in the last five year period, the Loss ratio for the credit insurance business line is not absolutely higher than the overall Loss ratio, but in 2018 the Loss ratio for the credit insurance business line showed a significant increase. With the potential for a high premium market share in the credit business line, the phenomenon of a high increase in loss ratio needs to be watched out for by the insurance industry and business players and users of insurance coverage services.

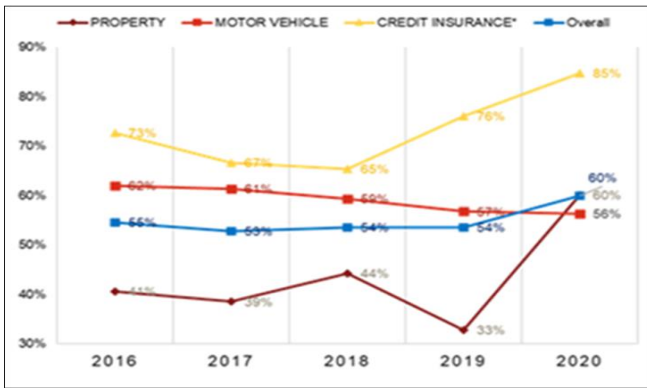


Fig 2 Loss Ratio (Direct Business) for the 2017-2020 Period

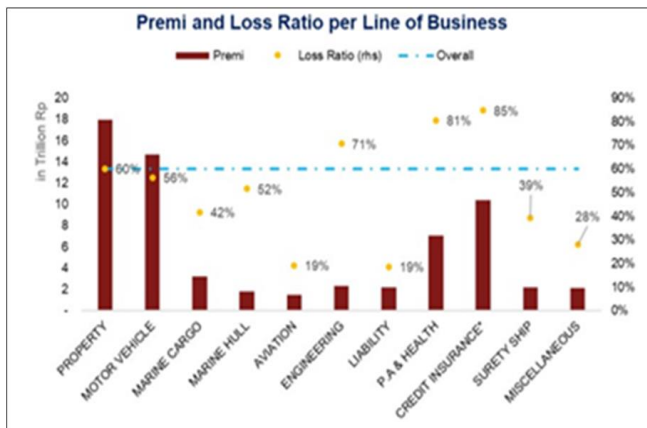


Fig 3 Premium and loss Ratio per Business Line in 2020

Based on the historical data in the table above for the last five years, there has been an increase in premium income from direct business over the last five years, which is in line with the increase in claims. This happened the other way around, where in 2019 there was a surge in claims on credit insurance lines which was higher than the increase in premiums obtained, while this was followed by a decrease in premiums that was greater than the decrease in claims that occurred. Therefore, from 2019 to 2020, the profitability of credit business lines experienced pressure. 70% of general insurance companies' main business is concentrated in the credit sector. This is based on the premium portion per sector of the total premium, the company recorded a high Loss Ratio. In this regard, this research concentrates on a comprehensive analysis of general insurance in the credit line sector which is ranked third highest as a contributor to the highest premiums from the total general insurance premiums in Indonesia so that if there is a decline in performance in this sector, it will greatly affect general performance of the insurance industry as a whole.

In principle, because credit insurance covers credit risk or the risk of default from creditors, a regulatory role is needed to provide a higher level of capital for companies that have credit insurance businesses and there needs to be other provisions regarding possible losses or potential claims in credit insurance. future. Based on the data, it was found that the majority of companies that have a high level of loss ratio in the credit insurance business line actually have a low level of capital (equity). Throughout 2016-2019, premium developments and economic growth showed a unidirectional

movement but tended to decline. Apart from that, developments in credit insurance premiums also tend to be in line with developments in banking credit. Until 2020, along with the contraction in economic growth due to the Covid-19 pandemic crisis, credit insurance premium levels also experienced a contraction.

Looking further, there was a development in nominal claims in the pre-pandemic period for credit insurance claims which was in line with the level of development of risky banking credit. Furthermore, in 2020, claims for credit insurance rose dramatically in proportion to high lending risks. The following is a description of the collectability status of banking credit based on the guidelines published by the Financial Services Authority number 40/POJK.03/2019, which governs Asset Quality Assessment for Commercial Banks.:

Table 1 Banking Credit Collectability Categories

Collectability	Category
Collectability - 1	Very Good
Collectability - 2	Under special attention
Collectability - 3	Not Good
Collectability - 4	Bad
Collectability - 5	Very Bad

Collectibility-1 to Collectibility-2 status is classified as Performing Loan (PL), while Collectibility-3 to Collectibility-5 is classified as Non-Performing Loan (NPL). In Credit Insurance, on average banks transfer the risk of default to insurance starting from call 3 – 5 (according to the agreement stated in the Cooperation Agreement and stated in the Credit Insurance policy) which shows that the insurance sector is carrying out its role in mitigating risky credit (loan at risk) with the aim of not turning into bad credit or the Non-Performing Loan (NPL) category. This condition shows that the insurance sector has an important role for the banking sector, especially in mitigating and reducing credit risk.

