

**FINANCIAL PERFORMANCE ANALYSIS OF LIFE INSURANCE  
COMPANY FOR THE 2016-2023 PERIOD: COMPARATIVE ANALYSIS  
OF PRE-PANDEMIC AND PANDEMIC ERA**



**THESIS**

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**FINANCIAL PERFORMANCE ANALYSIS OF LIFE INSURANCE  
COMPANY FOR THE 2016-2023 PERIOD: A CASE STUDY OF PRE-  
PANDEMIC AND PANDEMIC ERA**

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**A THESIS**

**Submitted in a partial fulfillment of the requirements for the degree of  
Master of Business Administration**

## **CERTIFICATE OF APPROVAL**

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We hereby declare that this Thesis is from student's work, has been read and presented to Institut IPMI Board of Examiners, and has been accepted as part of the requirements needed to obtain a Master of Business Administration Degree and has been found to be satisfactory.

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This Thesis is a presentation of our research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature and acknowledgement of collaborative research and discussions.

Also, this work is being submitted in partial fulfilment of the requirements for the Master of Business Administration degree, has not previously been accepted in substance for any degree, and is not being concurrently submitted in candidature for any degree.

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## **ABSTRACT**

The COVID-19 pandemic has brought drastic changes to the dynamics of the life insurance industry, deeply affecting economic growth projections and financial movements. The life insurance market experienced significant financial, operational, and strategic impacts during the pandemic in 2020, with an estimated market decline of 5.2% due to the economic slowdown. This study focuses on Prudential Life Insurance and Allianz Life, aiming to thoroughly investigate how the pandemic affected these companies' financial performance from 2019 to 2023. Secondary data from the companies was gathered from their respective websites and publicly available data from the Indonesia Stock Exchange. Financial statements for the years 2016 to 2023 were analyzed using eight financial ratios. The normality of the data distribution was assessed using the Shapiro-Wilk test. Based on the normality results, parametric tests (paired sample t-test) or non-parametric tests (Wilcoxon signed-rank test) were applied to compare the financial performance pre-pandemic and pandemic era. All statistical analyses were conducted using IBM SPSS Statistics 27 to determine whether significant differences existed between the two periods.

**Keywords:** Financial Ratio, COVID-19, Life Insurance, T-test, Wilcoxon test



## CHAPTER 1: INTRODUCTION

### 1.1 Background Research

The COVID-19 pandemic, which emerged in late 2019, began to affect the Indonesian population in early March 2020 significantly. This crisis not only threatened public health but also disrupted nearly all sectors across the country (Seftarita et al., 2022). The restrictions on human activities impacted business operations, leading to economic repercussions. The pandemic caused a severe economic contraction, evident from the negative growth in the second and third quarters of 2020. According to data from Bank Indonesia covering the years 2008 to 2020, as shown in Figure 1.1, economic growth was reported at -5.32% in the second quarter and -3.49% in the third quarter. These figures represent the lowest levels recorded compared to previous crises in the pre-pandemic era, such as the 2008/2009 global financial crisis and the 2015 European crisis, and during the pandemic era. Although economic growth also declined during these previous crises, it remained in positive territory.

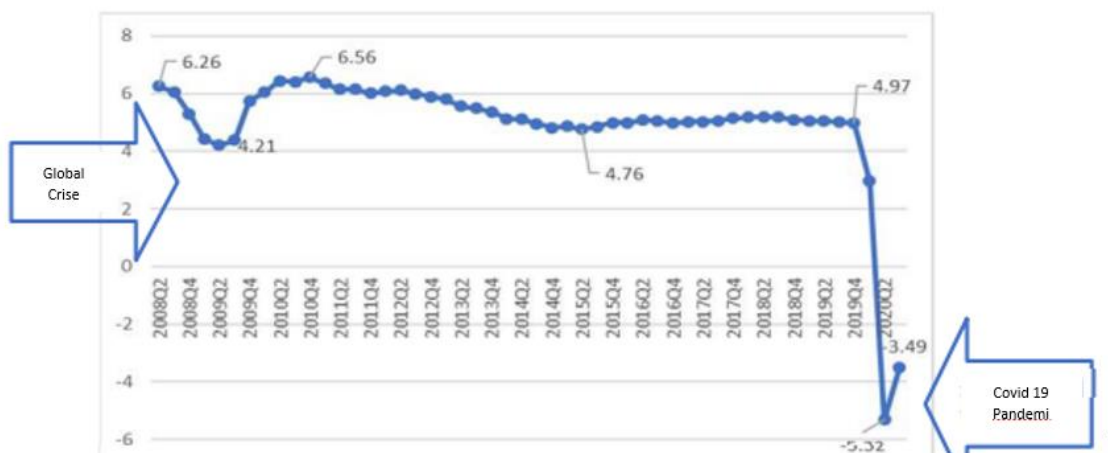


Figure 1.1 Economic Growth in the Pre-Pandemic and Pandemic Era of COVID-19

Source : Bank Indonesia, 2008 - 2020

Amidst the deteriorating economic situation caused by the pandemic, various sectors have faced significant challenges, including the insurance industry. The COVID-19 pandemic has brought drastic changes to the dynamics of this industry, deeply affecting economic growth projections and movements (Sitepu et al., 2022). This widespread health crisis highlights the critical importance of insurance protection, making it an essential element in financial planning and risk mitigation. The rising uncertainty, increased health risks, and sharp economic impacts have compelled many individuals to seek additional protection and ensure their financial readiness for unexpected situations (Hartwig et al., 2020). Insurance has become a crucial tool

for providing security and protection against the potential negative effects of the pandemic, such as high medical costs and income loss. Furthermore, the pandemic has driven the need for more adaptive and responsive insurance products for emergency situations, reinforcing the role of insurance as a vital pillar in personal and family risk management strategies during these uncertain times (Elsawati et al., 2023).

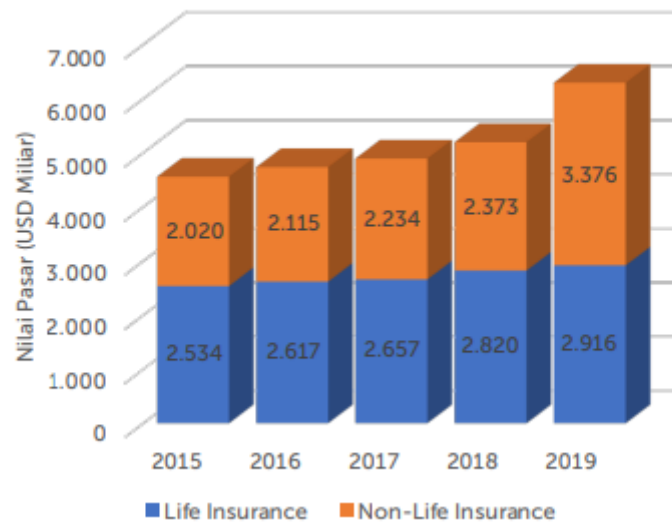


Figure 1.2 : Market share asuransi global

Source : World Insurance 2015-2019, Swiss Re Institute

According to Swiss Re data, in 2019 in Figure 1.2, the global insurance industry's market value reached USD 6.292 trillion, reflecting an 8% growth (Compound Annual Growth Rate/CAGR) from 2015. With a contribution of 7.2% to global Gross Domestic Product (GDP), the insurance industry plays a crucial role in the global economy, nearly accounting for 10% of the overall service sector. However, in 2020, the industry experienced a significant decline of USD 128.9 billion. This decline was primarily due to the global economic slowdown caused by the COVID-19 pandemic, which affected nearly all economic sectors, including the insurance industry. The drop highlights the substantial challenges faced by the insurance industry, including the life insurance sector, in dealing with the economic crisis and the pandemic's impact.

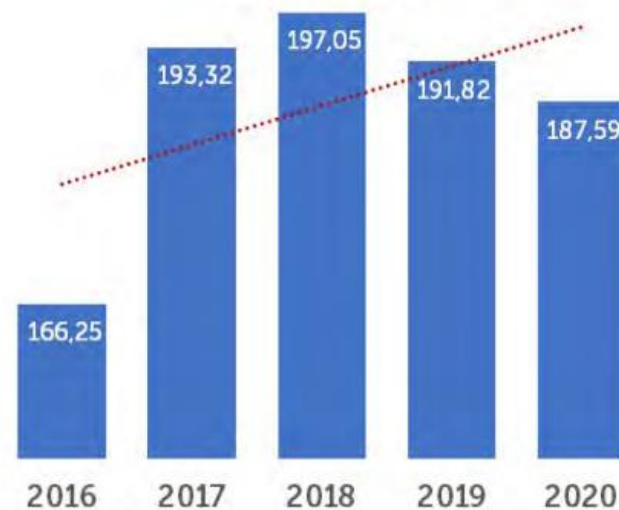


Figure 1.3. Life Insurance Premium Income (IDR Trillion)

Source : Roadmap Industri Asuransi Jiwa, 2021

Based on Figure 1.3 the life insurance industry experienced significant impacts—financial, operational, and strategic—during the pandemic in 2020. The life insurance market is estimated to have declined by 5.2% throughout 2020 due to the economic slowdown. According to historical data from the Indonesian Life Insurance Association (AAJI) covering the period from 2016 to 2020, the life insurance industry recorded positive premium income growth with a compound annual growth rate of 3.1%. The year 2017 saw a significant increase in premium income, with new business premiums growing by 21.9% and renewal premiums by 6.6%, driven by improved performance in the bancassurance distribution channel, which grew by 26.6%. However, the COVID-19 pandemic in 2020 led to a 2.2% decline in premium income compared to the previous year.

During the period from 2018 to 2022, there was a significant decline in life insurance premiums, with total premiums decreasing by 3.8% from IDR 198.30 trillion in 2018 to IDR 169.95 trillion in 2022. The sharpest decline occurred in 2020, when life insurance premiums fell dramatically by 8.28%, from IDR 186.26 trillion to IDR 170.83 trillion. This decline can be directly attributed to the impact of the COVID-19 pandemic, which affected various aspects of the economy, leading to financial uncertainty and changes in consumer behavior. However, in 2021, there was a recovery with a 7.90% growth in life insurance premiums, indicating a rebound from the effects of the global health crisis. Nevertheless, the significant drop in conventional life insurance premiums during this period reflects the profound impact of the pandemic on the life insurance industry (Life Insurance Industry Roadmap, 2021). An example of this impact can be seen in one of Indonesia's leading life insurance companies, Prudential

Life Insurance, which also experienced fluctuations in premium income and claim expenses as a direct result of the pandemic.

Table 1. 1 Premium Income and Claim and Benefit Expenses Report for Prudential Life Insurance, 2018 - 2022

Year	Premium Income (In millions of IDR)	Claim and Benefit Expenses(In (millions of IDR)
2018	IDR 24.665.103	IDR 10.352.023
2019	IDR 24.239.782	IDR 15.837.921
2020	IDR 22.819.246	IDR 8.469.806
2021	IDR 22.505.004	IDR 14.216.960
2022	IDR 19.281.361	IDR 16.491.183

Source : Financial Report Prudential Life Insurance, 2018-2022

Based on the Table 1.1, from 2018 to 2022, Prudential Life Insurance showed significant fluctuations in premium income and claim expenses. In 2018, the company recorded a premium income of IDR 24,665.1 billion with claim and benefit expenses of IDR 10,352.0 billion, resulting in a claims ratio of approximately 42%. In 2019, despite a slight decrease in premium income to IDR 24,239.8 billion, claim and benefit expenses surged to IDR 15,837.9 billion, causing the claims ratio to rise to around 65%. In 2020, there was a more substantial decline in premium income to IDR 22,819.2 billion, while claim and benefit expenses decreased to IDR 8,469.8 billion, resulting in a claims ratio of 37%, which may have been influenced by the impact of the COVID-19 pandemic. In 2021, premium income slightly decreased to IDR 22,505.0 billion, while claim and benefit expenses increased again to IDR 14,216.9 billion, with a claims ratio of approximately 63%. In 2022, premium income sharply declined to IDR 19,281.4 billion, with claim and benefit expenses remaining at IDR 14,216.9 billion, resulting in an increased claims ratio of around 74%. These fluctuations underscore the profound impact of the COVID-19 pandemic on the life insurance industry, significantly affecting both income and claims management.

Table 1. 2 Premium Income and Claim and Benefit Expenses Report for Allianz Life Insurance, 2018 - 2022

Year	Premium Income (In millions of IDR)	Claim and Benefit Expenses(In (millions of IDR)
2018	IDR 9.983.611	IDR 6.008.806
2019	IDR 12.465.035	IDR 9.815.989
2020	IDR 18.812.729	IDR 12.697.836
2021	IDR 19.900.477	IDR 12.456.954
2022	IDR 13.055.697	IDR 9.976.089

Source : Financial Report Allianz Life Insurance, 2018-2022

In the period 2018 to 2022, Allianz experienced significant changes in premium income and claims expenses and benefits. In 2018, Allianz recorded premium income of IDR 9.98 trillion with claim expenses of IDR 6.01 trillion, resulting in a claim ratio of 60%. The following year, premium income increased to IDR 12.47 trillion, but claims expenses also rose to IDR 9.82 trillion, pushing the claims ratio up to around 79%.

2020 became a landmark year for Allianz with a surge in premium income to IDR 18.81 trillion. Although claims expenses increased to IDR 12.70 trillion, the claims ratio fell slightly to 67%, which was most likely influenced by the COVID-19 pandemic conditions. In 2021, premium income continued to grow to IDR 19.90 trillion, while claims expenses slightly reduced to IDR 12.46 trillion, lowering the claims ratio to 63%. However, in 2022, premium income dropped dramatically to IDR 13.06 trillion, with claim expenses also dropping to IDR 9.98 trillion, resulting in the claim ratio increasing again to 76%.

These fluctuations demonstrate the significant impact of the pandemic and economic challenges on Allianz's financial performance. The volatile claims ratio reflects the changing dynamics of premium income and claims expenses, which require adjustment strategies to maintain the financial health of the company.

Based on the data from the table, Allianz and Prudential show different patterns in financial performance over the period 2018 to 2022. Allianz experienced a significant increase in premium income early in the pandemic, but its claims ratio showed higher fluctuations, reflecting challenges in consistent claims and benefits management. Prudential, on the other hand, experienced a more gradual decline in revenue during the period, but with a more stable claims ratio. This suggests that Prudential may have been more effective in maintaining a balance between premium income and claims expenses, while Allianz faced greater variability in managing claims and benefit expenses amid changing economic conditions and the pandemic.

This comparative analysis of Prudential and Allianz is particularly relevant in light of the COVID-19 pandemic's profound impact on the insurance sector. The title "Financial Performance Analysis of Life Insurance Company for the 2016-2023 Period: Comparative Analysis of Pre-Pandemic and Pandemic Era" was chosen to explore how these companies adapted their strategies during two distinctly challenging periods. Analyzing their financial performance pre-pandemic and pandemic era allows for a deeper understanding of their resilience and the effectiveness of their responses to the unprecedented economic turmoil.

## **1.2 Company Profile**

### **1.2.1 Prudential Life Assurance**

Prudential Plc is a leading provider of life insurance and pension funds, offering a wide range of retail financial products. Established in England in 1848, Prudential entered the Indonesian market as PT Prudential Life Assurance in 1995. As part of Prudential Plc Group, with over 168 years of experience in the life insurance industry, Prudential Indonesia is committed to growing its business in Indonesia. Since launching its first investment-linked insurance product (unit link) in 1999, Prudential Indonesia has become the market leader in the unit link product category in Indonesia. The company provides various products and services designed to meet and complement the financial needs of its customers in Indonesia. Additionally, Prudential Indonesia established its Sharia business unit in 2007 and has been recognized as the market leader in Sharia life insurance in Indonesia since its inception (PT Prudential Life Assurance, 2012, pp. 8-11).

As of December 31, 2022, Prudential Indonesia's headquarters is located in Jakarta, with six marketing offices in Bandung, Semarang, Surabaya, Denpasar, Medan, and Batam, along with

356 independent marketing offices (KPM) throughout Indonesia. By the end of 2022, the company was supported by more than 150,000 licensed marketers. Prudential Indonesia's marketing strategy employs an agency system, allowing each city to develop independent marketing offices (KPM). The company serves over 2.3 million customers through more than 277,000 licensed marketers across 408 independent marketing offices (KPM) nationwide. All data is sourced from the official Prudential Life website.

As a leading company, PT Prudential Life Assurance aspires to be the foremost insurance provider in Indonesia by focusing on:

1. Customer Service

Customers are crucial to the business, and therefore, Prudential prioritizes them to achieve its goal of becoming the top financial services company in Indonesia. The company is dedicated to offering exceptional service to its customers.

