Infrastructure-360: Analyzing the Performance of the Infrastructure Sector from Multiple Sides

Helmi Adam
School of Business, IPB University, Indonesia
E-Mail: helmiadam@apps.ipb.ac.id

Noer Azam Achsani
School of Business, IPB University, Indonesia
E-Mail: achsani@apps.ipb.ac.id

Roy H.M. Sembel
IPMI International Business School, Indonesia
E-Mail: roy.sembel@ipmi.ac.id

Linda Karlina Sari
School of Business, IPB University, Indonesia
E-Mail: lindakarlinas@apps.ipb.ac.id

Submitted:
MARCH 2025

Accepted:
JUNE 2025

ABSTRACT

The infrastructure sector serves as the backbone of national economic growth, with both state-owned enterprises (SOEs) and non-state-owned enterprises (Non-SOEs) playing strategic roles in public service delivery and investment. However, the Covid-19 pandemic has disrupted the sector's stability and performance, highlighting the need for a more comprehensive analysis of the internal and external factors influencing company performance across different periods. This study aims to examine the impact of corporate fundamentals, macroeconomic indicators, the Indonesia Composite Index (ICI), and Environmental, Social, and Governance (ESG) factors on the profitability and stock returns of SOEs and Non-SOEs in the infrastructure sector before, during, and after the Covid-19 pandemic. Using a descriptive quantitative approach and quarterly financial data from 2018 to 2023 for 42 companies, the study finds that SOEs demonstrate greater financial stability, while Non-SOEs exhibit higher operational adaptability. ESG-implementing firms generally report better profitability and healthier capital structures, albeit with higher volatility. These findings suggest the importance of enhancing operational efficiency, reinforcing ESG adoption, and maintaining sound financial structures to ensure business sustainability. Future studies are encouraged to explore qualitative aspects such as strategic innovation and governance transformation for more holistic insights.

Keywords*: Infrastructure, SOEs, Non-SOEs, Company Performance, Covid-19 Pandemic*

INTRODUCTION

Every business field needs a guarantee of energy, water, communication and transportation supply to carry out production activities. If it is not available, the productivity of the country will be lower and so will economic growth in the end. Infrastructure is widely recognized as one of the key factors influencing economic growth and facilitating the reduction of inequality and poverty rates, especially in developing countries (Khurriah & Istifadah, 2019). As for now, SOEs have played an active role in supporting the national economy with their operational expenditures and capital expenditures. This spending has contributed to the growth of the national economy in terms of consumption and investment, which will increase demand and boost national

JIMKES

Jurnal Ilmiah Manajemen Kesatuan
Vol. 13 No. 4, 2025
pp. 2097 - 2118
IBI Kesatuan
ISSN 2337 – 7860
E-ISSN 2721 – 169X
DOI: 10.37641/jimkes.v13i4.3688

economic activity. In the context of infrastructure development, SOEs have played a strategic role with projects such as the construction of toll roads, airports, ports, and railways. Realizing the importance of infrastructure in economic growth, President Joko Widodo launched a development acceleration project to increase economic growth by at least 7% in order to take off as a developed country by 2020 (KPPIP 2018). In this effort, the government through the Coordinating Ministry for Economic Affairs initiated the creation of a mechanism to accelerate the provision of infrastructure and the issuance of related regulations as a legal umbrella that regulates it. Figure 1 is an effort known as the National Strategic Project (PSN) carried out in accordance with Presidential Regulation Number 3 of 2016 and Presidential Regulation Number 58 of 2017.

Source: Researcher (2024)

Figure 1. National Strategic Projects (PSN) Spread Nationally

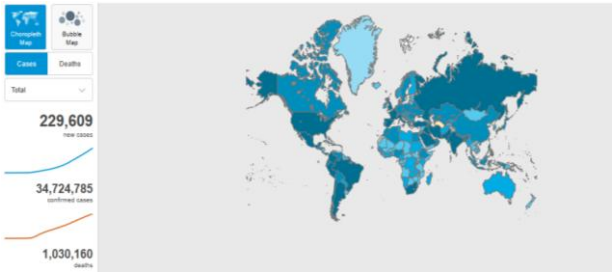
Figure 1 According to kkip.go.id (2021), PSN is mostly the provision of physical infrastructure that reaches all of Indonesia. First established in 2016, the PSN is updated annually by KPPIP based on the selection process and input from the project implementers. In PSN 2017, there are 245 projects and 2 programs with an estimated total financing of Rp4,197 trillion with funding sources from State/Regional Owned Enterprises (BUMN/BUMD) of Rp1,258 trillion, private sector of Rp2,414 trillion, and state budget of Rp. 525 trillion or Rp510 trillion for the 2015-2023 project as shown in table 1. Then, the complete list of projects from PSN 2017 includes roads, railways (Makassar–Parepare), energy, ports, airports, sanitation and clean water, and the technology sector. Of all sectors in the 2017 PSN, the railway sector took the largest portion of state budget investment with a value of Rp309 trillion. In Table 1, the existence of PSN gradually increases the portion of the state budget for infrastructure in Indonesia, as shown in Figure 2 regarding the amount of state budget for infrastructure (Kemenkeu RI, 2024).

Table 1. Funding Sources for National Strategy Projects

Funding Sources	Amount (trillion Rp)
State/Regional Owned Enterprises (SOEs/D)	1.258
Private sector	2.414
State Revenue and Expenditure Budget	525

Source: Kemenkeu RI (2024)

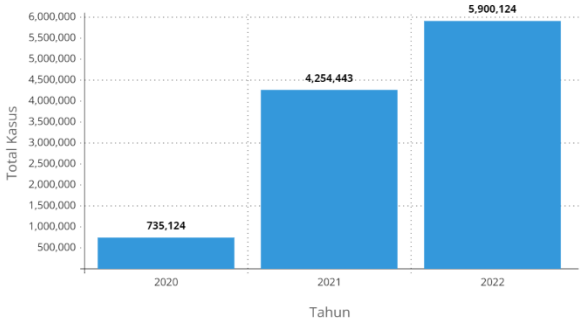
With the pandemic that began on January 30, 2020, the World Health Organization declared a covid-19 outbreak caused by a new virus called Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) with a disease called coronavirus 2019 or covid-19, therefore this is used as a moment of international health emergency due to the high risk of rapid spread of the virus, confirmed cases, and high death rates. Countries with vulnerable health care systems will be most impacted (Walker et al., 2020).



Source: Researcher (2024)

Figure 2. Spread of Covid-19 Global Map

Figure 2 by the *World Health Organization* (WHO) shows the spread of the virus in all countries in the world, and covid-19 began to enter Indonesia since March 2, 2020 (Indonesia Portal Informasi, 2020), Where in 2020 the virus has been confirmed to infect around 735,124 people, in 2021 with a total number of confirmed infections around 4,254,443 and in 2022 as many as 5,900,124 people. Figure 4 is a picture of the total number of Covid-19 case developments for the period 2020, 2021, and 2022 based on data Kemenkes RI.



Source: Researcher (2024)

Figure 3. Total Covid-19 Cases in Indonesia for the 2020-2022 Period

The existence of the Covid-19 pandemic has greatly affected the way the global economy works between health, public services, economy, politics, agriculture, transportation, and education, which has caused major economic and financial crises (Pianta & Lucchese, 2020). Then, it was supported by several studies on the impact of covid-19 on business performance, including according to Katusiime (2021) that Covid-19 affects the profitability of companies and research related to the influence of Covid-19 on stock market indices and stock market index returns was also carried out by Lv *et al.* (2020) It is known that the Covid-19 pandemic has a significant impact on the stock market and due to the Covid-19 pandemic which has had an impact on the business world, including State-Owned Enterprises (SOEs) (DJKN Kemenkeu, 2020) and also Non-SOEs in the infrastructure sector, so Covid-19 affects the performance of SOEs and Non-SOEs as a whole.

The performance of a business can be influenced by many things, ranging from the company's internal conditions such as its business fundamentals, to external factors such as the state of the macroeconomy, ICI movements, and the application of ESG principles. Research on the dynamics of corporate performance in the infrastructure sector shows the development of scientific publications from year to year. This research trend reflects the increasing attention of academics and practitioners to factors that affect company performance, especially in various aspects (Adam et al., 2024). Based on this, company fundamentals are often considered one of the main determinants in assessing whether a business can run well. A number of studies have also discussed this a lot. For example Benyamin and Soekarno (2023); Chen *et al.* (2019); Meghanathi and Chakrawal (2021); Saleh *et al.* (2021); Paul *et al.* (2021); Okta and Hariasih (2021) found that leverage

and profitability are closely related to stock returns. On the other hand, macroeconomic aspects such as inflation, exchange rates, and interest rates have also been proven to affect a company's performance (Simbolon & Purwanto, 2018). The movement of the ICI cannot be ignored. Research by Amrulah and Iskandar (2022, Thamrin and Sembel (2020), serta Mamesah *et al.* (2023) shows that ICI can reflect market and economic conditions in general, and have a positive influence on the company's stock returns. In addition, ESG trends are also getting more attention. Other studies from Al Amosh *et al.* (2023) shows that companies that care about environmental, social, and governance (ESG) tend to have more stable and sustainable business performance (Dong, 2023; Hastalona & Sadalia, 2021; Savio et al., 2023). Even so, most of the research only focuses on the period before or during the pandemic, and focuses more on stock returns. In fact, to get a more complete picture, it is also necessary to see how factors such as company fundamentals, macroeconomic conditions, ICI, and ESG affect profitability and stock returns, especially in the infrastructure sector. Moreover, this sector has an important role in state development and contributes to state revenue through taxes, both from state-owned and non-state-owned companies. This is in line with the view Langston and Crowley (2022) which mentions that corporate taxes are very important in financing government infrastructure projects and can also affect state revenues on taxes (Yoshino et al., 2020). Therefore, this study will specifically thoroughly examine how the company's fundamental conditions, macroeconomic factors, ICI, and ESG aspects affect profitability and stock returns, taking into account the context of the Covid-19 pandemic. This research will focus on state-owned and non-state-owned companies in the infrastructure sector, considering that this sector has a large contribution to national development and state revenue through taxes. Thus, the results of this study are expected to provide a comprehensive picture of what factors have the most influence on the performance of infrastructure companies, both under normal conditions and when facing crises such as pandemics.

