

## Conference Paper

# Profitability Analysis of Non-life Insurance: Case in Indonesia Stock Exchange

Gatot Nazir Ahmad and Ramadhon Prabu Prasetyo

Faculty of Economic Universitas Negeri Jakarta

## Abstract

This study aims to understand the influence of premium income, underwriting income, risk-based capital, liquidity and growth on the profitability of non-life insurance company in Indonesia which is proxied by the Return on Assets (ROA). The data used in this study is annual report published and provided by IDX and the websites of each company during the period of 2011–2014. The regression model using panel data approach with chow test and Hausman test showed the best regression model using the fixed effect model. The results showed that premium income, underwriting income and risk-based capital have positive and significant impact. Meanwhile, liquidity and growth variables have positive but no significant effect on the profitability of the non-life insurance companies in Indonesia during the period of 2011–2014.

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**Keywords:** profitability, insurance, premium, underwriting, RBC, liquidity, growth

## 1. Introduction

According to the Law No. 2 of 1992, insurance or coverage is an agreement between two or more parties, with a binding to insured to receive insurance premium, to reimburse the insured for loss, damage or loss or legal responsibility to third parties that may be suffered by the insured, arising of an uncertain event or to provide a payment based on death or life of an insured person.

Measurement of insurance companies' performance can be done through an analysis of aspects of the financial statements. Financial report is a summary of the financial situation of companies within a certain time, which involves a balance, income statement, cash flow statement and change of equity statement. In the insurance industry, the profitability is the primary focus. This study describes the performance of the company by using ROA to measure the company's ability to generate profits. ROA

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is the ratio of profitability to determine the rate of return of an asset (Riyanto, 2008: 21).

Some determinants contained in the financial statements can be used to see the effect on the profitability of insurance companies. Determinants include premium income, underwriting income, risk-based capital, liquidity and growth. By examining the determinant, it is known which of the determinants have significant effect on profitability described by ROA. So, it can be reviewed by management in order to obtain more optimal profit.

Some researchers conduct similar research. Research by Mutmainnah (2015) concluded that the premium income, underwriting results and risk-based capital have positive and significant effect on profitability of insurance companies. The study used 20 general insurance companies in 2009–2013. Similar results were found by Riani (2014) who took the samples of 19 general insurance companies in 2009–2012. Andhayani and Norita (2012) also have similar result with the variable of underwriting income and risk-based capital having positive effect on profitability. Premium income was also found to have positive effects on ROA by Malik (2011) who took the samples of 35 insurance companies in 2005–2009.

On the contrary, Ornella Moro and Luisa Anderloni (2014) took a sample of general insurance companies from Austria, Denmark, France, Germany, Italy, Netherlands, Spain and the UK during the period 2004–2012. In their research, premium income negatively affect profitability. Negative results are obtained due to intense competition among the largest insurance companies in the market.

risk-based Capital and liquidity that has a positive effect on profitability was also found by Yuliani (2014) and Siregar (2014). It is different from the findings of Marlina and Puryati (2013) who found that the risk-based capital has a negative effect on the profitability of insurance companies in Indonesia. This is caused by the sample not having a lot of insurance agents leading to inefficient performance, as indicated by the negative direction between risk-based capital and profitability.

Charumathi (2012) studied 23 insurers' samples in India during 2009–2011 which found that the premium income, underwriting income and liquidity are positively related to ROA. But the growth variables have a negative relationship. Variable growth with negative effect was also found by Chen-Ying (2014) with a sample of 15 insurance companies from the period of 1999 to 2009.

Research by Derbali (2014) used a sample of eight insurance companies during the period of 2005–2012 with finding that premium income, liquidity and growth has a positive relationship with ROA as the dependent variable. Similar results were found by

Sumaira and Amjad (2012) with a sample of 31 insurance companies, 2006–2011. Putri and Lestari (2014) found that the premium income and growth has positive effects on profitability, but variable of liquidity had a negative influence, with a sample of companies listed in Indonesia Stock Exchange during the period of 2003–2012.

