

The Role of Net Profit Margin, Asset Turnover, and Equity Multiplier in Driving Stock Returns: Moderating Effect of ROE Dupont

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Abstract

This study aims to test whether DuPont's ROE can moderate the effect of net profit margin, total asset turnover, and equity multiplier ratio on the stock returns of insurance companies listed on the Indonesia Stock Exchange. This research includes quantitative research. Purposive sampling techniques are used to find stocks of insurance companies that meet the research criteria. The data in this study is panel data sourced from financial statements and historical data on the closing prices of 14 insurance companies for the observation period of January 2018-December 2022. The research model uses SEM-PLS with a data analysis method, moderated regression analysis (MRA), through the Warp Pls 8.0 program. The results showed that the NPM variable did not affect stock returns, while TATO and EMR significantly affected insurance stock returns positively. Furthermore, Dupont's ROE moderation variable interactions were found to have varying classifications. Dupont's ROE role in NPM relationships acts as a homologizer, meaning it can influence the strength of the relationships built. While in the TATO relationship, Dupont's ROE acts as quasi-moderation, which means having a pseudo-interaction between the two. In the EMR relationship, Dupont's ROE acts as a moderation predictor, which means that Dupont's ROE variable only acts as an independent variable in the relationship model formed.

Keywords: Asset Turnover, Equity Multiplier, Net Profit Margin, ROE Dupont, Stock Return.

1. Introduction

The insurance industry is vital in supporting a country's economy, including Indonesia, whose development is still experiencing growth in quantity and quality, although not yet significant. The Financial Services Authority (OJK) recorded that insurance industry premium income for the January 2023 period reached IDR 30.55 trillion, growing by 5.22 percent year on year (YOY) compared to the same period the previous year, which was recorded at IDR 29.04 trillion. Nevertheless, the insurance industry will still encounter other challenges, especially amid the risk of global financial uncertainty (OJK, 2023)

The occurrence of an economic crisis can cause insurance companies to lose revenue. The reason is that with the trend of high-interest rates, people's ability to pay insurance premiums and demand for insurance products can weaken. In addition, the value of these shares' investments in the capital market will decrease and directly affect the company's share price (Abadiyah & Endraswati, 2023). However, insurance companies that have diverse and diversified investment portfolios with investments in various business sectors have the potential to be considered more resilient amid a crisis than companies that only rely on a single investment or are limited to one asset so that insurance stock prices in the capital market are maintained (Anggraeni, 2023).

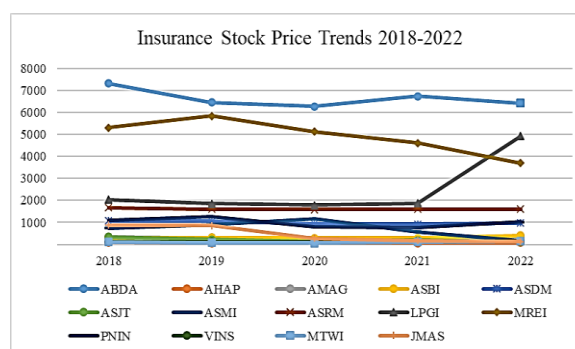


Figure 1. Insurance stock price trends 2018-2022
Source: Yahoo Finance, 2023

Based on Figure 1, it can be seen that the average stock price of insurance companies listed on the Indonesia Stock Exchange has been stable for the last five years. This indicates that the market still believes in the prospects of future insurance company performance, which can be reflected in the results of the company's financial statements. Therefore, there is a relationship between the company's performance and the performance of its shares in the capital market (Palepu & Healy, 2013) even though not all companies that have performed well in the past have the same success in the future (Abadiyah & Endraswati, 2023), So that by analyzing financial statements can provide a small picture of how company management manages its assets and can be considered before deciding to invest in the company (Palepu & Healy, 2013).

Investors who have the nature of value and growth investing are very considerate in their investment decisions by looking at the fundamental value of the company and, as much as possible, avoiding market risks that cannot be predicted movements (Graham & Dood, 2014). This means that by seeing and studying the company's financial ratios, investors can find out the company's current financial position and the company's financial prospects in the future (Abadiyah & Endraswati, 2023). Investors predict the risk and return received by using the Dupont method analysis to assess the company's performance.

