ANALYSIS OF COMPANIES' CHARACTERISTICS, ECONOMIC CONDITIONS, NET PREMIUMS, AND THEIR IMPACTS ON PROFITABILITY

**Endang Ruchiyat, STIE Ekuitas, Indonesia**

ABSTRACT

This research is aimed at empirically testing insurance companies' profitability and net premiums from the variables of company size, solvability, gross domestic products, and inflation. The research was conducted on general insurance companies in Indonesia observed throughout 2013 – 2017 using the panel data regression. The research results showed: First, company size, solvability, gross domestic products, and inflation have a significant influence on net premiums through the common model effect; secondly, net premiums have a significant influence on profitability through the fixed effect model. This research is expected to be a recommendation and information to the insurance industry, associations, and policymakers.

Keywords: net premiums, company size, solvability, profitability

Introduction

The insurance industry plays a significant role in supporting national development through the nurture of long-term investments in big amounts, which eventually become the source of development funds. Besides that, the insurance industry also plays a role in helping the community cope with the risks they face every day, especially when they start and undertake their business.

The development of the insurance industry improves every year, along with the increase of insurance-minded people in the community. As can be seen in Figure 1, in the past five years, there has been an increase in the accumulation of net premiums by general insurance companies. This increase shows that general insurance companies in Indonesia are improving their condition. This improved condition of the insurance companies necessitates the testing of factors that determine them to be good from the companies' both internal and external aspects.
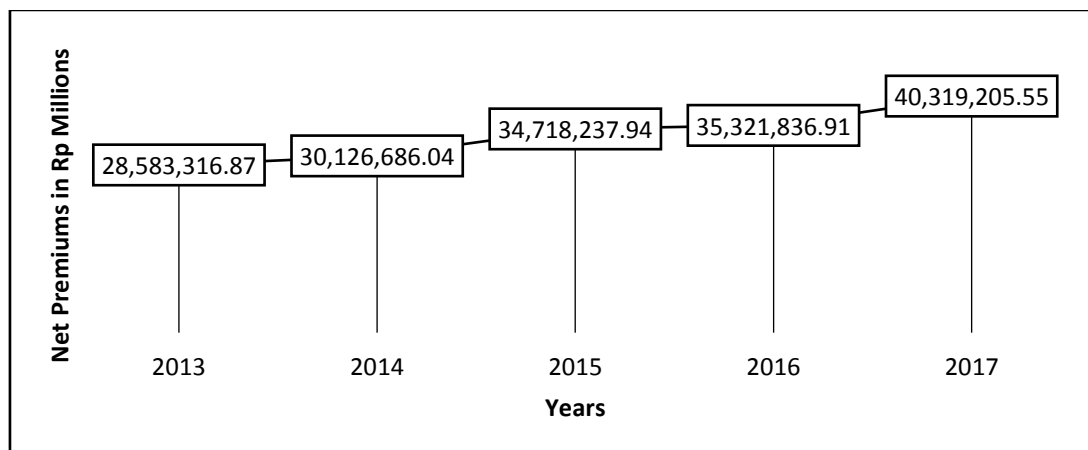
Source: Insurance Statistics, 2018

Figure 1. The Trend of Progress of General Insurance Companies' Net Premiums in Indonesia in the Period of 2013 -2017

Much research on factors that determine net premiums has been conducted, but it seems that the results suggest discrepancies between one researcher and another. Chen, Chen, & Liao (2009) found that insurance premiums constitute the main income source for life insurance companies. According to him, the growth of life insurance companies' premiums in Taiwan is determined by the structure of capital and risk management. Kozak (2011) found that premiums and profitability of global insurance companies in Poland are determined by the variables of company size, market shares, and gross domestic products. Researching insurance companies in Pakistan, Malik (2011) found that company size is not the only variable determining premiums; the other variables determining so include company age, capital, and leverage.

A different result is rendered by Charumathi (2012), who found that company size, leverage, capital, premiums have a negative influence on the profitability of life insurance companies in India. The same is suggested by the result of the research by Mwangi &

Murigu (2015), who found that company size has a negative influence on the premiums obtained by insurance companies in Kenya.

