
THE INFLUENCE OF THE FINANCIAL RATIO OF THE EARLY WARNING SYSTEM AND THE COVID-19 PANDEMIC ON THE SOLVENCY LEVEL OF ISLAMIC GENERAL INSURANCE COMPANIES IN INDONESIA

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Abstract

The purpose of this study is to determine the effect of the liquidity ratio, claim expense ratio, own retention ratio, and the COVID-19 pandemic on the solvency level of Islamic general insurance companies, as proxied by risk-based capital (RBC). The sample for this study was Islamic general insurance companies that published financial statements for the 2019-2023 period. The sample size was 8 using a purposive sampling method. This study used a quantitative approach with descriptive analysis, static panel data regression, Chow test, Hausman test, and Lagrange multiplier test, processed using STATA software version 17. The results show that the liquidity ratio partially has a significant negative effect on solvency level, the claim expense ratio partially has no significant effect on solvency level, the own retention ratio partially has no significant effect on solvency level, and the COVID-19 pandemic partially has no significant effect on solvency level. Simultaneously, the liquidity ratio, claim expense ratio, own retention ratio, and the COVID-19 pandemic have a significant effect on solvency level. The results of the R² coefficient value of 21.70% indicate that the liquidity ratio, claim burden ratio, own retention ratio and the Covid-19 pandemic are able to explain the dependent variable, namely the solvency level, by 21.70%.

Keywords: liquidity ratio, claim expense ratio, own retention ratio, covid-19, solvency level

Abstrak

Tujuan penelitian ini adalah untuk mengetahui pengaruh rasio likuiditas, rasio beban klaim, rasio retensi sendiri, dan pandemi COVID-19 terhadap tingkat solvabilitas perusahaan asuransi umum syariah, yang diproksikan dengan modal berbasis risiko (RBC). Sampel penelitian ini adalah perusahaan asuransi umum syariah yang menerbitkan laporan keuangan periode 2019-2023. Ukuran sampel sebanyak 8 dengan menggunakan metode purposive sampling. Penelitian ini menggunakan pendekatan kuantitatif dengan analisis deskriptif, regresi data panel statis, uji Chow, uji Hausman, dan uji pengali Lagrange, yang diolah

menggunakan perangkat lunak STATA versi 17. Hasil penelitian menunjukkan bahwa rasio likuiditas secara parsial berpengaruh negatif signifikan terhadap tingkat solvabilitas, rasio beban klaim secara parsial tidak berpengaruh signifikan terhadap tingkat solvabilitas, rasio retensi sendiri secara parsial tidak berpengaruh signifikan terhadap tingkat solvabilitas, dan pandemi COVID-19 secara parsial tidak berpengaruh signifikan terhadap tingkat solvabilitas. Secara simultan, rasio likuiditas, rasio beban klaim, rasio retensi sendiri, dan pandemi COVID-19 berpengaruh signifikan terhadap tingkat solvabilitas. Hasil nilai koefisien R² sebesar 21,70% menunjukkan bahwa rasio likuiditas, rasio beban klaim, rasio retensi sendiri dan pandemi Covid-19 mampu menjelaskan variabel dependen yaitu tingkat solvabilitas sebesar 21,70%.

Kata-kata kunci: rasio likuiditas, rasio beban klaim, rasio retensi, covid-19, solvabilitas

INTRODUCTION

At the end of 2019, the world was shocked by the spread of the Covid-19 virus, which affected almost the entire globe. This virus was first detected in late 2019 in Wuhan, China. Within a short time, Covid-19 had spread to developed countries such as Korea and the United States. In March 2020, Indonesia also announced that it had been exposed to Covid-19. According to data from Worldometers, Covid-19 cases worldwide totaled 107,375,449 (107 million) cases, as of Wednesday morning (February 10, 2021). From this data, 2,348,659 people had died. The increase in Covid-19 in Indonesia was also quite high as of Tuesday (February 9, 2021) with positive cases reaching 1,174,779. Meanwhile, the number of recovered cases increased by 10,424 people, and the number of patients infected with Covid-19 who died also increased to 31,976 people.