2. Providing Excellent Returns for Shareholders

Prudential is committed to delivering satisfactory results to its shareholders, ensuring their ongoing support for the company's future growth.

3. Hiring the Best Talent

Prudential continually develops its human resources, including both marketing personnel and employees. The company places a strong emphasis on education, training, and development for its staff to meet corporate objectives.

Mission "To be the best retail financial services company" in Indonesia, surpassing the expectations of customers, marketing staff, employees, and shareholders by delivering excellent service, high-quality products, a highly committed professional marketing team, and profitable investment returns.

As an essential part of its mission, Prudential has established Four Pillars that form the foundation of its growth and differentiate it from other companies. These Four Pillars are:

1. A commitment to always striving for excellence.
2. Working together as a cohesive family.
3. Being an organization that fosters learning opportunities.
4. Upholding integrity and ensuring fair benefits for all stakeholders.

Prudential Life offers a variety of insurance products tailored to diverse financial and protection needs. One of their key products is the Prulink Assurance Account (PAA), which integrates life insurance with investment opportunities. This plan provides life coverage up to a specified age and includes investment options such as equity funds, bond funds, balanced funds, and money market funds. Another significant product is the Prulink Investor Account (PIA), which emphasizes investment while still offering life protection. This account allows policyholders to choose from various investment funds, including aggressive, moderate, and conservative options, depending on their financial goals and risk tolerance.

In addition to these unit-linked products, Prudential Life offers the Prulink Protection Plus, which combines extensive life insurance coverage with additional investment benefits. The Prulink Smart Saver product merges savings with protection, offering flexible investment options. For health coverage, Prudential provides the Prudential Health Protection plan, which includes coverage for hospital expenses, medical costs, and critical illnesses. The Prudential Retirement Plan is designed for long-term savings and investment to prepare for retirement, while the Prudential Education Plan focuses on saving for future educational expenses with various investment options. Lastly, Prudential also offers Sharia-compliant insurance products that adhere to Islamic principles, such as mutual assistance and risk-sharing.

The COVID-19 pandemic has brought about dramatic shifts across various sectors, with the life insurance industry facing significant challenges. This study centers on Prudential Life Insurance, aiming to thoroughly investigate how the pandemic has affected the company's financial performance during the period from 2016 to 2023. The pandemic has introduced a series of unprecedented difficulties and uncertainties, making it essential to critically evaluate the company's financial health and operational performance in response to these conditions.

### **1.2.2 Allianz Life Indonesia**

Allianz is one of the world's largest investors, with more than €714 billion in assets under management for insurance clients. While our asset managers PIMCO and Allianz Global Investors manage an additional €1.7 trillion in third-party assets. Thanks to the systematic integration of ecological and social criteria in business processes and investment decisions, Allianz holds the leading position for insurance companies in the Dow Jones Sustainable Index. In 2022, the Allianz Group had 159,000 employees and achieved total revenues of 152.7 billion euros and an operating profit of 14.2 billion euros.



In 1989, Allianz established PT Asuransi Allianz Utama Indonesia, a general insurance company. Later, Allianz entered the life, health, and pension insurance business by establishing PT Asuransi Allianz Life Indonesia in 1996. In 2006, Allianz Utama and Allianz Life started sharia insurance business. In 2023, PT Asuransi Allianz Life Syariah Indonesia officially operated as a separate entity that provides sharia-based life insurance protection and financial risk management.

Today, Allianz Indonesia is supported by more than 1,000 employees and more than 40,000 marketers and supported by a network of banking partners and other distribution partners. Today, Allianz is one of the leading insurance companies in Indonesia, trusted to protect more than 10 million insureds.

Allianz Indonesia is a company whose purpose is deeply embedded in every aspect of its operations. They are committed to securing the future of loved ones, customers, and communities, and this dedication is reflected in every product and service they provide. Whether through innovative insurance solutions or sustainable business practices, Allianz consistently strives to protect what matters most. This commitment isn't just a corporate mission—it's ingrained in the company's DNA, driving them to be the trusted partner that individuals and businesses can rely on in times of need.

The research will involve a comprehensive analysis of Prudential Life Insurance and Allianz Life Insurance's financial data from the pre-pandemic year (2016-2019) and compare it with the data from the pandemic years (2020-2023). Key financial metrics such as revenue, profitability, liquidity, and solvency will be assessed to determine the pandemic's impact on the company's stability and performance. Furthermore, the study will examine the strategic responses and crisis management measures implemented by Prudential Life Insurance and Allianz Life Insurance to navigate these turbulent times. By providing insights into how the company has adapted to the challenges and suggesting strategies for future resilience, the research aims to offer valuable recommendations for enhancing sustainability and robustness within the life insurance sector.

#### **1.4 Research Questions**

To comprehensively understand the impact of the COVID-19 pandemic on the life insurance industry, this study aims to address several key research questions. These questions are

designed to explore and evaluate how the financial performance of Prudential Life Insurance and Allianz Life Insurance has been influenced by the pandemic. Specifically, the research will seek to answer the following questions :

1. How does the financial performance of Allianz and Prudential Life Insurance in the pre-pandemic era compare in terms of liquidity, solvency, activity, and profitability ratios?
2. How does the financial performance of Allianz and Prudential Life Insurance in the pandemic era compare in terms of liquidity, solvency, activity, and profitability ratios?
3. Are there any differences in the financial performance ratios of Allianz in the pre-pandemic and pandemic era, specifically regarding liquidity, solvency, activity, and profitability?
4. Are there any differences in the financial performance ratios of Prudential in the pre-pandemic and pandemic era, specifically regarding liquidity, solvency, activity, and profitability?

### **1.5 Research Objectives**

To gain a comprehensive understanding of the COVID-19 pandemic's impact on the life insurance industry, this study sets out several key objectives. These goals are intended to examine and assess how the financial performance of Prudential Life Insurance and Allianz Life Insurance was affected during the pandemic. In particular, this research aims to achieve the following objectives:

1. To assess and compare the financial performance of Allianz and Prudential Life Insurance in the pre-pandemic era, focusing on liquidity, solvency, activity, and profitability ratios.
2. To assess and compare the financial performance of Allianz and Prudential Life Insurance in the pandemic era, focusing on liquidity, solvency, activity, and profitability ratios.
3. To determine if there are significant differences in the financial performance ratios of Allianz in the pre-pandemic and pandemic era, specifically regarding liquidity, solvency, activity, and profitability.

4. To determine if there are significant differences in the financial performance ratios of Prudential Life Insurance in the pre-pandemic and pandemic era, specifically regarding liquidity, solvency, activity, and profitability.

## **1.6 Scope and Limitation Study**

This research focuses on analyzing the financial performance of Prudential Life Insurance and Allianz Life Insurance for the period from 2016 to 2023, with particular emphasis on the impact of the COVID-19 pandemic. The study aims to provide a comprehensive evaluation of how the pandemic has affected the companies' financial health by examining key financial ratios including liquidity, solvency, activity, and profitability. Data will be analyzed from the pre-pandemic year of 2016 and compared with data from the pandemic years of 2020 to 2023 to understand changes in the company's financial stability and performance.

However, several limitations are inherent in this study. Firstly, the research is restricted to Prudential Life Insurance, which may limit the applicability of the findings to other life insurance companies or broader industry trends. The analysis is confined to the period of 2016 to 2023, focusing on annual financial statements and excluding potential long-term effects beyond this timeframe. The COVID-19 pandemic, which began in early 2020, acts as a pivotal point for the analysis, potentially overlooking long-term financial impacts and the pandemic's ongoing effects. Additionally, the study's reliance on financial ratios—liquidity, solvency, activity, and profitability—may omit other critical financial indicators necessary for a complete assessment of the company's performance. Despite these constraints, the research aims to offer valuable insights into Prudential Life Insurance's financial dynamics during a turbulent period, assisting stakeholders in making informed decisions within the life insurance sector.

## **1.7 Research Gap and Novelty**

This study addresses several research gaps related to the financial performance of life insurance companies in the pandemic era. While existing research has explored the pandemic's impact across various sectors, there is a lack of in-depth analysis specifically targeting life insurance companies like Prudential Life Insurance and Allianz Life Insurance. Previous studies often fail to provide a quantitative comparison using appropriate statistical methods to assess significant differences in financial ratios—such as liquidity, solvency, activity, and profitability—between the pre-pandemic period and the pandemic years. This research offers

novelty by employing the t-test to statistically analyze Prudential Life Insurance and Allianz Financial Insurance’s financial performance from 2016 to 2023. The uniqueness of this study lies in its detailed examination of significant changes in key financial metrics and its assessment of the company's strategic responses to the pandemic. By combining quantitative analysis with strategic evaluation, this study aims to provide valuable insights into how Prudential Life Insurance has adapted and maintained resilience during a turbulent period, offering practical recommendations for enhancing sustainability in the life insurance sector.

Table 1. 3 Previous Research Study

Author	Title of Research	Methodology	Results
Daryanto, W.M. and Nurfadilah, D.	Financial Performance Analysis Before and After the Decline in Oil Production: Case Study in Indonesian Oil and Gas Industry. INA: International Journal of Engineering and Technology.	This study uses financial ratio analysis (FRA) and paired sample t-test to compare financial performance before (2011-2012) and after (2014-2015) the decline in oil and gas production.	Although the largest oil and gas companies in Indonesia experienced losses, their financial condition remained strong. There were significant differences in the current ratio and return on equity between the periods before and after the decline in production.
Harini, O & Daryanto, W.M	Analysis Financial Performance of Pt. Unilever Indonesia Tbk Before and After Economy Crisis 2017 – 2022	This study analyzes the financial performance of PT Unilever Indonesia Tbk (UNVR) using the paired t-test to	The results of the study show that UNVR's financial performance before and after the economic crisis did

Author	Title of Research	Methodology	Results
		<p>compare financial data before and after the economic crisis. Data is obtained from UNVR's financial statements for two periods: before the crisis (Q1 – Q4 2017 to Q1 – Q4 2019) and after the crisis (Q1 – Q4 2020 to Q1 – Q4 2022).</p>	<p>not experience significant statistical differences. The company remained in good liquidity condition and was not significantly affected by the pandemic.</p>
<p>Daryanto, W. M, Wijaya, J &amp; Renatauli, R.</p>	<p>Financial Performance Analysis of PT. Ace Hardware Indonesia, TBK. Before and After The Launch of Rugarupa.com</p>	<p>This study uses financial ratio analysis and paired t-test to evaluate the financial performance of PT. Ace Hardware Indonesia, Tbk before and after the launch of the rugarupa.com website. The analyzed data includes annual financial reports from the period 2014 to 2019, focusing on</p>	<p>The results of the study indicate that the overall financial performance of PT. Ace Hardware Indonesia, Tbk did not show significant changes after the website launch. However, the Earnings per Share (EPS) ratio did show significant changes. Other financial ratios experienced both positive and negative changes that were</p>

Author	Title of Research	Methodology	Results
		liquidity, solvency, profitability, efficiency, and valuation ratio	not statistically significant. Temuan ini diharapkan memberikan wawasan yang berguna bagi manajer dalam pengambilan keputusan.
Rachmatullah, , Haliah and Kusumawati	Analysis of Financial Performance Before and After the Pandemic Covid-19 : Automotive and component sub-sector companies	This study uses financial ratio analysis and paired sample t-tests to assess the financial performance of automotive and component companies listed on the Indonesia Stock Exchange before and during the Covid-19 pandemic. Data were collected from financial statements and literature reviews.	The results show no significant differences in the current ratio and debt to equity ratio. However, there are significant differences in the return on assets and total asset turnover, indicating a decline in profitability and efficiency during the pandemic.

Author	Title of Research	Methodology	Results
Tsany, N. R, Astuti, S.B, Munira, M.	Analysis of Financial Performance Before and During the Covid-19 : A Case Study of Selected Cosmetics and Household Companies	This study uses financial ratio analysis and the paired sample t-test to evaluate financial performance differences before and during the Covid-19 pandemic in food and beverage sector companies listed on the Indonesia Stock Exchange (2019-2020). A purposive sampling method selected 30 companies. Descriptive statistical analysis and the Kolmogorov-Smirnov test were used to analyze the data.	The results show no significant differences in the current ratio, debt to total assets ratio, net profit margin ratio, and price-earnings ratio. However, there is a significant difference in the total assets turnover ratio before and during the Covid-19 pandemic.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Theoretical Framework**

This chapter provides a comprehensive review of the literature on agency theory, a grand theoretical foundation that will be used to explore the factors influencing a company's financial performance, particularly those related to agency problems and corporate governance. The COVID-19 pandemic has negatively disrupted various retail sector industries such as tourism, telecom, and transportation within the Indian economy (Kumar Das and Patnaik, 2020). Furthermore, COVID-19 has significant negative influence on stock market return in the Saudi Arabian context (Alzyadat and Asfoura, 2021). Nnamani et al., (2017) noted that financial performance is a subjective measure of a company's ability to effectively and efficiently use its assets to produce resources. A company's financial performance improves when it optimally leverages its assets. Devi et al., (2020) mentioned that financial performance is affected by the strategies and policies set by management to reach company objectives. It reflects the company's financial state based on set standards and is evaluated not just for one period but also for changes across different periods. The financial performance of a company is shown in financial statements, such as the cash flow statement, financial position statement, and income statement. The company's financial performance can be analyzed by calculating and interpreting financial ratios from financial statements.

#### **2.1.1 Financial Ratio Analysis**

Financial ratio analysis (FRA) is a widely used method to assess a company's financial performance and examine its health by calculating profitability, liquidity, activity, and solvency ratios. This method analyzes past performance and helps illustrate change patterns while identifying risks and opportunities within the company (Kasmir, 2019). According to Hery (2018), financial ratios are calculated using financial statements, which serve as tools to evaluate the company's financial condition and performance by comparing figures from different periods.

Fraser and Ormiston (2016) explain that financial ratios are calculation techniques used to analyze and compare financial data, including cross-sectional analysis, time-series analysis, and combined analysis. Miswanto et al. (2020) add that using financial ratios to analyze financial statements is the most effective method for assessing a company's



financial condition. In financial performance analysis, these ratios are categorized into profitability ratios, liquidity ratios, solvency ratios, and activity ratios, all of which are essential for providing a comprehensive view of the company's financial health.

### 2. 1. 1. 1 Profitability Ratio

Brigham and Houston (2018) explain that profitability ratios are a set of ratios that assess the outcomes of asset and debt management by a company. The more effective a company is at managing its assets, liabilities, and equity to generate profits, the higher its profitability ratio will be. These ratios reflect how well the company utilizes its resources to achieve profitability. Kasmir (2019) supports this view by stating that profitability ratios are used to evaluate a company's ability to generate profits and managerial effectiveness. These ratios measure how well the company uses its assets to create value for shareholders. According to the research conducted by Coulon (2020), profitability ratios include Net Profit Margin (NPM), Gross Profit Margin (GPM), ROIC, ROA, and ROE. In this study, the author measured ROA and ROE.

#### 1. Return on Equity (ROE)

Return on Equity (ROE) measures the profit generated by a company from the funds invested by its shareholders. This ratio is crucial for evaluating both the shareholders' perspective and the company's management, as it serves as a key indicator of the value created from shareholder investments (Robert N., David F. H., Kenneth A., 2011).

$$ROE = \frac{\text{Income After Tax}}{\text{Shareholder's Equity}} \times 100\%$$

Formula 1. Return on Equity (ROE) (Daryanto, Maharani, & Wiradjaja, 2021)

#### 2. Return on Asset (ROA)

Profitability refers to a company's ability to generate profit relative to sales, total assets, and equity. The significance of profitability ratios for financial statement users lies in their ability to reflect how effectively management is at generating profit (Sartono in Angelia and Toni, 2020). Return on Asset (ROA), a type of profitability ratio, measures a company's capacity to generate profit from its total assets. A positive ROA indicates that the assets used in operations are effective in generating profit, while a negative ROA signifies the opposite.

A higher ROA indicates better performance, which may result in increased capital gains or dividends for shareholders (Atidhira & Yustina, 2017).

$$ROA = \frac{Net\ Income}{Total\ Assets} \times 100\%$$

Formula 2. Return on Equity (ROA) (Daryanto, Maharani, & Wiradjaja, 2021)

### **2. 1. 1. 2 Liquidity Ratio**

According to Brigham and Ehrhardt (2014), the Liquidity Ratio illustrates the relationship between a company's current assets and current liabilities in managing maturing debts. Gitman and Zutter (2015) describe liquidity as measured by a company's ability to meet short-term obligations. Kasmir (2016) adds that this ratio reflects the company's capacity to settle obligations that have already matured, both to external parties and within the company. This ratio is crucial for assessing how well a company can pay its debts when they come due. Common liquidity ratios include the cash ratio, acid-test ratio, current ratio, working capital ratio, and times interest earned ratio. This research focuses on the current ratio and cash ratio.

