ANALYZING THE EFFECTS OF THE HEALTH BPJS REGULATION ON THE INSURANCE COMPANIES PERFORMANCE AND EFFICIENCY

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ARTICLE INFO	ABSTRACT
	The purpose of this study was to determine the effect of the presence of BPJS Health regulations on the level of efficiency of insurance companies and to determine the effect of the level of efficiency of insurance companies on company performance in the period 2009 (before the implementation of the BPJS Health regulations) to 2019 (after the implementation of the BPJS Health regulations). The method used in this study is the analysis of Data Envelopment Analysis (DEA), calculation of Return on Assets (ROA), and calculation of Return on Equity (ROE) by testing 12 insurance company samples. The results showed that the company's efficiency had a significant positive change in the period before compared to after implementing the BPJS Health regulation. The tests of ROA and ROE showed that the company's performance did not significantly differ before and after implementing the BPJS Health regulation.

Introduction

Efficient companies actively use their best assets. For this reason, (Yuniastuti & Nasyaroeka, 2017), measuring efficiency is an essential concern for insurance companies to support companies in measuring and evaluating performance. To what extent can insurance companies survive and solve problems on an ongoing basis, seeing how BPJS users have experienced an increase? (Viverita, 2019) found no significant difference between the company's efficiency before and after the implementation of BPJS Health. Based on previous findings, insurance-related research is still tiny, so research can be carried out regarding the impact of the BPJS Health program on the efficiency and performance of insurance companies (Muhamad & Kusumastuti, 2022).

The concept of efficiency begins with the microeconomic theory developed by Adam Smith et al. in the 18th and 19th centuries, consisting of producer and consumer theories. Producers maximize profits and minimize costs; in consumer theory, they maximize utility or satisfaction. For this reason, efficiency must represent the maximum output level from each use of a company's technological input to reach the frontier line (Gusmiarni & Sudrajat, 2023).

Efficiency is a method related to how well a company manages available resources to obtain yield productivity by measuring the ratio between output and input and optimizing output without excessive input (Prakoso, 2018). The concept of performance is based on the agency theory developed by Jensen & Meckling (1976), in which the ownership and company management functions are separated. Therefore

companies are very vulnerable to agency conflicts because shareholders and management often conflict in achieving their respective welfare. Thus, obtaining benefits for both parties is highly dependent on the results of the company's performance. Signaling Theory developed by (Nugrahaningsih, 2021) states that there are signals of success or failure that occur in companies that need to be conveyed by management as company managers to shareholders as company owners to reduce asymmetric information (Munir, Arief, Abdinagoro, & Furinto, 2022).

Performance is a portrait of the company's finances in a certain period to show good and bad financial performance concerning the collection or distribution of funds and is measured by financial analysis through financial ratios, so that performance in a certain period or last year with the following period can be compared, including comparing financial statements with other companies, especially in the same industry. Thus, companies can evaluate, plan, and control the company's performance growth.

(Yulianti, Djatmika, & Santoso, 2017) said that efficiency and company performance are interconnected where the primary goal of a company is to maximize shareholder profits by carrying out optimal performance productivity through an efficient system, which can be achieved by managing and evaluating the use of costs and resources to minimize the occurrence of cost reduction. This is also supported by Duston et al. (2014) that companies that are efficient in building development and investment actively use the best assets.

(Viverita, 2019) argues that increasingly fierce competition encourages companies to try to be more optimal in providing services and efficiency. This is reinforced by the opinion of (Eling & Schaper, 2017), where the results of their research illustrate that life insurance companies in Europe from 2002-2013 experienced increased efficiency due to increasingly competitive business conditions. Thus, environmental changes affect productivity and efficiency. Then, the hypothesis can be determined as follows:
H1: BPJS's policies positively affect insurance companies' efficiency levels.

(Jang & Ahn, 2021) analyzed Korean outbound shipping companies' financial performance ratio before and after the 2008 financial crisis. Korean outbound shipping companies relatively increased their stability, profitability, productivity, development, and performance before the financial crisis compared to transportation companies and other industries. However, these parameters tended to decrease after the financial crisis. (Zhang et al., 2020) in (Jang & Ahn, 2021) based on his research using financial panel data from 29 medium-sized shipping companies within the ten years from 2009 to 2018 and independent variables derived from financial data regarding strategy. The analysis results related to the growth strategy show that the components of assets, turnover, equity, and debt affect performance. The hypotheses can be determined as follows:

H2: There are differences in the performance of insurance companies before and after implementing the BPJS regulations.

Method

The population used in this study is all insurance companies registered with the Financial Services Authority (OJK). The sampling technique uses a purposive sampling technique with the criteria: national life insurance companies consistently published their annual report during the 2009-2019 period so that the sample used in the study can be determined from as many as 12 insurance companies. Quantitative data collection techniques use secondary data through insurance statistical, financial reports sourced from OJK.