COVID-19 has devastated the global economy. Due to the current pandemic, industrial businesses in Indonesia have also experienced a decline in revenue, including companies operating in the property, automotive, tourism, manufacturing, finance, and MSME sectors (Antoni, 2021).

A financial performance analysis specifically used by insurance companies is the Early Warning System (EWS) financial ratio analysis developed by the National Association of Insurance Commissioners (NAIC). This system is specifically designed to provide early warnings of financial conditions for analyzing insurance companies' financial performance (Utami dan Khoiruddin, 2016).

In addition to ratio analysis, the Risk Based Capital (RBC) approach can be used to assess the financial health of an insurance company. Risk Based Capital, also known as the solvency limit, is a measure of an insurance company's financial health, specifically related to solvency or the ability to meet its obligations, in accordance with the Decree of the Minister of Finance (KMK) No. 424/KMK.06/2003

concerning the financial health of companies and reinsurance companies. When an individual or group of individuals purchases a policy from a business, Risk Based Capital is very important because it serves as a reference for customers to determine whether the business has adequate capital.

Risk-Based Capital Analysis Results and Financial Ratio Analysis: An insurance company's financial performance can be evaluated using capital. A company's operational efficiency and effectiveness in managing its current financial resources over a specific period of time can be measured by its financial performance. Future decisions or policies may be based on an evaluation of the business's past financial performance (Nurfadila et al., 2015).

The Early Warning System ratios consist of the solvency ratio, fund adequacy ratio, surplus growth ratio, underwriting ratio, claim expense ratio, management expense ratio, return on investment ratio, liquidity ratio, agent balance to surplus ratio, premium receivable to surplus ratio, premium growth ratio, self-retention ratio, and technical reserve ratio. The financial ratios used in this study are the liquidity ratio, claim expense ratio, and self-retention ratio. The researcher used these three ratios because there are several research gaps that can still be addressed, even though many studies have discussed the liquidity ratio, claim expense ratio, and self-retention ratio. Among the most recent gaps in this study are the crisis or post-pandemic period, the comparison between life insurance companies and general insurance companies, and the data analysis techniques used that differ from previous studies (Rohmah, 2021).

The liabilities-to-liquid assets ratio, also known as the liquidity ratio, is a tool used to measure a company's ability to meet its short-term obligations and provides a snapshot of the company's financial health. The purpose of the liquidity ratio is to determine the company's financial ability to meet short-term commitments and financial payment obligations. The adequacy of reserves, as well as the stability and acceptability of assets, should be examined, as a high liquidity ratio indicates liquidity problems; conversely, a lower liquidity ratio indicates a better solvency. The quality of the closing business and claims experience (loss ratio) are reflected in the claims expense ratio. However, it is important to first determine whether there are any substantial claims causing this high percentage before drawing any conclusions.

The claim burden ratio indicates a company's solvency level will decline as it becomes more burdened. Conversely, a corporation is considered solvent if it successfully pays its collection costs. Therefore, businesses must lower its ratio. The retention ratio itself is a company's retention rate, or the amount of premiums retained compared to premiums received directly. Furthermore, a company's ability to retain premiums relative to its available cash or capital is measured using

retained premiums alone (Agustiyani, 2019).

The Financial Services Authority (OJK) establishes regulations regarding the financial health of insurance companies. A company's financial health is influenced by its solvency level. Considering each company's risk profile and the results of simulated scenarios, Financial Services Authority Regulation No. 71/POJK.05/2016 stipulates that an insurance company's solvency level must not exceed 120% of its minimum risk-based capital (MMBR).

The Indonesian Accounting Standards (PSAK) regulate financial ratio analysis in Indonesia, including early warning systems for insurance companies. PSAK No. 28 concerns Insurance Loss Accounting. The financial ratios contained in PSAK No. 28 include profitability, liquidity, and premium stability.

