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Ratio of early warning system and risk based capital in insurance companies registered at OJK 2016-2020

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ABSTRACT

The purpose of this study is to analyze the effect of the early warning system ratio which is proxied in the ratio of the level of adequacy of funds, the ratio of claims expense and the ratio of liquidity to risk based capital in insurance companies registered with the OJK in 2016 - 2020. Risk based capital is a ratio that describes the solvency of the company. insurance. The population in this study is the annual financial statements of life insurance companies registered with the OJK Financial Services Authority in Indonesia from 2016 - 2020 with a population of 20 companies and the sample used is 20 life insurance companies registered with the Financial Services Authority (OJK). . The sampling technique in this study used a saturated sampling technique. This study uses the Eviews version 10 tool. The findings in this study show that the ratio of the level of adequacy of funds, the ratio of claims expense, and the liquidity ratio partially and simultaneously has an effect on risk based capital.

Keywords: Early Warning System Ratio, Risk Based Capital, Life Insurance

1. INTRODUCTION

One of the financial services industry that is experiencing development is the Non-Bank Financial Industry (IKNB). IKNB currently has a market share of 5% - 7%, but still has the opportunity to increase. IKNB assets increased by 12% until mid-2018 reaching 97.82 billion. The Financial Services Authority (OJK) predicts the growth of Islamic NBFI assets in 2018 will be in the range of 15% (www.bisnis.com). One of the Sharia NBFIs that has a large asset growth is the insurance industry. The insurance industry has great asset growth potential due to the increasing number of insurance industry players who spin off units . According to OJK, insurance assets reached 42.7 trillion as of March 2018. This amount increased by around 21.3% from 2017 which was 35.2 trillion (www.kontan.co.id). The sharia insurance industry has the potential for large asset growth due to the increasing number of sharia insurance industry players who spin off sharia business units (UUS). According to OJK, sharia insurance assets reached 42.7 trillion as of March 2018. This number increased by around 21.3% from 2017 which was 35.2 (www.kontan.co.id)

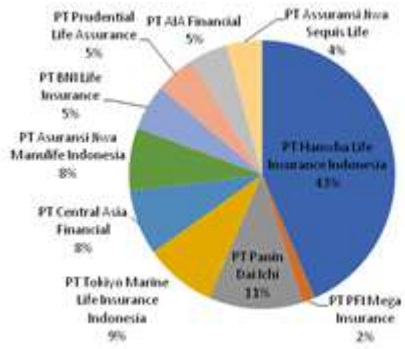

Image 1. List of Insurance Companies

Based on Figure 1, of the 20 insurance companies that issued the highest RBC, there were PT Hanwha Life Insurance Indonesia at 5,624.2%, PT PFI Mega Insurance at 2,047%, PT Panin Dai Ichi at 1,482%, PT Tokiyo Marine Life Insurance Indonesia by 1.122%, PT Central Asia Financial at 1,009.7%, PT Asuransi Jiwal Manulife Indonesia at 982%, PT BNI Life Insurance at 715%, PT Prudential Life Assurance at 635%, PT AIA Financial at 592%, PT Assuransi Jiwa Sequisl Life at

562%, PT Assuransi Jiwa BCA at 543.4%, PT Zurich Topas Life at 508%, PT Lippo Life Assurance at 468.3%, PT Sunlife Financial Indonesia at 430%, PT Astra Aviva Life at 422%, PT Avrist Assurance by 337%, PT Asuransi Allianz Life Indonesia at 327.6%, PT Asuransi Jiwa Generali Indonesia at 319%, PT Heksa Solution Insurnce at 315.1%, and PT AXA Mandiri Financial at 312 (Source : www.lifepal.co. id)

Based on the data above, RBC can be an indicator that shows the company's ability to pay claims. The lower the company's RBC, it means that the insurance company's ability to pay claims due is relatively weak. Lifepa stated that this data is based on an analysis of the financial statements of 50 insurance companies registered with the Financial Services Authority. Lifepal stated that this data is based on an analysis of the financial statements of 50 life insurance companies registered with the Financial Services Authority (OJK). PT Hanwha Life Insurance Indonesia is the insurance company with the highest RBC level. Even so, Hanwha Life posted a loss of IDR 5 billion. The value of the loss even increased from the same period the previous year of Rp.718.5 million. In its research, Lifepa also described 20 insurance companies that scored the highest net profit in the first quarter of 2020. In this category, PT Prudential Life Assurance was recorded as the company that earned the highest profit in 2020 of Rp.1.135 trillion.

