Leverage, Product Diversification, and Performance of Life Insurance Companies in Indonesia

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Abstract
The insurance sector is often faced with dynamic economic changes. Product adjustments to new policies and the availability of funding for the company's operational activities are crucial. This study aims to observe the effect of leverage on the financial performance of life insurance companies and examine the moderation of product diversification on the relationship of leverage to the financial performance of life insurance companies. The study also aims to confirm the pecking-order theory related leverage funding and the synergistic-effect theory about diversification product strategy. Firm-size variables and dummy periods are used as control variables. Leverage is proxied by the ratio of total debt to total equity, product diversification uses the Herfindahl index, and financial performance is proxied by return on equity. The research sample are 25 life insurance companies in Indonesia registered with the Financial Services Authority (OJK) and have published financial reports for the period of 2016 to 2020. The data analysis method uses panel regression analysis with the estimation approach of the Chow Test, the Hausman Test, the Lagrange Multiplier Test, and the moderated regression analysis. The results show that leverage has a significant negative effect on the performance of life insurance companies, and product diversification significantly strengthens the effect of leverage on the performance of life insurance companies. Firm size has a significant positive effect, while the dummy period variable has no significant effect on the performance of life insurance companies. Company with high or low leverage, both must be able to see the potential and current market risks then adjust policies. For both creditors and investor can take advantage of information to provide funding and investment on the relationship between the use of leverage and the life insurance company's product diversification strategy. Finally, the regulatory authorities of the insurance sector present as controllers of life insurance companies in serving their customers.

Keywords: leverage; product diversified; financial performance; life insurance.
JEL Classification: G2, G22, M11.

1. INTRODUCTION

Insurance companies face constant changes in their business activities due to changes in the insurance sector environment, including regulations, technology, and macroeconomic changes. These pose significant challenges for governments, policymakers, and standard-setting institutions to introduce improved policies and procedures to ensure

a safe and stable insurance market for profit, protect policyholders, and contribute to overall financial stability (Kramarić et al., 2019).

Environmental change has an impact on increased risk, so the task of minimizing the impact of these risks on the activities of insurance companies is very important. Insurance companies need to develop a corporate financial management strategy, identify risks for mitigating the impact on the business, perform qualitative analysis and quantitative assessments as well as developments and implementations in accordance with the objectives of minimizing or even eliminating unacceptable consequences (Pikus et al., 2018). Insurance organizations face several difficulties in maintaining financial sustainability, such as the current crisis and regulatory changes that require a certain level of solvency. Most domestic insurance companies are financially unstable, which is caused not only by the lack of funds, but also by low levels of management (Pikus et al., 2018).

Capitalization strategies such as using leverages have been commonly used by companies to drive operational activities. Leverage refers to the amount of debt financing in the company's capital structure. Companies with leverage are said to be successful if the return on assets exceeds the after-tax cost of debt while unsuccessful if the return on operating assets is less than the after-tax cost of debt (Subramanyam, 2017). However, pecking-order theory states that the company's source of funding is prioritized internally because the cost of capital is cheaper, after that, external funding can be added (Kalantonis et al., 2021). Based on the pecking-order theory, debt, profitability, and financial performance have a close negative relationship.

In economics, the leverage ratio has a concept as the relationship between borrowed funds and funds owned (debt to equity) (Thimann, 2015). For insurance companies, leverage is the largest liability consisting of policyholder reserves. There are two functional leverage relationships, namely debt-equity relationships and asset-liability management relationships whose purpose is to avoid maturity that is not in accordance with the period. Insurance companies do not issue debt to purchase financial assets to cover liabilities related to policyholders. The insurance company issues debt and holds the debt. Insurance companies do this to get additional funds when buying fixed assets. In insurance companies, the leverage ratio would be better interpreted as debt to equity (Thimann, 2015).

Other business strategies, such as diversification, provide many benefits for the company both materially and non-materially. Based on the Synergistic-effect theory, the motivation of companies to diversify is to reduce operational costs and reach certain consumer groups through diversified products, increase revenue and maximize resources (Wu & Deng, 2021). The organization may want to expand economies of scale and target good financial performance when it is on a declining position in the product life cycle. Product line diversification wishes to catch customers' demands as well as gain profitability (Oladimeji & Udosen, 2019). The application of diversification can vary according to the necessity, whether it is diversification based on geography or product. Cummins and Venard (Hsieh et al., 2015) observed how the impact of globalization, deregulation, intensive competition, and increased sales of insurance would reshape the entire international insurance market. On the one hand, several trends show a homogeneous impact on insurance companies in the international market, such as the similarity of insurance products and product innovation or the increase in premium rates in general insurance companies and the frequency of occurrence of global risks. On the other hand, the insurance market in some heterogeneous countries differs according to local characteristics, certain strengths, and existing limitations (Hsieh et al., 2015).

