Conference Paper

Early Warning System Analysis of General Insurance Companies

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Abstract

This research aimed to examine the effect of an Early Warning System on insurance company performance. The sample included insurance companies listed on The Financial Services Authority (OJK) in 2016-2018. Fifty samples were obtained through purposive sampling. Data were analysed using regression. The results showed that the loss ratio, liquidity ratio, technical reserve ratio and age of the insurance company affected their performance, but not consistently across the three regression test methods. Meanwhile, the retention ratio did not affect the performance of insurance companies consistently. These results suggest that Indonesian insurance companies having a tendency to prioritize public trust to increase the insurance business.

Keywords: Early Warning System, Insurance Company Performance, Indonesia General Insurance

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1. Introduction

The insurance sector as part of Indonesia's financial services has a strategic role in creating stability in the Indonesian economy, especially through the aspect of risk management. The development of the Indonesian insurance industry has experienced an increase in asset growth reaching 17.36% per year when compared to the total assets of the previous year, with total assets reaching IDR 1,176.97 trillion in 2017 (OJK, 2017: 10). This high growth figure shows the potential for a large domestic insurance market.

The development of the insurance industry has resulted in tighter competition between insurance companies and encourages all insurance companies to continue to improve their company performance properly so that they can run well to meet the criteria of a healthy insurance company. A healthy insurance company will find it easy to find customers because it is considered trusted and the company can maintain its existence in the Indonesian insurance industry, besides that insurance companies are required to be "healthy" in order to avoid the risk of default cases which can affect the

interest of the Indonesian people towards insurance due to lack of calculation. of the risks faced.

Efforts to measure the health level of the insurance company, an analysis is needed that has specific criteria. As stipulated in PSAK No. 28, it is one of the provisions that can be used to determine the performance condition of an insurance company which is often called the Early Warning System (Sumartono & Harianto, 2018).

Early Warning System (EWS) is a tool that can be used to analyze financial reports and process them into useful information to be used as a system for monitoring and evaluating the financial performance of the insurance company Arimaharani & Bambang (2015) in Sumartono & Harianto (2018). Several financial ratios from the EWS method used by insurance companies have been regulated in the Statement of Financial Accounting Standards. The analysis of financial ratios for insurance companies is prepared in Statement of Financial Accounting Standards (PSAK) Number 28 concerning Insurance for Loss Accounting which is divided into four categories, the first category is solvency and profitability ratio. In the solvency and profitability ratio there is a loss ratio or claim expense ratio, This ratio reflects the quality of claims that occur in the company and measures the quality of insurance coverage (PSAK No. 28). The level of this ratio provides information about the quality of the underwriting process and the process of closing risks. The second category is the liquidity ratio, which shows the company's ability to meet its short-term obligations, which in general will provide an overview of the company's financial condition. The high and low ratio indicates a liquidity problem, the greater the liquidity ratio the more dangerous the company is because it can result in the company being unable to meet its debts. Premium stability ratio / own retention ratio is the third ratio to measure the health level of an insurance company. This ratio shows the company's retention rate as a basis for deciding the share of risk borne by itself and the risk borne by reinsurance. The high and low value of the own retention ratio shows how a company has the courage to bear its own claim risk. The last ratio is the technical ratio, which shows the level of reserve adequacy needed to face obligations arising from risk closure. This low ratio means that the company's decision to set technical obligations is too low so that it is not sufficient to pay future obligations (Nurfadilah, et al, 2015). The last ratio is the technical ratio, which shows the level of reserve adequacy needed to face obligations arising from risk closure. This low ratio means that the company's decision to set technical obligations is too low so that it is not sufficient to pay future obligations (Nurfadilah, et al, 2015). The last ratio is the technical ratio, which shows the level of reserve adequacy needed to face obligations arising from risk closure. This low

ratio means that the company's decision to set technical obligations is too low so that it is not sufficient to pay future obligations (Nurfadilah, et al, 2015).