#### **1. Current Ratio**

The Current Ratio measures a company's ability to pay short-term liabilities or debts that are due at the time of collection (Kasmir, 2016). A higher Current Ratio indicates a stronger ability to promptly meet obligations. This ratio compares all current assets against all current liabilities. A very low Current Ratio suggests that the company may not have enough capital to cover its debts.

#### **2. Cash Ratio**

The cash ratio is a metric used to measure a company's ability to pay off long-term debts using only cash without needing to liquidate other assets. The cash ratio is also used to assess whether the company has sufficient cash and its cash management strategy

### **2. 1. 1. 3 Solvency Ratio**

The solvency ratio is a metric used to measure the extent to which a company can meet its obligations. This ratio can be measured through the debt-to-equity ratio and the long-

term debt-to-capitalization ratio (Amalia et al., 2020). A company can be considered insolvent if its debt exceeds its assets. Insurance premium is the payment of the insured to the guarantor in return for services for the transfer of the risk of the guarantor. In life insurance premiums are compensation for the protection provided by the guarantor (insurance company) to the insured (customer) by providing a sum of money (benefits) against the risk of old age and death. In insurance company, solvency ratio calculated by Risk Based Capital and Net Premium Growth.

Risk-Based Capital is a key measure used to assess the solvency of insurance companies, ensuring they hold sufficient capital to cover potential risks and obligations, thus protecting policyholders. A higher Risk-Based Capital ratio indicates stronger financial stability. Net Premium Growth, which represents the increase in premiums earned after deducting reinsurance costs, reflects the company's ability to attract new business and maintain revenue growth. Research by Tarsono et al. (2019) highlights that both Risk-Based Capital and Net Premium Growth significantly influence the financial performance of life insurance companies, playing a crucial role in maintaining their solvency and long-term sustainability.

#### **2. 1. 1. 4 Activity Ratio**

Based on research conducted by Sianipar (2015), the activity ratio is used to measure a company's effectiveness in utilizing its assets. In his research, it is stated that the higher the activity ratio of a company, the greater the company's value will be. The activity ratio measures the inventory turnover ratio, accounts receivable turnover ratio, and total asset turnover ratio.

##### **1. Total Assets Turnover**

The Total Asset Turnover Ratio is a ratio used to measure a company's effectiveness in utilizing its assets to generate sales. A company with a high ratio means that it can use its assets effectively and efficiently to generate revenue (Eni, 2010).

$$\text{Total Assets Turnover} = \frac{\text{Sales Revenue}}{\text{Total Asset}} \times 100\%$$

Formula 3. Total Assets Turnover (Daryanto, Rizki, & Mahardika, 2021)

## 2. Collection Periods

Collection periods are calculated to assess a company's ability to collect receivables or its reliance on credit policies. When compared to companies in the same industry, longer collection periods indicate a worse condition as they signify that the company is inefficient in its collection procedures.

$$\text{Collection Periods} = \frac{\text{Account Receivable}}{\text{Sales}} \times 100\%$$

Formula 4. Collection Periods (Mulia & Daryanto, 2021)

### 2. 1. 3 The Inferential of Statistics

#### 2. 1. 3. 1 Determine A Statistical Test

The choice of statistical tests in research depends on several crucial factors. First, the type of measurement scale of the data variables must be considered, such as continuous, binary, or categorical data. Continuous data involves measurement on an interval or ratio scale, binary data consists of two categories, while categorical data has multiple categories without a clear order. Second, the study design influences the selection of the appropriate statistical test, whether the data is paired or unpaired. Third, the distribution of the data plays an important role in selecting the method; parametric tests are used if the data follows a normal distribution, whereas non-parametric tests are chosen if the data does not meet the normality assumption or if the assumptions of parametric tests cannot be met (Wilcox, 2017).

Using continuous endpoint data is essential for analyzing financial performance pre-pandemic and pandemic era an event because it allows for more detailed and accurate measurement of financial variable (Urbanowicz et al., 2015). According to (Quan, 2021) Continuous data enables the detection of subtle changes that might not be visible with categorical data and supports the use of more robust parametric statistical methods for deeper and more precise analysis. Additionally, continuous data facilitates more objective evaluation and better decision-making, providing a clearer picture of the impact of an event on financial performance.

According to Wang et al., (2022). for normally distributed continuous data, parametric tests such as paired sample t-tests and independent (unpaired) sample t-tests can be used, as explained below:

#### 1. Paired Sample

A paired sample refers to samples that are related to each other. For example, a researcher analyzing the effects on the same group of people in the pre-pandemic and pandemic era consuming a medication is using paired samples. This type of sample is typically used by researchers to measure whether there is a change in a variable over time or to compare two or more related groups. An example is a researcher assessing the effects of a new drug on a patient, with the study conducted on the same patient before and after taking the medication. Paired samples are considered an effective way to ensure that the data collected is accurate (Xu & Harrar, 2012).

#### 2. Unpaired Sample

Unpaired samples are samples that do not have any relationship with each other. These samples are typically used by researchers to compare subjects that are not related. For example, a study might compare the performance of students in two different schools or compare the productivity of students at different grade levels. Each of these samples is considered independent because the populations being measured are different and not connected in any way. This type of sampling is often used in comparative studies where the goal is to identify differences between distinct groups (Xu & Harrar, 2012).

In statistical analysis, understanding data distribution is essential for selecting the appropriate method. Data variables can be normally distributed or non-normally distributed, and this influences the type of statistical tests that can be applied. In statistical analysis, if the data at the endpoint follows a normal distribution, parametric tests can be applied for further analysis (Kalbfleisch & Prentice, 2002). These parametric tests are designed to utilize the assumption of normality to provide accurate results. According to Akritas, Antoniou, and Kuha (2006) conversely, if the data does not follow a normal distribution but is at least on an ordinal scale, non-parametric tests are a more suitable choice. Non-parametric tests do not rely on the

assumption of normal distribution and are appropriate for data that does not meet this criterion, offering flexibility in analyzing various types of data.

For continuous data that follows a normal distribution, parametric tests such as the paired t-test and the unpaired t-test can be used. The paired t-test compares two related sets of data within a single group, while the unpaired t-test compares two independent groups. Conversely, for data that does not follow a normal distribution, non-parametric tests are preferable. For paired data, the Wilcoxon test is used, and for unpaired data, the Mann-Whitney test is applied. To compare more than two related groups within a dataset, the Friedman test is utilized, whereas the Kruskal-Wallis test is used for comparing more than two independent groups (Wang et al., 2022)

### **2.1.3.2 Assessing Normality of Distribution**

Assessing the normality of data distribution is crucial for ensuring the accuracy of statistical analyses, especially with parametric tests like the t-test, which rely on the assumption of normality. This assumption is critical because deviations from normality can undermine the validity of test results, potentially leading to incorrect conclusions and affecting the quality of the analysis. Verifying normality also aids in selecting the appropriate statistical methods; if the data does not meet the normality assumption, non-parametric tests or data transformations may be necessary to obtain reliable and valid result (Stejskal et al., 2018,

According to Stejskal et al., (2018), to evaluate whether data follows a normal distribution, various methods can be utilized, including visual inspection techniques. One common approach is to create a histogram, which displays the frequency distribution of the data. By analyzing the shape of the histogram, you can assess whether the data resembles a normal distribution. Another valuable visual tool is the Quantile-Quantile (Q-Q) plot, which compares the quantiles of the sample data with those of a normal distribution. In a Q-Q plot, if the data is normally distributed, the plotted points should align closely with the reference line. Deviations from this line indicate departures from normality, providing a visual cue for assessing the distribution.

In addition to visual inspection techniques, statistical tests provide a more rigorous evaluation of normality. The Shapiro-Wilk test is commonly used to test the hypothesis that the data follows a normal distribution. The Shapiro-Wilk test is frequently employed to assess whether a random sample follows a normal distribution by calculating the  $W$  and  $W'$  statistics. Low values for  $W$  or  $W'$  indicate a deviation from normality. This test is suitable for sample sizes between 3 and 5000 (inclusive) (Razali & Wah, 2011). The Shapiro-Wilk test results, along with the  $P$  value, help determine whether to "accept normality" or "reject normality." If the  $P$  value exceeds 0.05, the data can be regarded as normally distributed; conversely, a  $P$  value below 0.05 suggests that the hypothesis of normality should be rejected. If the test result is significant, it suggests that the data deviates significantly from normality.

Another important test is the Kolmogorov-Smirnov test, which assesses whether the sample distribution differs from a normal distribution. A significant result from this test also indicates a departure from normality. The Anderson-Darling test, which builds on the Kolmogorov-Smirnov test, offers a more nuanced evaluation by placing greater emphasis on the tails of the distribution. This test is especially valuable when dealing with extreme values or outliers that might affect normality. A significant result from the Anderson-Darling test further confirms deviations from normality, providing a thorough assessment of the data distribution (Razali & Wah, 2011).

Descriptive statistics also play a crucial role in assessing normality by providing insights into the shape of the data distribution. Measures of skewness and kurtosis are particularly useful in this regard. Skewness quantifies the asymmetry of the distribution, while kurtosis measures the peakedness. For a normal distribution, skewness should be near zero, indicating symmetry, and kurtosis should be close to 3, reflecting the typical level of peakedness. Deviations from these values suggest that the data may not follow a normal distribution, offering additional information about the distribution's departure from normality (Yuan, K.-H, 2005)

## 2. 1. 4 Hypothesis Testing

### 2. 1. 4. 1. T-test for Dependent and Independent Samples

The t-test is a statistical tool used to assess the differences between the means of two data groups. Research needs to evaluate whether the observed differences between these groups are statistically meaningful. According to Wang et al. (2022), T-tests are categorized into three main types based on the relationship between the groups being compared: the one-sample t-test, the independent two-sample t-test, and the paired t-test

#### 1. Paired T-Test

The paired (also known as the dependent t-test) is a statistical method used to compare the means of two related groups to determine if there is a significant difference between them. A difference is considered significant if it is unlikely to be caused by sampling error or chance. The groups being tested can consist of the same individuals, the same items, or the same conditions. The paired t-test is more powerful than the unpaired t-test because it removes variation between samples that might arise from factors other than what is being tested.

There are two main hypotheses in a paired t-test:

- Null Hypothesis (H<sub>0</sub>): States that there is no significant difference between the means of the two groups.
- Alternative Hypothesis (H<sub>1</sub>): States that there is a significant difference between the two population means, and this difference is not likely due to sampling error or chance.

Assumptions for the paired t-test include the normal distribution of the dependent variable, independent sampling, measurement of the dependent variable on a ratio or interval scale, and two related or matched groups.

The paired t-test is typically used in situations such as measuring before and after treatment in the same group, or when measurements are taken with the same items in the same group. Examples of its application include evaluating the effects of pharmaceutical treatments, comparing body temperature with



different thermometers in the same group, or assessing test results before and after a preparatory course.

## 2. Unpaired T-Test

The unpaired t-test (also known as the independent t-test) is a statistical method used to compare the means of two independent groups to determine if there is a significant difference between them. The hypotheses for this test are the same as those for the paired t-test: the null hypothesis ( $H_0$ ) states that there is no significant difference between the group means, while the alternative hypothesis ( $H_1$ ) suggests a significant difference not attributable to chance or sampling error. Assumptions for the unpaired t-test include normal distribution of the dependent variable, independent sampling, measurement on a ratio or interval scale, equal variances between groups, and the presence of two independent groups. This test is suitable when comparing two separate groups with similar variances.

## 2. One Sample T-Test

One-Sample T-Test is a statistical method used to determine whether the mean of a single sample is significantly different from a known population mean or an expected mean value. This test is often used when dealing with small sample sizes and when the population standard deviation is unknown. The procedure starts by formulating the null hypothesis, which states that the sample mean ( $\bar{X}$ ) is equal to the population mean, while the alternative hypothesis proposes that there is a difference.

### **2.1.4.2 Wilcoxon Matched-Pairs Signed-Ranks Test**

The Wilcoxon Matched-Pairs Signed-Ranks Test is a non-parametric statistical method used to determine whether there is a significant difference between two related samples or matched pairs, especially when the data do not meet the normality assumptions required for parametric tests. According to (Harris & Hardin, 2013), this test is particularly useful for analyzing ordinal data or small sample sizes where the distribution of differences between paired observations is not normally distributed. The procedure involves calculating the differences

between paired observations, ranking the absolute values of these differences, and then summing the ranks for positive and negative differences separately. The test statistic is defined as the smaller of these two sums of ranks.

To perform the test, the computed test statistic is compared to a critical value from the Wilcoxon signed-rank distribution table, given a significance level ( $\alpha$ ) of 0.05 and based on the sample size. If the test statistic is less than or equal to the critical value, the null hypothesis—which posits that there is no difference in the median of the differences between the paired observations—is rejected. This result indicates a statistically significant difference in the medians. The Wilcoxon Matched-Pairs Signed-Ranks Test provides a robust alternative when parametric assumptions are violated, allowing for valid analysis of paired data in such scenarios (Happ et al., 2019).

## 2.2 Research Framework

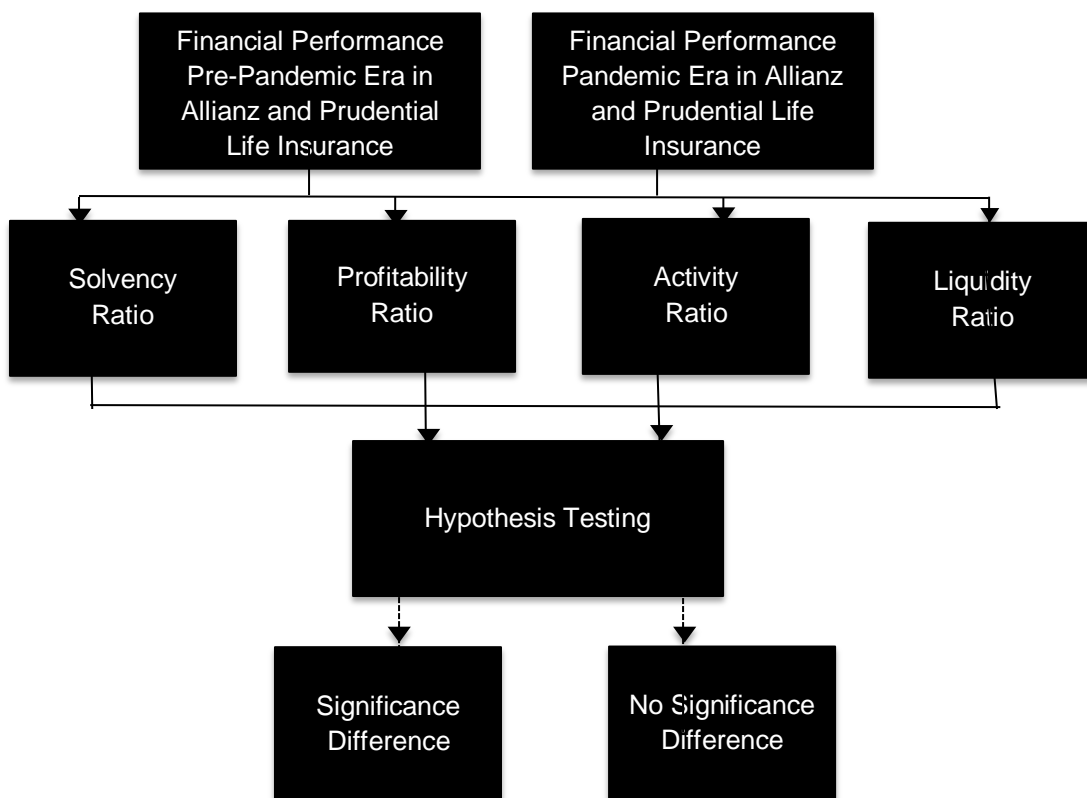


Figure 2.1 Conceptual Framework

Figure 2.1 will explain the conceptual framework of this study, which is based on the research model from previous work by Wiwiek M. D and Dety N. (2018:3). The conceptual framework

provides a description of the research procedure and the connections between concepts, empirical research, and related theories in a structural form, according to Dickson A. (2018). This study uses financial ratio analysis (FRA) and paired sample t-test to compare financial performance in the pre-pandemic era (2011-2012) and the pandemic era (2014-2015) following the decline in oil and gas production.

