

Analysis of Life Insurance Company Financial Performance: Early Warning System Ratios and Risk-Based Capital Before and After the Covid-19 Pandemic in Indonesia

Ayunda Annisa Soleha ^{a,1}, Made Irma Lestari ^{*,b,2}

^{a,b} Accounting Department BINUS Online, Bina Nusantara University, Jakarta, Indonesia

¹ ayunda.soleha@binus.ac.id, ² made.lestari@binus.edu*

Abstract

This study aims to analyze the financial performance of life insurance companies through the early warning system ratios and risk-based capital before (2019) and after the pandemic (2023). Utilizing a quantitative research approach with purposive sampling, a total of 44 samples were tested in this study as non parametric data. The data analysis method employed is descriptive analysis using the non-parametric wilcoxon signed rank test, conducted with IBM SPSS Statistics software. The results indicate that there were no significant changes in the combined ratio, retention ratio, liquidity ratio, technical reserve ratio, and risk-based capital ratio, although some positive trends were observed. Meanwhile, the investment adequacy ratio experienced a significant decline but remained within a healthy category. Overall, these findings reflect the life insurance industry's ability to stabilize its financial performance through strategic adaptation following the Covid-19 pandemic.

Keywords: Early Warning System, Risk-Based Capital, Financial Performance, Life Insurance

1. Introduction

The Covid-19 pandemic, which first emerged in Wuhan, China, in December 2019, rapidly spread and was ultimately declared as a global pandemic by the World Health Organization (WHO) on March 11, 2020. In Indonesia, the first Covid-19 case was identified on March 2, 2020, and since then, the pandemic has had widespread impacts, not only on the health sector but also on the economy and various industries, including life insurance. Measures taken to limit the spread of the virus, such as lockdowns, travel restrictions, and business closures, led to a significant decline in economic activity, triggering a recession and posing major challenges for many business sectors.

The life insurance industry in Indonesia has been significantly affected by the pandemic. Data from the Indonesian Life Insurance Association (AAJI) indicates that in the first half of 2020, the life insurance industry's revenue fell by 28.7%, influenced by a 2.5% decrease in premium income and a staggering -191.9% drop in investment returns (Sidik, 2020). The impact of the pandemic required these companies to quickly adapt to a surge in death and health claims, increased volatility in financial markets, and a decline in the value of investment assets.

Data from the Financial Services Authority (OJK) (Otoritas Jasa Keuangan, 2022) recorded fluctuations in the claims ratio to gross premiums from 2018 to 2022. In 2020, the claims ratio decreased, primarily due to a reduction in patient visits to hospitals during the pandemic, but it subsequently increased in 2021 and 2022 as public activities resumed. Additionally, public awareness of the importance of insurance protection also grew, as evidenced by AAJI data showing a 48% increase in the number of insured individuals since the pandemic (Maesaroh, 2023).

Table 1. Data on Growth of Premiums and Gross Claims in Life Insurance 2018 – 2022 (in Trillion Rupiah)

Year	Gross Premi Amount (a)	Gross Claimed Amount (b)	Claimed Ratio (b)/(a)
2018	196.92	150.35	76%
2019	194.27	163.50	84%
2020	185.84	152.90	82%
2021	204.78	178.89	87%
2022	190.74	175.74	92%

Previous research has shown that the Covid-19 pandemic negatively impacted the financial performance of insurance companies due to increased claims, which placed significant pressure on the companies' capital reserves and liquidity. As found by Pratiwi & Agustina (2022), there was a significant decline in premium income during the pandemic, while technical reserves increased as a risk mitigation measure against the surge in claims. Other studies conducted by Xie et al. (2023), Al-Zoubi (2023), and Parizi & Riani (2023) indicated a decline in investment performance during the Covid-19 pandemic. Furthermore, Zahra et al. (2023) and Xie, et al. (2023) also found significant changes in liquidity ratios during the pandemic. Under pre-pandemic conditions, insurance companies generally faced manageable claims; however, the surge in claims during the pandemic led to a decline in financial performance.

In 2023, the Indonesian government officially lifted the Covid-19 pandemic status through Presidential Decree No. 17 of 2023, reclassifying Covid-19 as an endemic disease (Presiden Republik Indonesia, 2023). Although numerous studies have been conducted on the pandemic's impact on the financial performance of insurance companies, research covering the post-pandemic period remains limited. Analyzing the post-pandemic period is crucial for understanding the strategies adopted by insurance companies to address new changes and challenges.

