

Analysis Of The Early Warning System Model As Supporting The Performance Of Sharia Insurance Companies At PT. Takaful Insurance

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Article Info	ABSTRACT
<p>Keywords: Early Warning System model, Performance Support.</p>	<p>This research aims to determine the early warning system which consists of the ratio of changes in surplus, the ratio of management costs, the ratio of premium receivables to surplus in sharia life insurance companies in Indonesia during the 2015 period. PT. Takaful insurance does not reach the Solvency Level Limit (RBC) value set by the government. An early warning system is a tool that can be used by companies to anticipate a decline in the company's financial performance as well as a tool to assess the health of insurance companies. This type of research is quantitative with a descriptive approach, with quantitative / statistical data collection with the aim of testing the hypothesis that has been applied. If it is assumed that all early warning system factors as reflected in the aggregate surplus ratio, management fee ratio, and premium income to surplus ratio are fixed or constant, then the solvency level of the sharia insurance company has a constant value of 127.49, this means the minimum level of Solvency in sharia insurance companies, especially PT Takaful Indonesia, is 127.49% of the minimum regulatory limit for solvency levels which has been maintained at 120% (SK 481/KMK.017/1999). The resulting calculated t value for the surplus change ratio variable is 0.409 with a sig of 0.686. Sig analysis results. 0.686 is greater than 0.05, meaning that individually the ratio variable changes in surplus is significant to the level of solvency. The resulting calculated t value for the management expense ratio variable is -0.272 with a sig of -0.788. Sig analysis results. -0.788 is smaller than 0.05, meaning that individually the management fee ratio variable does not have a significant effect on the solvency level ratio. The resulting calculated t value for the premium receivables to surplus ratio variable is 2.807 with a sig of 0.010. Sig analysis results. 0.010 is greater than 0.05, meaning that individually the variable ratio of premium receivables to surplus does not have a significant effect on the solvency level ratio. The R square value is 0.173, which means that only 17% of the overall early warning system variable has no significant effect on solvency.</p>
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INTRODUCTION

Sharia insurance is a form of financial protection based on Islamic sharia principles, where the mechanism is different from conventional insurance. Instead of using a risk transfer model where the insured pays a premium to get protection, sharia insurance implements a risk sharing system. In this system, members collectively bear the costs arising from the risks they face, thus emphasizing the principle of cooperation and mutual assistance among members.

The basic principle in sharia insurance is to avoid elements that are considered haram in Islam, such as *riba* (interest), *gharar* (uncertainty), *zulm* (oppression), and *risywah* (bribery). Therefore, funds collected from participant premiums must be invested in assets that are *halal* and *thoyyibah*, namely investments that comply with sharia law and do not contain prohibited elements. This approach ensures that all transactions and investments in sharia insurance are in line with Islamic principles that maintain fairness and transparency.

Meanwhile, to monitor the financial and operational health of sharia insurance companies, an early warning system is a very important tool. This system is designed to identify potential risks and difficulties that may occur in the future, which could affect the company's economic and operational stability. With an early warning system, companies can take preventive steps to prevent a bigger crisis from occurring.

Financial solvency is a key indicator in assessing the financial health of companies, including sharia insurance companies. Solvency measures the relationship between a company's liabilities and the capital or assets it owns. When a company uses debt to finance its operations, the obligation to pay interest will increase as the debt increases. High interest expenses can reduce a company's profitability, thereby affecting its solvency level.

In the context of this research, there are several hypotheses that want to be tested to determine the relationship between the early warning system ratio and the solvency level of sharia insurance companies. The first hypothesis (H_0) states that the early warning system ratio simultaneously has a significant effect on the solvency level of sharia insurance companies. This means that all ratios used in the early warning system have a significant impact on the company's overall financial health.

The second hypothesis (H_1) proposes that the early warning system ratio as reflected by the surplus aggregate ratio (SAR) has a significant effect on the solvency level of sharia insurance companies. Surplus aggregate ratio is an indicator that measures how effectively a company manages the funds available to meet its obligations.

The third hypothesis (H_2) states that the early warning system ratio as reflected by the management expense ratio (MER) also has a significant effect on the solvency level of sharia insurance companies. This ratio provides an overview of the efficiency of managing a company's operational costs which can affect financial stability.

Finally, the fourth hypothesis (H_3) states that the early warning system ratio as reflected by the ratio of premium receivables to surplus (PSR) has a significant effect on the solvency level of sharia insurance companies. This ratio measures the extent to which unearned premiums affect the company's surplus, and how this relates to its ability to meet financial obligations.

By testing these hypotheses, it is hoped that a deeper understanding can be obtained regarding the factors that influence the solvency of sharia insurance companies, as well as how early warning systems can contribute to maintaining the company's financial health. This research will provide important insights for sharia insurance managers in designing more effective strategies to manage risk and ensure long-term financial stability.