Based on the analysis gap, it can be seen that there are discrepancies in the research results. This is undoubtedly an interesting point that drives the need to test various factors that determine net premiums and profitability for insurance companies in Indonesia. Another thing that drives the need to conduct this research is that research on factors that determine net premiums and profitability in general insurance companies in Indonesia has not yet been undertaken. Researchers in Indonesia, such as Fitriani & Dorkas (2009) focused their research only on insurance companies listed on the Indonesia Stock Exchange. Kirmizi & Agus (2011) did their research on general insurance companies but focused only on the variables of capital and assets. This research, in contrast, focuses on the internal and external aspects of general insurance companies.

Dwelling on the outlines, this research is aimed at empirically testing the company size, solvability, gross domestic income, and inflation against net premiums and their impacts on profitability in insurance companies. This research is expected to be a recommendation and information to the insurance industry, associations, and policymakers.

Literature Review and Hypothesis Making

1. Insurance Theory

There exist two principles in the insurance business, namely, the reserve principle and the mutuality principle (Marshall, 1974). In the reserve principle, it is explained that basically, an individual's membership with an insurance company is a way for him to allocate funds as a reserve in case he faces a misfortune in the future. From the perspective of the insurance company, the amount of the premium1 paid by the customer constitutes a fund that should be allocated to anticipate a claim filed by the customer when he faces a risk.

The mutuality principle in the insurance company necessitates the insurance company to establish a good relationship with the consumer. Put in a simple way; the mutuality principle determines how the insurance company and the customer are both benefited. Moreover, according to Marshall (1974), based on existing regulations, the insurance company is allowed to manage the fund from the customer to be invested in some financial instruments. It constitutes the insurance company's way of obtaining benefits from the premium paid by the customer. Meanwhile, the customer must also be considered and benefited by the insurance company when he files a claim.

2. Company Theory

The company theory that is popular enough in explaining the company behavior in relation to the issue of competitive advantages seen from the ability of the resources it has is the company strategic theory. Phelan and Lewis in Lipczynski, Wilson, & Goddard (2005) explain that the company strategic theory discusses the view that a company's competitive advantages are determined by the resources it has (resource-based view of

the company), the company's operational limit, and the company's ability to act properly within the limit of the company's information (bounded rationality).

In relation to the role of resources in supporting the company's competitive advantages, resources are defined as the input used by the company to produce output. Resources meant here cover not only physical input but also intangible input that does not materialize, both comprising physical capital (goods), human resource capital, and organizational capital. These resources cover manpower, capital, raw materials, new knowledge, experts, and good relationship with the laborers' union. When the level of the company's ownership towards unique resources and the good relationship among the company's elements increase higher, the company's competitive advantages improve better.

In this research, the company theory becomes the basis for the researcher to explain the concept of company size and solvability as resources deemed related to the insurance company's efforts to increase its income.

3. Company size, solvability, and Net Premiums
Company size is defined as a measurement or a scale that shows a business. Brealey, Myers, & Marcus (2001) defined company size as the relative bigness or the smallness of a company seen from the amount of the equity value, sales value, or total asset value. A company with an economic scale proxied with the three factors is deemed to have an ability to last long (Lee, 2014).

Bunn & Young (2004) stated that companies have different scales so that it is difficult to determine whether the companies belong in the categories of big-, medium-, or small-scale companies. In relation to this issue, there exist some ways to determine a company's size, namely, through its total assets, sales value, or market capitalization value. If the company's asset value increases higher, the equity value invested turns bigger; if the sales value reached gets bigger, the company's money earned through its activities is in an amount more significant. A high capitalization value reflects a high recognition from the community (Brigham & Houston, 2006).

The ownership of assets as a proxy of company size can be a parameter to weigh the company's ability to produce income (Gron, 1998). In the insurance company, insurance premiums obtained can be a parameter to evaluate the performance of the insurance company's income (Mwangi & Murigu, 2015). In this research, the premium meant is the net premium, namely, the gross premium deducted by the re-insurance premium deducted first by re-insurance commission (own retention premium). Ideally, the company that succeeds in obtaining net premiums in great amounts will also manage to gain big profits. Malik (2011) found that company size proxied with the total assets has to influence on both net premiums and profitability.

Insurance companies, just like other companies, can utilize debts as a funding source. The funding source from debts undoubtedly poses certain risks if the companies cannot manage them well. But if otherwise the debts are managed well, they will support the effort in gaining income for the companies. The companies' ability to manage debts is

called solvability. (Deangelo & Roll., 2015) explained that solvability or leverage measures to which extent the total assets are financed by the owner if compared with the funding provided by the creditors.