External parties who have identified the health level of the insurance company also need to know information about the age of the insurance company which is also an important information to pay attention to because the age of the company can show information on how long the company has been running its business, indicating the company's level of experience in dealing with competition and staying in the company. market. Companies that operate for longer have a greater possibility to provide more and broader company information and show that the company can manage its income well and optimally than companies that have just been established. So that the age of the company can reflect the performance of the insurance company in surviving in the insurance industry, especially in Indonesia.

In measuring the financial condition as an assessment of the company's performance and assessing the potential of a company in the future. One way that can be done is to assess the company's ability to generate profits / profits which can be done through profitability analysis using financial ratio analysis which is commonly used. Financial ratio analysis is a process to dissect financial statements into their elements and examine each of these elements with the aim of obtaining a good and precise understanding and understanding of the financial statements themselves (Hery, 2016: 113). The calculation of the company's profitability can use the operating profit margin which shows the pure amount that a company receives from the results of operations by ignoring financial obligations in the form of interest and taxes. Syamsudin (2016). When the company generates a large operating profit margin, it shows that the company can generate high profits with its main business as a signal that the company is doing its operations well to generate maximum revenue for the company. The greater the operating profit margin, the better the operation of a company Syamsudin (2016).

Several researchers who have conducted similar research include Arifin, F (2014) which shows that the liquidity ratio and self-retention ratio affect company performance, Sumartono & Harianto (2018) stated that the liquidity ratio and retention ratio affect the company's financial performance, while claim expense ratio has no effect on the company's financial performance. However, another research conducted by Detiana (2012) states that the claim expense ratio / loss ratio does not affect the company's financial performance as well as the liquidity ratio. In addition, other researchers Sukarya & Margareta (2018) show that company age affects the financial performance of insurance companies.

The existence of a research gap from the results of previous research which was also obtained from the results of research by Sumartono & Harianto (2018) states that the liquidity ratio has an effect on company performance, this is also supported by research conducted by Arifin (2014). However, based on research conducted by Detiana (2012) states that the liquidity ratio has no effect on the performance of insurance companies.

Based on the above analysis, it is proven that the results are still inconsistent and interesting for further research to obtain more consistent and general findings that can be used as an additional final reference for similar studies. This study adds the variable age of the company and the variable operating profit margin that have never been used before to determine the effect on the company's performance. In addition, in order to complete and test the consistency of the results, this study also uses 3 kinds of multiple regression test methods, namely Fixed Effect (FE), Random Effect (RE), and Ordinary Least Square (OLS).

This research was conducted at general insurance companies in Indonesia in 2016-2018 because general insurance companies provide a wide range of risk coverage services including compensation for losses, damage, fires or other possible costs such as fire insurance, sea freight insurance, aviation insurance, transportation insurance. landline, personal accident insurance, passenger accident insurance etc. In addition, general insurance companies have the largest number of insurance companies in Indonesia, namely 74 general insurance companies based on statistical data (OJK: 2018).

This research has the urgency to find out how the management and level of financial health of general insurance companies in Indonesia because currently many general public and business people in Indonesia need consideration based on research to establish whether it is feasible and safe to use insurance services as a protector of your business.

2. Literature Review

2.1. Company performance

Financial performance is an analysis carried out to see the extent to which a company has implemented proper and correct financial implementation rules Fahmi (2012) in Arifin (2014). The way to find out the financial performance of a company can be done by analysed the company's profitability. The profitability is considered to be able to describe the information on the company's ability to generate profits that are important for internal and external companies. The calculation of the company's profitability can be through

the Operating Profit Margin (OPM). According to Daft (2010), company performance is the company's ability to achieve goals by using resources efficiently and effectively. Operating Profit Margin is a ratio that shows the percentage of operating profit on net income (Hery. 2016: 144). When the company generates a large operating profit margin, it shows that the company can generate profits with its main business as a sign that the company is doing its operational activities well. The higher the operating profit margin, the better the operation of a company (Syamsuddin, 2016: 61). OPM can be calculated with the following formula:

$$\text{OPM} = \frac{\text{Laba Operasional}}{\text{Pendapatan Bersih}}.$$

Equation 1 - Operating Profit Margin Equation

2.2. Early Warning System (EWS)

According to Satria (1994), one of the tools that can be used to analyse insurance company financial reports and process them into useful information is the Early Warning System (EWS). The Early Warning System (EWS) used is a modification of the EWS made by the National Association of Insurance Commissioners (NAIC) and the Insurance Regulatory Information System (IRIS). NAIC is a supervisory agency located in the United States with the task of overseeing insurance activities in the territory of the United States of America.

