THE IMPACT OF CLAIM EXPENSES, UNDERWRITING RISK, PROFITABILITY, COMPANY SIZE AND RETENTION RATIO ON SOLVENCY OF INSURANCE INDUSTRY

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Abstract

The main purpose of this research is to analyze Claim Expenses, Underwriting Risk, Profitability, Company Size, and Retention Ratio on Solvency of Insurance Industry. The purpose of this research is to help future investors in choosing the right insurance company. This research was a quantitative descriptive research method. The sample used in this research is secondary data of Insurance Industry on the period from 2015 to 2020. Using SPSS (statistical package for the social sciences), methods of analysis used in this study include tolerance and VIF test, Kolmogorov-Smirnov test, multivariate cointegration tests: Test, SRESID and ZPRED estimation, t-statistical tests, F-statistical test, coefficient of determination (R^2), and Pearson Correlation Product Moment.

The result of this research shows claim expense, underwriting risk, ROA, and company size have significant influence on insurance industry's solvency, but retention ratio has no significant influence on insurance industry's solvency. All the independent variables simultaneously from a good model to explain the solvency since the magnitude of the effect value is 83,4%, while remaining 16,6% is explained by other variables besides claim expense, underwriting risk, ROA, company size, and retention ratio. The linear regression produced a formula to calculate the solvency, so this formula could be used in monitoring the financial health of an insurance company.

Keywords: *Claim Expense, Underwriting Risk, Profitability, ROA, Company Size, Retention ratio, Solvency*

1. Introduction

The rapid development of technology and the progress of times have made everyone more aware of the need for protection of life and assets. This is usually limited by the risks that mush be faced related to the protection and safety of life, property or assets, and mental health in the future. In the event that a person does not have the ability to

bear the risk that may oocur, then the person concerned can divert the risk to the insurance company. The development of insurance companies in Indonesia is growing rapidly. In general, the performance of insurance companies since 2014 has continued to grow well, the insurance industry assets worth from 807,77 trillion rupiah to 1.325,7 trillion in December 2019 (Kompas.com, 21/01/2020). Using the Compound Annual Growth Rate (CAGR) method, the average gross premium growth rate during the 2015-2019 period was around 10,2%. If compare the total gross premiums with the total population of Indonesia in 2019, which is 267 million people, an average value of 1.801.875,90 will be obtained. This means that every resident of Indonesia spends an average of 1.801.875,90 rupiah to pay insurance premiums.

However lately, insurance cases in Indonesia have risen a lot are the cases of failure to pay insurance company claims to clients, causing the insured to suffer losses. The cases of failing to pay the client by the insurance companies are in the public spotlight because at least 5 life insurance companies have failed to pay in the 2013-2020 period (cnbcindonesia.com, 2020).

This adds to confusion and distress to clients and the public which causes a decline in public trust in asset management institutions in the from of insurance. To minimize and avoid these risks, better monitoring facilities are needed.

The law No.71/POJK.05/2016 concerning the financial health of insurance companies and reinsurance companies in Article 2 of the OJK (Otoritas Jasa Keuangan) Regulations states that insurance companies are required to periodically fulfill the requirements for the level of financial health, one of which is the level of solvency. These arguments lead to research that aims to find out and analyze the effect of claims expense, underwriting risk, profitability, company size and own retention ratio on the solvency of insurance company.

2. Literature Review

2.1 Risk Based Capital and Solvency

The level of financial health of an insurance company can be measured using the ratio of the total assets of the company to the total number of insurance claims, which is called the Risk Based Capital (RBC). (Nurlatifah & Saputri, 2022)

The definition of Risk Based Capital according to the Government Regulation (Peraturan Pemerintah) Number 63 of 2004 is a measure that informs the level of financial security or health of an insurance company. The level of security that must be met by a general insurance company is 120%. The greater the health ratio of Risk Based Capital of an insurance company, the healthier the company's financial condition.

2.2 Claim Expense

The Claim Expense Ratio is a ratio that reflects the experience of claims that have occurred and the quality of the closing business. The Claim Expense ratio shows the company's ability to pay claim expenses through premium income. (Gulsun & Umit, 2010)

According to Jhongpita et al. (2011), the claim expense ratio greatly affects a company's ability to generate profits from the insurance business and maintain company's liquidity. The smaller the claim expense ratio, the better the solvency level of the insurance company.