Data Envelopment Analysis (DEA)

According to (Subardi, Sukmadilaga, & Yuliafitri, 2020), efficiency measurement techniques through a non-parametric approach carry out mathematical designs using output and input, which are applied to evaluate company efficiency. DEA has a relative value, not an absolute one, where the Decision Making Unit (DMU) with the best performance gets a score of 100 and a lower DMU of 0-100, depending on comparing the best DMU. According to (Aldo, 2022), efficiency measurement models based on the DEA approach are divided into two types, namely:

a. Constant Return to Scale (CRS): a change of x times in the input will also increase the output of x times. Rusyidiana (2013) states that CRS represents technical efficiency and scale.

b. Variable Return to Scale (VRS): a change of x times in the input is not matched by an increase in output x times. We go higher or lower. Rusyidiana (2013) stated that VRS only represents technical efficiency.

Relative scale efficiency is the ratio of the efficiency of the CRS and VRS models. If the scale value equals one, then the DMU operates at the best scale efficiency standard. The DEA method used in this study uses DEAP 2.1 software with the following equation:

$$\text{Es} = \frac{\sum_{t=1}^{m} U_i Y_s}{\sum_{j=1}^{n} V_j X_s}$$

Information:

Es   = insurance efficiency
m   = observed insurance output
n   = observed insurance input
Ys   = total output produced by insurance
Xs   = number of inputs produced by insurance
Ui   = output weight generated by the insurance
Vj   = input weight provided by insurance

Financial Performance Ratios

According to (ROHIM, 2017), financial ratios are metrics applied as analytical techniques in financial management to interpret and analyze financial reports or company performance over a certain period through one of the ratios, namely the profitability ratio. (Noordiatmoko, 2020) states that the profitability ratio measures a company's profit-seeking ability and provides an overview of the value related to the

effectiveness of a company's governance during a specific period through the company's asset or capital components.

Return on Assets

Prastowo and Juliaty (2002) in Astuti (2009) argue that ROA is an assessment tool for a company's ability to use its assets to generate profits. ROA measures the return on investment that a company has generated using all of its asset holdings. The higher the yield ratio, the better the use of assets by the company in earning profits. ROA ratio calculation formula:

$$Return\ on\ Aset = \frac{EBIT}{total\ asset}$$

Return on Equity

Prastowo and Juliaty (2002) in Astuti (2009) argue that ROE is a measure of net profit after tax or the level of investment that comes from the financial funds of the company owner only. This becomes necessary because one of the most important reasons a company operates is to maximize profits for shareholders.

Hypothesis testing

The t-test is applied to the same sample in two different observation periods to evaluate specific characteristics in one sample (Pramana, 2012). Observations in this study examined whether there were differences in efficiency and performance before and after the BPJS Health regulation implementation in insurance companies and whether the two objects are significantly related.

Results And Discussion

12 samples of insurance companies registered with OJK with the following criteria: local life insurance companies and consistent financial reports during the 2009-2019 period.

Data Envelopment Analysis

The efficiency measurement component uses input consisting of assets, claims expenses, and other expenses. While the output used consists of premiums and investment returns.

Table 1
The difference in Average Total Input of Insurance Companies

INSURANCE COMPANY	TOTAL INPUT 2009-2013	AVERAGE	TOTAL INPUT 2015-2019	AVERAGE	DIFFERENCE
Adisarana Wanaartha	20.023.965	4.004.793	82.089.416	16.417.883	12.413.090
Jiwa Bersama Bumiputra	125.865.547	25.173.109	114.077.990	22.815.598	-2.357.511
Central Asia Raya	20.644.151	4.128.830	33.292.462	6.658.492	2.529.662
Equity Life	10.949.829	2.189.966	49.054.417	9.810.883	7.620.918

Indolife	70.917.084	14.183.417	129.457.704	25.891.541	11.708.124
Heksa Eka	1.988.533	397.707	21.142.904	4.228.581	3.830.874
Inhealth	15.126.138	3.025.228	83.136.473	16.627.295	13.602.067
Jiwasraya	69.030.975	13.806.195	178.510.453	35.702.091	21.895.896
Jiwa Kresna	1.099.840	219.968	22.923.099	4.584.620	4.364.652
Pasaraya	415.959	83.192	1.100.874	220.175	136.983
Sequis Financial	3.856.639	771.328	3.692.023	738.405	-32.923
Tugu Mandiri	2.736.262	547.252	6.758.910	1.351.782	804.530

Based on the classification above, it can be seen that in the description of insurance company inputs for the period 2009-2013 (before the implementation of the BPJS Health regulation) to 2015-2019 (after the implementation of the BPJS Health regulation), the average ratio of company inputs has increased and decreased. The increase occurred in 10 companies with an increase in inputs between 136 billion rupiahs (Pasaraya Company) and 21 trillion rupiahs (Jiwasraya Company). In comparison, for two insurance companies, it decreased by 32 billion (Sequis Financial Company) up to 2 trillion rupiahs (Jiwa Bersama Bumiputera Company).