The EWS ratios used to assess the financial performance of insurance companies in this study which are based on the Statement of Financial Accounting Standards (PSAK) Number 28 concerning Insurance for Loss Accounting are as follows:

• Loss Ratio

This ratio reflects the experience of claims that have occurred and measures the quality of insurance coverage. The claim expense ratio formula is

$$\text{Loss Ratio} = \frac{\text{Klaim yang terjadi}}{\text{Pendapatan Premi}}.$$

Equation 2 - Loss Ratio Equation

Interpretation:

This high ratio provides information about the poor underwriting process and the insurance company's risk coverage.

• Liquidity Ratio

The liquidity ratio is a ratio used to measure a company's ability to meet its short-term liabilities using company assets. This ratio roughly gives an idea of the company's financial condition whether its financial condition is solvent or not. This ratio formula is

$$\text{Liquidity Ratio} = \frac{\text{Aset Lancar}}{\text{Kewajiban Lancar}}.$$

Equation 3 - Liquidity Ratio Equation

Interpretation:

A high ratio indicates a liquidity problem and the company is likely to be in a non-solvent condition, so it is necessary to carry out an analysis of the level of fund adequacy, distribution of assets, assessment of premium stability, and allowable liquidity of wealth.

• Own Retention Ratio

Premium stability ratio / own retention ratio is the third ratio to measure the health level of an insurance company. This ratio shows the company's retention rate as a basis for deciding the share of risk borne by itself and the risk borne by reinsurance. The high and low value of the own retention ratio shows how a company is brave enough to bear its own claim risk.

$$\text{Own Retention Ratio} = \frac{\text{Premi Neto}}{\text{Premi Bruto}}.$$

Equation 4 - Own Retention Ratio Equation

Interpretation:

The sharp increase / decrease in net premium volume indicates a lack of stability in the company's business activities. And the high increase in net premium means that the company is oriented towards cash flow underwriting. The results of this ratio should be interpreted together with the history and operations of the company. In analyzing this ratio, it must also be considered the reasons put forward by the company which cause this ratio to vary / fluctuate. In addition, it is necessary to consider the changes taking place in the insurance industry and in the economy.

• Technical Reserve Ratio

This ratio is broadly used to measure the level of fund adequacy needed to meet technical obligations. Technical liabilities consist of unearned premiums plus estimated self-dependent claims. Sufficient funds to meet technical obligations make financial conditions solvent. This ratio formula is

$$\text{Technical Reserve Ratio} = \frac{\text{Kewajiban Teknis}}{\text{Premi Neto}}.$$

Equation 5 - Technical Reserve Ratio Equation

Interpretation:

This low ratio means that the company sets its technical liabilities too low and if the company is not in a solvent condition, the company needs to make adjustments to its solvency margin. Likewise, a high ratio indicates that the business portfolio does not bring profit. The trend of this ratio needs to be studied by the company, as well as the trend of claims.

2.3. Company Age

A long-established company has more experience and is better at exploiting the market than a new company. Likewise with insurance companies, so that the age of the company can reflect the ability of the insurance company to survive in the insurance industry, especially in Indonesia. So, according to Sukarya & Margareta (2018) the age of a company has an influence on the financial performance of an insurance company.

$$Age=Tahun\ izin\ usaha\text{-}tahun\ akhir\ penelitian.$$

Equation 6 - Age Equation

Interpretation:

the age of the company can show information on how long the company has been running its business, which indicates the company's experience level in facing competition and staying in the market. Companies that operate for longer have a greater possibility to provide more and broader company information and show that the company can manage its income well and optimally than companies that have just been established. So that the age of the company can reflect the performance of the insurance company in surviving in the insurance industry, especially in Indonesia.

3. Hypotheses

H1: Loss ratio has a significant effect on the performance of general insurance companies in 2016-2018.