The Dupont method is an analytical tool that measures the company's overall financial performance and assesses management's ability to streamline costs and optimize revenue (Palepu & Healy, 2013). This method uses various ratios to assess the company's financial condition regarding increasing return on equity (Yusuf, 2022). This method is believed to help managers and investors estimate a company's future profitability by understanding what happens to its profits and how it uses its assets to generate maximum profit.

Like insurance companies listed on the capital market, the performance results of insurance companies can also be influenced by external parties such as investors or other market participants. Therefore, an investor must assess the company's health before deciding to invest in these stocks and minimize the risk of loss. Typical indicators used by the Dupont system, such as Net Profit Margin (NPM), Total Asset Turnover (TATO), Equity Multiplier, and Dupont ROE, can provide an overview of a company's financial performance. This is because companies with ROE grow yearly, and it can be said that the company's finances are in good condition (Hargrave, 2022).

There are many studies found that the Dupont Analysis is quite capable of assessing and evaluating the financial performance of different types of companies and in different countries (Stiawan & Magfiroh, 2021; Anggraini & Febrianty, 2022; He et al., 2022; Aikor & Timothy, 2022; Yan & Chen, 2022; Nurapih et al., 2021; Mahdawi et al., 2021; AlAli & AlShamali, 2019; Bunea et al., 2019). In addition, the Dupont ratio can affect a company's stock return (Wilda et al., 2022). Rahmawati & Martaseli (2021) tested Dupont's ratio to stock return and found that NPM and TATO did not affect stock return, while EM and ROE had a significant effect on stock return, and simultaneously all Dupont ratios had a significant effect on stock return. These results differ from Sunardi's (2019) research, which found that

positive EM is significant for stock returns, positive NPM is not significant for stock returns, and TATO and ROE are negative for stock returns.

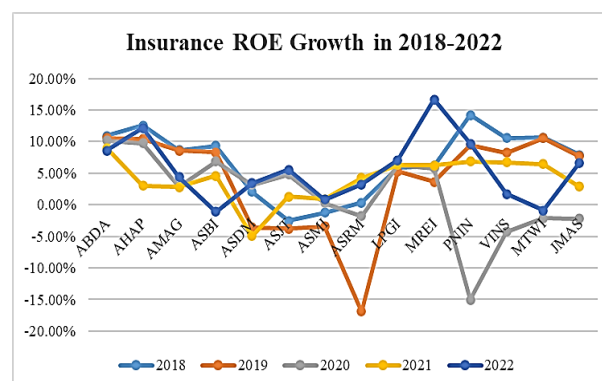


Figure 2. Insurance ROE growth in 2018-2022

Source: Data processed by researchers, 2023

The contribution of this study First, this study examines the analysis of the Dupont ratio and its effect on insurance stock returns that were not tested in other studies (Stiawan & Magfiroh, 2021; Anggraini et al., 2022; Aikor et al., 2022) which uses Dupont analysis to evaluate a company's financial performance. Second, this study used Dupont's ROE indicator as a moderation variable in contrast to the study Rahmawati & Martaseli (2021) and Sunardi (2019), which directly examines the effect of NPM, TATO, EM, and ROE variables on stock prices and stock returns. Third, this study used a moderated regression analysis interaction test through the Warp PLS 8.0 data processing application, while other studies only uses multiple regression tests of partial and simultaneous influence (Wilda et al., 2022; Rahmawati & Martaseli, 2021; Sunardi (2019).

Based on the problem description above, a research gap was found in this study that had not been tested in previous studies. With the addition of Dupont ROE variability as a moderation factor, it is expected that the results of this study can provide diverse insights into managing investment risk in the insurance industry, especially in maximizing stock returns, increasing portfolios for investors, and improving financial performance for insurance companies.