This study aims to fill this gap through a comprehensive analysis of the financial performance of insurance companies by comparing the pre-pandemic conditions of 2019 with the post-pandemic conditions of 2023. The approach used involves analysis through early warning system (EWS) indicators and risk-based capital (RBC), which is expected to provide insights into how insurance companies have adapted to the post-pandemic environment and the potential strategies that could enhance the financial resilience of the insurance industry in the future.

2. Literature Review

A. Signalling Theory

According to Brigham and Houston, signaling theory refers to a decision made by company management to provide information to investors and other stakeholders regarding the company's performance (Antoni, 2021). This theory emphasizes the importance of financial reports in attracting investment and building market confidence. Financial performance information reflects the company's past, present, and future projections, thereby assisting management in making strategic decisions (Hizia, 2023). The financial performance of a company is influenced by economic conditions, including the impact of the Covid-19 pandemic, which has put pressure on the financial sector, such as insurance. These challenges have prompted insurance companies to adapt, evaluate their risk portfolios, and analyze performance to demonstrate stability and growth potential to investors and stakeholders.

B. Financial Performance

Financial performance is an effort to measure a company's success in generating profits, thereby enabling the company to have prospects for growth and potential by effectively utilizing available resources. A company's success is marked by improvements across all aspects, including capital, scale of operations, profitability, and the achievement of established targets and standards (Safitri, 2023). In the insurance industry, financial performance is measured using the EWS and RBC.

The EWS is designed to enhance the efficiency and effectiveness of monitoring the solvency of insurance companies. This system comprises several financial ratios, including the combined ratio, retention ratio, liquidity ratio, investment adequacy ratio, and technical reserve ratio. In addition to the EWS ratios, RBC ratios can also be employed to assess the financial performance of life insurance companies.

C. Changes in the Combined Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

During the pandemic, a surge in claims due to high mortality rates, deteriorating health conditions, and operational adaptations led to an increase in the combined ratio. 2 studies by Agustina & Pratiwi (2022), and Zahra et al. (2023) showed significant differences in claim costs before and during the pandemic, associated with high claims and low premium income. After the pandemic, although conditions improved, changes in the combined cost risk may still occur as insurance companies adjust to new challenges, potentially affecting the combined ratio between the pre-pandemic and post-pandemic periods. There has been an increase in health care spending, especially for patients diagnosed with COVID-19. For instance, commercial members saw a 7.7% increase in healthcare spending per member per month (PMPM), while Medicare Advantage members experienced a 13.1% increase (Chambers, et al., 2023). Contribution of per claimant spending is due to a significant increase in the proportion of patients receiving treatment for anxiety and depression during the pandemic (Li et al., 2023).

H1: There is a significant change in the combined ratio of life insurance companies before and after the Covid-19 pandemic

D. Changes in the Retention Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

During the Covid-19 pandemic, uncertainty and increased claims led life insurance companies to rely more on reinsurance to mitigate unexpected claims risks. Reinsurance helps transfer some of the risks to third parties, maintaining the stability of the company (Adhitama, 2011). Research by Trihadmini & Gunawan (2023) shows a significant change in the retention ratio, which decreased as companies shifted more risk. After the pandemic, with more stable conditions, companies are expected to retain more premiums and reduce their reliance on reinsurance, thereby increasing the retention ratio for more independent and sustainable risk management.

H2: There is a significant change in the retention ratio of life insurance companies before and after the Covid-19 pandemic

E. Changes in the Liquidity Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The liquidity ratio measures a company's ability to meet short-term obligations. Two studies by Zahra et al. (2023) and Xie et al. (2023) indicate significant changes in the liquidity ratios of financial companies before and after the Covid-19 pandemic, reflecting efforts by companies to adjust their liquidity strategies amid financial pressures. After the pandemic, although the economy is more stable, insurance companies may have made adjustments that affect their liquidity ratios. This adaptation is crucial for facing future uncertainties, and thus, the liquidity ratios are expected to show significant differences between the pre-pandemic and post-pandemic periods.

H3: There is a significant change in the liquidity ratio of life insurance companies before and after the Covid-19 pandemic

F. Changes in the Investment Adequacy Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The Covid-19 pandemic significantly impacted investments in the financial sector, based on the research by Xie et al. (2023), Al-Zoubi (2023), and Parizi & Riani (2023) showing declines in investment performance, including Return on Assets, Net Profit Margin, and Return on Equity. Research by Syahida et al. (2022) highlights a decrease in the investment adequacy ratio in the life insurance industry, reflecting the challenges faced by the sector amid pandemic-related uncertainties. Although the market has recovered post-pandemic, previous instability continues to affect the investment adequacy ratio, and companies need to ensure that this ratio is sufficient to support long-term financial health.