The companies used in this study include Prudential Life Insurance and Allianz Life, focusing on financial performance analysis for the period 2016-2023. The data was taken from the published annual reports of Prudential Life Insurance and Allianz Life, which were analyzed in two periods: the pre-pandemic era (2016-2019) and the pandemic era (2020-2023). The health of the company's financial performance will be evaluated using Financial Ratio Analysis (FRA) by measuring the ratios of profitability, liquidity, activity, and solvency. The analysis will be based on relevant financial ratios, and the results will be validated using statistical methods, such as the paired t-test, to investigate if there are significant differences in the financial performance between the pre-pandemic and pandemic era.

### **2.3 Hypothesis Development**

The COVID-19 pandemic, which began in late 2019 and intensified in early 2020, had a profound impact on the global economy and various sectors, including the life insurance industry. This crisis introduced unprecedented challenges, such as economic contraction, shifts in consumer behavior, and disruptions in financial markets. For the life insurance sector, these disruptions were expected to significantly affect financial performance metrics, including profitability, liquidity, and solvency ratios.

The life insurance industry faced significant hurdles as it adapted to the new realities brought about by the pandemic. For example, the restrictions imposed to curb the spread of the virus led to decreased economic activity and increased uncertainty, which influenced insurance premium collections and claim expenses. Additionally, the crisis highlighted the need for insurers to reassess their financial health and operational strategies to cope with the evolving market conditions.

The following hypotheses are proposed to assess the financial performance of life insurance companies in the pre-pandemic and pandemic era:

H1: There is a difference in Return on Equity in the Profitability Ratio between the pre-pandemic and pandemic era.

H2: There is a difference in Return on Assets in the Profitability Ratio between the pre-pandemic and pandemic era.

H3: There is a difference in Current Ratio in the Liquidity Ratio between the pre-pandemic and pandemic era.

H4: There is a difference in Cash Ratio in the Liquidity Ratio between the pre-pandemic and pandemic era.

H5: There is a difference in Risk Based Capital in the Solvency Ratio between the pre-pandemic and pandemic era.

H6: There is a difference in Net Premium Growth in the Solvency Ratio between the pre-pandemic and pandemic era.

H7: There is a difference in Total Assets Turnover Ratio in the Activity Ratio between the pre-pandemic and pandemic era.

H8: There is a difference in Collection Period in the Activity Ratio between the pre-pandemic and pandemic era.

## CHAPTER 3 : METHODOLOGY

### 3.1 Research Design

The financial performance of Prudential both Pre-pandemic and Pandemic era of COVID-19 epidemic will be examined in this quantitative analysis. Eight indicators will be used in financial ratios. The use of the Financial Ratio Analysis (FRA) approach for this study was prompted by the lack of available literature on the Indonesian life insurance market. A methodical way to evaluate financial statements is through financial ratio analysis, which helps determine a company's performance and financial health. It entails figuring out several ratios from the financial accounts to reveal information about the operational effectiveness, profitability, liquidity, and solvency of the business (Brigham & Ehrardt, 2013). This approach helps identify problem areas and opportunities within a company, though caution is advised due to the potential subjectivity and varying accounting practices that can affect comparability (Johnson, 1979).

This research design aims to provide the study's framework for addressing the research questions, conducting an analysis, and ultimately developing study results to answer the research problem. Figure 3.1 gives an outline of every step of the research design process, including selecting the study topic, finding relevant literature, defining the issue, the research question and its goals, the research methodology, the research framework, the data collection and statistical approach, the data analysis, the conclusion, and the recommendation.

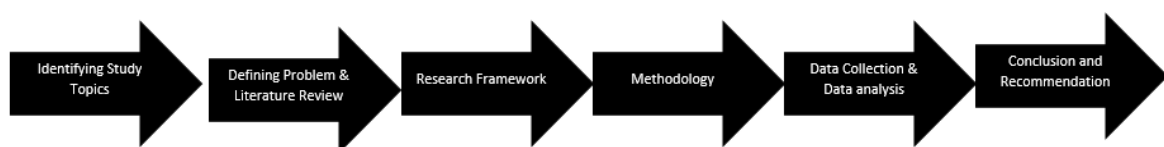


Figure 3.1 Research Design of the Study

Source : Author, 2024

### 3.2 Data Collection

Secondary data from the company was gathered from the websites of the individual companies, and data that was publicized came from the Indonesia Stock Exchange. The financial statements for the years 2016 to 2023 were then calculated using the formula to yield eight financial ratios.

Quantitative data that is displayed as numbers is the type of data that is employed. The first quarter financial report of 2020 will be used as the cut-off period (COVID-19 stated as a pandemic), as shown in Table 3.1. Prudential's and Allianz's thirty quarterly financial statements from the second quarter of 2016 to the fourth quarter of 2023 are used for financial performance measurement and analysis.

Table 3.1 Data Collection of Financial Performance of Prudential and Allianz  
Source : Author, 2024

Financial Performance							
2016	2017	2018	2019	2020	2021	2022	2023
	Q1	Q1	Q1	Q1	Q1	Q1	Q1
Q2	Q2	Q2	Q2	Q2	Q2	Q2	Q2
Q3	Q3	Q3	Q3	Q3	Q3	Q3	Q3
Q4	Q4	Q4	Q4	Q4	Q4	Q4	Q4

### 3. 3 Research Procedure

The purpose of this study is to quantify and analyze the financial performance of Prudential and Allianz in the pre-pandemic and pandemic era. To evaluate the company's financial performance using financial ratios that will be assessed based on their quarterly financial statements for the years 2016 through 2023, the research approach will employ statistical techniques.

The study procedure (Figure 3.2) shows how the analysis will be divided into two main steps: measuring and analyzing the financial performance. To measure financial ratios, 30 quarterly financial statements will first be collected. After that, all necessary data will be acquired to better understand the situation and begin the distribution normality test using Saphiro-Wilk. Afterward, a right-tailed two-dependent sample hypothesis test will be conducted to examine the importance of determining if a certain variable has improved in the pandemic era.

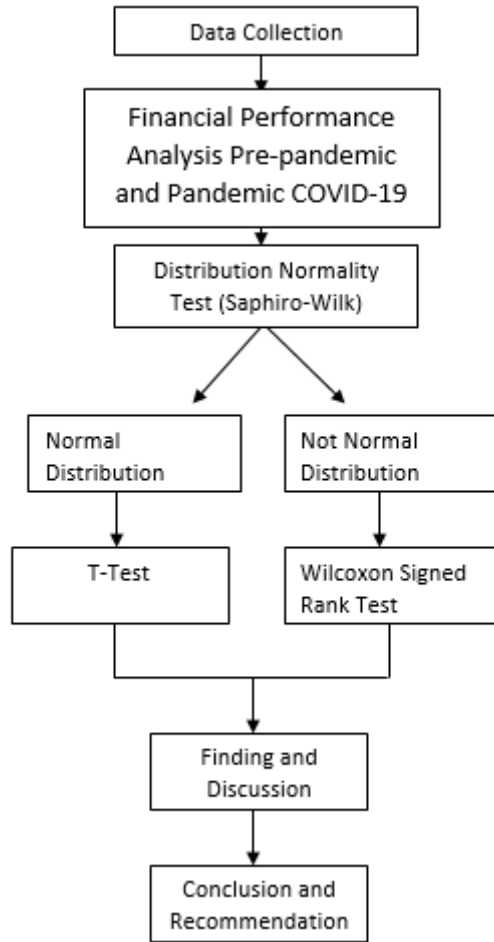


Figure 3.2 Research Procedures of the Study

Source : Author, 2024

### 3. 4 Distribution Normality Test

A statistical technique called a normality test is used to assess whether a sample or any other set of data fits into the conventional normal distribution. This is significant for several statistical analyses that depend on the normalcy assumption (Ghasemi & Zahediasl, 2012). In this research, the author will use the Saphiro-Wilk method for the normality test. A statistical technique called the Shapiro-Wilk test is used to ascertain if a sample of data is representative of a population that is normally distributed. It works especially well with small to medium sample sizes. By comparing the sample's order statistics with the corresponding predicted values if the sample were taken from a normal distribution, the test statistic  $W$  is computed. A low  $W$  value denotes a deviation from normality, and the null hypothesis of normality is rejected if the test statistic is substantially lower than predicted (Razali & Wah, 2016).

$H_0$  = data are normally distributed.

$H_a$  = data are not normally distributed.

$H_0$  is rejected if the p-value  $< 0.05$ , to conclude that the samples are not normally distributed.

### **3. 5 Hypothesis Testing**

Hypothesis testing is used to assess whether the data collected provides adequate support to confirm or refute a claim or hypothesis about a population. This process helps determine if the findings from the research are genuinely significant or if they might have occurred by chance. It allows researchers and decision-makers to base their decisions on data, such as when crafting policies or planning further studies. Additionally, hypothesis testing helps reduce the likelihood of making errors in decision-making, such as Type I errors (incorrectly concluding that an effect exists when it does not) and Type II errors (incorrectly concluding that an effect does not exist when it does). Typically, hypothesis testing involves evaluating two primary hypotheses: the null hypothesis ( $H_0$ ), which posits no effect or relationship, and the alternative hypothesis ( $H_1$ ), which suggests that there is an effect or relationship. The data are analyzed to determine if there is sufficient evidence to reject the null hypothesis (Meyer, van Witteloostuijn, & Beugelsdijk, 2017).

In hypothesis testing, various types of tests are available. A left-tailed test is employed when the alternative hypothesis proposes that the parameter under investigation is less than a specific value, and the aim is to assess whether there is sufficient evidence to support this claim. According to Khalilzadeh, J., & Tasci, A. D. A. (2017), it is essential to determine the type of test before setting the significance level ( $\alpha$ ) and analyzing the data to ensure that the results are unbiased and fit the research goals. On the other hand, a two-tailed test is used when the alternative hypothesis suggests that the parameter is different from a certain value, whether greater or smaller. This test evaluates whether there is enough evidence to determine that the parameter deviates from the expected value, regardless of the direction of the deviation.

In this study, will use the two-tailed test. The rejection region in two tailed test is distributed on both sides of the distribution. By dividing the rejection area into two sides, each side has a boundary of 2.5%. This makes the criteria for rejecting the null hypothesis stricter. If the rejection boundaries are expanded to 5% on both sides, the significance level will decrease to 90%.



After establishing the null hypothesis ( $H_0$ ) and the alternative hypothesis ( $H_1$ ), the next step is to determine the significance level ( $\alpha$ ) for the analysis. The significance level, denoted as  $\alpha$ , sets the threshold at which the observed results are deemed statistically significant. Typically, significance levels of 0.05 (5%) and 0.01 (1%) are used. The choice of significance level depends on the specific research field and the balance desired between Type I and Type II errors. Following this, data is collected and analyzed using the appropriate statistical methods to evaluate the hypotheses (Khalilzadeh, J., & Tasci, A. D. A., 2017)

After determining the significance level ( $\alpha$ ), data is collected and analyzed using a t-test. Next, calculate the p-value associated with the t statistic using a t-distribution table or statistical software. The p-value indicates the probability of obtaining results as extreme or more extreme than those observed if the null hypothesis is true. Compare the p-value to the significance level ( $\alpha$ ); if the p-value is less than  $\alpha$ , the null hypothesis ( $H_0$ ) is rejected. Conversely, if the p-value is greater than  $\alpha$ , the null hypothesis is not rejected. Finally, report the results of the test, including the t statistic, p-value, final decision regarding the null hypothesis, and interpretation of the results within the context of the research (Khalilzadeh, J., & Tasci, A. D. A., 2017)

Hypothesis analysis is presented by:

$$H_0 = \delta_1 = 0$$

$$H_1 = \delta_1 \neq 0$$

The following standards will be applied in order to evaluate the study's hypothesis:

- If  $p < 0.05$ , means  $H_0$  is rejected, which means the financial performance is better in the pre-pandemic era than pandemic era.
- If  $p > 0.05$ , means  $H_0$  is accepted, which means the financial performance is equal to or worse in the pre-pandemic era than pandemic era.

### **3. 5. 1 Two Dependent Sample Test**

In this study, two dependent sample tests, specifically the paired sample t-test, were applied as a hypothesis testing method. This method was chosen to compare financial performance across two distinct periods, the pre-pandemic and pandemic eras, for two insurance companies: Allianz and Prudential Life Insurance. The paired sample t-test was selected based on a research design involving two paired or interrelated samples measured at different times or under different conditions, yet originating from the same subject.

Each insurance company (Allianz and Prudential) is compared for its performance in two different periods: pre-pandemic and pandemic era. The data is paired or dependent since the financial performance data in the two periods is measured from the same company. The use of paired sample t-test allows us to see if there is a significant difference in the financial performance of each company between the two periods by accounting for variability in the data stemming from changing global economic conditions. This test is appropriate only if the data follow a normal distribution, ensuring the validity of the t-test results.

### **3. 5. 2 Wilcoxon Signed Rank Test**

This study uses the Wilcoxon Signed Rank Test method as an alternative hypothesis test when the data is not normally distributed. The Wilcoxon Signed Rank Test is a non-parametric test applied to paired data to determine whether there is a significant median difference between two conditions or periods in the same sample.

The procedure in the Wilcoxon Signed Rank Test involves calculating the difference between each pair of values (for example, financial performance pre-pandemic and pandemic era). These differences are then ranked by their absolute value, regardless of sign (positive or negative), and then each rank is assigned a sign according to the direction of change. Next, the number of positive ratings is compared to the number of negative ratings to determine if there is a statistically significant difference between the two conditions.

### **3. 6 Comparative Study of Allianz and Prudential Indonesia**

This comparative study focuses on examining the financial performance of Prudential Life Insurance and Allianz Life Insurance in the pre-pandemic and pandemic era. By analyzing key financial ratios, such as profitability, liquidity, activity, and solvency, the research aims to uncover how each company was impacted by the pandemic. Statistical techniques such as the Wilcoxon signed-rank test and the paired t-test are used to provide a more thorough study. The financial performance parameters of the two organizations will be compared in these tests between the pre-pandemic period (2016-2019) and the pandemic period (2020-2023). If the data is normally distributed, the paired t-test will be utilized; if not, the Wilcoxon test will be conducted to provide a reliable comparison of the two time periods.

The study aims to ascertain whether Prudential and Allianz's financial performance differs significantly in the pre-pandemic and pandemic era utilizing these statistical methodologies.

The analysis's findings will shed light on how these top life insurance providers responded to the difficulties brought on by the recession and shifting market dynamics in the pandemic. In the end, the results will aid in evaluating the resilience of each business and offer insightful guidance for enhancing financial performance and crisis management tactics within the life insurance sector.

## CHAPTER 4: RESULT AND DISCUSSION

### 4.1 Financial Performance Analysis

In this chapter, the results of the financial performance analysis for the life insurance company, Allianz and Prudential, are presented, based on calculations using eight financial ratios. The calculations are based on quarterly data covering the period from 2016 to 2023, resulting in 30 data points in total. Q1 2020 is used as the benchmark to distinguish between the pre-pandemic and pandemic phases.

#### 4.1.2 Profitability Ratio

According to Brigham and Houston (2018), profitability ratios measure how well a company manages its assets and debts to achieve profits. The more efficiently a company handles its assets, liabilities, and equity to generate earnings, the higher its profitability ratios will be.

##### 4.1.2.1 Return on Asset (ROA)

Profitability represents a company's capability to produce profits in relation to its sales, total assets, and equity. Profitability ratios are important to financial statement users because they demonstrate how well management is able to generate profits (Angelia and Toni, 2020). One such ratio, Return on Assets (ROA), evaluates a company's ability to generate profits from its total assets. A positive ROA suggests that assets are being used effectively to produce profit, whereas a negative ROA indicates inefficiency. A higher ROA reflects stronger performance, potentially leading to greater capital gains or dividends for shareholders (Atidhita & Yustina, 2017).