2. Literature Review

2.1. Stock Return

Stock return results from profits on stock investment returns generally obtained by investors in the form of capital gains (the difference in stock prices today with the previous day) (Kurniawan, 2020). Return can be in the form of realized returns

calculated using historical data, while expected returns that have not occurred are expected to occur in the future. Return realization is essential in measuring the company's historical performance and is applicable for determining return expectations (Sunardi, 2019).

$$\text{return} = \frac{\text{Closing Price}_t - \text{Closing Price}_{t-1}}{\text{Closing Price}_{t-1}}$$

2.2. Net Profit Margin (NPM)

Net Profit Margin (NPM) is a ratio that measures how much net profit a company earns compared to its revenue. NPM shows how efficient the company is in managing costs and revenue, as well as how much the company can generate profits from its revenue (Sugiono, 2009). Several factors affect NPM, such as interest rates, operating expenses, and revenue composition. The higher the NPM value in recent periods shows that the company is able to generate high profits from its revenue, and vice versa. The NPM formula is as follows (Hargrave, 2022):

$$\text{NPM} = \frac{\text{Net Income}}{\text{Revenue}} = \frac{\text{EAT}}{\text{Net Sales}}$$

2.3. Total Asset Turnover (TATO)

Total Asset Turn Over (TATO) is a ratio that measures the turnover of all assets owned by the company by measuring how much sales turnover is obtained from each rupiah of assets (Kasmir, 2019). TATO can be influenced by several factors such as operating efficiency, asset utilization rate, and company asset structure. A high TATO value indicates that the company can rotate its assets efficiently and is able to generate high income from its assets. The TATO formula is as follows (Hargrave, 2022):

$$\text{TATO} = \frac{\text{Net Sales}}{\text{Average Total Aset}}$$

2.4. Equity Multiple Ratio (EMR)

Equity Multiplier Ratio (EMR) is a ratio that measures how much a company uses debt in managing its finances or the extent to which the company uses borrowed money to finance its assets (leverage level). EMR can be influenced by several factors, such as interest rates, bank debt structure, and dividend policy. A high EMR value indicates that the company uses debt financing more than shareholder equity financing. The EMR formula is as follows (Hargrave, 2022):

$$\text{EMR} = \frac{\text{Average Total Aset}}{\text{Average Total Shareholders' Equity}}$$

2.5. ROE Dupont

Return on Equity (ROE) is a ratio to measure the extent to which a company is about its shareholders' equity or how efficient the company is in using investments made by its shareholders to generate profits. If the ROE value is high, then it indicates that the company can generate higher returns on investments made by its shareholders. Conversely, if the ROE value is small, it can indicate that the company is not using its equity efficiently. The Dupont ROE formula is as follows (Hargrave, 2022):

$$\text{ROE Dupon} = \text{NPM} \times \text{TATO} \times \text{EMR}$$

2.6. Model Hypothesis

Based on the result of the exploration and assessment of each variable, the conceptual framework can be clarified in the figure below:

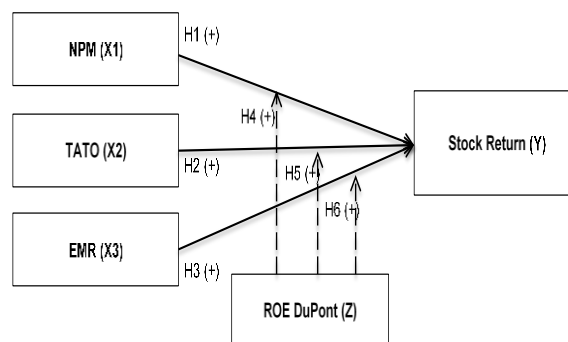


Figure 3. Conceptual framework

It can be seen from the conceptual framework model above in Figure 3 the formulation of the research hypothesis:

- H₁: Net Profit Margin has a positive effect on Stock Return.
- H₂: Total Asset Turnover has a positive effect on Stock Return.
- H₃: Equity Multiplier Ratio has a positive effect on Stock Return.
- H₄: ROE DuPont can moderate the effect of Net Profit Margin on Stock Return.
- H₅: ROE DuPont can moderate the effect of Total Asset turnover on Stock Return.
- H₆: ROE DuPont can moderate the effect of the equity multiplier ratio on stock returns.

3. Methods

This research method uses descriptive quantitative (Sekaran & Bougie, 2017). The data used are panel data, namely data sourced from insurance companies'

financial statements for the last five years obtained from the official website of www.idx.co.id, and historical data on the closing price of insurance stocks from January 2017 until December 2022 obtained from www.yahoo.finance.com. Meanwhile, the study population is in insurance companies listed on the Indonesia Stock Exchange in the 2018-2022 period, with research samples using purposive sampling. The sample criteria and list of selected samples have been described in Tables 1 and 2.