Insurance companies have to maintain their solvability level to avoid insolvency. There exist several factors that can cause insurance companies' insolvency, namely, among others, capital inadequacy, excessive investment risks, disaster-caused losses, and asset value decrease. Management fraud sometimes plays a role in causing many insurance companies to go bankrupt out of deliberately decreasing claims and exaggerating asset value right before bankruptcy (Harrington & Niehaus, 2004).

Gatzert & Schmeiser (2008) explained that adequate solvability is used not only to prevent bankruptcy but also to reduce expenses about insolvency. Bankruptcy is also related to the high expense of claims compared with the expense recorded in the financial report. Claim expenses are significantly higher than those previously expected when the insurer did a joint business and reported the estimated claim expense in the beginning.

If the company can manage debts well, the debts can become the leverage to increase the income in the form of premiums. The ideal condition of debt management is called solvability, and so solvability has deemed a factor that also determines net premiums. The other way around, when the company is insolvable, the company is confronted with risks and prevented from being able to devise activities to accumulate premiums.

Based on the outline of concepts related to company size, solvability, and net premiums, a hypothesis can be formulated as follows:
H_1: Total assets have a significant influence on net premiums.
H_2: Solvability has a significant influence on net premiums.

4. Economic Growth and Net Premiums
Economic condition constitutes an important factor for companies to be able to run their operational activities well. Economic growth is a process of sustainable economic condition change in a country towards a better condition in a certain period. Economic growth can also be defined as a process of increased production capacity in an economy that is realized in the form of national income.

In the economic sector, GDP is the market value of all goods and services that are produced by a country in a certain period. GDP is a method of calculating national income. GDP growth is oftentimes used as a framework for companies to devise plans to increase production capacity or their services. In an improved economic condition, companies will likely increase their capacity. This increased capacity is later expected to boost the companies' income growth.

Kozak(2011), in his research, found that, in the period of integration, with the European Union's higher economic growth rate, Poland had a greater demand for insurance products, which increased the profit of insurance operations. A similar finding was revealed by Mwangi & Murigu (2015), who explained that decreased GNP in Kenya caused the growth of general insurance companies' premium income in the country to also drop sharply.

While gross domestic products are expected to increase, inflation is required not to. Inflation is defined as the increase in prices in general that happens continuously over a certain period of time. The increase in prices of one or two goods alone does not cause inflation, except if the increase widens to (or causes the increase of prices of) other goods (Bank of Indonesia, 2018). Inflation focused, the issue is not about the change in prices of various goods, but the change in the average price that applies. That is, the value or the inflation rate describes the average increase in prices over a certain period of time (years, months) in a given economy (Sukirno, 2016). If the average inflation increases higher, the prices of goods turn higher, too; this condition will decrease investment and production activities.

Higher production costs will cause goods selling prices to increase, and this will, in turn, reduce the community's purchasing power, because the community's real income also decreases. The community's decreased purchasing power causes companies' sales to drop, and companies' decreased sales will cause the companies' profits to lower.

Chen, Chen, & Liao (2009) found that one factor of macro-economy that has a significant influence on the premium income growth of life insurance in Taiwan is inflation. Inflation gives impacts in the form of big risks to the investment that has to be borne by insurance companies and in the form of wide gaps that are caused out of premiums and expenses that have to be paid to run the life insurance service. The same is confirmed by the finding from Akotey, Sackey, Amoah, & Manso (2013), who explained that the premium income and profitability of insurance companies in Ghana are determined by the macro-economic condition, namely, among others, inflation.

Based on the outline of concepts related to gross domestic products, inflation, and net premiums, a hypothesis can be formulated as follows:
H_3: Gross domestic products have a significant influence on net premiums.
H_4: The inflation rate has a significant influence on net premiums.

5. *Net premiums and Profitability*
Premium is an amount of money that has to be paid by the insured as an obligation for his participation in the insurance. The amount of premium that has to be paid for the participation in the insurance has been determined by the insurance company observing the conditions of the insured. In this research, the premium meant is the net premium, which is the gross premium deducted by the re-insurance premium deducted first by the commission (own retention premium).

The net premium as an income element constitutes a parameter that draws the insurance company's attention to use it to evaluate the profitability performance (Horowitz, Loughran, & Savin, 2000). The highs and lows of the net premium are deemed to determine the profitability that will be obtained by the insurance company. Regarding this, Chen et al., (2009) explained that the insurance premium in life insurance companies in Taiwan constitutes a main income source for the insurance companies, and also found that when the premium increases, profitability also grows.