METHODS

This study uses a descriptive quantitative approach that aims to analyze, know, and describe various factors that affect business performance in SOEs and Non-SOEs in the infrastructure sector. The main focus of this study is to examine how the fundamental condition of the company, macroeconomy, ICI, environmental, social, and governance (ESG), profitability, and stock returns in state-owned and non-state-owned companies in the infrastructure sector in the context before, during, and after the Covid-19 pandemic. Through a quantitative approach, this study processes numerical and statistical data from quarterly financial statements from 2018 to 2023. Meanwhile, the descriptive method is used to describe the real conditions in the infrastructure sector, both in terms of state-owned enterprises (SOEs) and private companies (Non-SOEs) (Sugiyono, 2019). There are 71 state-owned and non-state-owned companies that are members of the infrastructure sector.

Table 2. Population of SOEs and Non-SOEs in the Infrastructure Sector

No.	Transportation Infrastructure	Building Construction	Utility	Telecommunications
1	CASS	ACST	ARKO	BTEL
2	CMNP	ADHI	BREN	EXCL
3	GMFI	BEBS	KEEN	FREN
4	IPCC	DGIK	LAPD	INET
5	IPCM	IDPR	MPOW	IPTV
6	JSMR	JKON	PGEO	ISAT
7	KARW	KOKA	POWR	JAST
8	META	MTRA	TGRA	KETR
9	PORT	NRCA		MORA
10		PBSA		MTEL
11		PTDU		TLKM
12		PTPP		BALI

13	SKRN	CENT
14	SSIA	GHON
15	TAMA	GOLD
16	TOPS	IBST
17	TOTL	KBLV
18	WEGE	LCKM
19	WIKA	LINK
20	WSKT	OASA
21	BDKR	SUPR
22	BUKK	TBIG
23	SMKM	TOWR
24	FIMP	
25	KRYA	
26	MANG	
27	MTPS	
28	PPRE	
29	PTPW	
30	RONY	
31	ASLI	

Source: Researcher (2024)

From the total population in table 2. The next researcher said that the population of state-owned companies in the infrastructure sector was 6 companies, so the six companies were used as a sample with a saturated sampling technique (census sampling). Then, sampling non-SOE companies in the infrastructure sector uses purposive sampling techniques, with a specific goal, namely by selecting Non-SOE companies with IPO dates below 2018, this is because in the study we want to research Non-SOE companies in the infrastructure sector before, during, and after the pandemic which is seen from the period starting from 2018 to 2023, the Non-SOE companies in the infrastructure sector are selected to The research sample is 41 companies, but there are 5 Non-SOE companies with incomplete quarterly financial statement data within 6 years from 2018 to 2023 so that the total sample used for Non-SOE companies is 36 companies.

Table 3. Research Sample

No.	SOE	IPO Date	Non-SOE	IPO Date
1	ADHI	18 March 2004	CMNP	10 January 1995
2	JSMR	12 November 2007	SSIA	27 March 1997
3	PTPP	9 February 2010	KBLV	25 February 2000
4	TLKM	14 November 1995	META	18 July 2001
5	WIKA	29 October 2007	CENT	1 November 2001
6	WSKT	19 December 2012	HADE	12 April 2004
7			EXCL	29 September 2005
8			TOTL	25 July 2006
9			FREN	29 November 2006
10			TOWR	8 March 2010
11			GOLD	7 July 2010
12			ACST	24 June 2013
13			NRCA	27 June 2013
14			BALI	13 March 2014
15			LINK	2 June 2014
16			BUKK	29 June 2015
17			POWR	14 June 2016
18			OASA	18 July 2016
19			PBSA	28 September 2016
20			PORT	16 March 2017
21			GMFI	10 October 2017

22	MPOW	5 July 2017
23	PPRE	24 November 2017
24	WEGE	30 November 2017
25	GHON	9 April 2018
26	JKON	04 December 2007
27	CASS	05 December 2011
28	IDPR	10 December 2015
29	SUPR	11 October 2011
30	DGIK	19 December 2007
31	ISAT	19 October 1994
32	KARW	20 December 1994
33	IPCM	22 December 2017
34	TBIG	26 October 2010
35	IBST	31 August 2012
36	TGRA	16 May 2017

Source: Researcher (2024)

RESULTS AND DISCUSSION

Corporate Fundamental Conditions, Macroeconomics, ICI, ESG, Profitability, Stock Returns in State-Owned and Non-State-Owned Companies in the Infrastructure Sector in the Context Before, During, and After the Covid-19 Pandemic

Table 4 shows the results of descriptive statistical analysis that has been processed by researchers related to the fundamental condition of the company, macroeconomy, ICI, environmental, social, and governance (ESG), profitability, stock returns, and covid-19 in state-owned and non-state-owned companies in the infrastructure sector.

Table 4. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROCE	1001	.042	.105	-.953	.944
SR	1008	.013	.31	-.843	3.252
DAR	1004	.596	.431	.003	3.601
CR	989	1.646	2.337	.021	29.125
TAT	1005	.243	.218	.00011	1.361
GS	1008	.085	.21	0	.7
ER	1008	.007	.052	-.126	.177
OP	1008	.025	.166	-.364	.405
GOLD	1008	.019	.052	-.077	.124
MR	1008	.009	.082	-.279	.228

Source: Researcher (2025)

Starting from the profitability variable, which is measured through Return on Capital Employed (ROCE), it has an average of 0.042 with a standard deviation of 0.105, indicating that there is variation in profitability performance between companies. A minimum ROCE value of -0.953 indicates that some companies are experiencing losses, while the maximum value is 0.944. The Stock Return (SR) variable has an average of 0.013 with a standard deviation of 0.31, which reflects that the average stock return is relatively small. However, a minimum value of -0.843 and a maximum of 3.252 indicate a fairly high market volatility. The Debt to Asset Ratio (DAR) has an average of 0.596 and a standard deviation of 0.431, indicating that most of the companies in the sample have a relatively high proportion of debt compared to their assets. A minimum value of 0.003 indicates that some companies have very low debt ratios, while a maximum value of 3.601 indicates that there are companies that rely heavily on debt in their structures. Then, the Current Ratio (CR) has an average of 1,646 with a standard deviation of 2,337, reflecting a fairly high variation in liquidity between companies. A minimum value of 0.021 indicates that some companies have barely enough current assets to cover short-

term liabilities, while a maximum value of 29.125 indicates that there are companies that have very large current assets.

The Total Asset Turnover (TAT) variable has an average of 0.243 with a standard deviation of 0.218, indicating that most of the companies in the sample have moderate asset use efficiency. A minimum value of 0 indicates that there are companies that do not generate revenue from their assets, while a maximum value of 1,361 indicates that some companies are able to generate more than a third of their assets. Government Share (GS) has an average of 0.085 with a standard deviation of 0.21, indicating that most companies have low government involvement in stock ownership. Next, the Exchange Rate (ER) variable has an average of 0.007 with a standard deviation of 0.052, which indicates that the exchange rate fluctuations in the observation period are relatively small. The minimum value of -0.126 and the maximum value of 0.177 indicate that some companies are facing extreme exchange rate changes. The Oil Price (OP) has an average of 0.025 with a standard deviation of 0.166, indicating that the oil price in the observation period is quite stable despite fluctuations. A minimum value of -0.364 and a maximum of 0.405 indicate a large change in the price of oil. Gold Price (GOLD) has an average of 0.019 with a standard deviation of 0.052, indicating that the change in the price of gold is relatively small in the observation period. The minimum value of -0.077 and the maximum value of 0.124 indicate that the fluctuation in the price of gold in this sample is quite limited.