Table 1. Research sampling criteria

No	Sample Characteristics	Total
1	The total population is companies engaged in the insurance sector listed on the Indonesia Stock Exchange	18
2	Orderly insurance companies disclose complete financial statements from 2018 to 2022	(3)
3	Insurance companies whose shares were actively traded (liquid) from January 2018 to December 2022	(1)
Number of Samples		14 Samples
End-of-Year Observation		5 Years
Number of Observations		70 Data

Note: Researcher Processed Data, 2023.

Hypothesis testing was performed with Partial Least Square/PLS using Warp PLS 8.0. PLS testing is done by testing hypothesis analysis, including measurement items such as variables and indicators. Measurement items are entered as variables in each hypothesis to see the importance of the variables in each model. Measurement elements are used as indicators to see relationship patterns between variables to determine the direct and indirect influence of a set of independent or exogenous variables on the dependent or endogenous variable (Sholihin & Ratmono, 2021). The regression equation formula to find out the moderation variable is as follows:

$$Y = \alpha + \beta_1NPM + \beta_2TATO + \beta_3EMR + \beta_4ROE + \beta_5ROE*NPM + \beta_6ROE*TATO + \beta_7ROE*EMR + e$$

Where:

Y = Volatility of Return Stocks

α = Constant

β_1 - β_7 = Multiple Regression Coefficient

NPM = Net Profit Margin (X1)

TATO = Total Asset Turnover (X2)

EMR = Equity Multiple Ratio (X3)

ROE = Return on Equity Dupont (Z)

E = error term

Table 2. List of research samples

No	Sample Code	Issuer's Name
1	ABDA	Asuransi Bina Anda Arta Tbk.
2	AHAP	Asuransi Harta Aman Pratama Tbk.
3	AMAG	Asuransi Multi Artha Guna Tbk.
4	ASBI	Asuransi Bintang Tbk.
5	ASDM	Asuransi Dayin Mitra Tbk.
6	ASJT	Asuransi Jasa Tania Tbk.
7	ASMI	Asuransi Maximus Graha Persada Tbk.
8	ASRM	Asuransi Ramayana Tbk.
9	LPGI	Lippo General Insurance Tbk.
10	MREI	Maskapai Reasuransi Indonesia Tbk.
11	PNIN	Paninvest Tbk.
12	VINS	Victoria Insurance Tbk.
13	MTWI	Malacca Trust Wuwungan Insurance Tbk.
14	JMAS	Asuransi Jiwa Syariah Jasa Mitra Abadi Tbk.

Note: Researcher Processed Data, 2023

4. Result

Before entering the PLS-SEM hypothesis analysis test, each research variable must meet the validity testing criteria. There are three stages of validity testing, namely the first stage, the AVE (average variance extracted) test with criteria declared passed if the AVE value is more significant than 0.50 (>0.50). Then, the second stage, the Composite Reliability test, is declared passed if the CR value is more significant than 0.7 (>0.7). And the last stage, the Cronbach Alpha test with the criterion of a Cronbach value greater than 0.6 (>0.6). The results of the validity tabulation summary are presented in Table 3.

Based on the results of the validity test in Table 3 above, shows that the variables net profit margin (NPM), total asset turnover (TATO), equity multiplier ratio (EMR), return on equity Dupont (ROE Dupont). Interaction variables (ROE*NPM), (ROE*TATO), (ROE*EMR) have met the validity test requirements. Furthermore, inner and outer model tests were carried out. The inner model tests the effect of relationships between latent variables, while the outer model measures the relationship between latent variables and their indicators (Gio, 2022)—the elaboration of the inner and outer model test results in Table 4.

Table 3. Validity test results

	AVE	Composite Reliability	Cronbach Alpha	Description
Criteria	> 0.500	> 0.700	> 0.600	
NPM	1.000	1.000	1.000	Meets convergent validity
TATO	1.000	1.000	1.000	Meets convergent validity
EMR	1.000	1.000	1.000	Meets convergent validity
ROE DUPONT	1.000	1.000	1.000	Meets convergent validity
ROE*NPM	1.000	1.000	1.000	Meets convergent validity
ROE*TATO	1.000	1.000	1.000	Meets convergent validity
ROE*EMR	1.000	1.000	1.000	Meets convergent validity