Supported growth of insurance entities with an increase in the number of assets and income in each period, requires companies to optimize their company's performance so that they can meet criteria as a good insurance company. However, this does not guarantee that the insurance company has a good performance in managing its finances. Considering in 2017, the Financial Services Authority (OJK) has revoked the business license of PT Asuransi which has a low RBC, or the company's solvency ratio or RBC is not in accordance with the minimum limit of 120% and the company is reportedly having difficulty paying claims . The financial performance of insurance companies is considered as one of the important factors in increasing the trust of prospective policyholders. Islamic insurance companies need to prove by optimizing asset management and premium income so that they can maintain the company's financial stability. In addition, to see the company's financial condition, it is necessary to analyze financial performance. Financial performance is a reflection of the company's financial statements which contain forecasts regarding the assets, liabilities, capital and profits of the company (Agustina, 2012). Knowledge of the financial condition of the insurance company is considered important, because the company sells insurance products for risk losses in a policy. Financial performance shows the company's achievements in one period which is analyzed from the financial statements (Puspitasari, 2015).

Islamic insurance companies have special characteristics so that the analysis of financial performance is carried out using special ratios. To determine the financial performance of insurance companies can be through the solvency ratio. The calculation of the solvency of insurance companies is known as Risk Based Capital (RBC). RBC is the ratio of capital adequacy to risk borne. In Indonesia, the minimum solvency level limit for insurance companies has been stipulated in PMK No 53/PMK.010/2012 by 120%. The RBC value of at least 120% means the company needs to have a minimum wealth of more than 20% of the company's obligations including financing the company's insurance risk (Sujana and Sinarwati, 2017).

In addition to the level of solvency, the financial performance of insurance companies can also be seen through the analysis of financial ratios. Analysis of the financial ratios of Islamic insurance companies is known as the Early Warning System (EWS) ratio. The EWS ratio has been applied in Indonesia and is contained in the Statement of Indonesian Accounting Standards (PSAK) to determine the health of insurance companies. The EWS ratio has included the ratio of liquidity, solvency, and profitability which aims as an early warning on the company's financial condition.

The results of the EWS and RBC ratio analysis can be used as a description of the company's financial activities. Evaluation The company's financial performance can be used as a guide for future decision making. Besides In addition, the results of the analysis of the company's financial performance are also useful for calculating the risk of failure in wealth management, imbalances in the company's balance sheet and preventing the occurrence of inability to pay by insurance companies. The slowdown in the company's financial performance will have an impact on the company's financial health and the growth of the industrial sector in general. Islamic insurance companies need to make efforts to improve financial performance by maintaining company profits and solvency. Many studies on the financial performance of insurance companies have been carried out, but have different results. Utami and Khoiruddin (2016) analyzed the effect of early warning system financial ratios as proxied by liquidity ratios, own retention ratios, expense ratios, and company size on the solvency level of sharia life insurance companies for the period 2010 – 2013. to the level of solvency. Research conducted by Putri, Sugeng and Harjum (2015) regarding the level of solvency as measured by the ratio of the level of adequacy of funds, the ratio of premium receivables to surplus, claims expense ratio, agents balance to surplus ratio, liquidity ratio and the ratio of changes in surplus. Based on this research, only the ratio of the level of adequacy of funds has a significant effect on the solvency of insurance companies listed on the IDX.

Research conducted by Alamsyah and Adi (2017) regarding premium income, investment return ratios, profits, and claims on RBC of general insurance companies in Indonesia, shows that only the claims ratio and investment return ratio have a positive effect on RBC. Ambarwati and Fatin (2018) said in their research on the effect of firm size, investment returns and profitability on the solvency of Islamic insurance companies in Indonesia, that firm size has a bearing on solvency. Research conducted by Hasbi and Suryawardani (2018), that the ratio of EWS and RBCl is not only to determine the performance and health of the company but also affects the solvency of the company. In this study, it is proven that the ratio of changes in surplus, the ratio of management costs, and the ratio of premium receivables to surplus have an effect on solvency.

The results of a study conducted by Sulasmiyati et al., (2019) in their research revealed that the early waning system ratio had a positive and significant effect on risk based capital at PT. Asei Reasurasni Indonesia (Persero). The results of research conducted by Andari (2018) and Saputra (2019) in their research revealed that the Early waning system ratio which consists of the level of fund adequacy, claims expense ratio, and liquidity ratio has a positive effect on Risk Based Capital. In contrast to the results of research conducted by Sukiati and Leviany (2019) in his research reveals that the early warning system ratio has no

effect on risk based capital in life insurance companies. The differences in the results of previous studies regarding the factors that can affect the level of solvency of insurance companies, make researchers interested in studying more deeply how the level of solvency in life insurance companies in Indonesia. This study chose the object in the life insurance sector because from the data on the growth of the number of companies and assets of life insurance companies experiencing rapid development. This study will provide an overview of the solvency condition of life insurance companies by taking into account the financial health of life insurance companies in Indonesia. Solvency level measurement is used as an effort to ensure that the company's financial management has been carried out optimally.