H4: There is a significant change in the investment adequacy ratio of life insurance companies before and after the Covid-19 pandemic

G. Changes in the Technical Reserve Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The technical reserve ratio measures an insurance company's ability to provide reserves for future claims. Before the pandemic, life insurance companies generally maintained stable technical reserves. However, the surge in claims during the pandemic forced companies to increase these reserves. Research results by Syahida et al. (2022) and Izakova & Grofcikova (2021) indicate a significant increase in the technical reserve ratio in Indonesia and Slovakia during the pandemic. After the pandemic, although conditions are stable, companies may still need to adjust their technical reserves to anticipate unresolved claims, with the potential for significant changes in the technical reserve ratio post-pandemic.

H5: There is a significant change in the technical reserve ratio of life insurance companies before and after the Covid-19 pandemic

H. Changes in the Risk Based Capital Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The risk-based capital (RBC) ratio measures an insurance company's ability to meet its long-term obligations. Research by Trihadmini & Gunawan (2023) indicates that the Covid-19 pandemic significantly impacted solvency ratios, influenced by economic policies and instability. Siregar et al. (2021) published that foreign companies experienced a 7% increase, while local companies saw a 9% decrease, although most still met the minimum threshold set by the Financial Services Authority (120%). The volatility during the pandemic suggests the potential for significant changes in the RBC ratio post-pandemic, reflecting the impact of instability and the companies' adaptations in their financial policies.

H6: There is a significant change in the risk-based capital ratio of life insurance companies before and after the Covid-19 pandemic

3. Method

This study employs quantitative data, focusing on life insurance companies in Indonesia. The data used consists of secondary data in the form of annual financial statements from life insurance companies in 2019 (pre-pandemic) and 2023 (post-pandemic), obtained from the official websites of the respective companies. Based on data during 2020, the claim ratio decreased, mainly due to reduced patient visits to hospitals during the pandemic but then increased in 2021 and 2022 as community activities recovered (Maesaroh, 2023). Therefore, 2020 to 2022 is categorized as the post-Covid-19 period, because it is still the period affected by the pandemic.

Data collection was conducted through documentation, utilizing published documents and literature reviews from previous research. The sample for this study was selected using purposive sampling, comprising 58 life insurance companies registered with the Financial Services Authority of Indonesia as of early 2024. The criteria for sample selection in this study are shown in Table II.

Table 2. Sample Selection

No.	Description	Quantity
1.	Life insurance companies registered with Indonesia's Financial Services Authority in 2024	58
2.	Life insurance companies that failed to publish complete financial statements for both 2019 and 2023	(8)
3.	Life insurance companies established after 2019	(4)
4.	Sharia life insurance companies	(2)
Total Sample		44
Number of Research Years		2
Total Research Observations (44 x 2)		88

The data analysis method employed is comparative analysis to assess the financial performance of companies before and after the Covid-19 pandemic, focusing on the EWS ratios and RBC ratios. Data were analyzed using IBM SPSS Statistics, incorporating descriptive statistics, normality tests (Shapiro-Wilk), and hypothesis testing (Wilcoxon Signed-Rank).

4. Result and Discussion

A. Descriptive Statistical Analysis

Based on the financial statements from 2019 and 2023 of the 44 life insurance companies included in this study, the following presents the minimum, maximum, mean, and standard deviation for each EWS and RBC ratio before the Covid-19 pandemic (2019) and after the pandemic (2023). Outlier data will be identified using the Interquartile Range (IQR) method.

Before the pandemic, the combined ratio exhibited substantial variation in the research data (standard deviation of 2.178%) with five outliers, including PT Asuransi Jiwa Starinvestama (14.042%) and PT Heksa Solution Insurance (-51%). After the pandemic, the variation decreased (standard deviation of 254%) with four outliers, including PT Victoria Alife Indonesia (1.479%) and PT Asuransi Jiwa Investama (1.116%).

The retention ratio before the pandemic showed minimal variation in the research data (standard deviation of 27%) with three outliers, one of which was PT Heksa Solution Insurance (-53%). After the pandemic, the variation decreased (standard deviation of 6%) with one outlier from PT Lippo Life Insurance (76%). Most companies exhibited retention ratios close to 100%, with an observable increase in the ratio after the pandemic, as reflected in the mean value.