The Market Return (MR) has an average of 0.009 with a standard deviation of 0.082, which indicates moderate market fluctuations. The minimum values of -0.279 and the maximum of 0.228 indicate that some companies experience significant negative market returns while others record relatively high market profits. The Covid-19 Period Dummy variable (DC1) had an average of 0.5, indicating that half of the observations covered periods during the pandemic. Then, the Dummy After Covid-19 (DC2) had an average of 0.167, indicating that the proportion of observations after the pandemic was smaller compared to the period during the pandemic. Dummy ESG (DESG) has an average of 0.833, indicating that about 83.3% of the companies in the sample have a high adoption of sustainability aspects. This value shows a fairly high awareness of ESG in most companies. The Tax Dummy (DPJK) has an average of 0.503, which indicates that about half of the companies in the sample have significant tax contributions.

Table 5. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ROCE	1.000													
(2) SR	0.028	1.000												
	(0.374)													
(3) DAR	-0.036	0.010	1.000											
	(0.257)	(0.740)												
(4) CR	-0.035	-0.023	-0.211*	1.000										
	(0.270)	(0.479)	(0.000)											
(5) TAT	0.270*	0.020	-0.006	0.012	1.000									
	(0.000)	(0.529)	(0.857)	(0.716)										
(6) GS	0.063*	-0.033	0.079*	-0.107*	-0.080*	1.000								
	(0.046)	(0.301)	(0.012)	(0.001)	(0.011)									
(7) ER	-0.019	-0.278*	-0.014	0.002	-0.091*	0.000	1.000							
	(0.549)	(0.000)	(0.656)	(0.948)	(0.004)	(1.000)								
(8) OP	-0.059	0.017	-0.017	0.012	-0.091*	0.000	0.239*	1.000						
	(0.062)	(0.581)	(0.582)	(0.705)	(0.004)	(1.000)	(0.000)							
(9) GOLD	-0.096*	-0.068*	0.013	-0.009	-0.135*	0.000	-0.120*	-0.145*	1.000					
	(0.002)	(0.032)	(0.687)	(0.766)	(0.000)	(1.000)	(0.000)	(0.000)						
(10) MR	0.053	0.355*	0.000	-0.009	0.173*	0.000	-0.774*	0.119*	-0.232*	1.000				
	(0.094)	(0.000)	(0.993)	(0.774)	(0.000)	(1.000)	(0.000)	(0.000)	(0.000)					
(11) DC1	-0.062	0.051	0.004	-0.017	-0.107*	0.000	0.114*	0.186*	-0.090*	0.052	1.000			
	(0.050)	(0.103)	(0.894)	(0.603)	(0.001)	(1.000)	(0.000)	(0.000)	(0.004)	(0.098)				
(12) DC2	0.030	-0.044	0.078*	0.030	0.040	0.000	-0.099*	-0.092*	0.134*	0.034	-0.447*	1.000		
	(0.349)	(0.161)	(0.013)	(0.349)	(0.205)	(1.000)	(0.002)	(0.004)	(0.000)	(0.287)	(0.000)			
(13) DESG	0.159*	-0.039	-0.068*	-0.183*	0.130*	0.181*	0.000	0.000	0.000	0.000	0.000	0.000	1.000	
	(0.000)	(0.216)	(0.031)	(0.000)	(0.000)	(0.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)		
(14) DPJK	0.149*	-0.003	0.001	-0.066*	0.135*	-0.033	0.033	0.039	-0.083*	0.048	0.069*	-0.019	0.029	1.000
	(0.000)	(0.912)	(0.986)	(0.039)	(0.000)	(0.295)	(0.289)	(0.210)	(0.008)	(0.124)	(0.027)	(0.555)	(0.353)	

** shows significance at p<.05*

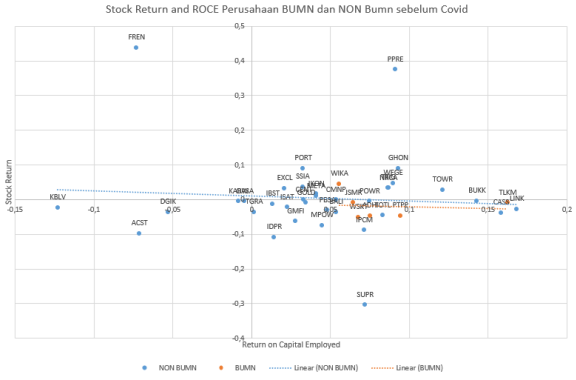
Source: Researcher (2025)

Table 5 shows the results of the paired correlation matrix between the variables studied. Return on Capital Employed (ROCE) has a positive correlation with Total Asset Turnover (TAT) of 0.270, which indicates that the higher the efficiency of the company in using assets to generate income, the more profitability the company tends to increase. In addition, the correlation between ROCE and Government Share (GS) of 0.063 suggests that companies with a larger proportion of government ownership tend to generate higher profits. The positive relationship between the variables Stock Return (SR) and Market Return (MR) of 0.355 indicates that there is a correlation between the performance of individual stocks and the overall market performance. The Debt to Asset Ratio (DAR) has a negative correlation with the Current Ratio (CR) of -0.211, which indicates that companies with higher debt tend to have lower liquidity. In addition, a positive correlation between DAR and Government Share (GS) of 0.079 suggests that companies with higher government involvement are correlated with high levels of leverage. Total Asset Turnover (TAT) has a positive correlation with tax revenue (DPJK) of 0.135, which shows that the efficiency of using company assets in generating revenue is related to the company's tax contribution to the state. This means that when the TAT increases, tax revenue from companies tends to increase. The Exchange Rate (ER) has a high negative correlation with the Market Return (-0.774), which indicates that changes in the exchange rate have an opposite effect on market performance. The positive correlation between ER and oil price (OP) of 0.239 indicates that exchange rate movements are in line with oil price fluctuations.

Oil prices (OP) and gold prices (GOLD) have a low correlation with most variables, suggesting that fluctuations in commodity prices do not affect profitability or stock returns much. However, there is a negative correlation between GOLD and Market Return (-0.232), which suggests that rising gold prices can have a negative effect on stock market performance. The Covid-19 variable dummy shows that there is a significant difference between the period during (DC1) and after the pandemic (DC2), as seen from the negative correlation of -0.447 between the two variables. Dummy ESG (DESG) has a positive correlation with DPJK of 0.029, indicating that companies with higher levels of ESG compliance tend to have greater tax contributions.

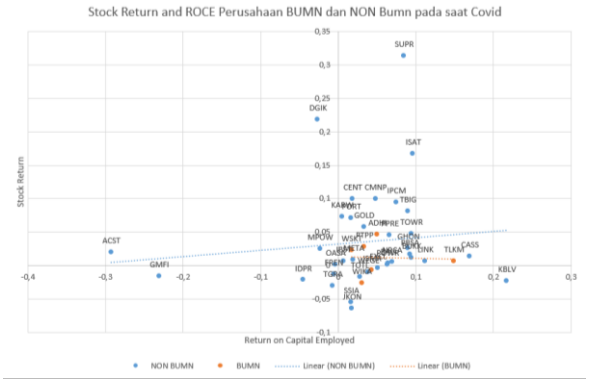
Overview of Stock Return and Return On Capital Employed of SOEs and Non-SOEs during Covid-19

Figures 4, 5 and 6 show the scatter plot graph of stock return (SR) and return on capital employed (ROCE) of 42 SOEs and Non-SOEs before, after and during covid. Before the pandemic, there was no strong relationship between ROCE and Stock Return, both in SOE and Non-SOEs. The linear trend line that tends to be flat, even slightly negative, indicates that capital use efficiency has not yet been the main determining factor for stock movements in the market. Non-SOE stocks also show higher volatility than SOEs, reflected in a wider spread of data on both axes.



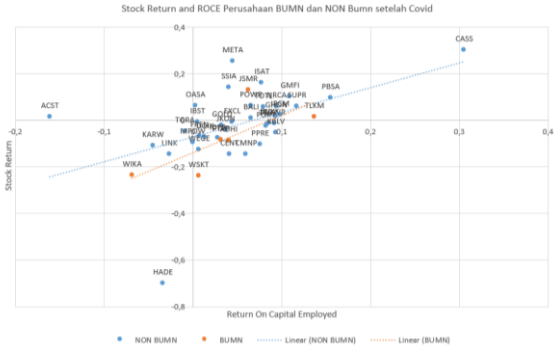
Source: Researcher (2025)

Figure 4. Scatter Plot Chart of Stock Return and ROCE of State-Owned and Non-State-Owned Companies in the Time Before Covid-19



Source: Researcher (2025)

Figure 5. Scatter Plot Chart of Stock Return and ROCE of SOE and Non-SOE Companies during Covid-19



Source: Researcher (2025)

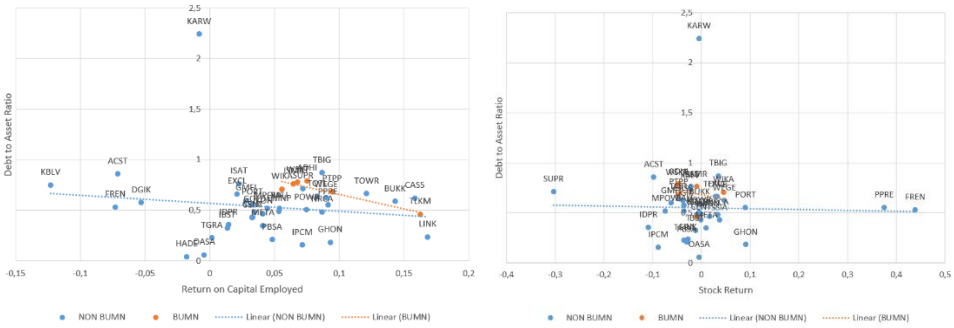
Figure 6. Scatter Plot Chart of Stock Return and ROCE of SOEs and Non-SOEs in the post-Covid-19 period

