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Analysis of Financial Performance on Shariah Insurance Companies in Indonesia Using Early Warning System (EWS) and Risk Based Capital (RBC) Methods

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Abstract: This study aims to analyze the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies for the period 2017-2019 using the Early Warning System (EWS) and Risk-Based Capital (RBC) methods. The EWS ratios used in this study are Liquidity Ratios, Capital Adequacy Ratios, Claim Expense Ratios, and Own Retention Ratios. Meanwhile, the RBC method used is based on regulations set by the government. This research was descriptive research with a quantitative approach. The samples used in this study were 5 Sharia Life Insurance companies and 4 Sharia General Insurance companies selected using the purposive sampling method. The results of this study indicate that: First, the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies for the period 2017-2019 were quite good. Second, Sharia General Insurance was slightly better than Sharia Life Insurance. And third almost all research variables showed that there is no significant difference between Sharia Life Insurance and Sharia General Insurance. In the future, Sharia Life Insurance companies and Sharia General Insurance companies are advised to pay more attention to the company's stability because stability is very important to show the success of an insurance company in running its business.

Keywords: Financial Performance; Early Warning System (EWS); Risk-Based Capital (RBC); Sharia Life Insurance; Sharia General Insurance

JEL Classification: D53; G22; G32

Introduction

Human life in this world is surrounded by various dangers that cause fear and anxiety in humans. Death, accidents, sickness, natural disasters, fire, and other risks are examples of conditions that make people worry because these conditions cause harm to humans. Risk always comes at any time, and we cannot predict how significant the risk is. Allah SWT has explained the risks in Surah Al-Luqman verse 34.

“Indeed, Allah (alone) has knowledge of the Hour and sends down the rain and knows what is in the wombs. And no soul perceives what it will earn tomorrow, and no soul perceives what land it will die. Indeed, Allah is Knowing and Acquainted” (Q.S. Al-Luqman: verse 34).

One of the financial institutions that specifically deal with risks is Shariah Insurance. Shariah Insurance's role is to protect and help each other based on *ukhuwah Islamiyah* among Shariah Insurance participants in facing calamities. The principle of protecting and helping each other in Shariah Insurance is the embodiment of Allah SWT's command in Surah At-Taubah verse 71.

“And the believing men and the believing women, they are friends of each other. They enjoin Al-Ma’rûf and forbid from Al-Munkar and keep up the prayer and give alms (the Zakât) and obey Allah and His Messenger. These, Allah will show mercy to them. Surely Allah is All-Mighty, All-Wise” (Q.S. At-Taubah: verse 71).

The verse above shows that Allah SWT will have mercy on His servants who protect each other. This verse is in line with one of the main principles of Sharia Insurance, which is to protect each other based on *ukhuwah Islamiyah* in facing calamities.

Human existence is inherently exposed to various perils and hazards, including death, accidents, illness, natural disasters, and fires. Sharia Insurance, a financial institution rooted in Islamic principles, specializes in managing these risks, providing protection and assistance to participants in times of adversity. The Islamic Financial Service Board Report reveals that the global Sharia Insurance industry experienced modest growth of 1.5% in 2019, positioning Indonesia at the 15th spot for gross premiums. Surprisingly, despite having the largest Muslim population worldwide, Indonesia's Sharia Insurance industry held a mere 4.8% market share in 2018. Furthermore, data from the Financial Services Authority indicates a slowdown in the growth of the Sharia Life Insurance industry from 2015 to 2019.

Table 1 The Growth of Sharia Life Insurance and Sharia General Insurance Businesses 2015-2019 (in Trillion Rupiah)

Type of Insurance	Description	Year				
		2015	2016	2017	2018	2019
Sharia Life Insurance	Assets	18,08	21,73	33,19	34,28	37,89
	Investments	19,6	24,32	30,4	31,87	34,40
	Claim	2,58	3,06	3,5	7,19	9,24
	Gross Premium	8,27	9,44	11,09	12,66	13,96
Sharia General Insurance	Assets	4,96	6,22	7,34	7,32	7,91
	Investments	3,5	4,24	5,04	5,1	5,49
	Claim	0,91	1,23	1,44	1,47	1,44
	Gross Premium	1,96	2,87	2,65	2,75	2,79

Source: 2019 Indonesian Insurance Statistics by the Financial Service Authority

The Table 1 shows a slowdown in the growth of the Sharia Life Insurance industry from 2017 to 2019, as well as a similar trend in the Sharia General Insurance industry. Assets, investments, claims, and gross premiums experienced a slowdown during this period. This slowdown in industry growth necessitates attention to the performance of insurance companies. Evaluating financial performance through methods like Early Warning System (EWS) and Risk-Based Capital (RBC) analysis is crucial. Studies have shown that EWS and RBC are commonly used to assess insurance performance. Therefore, analyzing the

financial performance of Sharia Life Insurance and Sharia General Insurance in Indonesia and comparing them will provide valuable insights into the performance of these insurance companies, allowing for a better understanding of their strengths and weaknesses. The findings can help stakeholders make informed decisions and identify areas for improvement in the insurance industry.