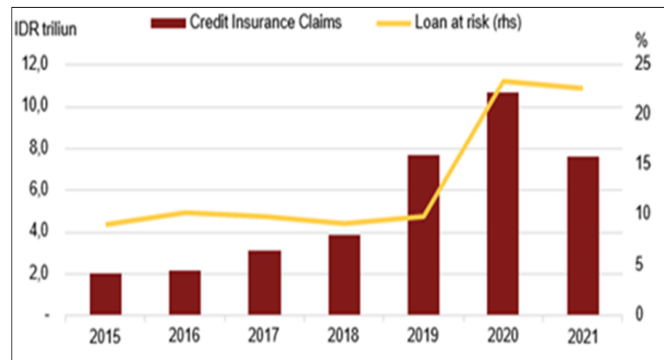


Fig 4 Indonesian Credit and Banking Insurance 2015-2021

Several factors cause degradation in the quality of premium production and claims contributions in general insurance companies, one of which is the potential for the company's capital structure to be insufficient or not meeting the provisions required by the regulator, the amount of liquidity that the business has for short-term obligations, its

solvency, and any losses. anomalies brought on by the COVID-19 pandemic, which can have an impact on a company's profitability level. If management does not take prompt action to address these issues and save the company, there is a chance that the business will face financial difficulties, which could result in an unexpected bankruptcy for the stakeholders.. interest. In predicting financial performance in the insurance industry, the financial performance ratio calculation method is used, namely the Early Warning System (EWS), which includes, among other things, profitability, liquidity, solvency ratios, premium stability ratios and technical ratios and premium growth. This is contained in the guidelines for Statement of Financial Accounting Standards (PSAK) No. 28, namely about General Insurance Accounting.

II. THEORITICAL REVIEW

➤ *Signaling Theory*

The idea that signals supply signals—that is, that "the sender tries to provide relevant pieces of information that can be utilized by the recipient"—was initially presented by Spence (1973) in his research on job market signaling. Additionally, Ross (1977) found in his research that leaders of companies with better knowledge of their business will be more inclined to share that knowledge with prospective investors, which will raise the price at which their company's shares can be purchased. In signal theory, it shows companies how the method of providing signals to users of financial reports should be explained.

➤ *Agency Theory*

Jensen and Meckling (2012) argue that the definition of Agency Theory is a relationship or contract between one or more parties (principals) that involves another party (agent). There is a separation of interests between principals and agents in the company. Where the explanation of the principal is the person who invests capital in the company, while the explanation of the agent is the person who works and provides information to the principal. Owners and managers have an unbalanced connection as a result of agency theory. This requires the concept of excellent corporate governance, which aims to strengthen the business and reduce the possibility of unequal relationships between owners and management.

➤ *Financial Distress*

Platt and Platt (2002) defined financial distress as the state in which a business is experiencing financial difficulties by indicating the point at which the company's financial income declines prior to liquidation or bankruptcy. This theory was applied by the researcher in this study with the focus of general insurance. Zamachsyari and Amanah (2016) state that there are a number of financial distress theories that, in the opinion of other specialists, supplement knowledge. These theories include the following: financial distress is a situational indicator of a company's financial difficulties and serves as a warning sign before bankruptcy.

➤ *Insurance*

According to the legal framework of the Republic of Indonesia Number 2 of 1992, which governs the insurance industry, an insurance policy is defined as a contract in which two or more parties agree that the insurer will bind itself to the insured in exchange for payment of an insurance premium. In Indonesia, the many kinds of insurance are:

- General Insurance (General Insurance) is a company that offers insurance services and covers risks related to losses, benefits forfeited, and third-party legal liability resulting from unforeseen circumstances;
- Policy for Life Insurance is an insurance service company that offers protection against risks associated with an insured person's life or death;
- Reinsurance (Reinsurance) is an insurance services company that offers insurance protection against hazards that life and general insurance businesses must confront.
- According to PSAK No. 28, the following financial performance ratios are used in assessing the financial condition of an insurance company:

➤ *Underwriting Ratio (UWR)*

Is a ratio used to calculate the underwriting income obtained and used with the aim of measuring the level of profit from the insurance business. If the result of this ratio is negative, it means that the tariff charged is too high. The Underwriting Ratio can be measured as follows :

$$\frac{\text{Underwriting Result}}{\text{Earning Premium}} \times 100 \%$$

➤ *Loss Ratio*

The ratio is used to calculate and show historical data on claims that have occurred at the company and to measure the quality of the insurance covered. If the Loss Ratio is high, it provides information about weak insurance and poor risk coverage. A good loss ratio value is below 100% or below the premium income value. Loss ratio can be measured as follows:

$$\frac{\text{Claim Occurs}}{\text{Earning Premium}} \times 100 \%$$

➤ *Liquidity Ratio*

The ratio is used to calculate how liquid a company is in meeting its current or short-term obligations. Liquidity Ratios can be measured as follows:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100 \%$$

➤ *Investment To Tehnical Reserve Ratio (ITR)*

A ratio that shows the extent to which the technical obligations set by the insurance company are reflected in the investment. If the ratio results are low, it indicates that there is a tendency for estimates of bills to be borne by oneself that are not supported by adequate funding. The premiums that have not yet become income are less reflected in investments. The Investment to Technical Ratio can be measured as follows:

$$\frac{\text{Investment}}{\text{Technical Liability}} \times 100 \%$$

➤ *Risk Based Capital (Rbc)*

POJK regulation number 71/POJK.05/2016, which addresses the financial stability of insurance and reinsurance firms, serves as the foundation for the ratio used to calculate the size of an insurance company's solvency level. In an effort to determine how much money is required in order to foresee the possibility of loss resulting from anomalies in the handling of assets and obligations. Insurance firms and reinsurance businesses are required to maintain a minimum limit of solvency ratio (RBC) of 120% or at least 100%, according to the applicable regulatory rules. In this instance, an insurance company's solvency ratio indicates its degree of security or financial health; the higher the ratio, the better the company's financial standing. It Can be measured as follows:

$$\frac{\text{Solvability}}{\text{Minimum Level Of Solvability}} \times 100 \%$$

Table 2 Score and Evaluation of Risk Based Capital

RBC (%) Ratio	Score	Criteria
X > 150%	15	Very Good
150% > x > 120%	12	Good
120% > x > 110%	8	Enough
110% > x > 100%	4	Not Enough
X < 100%	0	Very Bad

➤ *Premium Growth Ratio*

According to Brigman Houston (2009), a shift (increase or decrease) in the total assets possessed by the business is referred to as firm growth. This demonstrates the business's capacity to grow its assets or sales over time. The premium assessment that is obtained can be based on the rise of premium income in recent years rather than just the quantity of premium income at a particular level position. Premium growth during the previous five years (SE OJK. 05/2019) is one example. The Premium Growth Ratio displays the percentage rise in premiums from the prior year's performance to the current year's. The minimum premium growth ratio typically has a limit of 23%. Should the growth be excessively small and/or fall short of the average. The ratio can be measured as follows:

$$\frac{\text{Increase/Decrease in net premium}}{\text{Last year's net premium}} \times 100 \%$$

➤ *Hypothesis Development*

In this research, the author refers to several research results to enrich the author's research study material. Some of the journals referenced in this research are as follows:

- Letiana & Hartono's research (2023) shows that financial distress is negatively impacted by Return on Assets (ROA). This demonstrates that a company's likelihood of going through financial difficulty decreases with increasing ROA. Sales Growth, DAR, and CR are ineffective in preventing financial hardship.

- The research findings of Oktaviani & Listiantara (2022) indicate that whilst liquidity, leverage, and sales growth have no bearing on financial hardship, profitability has a negative effect on it.
- According to Rismala's research findings from 2022, liquidity and business expansion have no bearing on profitability; capital structure and solvency do. All three of them work together at the same time. While liquidity, solvency, and firm development have no bearing on financial hardship, capital structure and profitability do, and their combined influence will be felt. Although profitability often acts as a mediator between capital structure and financial troubles, it is not necessarily a mediator between liquidity, solvency, and corporate growth. But financial troubles are influenced by profitability.
- The findings of Suharti's research (2020) indicate that financial distress is significantly influenced negatively by the current ratio, debt-to-asset ratio, and return on assets. Additionally, the results of the Moderated Regression Analysis indicate that the relationship between the three independent variables and financial distress in manufacturing companies is significantly moderated by company size.
- Ethiopian insurance firms' evidence about financial suffering and its causes. Isayas's (2021) research reveals a negative correlation and a considerable negative influence on financial distress between profitability, company size, leverage, and age. In the meantime, the financial troubles of insurance businesses are positively correlated with tangible assets and loss ratios in a statistically meaningful way.