Entering the period during the Covid-19 pandemic, this relationship pattern began to change. The linear trend line in non-SOE companies is starting to show a positive direction, although the relationship with SOE companies remains flat. This indicates that amid the uncertainty of the pandemic, non-SOE investors are starting to pay attention to fundamental performance, such as ROCE, as an indicator to predict stock returns, although the strength of the relationship is not yet very significant. Meanwhile, SOE stocks remain stable, with narrower spreads and flat trend lines, reflecting the market's perception that SOEs play a "safe haven" during a crisis. After the pandemic, the relationship between ROCE and Stock Return has strengthened significantly, especially in non-state-owned companies. The Non-SOE linear trend line has a clear positive slope, indicating that the market increasingly appreciates capital use efficiency in determining stock returns. In state-owned companies, the trend line is also starting to show a positive direction, although the slope is not as large as in non-SOEs. This condition shows a shift in investor behavior that increasingly considers fundamental factors in making post-pandemic investment decisions, as well as signaling a market recovery that is starting to appreciate the company's operational performance. Overall, the Covid-19 pandemic seems to be a catalyst that encourages investors to pay more attention to fundamental performance, especially in non-state-owned companies. If before the pandemic the relationship between ROCE and Stock Return was weak, then after the pandemic this relationship strengthened, reflecting changes in market dynamics and investor behavior in Indonesia.

Overview of the Relationship between Debt to Asset Ratio and Stock Return and Return On Capital Employed of SOEs and Non-SOEs during Covid-19

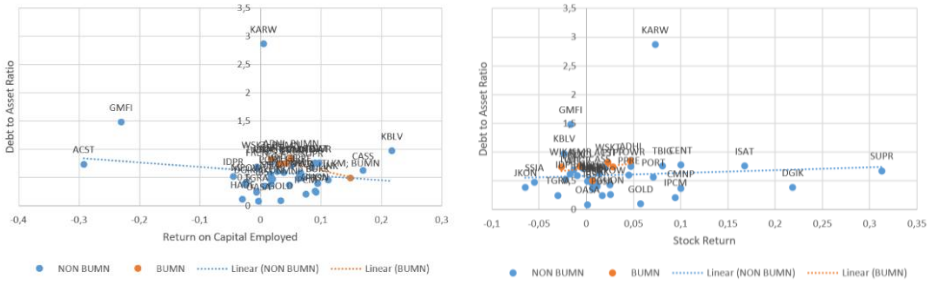
Figures 7, 8 and 9 analyze the relationship between Debt to Asset Ratio (DAR), Stock Return (SR), and Return on Capital Employed (ROCE) in 42 SOE and Non-SOE infrastructure companies in three periods, namely before, during, and after the Covid-19 pandemic. Figure 7 shows the relationship between DAR and SR before Covid-19. Non-

SOE companies are seen to be more widely distributed, while SOEs are more concentrated around zero to small positive returns. The Non-SOE trend line is slightly up, indicating a weak positive trend between DAR and SR, while in SOEs there is also a positive trend. However, in general, this relationship is very weak, indicating that before Covid, corporate leverage had not played a major role in driving stock returns, both in SOEs and Non-SOEs. This graph also shows the relationship between DAR and ROCE before Covid. Non-SOEs show a weak negative trend, while SOEs show a slight downward trend. This means that leverage tends to slightly depress capital use efficiency in both groups before the pandemic, even though the relationship is not very strong.



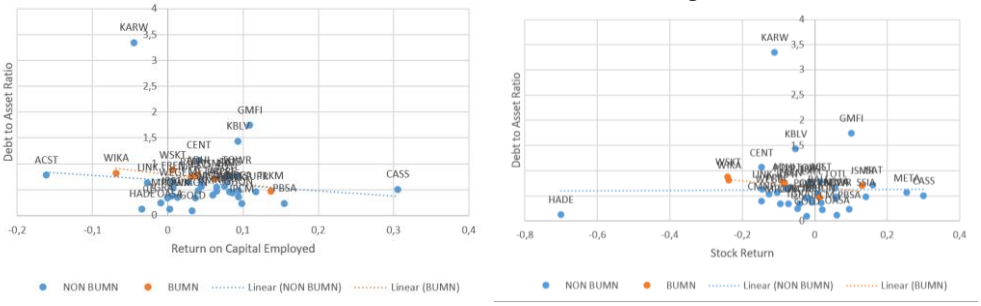
Source: Researcher (2025)

Figure 7. Scatter Plot Chart the Relationship between Debt to Asset Ratio and Stock Return and ROCE of SOEs and Non-SOEs in the Time Before Covid-19



Source: Researcher (2025)

Figure 8. Scatter Plot Chart the Relationship between Debt to Asset Ratio and Stock Return and ROCE of SOEs and Non-SOEs during Covid-19



Source: Researcher (2025)

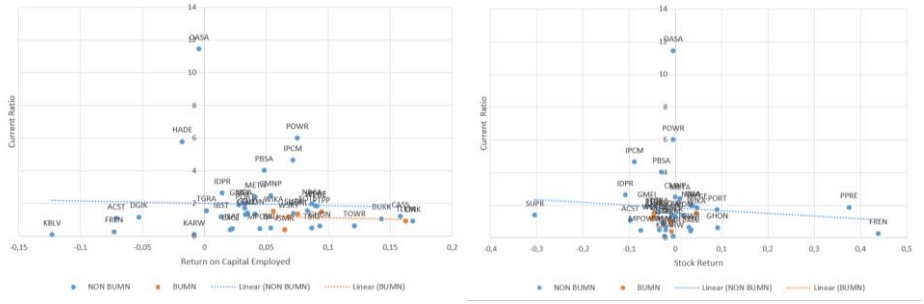
Figure 9. Scatter Plot Chart the Relationship between Debt to Asset Ratio and Stock Return and ROCE of SOEs and Non-SOEs in the post-Covid-19 period

During the pandemic, figure 9 shows a wider spread of data, especially for Non-SOEs with a negative SR that is quite extreme (up to -0.3), while SOEs continue to gather in narrower areas. The trend line of Non-SOEs is almost flat, indicating that there is no meaningful relationship between DAR and SR. For SOEs, the trend line is slightly up, indicating that during a crisis, SOEs tend to be able to maintain leverage without significantly destroying stock returns. This may reflect the government's protective role for SOEs. In addition, during the pandemic, both SOEs and Non-SOEs showed a clearer negative trend between DAR and ROCE. This means that during a crisis, companies with high debt ratios tend to experience a sharper decline in capital efficiency. SOEs, although still more stable, have also begun to show a decline in ROCE performance as leverage

increases. After Covid-19, figure 9 shows that Non-SOE companies have a wider spread with several large negative return outliers, while SOEs remain more stable. The Non-SOE trendline remained flat, while the SOE trendline showed a slight decline. This means that in the recovery phase, high leverage begins to become a burden for SOEs and is negatively correlated with the performance of their stocks. After Covid, the negative relationship between DAR and ROCE is increasingly firm, both for SOEs and Non-SOEs. The trend lines of SOEs and Non-SOEs are both declining, with Non-SOEs sharper. This suggests that the post-pandemic recovery is still burdened by debt, and the higher the leverage, the lower the company's ability to generate a return on its capital.

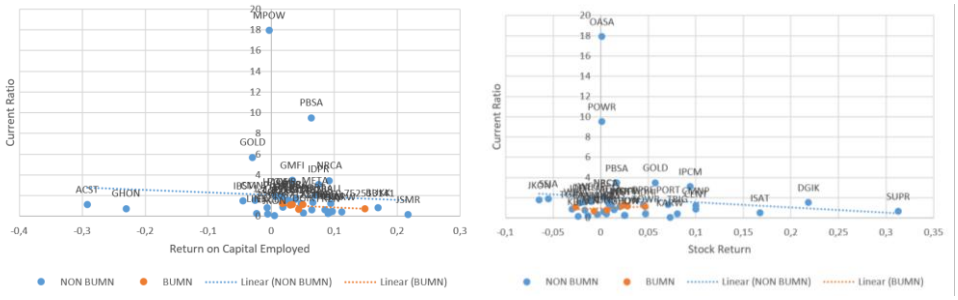
Overview of the Relationship between Current Ratio and Stock Return and Return On Capital Employed of State-Owned and Non-State-Owned Companies during Covid-19

Figures 10, 11 and 12 analyze the relationship between Current Ratio (CR), Stock Return (SR), and Return on Capital Employed (ROCE) in 42 state-owned and non-state-owned infrastructure companies in three periods, namely before, during, and after the Covid-19 pandemic. Figure 10 shows a fairly weak relationship between CR and SR, with most of the SOE and Non-SOE data concentrated on a low current ratio and stock returns around 0 to positive 0.1. There are several outliers in Non-SOEs with a very high current ratio (>10) but not accompanied by high stock returns. The trend line tends to be flat or slightly decreasing, indicating that the company's liquidity level (as reflected in the current ratio) is not much related to the performance of stocks before the pandemic, both in SOEs and Non-SOEs. Before the pandemic, the relationship between CR and ROCE in Non-SOEs showed a horizontal or slightly negative trend, while in SOEs, the trend line was almost flat. This shows that liquidity has not played much of a role in improving the efficiency of capital use before the pandemic, both in state-owned and private companies.