2. LITERATURE REVIEW

Risk Based Capital (RBC)

Budiarjol (2015) stated that the Risk Based Capital Health Ratio a ratio of the net worth or Net Worth of the company concerned, which is calculated based on standard accounting rules divided by net worth which is recalculated taking into account the possible deteriorating risks. The inclusion of these risks reflects the uncertainty faced by the company in its daily activities, for example the possibility of a short-term fall in asset values due to investment in riskier instruments, as well as the possibility of increasing debt levels due to unfavorable developments in the future in terms of interest rates, death rates, termination rates and so on.

Early Warning System (EWS)

The Early Warning System (EWS) ratio is a benchmark for calculating the National Association of Insurance Commissioners (NA/C) to determine the financial performance and soundness of sharia insurance companies. EWS can be used as an early detection of financial and operating risks of insurance companies in the future. This ratio has been modified by other countries as needed. In Indonesia, the EWS method has been recognized and regulated in the Statement of Financial Accounting Standards (PSAK) No. 28 concerning Loss Insurance Accounting. The EWS ratio includes liquidity, solvency and profitability ratios. EWS is a system for calculating the financial ratios of Islamic insurance companies based on the company's financial statements and as an identification of financial problems (Munawir, 2007). The results of the EWS ratio can provide an early warning of risky financial conditions in the future. With the EWS, supervisory and preventive actions can be taken against failures that may be experienced by insurance companies. The use of the EWS ratio will make it easier to build and supervision of the insurance industry by the authorities. An early warning system is used to detect early on the condition and financial performance of insurance companies so that management can immediately make improvements. The early warning system becomes a benchmark in assessing the financial performance and health level of insurance companies.

3. METHODS

This study uses a quantitative approach whose measurement uses primary data. The quantitative approach is the definition of objective statistical and data measurement through scientific calculations derived from the financial statements of insurance companies. This study aims to explain the effect of the independent variable, namely the Early Warning System Ratio which consists of the Adequacy Fund Ratio , Claims Expenses Ratio, and Liquidity Ratio with the dependent variable being Risk Based Capital. In this study, the sample used was the insurance company with the highest RBC throughout 2016 – 2020 which was registered with the Financial Services Authority (OJK). Adpun in determining the sample using purposive sampling technique. The number of samples used in this study were 20 insurance companies registered with the OJK and issuing the largest RBCs in 2016 – 2020.

4. RESULTS AND DISCUSSION

Normality test

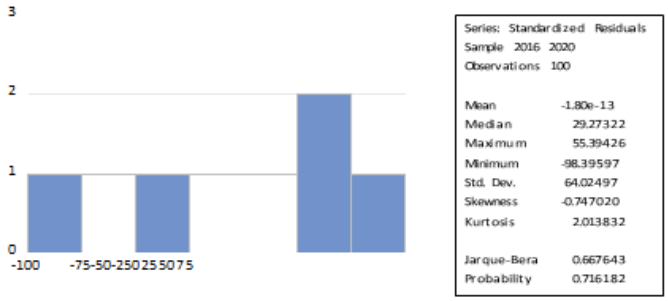

Figure 2. Normality Test
Source: Eviews 10

Based on the results of the tests that have been carried out on the software eviews version 10, it is known that the probability value of Jarque Bera residual research data which includes: Fund adequacy ratio, claims expense ratio, liquidity ratio and risk based capital is 0.667643 and the probability value is greater than 0.716182 > 0.05, it is stated that the research data is normally distributed.

Multicollinearity Test

Table 1. Multicollinearity Test Results

Variance Inflation Factors
Date: 27/05/21 Time: 19:15
Sample: 2016 - 2020
Included observations: 100

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	23144.59	1.290409	NA
TKD	7.623532	1211,653	1.005236
RBK	9178710	1072,252	1.005236
LKD	8167777	1332,142	1.005236

Source: Output Eviews V10

Based on table 1, it can be seen the value of the variance inflating factor (VIF) for the three variabel bebas yaitu Rasio t ingkat kecukupan dana (TKD), R ratio Beban klaim (RBK) dan R ratio Liquidity (LKD) each is 1.005236. The VIF value for the three independent variables is less than 10, so it can be stated that the regression model is free from problems multicollinearity.