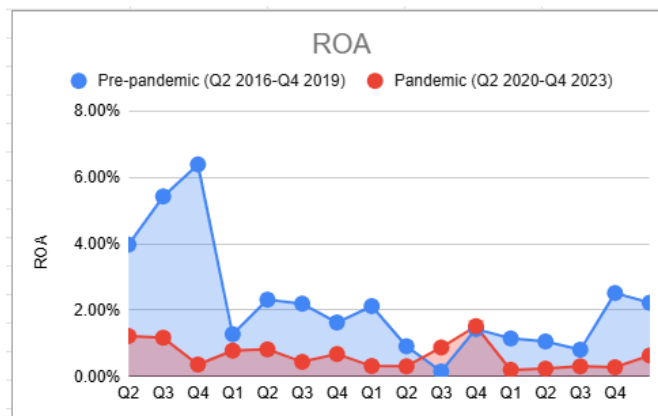


Figure 4. 1 Analysis of Return on Assets (ROA) for Allianz Life Insurance

Source: Author Analysis, 2024

The company's Return on Assets (ROA) performance in the pre-pandemic era (Q2 2016 - Q4 2019) showed relatively significant fluctuations but with a more stable trend. The highest ROA value was recorded in Q4 2016 at 6.39%, with some declines in the following quarters. Despite the variations, the average ROA during this period is still higher and reflects stronger asset profitability before the impact of the global crisis.

In the pandemic era (Q2 2020 - Q4 2023), corporate ROA experienced a steep decline, starting with 1.22% in Q2 2020. During this period, there was no significant recovery, with ROA ranging from 0.20% to 1.52%. This indicates that companies are struggling to maintain the profitability of their assets amidst the difficult economic conditions caused by the pandemic. Overall, the pandemic has had a considerable negative impact on companies' financial performance compared to the previous period.

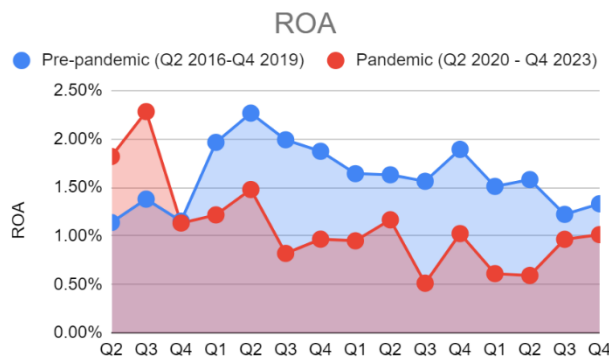


Figure 4. 2 Analysis of Return on Assets (ROA) for Prudential Life Insurance

Source: Author Analysis, 2024

Based on Prudential's Return on Assets (ROA) data in the pre-pandemic era (2016-2019), there are fluctuations in the company's performance. In 2016, ROA was fairly stable, starting from 1.14% in Q2 to 1.38% in Q3, but declined slightly in Q4 to 1.15%. A positive trend was seen in 2017, where ROA reached its highest peak of 2.27% in Q2, although there was a slight decline in the following quarters. The year 2018 showed relative stability with ROA averaging above 1.5%, despite a slight decline in Q4 to 1.51%. In 2019, performance trended downward, characterized by a significant drop from 1.58% in Q2 to 1.33% in Q4, indicating a decline in profitability towards the start of the pandemic.

In the pandemic period (2020-2023), Prudential's ROA performance experienced sharper volatility. After Q1 2020 was ignored, there was a significant uptick in Q3 2020

with ROA reaching 2.28%, the highest in the last four years. However, this trend did not last long as ROA declined dramatically in Q4 2020 to 1.13%. In 2021, performance continued to decline with ROA of only 0.82% in Q3, although there was a slight improvement in Q4 to 1.48%. This trend continued in 2022 with fluctuations, where Q1 reached 1.17%, but dropped in Q4 to 1.02%. The year 2023 showed stability with a slight increase in Q4 to 1.01%, although it remained lower than the pre-pandemic period.

#### 4. 1. 2. 2 Return on Equity (ROE)

Return on Equity (ROE) measures the profit a company produces from the capital invested by its shareholders. This ratio is essential for evaluating both shareholder returns and the company's management performance, as it serves as a key indicator of the value created from shareholder investments (Robert N., David F. H., Kenneth A., 2011).

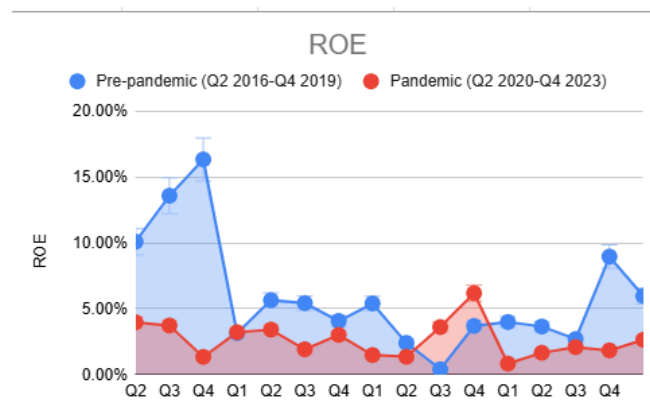


Figure 4.3 Analysis of Return on Equity for Allianz Life Insurance

Source : Author Analysis, 2024

Based on Prudential's ROE data in the pre-pandemic era (2016-2019), performance showed considerable fluctuations. In 2016, the highest ROE was recorded in Q4 at 16.33%, while in Q1 it was at its lowest point of 3.16%. The year 2017 showed a steady decline with ROE ranging from 2.41% to 5.65%, which still reflected a moderate rate of return. In 2018, performance trended downward with the lowest ROE figure recorded in Q3 at just 0.41%, before rebounding slightly in Q4 to 4.00%. 2019 marked an improvement, with Q4 recording an ROE of 8.96%, but the average pre-pandemic ROE over these four years was around 5.97%, which shows a fair amount of stability with some seasonal fluctuations.

In the pandemic period (2020-2023), Prudential's ROE performance underwent significant changes. In 2020, after a high Q1 at 7.73% (not included in the analysis), the ROE figure saw a drastic drop to 1.35% in Q4. In 2021, although there was a slight improvement in Q1 and Q2 with ROE reaching 3.22% and 3.42%, this figure declined again in Q4 to 3.02%. This negative trend continued into 2022, where ROE was below 2% throughout the year, even hitting a low of 0.61% in Q3. In 2023, despite a slight improvement in Q4 to 1.84%, the average ROE in the pandemic was much lower than the previous period, at only 1.84%. This reflects the significant impact of the pandemic on Prudential's profitability and ability to manage its business.

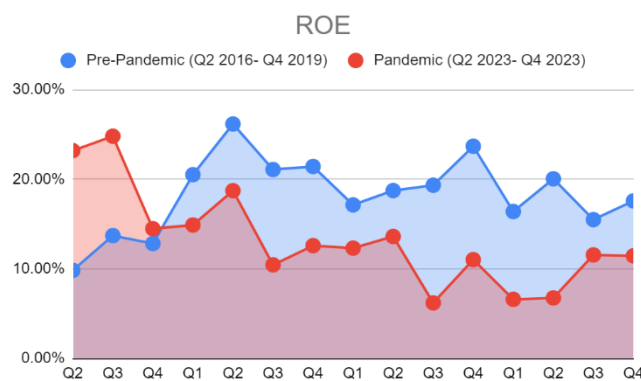


Figure 4. 4 Analysis of Return on Equity for Prudential Life Insurance

Source : Author Analysis, 2024

In the pre-pandemic era (Q2 2016 - Q4 2019), the company's return on equity (ROE) ratio showed stability and strong performance. The peak was recorded in Q2 2017 at 26.16%, and despite fluctuations, ROE generally ranged from 9.82% (Q2 2016) to 26.16%. During this period, there was an upward trend until mid-2017, followed by a steady movement in the range of 15-20% until the end of 2019.

In the pandemic (Q1 2020 - Q4 2023), there were significant changes in the company's financial performance. In 2020, the company still recorded a relatively strong performance with the highest ROE of 24.79% in Q3 2020. However, since 2021, ROE has started to decline. In 2021 and 2022, ROE ranged from 10-15%, indicating that the company's performance declined further as the pandemic continued.

Overall, in the pre-pandemic era, the company managed to maintain a higher and stable level of profitability. However, the pandemic has had a significant negative impact on financial performance, with the downward trend most pronounced in 2023. This drastic

decline can be seen in the ROE, which fell sharply from 6.59% in Q1 to just 11.45% in Q4, indicating the huge pressure on the company's profitability in that year.

### 4. 1. 3 Activity Ratio

According to Sianipar (2015), the activity ratio is used to evaluate how effectively a company utilizes its assets. His research highlights that a higher activity ratio correlates with increased company value. The activity ratio encompasses measures such as the inventory turnover ratio, accounts receivable turnover ratio, and total asset turnover ratio.

#### 4. 1. 3. 1 Total Asset Turnover

Total asset turnover ratio is used to assess how efficiently a company utilizes its assets to generate sales. A high ratio indicates that the company is effectively and efficiently using its assets to produce revenue (Eni, 2010).

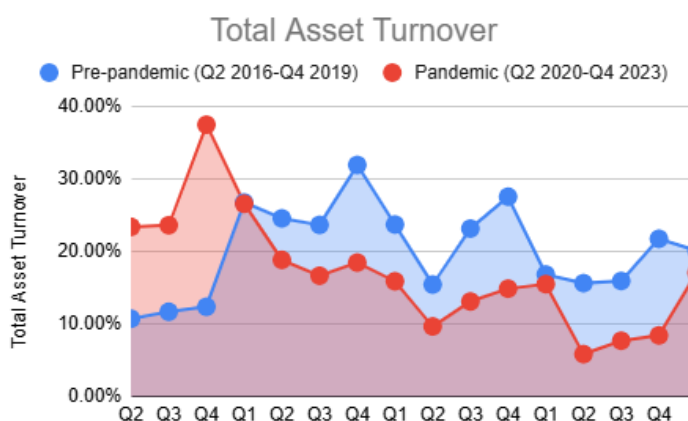


Figure 4. 5 Analysis of Total Asset Turnover for Allianz Life Insurance

Source : Author Analysis, 2024

Based on Allianz's turnover asset ratio data in the pre-pandemic era (2016-2019), the performance showed significant fluctuations, with several peaks and sharp drops. In 2016, the turnover asset ratio increased from 10.75% in Q2 to 12.39% in Q4. 2017 saw a significant spike, especially in Q1 with the highest ratio in the pre-pandemic era, at 26.77%. However, this value declined slightly throughout the year, reaching 31.96% in Q4. In 2018, although there was a decline in Q2 with the lowest ratio of 15.46%, the figure increased again in Q4 to 27.58%. 2019 showed a more stable trend albeit with a decline in Q2 and Q3 of around 15%, but again rose in Q4 to 21.77%. The average turnover asset ratio in the pre-pandemic era showed relatively healthy growth with normal fluctuations.



In the pandemic (2020-2023), Allianz's turnover asset ratio experienced a continuous decline, especially in the latter years. At the start of the pandemic, Q2 2020 recorded a ratio of 23.41%, which continued to increase until it reached a peak of 37.51% in Q4 2020. However, starting in 2021, this ratio began to decline, with Q2 at 18.86% and a further drop to 16.67% in Q3. This downward trend continued in 2022, with the lowest figure in Q2 at 9.68%. In 2023, Allianz's performance declined further, reaching the lowest point in this analysis period in Q2 2023, at only 5.85%. Overall, Allianz's turnover asset ratio in the pandemic era reflects the impact of the pandemic.

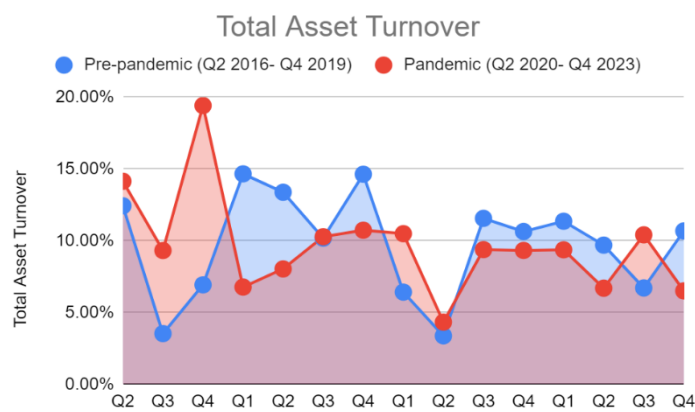


Figure 4. 6 Analysis of Total Asset Turnover for Prudential Life Insurance

Source : Author Analysis, 2024

In the pre-pandemic period (Q2 2016 - Q4 2019), asset turnover showed fluctuations generally in the range of 5% to 15%, with some significant peaks and dips. The highest values were recorded in Q1 2017 (14.65%) and Q4 2017 (14.62%), reflecting strong asset utilization performance. Despite some dips, such as in Q3 2016 (3.52%) and Q2 2018 (3.36%), the trend of asset turnover is relatively stable compared to the pandemic period. This indicates better asset utilization efficiency and more consistent stability during this period.

In contrast, in the pandemic period (Q2 2020 - Q4 2023), asset turnover experienced a sharp recovery in Q2 2020 (14.13%) and Q4 2020 (19.40%), albeit followed by greater volatility. After 2021, asset turnover trended lower and stabilized, hovering around 6% to 10%, with fewer fluctuations compared to the pre-pandemic period. This comparison shows that in the pandemic era, companies faced greater instability, especially in 2020, before stabilizing at a

lower level. The pandemic brought higher volatility and lower asset turnover performance compared to the more stable pre-pandemic period.

#### 4. 1. 3. 2 Collection Period

The collection period is used to evaluate how well the company manages the collection of receivables or how dependent it is on its credit policy. When compared to other companies in the same sector, a longer collection period reflects poor performance, as it indicates inefficiency in the collection process. In the insurance industry, Collection Period (or Average Collection Period) measures the average time it takes for a company to receive payment from policyholders after premiums are due, and is an important indicator of the effectiveness of receivables management (Spanò, 2019).

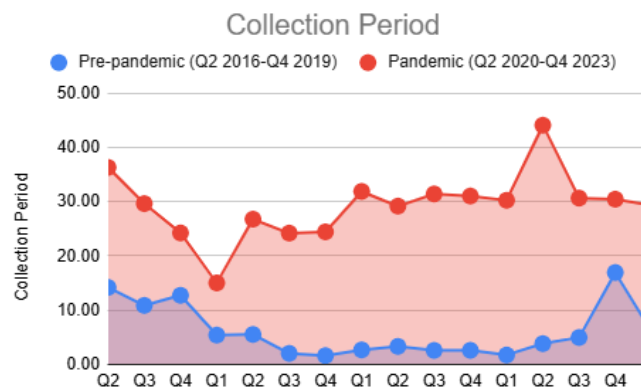


Figure 4. 7 Analysis of Collection Period for Allianz Life Insurance

Source : Author Analysis, 2024

In the pre-pandemic era, the collection period started at around 35 days and decreased gradually until it reached around 10 days at the end of the period. In the pandemic era, the collection period started at around 30 days and stabilized in the range of 25 to 30 days, with a significant spike reaching around 40 days before declining again. Overall, the collection period in the pandemic era was longer compared to the pre-pandemic period, indicating lower collection rates and a continued downward trend.

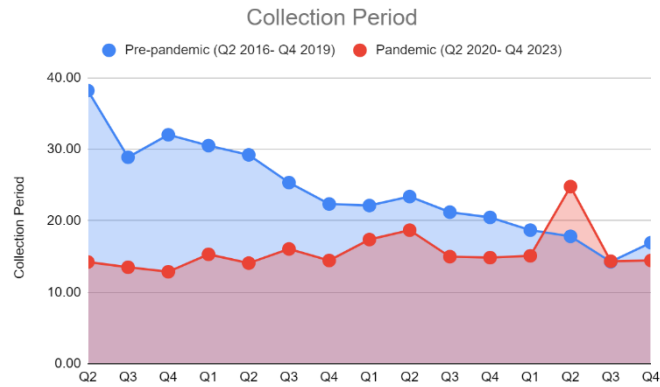


Figure 4. 8 Analysis of Collection Period for Prudential Life Insurance

Source : Author Analysis, 2024

In the pre-pandemic period (Q2 2016 - Q4 2019), Collection Period showed a consistent downward trend. Initially, in Q2 2016, the collection period reached its highest point at 38.21 days, but over time, the company managed to gradually reduce it to 16.94 days in Q4 2019. This decline reflects the company's improved efficiency in collecting receivables. After a sharp decline in 2016, the Collection Period figure stabilized in the range of 22-25 days from 2017 to 2019, showing relatively good stability.

In the pandemic period (Q2 2020 - Q4 2023), the Collection Period remained at a lower and stable level. Although at the start of the pandemic (Q1 2020), the collection period was 14.86 days, this figure quickly stabilized at around 14-15 days until the end of 2023. Although there were minor fluctuations, such as in Q4 2021 (14.84 days), the company managed to maintain a more stable and lower figure compared to the pre-pandemic period.