## 2. Literature Review

### 2.1. Insurance

According to the Law No. 2 of 1992, insurance or coverage is an agreement between two or more parties, with a binding to insured to receive insurance premium, to reimburse the insured for loss, damage or loss or legal responsibility to third parties that may be suffered by the insured, arising of an uncertain event or to provide a payment based on death or life of an insured person.

According to Muhammad (2006: 3), insurance can be grouped by the type of business as follows:

1. Life Insurance. This type of insurance is the insurance that provides protection for the lives and safety of life of its customers. For example, personal accident insurance.
2. General Insurance. This type of insurance provides protection against property of uncertain events in the future. For example, fire insurance and motor insurance.
3. Reinsurance. This type of insurance is the insurance where the insurer insured their risk to another insurance company, because the risks are too great.
4. Social Insurance. This type of insurance provides protection to the public for example, from traffic accidents and loss of income when they retire.

Specifically for this study, using a sample of the general insurance company, which according to IAI with Statement of Financial Accounting Standards No. 28 of 2007, general insurance company have characteristics as follows:

1. Loss insurance is a protection system in order to address the risk of financial loss as well as a means to raise funds.
2. Presentation of the financial statements affected the financial accountability on the part of the insured.

3. Elements estimate affecting the financial statements, for example, the approximate amount of unearned premiums (unearned premium), the estimated amount of the claim, including the number of claims that have been there but not yet reported (incurred but not reported claims).
4. Customer as insurance buyers will pay a sum of money (premium) to the insurer (insurance company) prior to the event that will make a financial loss.
5. The specific method used to estimate the amount of premium that is not yet a revenue and claims incurred but not yet reported.
6. Insurance companies should comply with regulations and laws that have been established, for example, the level of solvency.

## 2.2. Profitability

In the financial evaluation, the company can measure its ability to generate earnings (profit) through profitability ratios. According Irawati (2006: 41), profitability ratio is useful in assessing the efficiency of assets or the company's ability to gain an advantage in a certain time to see how efficient the company is in its operations. This study uses the ratio of profitability and Return on Assets (ROA) as a proxy. According Husnan and Pudjiastuti (2006: 49), ROA is useful to look at the ability of property companies to profit from the company's operations.

## 2.3. Premium income

According to Nitisusastro (2013: 13), the premium income is a price set by the insurer for specific risk, place and time. In the practice of insurance, the premium is divided into two parts; gross premiums and net premiums. Gross premiums are obtained from clients, brokers, insurance agents and other companies. Net premium is the result of gross premiums minus reinsurance premiums and commissions [12]. Evaluation of operational performance can be done by looking at the movement in premium income. The increase or decrease of extreme instability shows the company's operations.

## 2.4. Underwriting income

According to Abbas (2012: 37), underwriting is a part of its efforts to benefit by choosing a good risk. Underwriting result is the difference of underwriting revenue and underwriting expenses [7]. Underwriting income is derived from gross premium income and reinsurance premiums. Underwriting expenses are derived from expenditure claims and reinsurance claims.

## 2.5. Risk-based capital

According to Government Regulation (PP) No. 63 of Year 2004, risk-based capital is a measure that indicates how secure are the finance of an insurance company, with a minimum rate of 120 percent. Insurance companies with risk-based capital of 120 percent will always be able to pay its claims. The higher the value of the risk-based capital the more healthy the financial situation of the company, and of course the company is able to meet its obligations and improve profitability.

## 2.6. Liquidity

According to Brigham and Houston (2010: 105), liquidity is the question, can a company pay its obligations when the obligation matured. Liquidity variables in this study uses a proxy current ratio. This ratio measures how well the company can pay the debt (liabilities) in short-term use of its current assets. In the insurance companies, the company's ability to pay claims falling due is one of the main topics for evaluating company performance. More liquid, the performance will be better; encashment of short-term liabilities and ability to generate profits.

## 2.7. Growth

According to Budiarjo (2015), premium growth represents the increase or decrease in the volume of gross premiums that indicates the stability of the company's business activities. The increase in premium growth will ensure the company's growth and market share gains. In the face of fierce competition, the growth of the business has become an important strategy for the insurance company to survive in industry.