The global economic recession has impacted the insurance sector such as in the decrease in demand for insurance products, increase in insurance policy disbursement, increase in market risk, and credit risk from investment portfolios (Yong, 2020). Measurement of the performance of insurance companies provides relevant benefits, not only in providing a mechanism for fund allocation and risk transfer but also in assisting the distribution of funding with the right approach in accordance with surplus or deficit economic conditions to support investment activities (Bawa & Chattha, 2013).

This research wants to confirm the pecking-order theory and synergistic-effect theory, whether financing with leverage affects the financial performance of life insurance companies significantly, and products diversification strongly encourages the relation. The findings provide insight for corporate to makes proper strategy using leverage in supporting operations while generate revenue through product diversification. For creditors, when deciding to provide loans, creditors will be willing to provide funding if there is protection provided by equity funding (Subramanyam, 2017). Investors can develop an appropriate investment strategy to invest in a favorable rate of return on equity. Meanwhile, dedicated to the Financial Services Authority (OJK) as the institution that oversees the insurance sector in Indonesia, the findings are expected to provide direction in formulating policies related to insurance, especially in a dynamic situation. Company performance can affect the economy; therefore empirical analysis is needed to assess the performance.

2.   HYPOTHESES DEVELOPMENT

Saunders & Cornett (2006)mentioned that the insurance industry is divided into two major groups, life insurance companies, and general insurance companies. Life insurance companies provide protection against possible death, illness, and retirement. General insurance companies protect against possible injuries such as accidents, risks or losses due to theft and fire. Labor productivity and the value of human life can be protected with life insurance, including education insurance or personal non-life insurance. The economic value of human resources can be managed with a personal insurance system. The financial system or capital productivity can be protected by credit life insurance, fire insurance, or deposit insurance in the banking system, according to contract (Jung, 2020).

Life insurance companies protect policyholders from loss of income due to death and retirement by means of pool-risk, in which the insurance company transfers the income of policyholders to a group. While life insurance is the core activity, modern life insurance also sells annuity contracts, manages pension funds, and provides health and accident insurance (Saunders & Cornett, 2006). Offering several types of life insurance products to customers as needed opens wider business opportunities for life insurance companies, especially in times of crisis. From the customer side, Kensicki (1974)stated that insurance benefits are an opportunity for cash flow which is described by the estimated value of the insurance provided based on the policy each year. Customers may not deposit cash every year but tend to borrow it and use it as another investment opportunity. Life insurance companies receive deposits in the form of annual premiums and then invest these funds in stocks, bonds, real estate, and mortgages and make payments to the heirs of the insured. In recent years, life insurance companies have also offered a variety of tax-deferred savings plans designed to provide benefits to their policyholders when they retire (Brigham & Houston, 2020).

The organizational performance tends to increase up to the average level and then declines after the cost outweighs the benefits (Kanini et al., 2019). The main problem faced by life insurance companies and general insurance is the adverse selection problem

(Saunders & Cornett, 2006). This is where customers who apply for insurance are people who really need insurance protection such as someone who suffers from a chronic disease will tend to buy an insurance policy compared to someone who is healthy or does not have a chronic disease. Insurance companies have different pooling mechanisms based on health and related characteristics such as income, and thus insurance companies can accurately determine the probability of paying the policy and the corresponding insurance premiums.

It is alleged that a large number of insured products are leveraged by reinsurance, meaning that the reinsurance company will bear most of the risk on the policy compared to the direct writer. However, this is still a matter of debate because there are no general population data showing the amount of risk faced (Dreyer et al., 2007). The level of financial difficulty tends to be lower in companies with high diversification than companies with low diversification levels(Nugrahanti et al., 2019). There are cases where the regulator prohibits the level of leverage that is too low and in other cases the leverage must be determined by the amount of the upper and lower limits. Pecking-order theory states that company choose to funding by debt to complete internal funding (retained earnings) and tend to has lower risk compared to issuing new shares (Wulandari & Setiawan, 2020). However, this is difficult to apply practically (Kahane, 1979). There are several companies with high risk which tend to use more leverage (Byoun et al., 2018). Research by Worku & Asmare (2018) shows that leverage has a significant positive effect on the performance of the microinsurance business. The company uses leverage for productive business activities that drive the performance of the micro-insurance business. The increasing amount of leverage and diversification will contribute to the profit before tax and then increase in ROE (Yuliante & Nuryatno, 2017).