➤ *Research Hypothesis*

A hypothesis is defined as a temporary answer or guess whose truth cannot be proven. In this research, a hypothesis formulation was obtained to be tested for its truth referring to the theory above, the results of which will show that the hypothesis resulting from this research is accepted or rejected, as follows:

- H1: It is suspected that the Underwriting Ratio has a negative influence on financial distress.
- H2: It is suspected that the Liquidity Ratio has a negative influence on financial distress.
- H3: It is suspected that investment in Technical Reserved Companies has a negative influence on financial distress.
- H4: It is suspected that the Premium Growth Ratio has a negative influence on financial distress.
- H5: It is suspected that Risk Based Capital has a negative influence on financial distress.
- H6: It is suspected that the Loss ratio is able to moderate the influence of the Underwriting Ratio on financial distress.
- H7: It is suspected that the Loss ratio is able to moderate the influence of the Liquidity Ratio on financial distress.
- H8: It is suspected that the Loss ratio is able to moderate the influence of the Investment to Technical Reserved Ratio on financial distress.

- H9: It is suspected that the Loss ratio is able to moderate the influence of Risk Based Capital on financial distress
- H10: It is suspected that the Loss ratio is able to moderate the influence of the Premium Growth Ratio on financial distress.

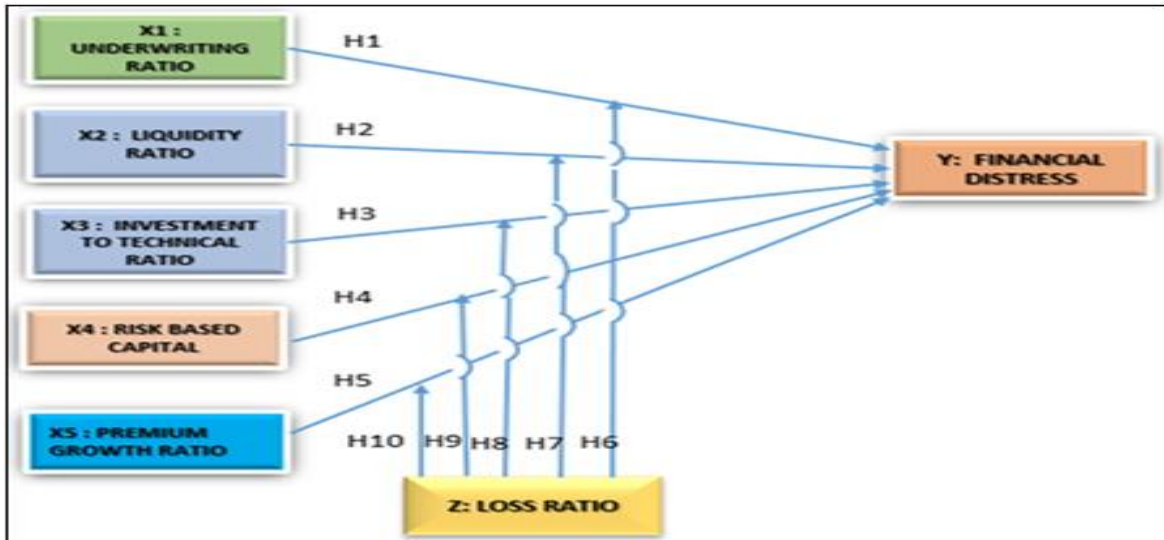


Fig 5 Research Hypothesis

III. RESEARCH METHODOLOGY

➤ *Research Design*

The Causal Research method used in this research is by testing hypotheses regarding the influence of the Underwriting Ratio, Liquidity Ratio, Investment to Technical Ratio, Risk Based Capital as the independent variable and then Financial Distress as the dependent variable with Loss ratio as the moderator variable .

➤ *Population and Sample*

In the research conducted using a population, namely general insurance companies (companies) registered with the Indonesian Financial Services Authority in the 2020-2022 period and purposive sampling was used as a sampling technique. The criteria set in sample selection are:

- All General Insurance Companies (Companies) registered with the Financial Services Authority (OJK) in 2020-2022
- General Insurance Companies registered with the Financial Services Authority (OJK) in the research period, namely 2020-2022, which have a Credit Insurance product license and market Credit Insurance products.
- The sample used was 32 general insurance companies for 3 (three) years with a total of 96 data based on the criteria determined above.