Companies need to analyze their financial statements to identify the true strengths and weaknesses of their finances. Everything must be considered and considered to avoid a situation like the one experienced in PT Asuransi Jiwasraya, where the company failed to meet the minimum solvency level, or Risk-Based Capital (RBC) of 120%. PT Asuransi Jiwasraya required IDR 32.89 trillion to meet the RBC, which put pressure on its liquidity.

Furthermore, a general insurance company belonging to the Recapital Group explained that PT Asuransi Recapital had to close its business because the Financial Services Authority (OJK) had revoked its general insurance business license. The OJK imposed sanctions for violating the minimum solvency requirement. The problems experienced by Asuransi Jiwasraya and PT Asuransi Recapital will impact the insurance industry as a whole and public perception of insurance products (Simbolon & Siagian, 2021).

LITERATUR REVIEW

Signalling Theory

Signaling theory was first introduced by Spence in his 1973 study, "Job Market Signaling." Signaling theory is based on the idea that there is an imbalance in the exchange of signals between company management and shareholders. Signaling theory concerns how signals about a business's success or failure are communicated to its owners. This information includes data or descriptions of the past, present, and future, and their impact on the company. This signal or information can be communicated through financial statements (Pepayosa, 2024).

In signaling theory, companies can use early warning system (EWS) results to inform stakeholders about their financial condition. Early warning system (EWS) results can serve as signals to stakeholders such as investors, creditors, and regulators. Early warning system ratios, such as liquidity ratios, claims expense

ratios, and retention ratios, can provide information about a company's financial condition and potential future risks. The signals provided by the company must be accurate and honest to be trusted by stakeholders and aid in informed investment or credit decisions (Suwarni et al., 2023).

Financial Statements

Financial statements are reports that show the amount of assets, types of liabilities (debts), both short-term and long-term, equity (capital), and business profits owned or earned by an organization. Financial statements are intended to provide other financial information. Financial statements can be used to provide information about a company's financial position, performance, and changes in position, which helps in economic decision-making. There are five types of financial statements: the balance sheet, the income statement, the statement of changes in equity, the cash flow statement, and financial statements (Azizah, 2022).

Financial Report Analysis

Financial statement analysis is comprised of two terms: "analysis" and "financial statements." Analysis refers to the process of breaking down a problem to identify the interrelationships between its components to achieve a comprehensive understanding. Meanwhile, financial statements are an organized presentation of an entity's financial condition and performance.

(Harahap, 2011) Explains that financial statement analysis means breaking down financial statements into smaller pieces of information and examining how quantitative and non-quantitative data relate to each other in significant ways. The purpose of this analysis is to gain more insight into the financial condition, which is a crucial part of the decision-making process. The purpose of financial statement analysis is to determine what is desired or what is to be gained from the analysis. By having a goal, subsequent analysis can be structured, have limitations, and achieve the desired results (Maith, 2013).

Early Warning System (EWS)

The Early Warning System (EWS) functions to detect early changes in an insurance company's financial condition. This system provides warning signals regarding potential difficulties or operational issues the insurance company may face in the future. In practice, this system measures the company's financial performance and health using financial ratio analysis (Oktivia Denovis et al., 2023). Basically, the Early Warning System consists of four main elements, namely Risk Knowledge: assessment provides important information to set priorities in

mitigation, prevention strategies and designing early warning systems, Monitoring and Predicting: a system with monitoring and predictive capabilities provides timely estimates of potential risks faced by society, the economy and the environment, Disseminating Information: an information system needed to send warning messages to affected locations to alert local and regional government agencies, Response: Coordination, good governance and appropriate action plans are important points in effective early warning (Ulfan et al., 2018).