Source: Data processed Warp PLS 8.0, 2023

Table 4. Inner and outer model test results

	Coefficient	p-values	Criteria	Decision
AVIF	2.097		≤ 5.00	Ideal
APC	0.300	0.011	< 0.05	Accepted
ARS	0.102	0.001	< 0.05	Accepted
R-squared	0.102			
Q-squared	0.320			

Source: Data processed Warp PLS 8.0, 2023

Table 5. Hypothesis testing results

	NPM	TATO	EMR	ROE*NPM	ROE*TATO	ROE*EMR
Return Stock (Path Coefficient)	0.080	0.490	0.748	-0.029	-0.443	-0.009
Return Stock (p-value)	0.310	<0.001	<0.001	0.430	0.001	0.479

Source: Data processed Warp PLS 8.0, 2023

Based on Table 4, the APC (average path coefficient) coefficient value of 0.300 with a p-value of 0.011 has met the criteria (<0.05). Next look at the ARS (average R-squared) value of 0.102 with a p-value of 0.130. Then, the value of the AVIF coefficient (average block VIF) of 2.097 is less than criterion 5. Furthermore, the R-squared test of 0.102 means that the independent variable in this study of 10.2% affects the dependent variable. Furthermore, the value of the Q-squared coefficient is used to assess how well the observation value is produced by the model and also the parameter estimation (Ratmono & Sholihin, 2013). the result of the Q-squared coefficient of 0.320 is greater than 0, so it can be said to have a good observation value. The results of multiple hypothesis testing and moderation tests are illustrated in Table 5.

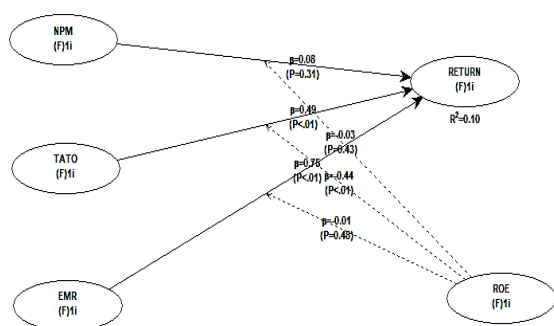


Figure 4. Hypothesis model results

5. Discussion

5.1. The Effect of Net Profit Margin on Stock Return

Based on the results of the hypothetical test in Table 5, the path coefficient value of the NPM variable (X1) is 0.080 with a p-value of 0.310. This figure is greater than the significance level of 0.05 (> 0.05). So, it can be concluded that NPM does not

affect insurance stock returns. In other words, the first hypothesis is rejected. The results of this research align with the findings of Martaseli & Harsono, (2021) who concluded that NPM does not influence stock returns. However, other research concludes that NPM can increase stock returns significantly (Sunardi, 2019). These contradictory findings indicate that stock returns are not only determined by NPM. This is because many other factors, such as market conditions, economic indicators, and company-specific factors, can influence stock returns. Moreover, insurance companies are the main object of this research.

5.2. The Effect of Total Asset Turnover on Stock Return

Based on the findings of Table 5, it is known that the path coefficient value for the TATO variable (X2) is 0.490 with a p-value of <0.001. This figure is smaller than the significance level of 0.05 (<0.05). Based on these values, it can be concluded that TATO has a significant positive effect on increasing insurance stock returns. In other words, the second hypothesis is declared accepted. These findings contradict with Sunardi (2019) research, which shows that TATO significantly negatively influences stock returns. Meanwhile, other research proves that TATO does not affect (Rahmawati & Martaseli, 2021). In general, high TATO can increase stock returns. This indicates that a high TATO shows that the company can use its assets efficiently to generate profits and will indirectly affect its share returns.

5.3. The Effect of Equity Multiplier Ratio on Stock Return

The results of Table 5 above show that the path coefficient value for the EMR variable (X3) is 0.748 with a p-value of 0.001. This figure is smaller than

the significance level of 0.05 (<0.05). Based on these values, it can be concluded that EMR significantly positively affects insurance stock returns. In other words, the third hypothesis is declared accepted. These results are supported by research by Sunardi (2019) and Martaseli (2021), who state that the equity multiplier ratio significantly positively affects stock returns. In general, a high EMR can be interpreted as increasing stock returns. This is because it can increase growth potential and indirectly increase stock returns.