Besides the premium, profitability is often used as a framework by researchers to evaluate companies' success. Profitability is even used as a parameter by investors to assess companies' prospects in the future. Tandelilin (2010) stated that profitability is often made related to the aspect of investment prospect evaluation. Profitability constitutes companies' ability to gain profits in relation to sales, total assets, and own capital. In contrast, according to Brealey et al. (2001, p. 116), profitability constitutes a picture of management performance in running companies.

Thus, profitability constitutes an indicator that is used by the management in managing the wealth of the company as shown by the profit that is generated from the company's operational activities. Brigham & Houston (2006) explained that profitability ratio constitutes a ratio to assess the company's ability to make profits. This ratio can also measure the level of management effectiveness in a company. This is shown by the availability of profits that are generated from sales and investment income. The essence of the use of this ratio is to show the company's effectiveness.

In this research, the profitability ratio used is Return on Asset (ROA). ROA shows the company's ability to generate profits from the assets used in the company's operations. Therefore, ROA is formulated as a comparison between net profits after tax and total assets owned by the company. ROA measures the ability and effectiveness of the management in using the company's assets to make profits (Pettit, 2007). If ROA is higher, the return received by the company is also greater. Besides that, the measurement of financial performance with ROA also shows the ability of the capital invested in total assets to generate profits.

Kozak (2011), who studied 25 non-life insurance companies from 2002 to 2009, found that the growth of net premiums in Polish insurance companies has a positive influence on profitability per year.

Based on the outline of concepts related to net premiums and profitability, a hypothesis can be formulated as follows:
H_5: net premiums have a significant influence on profitability.

Research Methods
The model in this research is divided into one of the net premiums that are viewed from the aspects of company size, solvability, gross domestic product, and inflation. The other one empirically tests the influence of net premiums on profitability. The variables tested are outlined as follows:
Dependent Variables
1. Return on Assets = Profits After Tax/Total Assets
2. Net Premium   = Gross Premium – (Re-Insurance Premium – Re-Insurance Commission)
Independent Variables
1. Company Size = Ln Total Assets
2. Leverage = Total Debts/Total Assets
3. Gross Domestic Products = Household Consumption (C) + Government Consumption (G) + Investment + (Export – Import)

4. Inflation = Consumer Price Index Year n – Consumer Price Index n-1/Consumer Price Index n-1

Next, the variables were empirically tested using panel data from 55 general insurance companies in Indonesia in the observation years of 2013 – 2017 (see Attachment 1). Meanwhile, the panel data regression model used in this research is outlined as follows:

$$PREMIUM_{i,t} = \beta_0 + \beta_1 Ln\ ASET_{i,t} + \beta_2 LEV_{i,t} + \beta_3 GDP_t + \beta_4 INF_t + \varepsilon_1$$

$$ROA_{i,t} = \beta_0 + \beta_5 PREMI_{i,t} + \varepsilon_2$$

Remarks:

$PREMIUM_{i,t}$ = Insurance company's net premiums i year t
$Ln\ ASET_{i,t}$ = Natural logarithm of insurance company's total assets i year t
$LEV_{i,t}$ = Insurance company's solvability i year t
GDP_t = Gross domestic products in Indonesia year t
INF_t = Inflation in Indonesia year t

Research Results and Discussion

The model of panel data regression analyzed in this research consists of the model of panel data for net premiums and that of panel data for profitability. The first regression model establishes a common effect relationship. Table 1 shows the company's characteristics indicated by the company size variable having an influence on net premiums; this is going in a positive direction. In contrast, leverage also influences net premiums, this moving in a negative direction. Meanwhile, the macro-economic factors that have an influence on the net premiums are gross domestic products and inflation.

Table 1. Panel Data Regression with Net Premium Variable
Dependent Variable: PREMI

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	3.318241	2.772776	1.196722	0.2325
Ln ASET	0.951156	0.017741	53.61455	0.0000
LEV	-0.002311	0.001036	-2.230898	0.0265
Ln GDP	0.610397	0.407096	2.199394	0.0349
INF	-0.023008	0.010173	-2.261674	0.0245

Weighted Statistics			
R-squared	0.922927	Mean dependent var	25.06958
Adjusted R-squared	0.921786	S.D. dependent var	18.76635
S.E. of regression	0.928895	Sum squared resid	232.9686
F-statistics	808.2981	Durbin-Watson stat	0.985225
Prob (F-statistics)	0.000000		

Source: Result of data treatment with e-views

Simultaneously, the influence of the four variables on net premiums is very significant, with a determination coefficient of 0.9229 or 92.29%. This result shows that the four

variables are the dominant variables that show the change in net premiums in general insurance companies in Indonesia.