Supervision and assessment of the insurance companies' performance need attention. According to Ang (2007), the importance of performance monitoring in the insurance sector is because the insurance industry requires public trust regarding Indonesia's financial institutions' condition. Samad and Hassan's (2006) research supported this statement, which stated that Sharia Insurance performance appraisal's importance to determine the company's health level achievement and the company's ability to benefit from the Sharia Insurance profit-sharing system.

The financial performance can be seen from its financial statements because, in the financial statements, there are estimates such as assets, liabilities, capital, and profits. According to Horne and Wachowicz Jr (2009), the tools used to assess a company's financial condition and performance are financial ratios obtained from the company's financial statements, which describe profitability, solvency, and management efficiency. Financial ratio analysis for insurance companies prepared by The National Association of Insurance Commissioner (NAIC), which is the regulatory body for insurance companies in the United States under the Organization for Economic Co-Operation and Development (OECD) (NAIC 2016; Pitselis 2009).

NAIC raises several types of insurance performance measurements, namely 1) Early Warning System (EWS), which includes elements of financial ratios, productivity, profitability, and growth in its calculations, 2) Insurance Regulatory Information System (IRIS) to assess company financial distress using a national computerized database, 3) Risk-Based Capital (RBC) to take into account the risk of failure in wealth management, an imbalance between asset and liability values, and 4) Financial Analysis and Surveillance Tracking (FAST) conducted by the state to monitor financial performance conditions and prevent inability to pay by insurance companies (Pitselis 2009).

Tahira and Arshad (2014) Compared the performance of Sharia and conventional insurance companies in Pakistan. Results showed that Sharia insurance companies performed well in liquidity ratios, risk and solvency ratios, and capital adequacy ratios, but not in profitability.

Hsiao (2000) Analyzed the differentiation of risk-based capital (RBC) in financial risk management of life insurers. Found significant differences between domestic and foreign branches of life insurers, proposing the use of RBC as an Early Warning System (EWS) reference.

Torno and Tiu (2014) Assessed the factors affecting the survivability of non-life insurance firms in the Philippines using Levene-Welch-Games-Howell ANOVA. Identified factors such as leverage, premium growth, firm size, and losses paid due to natural disasters.

Antonio et al. (2013) Conducted a comparative analysis of efficiency between takaful (Islamic insurance) and conventional insurance in Malaysia using Data Envelopment Analysis (DEA). Conventional insurance companies showed better overall cost efficiency.

Abdou et al. (2014) Compared Sharia insurance and conventional insurance in the Malaysian market. Conventional insurance performed better in terms of financial performance and managerial efficiency, as indicated by ROA and ROE.

This article tries to estimate a significant difference in the financial performance of pure Sharia Life Insurance companies compared to pure Sharia General Insurance companies, using the EWS and RBC methods for the period 2017-2019. As some researches before only paid attention to one of those insurance type, this article wants to fill the limited research that can be found.

Research Method

The study analyzed data from 5 Sharia Life Insurance companies and 4 Sharia General Insurance companies for the period 2017 to 2019. The data was obtained from the companies' annual reports.

There will be two methods used in this article, namely, early warning system (EWS) and risk-based capital (RBC). The explanation of each method is as follow with hypotheses related to the method.

Early Warning System (EWS)

1. Liquidity Ratio (LR)

H_{01} : There is no significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Liquidity Ratio for the period 2017-2019.

H_{a1} : There is a significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Liquidity Ratio for the period 2017-2019.

2. Capital Adequacy Ratio (CAR)

H_{02} : There is no significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Capital Adequacy Ratio for the period 2017-2019.

H_{a2} : There is a significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Capital Adequacy Ratio for the period 2017-2019.

3. Claim Expense Ratio (CER)

H0₃: There is no significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Claim Expense Ratio for the period 2017-2019.

Ha₃: There is a significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Claim Expense Ratio for the period 2017-2019.

4. Own Retention Ratio (ORR)

H0₄: There is no significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Own Retention Ratio for the period 2017-2019.

Ha₄: There is a significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the EWS method represented by the Own Retention Ratio for the period 2017-2019.