➤ *Data Analysis Methods*

Secondary data is used in this research using the documentation method, namely data obtained from the official website of the Financial Services Authority and the official website of the Indonesian General Insurance Association. Data analysis uses descriptive statistical methods, Logistic Regression Test and Moderated Regression Analysis (MRA). (Ghozali, 2011), descriptive statistical analysis is defined as a statistical method that has

the function of describing the collected data. Where the data is in the form of mean, standard deviation, maximum, minimum and kurtosis. The logistic regression analysis technique ignores heteroscedasticity (Gujarati, 2003) and does not require the assumption of normality of data on independent variables (Ghozali, 2011)

With this application, the research model will be:

$$Y = \text{Ln} (P/ (1-P)) = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + e$$

Next is the moderated logistic regression analysis, so this test uses a moderating variable in it. MRA is the application of a linear regression model that connects two or more independent variables or independent variables through multiplying regression equations (Ghozali, 2016). With this application, the research model is:

$$Y = \text{Ln} (P/ (1-P)) = c_0 + c_1 x_1 + c_2 x_2 + c_3 x_3 + c_4 x_4 + c_5 x_5 + c_6 Z + c_7 x_1 * Z + c_8 x_2 * Z + c_9 x_3 * Z + c_{10} x_4 * Z + c_{11} x_5 * Z + u$$

ANALYSIS RESULT AND DISCUSSION

➤ *Descriptive Statistics*

Table 3 Descriptive Statistics

Statistics	UWR	LR	ITR	RBC	GROWTH	LOSS_RATIO
Mean	43,42%	182,66%	252,75%	355,71%	18,22%	45,92%
Median	53,60%	173,16%	194,50%	337,34%	2,97%	42,39%
Maximum	114,36%	400,99%	114,73%	794,00%	947,37%	125,15%
Minimum	-815,51%	110,91%	89,21%	-84,85%	-103,99	-223,22%
Std. Dev.	92,09%	48,62%	190,39%	158,19%	109,91%	36,11%
Observations	96	96	96	96	96	96

- The table shows the results of the independent variables and moderating variables from 96 sample data.

➤ *Logistic Regression*

The data processing method in this research uses Logistic Regression using the logit method and regression testing will be tested using The Goodness of Fit and Prediction Accuracy Table.

- *The Goodness of Fit test.*

Table 4 The Goodness of fit test without Moderating Variables

	Quantile of Risk		Dep=0		Dep=1		Total Obs	H-L Value
	Low	High	Actual	Expect	Actual	Expect		
1	5.E-05	0.0009	9	8.99625	0	0.00375	9	0.00375
2	0.0010	0.0032	10	9.98166	0	0.01834	10	0.01838
3	0.0034	0.0087	9	8.94684	0	0.05316	9	0.05348
4	0.0102	0.0180	10	9.85811	0	0.14189	10	0.14393
5	0.0184	0.0296	8	9.77047	2	0.22953	10	0.13975
6	0.0302	0.0492	9	8.64286	0	0.35714	9	0.37190
7	0.0518	0.0685	10	9.40349	0	0.59651	10	0.63435
8	0.0750	0.1082	9	8.20560	0	0.79440	9	0.87131
9	0.1130	0.2340	9	8.36556	1	1.63444	10	0.29438
10	0.2769	1.0000	3	3.82915	7	6.17085	10	0.29095
Total			86	86.0000	10	10.0000	96	16.6599
H-L Statistic			16.6599	Prob. Chi-Sq(8)				0.0339
Andrews Statistic			63.0465	Prob. Chi-Sq(10)				0.0000

Table 5 The Goodness of Fit test with moderating variables

	Quantile of Risk		Dep=0		Dep=1		Total Obs	H-L Value
	Low	High	Actual	Expect	Actual	Expect		
1	3.E-21	7.E-11	9	9.00000	0	1.1E-10	9	1.1E-10
2	1.E-10	5.E-07	10	10.00000	0	1.1E-06	10	1.1E-06
3	8.E-07	1.E-05	9	8.99994	0	6.1E-05	9	6.1E-05
4	2.E-05	6.E-05	10	9.99966	0	0.00034	10	0.00034
5	6.E-05	0.0030	10	9.99348	0	0.00652	10	0.00653
6	0.0043	0.0145	8	8.92579	1	0.07421	9	11.6453
7	0.0146	0.0320	10	9.77852	0	0.22148	10	0.22650
8	0.0367	0.0792	9	8.48812	0	0.51188	9	0.54275
9	0.0890	0.3444	8	7.89515	2	2.10485	10	0.00662
10	0.4088	1.0000	3	2.91934	7	7.08066	10	0.00315
Total			86	86.0000	10	10.0000	96	12.4312
H-L Statistic			12.4312	Prob. Chi-Sq(8)				0.1330
Andrews Statistic			42.1989	Prob. Chi-Sq(10)				0.0000