Overall, the company was able to adapt well in the pandemic era, maintaining a shorter and stable Collection Period in the range of 14-15 days, lower than the pre-pandemic period which decreased from 38 days to 16 days. This shows that the company is still able to maintain efficiency in collections despite facing challenges in the pandemic crisis.

#### 4. 1. 4 Solvency Ratio

The solvency ratio is an indicator used to assess the company's ability to meet its financial obligations. This ratio can be calculated using the ratio of debt to equity and

the ratio of long-term debt to capitalization (Amalia et al., 2020). A company can be considered unable to pay its obligations if the amount of its debt exceeds its assets. Insurance premiums are payments from the insured party to the insurer in exchange for risk transfer services. In life insurance, the premium is a fee paid for the protection provided by the guarantor (insurance company) to the insured (customer) by providing a sum of money (benefit) against risks such as death or old age.

In insurance companies, the solvency ratio is calculated through Risk-Based Capital and Net Premium Growth. Risk-Based Capital is the main tool to evaluate the solvency of insurance companies, ensuring that they have sufficient capital to deal with risks and liabilities that may arise, thus protecting policyholders. A higher Risk-Based Capital ratio indicates better financial stability. Net Premium Growth, which shows the increase in premiums received after deducting reinsurance costs, reflects the company's ability to attract new business and maintain revenue growth. According to research by Tarsono et al. (2019), Risk-Based Capital and Net Premium Growth are significantly correlated.

#### **4. 1. 4. 1 Risk-Based Capital**

In the context of finance, capital is usually considered to be a company's long-term funding that protects it from unforeseen losses. Losses result from the financial firm's exposure to a variety of risks in its commercial operation (GAO, 1998). Risk-based capital requirements are designed to protect financial firms, their investors, clients, and the broader economy by ensuring that each institution has enough capital to sustain operating losses. RBC regulations in the insurance industry differ by country, but they often mandate that insurers maintain capital in line with the risks they take on. This strategy is in opposition to fixed-capital rules, which require consistent capital reserves irrespective of the risk profile of a business (Sherris, 2014).

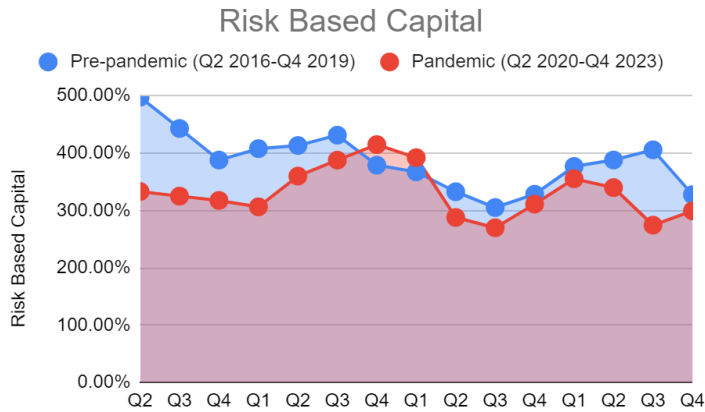


Figure 4. 9 Analysis of Risk Based Capital for Allianz Life Insurance

Source : Author Analysis, 2024

Figure 4.9 illustrates the comparison of Risk Based Capital (RBC) ratios pre-pandemic and the pandemic, highlighting the financial impact of COVID-19 on the Allianz. The pre-pandemic period (Q2 2016 to Q4 2019), where RBC ratios were relatively higher, starting above 400% and gradually decreasing but still maintaining values above 300%. In contrast, shows the pandemic period (Q2 2020 to Q4 2023), where RBC ratios were consistently lower, often hovering around 300%, with noticeable fluctuations. The pandemic had a significant impact on the institution's ability to maintain higher capital levels, potentially due to increased risk exposure or more stringent capital requirements during this time. Toward the end of the pandemic period, the RBC ratios stabilize, although they remain lower than pre-pandemic levels, reflecting the ongoing challenges in maintaining robust capital reserves.

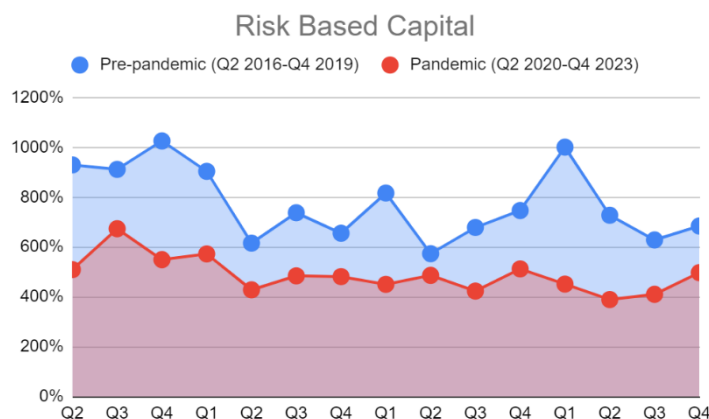


Figure 4. 10 Analysis of Risk Based Capital for Prudential Life Insurance

Source : Author Analysis, 2024

Figure 4.10 compares Risk Based Capital (RBC) ratios in the Prudential Life Insurance pre-pandemic and the pandemic. Pre-pandemic (Q2 2016–Q4 2019), the RBC ratios were significantly higher, often exceeding 600%, showing strong capital buffers. In the pandemic period (Q2 2020–Q4 2023), the ratios dropped, stabilizing around 400-500%, indicating tighter capital reserves. This suggests that the pandemic increased risk exposures or required insurers to hold less capital, reflecting financial strain within the industry. However, both periods show fluctuations, with pre-pandemic levels consistently outperforming pandemic-period ratios.

A good Risk-Based Capital (RBC) ratio for insurance companies in Indonesia is at least 120%. This figure is set by the Otoritas Jasa Keuangan (OJK) as the minimum limit that every insurance company must meet to ensure their financial health. Prudential and Allianz have scores above 120%, thus reaching the minimum limit.

#### 4. 1. 4. 2 Net Premium Growth

Net premium growth is the change in the total amount of net premiums written by an insurance business over a period. Positive growth indicates improved consumer confidence, favorable market conditions, and effective risk management, while negative growth may be due to economic downturns, increased competition, or unfavorable regulatory changes.

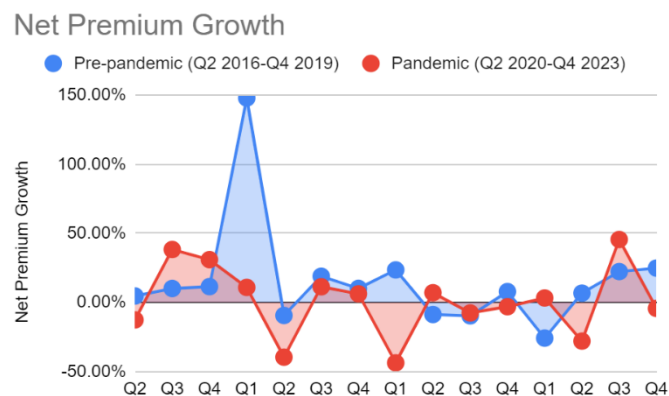


Figure 4. 11 Analysis of Net Premium Growth for Allianz

Source : Author Analysis, 2024

Based on Figure 4. 11, net premium growth of Allianz pre-pandemic experienced varied net premium growth, with significant highs such as 147.91% in Q1 2017 and 23.51% in Q1 2018, along with some declines like -25.89% in Q3 2018, reflecting normal business volatility. In the pandemic era, the company's growth became more erratic, with sharp increases such as 42.45% in

Q1 2020 and 45.53% in Q3 2023, but also substantial declines, notably -43.78% in Q1 2022. This reflects the disruptive impact of the pandemic on Allianz's business, marked by both recovery periods and ongoing challenges.

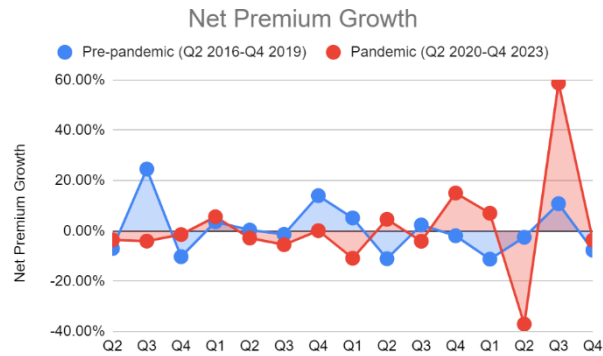


Figure 4. 12 Analysis of Net Premium Growth for Prudential Life Insurance

Source : Author Analysis, 2024

Figure 4.12 shows Prudential's net premium growth from 2016 to 2023, marked by significant fluctuations. In 2016 and 2017, growth was highly inconsistent, with notable gains like 24.58% in Q3 2016, followed by sharp declines. From 2018 to 2019, the company faced predominantly negative growth, including -11.07% in Q3 2018 and -7.71% in Q4 2019. In 2020 was particularly challenging, starting with a -3.60% decline in Q1, and remaining negative. In 2021, Prudential briefly recovered with 5.60% growth in Q1, but the decline returned in 2022, with -10.88% in Q1. owever, a substantial increase in premium sales during Q3 2023 led to a remarkable rebound, pushing net premium growth up to 58.78%, reflecting a strong recovery driven by higher sales from 3 trillion rupiah to 4 trillion rupiah.

#### 4. 1. 5 Liquidity Ratio

According to Brigham and Ehrhardt (2014), the Liquidity Ratio shows the relationship between current assets and current liabilities of the company in managing maturing debt. Gitman and Zutter (2015) state that liquidity is measured by the company's ability to meet short-term obligations. Kasmir (2016) adds, this ratio reflects the company's ability to pay off maturing obligations. This ratio is important to assess the company's ability to pay debts on time. Some common liquidity ratios include cash ratio, quick ratio, current ratio, and working capital ratio, with this research focusing on current ratio and cash ratio.

#### 4. 1. 5. 1 Cash Ratio

According to Coulon (2020), cash ratio is a metric used to measure a company's ability to pay off long-term debt using only cash, without having to sell other assets. It is also used to assess whether the company has enough cash and what its cash management strategy is.

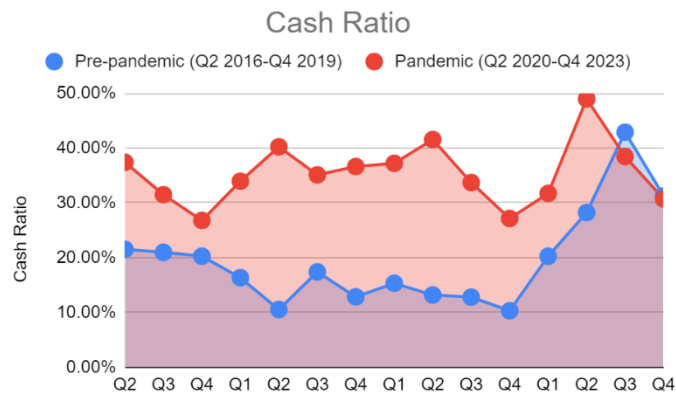
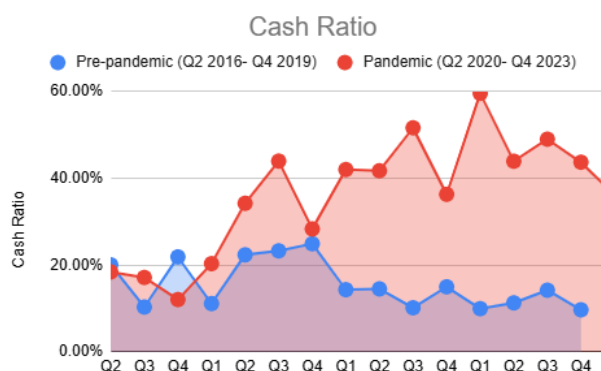


Figure 4 .13 Analysis of Cash Ratio in Allianz Life Insurance

Source : Author Analysis, 2024

The chart above compares the Cash Ratio between the in the pre-pandemic era (Q2 2016-Q4 2019) and in the pandemic period (Q2 2020-Q4 2023). In the pre-pandemic era, the Cash Ratio ranged from 10% to 25%, with fluctuations generally below 30% and a drop to around 10% in some quarters. In the pandemic era, the Cash Ratio increased to between 25% and 50%, with a significant spike reaching 45% to 50% in Q3 2022, being the highest peak in this period. However, after this peak, there was a decline in Q4 2023 to close to 30%. Overall, the data shows that Cash Ratio in the pandemic era tends to be higher compared to previous periods, with a clear peak in Q3 2022.





#### Figure 4 .14 Analysis of Cash Ratio in Prudential Life Insurance

Source : Author Analysis, 2024

Based on the Figure the pre-pandemic period, from 2016 to Q4 2019, the cash ratio showed considerable fluctuations. For example, in 2016, the ratio started at 20.02% in Q2 but dropped to 10.28% in Q3 before rebounding to 21.85% by Q4. Between 2017 and 2019, the cash ratio varied, peaking at 24.87% in Q4 2017, but saw a general decline, particularly in 2019, where it ended the year at a low of 9.63%. This suggests a decrease in liquidity, indicating that Prudential was maintaining lower cash reserves towards the end of this period.

In contrast, the pandemic era, starting in 2020, had an immediate impact. In Q1 2020, the cash ratio stood at 20.47%, but it dropped steadily throughout the year, ending at 12.01% in Q4, reflecting the initial financial disruption caused by the pandemic. However, Prudential's cash ratio began to recover significantly in 2021, with a steady rise that continued into 2022. By Q4 2021, the cash ratio reached 43.95%, and it peaked at 51.62% in Q2 2022. The upward trend continued into 2023, with the ratio reaching a high of 59.57% in Q1. This suggests that Prudential adjusted its liquidity strategy in response to the uncertainties of the pandemic, amassing more cash reserves to manage the financial challenges.

#### **4. 1. 5. 2 Current Ratio**

The Current Ratio measures a company's ability to pay short-term liabilities or debts that are due at the time of collection (Kasmir, 2016). A higher Current Ratio indicates a stronger ability to promptly meet obligations. This ratio compares all current assets against all current liabilities. A very low Current Ratio suggests that the company may not have enough capital to cover its debts.

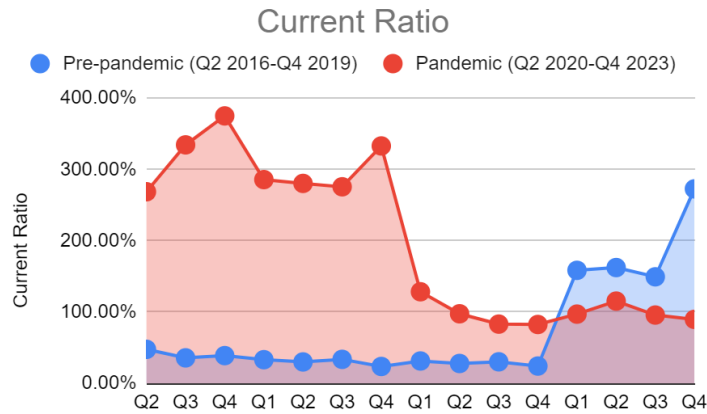


Figure 4. 14 Analysis of Current Ratio in Allianz

Source : Author Analysis, 2024

Figure 4.14 compares Allianz's current ratio pre-pandemic (Q2 2016 - Q4 2019) and in the pandemic era (Q2 2020 - Q4 2023). Pre-pandemic, the current ratio remained relatively stable, fluctuating around 100%, indicating balanced liquidity. However, in the pandemic era, the ratio spiked significantly, peaking at around 300% in the early quarters. This suggests that Allianz accumulated more short-term assets relative to liabilities, likely due to conservative cash management during the uncertainty of the pandemic. Post-pandemic, the ratio gradually normalized but remained slightly elevated compared to pre-pandemic levels, reflecting a cautious approach to liquidity.