Table 2, Heteroscedasticity Test Results

Heteroskedasticity Test: White

F-statistics	0.960497	Prob. F(3,12)	0.3428
Obs*R-squared	3.098067	Prob. Chi-Square(3)	0.2768
Scaled explained SS	1.866569	Prob. Chi-Square(3)	0.4006

Source: Output Eviews V10

Based on table 2, it can be seen that the probability value of the White Test (Obs*R-Squared) is 0.2768. The probability value is greater than 0.05 so that it can be stated that the regression model is free from heteroscedasticity problems or in other words, the research data consisting of: Fund adequacy ratio (TKD), Claim Expense Ratio (RBK) and Liquidity Ratio (LKD) have a large variance. the same (homogeneous) so that it meets the requirements of the classical assumption.

Autocorrelation Test

Autocorrelation is a condition where there is a correlation between the residual values in one observation with other observations in the regression model. This autocorrelation test aims to test whether in the linear regression model there is a correlation between the confounding error in period t and the error in period t-1 (previous). The prerequisite that must be met is the absence of autocorrelation in the regression model. The test method used in this research is the Breusch Godfrey Serial Correlation LM Test. The autocorrelation test using the Eviews application program obtained the following results:

Table 3. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistics	6.210503	Prob. F(2,11)	0.3157
Obs*R-squared	8.485378	Prob. Chi-Square(2)	0.2144

Source: Output Eviews V10

Based on table 3, it can be seen that the probability value of the Breusch Godfrey Serial Correlation LM Test (Obs*R-Squared) is 0.2144. The profitability value is greater than 0.05 so that it can be stated in the regression model that there is no autocorrelation problem. This shows that there is no correlation between the residual values in one other observation in the regression model or in other words there is no correlation between the nuisance error in period t and the error in period t-1 (previously).

Panel Model Data

Regression Analysis

The analytical method used to perform statistical analysis is panel regression analysis. Panel data is a combination of cross section data and time series (Time Series) so that it has implications for the large number of observations. Panel regression has three models, namely the Common Effect model, the Fixed Effect model, and the Random Effect model . The analysis of the three panel models is as follows :

Fixed Effect Model

The fixed effect model assumes that differences between individuals can be captured in their intercept differences. Therefore, each 0 is treated as an unknown parameter and will be estimated. To estimate the intercept that varies between individuals, the Dummy variable technique is used, so the fixed effect model is often called the least square dummy variable (LSDV) model. The results of data processing using the eviews program obtained a fixed effect model as follows:

Table 4. *Fixed Effect Test Results*

Dependent Variable: RBC ?
Method: Pooled Least Squares
Date: 27/05/21 Time: 17:45
Sample: 2016 2020
Included observations:5
Cross-sections included: 20
Total pool (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	5.372199	2.443187	2.198849	0.0031
TKD	0.319755	0.099914	3.200318	0.0025
RBK?	0.753918	0.212327	3.550742	0.0009
LKD?	0.395414	0.122893	3.217542	0.0024

Fixed Effects (Cross)

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.734845	Mean dependent var	2.743568
Adjusted R-squared	0.681477	SD dependent var	1.433945
SE of regression	0.195158	Akaike info criterion	0.255843
Sum squared resid	1.713905	Schwarz criterion	0.141994
Likelihood logs	18.16361	Hannan-Quinn Criter.	0.101603
F-statistics	292.4296	Durbin-Watson stat	1.009720
Prob(F-statistic)	0.000000		

Source: Output Eviews V10

Based on table 4. the coefficients for the Fixed effect regression model are obtained so that the following equation can be arranged:

$$Y_{it} = 5.372199 + 0.319755\,X1 + 0.753918\,X2 + 0.395414\,X3 + \square$$

Based on these equations, a panel model for each company can be arranged below:

Regression Coefficient Capital Adequacy Ratio (TKD) Or Slope Structure capital

The regression coefficient of the Capital Adequacy Level (TKD) or a slope of 0.319755 indicates that if the other independent variables have a fixed value and the Capital Adequacy Level (TKD) has increased by 1% then Risk Based Capital (RBC) will have an increase of 0.319755% regression coefficient The Capital Adequacy Level (TKD) has a positive value indicating that the Capital Adequacy Level (TKD) has a positive effect on Risk Based Capital (RBC).