(Kanini et al., 2019) found that product diversification has an insignificant negative effect on financial performance. It was observed that only one or two products amongst wide range products which have contribution to the income generated. The effect of product diversification on financial performance is influenced by capital structure and assets. An emerging market firm involve to has a higher proportion of diversification costs since the product's issues are changing faster (Nwakoby & Ihediwa, 2018). However, the resulting study by (Nahda & Rahmadana, 2021) states that there is a positive relationship between diversification and leverage, indicating higher power for a more diversified company.

The research of (Dreyer et al., 2007) states that the impact of life insurance could be widespread. The mortality rate is assumed to increase significantly during the pandemic, while the widening increase in differences between socio-economic groups will also be challenging to quantify. Many individuals who have life insurance policies get better access to medical services, and these individuals live in big cities with a higher rate of virus transmission than residents in rural areas. The impact on each insurance company will be different, there are customers who only be hospitalized due to mild symptoms, while others are in severe conditions (Dreyer et al., 2007).

The product line diversification strategy of multinational firms narrows impacts on corporate performance without considering problems in the firm's individual host-country markets (Nwakoby & Ihediwa, 2018). According to Dreyer et al. (2007) based on the type of ownership of life insurance companies, namely individual life insurance and group life insurance, the pandemic has a different business impact between the two types of business. In individual life insurance, all insurance benefit payments will increase during the pandemic. Group life insurance is very sensitive to price changes, generates less margin than individual life insurance, cannot do pricing, and there are business updates per year.

In some new products, adjustments have been made to anticipate future pandemics. Some group life assurance companies recommend that no long-term assurance, margin discretion, and risk management processes are to be offered to address this form of risk. The development of diversification can build the capacity of market development, but it can be stagnant as well as financial performance. It can be said, product diversification strategy leads a fine balance in product lines portfolio, gives social impact, and financial growth (Jha et al., 2021).

This study aims to explore the impact of leverage and product diversification moderation on the relationship between leverage and financial performance of life insurance companies, with firm size and period of observation as control variables.

Hypothesis

H1: Leverage has a significant negative effect on the financial performance of insurance companies.

H2: Product diversification moderates the effect of leverage on the financial performance of insurance companies.

3.   METHOD, DATA, AND ANALYSIS

This study is a quantitative study with a population of life insurance companies in Indonesia registered with the Financial Services Authority (OJK) for the 2020 period. The research sample is life insurance companies that publish financial statements for the 2016-2020 period. The data used is in the form of a data panel on the financial ratios of life insurance companies for the 2016-2020 period. The data analysis method is data panel regression and moderating relationship regression.

Panel regression equation:

$$Y_{it} = \beta_0 + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \beta_3 X_{it,3} + \beta_4 X_{it,4} + \beta_5 X_{it,5} + v_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 Lev_{it,1} + \beta_2 PD_{it,2} + \beta_3 Size_{it,3} + \beta_4 Period_{it,4} + v_{it}$$

Y = dependent variable
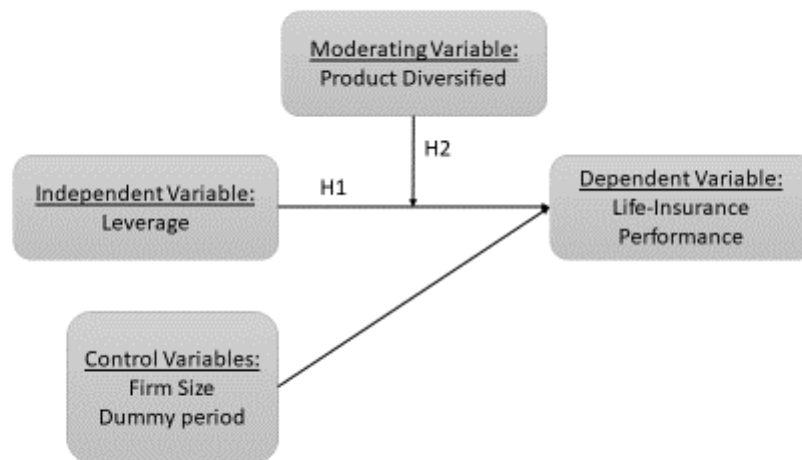
X = independent variable