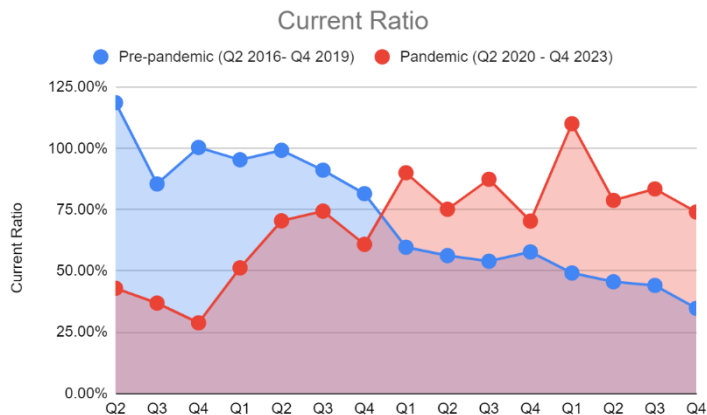


Figure 4. 15 Analysis of Current Ratio in Prudential Life Insurance

Source : Author Analysis, 2024

The Figure 4. 15 shows Prudential's current ratio in the pre-pandemic and pandemic. Pre-pandemic (Q2 2016 - Q4 2019), the current ratio was relatively

stable, often above 75%, indicating strong liquidity and the company's ability to cover short-term liabilities. However, in the pandemic era (Q2 2020 - Q4 2023), the ratio fluctuated more significantly, dropping below 75% in many quarters. This suggests Prudential faced challenges in maintaining the same level of liquidity, reflecting the financial stress and uncertainties brought on by the pandemic. The decline toward the end indicates a more strained short-term financial position compared to pre-pandemic stability

## 4.2 Normality Test

A normality test is a statistical procedure used to determine whether a data set follows a normal distribution, which is a bell-shaped curve where most observations cluster around the mean. The assumption of normality is important in many statistical methods, such as t-tests.

Table 4. 1 Normality Test in Allianz

Normality Test Allianz				
Saphiro-Wilk				
ROA	PRE-PANDEMIC	0.016	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.035	Not normally Distribution	
ROE	PRE-PANDEMIC	0.029	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.078	Normal Distribution	
CURRENT RATIO	PRE-PANDEMIC	<0.001	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.006	Not normally Distribution	
CASH RATIO	PRE-PANDEMIC	0.027	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.55	Normal Distribution	
TOTAL ASSET TURNOVER	PRE-PANDEMIC	0.387	Normal Distribution	Paired T-test
	PANDEMIC	0.307	Normal Distribution	
COLLECTION PERIOD	PRE-PANDEMIC	0.004	Not normally Distribution	Wilcoxon Signed Rank Test

	PANDEMIC	0.194	Normal Distribution	
RISK BASED CAPITAL (RBC)	PRE-PANDEMIC	0.806	Normal Distribution	Paired T-test
	PANDEMIC	0.712	Normal Distribution	
NET PREMIUM GROWTH	PRE-PANDEMIC	<0.001	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.754	Normal Distribution	

Source: Author Analysis, 2024

Based on the Shapiro-Wilk test statistic and p-values, it can be concluded that most of the financial ratios for Allianz are not normally distributed, especially pre-pandemic. This means that their data points are not evenly distributed around the mean, but rather skewed to one side or the other. For example, ROA, ROE, Current Ratio, and Collection Period all show significant deviations from normality pre-pandemic. The non-normality of many financial ratios has implications for statistical analysis. Some statistical tests, such as the t-test, assume normality of the data. When dealing with non-normal data, alternative tests, like the Wilcoxon Signed Rank Test, may be more appropriate.

Table 4. 2 Normality Test in Prudential Life Insurance

Normality Test Prudential				
Saphiro-Wilk				
ROA	PRE-PANDEMIC	<0.001	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	<0.001	Not normally Distribution	
ROE	PRE-PANDEMIC	0.998	Normal Distribution	Paired T-test
	PANDEMIC	0.163	Normal Distribution	
CURRENT RATIO	PRE-PANDEMIC	0.257	Normal Distribution	Paired T-test
	PANDEMIC	0.764	Normal Distribution	
CASH RATIO	PRE-PANDEMIC	0.015	Not normally Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.421	Normal Distribution	

TOTAL ASSET TURNOVER	PRE- PANDEMIC	0.388	Normal Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.047	Not normally Distribution	
COLLECTION PERIOD	PRE- PANDEMIC	0.739	Normal Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	<0.001	Not normally Distribution	
RISK BASED CAPITAL (RBC)	PRE- PANDEMIC	0.216	Normal Distribution	Paired T-test
	PANDEMIC	0.228	Normal Distribution	
NET PREMIUM GROWTH	PRE- PANDEMIC	0.178	Normal Distribution	Wilcoxon Signed Rank Test
	PANDEMIC	0.002	Not normally Distribution	

The normality test results for Prudential show that several financial ratios are not normally distributed, particularly pre-pandemic. This means their data points are not evenly spread out around the mean, but instead skewed to one side or the other. However, some ratios, like ROE, Current Ratio, and Risk Based Capital (RBC), exhibit normal distribution both pre-pandemic and pandemic era.

### 4.3 Hypothesis Testing

#### 4.3.1 Hypothesis Testing Prudential Life Insurance

Table 4. 3 Result of Wilcoxon Signes Rank Test in Prudential Life Insurance

WILCOXON SIGNED RANK TEST PRUDENTIAL			
FORMULA	RESULT	CONCLUSION	
ROA	0.021	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre- pandemic era than pandemic era.
CASH RATIO	0.002	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre- pandemic era than pandemic era.

TOTAL ASSET TURNOVER	0.571	H0 Rejected, H1 Accepted (p-value > 0.05)	H7: There is a difference in Total Assets Turnover Ratio in the Activity Ratio between the pre-pandemic and pandemic era.
NET PREMIUM GROWTH	0.91	H0 Rejected, H1 Accepted (p-value > 0.05)	H6: There is a difference in Net Premium Growth in the Solvency Ratio between the pre-pandemic and pandemic era.
COLLECTION PERIOD	0.004	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre- pandemic era than pandemic era.

Source : Author Analysis using SPSS. 2024

Table 4. 4 Result of Paired T-Test Prudential Life Insurance

PAIRED T-TEST PRUDENTIAL			
FORMULA	RESULT	CONCLUSION	
ROE	0.16	H0 Rejected, H1 Accepted (p-value > 0.05)	H1: There is a difference in Return on Equity in the Profitability Ratio between the pre-pandemic and pandemic era.
CURRENT RATIO	0.011	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.
RISK BASED CAPITAL (RBC)	0.002	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.

Following a statistical analysis using both the paired t-test and the Wilcoxon rank test, the result found that only 3 out of the 8 proposed hypotheses were supported by the Prudential Life Insurance data. The hypotheses accepted are as follows:

1. **H6:** There is a statistically significant difference in Net Premium Growth in the Solvency Ratio between the pre-pandemic and pandemic eras. This suggests that the pandemic has had a notable impact on how companies manage and grow their net premiums.

2. **H7:** There is a significant difference in the Total Assets Turnover Ratio in the Activity Ratio when comparing the pre-pandemic and pandemic periods. This finding indicates a shift in how effectively companies are utilizing their assets to generate sales in the pandemic era.
3. **H1:** There is a significant difference in Return on Equity in the Profitability Ratio between the pre-pandemic and pandemic eras. This result highlights changes in profitability measures, suggesting that the pandemic may have affected overall returns for shareholders.

#### 4.3.2 Hypothesis Testing Allianz Life Insurance

Table 4. 5 Result of Paired T-Test Allianz Life Insurance

PAIRED T-TEST ALLIANZ			
FORMULA	RESULT	CONCLUSION	
TOTAL ASSET TURNOVER	0.316	H0 Rejected, H1 Accepted (p-value > 0.05)	H7: There is a difference in Total Assets Turnover Ratio in the Activity Ratio between the pre-pandemic and pandemic era.
RISK BASED CAPITAL	0.002	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.

Table 4. 6 Result of Wilcoxon Signed Rank Allianz

WILCOXON SIGNED RANK ALLIANZ			
FORMULA	RESULT	CONCLUSION	
ROA	0.004	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.
ROE	0.015	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.
CURRENT RATIO	0.013	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.
CASH RATIO	0.001	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.
COLLECTION PERIOD	<0.001	H0 Accepted, H1 Rejected (p-value < 0.05)	H0 accepted : There is no difference of financial performance in the pre-pandemic era than pandemic era.
NET PREMIUM GROWTH	0.268	H0 Rejected, H1 Accepted (p-value > 0.05)	H6: There is a difference in Net Premium Growth in the Solvency Ratio between the pre-pandemic and pandemic era.

Based on the analysis of Allianz, we observed that only 2 out of the 8 proposed hypotheses received empirical support from the data. The hypotheses that were validated are as follows:

1. **H6:** There is a statistically significant difference in Net Premium Growth in the Solvency Ratio between the pre-pandemic and pandemic eras. This finding underscores the impact of the pandemic on Allianz's capacity to generate net premiums, indicating that external market conditions significantly influenced the company's performance during this period.



2. **H7:** There is a statistically significant difference in the Total Assets Turnover Ratio in the Activity Ratio between the pre-pandemic and pandemic eras.

The validation of these hypotheses indicates that Allianz experienced notable changes in key financial metrics in the pandemic era, particularly concerning growth and operational efficiency. Total Assets Turnover Ratio and Net Premium Growth experienced a decline in the pandemic era compared to the pre-pandemic period. Specifically, the Total Assets Turnover Ratio, which measures the efficiency with which a company utilizes its assets to generate revenue, decreased, indicating that Allianz faced challenges in effectively leveraging its assets to drive sales amidst the pandemic's disruptions. Similarly, the Net Premium Growth also showed a downward trend, reflecting a reduced capacity to generate premium income during this challenging period.

## CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The following conclusions are reached based on the analysis of eight financial ratios, assessment of the company's financial healthiness level, and validation of significant differences using the paired t-test statistical method for the pre-pandemic period (2016-2019) and pandemic period (2020-2023).

1. First research objective is to assess and compare the financial performance of Allianz and Prudential Life Insurance in the **pre-pandemic** era, focusing on liquidity, solvency, activity, and profitability ratios.
  - a) Profitability ratio

#### **Prudential's ROE is Better and Stable than Allianz in the Pre-Pandemic Era**

Over the period 2016 to 2019, Prudential showed strong performance with an average Return on Equity (ROE) of 18.26%, peaking at 26.16% in the second quarter of 2017, although it experienced a slight decline in the third quarter of 2019. In contrast, Allianz recorded a much lower average ROE of 5.97%, with performance declining significantly after 2016, reaching a low of 0.41% in the third quarter of 2018. Overall, Prudential was ahead of Allianz in terms of profitability and stability before the pandemic

#### **Prudential's ROE is Better and Stable than Allianz in the Pre-Pandemic Era**

Allianz showed a volatile ROA performance before the pandemic, with some high peaks such as 6.39% in Q4 2016, but also a significant drop to 0.15% in Q3 2018. Despite the instability, Allianz was able to recover in late 2019. In contrast, Prudential displayed a more stable performance with an average ROA of 1.61%, albeit lower than Allianz. Prudential's ROA movement remained consistent without drastic fluctuations, reflecting better risk management and more stable asset management.

b) Activity Ratio

**Allianz Has More Effective Asset Management Performance Than Prudential in the Pre Pandemic Era**

Based on Total Asset Turnover (TAT) data from 2016 to 2019, Allianz showed higher efficiency in the use of assets to generate revenue, with an average TAT of 20.13%. Over the same period, Prudential recorded an average TAT of only 9.73%, reflecting a lower ability to generate sales from its assets. Fluctuations are seen in Prudential's monthly data, with the highest peak of 14.65% in Q1 2017, while Allianz reached a significant peak of 31.96% in Q4 2017.

**Allianz's collection period is better than Prudential in the Pre-Pandemic Era**

Based on collection period data, Allianz shows better performance than Prudential in terms of receivables management efficiency, with an average collection period of 6.02 days, much lower than Prudential which recorded an average of 24.10 days. This figure shows that Allianz is faster in collecting its receivables, which could potentially have a positive impact on the company's cash flow and liquidity. Although Prudential had some good collection periods, especially in early 2016, overall, Allianz demonstrated better performance in managing receivables.

c) Solvency Ratio

**Prudential's Risk-Based Capital performance in the pre-pandemic era is significantly stronger and more stable than Allianz's**

Before the pandemic, Prudential showed a much better Risk-Based Capital (RBC) performance than Allianz. Prudential's average RBC reached 775%, with a peak in the fourth quarter of 2016 at 1025%, although it fluctuated in subsequent years. In contrast, Allianz recorded an average RBC of only 385.88%, with the lowest figure reaching 304.96% in the third quarter of 2018. Prudential's more stable and higher performance reflects its stronger financial position and better risk management than Allianz during the period.

**Prudential's net premium growth before the pandemic is significantly stronger and more stable than Allianz's**

In the pre-pandemic era, Prudential showed much higher and stable net premium growth than Allianz. With an average net premium growth of 775%, Prudential recorded remarkable figures, such as 1025% in the fourth quarter of 2016 and remained consistently high in the following years. On the other hand, Allianz has an average net premium growth of 15.62%, with sharp fluctuations, including negative growth in some quarters, such as -25.89% in Q1 2019. Prudential's consistently high performance indicates a better capacity to attract premiums compared to Allianz, which has experienced volatility in its growth.

d) Liquidity Ratio

**Allianz's cash ratio in the pre-pandemic era is higher overall than Prudential's, though Prudential demonstrated more stable performance**

Allianz showed a higher cash ratio performance than Prudential, with an average of 19.63% compared to Prudential's average of 15.49%. Allianz experienced a significant increase in late 2019, peaking at 42.92% in Q3 2019, while Prudential showed more stable fluctuations, with a high of 24.87% in Q4 2017. While Prudential has a more stable cash ratio year-on-year, Allianz overall excels in terms of cash availability, especially in the final period leading up to the pandemic.

**Allianz's current ratio in the pre-pandemic era is higher than Prudential.**

In the pre-pandemic era, Allianz and Prudential showed different current ratio performances. Allianz had an average current ratio of 73.29%, with a significant increase in 2019, reaching 272.65% in the fourth quarter. In contrast, Prudential has a slightly lower average current ratio of 71.55%, with a fairly steady downward trend from 118.67% in Q2 2016 to 34.74% in Q4 2019. Although Prudential started with a higher current ratio, Allianz showed a sharp improvement in the final years in the pre-pandemic era, which gave it an edge in terms of ability to meet short-term obligations.

2. Second research objective is to assess and compare the financial performance of Allianz and Prudential Life Insurance in the **pandemic** era, focusing on liquidity, solvency, activity, and profitability ratios.

- a) Profitability ratio

### **Prudential's ROE is Better and Stable than Allianz in the Pandemic era**

Prudential showed a much stronger Return on Equity (ROE) performance with an average of 13.24%, far ahead of Allianz which only recorded an average of 2.65%. Prudential consistently maintained ROE above 10% despite some fluctuations, while Allianz experienced low and volatile ROE, with a peak of only 6.18% in Q4 2022. Prudential managed to demonstrate better return on equity, compared to Allianz which experienced significant challenges during the period.

### **Prudential's ROA is Better and Stable than Allianz in the Pandemic era.**

In the pandemic era, Prudential showed better Return on Assets (ROA) performance with an average of 1.10%, compared to Allianz which only reached an average of 0.64%. Prudential was able to maintain ROA above 1% in some periods, although it experienced a slight decline in 2023. In contrast, Allianz experienced sharper fluctuations and trended lower, with a peak of only 1.52% in Q4 2022. Overall, Prudential has been better at managing its assets to generate profits in the pandemic era than Allianz.

- b) Activity Ratio

### **Allianz Has More Effective Asset Management Performance Than Prudential in the Pandemic era**

In the pandemic era, Allianz showed superior performance in Total Asset Turnover with an average of 17.08%, far ahead of Prudential which averaged only 9.67%. Allianz was able to reach a peak of 37.51% at the end of 2020 and maintained a relatively high figure at the beginning of the pandemic, although it experienced a decline in 2023. On the other hand, Prudential recorded a more stable yet lower Total Asset Turnover, with no sharp fluctuations, but also did not achieve the same strong performance as Allianz.

Overall, Allianz was more efficient in managing assets to generate income in the pandemic era.

### **Prudential's collection period is better than Allianz's in the Pandemic era**

Prudential performs better in terms of collection period, with an average of 15.67 days, compared to Allianz which has an average of 29.33 days. Prudential's lower collection period indicates better efficiency in managing receivables, which means they can collect payments from customers more quickly. This reflects healthier cash flow and more effective receivables management. Meanwhile, Allianz, despite having several quarters with decreased collection periods, still showed a higher average, indicating challenges in collecting receivables in the pandemic era. As such, Prudential has the upper hand in terms of receivables collection efficiency.

#### c) Solvency Ratio

### **Prudential's Risk-Based Capital performance in the pandemic era is significantly stronger and more stable than Allianz's**

In the pandemic era, Prudential performed much better than Allianz in terms of Risk-Based Capital (RBC). With an average RBC of 488%, Prudential has consistently maintained a high ratio, especially in the 2nd quarter of 2020, which recorded 509%. On the other hand, Allianz has an average RBC of 331.42%, with a noticeable decline in some quarters, such as Q2 of 2022 which stood at 287.64%. This shows that Prudential is better able to manage risk and maintain the necessary capital during this period of uncertainty, making it the better choice in terms of financial health in the pandemic era.