H2: Liquidity ratio has a significant effect on the performance of general insurance companies in 2016-2018.

H3: Own retention ratio has a significant effect on the performance of general insurance companies in 2016-2018

H4: Technical reserve ratio has a significant effect on the performance of general insurance companies in 2016-2018.

H5: Company age has a significant effect on the performance of general insurance companies in 2016-2018.

4. Data and Methodology

This type of research conducted in this research is quantitative associative with survey method methods. The population of this research is general insurance companies registered with the Financial Services Authority as many as 74 companies. As of December 31, 2018. The sampling method used was purposive sampling method, with judgment sampling techniques, namely sampling using certain criteria (Sekaran and Bougie, 2016).

Sample used as many as 50 companies as units of analysis after eliminating 24 companies by using the following criteria: Insurance companies registered with OJK 2016-2018; General insurance companies registered with OJK in 2016-2018 and provide the data needed in this study.

Data collection techniques used in this study is documentation techniques, namely data collection by quoting or recorded or viewed directly from the journal, media, documents, and records. Data used in this research is secondary data such as financial statements which have been provided life insurance companies listed on the Financial Services Authority (FSA). Sources of data in this study were obtained from the official website of the Financial Services Authority (www.ojk.go.id)and the official website of the companies sampled in this study.

Data analysis was performed using descriptive statistics. While testing the hypothesis using 3 methods of multiple linear regression analysis, namely Fixed Effect, Random Effect, and Ordinary Least Square using the STATA 13 analysis tool. This test also uses classical assumptions consisting of normality test, multicollinearity test and heteroscedasticity test. After passing all the classical assumption tests, it is continued with the regression analysis test with the following regression equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon.$$

Equation 7 - Regression Equation

where Y = Company performance calculated by Orating Profit Margin; α = constant coefficient;βn = regression coefficient for each independent variable; Xn = independent variable, n = 1: Loss ratio, 2: Liquidity ratio, 3: Own retention ratio, 4: Technical reserve ratio, 5: Company age; ε = Error.

5. Results

Variable	Obs	Average	Standard Deviation	Minimal	Maximum
OPM (Y)	120	0.20	0.14	0.01	0.85
Loss_R (X1)	120	0.46	0.20	0.04	1.41
Liq_R (X2)	120	0.69	0.21	0.12	1.87
ORR (X3)	120	0.58	0.18	0.16	0.99
TRR (X4)	120	1.29	0.73	0.21	2.99
Age (X5)	120	26.27	9.09	2	47

Notes: OPM = Operating Profit Margin; Loss_R = Loss Ratio; Liq_R = Liquidity Ratio; ORR = Ownership Retention Ratio; TRR = Technical Reserve Ratio; Age = Company Age.

In table 1, presents a description of the research data. Operating Profit Margin has a minimum value of 1% and a maximum of 85% with an average of 20% and a standard deviation of 0.147078. The loss ratio has a minimum value of 4% and a maximum of 141% with an average of 46% and a standard deviation of 0.200523.The liquidity ratio has a minimum value of 12% and a maximum of 187% with an average of 69% and a standard deviation of 0.2176879. Own Retention Ratio has a minimum value of 16% and a maximum of 99% with an average of 58% and a standard deviation of 0.1894136. The Technical Serve Ratio has a minimum value of 21% and a maximum of 299% with an average of 129% and a standard deviation of 0.7385765. The age of the company has a minimum value of 2 years and a maximum of 47 years with an average of 26.27 years and a standard deviation of 9.097014.

Before testing using regression analysis, first the classical assumption test is generally carried out. In this study, the multicollinearity, normality test, heteroscedasticity met the requirements for regression analysis testing. The following is a table of regression test results.

The results of the study on the loss ratio variable (Table 2) show that the loss ratio has a significant effect on company performance as assessed using Operating Profit Margin (OPM), but in the Ordinary Least Square method the loss ratio variable does not have a significant effect on company performance, so there are inconsistencies. the effect of loss ratio on company performance.