Solvency Level

The solvency ratio is a ratio used to assess how much of a company's assets are available for use (Ilham et al., 2024). According (Hato Schmeiser, 2008) it is explained that solvency not only plays a role in preventing the possibility of bankruptcy, but also functions to reduce costs related to conditions of insolvency. Bankruptcy also relates to the magnitude of claims costs compared to those reported in the financial statements. Actual claims costs will be significantly higher than those expected when the insurer initially established the business and reported estimated claims costs (Natasya & Putra Khrisna Mahardika, 2019).

Risk Based Capital (RBC)

Risk-Based Capital (RBC) is a calculation that provides information about the health of an insurance company. Risk-Based Capital indicates whether a company is in good health or not. The advantage of the Risk-Based Capital method is that it closely monitors the company's operational activities to generate profits, as well as the insurance company's ability to prevent losses and maintain its credibility. Furthermore, the company has strong capital capabilities to manage assets and liabilities, protecting customers from losses and providing clear legal guarantees. The level of financial solvency of an insurance company can be easily assessed using the Risk-Based Capital (RBC) method, providing information about the company's health and benefiting all parties. The Decree of the Minister of Finance of the Republic of Indonesia No. 53/PMK.010/2012 concerning the finances of the insurance and reinsurance industries requires all insurance companies to have a Risk Based Capital (RBC) level of at least 120%. This means that insurance companies must have assets at least 20% higher than the value of their debt to cover all risks covered by the insurance provider (Candra, 2023).

RESEARCH METHOD

Type of Research

The approach used to test the influence of financial variables, the early warning system, and the COVID-19 pandemic on the solvency of Sharia general insurance companies for the 2019-2023 period, is a descriptive analysis study with a quantitative approach. Quantitative research is a research method based on the philosophy of positivism, used to examine populations or samples, with the aim of testing predetermined hypotheses (Sugiyono, 2020). This study consists of four variables: the liquidity ratio, the claims expense ratio, the self-retention ratio, and dummy variables: the COVID-19 pandemic as the independent variable and the solvency level as the dependent variable. The data type used in this study is static panel data, a combination of time series and cross-sectional data.

Data Source

The data used and analyzed in this study is secondary data. Secondary data is data that is not obtained directly but through intermediaries or obtained and recorded by other related parties (Sofyan Azhar Siregar, Dr. Samakmur, 2020). The data generated from this study were obtained from historical data of Sharia general insurance companies and financial reports for the 2019-2023 period published on the official websites of Sharia general insurance companies registered with the Financial Services Authority.

Data Analysis Techniques

The data analysis process is an activity to find and organize data in an orderly manner from interviews, field notes, and other sources so that it is easier to understand and the results can be conveyed to others (Mechtildis Olivia, 2022). The data collected in this study were analyzed using Microsoft Excel 2019 and Stata software version 17. The collected data were then processed using descriptive statistics, which included classical assumption tests such as normality tests, multicollinearity tests, heteroscedasticity tests, and autocorrelation tests; static panel data regression analysis; and hypothesis testing such as t-tests for partial analysis, F-tests for simultaneous analysis, and coefficient of determination tests.

RESULTS

Chow Test

The Chow test is used to determine whether the common effects model is better than the fixed effects model (Aeniyatul, 2019). The results of the Chow test in this study are as follows:

Table 2 shows the Chi-Square probability value of 1.0000. This Chi-Square probability value is greater than 0.05, which means rejecting H1 and accepting H0. This means the selected Hausman test model is a random effects model. Furthermore, because the Hausman test conducted concluded that the random effects model was selected.