2.3 Underwriting Risk

Activities aimed at choosing which object to cover or not are reffered to as underwriting. (Andhayani & Norita, 2012).

The higher the underwriting risk indicates that the company also has the capability to deal with possible risks. High capital is also needed so that the company's level of solvency and handling of high risks can also be fulfilled. Underwriting risk is also concluded to have a positive relationship with solvency, because the company requires large capital if the risk is high (De Haan & Kakes, 2007).

2.4 Profitability

Profitability is defined as a ratio to measure a company's ability to obtain income of profit from resources, including company sales and company assets. (Sukmarini & Soedaryono, 2023)

Horne dan Wachowicz (2012) state, that "ROA is a profitability assessment of total assets, by comparing profit after tax with average total assets. Return On Assets shows that the effectiveness of a company is managing assets both from its own capital and from loan capital, investors will see how effective a company is in managing assets. (Kindangen et al, 2021)

2.5 Company Size

Company size is an indicator that can be used to show how capable an insurance company is in withstanding risk. Losses to customers tend to be incurred more often by insurance companies with higher capital ratios. The company's assets that are used for operational purposes can show the size of the company. Companies are considered flexible in using their assets, if the company's total assets are also large.

2.6 Retention Ratio

The definition of own retention ratio according to Utami and Khoiruddin (2016) is the ratio of the strength of own capital to the risk premium. Kamelia and Sulisti Afriani (2017) stated that this ratio is useful for measuring the level of retention of a company and could later be used as a basis for comparing the company's actual capabilities with funds that are available.

Using the own retention ratio together with the solvency level limit can describe a more accurate situation. The higher the results of own retention ratio, the better.

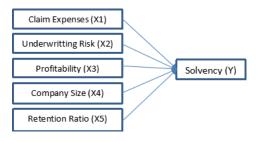The analysis model is described as follow:

Figure 1: Conceptual Framework
Source: processed in research (2023)

3. Methodology

3.1 Selection and Collecting of Data

The sample collection technique in this study uses the non-probability sampling method, the type of sample collection is purposive sampling, where certain considerations have been passed in determining the sample to be used in the study (Sugiyono, 2010). Population is a group targeted for analysis or study, so that it can be studied and draw conclusions from this research. This study takes a population of public companies engaged in the financial sector, especially insurance companies listed on the Indonesia Stock Exchange (IDX) in the 2015-2020 period.

3.2 Variable Measurement and Definition

3.2.1 Claim Expenses

The claim expense ratio is the risk payment claimed (billed) by the insured in accordance with the agreement on the insurance. The claims expense ratio is used to measure profitability by comparing claims that have been processed or have occurred with the premium income received by the company. The claim expense calculation formula is as follows:

$$Claim\ Expense = \frac{Claims\ that\ occured}{Premium\ Income}$$

3.2.2 Underwriting Risk

Underwriting is the process of assessing and classifying the risk level of the prospective insured or insured group related to a particular insurance product, then conducting an evaluation to decide whether the risk can be accepted or rejected. Underwriting risk shows the level of underwriting results obtained and is used to measure the level of profit from a loss business by comparing it to premium income. The underwriting risk calculation formula according to PSAK No. 28 is as follows:

$$Underwriting\ Risk = \frac{Underwriting\ Results}{Premium\ Income}$$

3.2.3 Profitability

According to Brigham dan Houston (2013) profitability ratios are ratios that show a combination of the effects of liquidity, asset management, and debt on operating results. Profitability describes a company's ability to use all of its resource to

generate profits within a certain period of time. The ROA calculation formula is as follows:

$$Return\ On\ Asset = \frac{Net\ Profit\ After\ Tax}{Total\ Assets}$$

3.2.4 Company Size

Company size shows its ability to bear risk, so company size affects the solvency of insurance companies. The size of the company can be seen from the total assets owned by the company that can be used for the company's operation. The formula company size is as follow:

$$Size = Total\ Asset$$

3.2.5 Retention Ratio

The own retention ratio shows the level of retention at which the insurance company bears the risk. The higher the results of own retention ratio, the better. The own retention ratio is as follows:

$$Own\ Retention\ Ratio = \frac{Net\ Premium}{Gross\ Premium}$$

3.2.6 Solvency

The level of solvency is the ability of a company to carry out its obligations in te event of dissolution or liquidation. The form of the company's obligations includes long-term liabilities and short-term liabilities. If an insurance company can pay all of its debts because it has sufficient assets, then the company is said to be solvable. However, if the total assets are insufficient to pay off debts or the value is less than all debts that must be repaid, it means that the company is in an insolvable situation. The company declared to be in crisis if the company is in an insolvable and illiquid situation (Amrin, 2009).

According to Kasmir (2015), the solvency ratio is the ratio used to measure the extent to which a company's assets are financed with debt. This means that the comparison between the asets and the debt burden borne by the company. In a broad sense it is said that the solvency ratio can be used as a measure of the level of a company's ability to pay its obligations in the short term and long term, if the company is dissolved.

3.3 Data Analysis Results

This study uses multiple linear regression analysis for data processing and hypothesis testing.

H_0: Claim expenses, Underwriting risk, Profitability, Company Size and Retention ratio simultaneously did not impact Solvency.

This analysis was processed with the help of SPSS software or Statistical Package for The Social Sciences.

4. Results and Discussions

4.1 Results of Descriptive Statistical Analysis

Tabel 4.1
Statistical Analysis Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X1_Beban Klaim	72	-.56	1.08	.3818	.44145
X2_Rasio Underwriting	72	-.217	1.216	.42072	.265202
X3_ROA	72	-.198	.099	.02848	.042461
X4_Ukuran Perusahaan	72	.219	.831	.56783	.126881
X5_Rasio Retensi Sendiri	72	.141	1.328	.59766	.270646
Y_Solvabilitas	72	.705	13.677	3.84210	2.835255
Valid N (listwise)	72				

Source : Data processing with SPSS (2023)

Table 4.1 shows the data sample (N) totaling 72 samples, but the data is not normally distributed, it is necessary to correct the data by removing outlier data as many as 12 data records, so that

descriptive statistical results are obtained as shown in the following table:

Table 4.2
Statistical Analysis Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X1_Beban Klaim	60	-.559	.848	.29616	.424833
X2_Risiko Underwriting	60	.022	1.216	.43177	.263035
X3_ROA	60	-.198	.099	.02994	.041043
X4_Ukuran Perusahaan	60	.426	.831	.60185	.100394
X5_Rasio Retensi Sendiri	60	.158	1.328	.57954	.254317
Y_Solvabilitas	60	.198	5.107	2.64535	.989390
Valid N (listwise)	60				

Source : Data processing with SPSS (2023)

Based on the results of data processing as shown in table 4.2 above, it shows that the sample that has been reduced by 12 outlier data, so that the remaining 60 records meet the data requirements for research.

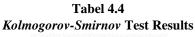## 4.2 Classical Assumption Test
4.2.1 Normality Test

Tabel 4.3

***Kolmogorov-Smirnov* Test Results**

One-Sample Kolmogorov-Smirnov Test

		Unstandardiz ed Residual
N		72
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.85448025
Most Extreme Differences	Absolute	.164
	Positive	.164
	Negative	-.096
Test Statistic		.164
Asymp. Sig. (2-tailed)		.000[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Source : Data processing with SPSS (2023)

The Kolmogorov-Smirnov test results with 72 data records have an Asymp value. Sig. (2-tailed) 0.000 (below 0.05), so that the data is not normally distributed. Table 4.4 below is a normal test result with corrected data.

Tabel 4.4
***Kolmogorov-Smirnov* Test Results**

Source : Data processing with SPSS (2023)

The results of the normality test after carrying out the reduction of outlier data give the Asymp value. Sig. (2-tailed) worth 0.200. this result represents that the value is more than 0.05 so it can be concluded that the research data has been normally distributed.

4.2.2   Multicollinearity Test

Tabel 4.5
Multicollinearity Test Results

Source : Data processing with SPSS (2023)

Table 4 above shows that the tolerance value for each independent variable is more than 0.10 as well as for the Variance Inflation Factor (VIF) value which is still below 10. This shows that there is no element of multicollinearity between the independent variables, so the analysis can be continued.