Regression Coefficient of Claim Expense Ratio (RBK) Or Firm Size Slope

The regression coefficient of the Claim Load Ratio (RBK) or a slope of 0.753918 indicates that if the other independent variables have a fixed value and the Claim Load Ratio (RBK) has increased by 1% then Risk Based Capital (RBK) will have an increase of 0.753918% regression coefficient The Claim Expense Ratio (RBK) is positive indicating that the Claim Expense Ratio has a positive effect on Risk Based Capital (RBC).

Liquidity Ratio (LDK) Regression Coefficient Or Slope leverage

The Liquidity Ratio (LDK) regression coefficient or a slope of 0.395414 indicates that if the other independent variables have a fixed value and the Liquidity Ratio (LDK) increases by 1%, then Risk Based Capital (RBS) will increase by 0.395414%. positive indicates that the Liquidity Ratio (LDK) has a positive effect on Risk-Based Capital (RBS).

Common Effect Model

The common effect model assumes that the slope and intercept are constant between individuals and time. This model combines time series and cross section data in the form of a pool where the estimation technique uses the Ordinary Least Square (OLS) approach. The results of processing research data using the Eviews application program obtained the following common effect model:

Table 5. *Common Effect* Test Results

Dependent Variable: RBC ?
Method: Least Squares Panel
Date: 27/05/21 Time: 17:50
Samples: 2016 2020
Periods included:5
Cross-sections included: 20
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	2152,430	330.3215	6.516168	0.0000
TKD?	18.56155	10.95885	2.693750	0.0002
RBK?	15.22897	353.9067	3.043031	0.0009
LDK?	14.22890	320.0123	2.012299	0.0013

R-squared	0.159962	Mean dependent var	2311,896
Adjusted R-squared	0.018183	SD dependent var	2156,955
SE of regression	2137,256	Akaike info criterion	18.23289
Sum squared resid	2.060008	Schwarz criterion	18.34984
Likelihood logs	-434.5895	Hannan-Quinn Criter.	18.27709
F-statistics	1.435211	Durbin-Watson stat	0.232740
Prob(F-statistic)	0.248753		

Data source: Output Eviews V10

Based on table 4.10, the coefficients for the Common Effect regression model can be obtained so that the following equation can be arranged:

$$Y\,it = 0 + 1\,X\,1it\text{-}1 + 2\,X\,2it\text{-}1 + + + \_$$
$$Y = 2152{,}430 + 18{,}56155\,X_1 + 15{,}22897\,\bar{X}_2 + 14{,}22890 +$$

Random Effect Model

The random effect model uses residual variables to accommodate differences in individual characteristics and time. Thus, in the random effects model there are two residual components, namely the residual cross section (μi). The results of data processing using the eviews application program obtained a random effect model as follows:

Table 6. *Random Effect* Test Results

Dependent Variable: RBC ?
Method: Pooled EGLS (Cross-section random effects)
Date: 27/05/21 Time: 17:45
Samples: 2016 2020
Included observations: 5
Cross-sections included: 20

Total pool (balanced) observations: 100
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	12.94764	2.035497	6.360926	0.0000
TKD?	0.622334	0.084031	8.406021	0.0000
RBK?	-1.093254	0.152604	-6.163979	0.0000
LDK?	0.699121	0.108228	8.459682	0.0000
Random Effects (Cross)				

Effects Specification	SD	Rho
Random cross-section	0.204537	0.5235
Idiosyncratic random	0.195158	0.4765

Weighted Statistics			
R-squared	0.501320	Mean dependent var	0.930746
Adjusted R-squared	0.489858	SD dependent var	0.531127
SE of regression	0.243475	Sum squared resid	3.082570
F-statistics	69.90919	Durbin-Watson stat	1.169806
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.918461	Mean dependent var	2.743568
Sum squared resid	9.221313	Durbin-Watson stat	0.391052

Source: Output Eviews V10

Based on table 6. the coefficients for the Random Effect regression model are obtained so that the following equation can be arranged:

$$Y = 12.94764 + 0.622334X_1 - 1.093254X_2 + 0.699121X_3 +$$

Panel Model Test

There are three Step in choose l estimation method in data panel that is testing model common effects and model l fixed effect (Chow test), testing model fixed effect and model l random effect (Hausmann Test), and testing the random effect model and the common effect model (Breusch-Pagan LM Test). The three stages can be further explained as described in the following:

Chow Test

This test was conducted to compare the common effect model with the fixed effect model through the F-test. If the results show that the common effects model is accepted, then the common effects model will be analyzed. But if the fixed effects model is accepted, then the fixed effects model will be analyzed. Data processing using the Eviews Version 10 application program obtained the following Chow Test results:

Table 7. Chow Test Results

Redundant Fixed Effects Test ts
Equation: Untitled
Test cross-section fixed effect cts

Effects Test	Statistics	df	Prob.
Cross-section F	340.092810	(2.43)	0.0000
Cross-section Chi-square	135.478359	3	0.0000

Source: Output Eviews v10

Based on table 7 above, the Fcount value is 340.092810 with a probability of 0.0000. The probability value is less than 0.05, so Ho is rejected, meaning that a good panel model to be used in this study is the fixed effect model.