The existence of the influence of company size proxied with the natural logarithm of total assets on net premiums shows that ownership of the company's assets constitutes an important medium to obtain net premiums. This finding conforms to the results of the research by Kozak (2011), who studied 25 general insurance companies in Poland in the period of 2002-2009; the research by Malik (2011), who researched 35 life and general insurance companies listed on Pakistan Stock Exchange in the years 2005-2009; the research by Charumathi (2012), who studied 23 life insurance companies in India.

The significant influence of company size on net premiums in Indonesia proves that ownership of assets for general insurance companies in Indonesia plays a pivotal role in gaining net premiums. This finding simultaneously proves that assets owned by insurance companies are utilized well by the insurance companies to maintain a mutual benefit with the customers (Marshall, 1974).

Besides company size, the condition of general insurance companies' leverage in Indonesia is a factor determining the net premiums. This finding describes that debt management by the insurance companies is deemed to be good as a medium to increase capital to gain net premiums. A similar finding is rendered in the research by Boadi, Antwi, & Lartey (2013) and another by Öner Kaya (2015).

The economic growth parameter in this research comprising gross domestic products and inflation constitutes an external factor determining net premiums for general insurance companies in Indonesia. As widely known, economic condition is an important factor for companies to be able to run their operational activities well. The table reveals that the trend of gross domestic products in the last five years has increased, this suggesting that national income has grown well. And also the inflation shows a relatively controllable figure in a normal inflation condition. Domestic investment positively influenced economic growth, while foreign investment gave negative influence due to the decline of global economic conditions in recent years and domestic macro variables got the impact (Wuri, 2018).

Net premiums as insurance companies' income are found to influence profitability proxied with ROA. And the panel model formed is a fixed effect panel regression. Table 2 shows that net premiums have a positive influence on profitability. This suggests that if the net premiums gained are greater, the profitability obtained by general insurance companies in Indonesia is bigger too. Besides that, the determination of both variables shows significant influence reaching 0.9420 or 94.20%, this placing net premium as the main determiner for the change in the profitability variable. The panel model formed, namely, a fixed-effect model, shows more and more that from year to year the change in profitability is determined by the net premium variable.

Table 2. Panel Data Regression with Profitability Variable
Dependent Variable: ROA

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.692808	1.034334	0.669810	0.5037
PREMI	0.276921	0.087345	3.170422	0.0017

Weighted Statistics

R-squared	0.942009	Mean dependent var	18.84294
Adjusted R-squared	0.927445	S.D. dependent var	40.02238
S.E. of regression	5.032044	Akaike info criterion	4.740812
Sum squared resid	5545.402	Schwarz criterion	5.477318
Log likelihood	-595.8617	Hannan-Quinn criter.	5.036393
F-statistics	64.68093	Durbin-Watson stat	1.913594
Prob (F-statistics)	0.000000		

Source: Result of data treatment with e-views

The discrepancy in panel data regression between model 1 and model 2 shows that the variable that identifies net premiums from one company to another from time to time is the same. Meanwhile, in the second model, the identification of the profitability-change variable by net premiums in every company shows differences, this suggesting that net premium change that individually impacts profitability is not the same from one company to another.

Conclusion
Based on the results of the research, it can be concluded as follows: First, company size, solvability, gross domestic products, and inflation have a significant influence on net premiums through the common effect model; second, net premiums have a significant influence on profitability through the fixed effect model; third, the discrepancy in the regression model shows that companies' characteristics and economic growth from time to time have a similar influence on net premiums, and in the profitability panel data regression, the model formed is a fixed-effect model.

Management-wise, this research renders the implication that insurance companies need to have control over assets owned by the companies so that all the available asset resources can catalyze to increase net premiums. Leverage concerned, general insurance companies in Indonesia need to consolidate themselves to boost net premiums.

Recommendation
To increase the profitability of insurance companies in addition to efforts that can encourage the growth of insurance premiums, it is also necessary to arrange the portfolio

of insurance products to minimize business risk. Likewise, to improve the performance of insurance companies in Indonesia, the Government must ensure that the national economy can grow from time to time and the inflation rate is in a manageable condition.

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