### 3. Research Methods

The object of this study is a general insurance company in Indonesia, which is listed in Otoritas Jasa Keuangan. The insurance data for the period 2011–2014 was obtained through the website [www.ojk.go.id](http://www.ojk.go.id). Premium income data, the results of underwriting, risk-based capital, liquidity, growth and ROA derived from the annual financial statements of the company through [www.idx.co.id](http://www.idx.co.id) website and the official website of each company.

#### 3.1. Variables research and measurement

The dependent variable is the variable that is influenced by other variables (independent variables). This study uses the dependent variable in the form of profitability as measured by ROA as a variable Y. ROA is the ability of the company's assets in the company's operating profit. The summary of the formula is as follows:

$$\text{ROA} = \frac{\text{Earning Before Interest and Taxes}}{\text{Total Asset}}$$

Independent variables are variables that affect other variables (the dependent variable). These are useful as a reference to determine the effect on the dependent variable. This study uses the independent variable in the form of Premium Income (X1), Underwriting Income (X2), Risk-based Capital (X3), Liquidity (X4) and Growth (X5).

1. Premium Income is the money paid to the insurance company clients on the risks that have been agreed in the agreement in the insurance policy. This study uses the net premium income. The formula is as follows:

$$\text{Premium Income} = \text{Gross Premium} - \text{Reinsurance Premium} - \text{Commision.}$$

2. Underwriting is the translation of the core activities of the insurance companies in the form of profits or losses resulting from a reduction of components of income and underwriting expenses. The summary of the formula is as follows:

$$\text{Underwriting Income} = \text{Underwriting Revenue} - \text{Underwriting Expense.}$$

3. Risk-based Capital is evaluating the solvency limit required under government regulations in order to see whether or not the financial condition of insurance companies is healthy. The formula is as follows:

$$\text{Risk Based Capital} = \frac{\text{Solvency level}}{\text{Minimum solvency level}} \times 100\%.$$

4. Liquidity in this study was measured using a proxy Current Ratio. This ratio measures how well the company can pay short-term obligations using its current assets. The formula is as follows:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

5. Growth in this study was measured by calculating the premium growth. Premium growth represents the increase or decrease in the volume of gross premiums. The formula is as follows:

$$\text{Growth} = \frac{\text{Current year gross premium} - \text{Prior year gross premium}}{\text{Prior year gross premium}} \times 100\%$$

### 3.2. Determination methods' population and sample

Samples were selected using purposive sampling method. Purposive sampling is a sampling technique with consideration or with specific selection criteria. Criteria for selection of the sample consisted of the following:

1. The general insurance company listed in the Otoritas Jasa Keuangan for four consecutive years during the period 2011–2014.
2. The general insurance company delivering complete financial statement data during the period 2011–2014 with regard to premium income, underwriting income, risk-based capital, liquidity (current ratio), growth (growth in gross premiums) and profitability (ROA).

### 3.3. Analysis method

Methods of data analysis used in this study are as follows:

#### 3.3.1. Selection of panel data regression model estimation

Data panel has several data-processing technique; Common Effect Model, Fixed Effect Model and Random Effect Model. For that will be tested before deciding which models to use. The testing is Chow Test and Hausman Test.

##### 1. Chow Test

Chow Test is a test to determine whether the model is Fixed Effect or Common Effect, most appropriately used in estimating panel data. Chow Test hypothesis is:

$H_0$ : Common Effect Model

$H_a$ : Fixed Effect Model

If the  $p$ -value  $> 0.05$ , then  $H_0$  is accepted. If the  $p$ -value  $< 0.05$ , then  $H_0$  is rejected.

## 2. Hausman Test

Hausman test is used for the selection panel of data processing model between the model and the Fixed Effect Random Effect. Hausman test hypotheses are:

$H_0$ : Random Effect Model

$H_1$ : Fixed Effect Model

If the  $p$ -value  $> 0.05$ , then  $H_0$  is accepted. If the  $p$ -value  $< 0.05$ , then  $H_0$  is rejected.