Figure 1. Conceptual Framework

Moderation relationship regression equation:

$$ROE_{it} = \beta_0 + \beta_1 Lev_{it,1} + \beta_2 PD_{it,2} + \beta_3 Lev_{it,1} \times PD_{it,2} + v_{it}$$

Information:

i	= observed units (25 life insurance companies)
t	= period (2016 to 2020)
β_0	= intercept
$\beta_1, \beta_2, \beta_3,$	= coefficient variable
v_{it}	= error term
$Lev_{it,1}$	= Leverage
$PD_{it,2}$	= Diversified Product
$Lev_{it,1} \times PD_{it,2}$	= Moderating Variabel
$Size_{it,3}$	= Firm size (Total assets) as control variable
$Period_{it,4}$	= dummy period as control variable; value of 0 = before the pandemic (2016-2019), 1 = after the pandemic (2020)
ROE_{it}	= return on equity

Variables

The number of data panel observations is 125 (25 samples of companies for five observation periods). The independent variable is the financial performance of the insurance company as proxied by return on equity (ROE). The dependent variable is leverage. The moderating variable is the diversified product. The control variables are firm size (company size) proxied by total assets and period (a dummy variable) for the 2016-2019 period before the pandemic and the 2020 period during the pandemic.

Company's performance measured with ROE (return on equity) ratio:

$$\text{Return on equity} = \frac{\text{premium revenue}}{\text{equity}}$$

Leverage measured with total debt to total equity ratio:

$$\text{Leverage} = \frac{\text{total liabilities}}{\text{total equity}}$$

Diversification of insurance products (product diversified – PD) is measured by the Herfindahl Index (Wu & Deng, 2021); (Foong & Idris, 2012); (Nahda & Rahmadana, 2021). Pi is the total premium of the product line divided by the total premium of the insurance company, n symbolizes the number of product lines.

$$PD = 1 - \sum_{I=1}^{n} Pi^2$$

Stages of Analysis
1. Classical assumption test includes normality test, heteroscedasticity test, multicollinearity test, and autocorrelation test.

2. The model estimation approach test was used to determine the model for panel data regression analysis among the Common Effect Model, Fixed Effect Model, and Random Effect Model. The order is as follows:
   a. The Chow test is used to determine the appropriate analytical model between the Common Effect Model and the Fixed Effect Model.

   H0: Common Effect Model is accepted if Cross Section F>0.05

   H1: Fixed Effect Model is accepted if Cross Section F<0.05

   b. Hausman test is used to determine the appropriate analytical model between the Fixed Effect Model and the Random Effect Model.

   H0: Random Effect Model is accepted if prob. > 0.05

   H1: Fixed Effect Model is accepted if prob. <0.05

   c. The Lagrange Multiplier test was used to determine the appropriate model between the Common Effect Model and the Random Effect Model.

   H0: Common Effect Model is accepted if Prob. Breusch-Pagan >0.05

   H1: Random Effect Model is accepted if Prob. Breusch-Pagan <0.05

   Common Effect Model regression equation (Xu et al., 2007):

   $$y = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k + v$$

   Fixed Effect Model regression equation (Xu et al., 2007):

$$y_{it} = \beta_0 + (\delta_1 D_1 + \cdots + \delta_{i-1} D_{i-1}) + (\theta_1 T_1 + \cdots + \theta_{t-1} T_{t-1}) + \beta_1 x_{it1} + \cdots + \beta_k x_{itk} + u_{it}$$

Information:

D_i = dummy variable for each cross-sectional unit except one

T_t = dummy variable for every time period except one

3. Data panel regression analysis uses a defined model based on three model estimation approaches. The Lagrange Multiplier test helps to determine the best method with the conditions below. Firstly, if the Chow test shows the best method is the Common Effect Model (compared to Fixed Effect Model) then Lagrange Multiplier is required. Secondly, if the Hausman Test shows the best method is the Random Effect Model (compared to Fixed Effect Model), then we should determine whether the Random Effect is better than the Common Effect Model. The last, Lagrange Multiplier test is required.