Hausmann Test

This test was conducted to compare the fixed effect model and the random effect model through the Chi Square test. If the results show that the fixed effects model is accepted, then the fixed effects model will be analyzed. But if the random effects model is accepted, then the random effects model will be analyzed. Data processing using the Eviews application program obtained the following Hausmann Test results:

Table 8. Results of Hausmann Test

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

Test Summary	Chi-Sq. Statistics	Chi-Sq. df	Prob.
Random cross-section	680.185620	3	0.0000

Source: Output Eviews V10

Based on table 8, the Chi-Square statistics value is 680.185620 with a probability of 0.0000. If the probability value is less than 0.05, then Ho is rejected, meaning that a good panel model to use is the fixed effect model.

T Test (Partial)

The Effect of Rational Adequacy of Funds (TKD) on Risk Based Capital (RBC)

Based on table 4. the tcount value for testing the H1 hypothesis is 3.200318 with a significance of 0.0025 where the tcount value with a significance level of 5% where df = n – k = (65 – 3) = 62, the Ttable value is 1.998 tcount = 3.200318 > Ttable = 1998 With a significance level of 0.0025 < 0.05, then H01 is rejected and Ha1 is accepted, meaning that the ratio of the level of fund adequacy partially has a positive and significant effect on risk based capital. This shows that if there is an increase in the ratio of the level of fund adequacy, it will result in an increase in risk based capital and vice versa, a decrease in the ratio of the level of adequacy of funds will result in a decrease in risk based capital.

The Effect of Claim Expense Ratio (RBK) on Risk Based Capital (RBC)

Based on table 4. the tcount value for testing the H2 hypothesis is 3.550742 with a significance of 0.0009, the t-count value with a significance level of 5% where df = n – k = (65 – 3) = 62, the Ttable value is 1.998 tcount value = 3.550742 > ttable = 1.998 With a significance level of 0.0009 < 0.05, then H02 is rejected and Ha2 is accepted, meaning that the claim expense ratio partially has a positive and significant effect on risk based capital. This shows that if there is an increase in the claim expense ratio, it will result in an increase in risk based capital. and vice versa, a decrease in the claim expense ratio will also result in a decrease in risk based capital.

The Effect of Liquidity Ratio (LDK) on Risk Based Capital (RBC)

Based on table 4. the Tcount value for testing the H3 hypothesis is 3.217542 with a significance of 0.0024 the tcount value with a significance level of 5% where df = n – k = (65 – 3) = 62, the ttable value is 1,998, tcount = 3.217542 > Ttable = 1,998 With a significance level of 0.0024 < 0.05, then H03 is rejected and Ha3 is accepted, meaning that the liquidity ratio partially has a positive and significant effect on risk based capital. This shows that if there is a liquidity ratio, it will result in an increase in risk based capital and vice versa, a decrease in the liquidity ratio will result in a decrease in risk based capital.

F Test (Simultaneous)

The F test is used to test the magnitude of the effect of all independent variables simultaneously on the dependent variable. This test is done by comparing the value of Fcount and Ftable, the value of Fcount can be obtained using the fixed effect model.

Based on table 4. the Fcount value is 292.4296 and the significance value is 0.00000. in table F with a significance level of 5%, where df = n – k – 1 (65 – 3 – 1) = 61, the Ftable value is 2.76. Fcount 292.4296 > Ftable 2.76 with a significance level of 0.00000 < 0.05 then H04 is rejected and Ha4 is accepted, meaning that the ratio of fund adequacy level, claims expense ratio and liquidity ratio simultaneously has a positive and significant effect on risk based capital. This shows that an increase in the capital adequacy ratio, claims expense ratio and liquidity ratio will result in an increase in risk based capital and vice versa.