### **Allianz's net premium growth in the pandemic era is significantly stronger and more stable than Allianz's**

In the pandemic era, Allianz and Prudential faced significant challenges in net premium growth, but Allianz overall performed better with an average growth of 3.52% compared to Prudential's 1.19%. Although Allianz experienced a sharp decline in the 2nd quarter of 2021 with -39.66%, the company managed to recover with positive growth in the following quarters, including a 45.53% surge in the 3rd quarter of 2023.

In contrast, Prudential faced greater fluctuations and tended to have lower growth, even recording negative growth in some quarters. As such, Allianz showed resilience and the ability to recover from the negative impact of the pandemic, making it the better choice in terms of net premium growth over the period.

#### d) Liquidity Ratio

#### **Allianz's cash ratio in the pre-pandemic era is higher overall than Prudential's, though Prudential demonstrated more stable performance**

In the pandemic era, Allianz performed slightly better than Prudential in terms of cash ratio, with an average of 35.43% versus 36.13% for Prudential. Allianz recorded higher fluctuations, with the peak cash ratio reaching 48.99% in quarter 2 of 2023, reflecting good liquidity and the ability to meet short-term obligations. While Prudential experienced significant increases in certain quarters, notably reaching 59.57% in quarter 1 of 2023, Prudential's cash ratio growth was inconsistent and lower at the start of the pandemic. As such, while Prudential has better highs, Allianz has a more stable performance overall, making it a better choice in terms of liquidity management in the pandemic era.

#### **Allianz's current ratio in the pandemic era is higher than Prudential.**

In the pandemic era, Allianz showed a much higher current ratio than Prudential, averaging 196.12% compared to 69.01%. Allianz had a very strong current ratio, especially in the second and third quarters of 2020, where the ratio reached 268.63% and 334.36%, indicating excellent liquidity and the ability to meet short-term obligations. While Prudential also showed a significant upward trend in its current ratio, especially in 2022 and 2023, the ratio was still far below the figure achieved by Allianz. Therefore, Allianz has performed better in terms of liquidity in the pandemic era period, making it a safer choice in terms of the ability to manage short-term liabilities.

3. To determine if there are significant differences in the financial performance ratios of Allianz in the pre-pandemic and pandemic era, specifically regarding liquidity, solvency, activity, and profitability.

- Based on the analysis conducted using the paired t-test and Wilcoxon rank test statistical methods, it can be concluded that the impact of the pandemic on the financial performance of Allianz varies. Allianz only had two hypotheses accepted, namely significant differences in net premium growth and total asset turnover ratio. This suggests that external market conditions in the pandemic era have affected Allianz's ability to generate net premiums and its asset utilization efficiency.

4. To determine if there are significant differences in the financial performance ratios of Prudential Life Insurance during the pre-pandemic and pandemic era, specifically regarding liquidity, solvency, activity, and profitability.

- The statistical analysis using both the paired t-test and the Wilcoxon signed rank test revealed that only three out of the eight hypotheses were supported by Prudential Life Insurance data. Specifically, significant differences were observed in the Net Premium Growth within the Solvency Ratio, Total Assets Turnover within the Activity Ratio, and Return on Equity within the Profitability Ratio between the pre-pandemic and pandemic periods. These findings suggest that the pandemic significantly impacted Prudential's financial performance in terms of premium growth, asset utilization, and shareholder returns, highlighting shifts in key financial metrics in response to economic challenges.

## **5. 2 Research Limitation**

This study focuses only on eight descriptive financial ratios. The analysis in this study is based entirely on secondary data provided by the companies in their published annual reports. Therefore, the authors did not link the financial performance analysis to the company's marketing activities, product portfolio and pricing strategies, and other internal and external market dynamics not mentioned in the official reports. Given the small sample size (performance of two companies from 2016 to 2023) and the number of insurance companies involved in this study, it is recommended that a larger study be conducted with a longer time period and a wider range of companies to validate the consistency of the results.



### **5.3 Recommendation**

Based on the analysis of the financial performance of Allianz and Prudential Life Insurance in the pre-pandemic and pandemic periods, several recommendations can be made to improve the performance and sustainability of the companies in the future. First, Prudential should continue to improve efficiency in asset management and receivables collection to maintain profitability stability. This can be done by implementing better risk management strategies and a more efficient collection system to accelerate cash flow. In addition, Prudential can capitalize on its strength in profitability ratios to attract more premiums, given its better traction in ROE and ROA performance in the pre-pandemic era.

On the other hand, Allianz, which showed better performance in asset management and liquidity in the pandemic era, should focus on a more stable and sustainable premium recovery. The company may consider product diversification and more innovative marketing strategies to boost premium growth, especially in the face of changing demand in the market. Allianz's success in liquidity ratio and asset management can be used as a reference to formulate further measures to deal with future uncertainties.

Overall, both companies should consider continuously monitoring and evaluating their financial performance using ratio analysis on a regular basis. This allows them to adjust their strategies according to dynamic market conditions. Collaboration and sharing of best practices between the two companies can also be a strategic move to strengthen their position in the insurance industry. By doing so, they can ensure that they remain competitive and can meet the needs of customers in the future.

## REFERENCES

- Akritas, M. G., Antoniou, E. S., & Kuha, J. (2006). Nonparametric analysis of factorial designs with random missingness: Bivariate data. *Journal of the American Statistical Association*, 101(476), 1513-1526.
- Amalia, S., Fadjriah, N. E., & Nugraha, N. M. (2020). The Influence of the Financial Ratio to the Prevention of Bankruptcy in Cigarette Manufacturing Companies Sub Sector. *Journal of Solid State Science and Technology*, (63)3.
- Angelia, N., & Toni, N. (2020). The Analysis of Factors Affecting Dividend Policy in Food and Beverage Sector Manufacturing Companies Listed in Indonesia Stock Exchange in 2015-2017. *Budapest International Research and Critics Institute Journal (BIRCI-Journal)*, 3, 902-910.
- Asosiasi Asuransi Jiwa Indonesia. (2021). "Semakin Meningkatkan, Minat Masyarakat terhadap Asuransi Kesehatan Paska Pandemi." Retrieved from <https://aaji.or.id/NewsEvent/semakin-meningkat,-minat-masyarakat-terhadap-asuransi-kesehatan-paska-pandemi>.
- Asosiasi Asuransi Jiwa Indonesia. (2022). *Roadmap Industri Asuransi Jiwa Indonesia*. Jakarta: AAJI.
- Atidhira, A. T., & Yustina, A. I. (n.d.). The influence of return on asset, debt to equity ratio, earnings per share, and company size on share return in property and real estate companies. *Journal of Applied Accounting and Finance*, 1(2), 128-146. ISSN: 2580-1791 (Print) / 2615-8051
- Bank Indonesia. (2020). Perkembangan Terkini Perekonomian dan Langkah BI dalam Hadapi COVID-19 (28 Mei 2020). Retrieved May 29, 2020, from <https://www.bi.go.id/id/ruang-media/info-terbaru/Pages/Perkembangan-Terkini-Perekonomian-dan-Langkah-BI-dalam-Hadapi-COVID-19-28-Mei-2020.aspx>.
- BPS RI. (2020). *Analisis Hasil Survei Dampak COVID - 19 Terhadap Pelaku Usaha*. Subdirektorat Indikator Statistik. Jakarta: BPS RI.
- Brigham, E. F., & Ehrhardt, M. C. (2013). *Financial Management: Theory & Practice*. South-Western College Pub.
- E.F. Brigham, J.F. Houston. (2018). *Fundamentals of Financial Management* (15th ed.). Cengage Learning.
- Daryanto, W. M., Lazuardi, D., & Rachman, G. P. (2020). Pacific Century Cyberwork (PCCW) Media Group Revenue Comparison Before and After VIU (Streaming Media), 2012-2018 Period. *International Journal of Business, Economics and Law*, 21(1), 11-17.
- Daryanto, W. M., Leonard, H., & Wijaya, H. (2020). Analysis of Indonesia 2014 Cigarette Packaging Regulation Impact on PT Hanjaya Mandala Sampoerna's Financial Performance. *International Journal of Business, Economics and Law*, 22(3), 9-18.
- Daryanto, W. M., Maharani, A. P., & Wiradjaja, N. (2021). Profitability ratio analysis before and during COVID-19: case study in PT Japfa Comfeed Indonesia. *South East Asia Journal of Contemporary Business, Economics and Law*, 24(4), 1-8.
- Daryanto, W. M., Rizki, M. I., & Mahardhika. (2021). Financial performance analysis of construction company before and during covid-19 pandemic in Indonesia. *International Journal of Business, Economics and Law*, 24(4), 99-108.
- Daryanto, W.M. and Nurfadilah, D. (2018). Financial Performance Analysis Before and After the Decline in Oil Production: Case Study in Indonesian Oil and Gas Industry. INA: International Journal of Engineering and Technology.
- Daryanto, W. M., Wijaya, J., & Renatauli, R. (2020). Financial performance analysis of PT. Ace Hardware Indonesia, Tbk. before and after the launch of ruparupa.com. *International Journal of Business, Economics and Law*, 23(1), 2289-1552.

- Djaelani, F., Keban, J. T., Husnan, S., & Hanafi, M. M. (2011). Pertumbuhan industri asuransi jiwa di Indonesia: Suatu kajian dari sisi penawaran. *Kawistara*, 1(3), 257-273.
- Elsawati, Arcella, Widuri, Trisnia, & Sutapa, H. (2023). Analisa kinerja keuangan PT. Gudang Garam Tbk menurut rasio likuiditas, rasio profitabilitas, rasio solvabilitas dan rasio aktivitas tahun 2017-2021. *Triwikrama: Jurnal Ilmu Sosial*, 1(5), 140–150.
- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: a guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, 10(2), 486-489.
- Happ, M., Bathke, A. C., & Brunner, E. (2019). Optimal sample size planning for the Wilcoxon-Mann-Whitney test. *Statistics in Medicine*, 38(3), 363-375.
- Harini, O., & Daryanto, W. M. (2022). *Analysis Financial Performance of PT. Unilever Indonesia Tbk Before and After Economy Crisis 2017–2022*. In Proceedings of the CEO 6 Congress.
- Harris, T., & Hardin, J. W. (2013). Exact Wilcoxon Signed-Rank and Wilcoxon Mann–Whitney Rank-Sum Tests. *The Stata Journal*, 13(2), 337-343. <https://doi.org/10.1177/1536867X1301300208>
- Hartwig, R., Niehaus, G., & Qiu, J. (2020). Insurance for economic losses caused by pandemics. *Geneva Risk and Insurance Review*, 45(2), 134–170.
- Hery. (2018). *Analisis Laporan Keuangan* (Adipramono, Ed.; 3rd ed.). PT Grasindo.
- Johnson, W. B. (1979). The Cross-Sectional Stability of Financial Ratio Patterns. *Journal of Financial and Quantitative Analysis*, 14(5), 1035–1048. doi:10.2307/2330305
- Kasmir. (2019). *Analisis Laporan Keuangan*. Rajawali Pers.
- Kalbfleisch, J. D., & Prentice, R. L. (2002). *The statistical analysis of failure time data*. Hoboken: Wiley.
- Khalilzadeh, J., & Tasci, A. D. A. (2017). Large sample size, significance level, and the effect size: Solutions to perils of using big data for academic research. *Tourism Management*, 62, 89-96. <https://doi.org/10.1016/j.tourman.2017.05.001>
- L. Fraser, A. Ormiston. (2016). *Understanding Financial Statements* (11th ed.). Pearson.
- Meyer, K. E., van Witteloostuijn, A., & Beugelsdijk, S. (2017). What’s in a p? Reassessing best practices for conducting and reporting hypothesis-testing research. *Journal of International Business Studies*, 48, 535–551. <https://doi.org/10.1057/s41267-017-0068-9>
- M. Miswanto, L. Kusumasari, R.W. Anggoro. (2020). Analysis of Financial Performance With Conventional Financial Ratio and Emoticon. *Journal of Critical Reviews*, 7(16), 158-165.
- Nabilla Rashqia Tsany, Shinta Budi Astuti, & Mira Munira. (2024). ANALYSIS OF FINANCIAL PERFORMANCE BEFORE AND DURING THE COVID-19: A STUDY OF SELECTED COSMETICS AND HOUSEHOLD COMPANIES . *INQUISITIVE : International Journal of Economic*, 4(2), 111-122. <https://doi.org/10.35814/inquisitive.v4i2.6226>
- Nanjundeswaraswamy, T. S., & Divakar, S. (2021). Determination of sample size and sampling methods in applied research. *Proceedings on Engineering Sciences*, 3(1), 25-32. <https://doi.org/10.24874/PES03.01.003>
- Newbold, P., Carlson, W. L., & Thorne, B. (2013). *Statistics for Business and Economics* (8th ed.). Pearson.
- Prahasti, V. (2021). *An International Multidisciplinary Research e-Journal*, 7(4). Ahmad Dahlan University, Yogyakarta.
- Rachmatullah, H., Haliah, & Kusumawati. (2023). Analysis of Financial Performance Before and After the Pandemic Covid-19. *International Journal*, 38(1), 80-83.
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors, and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21-33.

- Sianipar, Ruth Tridianty. (2015). The Effect of Liquidity, Solvency, Activities and Profitability on Company Value at PT Astra Internasional, Tbk, which is Listed on the Indonesia Stock Exchange. *Journal of Management and Finance*, STIE Sultan Agung, Vol 3, No 2.
- Seftarita, C., Ferayanti, Fitriyani, & Diana, A. (2022). Do pandemic COVID-19 and business cycle influence the Indonesia composite index? *E3S Web of Conferences*, 340, 05004. <https://doi.org/10.1051/e3sconf/202234005004>
- S. Devi, N.M.S. Warasniasih, P.R. Masdiantini, L.S. Musmini. The Impact of COVID-19 Pandemic on the Financial Performance of Firms on the Indonesia Stock Exchange.
- Sianipar, Ruth Tridianty. (2015). The Effect of Liquidity, Solvency, Activities, and Profitability on Company Value at PT Astra Internasional, Tbk, Listed on the Indonesia Stock Exchange. *Journal of Management and Finance*, STIE Sultan Agung, Vol 3, No 2.
- Sitepu, C., Iftitah, A., Pribadi, I., & Dewi, S. (2022). Analisis dampak pembangunan infrastruktur bendungan terhadap perekonomian-kesejahteraan pada masa pandemi Covid-19. *Jurnal Manajemen Perbendaharaan*, 3(2), 170-185. <https://doi.org/10.33105/jmp.v3i2.419>
- Stejskal, T., Dovica, M., Ďuriš, S., Palenčár, R., & Palenčár, J. (2018). Valuation of the normality of distribution in metrology using the fractal principle. *Journal of Physics: Conference Series*, 1065(21), 212008. <https://doi.org/10.1088/1742-6596/1065/21/212008>
- Urbanowicz, R. J., Ramanan, N., & Moore, J. H. (2015). Continuous Endpoint Data Mining with ExSTraCS: A Supervised Learning Classifier System. In *Proceedings of the Companion Publication of the 2015 Annual Conference on Genetic and Evolutionary Computation* (pp. 1029-1036). GECCO Companion '15.
- Wang, Y., Tang, Y., & Ye, Z.-S. (2022). Paired or partially paired two-sample tests with unordered samples. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 84(4), 1057-1585. <https://doi.org/10.1111/rssb.12498>
- Wilcox, R. (2017). *Modern statistics for the social and behavioral sciences: A practical introduction*. Chapman and Hall/CRC.
- Wu, S., Yang, W., Liu, H., & Gao, M. (2024). Asymptotic normality of error distribution estimator in autoregressive models. *Communications in Statistics - Simulation and Computation*, 53(5), 2389-2405.
- Quan, H. (2021). Trial monitoring via a futility criterion for interim results on a count data endpoint and a continuous endpoint. *Contemporary Clinical Trials*, 103, 106316. <https://doi.org/10.1016/j.cct.2021.106316>.
- Xu, J., & Harrar, S. (2012). Accurate mean comparisons for paired samples with missing data: An application to a smoking-cessation trial. *Biometrical Journal*, 54(3), 281-295.
- Yuan, K.-H. (2005). The effect of skewness and kurtosis on mean and covariance structure analysis: The univariate case and its multivariate implication. *Sociological Methods & Research*, 34(2), 240-258. <https://doi.org/10.1177/0049124105280200>