4. Moderation relationship regression analysis.

4. RESULTS

Analysis results
Descriptive Statistics and Classical Assumption Test
Table 1. Descriptive Statistics

Description	ROE	Log Leverage	Diversified Product	Ln Total Assets	Dummy period
Mean	-0.083490	0.454858	0.166801	15.36680	0.200000
Median	0.159495	0.582948	0.105216	15.48289	0.000000
Maximum	1.229722	3.427622	0.878161	18.21799	1.000000
Minimum	-40.98903	-0.982315	-0.006433	12.23806	0.000000
Std. Dev.	3.696202	0.518214	0.186417	1.484035	0.401610

Source: Data Processed by Researcher (2021).

Table 1 shows descriptive statistical data. The average value of ROE is -0.083, meaning there are several life insurance companies that suffer losses indicated by a minimum value of -40,989 but most of the sample companies are in a condition of maximum profit of 1.229. The average value of Log leverage is low at 0.454. The maximum value of 3,427 samples of life insurance companies does not do much funding with debt. The average value of diversified product is 0.166, meaning that the diversification of life insurance products in the sample is low with a maximum ratio of 0.878. The average value of Ln total assets is 15,366, the maximum value is 18,217, and the minimum value is 12,238, indicating that there are many life insurance companies with large firm-sizes. The value of the dummy period variable is 0 for four periods (2016-2019) and 1 for one period (in 2020), therefore, the average value for the dummy period is only 0.2. The results of the classical assumption test show that the data are normal, there is no heteroscedasticity, free of multicollinearity, and no autocorrelation.

Test the model estimation approach
Chow test
The results of the Chow test showed that the Chi-square cross-section value was <0.05, so the Fixed effect model was chosen.

Table 2. Chow Test

Model	Effects Test	Statistic	Probability
ROE	Cross-section F	5.792683	0.0000
	Cross-section Chi-square	111.917638	0.0000

Source: Data Processed by Researcher (2021).

Hausman Test
The Hausman test results show a probability value <0.05, so the Fixed effect model is selected.

Table 3. Hausman Test

Model	Test Summary	Chi-Sq. Statistic	Probability
ROE	Cross-section random	56.1940	0.0000

Source: Data Processed by Researcher (2021).

Langrange Multiplier Test
The Lagrange Multiplier test shows the Breusch-Pagan probability value < 0.05, so the Random effect model is chosen.

Table 4. Lagrange Multiplier Test

Model	Null (no rand. effect) Alternative	Cross-section One-sided	Both
ROE	Breusch-Pagan	9.473285 (0.0021)	9.984160 (0.0016)

Source: Data Processed by Researcher (2021).

Based on the three tests for determining the analytical model, the **fixed effect model** was chosen.

Data panel regression analysis
Table 5. Panel Regression Analysis

	Coefficient	t-Statistic	Prob.
Constant	-20.51659	-1.943458	0.0549

Log Leverage	-8.787359	-13.14841	0.0000
Diversified Product	-2.720685	-0.754510	0.4524
Ln Total Assets	1.613513	2.329165	0.0219
Dummy period	0.446908	0.853557	0.3955
R-squared	0.714436		
Adjusted R-squared	0.631146		
F-statistic	8.577723		
Prob(F-statistic)	0.000000		

Source: Data Processed by Researcher (2021).
Note: *significance < 5%.

The probability value of F-statistic 0.000 < 0.05 indicates that the model with the specified variable is feasible to be studied. The t-Table value with degrees of freedom (df) 120 is 1.97993. If the t-count value of Log Leverage and Ln Total Assets > t-Table, the hypothesis is accepted. If the diversified product t-count value and dummy period < t-Table, the hypothesis is rejected.

The results of the regression analysis show the p-value Log Leverage 0.000 <0.05 with a negative coefficient, which means leverage has a significant effect on the financial performance (ROE) of insurance companies. P-value of Diversified Product is 0.4524 > 0.05 with a negative coefficient, thus meaning product diversification does not have a negative effect on the financial performance (ROE) of life insurance companies. P-value Ln Total Assets is 0.0219 <0.05 with a positive coefficient, meaning that firm-size has a significant effect on the financial performance (ROE) of life insurance companies. The P-value dummy period is 0.3955 > 0.05 with a positive coefficient, meaning that the period before and during the Covid-19 pandemic did not significantly affect the financial performance of life insurance companies. An adjusted R-squared value of 0.6311 or 63% of the variables in the research model can explain the effect on the financial performance of life insurance companies, while the remaining 37% is explained by other variables not discussed in this study.