Source: Researcher (2025)

Figure 10. Scatter Plot Chart The Relationship between Current Ratio and Stock Return and ROCE of State-Owned and Non-State-Owned Companies in the Time Before Covid-19

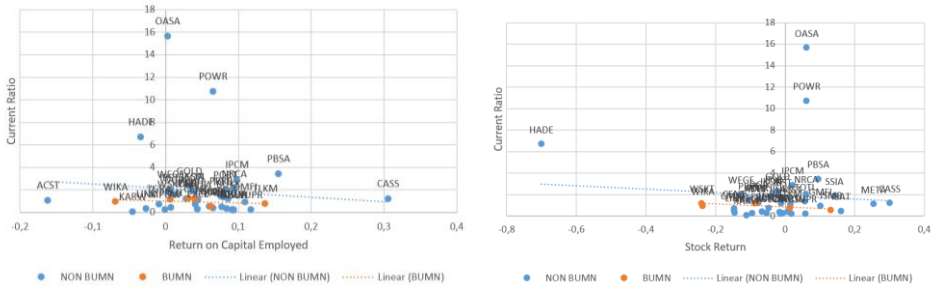


Source: Researcher (2025)

Figure 11. Scatter Plot Chart The Relationship between Current Ratio and Stock Return and ROCE of SOEs and Non-SOEs at the time during Covid-19

During the pandemic, the spread of the current ratio in Non-SOEs remained quite wide in Figure 11, while SOEs remained stable in the low current ratio range. The trend line in Non-SOEs is slightly up, indicating that during the crisis period, companies with better liquidity have little advantage in maintaining or increasing stock returns. In SOEs, the trend line is flat, indicating a more controlled impact of the crisis, possibly due to

support from the government. During the pandemic, the trend line of Non-SOEs remained slightly decreasing, while SOEs actually showed a horizontal or slightly positive trend. This indicates that SOEs, with relatively maintained liquidity, are able to maintain capital efficiency in the midst of a crisis, while Non-SOEs are under greater pressure despite having a high current ratio. After the pandemic, figure 12 shows that the high current ratio in Non-SOEs does not correlate with better stock returns, even the trend line decreases slightly. Meanwhile, SOEs continue to show stability, with a horizontal trend line. This shows that in the recovery phase, corporate liquidity (CR) is no longer the main factor affecting stock performance, especially in SOEs. Furthermore, the pattern of negative relationships is increasingly evident in non-SOEs in the post-Covid period, showing that high current ratios no longer help increase ROCE, and even tend to burden capital efficiency. In SOEs, the line trend is also decreasing, although in general it is more stable than non-SOEs. This shows that in the recovery period, the efficiency of capital use is more influenced by factors other than liquidity.

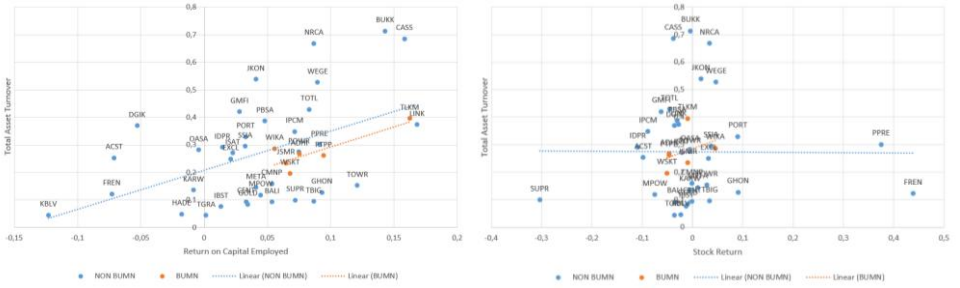


Source: Researcher (2025)

Figure 12. Scatter Plot Chart The Relationship between Current Ratio and Stock Return and ROCE of SOEs and Non-SOEs in the Post-Covid-19 Period

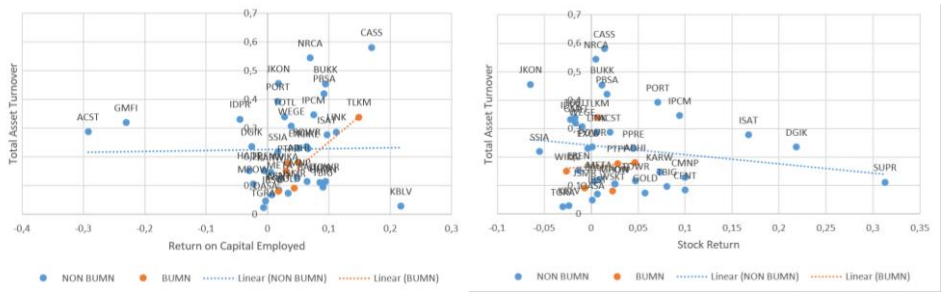
Overview of the Relationship between Total Asset Turnover and Stock Return and Return On Capital Employed of SOEs and Non-SOEs during Covid-19

Figures 13, 14 and 15 analyze the relationship between Total Asset Turnover (TAT), Stock Return (SR), and Return on Capital Employed (ROCE) in 42 SOE and Non-SOE infrastructure companies in three periods, namely before, during, and after the Covid-19 pandemic. Figure 13 shows that before the Covid-19 pandemic, the relationship between Total Asset Turnover (TAT) and Stock Return (SR) in SOEs and Non-SOEs tended to be weak with negative trends, especially in Non-SOEs. Most of the SOE data was concentrated on low TAT with SR around zero to small positive, while Non-SOEs showed a wider spread but still did not produce a meaningful positive correlation. During the pandemic, relationship patterns changed slightly; The trend line in Non-SOEs is flattening, while in SOEs it shows a slight increase. This shows that during the crisis period, the efficiency of asset use began to be slightly positively related to stock performance, especially in SOEs, which may be due to their ability to maintain more stable operations than non-SOEs.



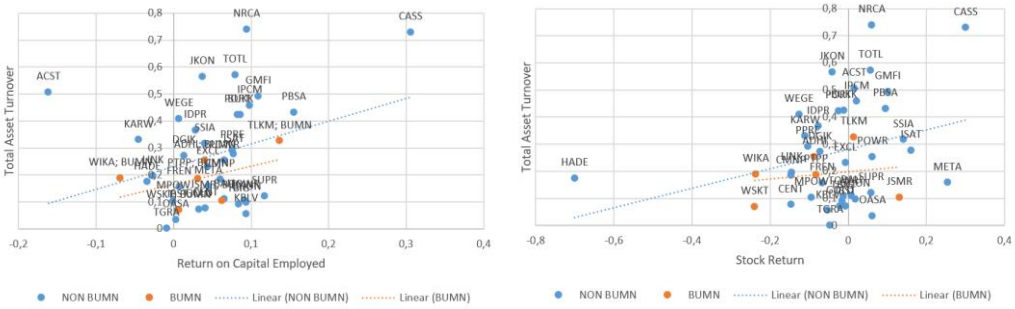
Source: Researcher (2025)

Figure 13. Scatter Plot Chart the Relationship between Total Asset Turnover and Stock Return and ROCE of State-Owned and Non-State-Owned Companies in the Time Before Covid-19



Source: Researcher (2025)

Figure 14. Scatter Plot Chart the Relationship between Total Asset Turnover and Stock Return and ROCE of SOEs and Non-SOEs during Covid-19



Source: Researcher (2025)

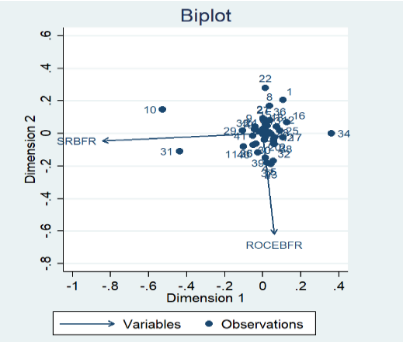
Figure 15. Scatter Plot Chart the Relationship between Total Asset Turnover and Stock Return and ROCE of SOEs and Non-SOEs in the post-Covid-19 period

After the pandemic, the relationship pattern between TAT and SR has strengthened, especially in non-SOEs, which shows a clear positive trend. This indicates that post-pandemic, asset use efficiency is an important factor in boosting the stock performance of non-SOE companies, while SOEs remain relatively stable with a sloping trend. On the other hand, the relationship between TAT and ROCE before the pandemic showed a flat pattern, both in SOEs and non-SOEs, indicating that asset efficiency has not had much impact on the effectiveness of capital use. However, during the pandemic, SOEs actually showed a fairly sharp positive trend between TAT and ROCE, while non-SOEs remained flat, indicating that SOEs were able to utilize assets more efficiently to generate capital returns during times of crisis. After the pandemic, the positive relationship between TAT and ROCE is increasingly evident in both SOEs and non-SOEs, with upward trend lines in both groups. This shows that post-crisis, both state-owned and privately owned companies are increasingly able to leverage asset efficiency to increase capital effectiveness, reflecting a healthier recovery process. Overall, these findings indicate that the role of asset efficiency is becoming increasingly important in influencing financial performance, especially after the pandemic, with non-SOEs showing a stronger response to the stock market and SOEs showing more stable adaptation in their internal operations.