Lagrange Multiplier Test

The Lagrange Multiplier test is used to select between a random effects model and a common effects model (Aeniyatul, 2019). The results of the Lagrange multiplier test in this study are as follows:

Table 3. Lagrange Multiplier Test

Breusch and Pagan Lagrangian multiplier test for random effects

$$y[id,t] = Xb + u[id] + e[id,t]$$

Estimated results:

	Var	SD = sqrt(Var)
y	2972.44	54.52009
e	1486.253	38.55195
u	889.2095	29.81962

Test: Var(u) = 0

chibar2(01) = 5.90
 Prob > chibar2 = 0.0076

Source: Processed data (stata 17)

Table 3. shows that the Chibar2 probability value is 0.0076. This Chibar2 probability value is less than 0.05, which means H0 is rejected and H1 is accepted. This means that the selected Lagrange multiplier test model is a random effects model. Therefore, the most appropriate panel data model between the common effect and random effect is the random effect.

Summary of Panel Data Regression Model Selection Results:

testing	Result	Conclusion
Chow Test	Prob > 0,05	CEM
	Prob < 0,05	FEM
Hausman Test	Prob > 0,05	REM
	Prob < 0,05	FEM
Lagrange Multiplier Test	Prob > 0,05	CEM
	Prob < 0,05	REM

Test The Classical Assumptions

According to Gujarati and Porter, the estimation method for random effects panel models uses the generalized least squares (GLS) method. Meanwhile, for common effects and fixed effects panel models, ordinary least squares (OLS) is used. One advantage of the GLS method is that it does not require classical assumptions. Therefore, if the regression model uses a random effects model, classical assumption testing is unnecessary. Conversely, if a common effects model or a fixed effects model is used, classical assumption testing is necessary. In this study, the selected model is a random effects model, which means classical assumption testing is not necessary (Kosmaryati et al., 2019).

Panel Data Regression Equation Analysis Test

Table 4. Random Effect Model

Random-effects GLS regression		Number of obs	=	40		
Group variable: id		Number of groups	=	8		
R-squared:		Obs per group:				
Within	= 0.1509	min	=	5		
Between	= 0.2748	avg	=	5.0		
Overall	= 0.2170	max	=	5		
corr(u_i, X) = 0 (assumed)		Wald chi2(4)	=	10.49		
		Prob > chi2	=	0.0329		
(Std. err. adjusted for 8 clusters in id)						
y	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
x1	-1.509645	.5472242	-2.76	0.006	-2.582185	-.4371055
x2	-.0520904	.1605508	-0.32	0.746	-.3667643	.2625834
x3	.4496331	.3324946	1.35	0.176	-.2020444	1.101311
dterjadi_pandemi	18.53999	18.04903	1.03	0.304	-16.83546	53.91544
_cons	68.84396	27.01879	2.55	0.011	15.88811	121.7998
sigma_u	29.819616					
sigma_e	38.551947					
rho	.37433117	(fraction of variance due to u_i)				

Source: Processed data (stata 17)

Based on the results of the Random Effects Model (REM) test in Table 5, the F test results show a chi-squared probability of 0.0329 (<0.05). Therefore, it can be concluded that the independent variables liquidity ratio, claim expense ratio, own retention ratio, and the COVID-19 pandemic simultaneously have a significant effect on the dependent variable, solvency level (Y).

The T-test results (hypothesis) show that variable X1, liquidity ratio, has a probability value of 0.006 (<0.05), thus concluding that variable X1, liquidity ratio, has a significant effect on variable Y, solvency level. The T-test results (hypothesis) show that variable X2, claim expense ratio, has a probability value of 0.746 (>0.05), thus concluding that variable X2, claim expense ratio, has no significant effect on variable Y, solvency level. The T-test results (hypothesis) show that variable X3, own

retention ratio, has a probability value of 0.176 (>0.05), thus concluding that variable X₃, own retention ratio, has no significant effect on variable Y, solvency level.

The T-test results (Hypothesis) for the X₄ COVID-19 pandemic variable have a probability value of 0.304 (>0.05), thus it can be concluded that the X₄ COVID-19 pandemic variable does not significantly influence the Y solvency level variable. The results of the Coefficient of Determination test, with an R-square value of 0.2170, conclude that the simultaneous influence of the independent variables (X₁, X₂, X₃, X₄) is 21.70%.