### 3.3.2. Hypothesis testing

Research using multiple linear regression analysis. Tests to know if there's any significant influence, and how much influence, on the dependent variable with the independent variables. Following is a regression model to the study:

$$Y = \alpha + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e,$$

where:

Y = Return on Assets (ROA)

$X_1$  = Premium Income

$X_2$  = Underwriting Results

$X_3$  = Risk-based Capital

$X_4$  = Liquidity

$X_5$  = Growth

$\alpha$  = Constant

b = Regression Coefficients

e = Standard Error

## 4. Results and Discussion

According to Table 1, descriptive results show that the value of the average profitability of the sample companies was 5.93 percent with a standard deviation of 2:27 percent. Highest profitability achieved by PT Asuransi Prog Son was in 2014 that reached

TABLE 1: Descriptive Statistics.

| Variable Name      | N   | Minimum | Maximum | Mean      | Std. Deviation |
|--------------------|-----|---------|---------|-----------|----------------|
| PROF               | 108 | 0.0134  | 0.1041  | 0.059315  | 0.0227478      |
| PRE                | 108 | 24.0703 | 28.4919 | 26.372856 | 1.1683131      |
| UND                | 108 | 23.5531 | 27.4856 | 25.233899 | 0.9543981      |
| RBC                | 108 | 1.22    | 7.5     | 2.7876    | 1.2795         |
| LIQ                | 108 | 1.15    | 3.55    | 1.7917    | 0.47957        |
| GR                 | 108 | -0.1331 | 2.4986  | 0.237986  | 0.3321092      |
| Valid N (listwise) | 108 |         |         |           |                |

Source: SPSS 20 output, computed by researcher in 2016

10:41 percent. Putera PT Asuransi Jasa Raharja was able to efficiently manage its business that makes high profitability. Lowest profitability obtained was PT Asuransi Axa Indonesia that recorded a 1:34 percent in 2011. These results were obtained from the cost of great effort that comes from salaries and large commissions, thus reducing the income earned companies.

Premium income in the sample had an average of 26.37 and a standard deviation of 1:17. The premium income in the sample etched by PT Asuransi Sinar Mas in 2014 is 28.49. This is due to the many services-owned insurance which led to the breadth of the target market. Lowest net premium income achieved by PT Staco Mandiri in 2011 which amounted to 7.24 with total assets of small limit the ability to provide insurance products, so as to compete in the premium net gain in business.

Underwriting results in the sample average of 25.23 and a standard deviation of 0.95. The highest value of this parameter is achieved by PT Asuransi Axa Indonesia in 2014 is 27.48. A large difference showed good underwriting activities in PT Asuransi Axa Indonesia. While achieving the lowest, underwriting results obtained by PT China Taiping Insurance Indonesia in 2012 is 23:55. This result is due to increased claims expense 22.75 percent led to the fall of the underwriting results.

Risk-based capital has an average of 278.76 and 127.95 percent standard deviation. The Risk-based capital etched by PT Asuransi Kredit Indonesia (Persero) in 2014 is 750 percent. This is because it is able to risk efficiently. PT Asuransi Rama Satria got the lowest value in 2014 which is 122 percent. This achievement is due to poor selection that increases the risk of claims which impact on risk-based capital company.

Liquidity has an average of 179.17 and 479.57 percent standard deviation. The liquidity etched by PT Lippo General Insurance Tbk. in 2014 was 355 percent. The magnitude of the liquidity ratio of PT Lippo General Insurance Tbk. showed bank cash that is not invested that followed the declining number of claims. Lowest Data was obtained by PT Asuransi Bina Dana Arta Tbk. in 2012, that is, 115 percent. Shows total current assets were detained particular bank cash is not too much difference with the current liquidity.

Growth has an average of 23.80 percent and a standard deviation of 33.21 percent. The greatest growth in the sample was etched by PT Asuransi General BCA in 2012 that is 249.86 percent. These results are obtained due to the increased size of the company to 148 percent, which supports the activities of companies in search of premium income. The lowest growth was obtained by PT Asuransi Jasa Tania Tbk. in 2013 which is -13.31 percent. This is due to the inability of the company to increase the sales of insurance products.