The Relationship between Stock Return and Return on Capital Employed Before, During and After Covid-19

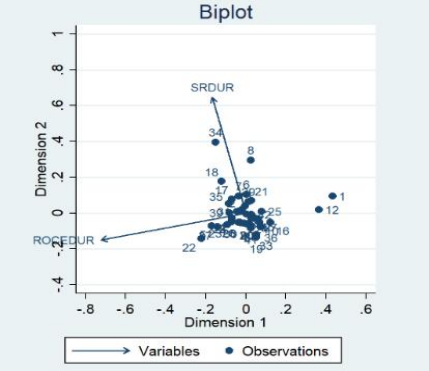
Figures 16, 17, and 18 show a two-panel biplot that provides an overview of the relationship between the Stock Return (SR) and Return on Capital Employed (ROCE) of 42 infrastructure companies in Indonesia, as well as how the two variables affect the distribution of observations in the dataset. In figure 16, the SRBFR variable (stock return before Covid-19) shows a strong negative direction in dimension 1, while ROCEBFR (ROCE before Covid-19) is predominantly negative in dimension 2. The majority of observations were seen gathering at the center, reflecting that before the pandemic, corporate performance tended to be homogeneous, with only a few companies (e.g. numbers 10, 31, and 34) deviating from the general pattern. The relationship between SR and ROCE before the pandemic also appears to be parallel, suggesting that before the

pandemic, operating profitability (ROCE) was not necessarily directly correlated with stock returns.



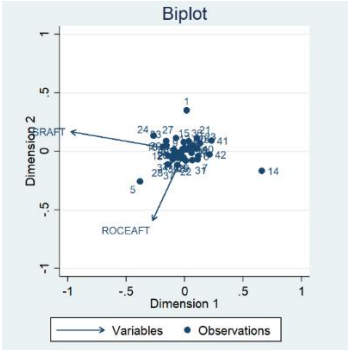
Source: Researcher (2025)

Figure 16. Two-Panel Biplot between Stock Return and Return on Capital Employed Before Covid-19



Source: Researcher (2025)

Figure 17. Two Panel Biplot between Stock Return and Return on Capital Employed During Covid-19



Source: Researcher (2025)

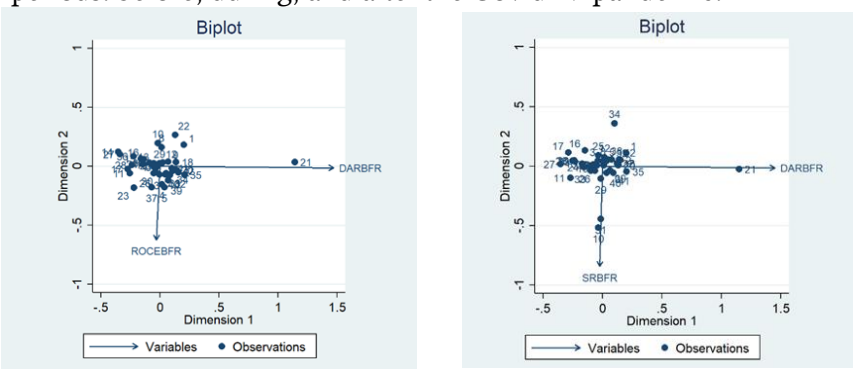
Figure 18. Two-Panel Biplot between Stock Return and Return on Capital Employed After Covid-19

The second panel, which shows the variables (SR and ROCE arrows), illustrates the relationship between the two variables. The SR and ROCE arrows have almost the same direction, which indicates a positive correlation between these two variables. This means that companies or observants that have a high rate of return on their shares (SR) tend to also have a high rate of return on capital used (ROCE). Figure 17 shows that the variables SRDUR (stock return during Covid-19) and ROCEDUR (ROCE during Covid-19) have relatively different vector directions. SRDUR leads to a strong positive to dimension 2, while ROCEDUR tends to be negative in dimension 1. This suggests that during Covid-19, the pattern of stock return movement was not in line with ROCE, and both may reflect two different performance patterns among companies. Some observations such as numbers 34 and 8 were seen spreading far from the main set, suggesting these companies had very different characteristics from the majority, possibly

affected by Covid-19 to the extreme. Furthermore, figure 18 shows that SRAFT (stock return after Covid-19) tends to be negative in dimension 1, while ROCEAFT (ROCE after Covid-19) tends to be negative in dimension 2. While most of the observations remain clustered at the center, outliers such as numbers 5 and 14 show companies behaving very differently post-pandemic. This pattern shows that post-pandemic, the relationship between stock returns and ROCE is still not uniform, and some companies may experience non-linear recovery or decline in both variables.

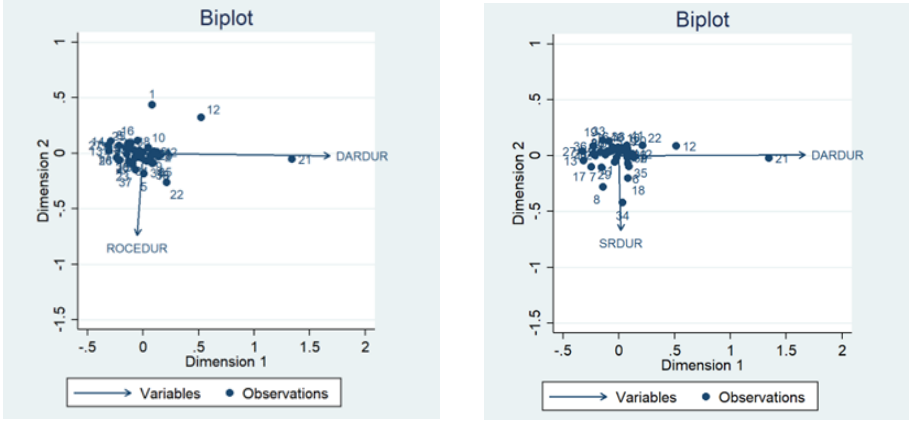
The Relationship between Debt to Asset Ratio and Stock Return and Return on Capital Employed Before, During and After Covid-19

Figures 19, 20, and 21 as a whole present a three-panel biplot illustrating the relationship between the Debt to Asset Ratio (DAR), Stock Return (SR), and Return on Capital Employed (ROCE) of 42 infrastructure companies in Indonesia in three different time periods: before, during, and after the Covid-19 pandemic.



Source: Researcher (2025)

Figure 19. Two-Panel Biplot between Debt to Asset Ratio with Stock Return and ROCE



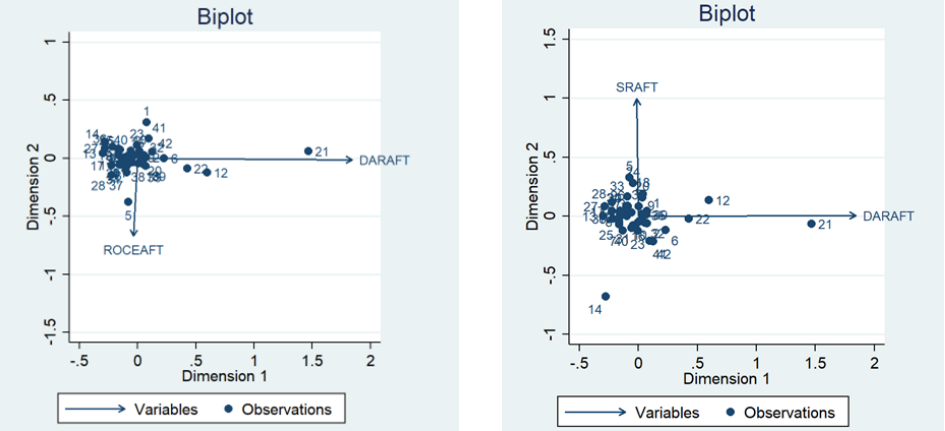
Source: Researcher (2025)

Figure 20. Two Panel Biplots between Debt to Asset Ratio with Stock Return and ROCE during Covid-19

In the period before Covid-19 Figure 19, the DARBFR (Debt to Asset Ratio Before Covid-19) arrow dominated the horizontal direction (dimension 1), while SRBFR and ROCEBFR tended to be negative in the vertical dimension (dimension 2). This pattern shows that leverage or debt levels are the main factors that differentiate companies, while stock performance and profitability have different patterns. The misalignment of the SR and ROCE arrows indicates that before the pandemic, stock returns were not necessarily in line with capital management efficiency.