5.4. The Effect of NPM on Stock Return with Dupont ROE as Moderation

Next, to see the Dupont ROE interaction as a moderating variable and identify the type of moderation, the overall hypothesis results are presented in Table 5 and Graph 4. It is known that the coefficient value obtained from the interaction of ROE and NPM (ROE*NPM) is negative 0.029 with a p-value of 0.430. This figure is greater than the significance level of 0.05 (> 0.05). So, it can be concluded that the interaction of ROE and NPM does not affect insurance stock returns. Thus, this shows that the fourth hypothesis is rejected. Furthermore, in determining the role of Dupont's ROE as a moderating variable, it is included in the Homologizer type of moderation. The NPM test on stock returns does not influence or interact with the stock return variable. So, a common thread can be drawn that the role of Dupont's ROE in the moderating variable can influence the strength of the relationship between the NPM variable and stock returns.

5.5. The Effect of TATO on Stock Return with Dupont ROE as Moderation

The interaction results between Dupont's ROE and TATO (ROE*TATO) obtained a path coefficient value of negative 0.443 with a p-value of 0.001. This figure is smaller than the significance level of 0.05 (< 0.05). This means that the ROE*TATO interaction variable significantly negatively affects insurance stock returns. Thus, this shows that the fifth hypothesis is accepted. Furthermore, identifying the type of modification of Dupont's ROE is included in quasi-moderation. Quasi moderation is a variable that moderates the relationship between the independent variables and the dependent variable, where the Quasi moderation variable interacts with the independent variable while also becoming an independent variable.

5.6. The Effect of EMR on Stock Return with Dupont ROE as Moderation

Furthermore, Dupont's ROE and EMR (ROE*EMR) interaction results obtained a path coefficient value of negative 0.009 with a p-value of 0.479. This figure exceeds the proposed significance level of 0.05 (> 0.05). So, it can be concluded that the ROE*EMR interaction variable does not influence stock returns. Thus, this shows that the sixth hypothesis is rejected. Furthermore, identifying the type of Dupont ROE moderation includes moderation predictors, namely moderating variables that only act as independent variables in the relationship model formed.

As the hypothetical model presented in Graph 4 above illustrates, Dupont's ROE moderates the relationship between net profit margin, asset turnover, and equity multiplier on insurance stock returns. The R-squared coefficient value is 0.102, or around 10.2% of the independent variables in this study. NPM, TATO, and EMR influence insurance stock returns. Meanwhile, the Q-squared value obtained was 0.320. ROE measures how well a company uses its equity capital. If a company has a high ROE, this means that the company can generate high profits with relatively little capital. In an insurance context, a company can earn good profits with limited capital. Thus, insurance companies with high ROE tend to have a more significant influence on stock returns due to their efficient use of capital. In addition, having a high ROE reflects good financial performance, which can increase investor confidence. This belief can lead to an increase in company stock trading transactions, which can increase the insurance company's stock price and stock returns.

6. Conclusion

This research examines the influence of net profit margin, total asset turnover, and equity multiplier ratio on stock returns of insurance companies listed on the Indonesia Stock Exchange during the 2018-2022 period. Apart from that, it also identifies the role of the Dupont ROE moderating variable in this relationship, which is also a novelty in this research. The statistical results of the SEM-PLS model show that net profit margin does not affect insurance stock returns, while asset turnover and equity multiplier have a significant positive effect on stock returns. Furthermore, Return on Equity (Dupont ROE) can trigger investors to invest in shares with a high return on equity, which shows the company has good performance. By using the MRA estimation model approach, Dupont's ROE was found to have various classifications as a modification variable. The relationship between

Dupont's ROE and NPM acts as a homologizer, strengthening the relationship between NPM and stock returns. Meanwhile, the relationship between Dupont's ROE and TATO acts as a quasi-moderation, which means there is a pseudo-interaction between TATO and stock returns. Furthermore, the relationship between ROE Dupont and EMR acts as a moderating predictor, which means that the ROE Dupont variable only acts as an independent variable in the relationship model formed. In this case, the performance of returns on equity can increase investors' expectations regarding the company's future profits. The novelty of this research is demonstrated by the finding that Dupont's ROE can moderate the influence of NPM and TATO on stock returns but cannot moderate the influence of EMR on the stock returns of insurance companies in Indonesia.

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