Coefficient of Determination Test R2

To determine the effect of the independent variables on the dependent variable, the coefficient of determination is used together. The coefficient of determination is the percentage of the influence of the independent variable on the dependent variable. The value of R2 lies between 0 and 1, where if the value of R2 is getting closer to the value of 1, it means that the influence of the independent variable on the dependent variable is getting stronger, and vice versa. Analysis of the coefficient of determination using the common effect model obtained the following results

Table 9. Coefficient of Determination Test for R ^{2}

Cross-section fixed (dummy variables)

R-squared	0.734845	Mean dependent var	2.743568
Adjusted R-squared	0.681477	SD dependent var	1.433945
SE of regression	0.195158	Akaike info criterion	0.255843
Sum squared resid	1.713905	Schwarz criterion	0.141994
Likelihood logs	18.16361	Hannan-Quinn Criter.	0.101603
F-statistics	292.4296	Durbin-Watson stat	1.009720
Prob(F-statistic)	0.000000		

Source: Eviews V10

Based on table 9, the joint effect is obtained by the coefficient of determination (Adjusted R Square) of 0.681477. This means that the effect of the fund adequacy ratio (X1), claims expense ratio (X2), and liquidity ratio (X3) on risk-based capital (Y) is 0.681 x 100% = 68.1%. While other variables that affect risk based capital (Y) but were not examined in this study were e = 0.319 x 100% = 31.9%.

Discussion

The Effect of Fund Adequacy Ratio, Claim Expense Ratio, and Liquidity Ratio on Risk Based Capital

Based on the results of the tests that have been carried out, the F count value is 292.4296 and the significance value is 0.00000. in table F with a significance level of 5%, where df = n – k – 1 (65 – 3 – 1) = 61, the Ftable value is 2.76. The value of Fcount 292.4296 > Ftable 2.76 with a significance level of 0.00000 < 0.05 then H04 is rejected and Ha4 is accepted, meaning that the ratio of fund adequacy level, claim expense ratio and liquidity ratio simultaneously has a positive and significant effect on risk-based capital. This shows that an increase in the capital adequacy ratio, claims expense ratio and liquidity ratio will result in an increase in risk-based capital and vice versa.

The results of research conducted by l Sudjana (2018) in his research reveal that the claim expense ratio and liquidity ratio have a significant effect on life insurance companies. The results of research conducted by Andari (2018) and Saputra (2019) in their research reveal that the Early Warning System Ratio which consists of the level of fund adequacy, the claim expense ratio, and the liquidity ratio has a positive effect on Risk Based Capital. The results of research conducted by Putril (2013), in his research revealed that the ratio of the level of adequacy of funds has an influence on RBC in insurance companies. The results of research conducted by Ratna (2017) in her research reveal that the early warning system ratio has a positive effect on risk-based capital in Islamic insurance companies. The results of research conducted by Kadek (2018) in his research reveal that the early warning system has a positive effect on risk-based capital in insurance companies listed on the Indonesian stock exchange for the period (2012 - 2017).

The Effect of Fund Adequacy Ratio (TKD) on Risk Based Capital

Based on the results of the tests that have been carried out, the tcount value for testing the H1 hypothesis is 3.200318 with a significance of 0.0025 where the tcount value with a significance level of 5% where df = n – k = (65 – 3) = 62, the ttable value is 1.998 tcount = 3.200318 > t table = 1.998 With a significance level of 0.0025 < 0.05 So H01 is rejected and Ha1 is accepted, meaning that the ratio of the level of fund adequacy partially has a positive and significant effect on risk based capital. The results of research conducted by Sudjana (2018) in his research reveal that the claim expense ratio and the liquidity ratio have a significant effect on life insurance companies. The results of research conducted by Andari (2018) and Saputra (2019) in their research reveal that the Early Warning System Ratio which consists of the level of fund adequacy, the claim expense ratio, and the liquidity ratio has a positive effect on Risk Based Capital. The results of research conducted by Putri (2013), in her research revealed that the ratio of the level of adequacy of funds has an influence on RBC in insurance companies. The results of research conducted by Ratna (2017) in her research reveal that the ratio of the early warning system has a positive effect on risk-based capital in Islamic insurance companies. The results of research conducted by Kadek (2018) in his research reveal that the early warning system has a positive effect on risk-based capital in insurance companies listed on the Indonesian stock exchange for the period (2012 - 2017). This shows that if there is an increase in the fund adequacy ratio, it will result in an increase in risk-based capital and vice versa, a decrease in the fund adequacy level ratio will result in a decrease in risk-based capital.