Goodness of Fit Test Results in the logistic regression table without and with moderating variables, the probability value (Prob. Chi-Sq(8)) which appears in table 4. (without moderating variables) is 0.0339 which is a value below 0.05, while the probability value (Prob. Chi-Sq(8)) which appears in table 5 (with moderating variables) is 0.1330 which is a value above 0.05. So the regression model in table 3 (without moderating variables) does not match the observation data, and the regression model in table 4 (with moderating variables) does not match the observation data.

➤ *Prediction Accuracy Table*

Table 6 Prediction Accuracy Table without moderating variables

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
P(Dep=1)<=C	85	6	91	86	10	96
P(Dep=1)>C	1	4	5	0	0	0
Total	86	10	96	86	10	96
Correct	85	4	89	86	0	86
% Correct	98.84	40.00	92.71	100.00	0.00	89.58
% Incorrect	1.16	60.00	7.29	0.00	100.00	10.42
Total Gain*	-1.16	40.00	3.13			
Percent Gain**	NA	40.00	30.00			

Table 7 Prediction Accuracy Table with moderating variables

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
P(Dep=1)<=C	84	4	88	86	10	96
P(Dep=1)>C	2	6	8	0	0	0
Total	86	10	96	86	10	96
Correct	84	6	90	86	0	86
% Correct	97.67	60.00	93.75	100.00	0.00	89.58
% Incorrect	2.33	40.00	6.25	0.00	100.00	10.42
Total Gain*	-2.33	60.00	4.17			
Percent Gain**	NA	60.00	40.00			

In the test results in table 6 without using moderating variables, research results were obtained on data that were predicted correctly by the regression model, amounting to 89 data from 96 total observation data and a percentage of 92.71%. This correctly predicted data includes 85 out of 86 data that did not experience Financial Distress at 98.84%, and 4 out of 10 data that experienced Financial Distress at 40.00%. Next, you can see the test results in table 7 using the moderating variable, with research data results that were predicted correctly by the regression model, amounting to 90 data from 96 total observation data and a percentage of 93.75%. The predicted data analyzed includes 84 out of 86 data that did not experience Financial Distress (97.67%) and 6 out of 10 data that experienced Financial Distress (60.00%).

➤ *Logistic Regression Result*

Table 8 Logistic Regression

Variabel	Coefficient	Prob.	Odds Ratio (Nilai eksponensial dari Coefficient)
UWR	-8,3271	0,0068	0,0002
LR	-3,6968	0,0572	0,0248
ITR	0,0720	0,7803	1,0747
RBC	0,0110	0,9779	1,0111
GROWTH	-1,0275	0,3423	0,3579
LOSS RATIO	-1,3350	0,5572	0,2632

➤ *Formula:*

$$\ln \frac{P_{it}}{(1 - P_{it})} = 8,003 - 8,3271 UWR - 3,6968 LR + 0,0720 ITR + 0,0110 RBC - 1,0275 Growth - 1,3350 Loss Ratio$$

➤ *Moderating Regression Analysis*

Table 9 Moderating Regression Analysis (MRA)

Variabel	Coefficient	Prob.	Odds Ratio (Nilai eksponensial dari Coefficient)
UWR	-27,0264	0,0398	0,0000
LR	-29,0030	0,0384	0,0000
ITR	3,3875	0,1704	29,5919
RBC	-4,7735	0,0882	0,0085
GROWTH	-2,2368	0,6567	0,1068
LOSS RATIO	-60,5073	0,0422	0,0000
UWR*LOSS RATIO	35,1079	0,0779	1.766.718.030.065.500
CR*LOSS RATIO	30,1433	0,0686	12.333.003.545.585
ITR*LOSS RATIO	-4,9352	0,1732	0,0072
RBC*LOSS RATIO	5,6887	0,0792	295,5092
GROWTH*LOSS RATIO	1,3922	0,8564	4,0237