Entering the period during Covid-19 Figure 20, DARDUR still dominated dimension 1, while SRDUR and ROCEDUR showed different vector directions vertically. SRDUR is strongly pointing downwards, while ROCEDUR is relatively vertical but not aligned. This difference in orientation reflects that during a crisis, the performance of stocks does not always reflect the fundamental condition of the company. Some companies (e.g. observations 21 and 34) are seen as outliers, indicating a higher vulnerability to external pressures during the pandemic. In the period after Covid-19

Figure 21, the DARAFT arrow still shows dominance in dimension 1, while SRAFT and ROCEAFT have vertically opposite directions—SRAFT points upwards and ROCEAFT downwards. This indicates that post-pandemic, there is an insynchronization between the stock market recovery and internal operational performance. Although most of the observations are concentrated in the center, the presence of outliers such as observations 5 and 21 reinforces the picture that the recovery is not uniform across the firm.

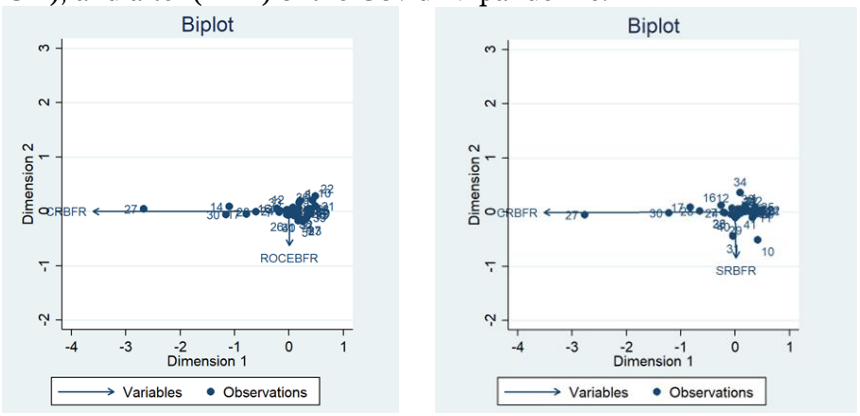


Source: Researcher (2025)

Figure 21. Two Panel Biplot between Debt to Asset Ratio with Stock Return and ROCE after Covid-19

The Relationship between Current Ratio and Stock Return and Return on Capital Employed at the Time Before, During and After Covid-19

Figures 22, 23, and 24 show a three-panel biplot that illustrates the relationship between the Current Ratio (CR), Stock Return (SR), and Return on Capital Employed (ROCE) of 42 infrastructure companies in Indonesia in three time periods: before (BFR), during (DUR), and after (AFT) of the Covid-19 pandemic.

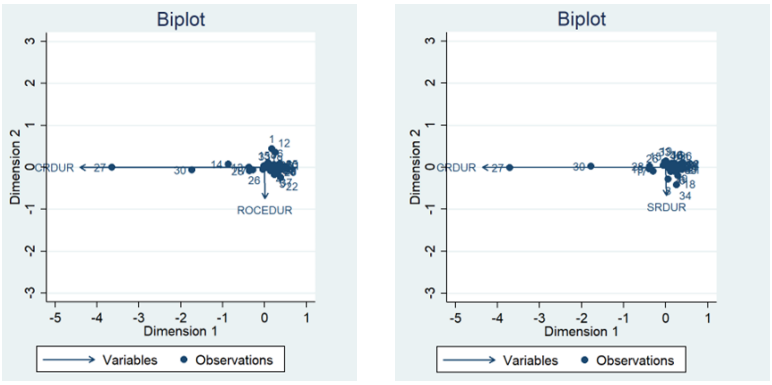


Source: Researcher (2025)

Figure 22. Two Panel Biplot between Current Ratio with Stock Return and ROCE in the Time Before Covid-19

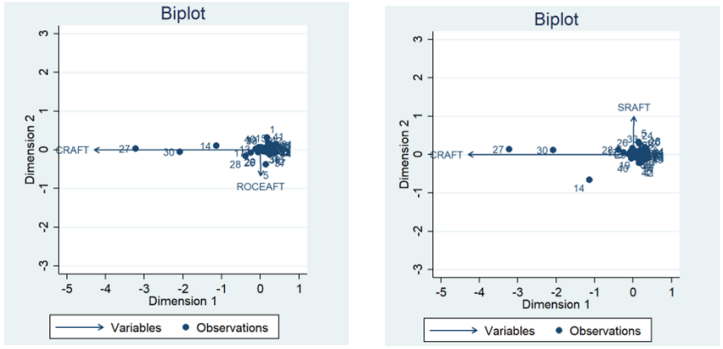
In the period before Covid-19 Figure 22, the CRBFR (Current Ratio Before) arrow pointed strongly to the left side (negative in dimension 1), while SRBFR and ROCEBFR pointed downwards (negative in dimension 2). This orientation reflects that the company's liquidity level (CR) is the main determinant of variation between companies horizontally, while stock performance and profitability are more influenced by vertical differences. The misaligned arrow direction between the three variables shows that before the pandemic, the relationship between liquidity and financial performance was not linear. Outliers such as observations numbers 10 and 27 show a very deviant financial character compared to the majority of other companies. During the pandemic period Figure 23, a similar pattern is still visible. CRDUR (Current Ratio During) remains the dominant variable in dimension 1, while SRDUR and ROCEDUR have a negative vertical orientation. The difference in arrow direction between CR and SR/ROCE

indicates that during the pandemic, increased liquidity needs or cash flow pressures are not necessarily related to changes in the company's market performance or operations. Some observations such as numbers 27, 30, and 14 are far from the center, reflecting the extreme financial instability that some companies are facing amid the pressures of the crisis.



Source: Researcher (2025)

Figure 23. Two Panel Biplot between Current Ratio with Stock Return and ROCE after Covid-19



Source: Researcher (2025)

Figure 24. Two Panel Biplot between Current Ratio with Stock Return and ROCE after Covid-19

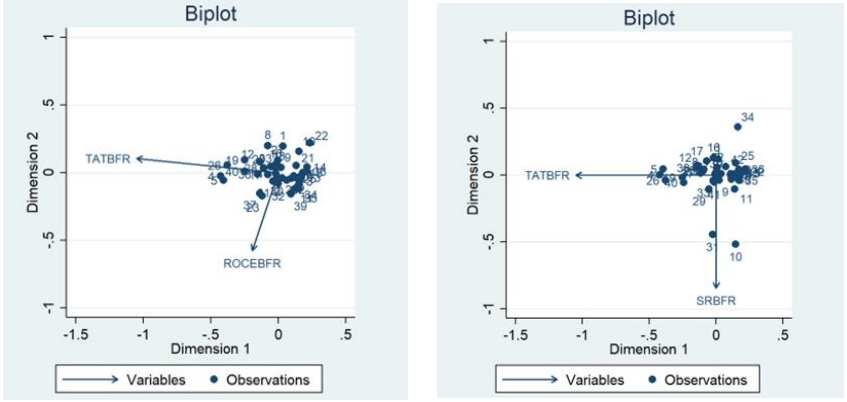
In the post-pandemic period Figure 24, the CRAFT (Current Ratio After) still maintains a strong leftward direction, indicating that the horizontal dimension is still dominated by the liquidity ratio. On the other hand, SRAFT (Stock Return After) is pointing upwards and ROCEAFT (ROCE After) is pointing downwards, reinforcing indications of a misalignment between market performance and post-pandemic operational efficiency. The distribution of observations remained concentrated at the center, but the presence of outliers such as numbers 5 and 14 indicates a non-uniform recovery response among companies, possibly due to differences in financial strategies and cost structures

The Relationship between Total Asset Turnover and Stock Return and Return on Capital Employed before, During and After Covid-19

Figures 25, 26, and 26 present a three-panel biplot that illustrates the relationship between Total Asset Turnover (TAT), Stock Return (SR), and Return on Capital Employed (ROCE) in three periods: before (BFR), during (DUR), and after (AFT) of the Covid-19 pandemic.

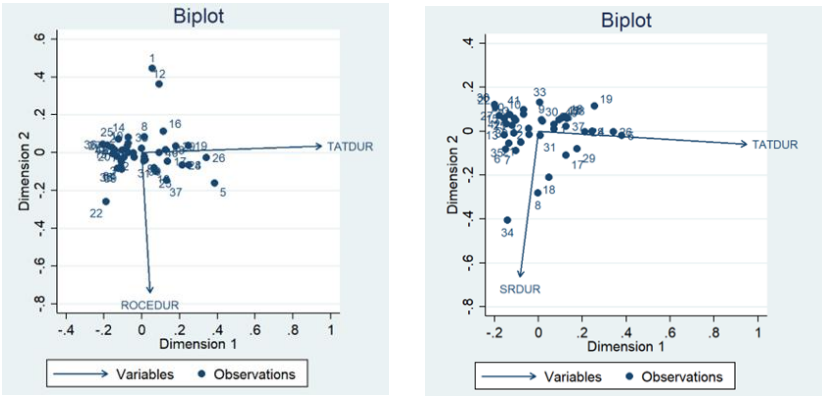
In the period before Covid-19 Figure 25, the TATBFR arrow pointed strongly to the left (negative in dimension 1), while the SRBFR pointed downwards (negative in dimension 2). The misaligned direction of the vector suggests that the efficiency of asset use does not directly correlate with the rate of return on stocks. Most of the observations are concentrated in the center, but there are some outliers such as observations numbers 10 and 3 that deviate significantly vertically and horizontally, reflecting the financial condition of the majority of other companies. During the Covid-19 pandemic period Figure 26, the direction of the TATDUR arrow shifted to dominant in dimension 1

(pointing to the right), while SRDUR remained pointing downwards (negative in dimension 2). The two vectors are almost perpendicular, signaling the absence of a linear relationship between asset use efficiency and stock performance during the pandemic. Some companies, such as observations 34 and 8, are prominent outliers, showing the uneven impact of crises between companies.