Risk-Based Capital (RBC)

H0₅: There is no significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the RBC method represented by the Risk-Based Capital for the period 2017-2019.

Ha₅: There is a significant difference between the financial performance of Sharia Life Insurance companies and Sharia General Insurance companies with the RBC method represented by the Risk-Based Capital for the period 2017-2019. The object of research in this study is the financial ratios of Early Warning System (EWS) and Risk-Based Capital (RBC) in Sharia Life Insurance companies and Sharia General Insurance companies for the period 2017-2019. EWS and RBC are measured by calculating the Liquidity Ratio, Capital Adequacy Ratio, Claim Expense Ratio, Own Retention Ratio, and Risk-Based Capital.

Result and Discussion

Analysis of Financial Performance in Sharia Life Insurance and Sharia General Insurance Companies in Indonesia

The liquidity ratios of all Sharia Life Insurance companies and Sharia General Insurance companies were found to be below the maximum standard limit of 120%, indicating favorable financial performance in both cases.

Table 2 Analysis of Liquidity Ratio

Type	Insurance Companies	Liquidity Ratio (%)				
		2017	2018	2019	Mean	Analysis
Sharia Life Insurance	PT Takaful Keluarga	55,31	66,76	66,77	63,28	< 120%
	PT Amanahjiwa Giri Artha	34,19	35,28	30,19	33,22	< 120%
	PT Jasa Mitra Abadi	31,85	38,74	58,21	42,93	< 120%
	PT Jiwa Syariah Bumiputra	64,39	65,42	86,60	72,14	< 120%
	PT ASYKI	19,40	36,15	44,38	33,31	< 120%
Sharia General Insurance	PT Takaful Umum	51,18	31,33	42,23	41,58	< 120%
	PT Sonwelis Takaful	17,53	10,06	9,61	12,40	< 120%
	PT Jasindo	62,43	85,65	81,01	76,36	< 120%
	PT Chubb Syariah	86,08	86,10	83,59	85,26	< 120%

Table 3 Analysis of Capital Adequacy Ratio

Type	Insurance Companies	Capital Adequacy Ratio (%)				
		2017	2018	2019	Mean	Analysis
Sharia Life Insurance	PT Takaful Keluarga	9,88	9,83	10,22	9,98	< 33%
	PT Amanahjiwa Giri Artha	57,86	54,96	58,98	57,27	> 33%
	PT Jasa Mitra Abadi	68,40	63,02	57,41	62,94	> 33%
	PT Jiwa Syariah Bumiputra	7,89	4,80	0,57	4,42	< 33%
	PT ASYKI	81,19	66,78	61,74	69,90	> 33%
Sharia General Insurance	PT Takaful Umum	13,44	47,87	41,31	34,21	> 33%
	PT Sonwelis Takaful	86,17	85,43	84,76	85,45	> 33%
	PT Jasindo	36,29	37,58	34,66	36,18	> 33%
	PT Chubb Syariah	24,32	24,28	29,12	25,91	< 33%

Most Sharia Life Insurance companies (3 out of 5) and Sharia General Insurance companies (3 out of 4) exceeded the minimum standard limit of 33% for capital adequacy ratios, indicating strong financial performance.

Table 4 Analysis of Claim Expense

Type	Insurance Companies	Claim Expense Ratio (%)				
		2017	2018	2019	Mean	Analysis
Sharia Life Insurance	PT Takaful Keluarga	89,01	98,74	89,00	92,25	< 100%
	PT Amanahjiwa Giri Artha	40,46	34,90	31,03	35,46	< 100%
	PT Jasa Mitra Abadi	40,85	78,73	137,95	85,84	< 100%
	PT Jiwa Syariah Bumiputra	73,44	59,50	63,89	65,61	< 100%
	PT ASYKI	100,52	93,96	106,06	100,18	> 100%
Sharia General Insurance	PT Takaful Umum	260,0	87,00	57,00	134,67	> 100%
	PT Sonwelis Takaful	18,00	28,00	11,11	19,04	< 100%
	PT Jasindo	93,29	56,05	82,55	77,30	< 100%
	PT Chubb Syariah	97,75	90,50	117,04	101,76	> 100%

Four out of five Sharia Life Insurance companies had claim expense ratios below the maximum standard limit of 100%, indicating good financial performance. However, two out of four Sharia General Insurance companies exceeded the limit, indicating poor financial performance.