Table 2
The Difference in Average Output of Insurance Companies

INSURANCE COMPANY	TOTAL OUTPUT 2009-2013	AVERAGE	TOTAL OUTPUT 2015-2019	AVERAGE	DIFFERENCE
Adisarana Wana.	-538,231	-107,646.20	2,214,736	442,947.20	335,301.00
Jiwa Bersama Bumiputra	5,390,131	1,078,026.12	2,100,525	420,105.00	-657,921.12
Central Asia Raya	2,237,739	447,547.70	2,277,063	455,412.60	7,864.90
Equity Life	993,834	198,766.80	918,451	183,690.20	-15,076.60
Indolife	3,396,964	679,392.70	9,996,814	1,999,362.80	1,319,970.10
Heksa Eka	141,592	28,318.36	191,043	38,208.60	9,890.24
Inhealth	1,704,929	340,985.84	1,250,587	250,117.40	-90,868.44
Jiwasraya	6,816,797	1,363,359.46	5,351,974	1,070,394.80	-292,964.66
Jiwa Kresna	143,274.00	28,654.80	2,196,406	439,281.20	410,626.40
Pasaraya	21,076	4,215.18	23,752	4,750.40	535.22
Sequis Financial	177,258.10	35,451.62	223,679	44,735.80	9,284.18
Tugu Mandiri	251,818.20	50,363.64	1,337,360	267,472.00	217,108.36

Based on the classification above, it can be seen that the input description of insurance companies for the period 2009-2013 (before the implementation of the BPJS Health regulation) to 2015-2019 (after the implementation of the BPJS Health

regulation), the ratio of the average output of companies has increased and decreased. The increase occurred in 8 companies with an output increase of 532 million rupiahs (Pasaraya Company) to 1 trillion rupiahs (Indolife Company). In comparison, for four insurance companies, it decreased by 15 billion (Equity Life Company) to 657 billion rupiahs (Jiwa Bersama Bumiputera Company).

Table 3
Results of the Mean Comparison of Analysis of Insurance Companies Before and After the Implementation of the Health BPJS Regulations

Period	Mean		
	CRS	VRS	SCALE
2009	0,869	0,942	0,922
2010	0,865	0,918	0,938
2011	0,847	0,883	0,950
2012	0,673	0,738	0,905
2013	0,168	0,443	0,258
AVERAGE	0,684	0,784	
2015	0,788	0,801	0
2016	0,697	0,732	0,922
2017	0,581	0,724	0,816
2018	0,580	0,594	0,955
2019	0,947	0,955	0,990
AVERAGE	0,719	0,761	

Based on the results of the mean analysis of insurance companies expressed by the description of t-0 as the basis, the year represents the year of the object under study. The average CRS for 2009-2013 has a value of 0.684, while the CRS for 2015-2019 has increased with a value of 0.719. Thus, based on the CRS benchmark, insurance companies, after implementing the BPJS Health regulation, are said to be more efficient after implementing the BPJS Health regulation. On the other hand, the average VRS for 2009-2013 was 0.784, while the 2015-2019 VRS was 0.761. Thus, the insurance company is said to be more efficient in the period before the implementation of the BPJS Health regulation compared to after the implementation of the BPJS Health regulation when measured using the VRS perspective. Based on this, H1 is supported, and H0 is rejected because the CRS results show that after the implementation of government policies, there has been a positive change in the efficiency of insurance companies.

Financial Performance Ratios

Table 4
**Results of Comparative Analysis of ROA and ROE in the Period Before and After
the Implementation of BPJS Health in Insurance Companies**

ROA			
INSURANCE COMPANY	**AVERAGE BEFORE BPJS**	**AVERAGE AFTER BPJS**	**DIFFERENCE**
Adisarana Wanaartha	-0,114	0,026	0,088
Jiwa Bersama Bumiputra	-0,012	-0,051	-0,039
Central Asia Raya	0,059	0,029	0,030
Equity Life	0,015	0,016	0,001
Indolife	0,006	0,007	0,001
Heksa Eka	0,034	0,013	-0,021
Inhealth	0,086	0,088	0,002
Jiwasraya	0,040	-0,111	-0,071
Jiwa Kresna	0,058	0,000	-0,058
Pasaraya	-0,059	-0,014	0,045
Sequis Financial	0,048	0,002	-0,046
Tugu Mandiri	0,039	0,021	-0,018
RATA-RATA	0,017	0,002	
Decrease			0,015