4.2.3   Heteroskedasticity Test

Tabel 4.6
Scatter Plot

Source : Data processing with SPSS (2023)

Figure 4.6 shows the distribution of the research data, where the data spreads in all directions and does not create any pattern. These results indicate that the

data is free from heteroscedasticity, so data analysis can be continued.

4.3 Multiple Linear Regression Analysis

Tabel 4.7
Multiple Linear Regression Results

Source : Data processing with SPSS (2023)

Solvency = 5.714 + 0.781 Claim Expense + 2.794 Underwriting Risk + 3.279 ROA − 7.556 Company Size – 0.097 Retention Ratio

4.4 Coefficient of Determination

Tabel 4.8
Multiple Linear Regression Results

a. Predictors: (Constant), X5_Rasio Retensi Sendiri, X1_Beban Klaim, X4_Ukuran Perusahaan, X3_ROA, X2_Risiko Underwriting

b. Dependent Variable: Y_Solvabilitas

Source : Data processing with SPSS (2023)

Table 4.9 shows that the Adjusted R Square value is 0.834 or 83.4%. The number 83.4% means that the variable Claim Expense, Underwriting Risk, ROA, Company Size, and Own Retention Ratio together have an influence on the Solvency variable of 83.4%. The Remaining 16.6% is influenced by other variables outside of this regression equation.

4.5 F Test

Tabel 4.9
F Test Results

a. Dependent Variable: Y_Solvabilitas

b. Predictors: (Constant), X5_Rasio Retensi Sendiri, X1_Beban Klaim, X4_Ukuran Perusahaan, X3_ROA, X2_Risiko Underwriting

Source : Data processing with SPSS (2023)

The results of multiple linear regression of Claim Expense, Underwriting Risk, ROA, Company Size, and Own Retention Ratio simultaneously on Solvency as presented in table 4.8 obtained the value of F-count = 60.429 > F-table = 2.383. Based on the output value above, a significance value (Sig.) is obtained of 0.000 < 0.005. It can be determined that Claim Expense, Underwriting Risk, ROA, Company Size, and Own Retention Ratio have a simultaneous effect on Solvency.

4.6 t Test

Tabel 4.10
t Test Results

Source : Data processing with SPSS (2023)

From the results of the t test, the conclusion is that Retention Ratio has a significance value above 0.05, which means Retention Ratio partially does not have a significant effect on Solvency. Claim Expense, Underwriting Risk, ROA, and Company Size have a significance value below 0.05, which means that Claim Expenses, Underwriting Risk, ROA, and Company Size partially have a significant effect on Solvency.

5   Conclusions and Suggestions

The results of the research and discussion that have been carried out provide results that can be concluded, that the variable Claim Expense, Underwriting Risk, ROA, Company Size, and Retention Ratio simultaneously have a significant influence on the Solvency variable. Some of the data in this study represents conditions during the Covid-19 pandemic, however, it does not have a strong influence or impact on research, thus it can be concluded that the Covid-19 pandemic does not affect the level of solvency of insurance companies operating within the territory of Indonesia.

The linear regression formula obtained from this study can be used as a mean of calculating the solvency of an insurance company with small to moderate assets, so that it can be used by various parties to determine whether it is worth investing in the insurance company. The level of accuracy that reaches 83.4% can provide recognition for the good solvency measurement using this solvency formula. The solvency calculation formula is as follow:

Solvency = 5.714 + 0.781 Claim Expense + 2.794 Underwriting Risk + 3.279 ROA – 7.556 Company Size – 0.097 Retention Ratio

Suggestions that can be given after seeing the conclusions above are as follow:

1. For business practitioners and investors, in making decisions, they can consider the factors of claim expense, underwriting risk, ROA, and company size because these four variables have a significant effect on the solvency of an insurance company.

2. For regulators, it is advisable to improve the supervisory function by monitoring the level of solvency of insurance companies, because a solvable company indicates that the company is able to pay all of its obligations with the assets it owns.

3. For further research, it is expected to expand the research variables, the number of samples, and the research period. This study has used the variable claim expense, underwriting risk, ROA, company size, and retention ratio have influence on solvency of the insurance company.

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