The results of this study are different from the results of research conducted by Detiana (2012) which show that the loss ratio does not have a significant effect on the performance of insurance companies. Similarly, research by Sumartono & Harianto

TABLE 2: Multiple Regression Analysis Test Using Ordinary Least Square (OLS) Method, Fixed Effect (FE) and Random Effect (RE)

VARIABLES	(OLS)	(FE)	(RE)
	OPM	OPM	OPM
LR	0.028	0.236***	0.124*
	-0.072	-0.089	-0.07
LQR	-0.148**	-0.134	-0.147**
	-0.062	-0.097	-0.069
ORR	-0.058	0.066	-0.082
	-0.074	-0.229	-0.094
TRR	0.060***	0.043	0.057**
	-0.019	-0.037	-0.023
AGE	-0.003*	-0.008	-0.003
	-0.001	-0.012	-0.002
Constant	0.329***	0.296	0.304***
	-0.076	-0.314	-0.098
Observations	120	120	120
R-squared	0.113	0.118	
Number of Obs		40	40

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. OPM = Operating Profit Margin; Loss_R = Loss Ratio; Liq_R = Liquidity Ratio; ORR = Own Retention Ratio; TRR = Technical Reserve Ratio; Age = Company Age.

(2018) found that the loss ratio did not have a significant effect on the financial performance of insurance companies. This is thought to be due to differences in the object and time of research where in Sumartono & Harianto's (2018) research it was carried out on insurance companies listed on the IDX in 2011-2016 while in Detiana's research (2012) it was carried out on insurance companies listed on the IDX in 2005-2011.

The loss ratio which affects financial performance is due to the public opinion that the increase in the quality of claims is considered good for policyholders, this is reflected in the size of the company in paying claim expenses so that increased public interest in becoming policyholders, the more insurance policy holders will increase income. premium so that the insurance company operating profit is also assumed to increase.

Judging from the results of the regression analysis in Table 2, this study shows that the results of the liquidity ratio have a significant effect on Operating Profit Margin (OPM), but in the Fixxed Effect method, the liquidity ratio variable does not have a significant effect on Operating Profit Margin (OPM). So that there is an inconsistency in the effect of the liquidity ratio on company performance through Operating Profit Margin (OPM).

The results of this study are supported by research conducted by Sumartono & Harianto (2018) and Arifin (2014) that the liquidity ratio has a significant effect on

the performance of insurance companies in Indonesia, although there are several differences regarding the range of years and the number of samples used in each study done. The liquidity ratio that affects the company's performance is assessed from the Operating Profit Margin (OPM), presumably because insurance companies have a good ability to control accounts payable and are able to obtain the desired investment results, of course this will increase the company's operating profit because it can allocate funds owned in the right posts. Based on the results of this study, Insurance companies in Indonesia have good financial management capabilities because the company can get investment returns that can be used to meet company liabilities in the event of a liquidity crisis and can properly manage accounts payable to external parties. So that the lower the liquidity ratio will increase the company's profit, thus increasing the performance of the insurance company. Thus the liquidity ratio has an influence on the performance of general insurance companies in Indonesia through the Operating Profit Margin (OPM) profitability assessor. So that the lower the liquidity ratio will increase the company's profit thus increasing the performance of the insurance company. Thus the liquidity ratio has an influence on the performance of general insurance companies in Indonesia through the Operating Profit Margin (OPM) profitability assessor. So that the lower the liquidity ratio will increase the company's profit thus increasing the performance of the insurance company. Thus the liquidity ratio has an influence on the performance of general insurance companies in Indonesia through the Operating Profit Margin (OPM) profitability assessor.

Based on the results of the regression analysis in Table 2, it shows the consistency of the results with the three regression test methods that the own retention ratio has no significant effect on Operating Profit Margin (OPM). This study is different from the results of research conducted by Sumartono & Harianto (2018) and Arifin (2014) which state that there is an influence between own retention ratio and the performance of insurance companies. In research conducted by Sumartono & Harianto (2018), overall, the high value of own retention ratio indicates that the company has self-retained funds for individual posts in a company to bear the risks that insurance companies estimate to be covered without assistance. reinsurance company.