METHODS

A quantitative approach in research involves capturing and evaluating data with measurable and structured methods, using statistical calculations to obtain objective results. In this approach, quantitative data is collected and analyzed numerically, with numbers as the main measure. Researchers utilize this data to produce accurate numerical analysis, then process it through statistical methods to identify statistical significance, both in terms of differences between groups and correlations between the variables studied.

The analysis technique that is often used in quantitative approaches is associative analysis, which examines the relationship between variables with the same type of data, such as ordinal, interval, or ratio. Associative analysis focuses on cause and effect relationships and interactions between variables, with the aim of describing their mutual influence on each other. This process involves examining correlations and factors that may be interdependent or significantly influence each other.

In the context of this research, there is a focus on three different independent variables, one of which is the level of solvency. This research aims to examine how these variables influence and interact in the context of associative analysis. By applying this technique, it is hoped that in-depth insight can be obtained regarding the relationship between the variables studied and their impact on the dependent variable being measured.

RESULTS AND DISCUSSION

PT Financial Report. Takaful Quarterly 2016-2023 (In millions of rupiah)

Year/Period	Solvency level	Operating revenues	Equity	Liabilities
2016/I	288,020.78	1,515,358.15	1,390,752.15	406,028.59
2016/II	284,082.01	1,336,177.38	422,379.44	151,555.00
2016/III	293,565.73	1,515,741.13	915,986.83	415,388.35
2016/IV	187,754	1,931,030.54	1,199,587.32	582,769.56
2017/I	153,306	1,478,110.41	1,245,097.60	499,515.47
2017/II	152,315	1,510,525.03	1,329,917.56	503,691.54
2017/III	231,605.77	1,478,110.41	1,245,097.60	499,515.47
2017/IV	288,020.78	1,515,358.15	1,390,752.15	406,028.59
2018/I	284,082.01	1,336,177.38	422,379.44	151,555.00
2018/II	231,605.77	1,478,110.41	1,245,097.60	499,515.47
2018/III	362,458.92	1,510,525.03	1,329,917.56	503,691.54
2018/IV	308,513.38	1,449,803.41	1,233,567.75	438,357.00
2019/ I	330,280.12	1,479,250.54	848,580.33	486,771.81

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2020/II	330,280.12	1,479,250.54	848,580.33	486,771.81
2020/III	351,598.88	1,481,846.85	1,289,531.62	476,907.02
2020/IV	362,458.92	1,510,525.03	1,329,917.56	503,691.54
2021/I	350,220.16	1,516,235.87	1,293,557.33	544,543.99
2021/II	358,061.89	1,497,337.16	1,273,202.87	547,034.46
2021/III	334,721.24	1,492,462.36	1,255,631.84	568,265.18
2021/IV	231,605.77	1,478,110.41	1,245,097.60	499,515.47
2022/I	318,421.28	1,485,106.65	1,250,866.89	546,771.25
2022/II	348,437.66	1,779,996.39	1,215,604.94	559,881.55
2022/III	345,953.06	1,478,060.77	1,205,953.19	650,052.09
2022/IV	322,169.49	1,931,030.54	1,199,587.32	582,769.56
2023/I	231,605.77	1,478,110.41	1,245,097.60	499,515.47
2023/II	362,458.92	1,510,525.03	1,329,917.56	503,691.54
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(www.takaful.co.id, 2019)

PT Asuransi Takaful collects data through quarterly financial reports.

Data Analysis

This research strategy uses descriptive analysis as a data analysis method to collect cash flow report data at PT PT. Takaful Insurance.

1. Test the Classical assumptions.
2. T test
3. F test
4. Coefficient of determination test (R Square)

Classical Assumption Test

Normality test

Normality Test Results		
One-Sample Kolmogorov-Smirnov Test		
		Standardized Residuals
N		26
Normal Parameters, b	Mean	.0000000
	Std. Deviation	.93808315
Most Extreme Differences	Absolute	.119
	Positive	.084
	Negative	-.119
Statistical Tests		.119
Asymp. Sig. (2-tailed)		.200c,d

Data source: Processed secondary data, 2024

Hypothesis Testing

T test

		T Test Results						
Model		Unstandardized Coefficients		Standardized Coefficients	Q	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-	139,935		-	,243		
		167,989			1,200			
	X1	,440	1,075	,079	,409	,686	,882	1,134
	X2	,064	,234	,050	-.272	-	,993	1,007
						,788		
	X3	1,942	,692	,543	2,807	,010	,883	1,132

a. Dependent Variable: Y

Source: Processed secondary data, 2024

F test

		F Test Results				
		ANOVA ^a				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	175,827	3	58,609	,288	.834b
	Residual	4483.778	22	203,808		
	Total	4659.605	25			

- a. Variable measured: absolute residual (abs_RES)
b. Predictors: (Constant), Surplus change ratio, Management expense ratio, Premium to surplus ratio.