The liquidity ratio before the pandemic displayed considerable variation in the research data (standard deviation of 306%) with two outliers from PT China Life Insurance (1.672%) and PT Hanwha Life Insurance (1.343%). After the pandemic, the variation increased (standard deviation of 746%) with one outlier from PT Bhinneka Life Indonesia (5.120%). Most companies maintained a healthy liquidity ratio, although some exhibited less favorable conditions (liquidity ratio <100%).

The investment adequacy ratio before the pandemic showed significant variation in the research data (standard deviation of 487%) with eight outliers, including PT China Life Insurance (2.887%) and PT Hanwha Life Insurance (1.559%). After the pandemic, the variation decreased (standard deviation of 154%) with five outliers, including PT Victoria Alife Indonesia (765%) and PT Asuransi Jiwa Starinvestama (645%). While all companies remained in a healthy condition, there was a decline in the number of companies with high liquidity ratios.

The technical reserve ratio before the pandemic exhibited considerable variation in the research data (standard deviation of 284%) with two outliers from PT China Life Insurance (916%) and PT Heksa Solution Insurance (-1.328%). Furthermore, the high mean value (196%) indicates varying reserve conditions among companies. After the pandemic, the variation decreased (standard deviation of 125%) with no identified outliers, and the mean increased to 235%, indicating that companies have strengthened their technical reserves to cover their obligations.

The risk-based capital ratio before the pandemic exhibited substantial variation in the research data (standard deviation of 1.088%) with six outliers, including PT Hanwha Life Insurance (5.600%) and PT China Life Insurance (5.005%). Additionally, the mean value of 861% indicates a high level of risk-based capital adequacy. After the pandemic, the variation decreased (standard deviation of 480%) with three outliers, one of which was PT PFI Mega Life Insurance (2.033%). Notably, all companies in this study met the minimum RBC requirement of 120% after the Covid-19 pandemic, despite a decline in capital for some companies.

Table 3. Descriptive Statistics Before the Covid-19 Pandemic (in percentage)

Ratio	N	Min	Max	Mean	Std. Deviation
<i>Combined Ratio</i>	44	-51	14.042	537	2.178
<i>Retention Ratio</i>	44	-53	100	89	27
<i>Liquidity Ratio</i>	44	87	1.672	325	306
<i>Investment Adequacy Ratio</i>	44	100	2.887	350	487
<i>Technical Reserve Ratio</i>	44	-1.328	916	196	284
<i>Risk-Based Capital</i>	44	101	5.600	861	1.088

Table 4. Descriptive Statistics After the Covid-19 Pandemic (in percentage)

Ratio	N	Min	Max	Mean	Std. Deviation
<i>Combined Ratio</i>	44	15	1.479	178	254
<i>Retention Ratio</i>	44	76	100	95	6
<i>Liquidity Ratio</i>	44	88	5.120	387	746
<i>Investment Adequacy Ratio</i>	44	107	765	226	154
<i>Technical Reserve Ratio</i>	44	38	545	235	125
<i>Risk- Based Capital</i>	44	122	2.033	609	480

Table 5. Shapiro-Wilk Normality Test Results

Ratio	Time	Shapiro-Wilk			Remarks
		Statistic	df	Sig.	
<i>Combined</i>	Before	0.213	44	<0.001	Not Normally Distributed
	After	0.365	44	<0.001	Not Normally Distributed
<i>Retention</i>	Before	0.412	44	<0.001	Not Normally Distributed
	After	0.822	44	<0.001	Not Normally Distributed
<i>Liquidity</i>	Before	0.649	44	<0.001	Not Normally Distributed
	After	0.294	44	<0.001	Not Normally Distributed
<i>Investment Adequacy</i>	Before	0.509	44	<0.001	Not Normally Distributed
	After	0.717	44	<0.001	Not Normally Distributed

B. Normality Test

The normality test in this study utilized the Shapiro-Wilk test. The criteria for assessing the Shapiro-Wilk test are that if the significance value is ≥ 0.05 , the data can be considered normally distributed. Conversely, data are deemed not normally distributed if the significance value is < 0.05 . The normality tests for the EWS and RBC ratios were conducted using IBM SPSS Statistics. Table 5 indicate that the financial ratio data are generally not normally distributed. Therefore, the hypothesis tests used in this study are non-parametric tests (Cleff, 2019).