Moderated regression analysis

The results of the regression analysis of the diversified product moderation variable show a probability value of 0.000 <0.05 so that product diversification significantly moderates the relationship between leverage and financial performance (ROE) of life insurance companies. The value of t-Table Leverage x Product diversified 66.10201 > 1.97993, so the hypothesis is accepted.

Table 6. Moderated regression analysis

	Coefficient	t-Statistic	Prob.
Constant	0.114765	0.917132	0.3613
Log Leverage	0.785961	4.614666	0.0000
Diversified Product	1.653153	2.987810	0.0036
Leverage × Diversified Product	-0.814620	-66.10201	0.0000
R-squared	0.993291		
Adjusted R-squared	0.991424		
F-statistic	531.9029		
Prob(F-statistic)	0.000000		

Source: Data Processed by Researcher (2021).

Note: *significance < 5%.

5. DISCUSSION

Leverage affects the financial performance of life insurance companies.

Based on Table 5, leverage has a significant negative effect on the performance of life insurance companies. Leverage is proxied by the ratio of total debt to total equity, meaning a high amount of debt will cause a decrease in the financial performance of life insurance companies. Higher leverage is associated with lower company performance (Ayuba et al., 2019), leveraging at optimum amount will perform better, but over-leveraging affects profitability negatively (Tegegn et al., 2020); (Morara & Sibindi, 2021). (Foong & Idris, 2012) mentioned that in the insurance sector, higher leverage implies a higher risk borne by insurance companies, and if the company's exposure to certain high-risk product segments is excessive, the company's performance can be negatively affected. Leverage positively affects the financial difficulties of insurance companies (Nugrahanti et al., 2019). The higher the leverage ratio, the higher the business risk and the risk of bankruptcy due to financial difficulties.

Agency conflict triggers the company to have to leverage itself and as a result, the company's performance is negatively affected, or the creditor's negative judgment when deciding to provide a loan (Ayuba et al., 2019). (Ayuba et al., 2019) stated that based on market timing theory, one of the theories of financial leverage determines the company's capital structure factor using debt and equity, as the company does not care about being funded with debt or equity and the company will choose funding that is more valuable in the financial market at that time. Debt can either hurt or boost financial performance depending on its percentage amount (Mallinguh et al., 2020).

In contrast to research by Ajao & Ogieriakhi (2018) leverage does not have a significant effect on the performance of insurance companies. At the same time, Bawa & Chattha (2013) compared the performance of private and public life insurance companies, with the result stating that private life insurance companies have higher liquidity and solvency ratios. Public life insurance companies show solvency stability for five years and better leverage analysis than private insurance companies. Life insurance companies with a high level of market competitiveness will have a high market share, larger asset size, longer operational period, and higher financial leverage than life insurance companies with low market competitiveness Chen et al. (2021). The greater the leverage, the stronger the power monopoly of the market, but the level of competition also increases. Levered firms have the opportunity to earn profitable investments and assets, enabling them to meet customers' expectations efficiently (Razak et al., 2021). The characteristics of the life insurance market in Taiwan, several insurance companies, look diverse but have slight differences in their products, imperfect information, and ease of entry into the market, indicating that the life insurance market is a competitive monopolistic market Chen et al. (2021).

Individually diversified products have no significant effect on the performance of life insurance companies. The increasingly diverse life insurance products can reduce the company's performance. A report released by The Deloitte Centre for Regulatory Strategy (2020) stated that the high demand for insurance products can have an impact on the slow process of determining new business policies that require medical underwriting, as there are several insurance companies that stop selling policies that require medical records. Companies and government regulations must pay attention to a slowdown that reduces the availability of products and services to customers, and for most insurance companies

this slowdown will have an impact on profitability throughout the period (The Deloitte Centre for Regulatory Strategy, 2020).

(Oladimeji & Udosen, 2019) diversification strategy has different impacts to financial performance such as hybrid diversification results in higher risk-return in terms of ROE, which means high level of risk in terms of leverage and liquidity. Klumpes & Schuermann (2011) stated that companies that adopt a cost-focused perspective tend to develop cost efficiency rather than adopting a product differentiation focus on consumers in general. This confirms that opportunistic managerial predictions observe efficiency variations across firms' operations with market imperfections versus product quality variances. The European insurance market has traditionally narrowed and differentiated the tax incentive components and the distribution model between countries. Differences in local channel distribution costs will cause differences in the local salary payment model.