#### 4.1. Selection of panel data regression methods

In analyzing the data panel, there are three commonly used models; Common Effect, Fixed Effect and Random Effect. Tests to determine the appropriate model in estimating panel data regression. Tests conducted by the method:

##### 1. Chow Test

Chow test is used to choose between Common Effect model or Fixed Effect model. The hypotheses of Chow test are:

$H_0$ : Common Effect Model or Pooled Least Regression

$H_1$ : Fixed Effect Model

Chow test criteria is if the probability  $\chi^2$  and the  $p$ -value  $> 5\%$ , then  $H_0$  is accepted, so that the right model is a Common Effect Model.

TABLE 2: Chow Test.

| Redundant Fixed Effects Tests    |            |         |        |
|----------------------------------|------------|---------|--------|
| Test cross-section fixed effects |            |         |        |
| Effects Test                     | Statistic  | d.f.    | Prob.  |
| Cross-section F                  | 19.534763  | (26.76) | 0.0000 |
| Cross-section Chi-square         | 220.212319 | 26      | 0.0000 |

Source: *Eviews 9.0* output, computed by researcher in 2016

So, the aforementioned model is not Pooled Least Square.

2. Hausman Test

Hausman test is done to determine the most appropriate regression model, whether Random Effect Model or Fixed Effect Model. The hypotheses of Hausman test are:

H<sub>0</sub>: Random Effect Model

H<sub>1</sub>: Fixed Effect Model

If the x<sup>2</sup> probability is less than 0.05, the Fixed Effect model is most appropriate *digunakan* (to be used). If the x<sub>2</sub> probability is greater than 0.05, then the Random Effect Model.

TABLE 3: Hausman Test.

| Correlated Random Effects—Hausman Test |                   |              |        |
|--|-------------------|--------------|--------|
| Test cross-section random effects      |                   |              |        |
| Test Summary                           | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob.  |
| Cross-section random                   | 27.501719         | 5            | 0.0000 |

Source: *Eviews 9.0* output, computed by researcher in 2016

In Table 3, it can be seen that the probability of 0.0000 x<sub>2</sub> is smaller than 0.05. Based on the decision-making criteria, it can be concluded that the hypotheses H<sub>0</sub> and H<sub>1</sub> are accepted. Hence, it can be concluded that in Fixed Effect, Hausman test models are more appropriate to use in estimating panel data of this study.

4.2. Hypothesis testing

To know if there’s any significant influence and how big the influence of independent variables are on the dependent variable, Fixed Effect Model is used:

From Table 5, the equation regression model is as follows:

$$PROF = -0.827613 + 0.023050PRE + 0.010559UND + 0.003735RBC + 0.001134LIQ + 0.000650GR + e.$$

In the equation generated constant value (α) of -0.827613, meaning that if the independent variable PRE, UND, RBC, LIQ and GR PROF constant, the value is equal to -0.827613.

TABLE 4: Hypothesis testing.

| Dependent Variable: PROF   |             |                       |             |           |
|--|-------------|-----------------------|-------------|-----------|
| Method: Panel Least Squares  |             |                       |             |           |
| Sample: 2011 2014  |             |                       |             |           |
| Periods included: 4  |             |                       |             |           |
| Cross-sections included: 27  |             |                       |             |           |
| Total panel (balanced) observations: 108                           |             |                       |             |           |
| Variable   | Coefficient | Std. Error            | t-Statistic | Prob.     |
| C  | -0.827613   | 0.121402              | -6.817104   | 0.0000    |
| PRE  | 0.023050    | 0.003891              | 5.923183    | 0.0000    |
| UND  | 0.010559    | 0.003557              | 2.968380    | 0.0040    |
| RBC  | 0.003735    | 0.001332              | 2.804784    | 0.0064    |
| LIQ  | 0.001134    | 0.003324              | 0.341005    | 0.7340    |
| GR   | 0.000650    | 0.004203              | 0.154533    | 0.8776    |
| Effects Specification  |             |                       |             |           |
| Cross-section fixed (dummy variables)                              |             |                       |             |           |
| R-squared  | 0.880297    | Mean dependent var    |             | 0.059315  |
| Adjusted R-squared   | 0.831470    | S.D. dependent var    |             | 0.022748  |
| S.E. of regression   | 0.009339    | Akaike info criterion |             | -6.268146 |
| Sum squared resid  | 0.006628    | Schwarz criterion     |             | -5.473440 |
| Log likelihood   | 370.4799    | Hannan-Quinn criter.  |             | -5.945922 |
| F-statistic  | 18.02913    | Durbin-Watson stat    |             | 1.839605  |
| Prob(F-statistic)  | 0.000000    |                       |             |           |
| Source: Output <i>Eviews 9.0</i> , computed by researchers in 2016 |             |                       |             |           |