DISCUSSION

The results of the study in Table 4 show the hypothesis test result of 0.006 (<0.05), meaning the probability value is smaller than the 5% significance level. Therefore, this study accepts the first hypothesis (H₁), which states that the liquidity ratio has a significant influence on the solvency level. Furthermore, the regression equation shows a coefficient of -1.509645, indicating that the liquidity ratio has a negative and significant effect on the solvency level. This means that any increase in the liquidity ratio will have an inverse impact on financial performance. Because a higher liquidity ratio indicates that the insurance company is financially unhealthy. If the liquidity ratio remains high for too long, it can also negatively impact the solvency ratio and potentially lead to the company becoming insolvent (Pujiharjo, 2019).

The results of the study in Table 4 show a hypothesis result of 0.746 (>0.05), meaning the probability value is greater than the 5% significance level. Therefore, this study rejects (H₂), which states that the claim expense ratio has no significant effect on solvency. The results of this study align with the research of (Simbolon & Siagian, 2021), which showed that the claims burden ratio had no significant effect on solvency levels. Therefore, Hypothesis 2 is rejected. Based on the discussion of the research results, companies need to improve their ability to settle claims payments to ensure their solvency and adequate funding.

The results in Table 4 show a hypothesis of 0.176 (>0.05), indicating a probability value greater than the 5% significance level. Therefore, this study rejects H₃, which states that the retention ratio itself has no significant effect on solvency. The results of this study align with Utami dan Khoiruddin (2016) study, which found that the retention ratio alone had no effect on solvency levels. This is due to differences in claim risks between the present and future.

The results in Table 4 show a hypothesis result of 0.304 (>0.05), meaning the probability value is greater than the 5% significance level. Therefore, this study

rejects (H4), which states that the COVID-19 pandemic has no significant effect on solvency levels. Based on the discussion, the results show that the dummy variable for the COVID-19 pandemic in 2020-2021 did not significantly affect solvency levels. Although the COVID-19 pandemic caused global uncertainty, insurance companies in Indonesia were able to maintain solvency levels. This is due to regulatory support, reinsurance policies, portfolio diversification, or the pandemic's impact being more pronounced on operational aspects than long-term financial structures. Companies must continue to take strategic steps to better survive the COVID-19 pandemic (Ayu Prawesti, 2022).

The results in Table 4 show a χ^2 probability value of 0.0329 (<0.05), which is less than the 5% significance level. Therefore, this study accepts (H5), which states that the liquidity ratio, claims expense ratio, own retention ratio, and the COVID-19 pandemic have a significant effect on solvency levels. Based on the results of the Determination Coefficient test, the R square value is 0.2170, this indicates that the dependent variable of the solvency level can be explained by independent variables, namely the liquidity ratio, claim expense ratio, own retention ratio and the Covid-19 pandemic of 21.70%, while the remaining 78.30% is explained by other variables outside the variables used in this study.

CONCLUSION

From the results of the analysis that have been discussed in this study using panel data regression analysis hypothesis testing, the results of the partial panel data regression test (t test) show the influence of each independent variable on the Solvency Level of Sharia General Insurance Companies in Indonesia for the period 2019-2023, with a significance value of 0.05, namely: Liquidity Ratio of 0.006 (<0.05) and coefficient regression equation of -1.509645 have a negative and significant effect on the Solvency Level. The claim expense ratio of 0.746 (>0.05) does not have a significant effect on the Solvency Level. The retention ratio itself of 0.176 (>0.05) does not have a significant effect on the Solvency Level. The Covid-19 pandemic of 0.304 (>0.05) does not have a significant effect on the Solvency Level. The results of the simultaneous panel data regression test (F test) show that the independent variables, namely the Liquidity Ratio, Claims Expense Ratio, Own Retention Ratio, and the Covid-19 Pandemic amounting to 0.0329 (<0.05) jointly influence the Solvency Level of Sharia General Insurance Companies in Indonesia for the period 2019–2023.

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