• *Formula :*

$$\begin{aligned} \ln \frac{P_{it}}{(1 - P_{it})} = & 58,3493 - 27,0264 UWR - 29,0030 LR + 3,3875 ITR \\ & - 4,7735 RBC - 2,2368 Growth - 60,5073 Loss Ratio \\ & + 35,1079 UWR * Loss Ratio + 30,1433 LR * Loss Ratio \\ & - 4,9352 ITR * Loss Ratio + 5,6887 RBC * Loss Ratio \\ & + 1,3922 Growth * Loss Ratio \end{aligned}$$

To see the impact of the independent variables and moderating variables on the dependent variable, a hypothesis test (t test) was carried out. Where the aim is to test whether the results of a partial hypothesis are accepted or rejected. The criteria set in determining whether to accept or reject a hypothesis are:

A. The hypothesis is accepted if the significance number is less than 0.10. This indicates that there is a substantial relationship between the independent and dependent variables, as demonstrated by the results.

In the event that the significant value exceeds 0.10, the hypothesis is deemed invalid. In other words, these findings indicate that there is no discernible relationship between the independent and dependent variables. Interpretations are therefore derived from tables 7 and 8:

- H1: Underwriting Ratio has a negative and significant influence on Financial Distress.
- H2: Liquidity Ratios have a negative and significant influence on Financial Distress.
- H3: Investment to Technical Reserved (ITR) has no influence on Financial Distress.
- H4: Premium Growth Ratio has no influence on Financial Distress.
- H5: Risk Based Capital has a negative and significant influence on Financial Distress.
- H6: Loss ratio can strengthen the influence of the Underwriting Ratio on Financial Distress.
- H7: Loss ratio can strengthen the influence of Liquidity Ratio on Financial Distress.
- H8: Loss ratio does not strengthen/weaken the influence of Investment to Technical Ratio on Financial Distress.
- H9: Loss ratio is able to strengthen the influence of Risk Based Capital on Financial Distress.
- H10: It is suspected that the Loss ratio does not strengthen/weaken the effect of the Premium Growth Ratio on Financial Distress.

IV. RESULT DISCUSSION

➤ *The Influence of the Underwriting Ratio (UWR) on Financial Distress*

This study's use of logistic regression testing revealed a relationship between the likelihood of financial difficulty and the profitability ratio as determined by the underwriting ratio. The regression findings support this, showing that X1's significance value is less than the alpha value ($\alpha=0.10$). Table 7's coefficient value is negative, indicating that the insurance firm is better protected against the possibility of financial difficulty the greater the underwriting ratio. This is consistent with studies by Fatmawati and Rihardjo (2017), who found a

negative relationship between profitability ratios and the likelihood of experiencing financial crisis. Zelig's (2019) research findings indicate that there is a positive correlation between the profitability ratio and the likelihood of financial trouble.

➤ *The Influence of Liquidity Ratio (LR) on Financial Distress*

The likelihood of financial difficulty is influenced by the liquidity ratio, according to the findings of the logistic regression test. This is demonstrated by the regression findings, which show that X2's significance value ($\alpha=0.10$) is less than the alpha value. Table 7's coefficient value is negative, indicating that the insurance firm will be less likely to experience financial difficulties the larger its liquidity ratio. This is consistent with study by Nurlatifah and Mardian (2016), who found that the financial performance of insurance companies was negatively impacted by the liquidity ratio. Conversely, Zelig's (2019) research suggests that liquidity ratios positively and significantly impact the likelihood of financial troubles for insurance companies.

➤ *The Influence of Investment to Technical Ratio (ITR) on Financial Distress (ITR)*

According to the findings of the logistic regression analysis, there is no relationship between the likelihood of financial hardship and the liquidity ratio as determined by the Investment to Technical Ratio. The regression findings demonstrate this; X3's significance value is higher than the alpha value ($\alpha=0.10$). Accordingly, the study's findings about the possible financial hardship of insurance businesses are unaffected by the value of the Investment to Technical Ratio variable. This study supports that conducted by Primayanti (2016), which found no connection between investment performance and the company's prospective financial problems.

➤ *The Influence Risk Based Capital (RBC) terhadap Financial Distress*

Table 7's logistic regression test findings demonstrate that the chance of financial hardship is negatively impacted by the solvency ratio as determined by risk-based capital. The regression findings demonstrate this, as X4's significance value is less than the alpha value ($\alpha=0.10$). Table 7's coefficient value is negative, indicating that the insurance firm will be less likely to experience financial difficulties the more risk-based capital it has. This is governed by POJK regulation no. 71/POJK.05/2016, which has been revised with POJK No. 5/POJK/2023. According to this research, insurance businesses must have a minimum RBC value of 120%. The insurance firm can avoid future financial troubles the greater the RBC value. However, in order to prevent future financial difficulties, the corporation needs to assess management and corporate performance if the RBC value is less than 100%.