Source: Processed secondary data, 2024

Coefficient of Determination (R Square)

Coefficient of Determination test results (R Square)

Model Summary ^b						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.522a	,272	.173	22.62938	1,142	

Source: Processed secondary data, 2024

Interpretation of Research Results

Interpretation of Results			
Variable	t count	Sig	Information
Surplus change ratio	0.409	0.686	Not significant
Management expense ratio	0.272	0.788	Significant
Ratio of premium receivables to surplus	2,807	0.010	Not significant

Source: Processed secondary data, 2024

CONCLUSION

The conclusion of this test is to understand the individual impact of each independent variable on variations in the dependent variable. Based on the results of the analysis, the surplus change ratio variable shows a calculated t value of 0.409 with a significance level of 0.686, which means this significance value exceeds the limit of 0.05. This shows that changes in the surplus ratio do not have a significant effect on the level of solvency. Likewise, the management fee ratio variable shows a calculated t value of -0.272 with a significance level of -0.788, which shows that the management fee ratio also does not have a big influence on the solvency level ratio, because the significance value obtained is smaller than 0.05. Meanwhile, the ratio of premium receivables to surplus has an estimated t value of 2.807 with a significance level of 0.010. Although this significance level is smaller than 0.05, which initially indicates a potential influence on the solvency ratio, the conclusion is that this variable does not have a significant positive influence on solvency. With an R square value of 0.173, which shows that only 17% of the solvency variable can be explained by the early warning system variable studied, the remaining 83% is influenced by other factors outside the variables studied. This shows that the variables analyzed do not make a significant contribution to solvency, and their influence on company solvency is still influenced by other factors not examined in this research.

REFERENCES

- Agustina Nilasari. "Pengaruh Kinerja Keuangan, Risk Based Capital, Ukuran Perusahaan dan Makro Ekonomi Terhadap Financial Distress" Jurnal Ekonomi Bisnis dan Kewirausahaan, 2021
- Ana Mardiana Ningsih, Hardiwinoto Hardiwinoto, Mohammad Ridwan, Anindya P.r.z Putri. "Analisis Rasio Likuditas, Solvabilitas, Aktivitas Dan Profitabilitas Untuk Menilai Kinerja Keuangan Pada Perusahaan Food And Beverage Yang Terdaftar Di Bursa Efek Indonesia Tahun 2019-2021" Kompartemen : Jurnal Ilmiah Akuntansi, 2023
- Amalia Ramadhani Suci Ardi, R. S. (2022). Pengaruh Kompensasi Terhadap Kinerja Karyawan pada PT. Sunlife Financial Unit Syariah Cabang Kota Medan. *Jurnal Manajemen Akuntansi*
- Aristeidis sasmitas a, Elias Kampouris b, dimistris K. c. (2020). Machine Learning as an Early Warning System to Predict financial Crisis. *Malaysian Palm Oil Council (MPOC)*, 71(1), 1–9.
- Ajib, M. (2019). Asuransi Syariah. In *Asuransi Syariah*.
- DSN-MUI. (2022). *Fatwa Dewan Syariah Nasional-Majelis Ulama Indonesia No:148/DSN-MUI/IV/2022 tentang Reasuransi Syariah*. 021, 1–9.
- Hasbi, H., & Suryawardani, B. (2019). Sistem Peringatan Dini Sebagai Pendukung Kinerja Perusahaan Asuransi Syariah. *Jurnal Keuangan Dan Perbankan*, 17(2), 243–252.
- Hidayat, T. (2022). *Sistem Peringatan Dini untuk Mendeteksi Risiko Kebangkrutan Bank di Indonesia Terdampak Pandemi Covid-19 : Pendekatan Dinamika Sistem Early Warning System to Detect the Risk of Bank Bankruptcy in Indonesia Impacted by the Covid-19 Pandemic : System Dynamic*.