Firm size proxied by total assets serves as a control variable. Firm size has a significant effect on the performance of life insurance companies. The larger the size of the company, the company's financial performance is expected to be better, and companies with large total assets have high investment values that meet solvency requirements. This agrees with (Bawa & Chattha, 2013); (Kramarić et al., 2019); (Morara & Sibindi, 2021) that company size based on total assets significantly and positively affects the company's financial health and larger insurance companies are expected to be financially healthier than small insurance companies. Firm size has a strong relationship with cost efficiency and profit. Companies with large firm sizes will be more efficient in terms of scale or economic scope and market power Klumpes & Schuermann (2011); (Tegegn et al., 2020).

In contrast to the research by Worku & Asmare (2018), firm size has no significant effect on the performance of the micro-insurance business. Worku & Asmare (2018) in their research through a deep-interview process, explained that firm size is one of the factors that make companies have a better capacity to influence market fluctuations, are easy to recruit employees with good capabilities, and have economies of scale on labor costs. Meanwhile, Ajao & Ogieriakhi (2018) argued that companies with large total assets could not generate high profits like insurance companies with small total assets. The more assets a company has, the more maintenance or administration costs the assets have.

The dummy period variable as a time-effect control variable is the period before the Covid-19 pandemic (2016-2019) and during the Covid-19 pandemic (2020). The dummy period variable has no significant effect on the performance of life insurance companies. The performance of life insurance companies did not change much during the observation period.

Diversified product moderates the relationship of leverage to the performance of life insurance companies.

Table 6 shows that product diversification significantly moderates the relationship between leverage and ROE. In this study, product diversification is a pure moderating variable, but when tested individually, it did not show any significance to ROE. Product diversification strengthens the relationship of leverage to the performance of life insurance companies negatively. The diversified organizations were found to outperform the undiversified in terms of profitability and market value, also face unpredictability if the return on equity and liquidity are unstable (Oladimeji & Udosen, 2019). Life insurance companies with high leverage must focus on certain product segments that are identified as being more profitable for the company, as well as risks on products that are still relevant so that it will improve company performance. For life insurance companies with low leverage, having lower risk can diversify products that provide opportunities to increase

sales of insurance products. Product diversification will increase sales because it produces new product variations that will increase market power and have the potential to win competitive markets. The increase in sales can be realized into cash which will then reduce the level of financial difficulty (Nugrahanti et al., 2019).

In contrast to research by (Foong & Idris, 2012) where product diversification positively moderates the relationship of leverage to firm performance, insurance companies with low leverage may not be able to benefit from diversification due to limited human, financial, and technical resources. Through product diversification, companies with high leverage can take advantage of economies of scale and thus determine product diversification strategies to improve company performance. Baranoff et al. (1999) found that based on product line and company size estimation, in an increasing segmentation insurance industry, companies use leverage for capitalization and investment purposes.

Quality insurance products have a significant effect on the trust and loyalty of life insurance customers Paidi et al. (2018) which are expected to encourage better company performance. Insurance companies change product lines to adapt to crisis situations. As an effort to reduce policy costs, insurance companies can offer policies with limited risk, such as special catastrophic events or fixed payment models in order to expand product sales Pikus et al. (2018). An insurance company with an efficient product diversification profile will be able to reduce its risk portfolio but also increase the capital ratio because an increase in business lines will require more capital to meet regulatory requirements. The choice of a diversification strategy or a concentration of business structure is a dilemma for the insurance industry. Another example of the heterogeneity of the international insurance market is the diversity of distribution of financial service products. Local market structures, both legal and institutional, will have a tremendous impact on global trends. Product diversity can reduce return volatility. On the other hand, a declining interest rate will threaten the fundamentals of insurance products and reduce profits or cause losses due to lower investment income Hsieh et al. (2015).