➤ *The Effect of Premium Growth Ratio (Growth) on Financial Distress*

According to the findings of the logistic regression analysis, there is no relationship between the likelihood of financial troubles and the growth ratio as determined by the Premium Growth Ratio. The regression results, where the significance value of X5 is bigger than the alpha value ($\alpha=0.10$), provide evidence for the claim. Additionally, this study demonstrates that the Premium Growth Ratio variable's value is unrelated to the possible financial difficulties faced by insurance businesses. The study's findings are consistent with those of Letiana (2023) and Oktaviani (2022), who discovered that premium growth had no bearing on the likelihood of financial issues for insurance businesses..

➤ *The Influence of the Loss Ratio in Moderating the Influence of the Underwriting Ratio on Financial Distress*

Empirical studies indicate that the loss ratio has the capacity to enhance the impact of the underwriting ratio on cases of financial crisis. The regression findings support this, showing that X1Z's significance value is less than the alpha value ($\alpha=0.10$). Table 8's coefficient value is positive, indicating that the Loss ratio can amplify the Underwriting Ratio's impact on financial distress. This is consistent with research by Isayas (2021), which found that the loss ratio has a positive and significant influence on the financial distress of insurance companies. In this case, the loss ratio in the form of credit insurance claims can strengthen the influence of profitability on the financial distress of insurance companies.

➤ *The Influence of the Loss Ratio in Moderating the Influence of the Liquidity Ratio on Financial Distress*

The test results in Table 8 demonstrate that the loss ratio has the capacity to amp up the impact of the liquidity ratio on financial distress. Regression results support this, as X2Z's significance value is less than the alpha value ($\alpha=0.10$). Table 8's coefficient value is positive, indicating that the Loss ratio might amplify the impact of the Liquidity Ratio on financial distress. In this instance, the impact of liquidity on the financial hardship of the insurance firm might be reinforced by the loss ratio in the form of credit insurance claims..

➤ *The Influence of the Loss Ratio in Moderating the Influence of the Investment to Technical Ratio on Financial Distress*

The test results in table 8 show that the loss ratio does not strengthen or weaken the influence of the investment to technical ratio on financial distress. This is proven by the regression results, the significance value of X3Z is greater than the alpha value ($\alpha=0.10$). The Loss Ratio in this case in the form of a credit insurance claim does not strengthen or weaken the influence of the investment to technical ratio on the insurance company's financial distress.

➤ *The Influence of the loss Ratio in Moderating the Influence of the Risk Based Capital Ratio on Financial*

Table 8's tests demonstrate how the loss ratio might increase the impact of risk-based capital on financial distress. The evidence may be found in the regression findings, where the alpha value ($\alpha=0.10$) is greater than the significance value of X4Z. Table 8 displays a positive coefficient value,

indicating that the Loss ratio might amplify the impact of the Risk Based Capital Ratio on financial distress. In this instance, the impact of solvency on the financial difficulties of the insurance firm might be reinforced by the loss ratio in the form of credit insurance claims.

➤ *The Influence of the Loss ratio in Moderating the Influence of the Premium Growth Ratio on Financial Distress*

Table 8's tests demonstrate that the impact of the premium growth ratio on financial distress is not enhanced or diminished by the loss ratio. This is demonstrated by the regression findings, which show that the X5Z significance value ($\alpha=0.10$) is bigger than the alpha value. In this instance, the impact of the premium growth ratio on the financial distress of the insurance firm is not mitigated or strengthened by the loss ratio in the form of credit insurance claims acquired.

V. CONCLUSION

The study comes to the conclusion that risk-based capital, liquidity ratio, underwriting ratio, and loss ratio can all have a moderating effect on the likelihood of financial distress. This complies with Financial Services Authority Regulation No. POJK 1 /SEOJK.05/2021, which governs how insurance, sharia, and reinsurance businesses evaluate their state of health for regulatory purposes. The results of this research can be used by Indonesian regulators and the Indonesian General Insurance Association to serve as a material for assessing potential financial distress in the insurance industry using financial ratios such as underwriting ratios, liquidity ratios, investment to technical ratios, risk based capital and premiums. the growth ratio can also be used as a consideration or reference in making policies related to credit insurance products so that general insurance companies can avoid potential financial distress. For the general public, it can be used as informative data and enrich literacy regarding the insurance industry and its products regarding the advantages and benefits that insurance service users can receive.

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