C. Hypothesis Test

In this study, hypothesis testing was conducted using the Wilcoxon Signed Rank Test, a non-parametric testing method suitable for comparative research when the data are not normally distributed (Cleff, 2019). The criteria for assessing the Wilcoxon Signed Rank test are that if the Asymp. Sig. value is ≥ 0.05 , then H_0 is accepted, indicating no significant change in the financial ratios before and after the Covid-19 pandemic, and vice versa. Hypothesis testing for the EWS and RBC ratios was performed using IBM SPSS Statistics.

Based on the results of the hypothesis tests above, negative Z statistics were obtained for all financial ratios used in this study. The negative value of the Z statistic does not necessarily align with changes in the mean values of the paired data because the Wilcoxon Signed Rank Test relies on the distribution of signs and ranks of the differences in the data (Wilcoxon, 1945). The presence of outliers also influences

the mean values due to their sensitivity to extreme values (Faster Capital, 2024). Outliers can drastically alter the average, leading to a different pattern in the distribution of signs within the ranked data. For example, in the retention ratio before the pandemic, there were outliers from PT Heksa Solution Insurance (-53%) and PT Bhinneka Life Indonesia (11%). In the liquidity ratio after the pandemic, the outlier came from PT Bhinneka Life Indonesia (5.120%), while in the technical reserve ratio, it was from PT Heksa Solution Insurance (-1.328%). These outliers affect the distribution of positive and negative ranks, so even if the mean shows an increase, a negative Z value may still arise due to the dominance of negative ranks in both quantity and total rank.

D. Changes in the Combined Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The research findings indicate that there was no significant change in the combined ratio between the periods before and after the Covid-19 pandemic, with an Asymp. Sig. value of 0.699, which meets the criteria for accepting H_0 (≥ 0.05). However, despite the lack of statistically significant differences, more than 50% of the life insurance companies in the sample (24 out of 44 companies) experienced an increase in the combined ratio after the pandemic. This is also reflected in the increased number of companies with a combined ratio above 100%, rising from 33 companies to 34 companies.

These findings align with previous research indicating that during the pandemic, claims burdens significantly increased without a corresponding rise in premium income, as noted by Chambers et al. (2023), Li et al. (2023), Agustina et al. (2022), Zahra et al. (2023), and Trihadmini et al (2023). Although companies have begun to stabilize their combined costs post-pandemic, the increase in the combined ratio for some companies suggests that several are still facing challenges in achieving optimal cost efficiency.

Table 6. Wilcoxon Signed Rank Test Results

Hypothesis	Negative Ranks	Positive Ranks	Ties	Z	Asymp. Sig.
H ₁ : Combined Ratio	19	24	1	-0.386	0.699
H ₂ : Retention Ratio	15	16	13	-0.216	0.829
H ₃ : Liquidity Ratio	19	24	1	-0.048	0.961
H ₄ : Investment Adequacy Ratio	27	16	1	-2.125	0.034
H ₅ : Technical Reserve Ratio	17	27	0	-1.768	0.077
H ₆ : Risk Based Capital	27	17	0	-1.710	0.087

Table 7. Hypothesis Test Result

Ha	Hypothesis Statement	Result
H ₁	There has been significant change in the combined cost ratio of life insurance companies before and after the Covid-19 pandemic	Not supported
H ₂	There has been significant change in the retention ratio of life insurance companies before and after the Covid-19 pandemic	Not supported
H ₃	There has been significant change in the liquidity ratio of life insurance companies before and after the Covid-19 pandemic	Not supported
H ₄	There has been significant change in the investment adequacy ratio of life insurance companies before and after the Covid-19 pandemic	Supported
H ₅	There has been significant change in the technical reserve ratio of life insurance companies before and after the Covid-19 pandemic.	Not supported
H ₆	There has been significant change in the risk-based capital ratio of life insurance companies before and after the Covid-19 pandemic	Not supported

E. Changes in the Retention Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The research findings show that there was no significant change in the retention ratio of life insurance companies before and after the Covid-19 pandemic, with an Asymp. Sig. value of 0.829, which meets the criteria for accepting H_0 (≥ 0.05). However, despite the lack of significant statistical change, there was an increase in the number of companies with retention ratios approaching 100%, as well as an increase in the average retention ratio from 89% to 95% after the pandemic. This indicates that life insurance companies are likely reducing their reliance on reinsurance and focusing more on retaining the premiums they have collected.