Own retention ratio which does not affect the performance of the insurance company which is calculated through the Operating Profit Margin (OPM) shows that the net premium, which is the amount of money insured for each risk that is borne alone without reinsurance support, does not affect the performance of the insurance company in terms of profitability, this is presumed. because the insurance company has spread the risk to several reinsurance companies and set retention limits at a certain target value where

the limit of claims to be borne is only at this limit, it can be seen from the amount of reinsurance premiums and reinsurance expenses that must be paid, the value does not differ much on each the year. By having a certain retention limit, the amount of gross premiums and net premiums obtained by the insurance company will make the amount of reinsurance premiums and reinsurance expenses large in the event of a claim or compensation. In addition, based on a comparison of the value of net premiums and gross premiums obtained by insurance companies, it shows that there is not much difference each year.

Own retention ratio, which does not affect the performance of the insurance company, which is calculated through the Operating Profit Margin (OPM) is also thought to be due to the company's orientation to get high investment returns because the company's other source of profit lies mostly in investment returns, so the total profit of the insurance company premium / underwriting results and investment returns, if the profit from underwriting activities is small the insurance company will try to get a large return on investment, because investment is also the main activity of the insurance company to perform financial management functions to obtain maximum results.

Based on the results of this study, it is suspected that insurance companies in Indonesia are not brave enough to bear the risk of their own claim burden which is greater, where boldly taking on the risk of their own claims will increase the insurance company's operating profit, assuming that they have carried out the underwriting process correctly. Besides, the insurance company is also focused. on increasing investment returns. Therefore, in this study the value of the own retention ratio does not affect the performance of the insurance company which is assessed through the operating profit margin.

Table 2 above shows that it has an effect on OPM but it is not consistent in the fixed effect regression method. These results indicate that the financial performance of insurance companies, which in this study is measured by Operating Profit Margin (OPM) is influenced by the size of the determination of technical liabilities, where the lower the value of the technical reserve ratio means that the company determines low technical liability estimates and reduces the insurance company's profit.

The results of this study are supported by the results of research conducted by Nurfadillah, et al (2015) and Arifin (2014) which state that the technical reserve ratio has an effect on the performance of general insurance companies. Based on the results of this study, the amount of technical reserve ratio will increase the performance of general insurance companies. Therefore, insurance companies in Indonesia must have

and determine sufficient technical liabilities based on the net premiums received so that it will also increase the operating profit of general insurance companies in Indonesia.

Judging from the results of the regression analysis in Table 2, it shows that there is an influence between company age on Operating Profit Margin (OPM), namely Fixed Effect and Random Effect. Thus, in this study, there is an inconsistency in the influence between company age and company performance through Operating Profit Margin (OPM).

The results of this study are different from the results of research conducted by Sukarya & Margareta (2018) which states that company age affects the performance of insurance companies. This is presumably due to differences in the years of research implementation, the number of samples studied and the result of using different dependent and independent variables.

The age of the company which affects the performance of the company is also assessed from the Operating Profit Margin (OPM) which shows that to achieve good and optimal company performance is not based on the length of time a general insurance company has been established but the ability to manage the company professionally.

6. Conclusion

Based on the research results described as well as the research objectives, it can be concluded that the early warning system variable which is proxied by the loss ratio, liquidity ratio and technical reserve ratio as well as company age has a significant effect on the performance of general insurance companies in the general insurance industry in Indonesia in 2016- 2017. The variables that have the greatest effect are the loss ratio or claim expense ratio and the technical reserve ratio.

Overall, the variables used in this study have different results because some have consistent results such as the own retention ratio variable and most others have inconsistent results. This shows that the determination of the retention rate of an insurance company has not become a special and meaningful concern in the making of general insurance company policies in Indonesia.

Based on the results of the research as a whole, it can be seen that there are indications that general insurance companies in Indonesia prioritize public trust in using insurance businesses, thus the number of policyholders and the number of premiums that can be increased even though they have not obtained maximum profit because they have to bear large claim costs. In addition, insurance companies in Indonesia are

starting to set high technical reserves for reserve funds to finance claims that occur, thereby maintaining public confidence in the fulfil of risks that may occur.

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