Policy recommendations regarding insurance products related to the pandemic.
Insurance companies need to review product design, risk coverage, and pricing strategies to ensure compliance with customer needs. Yong (2020) stated that there are several approaches that can be taken according to the Covid-19 pandemic situation, such as:

a) flexible pricing for insurance products according to current needs so that they can be reached by various levels of society this policy has been implemented in China and Thailand;

b) extend the coverage period on several types of products, especially insurance products related to travel/transportation, without any additional costs as compensation for tightening mobility regulations in several countries such as China, India, and Tunisia or by reducing premium rates in several American states;

c) provide proper accident, health, retirement, medical, and other insurance services for staff working on the front lines of handling Covid-19 as is enforced in California and China;

d) reduce the cost-sharing of medical insurance as in some states of America. Sharing costs can affect the quality of medical services provided to customers.

The process of underwriting and distribution of insurance products must be designed to be dynamic and simple. This can be done by reducing the requirement that insurance agents have to meet physically when meeting potential customers. There are several approaches related to the distribution process of insurance products that can be taken (Yong, 2020):

a) require or encourage the use of technology and remote authentication to replace face-to-face during the underwriting process as has been implemented in China, Poland, Thailand, and some American states;

b) Require insurance companies to be flexible in providing or expanding the coverage area of insurance coverage without having to wait for the completeness of documents, as has been applied in Russia and the UK.

Research by Dutta (2020) in India stated that the growth of claims with commission and management fees was greater than the insurance premiums obtained. Although it showed that there was premium income, the amount still did not meet the underwriting profit. With the help of other countries that are more technologically savvy, India was able to improve services in the health insurance sector and make a profit. The Covid-19 pandemic is a challenge for the health insurance industry but at the same time, it opens up opportunities to get potential customers, such as the existence of a reduction in commission and management fees due to several newly established insurance companies offering higher incentives to agents and brokers to penetrate the market. This trend needs to be stopped because it indirectly affects the profitability of the insurance sector (Dutta, 2020).

Most life insurance companies are expected to continue to capitalize fairly after the market-shock due to the pandemic, with the aim of reducing insolvency The Deloitte Centre for Regulatory Strategy (2020). In times of crisis, insurance companies that carry out reinsurance show a more stable condition than companies that do not do reinsurance Kramarić et al. (2019). It is therefore important to identify the specific factors of insurance companies, market structure, and macroeconomic conditions that may affect the company's financial health so that the government and policy authorities have guidelines for dealing with the determinants of the financial health of insurance companies.

6. CONCLUSION, LIMITATIONS, AND SUGGESTIONS

Conclusion

Leverage has a significant negative effect on the performance of life insurance companies. Companies with high leverage have the potential to be exposed to greater liquidity and solvency risks, which will have a negative impact on the company's financial performance. Leverage provides the benefit of operational flexibility, but excessive leverage will lead to financial distress. The findings confirm the pecking-order theory that profitable company tends to use internal financing. Individual diversified product has no significant effect on the performance of life insurance companies. However, as a moderating variable, diversified product significantly and negatively strengthens the relationship between leverage and the performance of life insurance companies. Life insurance companies with high leverage, should focus on certain product lines that are identified as profitable and improve company performance. Companies with low leverage, business risk is not as high as insurance companies with higher leverage and they can diversify products to increase sales of insurance products so as to encourage increased company performance. This finding is appropriate to the synergistic-effect theory.

Firm size and period as control variables. Firm size has a significant positive effect on life insurance companies; companies with larger total assets have an investment value that

is sufficient for the minimum solvency limit to maintain the stability of the company's performance. The time period has no significant effect on the performance of life insurance companies, as the time effect before and during the pandemic does not have an impact on the company's performance.

Suggestions and Limitations

The insurance sector, especially life insurance companies, can use large amounts of leverage to fund the operations of productive business activities, focusing on product lines that are identified as profitable for the company. For life insurance companies that choose low leverage funding, they can diversify their products, potentially increasing sales. Both companies with high and low leverage, both must be able to see the potential and current market risks and adjust policies such as product design, pricing, and claim submission processes that have the potential to slow down the process. In this case, both creditor and investor can take advantage of information to provide funding and investment on the relationship between the use of leverage and the life insurance company's product diversification strategy. Finally, the regulatory authorities of the insurance sector present as controllers of life insurance companies in serving their customers.

This study uses a control variable dummy-period data for the period 2016-2019 (which describes the period before the pandemic) and data for the period 2020 (describes the period during the pandemic). The use of dummy period variables and the short period of data during the pandemic may not accurately capture the phenomenon of conditions before and during the pandemic. Future research can add data period during the pandemic and use different analytical methods.

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