### 4.3. Discussion

#### 4.3.1. Variable PRE

Based on the results, it is known that premium income coefficient value (PRE) of 0.023050 has meaningful positive effect on the premium income amounted to 0.0000

profitability. Probability value is smaller than 0.05, meaning premium income has a significant effect on profitability.

These results support the findings of Malik (2011), Charumathi (2012), Riani (2015), as well as Sumaira and Amjad (2012). They used proxy size companies through the natural logarithm of premium income and found a positive and significant impact to profitability. This means an increase in premium income will increase the profitability of the company. Riani (2015) states that the premium income is the main income of the insurance company. It means that the greater the premiums received by the company, the more the funds that can be invested.

#### 4.3.2. Variable UND

Based on test results, it is known that the value of coefficient underwriting result (UND) amounted to 0.010559, which means that the underwriting result has a positive effect on the profitability. Probability value 0.0040 less than 0.05 means that premium income has a significant effect on profitability.

These results are consistent with the findings of Mutmainnah (2015) and Riani (2014). Underwriting result is the value obtained by calculating the difference between the income underwriting and underwriting expenses. According to Mutmainnah (2015), high underwriting results in general show that good underwriting (risk selection) has done. Meaning the claim expenses to be borne by the company are relatively smaller when compared to the premium income.

#### 4.3.3. Variable RBC

Based on test results, it is known that the value of the coefficient risk-based capital (RBC) of 0.003735, which means that risk-based capital has a positive effect on profitability and  $p$ -value is 0.0064, meaning RBC has a significant effect on profitability.

These results support the findings of Yuliani (2014), Mutmainnah (2015) as well as Andhayani and Norita (2012). The results of this study indicate that RBC partially has a positive effect in predicting the profitability of companies in the study period. Yuliani (2014) states that the increase in RBC, followed by an increase in profitability due to the low duty that must be fulfilled by the company led to an increase in solvency. In addition, the capital as one of the components in the formulation of RBC can be reinvested productively so that it will produce greater profits.

#### 4.3.4. Variable LIQ

From the test results, it is known that the coefficient of liquidity (LIQ) amounted to 0.001134, which means more liquidity has a positive effect on profitability. Probability value of 0.7340 is greater than 0.05, meaning liquidity has no significant effect on profitability.

The results of this study supported the findings of Derbali (2014), Sumaira and Amjad (2012) and Siregar (2014). According to Derbali (2014), a company with a high level of liquidity does not significantly affect the performance of the company. This is because in the process, insurance companies use more long-term liabilities to fund its operations, so that short-term liabilities are less and less used, the current assets of the transferred functions. The results showed that liquidity does not affect the profitability of general insurance companies.

#### 4.3.5. Variable GP

Referring to the test results, it is known that the growth coefficient (GR) of 0.000650, which means growth positively affects the probability of 0.8776 profitability. Probability value greater than 0.05 has meant that growth has no significant effect on profitability.

The results of this study support Derbali (2014), Princess and Lestari (2014), as well as Sumaira and Amjad (2012). According to Sumaira and Amjad (2012), inefficient insurance company will fail to predict profitability due to lack of managing its operations.

## 5. Conclusion and Suggestion

### 5.1. Conclusion

The premium income, underwriting, risk-based capital have effect to company profitability while liquidity and growth have no effect.

### 5.2. Suggestions

As for suggestions that researchers provide for future research are including life insurance and reinsurance companies in the sample for more thorough research. Besides

adding independent variables in order to give more significant results in predicting profitability. Using a proxy in each variable were more diverse.

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