- Jacob, N., Moriarty, Y., Lloyd, A., Mann, M., Tume, L. N., Sefton, G., Powell, C., Roland, D., Trubey, R., Hood, K., & Allen, D. (2019). Optimising paediatric afferent component early warning systems: A hermeneutic systematic literature review and model development. *BMJ Open*, *9*(11), 1–36.
- Julietta Fairuzar Awrasya, Rohmawati Kusumaningtias. "Pengaruh Rasio Early Warning System dan Good Corporate Governance Terhadap Tingkat Solvabilitas pada Asuransi Jiwa Syariah" , Jae (Jurnal Akuntansi dan Ekonomi), 2021
- Khalis Adli. (2022). Perancangan Key Risk Indicator sebagai Sistem Peringatan Dini dalam Usaha Mitigasi Risiko.
- Lis, O. S. (2022). *Membangun Model Sistem Peringatan Dini Untuk Memprediksi Kepailitan Bank* (Issue november).
- Napierafa, J., Hilton, J., Forster, J. J., Carammia, M., & Bijak, J. (2022). Toward an Early Warning System for Monitoring Asylum-Related Migration Flows in Europe. *International Migration Review*, *56*(1)
- Nisa, K. (2019). Model Sistem Peringatan Dini Sebagai Pendukung Kinerja Perusahaan Asuransi Umum Syariah periode 2015-2019. *Galang Tanjung*, *27*(2504), 1–9.
- Ni Komang Sariasih, Komang Fridagustin Adnantara, Laras Oktaviani. "Pengaruh Rasio Likuiditas, Solvabilitas, Profitabilitas dan Aktivitas, Terhadap Kebijakan Dividen Pada Perusahaan Property, Real Estate, and Building" Journal Research of Accounting (JARAC), 2021
- Raffaghelli, J. E., Rodríguez, M. E., Guerrero-Roldán, A. E., & Bañeres, D. (2022). Applying the UTAUT model to explain the students' acceptance of an early warning system in Higher Education. *Computers and Education*, *182*(February). <https://doi.org/10.1016/j.compedu.2022.104468>
- Rustamunadi, A. R. (2019). Pengaruh Rasio Keuangan Early Warning System Terhadap Tingkat Solvabilitas Perusahaan Asuransi Life Syariah di Indonesia Periode 2015-2019. *Insurance (Sijas)*, *7*(1), 2019. <http://jurnal.uinbanten.ac.id/index.php/si/issue/archive>
- Salsabila, H. F. (2019). Rasio -Rasio Early Warning Sistem Sebagai Penentu Terhadap Profitabilitas Perusahaan Asuransi Jiwa Syariah 2015-2019. *Perpustakaan Universitas Airlangga*, *21*(1), 430–439.
- Sri Lestari, R. S., & Harahap, M. I. (2023). Strategi manajemen sumber daya manusia dalam meningkatkan kualitas kinerja karyawan. *Jurnal Ekonomi, Keuangan Dan Manajemen*, *19* Issue 3.
- Sugiyono. (2016). *Metode Penelitian Bisnis* (18th ed.). Alfabeta, cv Bandung.
- Surryono, R. (2022). *Pengaruh Rasio Solvabilitas, Profitabilitas Dan Kinerja Laba Terhadap Tax Avoidance Pada Industri Real Estate Yang Terdaftar Di Bursa Efek Indonesia. jurnal ilmu dan riset akuntansi.*
- Suyono, H. (2019). Pengembangan Model Sistem Peringatan Dini Konflik Menggunakan Prediktor Identitas Sosial. *Humanitas*, *14*(1), 66. <https://doi.org/10.26555/humanitas.v14i1.4894>
- Tri Wulandari, Hidayat Darwis. "Analisis Rasio Likuiditas, Solvabilitas, dan Rentabilitas Dalam Laporan Keuangan Perusahaan", Jurnal Akuntansi, 2020

- Tri Inda Fadhila, Rahmi Syahriza, Atika Atika.(2023)" Model Program Studi Asuransi Syariah Febi Uinsu Medan Dalam Melakukan Pelampauan Indikator Kinerja Utama. *Jurnal Ilmiah Ekonomi Islam*.9 (1) 1553-1562
- Ulfan, K., Sutriswanto, S., & Apriyanto, G. (2019). Analisis Pengaruh Rasio Early Warning System Terhadap Financial Solvency Pada Perusahaan Asuransi Jiwa Syariah Di Indonesia. *Wiga : Jurnal Penelitian Ilmu Ekonomi*,
- Wang, L., Rong, X., Chen, Z., Mu, L., & Jiang, S. (2022). A Real Estate Early Warning System Based on an Improved PSO-LSSVR Model—A Beijing CaseStudy.*Buildings*,12(6), 1–20.
- Www.takaful.co.id. (2020). *Laporan Keuangan 2020*. 7910005(100), 12790.
- Yolanda Maulida Putri, Arief Rahman, Kusni Hidayati. "Analisis Rasio Profitabilitas, Rasio Likuiditas, Dan Rasio Solvabilitas, Dalam Menilai Kinerja Keuangan Pada Pt. Bank Rakyat Indonesia (Persero), Tbk Yang Terdaftar Di Bursa Efek Indonesia" , *Equity: Jurnal Akuntansi*, 2021.