Table 5 Analysis of Own Retention Ratio

Type	Insurance Companies	Own Retention Ratio (%)				
		2017	2018	2019	Mean	Analysis
Sharia Life Insurance	PT Takaful Keluarga	38,76	31,46	27,93	32,72	-
	PT Amanahjiwa Giri Artha	27,92	49,31	46,32	41,18	-
	PT Jasa Mitra Abadi	28,75	33,54	22,41	28,23	-
	PT Jiwa Syariah Bumiputra	31,17	42,13	43,82	39,04	-
	PT ASYKI	37,46	42,03	38,21	39,23	-
Sharia General Insurance	PT Takaful Umum	55,27	23,57	31,10	36,65	-
	PT Sonwelis Takaful	44,76	43,95	40,49	43,07	-
	PT Jasindo	32,94	33,35	31,94	32,74	-
	PT Chubb Syariah	29,38	33,06	32,52	31,65	-

There is No specific standard limit for retention ratio, but PT. Takaful Keluarga and PT. Sonwelis Takaful experienced declining ratios.

Table 6 Analysis of Risk-Based Capital

Type	Insurance Companies	Risk-Based Capital (%)				
		2017	2018	2019	Mean	Analysis
Sharia Life Insurance	PT Takaful Keluarga	259,37	494,99	492,70	415,69	>120%
	PT Amanahjiwa Giri Artha	927,33	827,97	773,33	842,88	>120%
	PT Jasa Mitra Abadi	1665,6	1341,3	1169,02	1392,01	>120%
	PT Jiwa Syariah Bumiputra	330,11	419,83	195,92	315,29	>120%
	PT ASYKI	3133,5	1340,8	1148,04	1874,16	>120%
Sharia General Insurance	PT Takaful Umum	612,3	1193,9	1384,4	1063,5	> 120%
	PT Sonwelis Takaful	1500,3	3100,9	3238,2	2613,1	> 120%
	PT Jasindo	396,4	317,9	311,4	341,9	> 120%
	PT Chubb Syariah	734,1	1131,1	1694,7	1186,6	> 120%

All Sharia Life Insurance companies met the risk-based capital ratio standard of 120%, indicating good financial performance. Similarly, all Sharia General Insurance companies also met the standard, indicating good financial performance.

Variable Descriptive Statistics

Table 7 Variable Descriptive Statistics

Type of Insurance		Min	Max	Mean	S. Dev
Sharia Life Insurance	Liquidity Ratio (%)	19,40	86,60	48,98	18,73
Sharia General Insurance		9,61	86,10	53,90	31,08
Sharia Life Insurance	Capital Adequacy Ratio (%)	0,57	81,19	40,90	29,21
Sharia General Insurance		13,44	86,17	45,43	25,71
Sharia Life Insurance	Claim Expense Ratio (%)	31,03	137,95	75,86	30,66
Sharia General Insurance		-	117,04	39,85	100,31
		260,00			
Sharia Life Insurance	Own Retention Ratio (%)	22,41	49,31	36,08	7,79
Sharia General Insurance		23,57	55,27	36,02	8,56
Sharia Life Insurance	Risk-Based Capital (%)	195,92	3.133,56	968,004	748,43
Sharia General Insurance		311,45	3.238,24	1.301,33	990,59

Sharia Life Insurance outperformed Sharia General Insurance in terms of Liquidity Ratio, while Sharia General Insurance had better financial performance in terms of Capital Adequacy Ratio, Claim Expense Ratio, and Risk-Based Capital. Sharia Life Insurance had superior financial performance in terms of Own Retention Ratio.

Normality Test Results

Table 8 Normality test on Sharia Life Insurance

		LR	CAR	CER	ORR	RBC
N		15	15	15	15	15
Standard Parameters ^a	Mean	48.5	40.27	75.3	35.6	967.47
	Std. Deviation	1866	2929	3065	7917	74846
Most Extreme Differences	Absolute	.180	.280	.142	.124	.176
	Positive	.180	.249	.142	.119	.176
	Negative	-.130	-.280	-.139	-.124	-.151
Kolmogorov-Smirnov Z		.699	1086	.551	.480	.680
Asymp. Sig. (2-tailed)		.713	.189	.922	.975	.744

All Sharia Life Insurance companies showed normally distributed data, allowing the use of parametric tests.

Table 9 Normality test on Sharia General Insurance

		LR	CAR	CER	ORR	RBC
N		12	12	12	12	12
Standard Parameters ^a	Mean	53.5	45.0	39.67	35.5	1300.8
	Std. Deviation	3112	2567	10021	8555	99056
Most Extreme Differences	Absolute	.228	.229	.304	.282	.179
	Positive	.149	.229	.220	.282	.179
	Negative	-.228	-.186	-.304	-.140	-.159
Kolmogorov-Smirnov Z		.788	.792	1053	.976	.620
Asymp. Sig. (2-tailed)		.564	.558	.217	.297	.836

All Sharia Life Insurance companies showed normally distributed data, allowing the use of parametric tests.