ROE			
INSURANCE COMPANY	**AVERAGE BEFORE BPJS**	**AVERAGE AFTER BPJS**	**DIFFERENCE**
Adisarana Wanaartha	-0,331	0,208	0,203
Jiwa Bersama Bumiputra	-0,462	0,161	-0,300
Central Asia Raya	0,161	0,113	-0,048
Equity Life	0,129	0,078	-0,065
Indolife	0,018	0,032	0,014
Heksa Eka	0,093	0,050	-0,043
Inhealth	0,104	0,110	0,006
Jiwasraya	0,270	0,476	0,206
Jiwa Kresna	0,088	0,000	-0,088
Pasaraya	-0,260	-0,018	0,242
Sequis Financial	0,099	-0,002	-0,097
Tugu Mandiri	-24,231	0,126	24,138
RATA-RATA	-2,027	0,111	
Increase			1,916

Based on the table above, the results of calculating the ROA of insurance companies for the period 2009-2013 (before implementing BPJS Health regulations) and 2015-2019 (after implementing BPJS Health regulations) show a decrease in ROA of 0.015, which means that insurance companies use assets to earn profits better or experienced an increase in the period before the implementation of the BPJS Health regulations compared to after the implementation of the regulations.

On the other hand, there was an increase in the average ROE comparison of insurance companies between 2009-2013 and 2015-2019, namely 1.916, which means that the ability of insurance companies to use owner's equity to earn profits for shareholders and increase company value is better in the period after the implementation of BPJS Health regulations compared to before the implementation of regulations.

The results of DEA analysis comparing the efficiency of the period before and after the implementation of BPJS Health regulations show that there are differences in results between the CRS and VRS models because the CRS model represents more technical efficiency and scale efficiency. In contrast, the VRS model only represents technical efficiency. The results of the CRS model efficiency show an increase, offset by an increase in ROE, even though the value of ROA has decreased. The decrease in ROA was due to an increase in total assets. Thus, researchers are more inclined to the CRS model than the VRS. Based on this, H2 is supported, and H0 is rejected because the performance results show differences in insurance companies before and after the BPJS Health regulation.

Hypothesis Testing

Table 5
Paired Samples Test (Firm's Efficiency)

		Paired Differences							
		Mean	*Std. Deviation*	*Std. Error Mean*	*95% Confidence Interval of the Difference*		*t*	*Df*	*Sig. (2-tailed)*
					Lower	*Upper*			
P a ir 1	Before - After	-.129433	.422764	.054579	-.238645	-.020222	-2.372	59	.021

Based on the table above, it can be seen that the significance value is 0.021 where <0.05 with an increase that occurs at a mean efficiency of 0.129 so that H1 is supported and H0 is rejected because there is a positive change in the efficiency of insurance companies between the period before and after the implementation of the BPJS Health regulation, which was supported by an increase in the output of insurance companies.

Table 6
Paired Samples Test (Firm Performance-ROA)

	Paired Differences						
Mean	*Std. Deviation*	*Std. Error Mean*	*95% Confidence Interval of the Difference*		*T*	*Df*	*Sig. (2-tailed)*
			Lower	*Upper*			

		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	Df	Sig.
P ai r 1	Before 2014 After 2014	.011433	.121667	.015707	-.019997	.042863	.728	59	.470

Based on the table above, it can be seen that the significance value is 0.470 where > 0.05 with a decrease that occurs in the mean ROA of 0.011, meaning that H0 is supported and H2 is rejected because there is no difference in the ROA of insurance companies between the period before and after the implementation of the BPJS Health regulation.

Table 7
Paired Samples Test (Firm Performance-ROE)

		Paired Differences							Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	Df	
Pa ir 1	Before 2014 - After 2014	-2.158850	15.694158	2.026107	-6.213081	1.895381	-1.066	59	.291

Based on the table above, it can be seen that the significance value is 0.291 where > 0.05 with an increase in the mean ROE of 2.159, meaning that H0 is supported and H2 is rejected because there is no significant difference in insurance company ROE between the period before and after the implementation of the BPJS Health regulation.

Conclusion

Based on the elaboration above regarding the results of the study, it can be concluded that. With the CRS model, the existence of BPJS Health regulations has a positive impact on the efficiency of insurance companies, which is indicated by the results of the hypothesis where H0 is rejected. The existence of BPJS Health regulations does not have an impact on the ROA performance of insurance companies due to an increase in assets. Meanwhile, ROE has an impact on performance.

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