These results are consistent with several studies during the pandemic by Zahra et al. (2023) and Ningrum et al. (2022), which also found that the retention ratio in the life insurance sector remained stable during the pandemic. Although there were no statistically significant changes, these companies demonstrated a tendency to enhance their financial resilience by retaining higher premiums within the company. This represents an important adaptive step to face future financial risks and challenges.

F. Changes in the Liquidity Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The research findings indicate that there was no significant change in the liquidity ratio of life insurance companies before and after the Covid-19 pandemic, with an Asymp. Sig. value of 0.961, which meets the criteria for accepting H_0 (≥ 0.05). Nevertheless, more than 50% of the companies (24 out of 44) experienced an increase in their liquidity ratios after the pandemic, and the average liquidity ratio also rose from 325% to 387%. These findings suggest that life insurance companies are becoming more cautious in managing their liquidity to navigate the economic uncertainties following the pandemic.

Previous research by Ningrum (2022) and Agustina et al. (2022) also found that life insurance companies maintained stable liquidity ratios during the pandemic, without any significant spikes. Overall, while there were no statistically significant changes, the increase in the average liquidity ratio reflects the companies' proactive measures to strengthen their liquidity reserves to mitigate risks associated with future economic uncertainties.

G. Changes in the Investment Adequacy Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The research findings reveal a significant change in the investment adequacy ratio of life insurance companies before and after the Covid-19 pandemic, with an Asymp. Sig. value of 0.034, which meets the criteria for rejecting H_0 (< 0.05). This indicates a decline in the ratio for more than 50% of the companies in the sample (27 out of 44). Despite the decrease in the investment adequacy ratio, all companies in the sample maintained a ratio of $\geq 100\%$, indicating that they remained in a healthy category.

This decline reflects the challenges faced by life insurance companies in managing their investments amid the economic instability caused by the pandemic, as found in studies by Syahida et al. (2022), Xie et al. (2023), and Al-Zoubi (2023). Although there was a decrease in the ratio, companies were still able to maintain their financial stability and meet the necessary investment adequacy requirements. This demonstrates that despite the negative impacts on investment adequacy, life insurance companies managed to endure and maintain their financial health during this period of uncertainty.

H. Changes in the Technical Reserve Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The research findings indicate that there was no significant change in the technical reserve ratio of life insurance companies before and after the Covid-19 pandemic, with an Asymp. Sig. value of 0.077,

which meets the criteria for accepting H_0 (≥ 0.05). However, the average technical reserve ratio increased from 196% to 235% after the pandemic, suggesting that most companies (27 out of 44) have strengthened their technical reserves.

These results align with previous research conducted during the pandemic by Syahida et al. (2022) and Izakova et al. (2021), which showed that life insurance companies increased their technical reserves to address the impacts of uncertainty. Although the increase in technical reserves post-pandemic was no longer statistically significant, life insurance companies achieved adequate reserve levels to manage their risks without requiring major adjustments. This reflects a stabilization of conditions after the pandemic, where companies are better equipped to manage risks and ensure the adequacy of the necessary technical reserves.

I. Changes in the Risk-Based Capital Ratio of Life Insurance Companies Before and After the Covid-19 Pandemic

The research findings indicate that there was no significant change in the risk-based capital ratio of life insurance companies before and after the Covid-19 pandemic, with an Asymp. Sig. value of 0.087, which meets the criteria for accepting H_0 (≥ 0.05). Despite a decrease in the average ratio from 861% to 609%, all life insurance companies in the study continued to meet the minimum regulatory requirement of 120%.

These findings are consistent with previous research by Chambers et al. (2023) and Li et al. (2023), which indicated that there were no significant changes in the risk-based capital ratio during the Covid-19 pandemic. Thus, even though there was a decline in the average risk-based capital ratio after the pandemic, all companies were able to meet the minimum threshold set by regulators, thereby maintaining their financial stability.

5. Conclusion

Based on the previous research conducted, it can be concluded that the life insurance industry has demonstrated resilience and adaptability in facing economic changes resulting from the pandemic. The EWS ratios (combined ratio, retention ratio, liquidity ratio, and technical reserve ratio) and the RBC ratio did not experience significant changes, except for the investment adequacy ratio, which declined but remained above the healthy threshold. Although there were improvements in several ratios reflecting the companies' efforts to strengthen their financial positions, life insurance companies were still able to maintain stability and meet the minimum solvency requirements set by regulators. This indicates the ability of life insurance companies to adapt and effectively manage their financial conditions during the transitional recovery period while adjusting their strategies for post-pandemic recovery.

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