Hypothesis Test

In this study, the Independent Sample T-Test is used to test the hypothesis. Before conducting the test, the researcher performs a variance similarity test using Levene's Test. If the p-value is > 0.05, the variances are considered the same (homogeneous). If the p-value is < 0.05, the variances are considered different (heterogeneous). Based on the variance similarity test, the t-test is conducted assuming equal or unequal variances. The criteria for the t-test are: If the Sig. (2-tailed) value > 0,05, then Ho is accepted or there is no significant difference between Sharia Life Insurance and Sharia General Insurance. If the Sig. (2-tailed) value < 0,05, then Ho is rejected or there is a significant difference between Sharia Life Insurance and Sharia General Insurance.

Table 10 Independence Sample T-Test

Methods	Variable		Levene's Test		T-Test for Equality of Means	
			F	Sig.	t	Sig. (2-tailed)
EWS	LR	EVA	6,555	0,017	-0,510	0,615
		EVA			-0,483	0,635
	CAR	EVA	2,157	0,154	-0,422	0,676
		EVA			-0,428	0,672
	CER	EVA	1,433	0,243	-0,386	0,703
		EVA			-0,359	0,725
ORR	EVA	0,007	0,933	0,017	0,987	
	EVA			0,017	0,987	
RBC	RBC (SMR)	EVA	0,872	0,359	-0,997	0,328
		EVA			-0,966	0,346

In terms of Liquidity Ratio (LR), no significant difference was found, which aligns with the research conducted by Indah (2014). For Capital Adequacy Ratio (CAR), there was also no significant difference, supporting the findings of Oktaviani (2016) and Indah (2014). However, in the case of Claim Expense Ratio (CER), a significant difference was observed, consistent with the research by Indah (2014). In regards to Own Retention Ratio (ORR), no significant difference was found, which supports the findings of Oktaviani (2016). Lastly, for Risk-Based Capital (RBC), no significant difference was observed, aligning with the research conducted by Astutik (2016).

Conclusion

Based on the results and discussion above, the following conclusions can be drawn, the financial performance of Sharia Life Insurance companies based on the Early Warning System (EWS) and Risk-Based Capital (RBC) methods during the period of 2017 to 2019 were classified as good. Because of the five ratios that have been studied, all of them showed good conditions, namely Liquidity Ratio, Capital Adequacy Ratio, Claim Expense Ratio, Own Retention Ratio, and Risk-Based Capital Ratio. The financial performance of Sharia General Insurance companies based on the Early Warning System (EWS) and Risk-Based Capital (RBC) methods during the period of 2017 to 2019 were classified as good. Because out of five ratios that have been studied there are four ratios that showed good conditions, namely Liquidity Ratio, Capital Adequacy Ratio, Own Retention Ratio, and Risk-Based Capital Ratio. Meanwhile, the Claim Expense Ratio shows bad condition.

Based on the results of the financial performance assessment using the ratio of Early Warning System (EWS) and Risk-Based Capital (RBC) methods, Sharia General Insurance was slightly better than Sharia Life Insurance. Sharia General Insurance companies had a better financial performance in terms of Capital Adequacy Ratio (CAR), Claim Expense Ratio (CER), and Risk-Based Capital Ratio (RBC). Meanwhile, Sharia Life Insurance companies are better in term of Liquidity Ratio (LR) and Own Retention Ratio (ORR).

The results of hypothesis testing using the independent sample t-test state that based on the Early Warning System (EWS) method, which is reviewed from four ratios, namely the Liquidity Ratio (LR), Capital Adequacy Ratio (CAR), Claim Expense Ratio (CER), and Own Retention Ratio (ORR), only the Claim Expense Ratio showed a significant difference in financial performance between Shariah Life Insurance companies and Shariah General Insurance companies. As for the Liquidity Ratio, the Capital Adequacy Ratio, and the Own Retention Ratio shows that there is no significant difference in financial performance between both companies in Indonesia for the period 2017-2019. For the Risk-Based Capital (RBC) method, which is represented by the Risk-Based Capital ratio shows that there is no significant difference in financial performance between both companies for the period 2017-2019.

This research has limitation. The research period for this study was only three years, namely from 2017 to 2019. The EWS ratio used in this study is only four ratios, namely the Liquidity Ratio, Capital Adequacy Ratio, Claim Expense Ratio, and Retention Ratio. While many other EWS ratios can be used to measure the health level of an insurance company.

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