The Effect of Claim Expense Ratio on Risk Based Capital

Based on the results of the tests that have been carried out, the t-count value for hypothesis testing H2 is 3.550742 with a significance of 0.0009 the t - count value with a significance level of 5% where df = n – k = (65 – 3) = 62, the t table value is 1,998 t value count = 3.550742 > t table = 1.998 With a significance level of 0.0009 < 0.05 Then H0 2 is rejected and Ha 2 is accepted, meaning that the claim expense ratio partially has a positive and significant effect on risk based capital. This shows that if there is an increase in the claim expense ratio, it will result in an increase in risk based capital. and vice versa, a decrease in the claim expense ratio will also result in a decrease in risk based capital. The results of research conducted by Sudjana (2018) in his research reveal that the claim expense ratio and liquidity ratio have a significant effect on life insurance companies. The results of research conducted by Andari (2018) and Saputra (2019) in their research reveal the Early waning system ratio which consists of the level of fund adequacy, claims expense ratio, and liquidity ratio has a positive effect on Risk Based Capital . The results of research conducted by Putri (2013), in her research revealed that the ratio of the level of adequacy of funds has an influence on the RBC of the insurance company. The results of research conducted by Ratna (2017) in her research reveal that the ratio of the early warning system has a positive effect on risk-based capital I in Islamic insurance companies. The results of the research conducted by Kadek (2018) in his research revealed that the early warning system had a positive effect on risk based capital in insurance companies listed on the Indonesian stock exchange for the period (2012 – 2012). 2017).

Claim expense ratio calculated by comparing l between claims incurred and premium income. Based on the results of these calculations, the results obtained that there was a significant decrease and increase for each company during the research observation period. This is an indication that the company has not been able to manage the claims that have occurred. So a high enough claim can lead to a high value of the load ratio claim. Some companies show that a decrease in the claim expense ratio results in an increase in RBC, the value of the claim expense ratio has not met the minimum normal limit of l 100%. Therefore, an in-depth analysis is needed regarding the high value of claims which experienced by the company. This is necessary so that the company is able to meet the normal limits of the claim expense ratio so that it confidence and can attract new customers. So that company l premium income will increase and solvency reserves can increase.

The Effect of Liquidity Ratio on Risk Based Capital

Based on the results of the tests that have been carried out, the tcount value for testing the H3 hypothesis is 3.217542 with a significance of 0.0024 the tcount value with a significance level of 5% where df = n – k = (65 – 3) = 62, the ttable value is 1,998 tcount = 3.217542 > Ttable = 1.998 With a significance level of 0.0024 < 0.05, then H03 is rejected and Ha3 is accepted, meaning that the liquidity ratio partially has a positive and significant effect on risk-based capital. This shows that if there is a liquidity ratio, it will result in an increase in risk-based capital and vice versa, a decrease in the liquidity ratio will result in a decrease in risk-based capital. The results of research conducted by Sudjana (2018) in his research reveal that the claim expense ratio and liquidity ratio have a significant effect on life insurance companies. The results of research conducted by Andari (2018) and Saputra (2019) in their research reveal that the Early Warning System Ratio which consists of the level of fund adequacy, claims expense ratio, and liquidity ratio has a positive effect on Risk Based Capital. The results of research conducted by Putri (2013), in her research revealed that the ratio of the level of adequacy of funds has an influence on RBC in insurance companies. The results of research conducted by Ratna (2017) in her research reveal that the ratio of the early warning system has a positive effect on risk-based capital in Islamic insurance companies. The results of research conducted by Kadek (2018) in his research reveal that the early warning system has a positive effect on risk-based capital in insurance companies listed on the

Indonesian stock exchange for the period (2012 - 2017). The more liquid the insurance company is, the better the company's solvency level will be. Therefore, insurance companies need to increase and maintain their liquidity ratios, in order to maintain the trust of insurance participants. If the company's performance is good, the interest of prospective insurance participants will increase which will result in an increase in company income.

5. CONCLUSION

Based on the results of the research and discussion that the author has stated in the previous chapter, it can be concluded that. The ratio of the level of adequacy of funds partially has a positive and significant effect on risk l based l capital . This means that as the ratio of the level of adequacy of funds increases, the risk based will also increase capital. Claims expense ratio partially has a positive effect on risk based capital. This means that the higher the claim expense ratio, the higher the risk based capital. Liquidity ratio partially positive effect on risk based capital. This means that the higher the liquidity ratio, the higher the risk based capital. The ratio of the level of adequacy of funds, the ratio of claims expense, and the ratio of liquidity simultaneously affect the risk l based l capital. This means that the higher the capital adequacy ratio, the expense ratio of risk based will also increase capital.

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