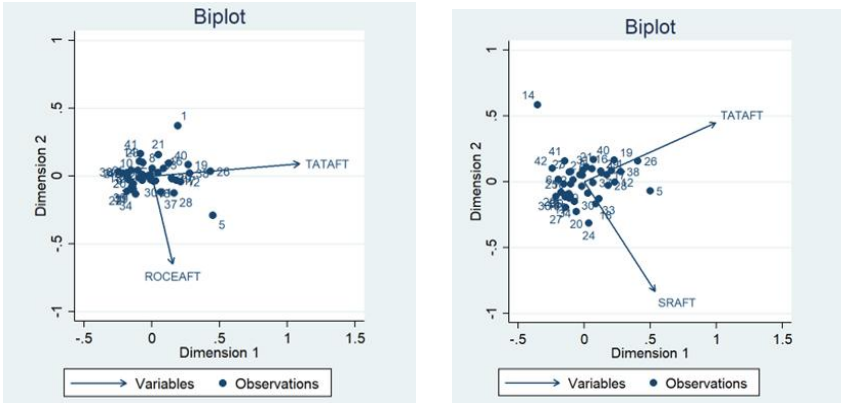
Source: Researcher (2025)

Figure 25. Two Panel Biplots between Total Asset Turnover with Stock Return and ROCE in the Time Before Covid-19



Source: Researcher (2025)

Figure 26. Two Panel Biplot between Total Asset Turnover with Stock Return and ROCE during Covid-19



Source: Researcher (2025)

Figure 27. Two Panel Biplots between Total Asset Turnover with Stock Return and ROCE after Covid-19

In the period after the pandemic Figure 27, the TATAFT arrow points to the upper right (positive in dimensions 1 and 2), while SRAFT points to the lower right (positive in dimension 1 but negative in dimension 2). This suggests that although both variables are both increasing on the horizontal dimension (representing the potential

recovery of asset efficiency), the opposite vertical direction reflects the asynchrony between market performance and operational efficiency. This means that companies that are able to restore asset use efficiency do not necessarily get a positive response from the stock market. Outliers such as observations numbers 5 and 14 show a very different recovery pattern than other companies.

Company Conditions, Macroeconomics, ICI, Environmental, Social, and Governance (ESG), Profitability, Share Returns, and Covid-19 in ESG and Non-ESG Companies in the Infrastructure Sector

Table 6 shows descriptive statistics that present a comparison between companies that implement ESG (Envsironmental, Social, and Governance) and those that do not implement ESG in several financial variables. In terms of Return on Capital Employed (ROCE), companies that implement ESG have a higher average (0.049) compared to non-ESG companies that only have an average of 0.005. However, ESG firms show greater variability with a standard deviation of 0.112, while non-ESG firms have a smaller standard deviation (0.051), which indicates that although ESG firms are more profitable, their performance is more volatile.

Table 6. Descriptive Statistics of ESG and Non-ESG Companies

	ESG					Non-ESG				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
ROCE	833	.049	.112	-.953	.944	168	.005	.051	-.138	.181
SR	840	.008	.275	-.843	2.069	168	.041	.445	-.8	3.252
DAR	836	.574	.263	.071	1.928	167	.701	.872	.0026	3.601
CR	840	1.466	1.58	.021	12.231	149	2.663	4.588	.031	29.124
TAT	837	.256	.228	.0013	1.361	168	.180	.135	.00011	.689
GS	840	.102	.226	0	.7	168	0	0	0	0
ER	840	.007	.052	-.126	.177	168	.007	.052	-.126	.177
OP	840	.025	.166	-.364	.405	168	.025	.166	-.364	.405
GOLD	840	.019	.052	-.077	.124	168	.019	.052	-.077	.124
MR	840	.009	.082	-.279	.228	168	.009	.082	-.279	.228

Source: Researcher (2025)

In the Stock Return (SR) variable, non-ESG companies have a higher average (0.041) compared to ESG companies (0.008), but ESG companies show lower volatility, with a standard deviation of 0.275 compared to 0.445 for non-ESG companies. In terms of Debt to Asset Ratio (DAR), ESG companies tend to have lower debt levels with an average of 0.574, although there is still a large variation, while non-ESG companies have an average of 0.701, indicating higher debt levels and greater variation. The Current Ratio (CR) variable shows that non-ESG companies have a higher average (2,663) compared to ESG companies (1,466), but a much greater variation in non-ESG companies, which is reflected in a larger standard deviation (4,588 versus 1.58). For other variables, ESG companies tend to show better performance on Total Asset Turnover (TAT), albeit with greater variation, which indicates a more volatile performance. Overall, companies that implement ESG tend to have more varied and volatile performance, with some variables showing advantages over non-ESG companies, but also followed by higher fluctuations. In addition, Non-ESG Companies, have higher debt levels and lower returns compared to companies that implement ESG.

Corporate Conditions, Macroeconomics, ICI, Environmental, Social, and Governance (ESG), Profitability, Stock Returns, and Covid-19 in State-Owned and Non-State-Owned Companies in the Infrastructure Sector

Table 7 presents descriptive statistics that compare the financial performance of SOE and Non-SOE companies in the infrastructure sector by focusing on several main indicators, namely Return on Capital Employed (ROCE), Stock Return (SR), Debt to Asset Ratio (DAR), Current Ratio (CR), and Total Asset Turnover (TAT). In general, SOEs have an average ROCE of 0.061, higher than Non-SOEs which only reach 0.039. This shows that SOEs are more efficient in utilizing working capital to generate profits, even though the data dissemination is relatively lower than that of Non-SOEs. In terms

of share returns, Non-SOE companies have an average stock return of 0.017, slightly higher than SOEs which are only 0.011. Nevertheless, the volatility of SOE stock returns is slightly larger, indicated by a higher standard deviation, which indicates greater stock yield volatility in the SOE group.

Table 7. Descriptive Statistics of SOE and Non-SOE Companies

	SOE					Non-SOE				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
ROCE	144	.061	.067	-.138	.377	857	.039	.109	-.953	.943
SR	144	.011	.345	-.674	2.069	864	.017	.303	-.842	3.252
DAR	144	.721	.118	.418	.878	859	.574	.460	.0026	3.601
CR	144	1.048	.348	.279	2.124	845	1.748	2.509	.021	29.124
TAT	144	.207	.143	.025	.634	861	.249	.227	.00011	1.361
ER	144	.007	.052	-.126	.177	864	.007	.052	-.126	.177
OP	144	.025	.166	-.364	.405	864	.025	.166	-.364	.405
GOLD	144	.019	.052	-.077	.124	864	.019	.052	-.077	.124
MR	144	.009	.082	-.279	.228	864	.009	.082	-.279	.228

Source: Researcher (2025)

Furthermore, in terms of funding structure, SOEs show a higher dependence on debt, reflected in the Debt to Asset Ratio (DAR) of 0.721 compared to Non-SOEs which are only 0.574. This indicates that SOEs are more levered, that is, they use more debt to finance their assets. Meanwhile, in terms of liquidity, Non-SOEs excel with an average Current Ratio of 1,748, far above SOEs which are only 1,048. However, the very high standard deviation in the CR of Non-SOEs indicates that there is a huge variation in liquidity between Non-SOEs, indicating that not all companies in this group have a solid short-term financial position. Finally, in terms of operational efficiency, the Total Asset Turnover (TAT) of Non-SOE companies is higher (0.249) than that of SOEs (0.207), indicating that Non-SOE companies tend to be more efficient in managing assets to generate revenue. Overall, SOEs show strength in working capital efficiency (ROCE), but have limitations in liquidity and asset efficiency, while Non-SOEs excel in operational efficiency and lighter financial structure, albeit with lower levels of profitability

CONCLUSION

This study explains that the performance conditions of infrastructure companies, both state-owned and non-state-owned, experienced significant dynamics before, during, and after the Covid-19 pandemic. In terms of company fundamentals, indicators such as asset use efficiency (TAT) and working capital management (ROCE) show increased relevance post-pandemic, especially in non-state-owned companies that are increasingly judged by the market based on their fundamental performance. Then, macroeconomic factors, such as exchange rates and commodity prices (oil and gold), are proven to have a varied relationship with financial and market performance. Exchange rates have a strong negative correlation to market returns, while fluctuations in gold prices tend to be a negative signal for stock performance. ICI as a market indicator reflects a positive correlation to stock returns, showing that overall market sentiment continues to affect the performance of infrastructure companies. Furthermore, the Environmental, Social, and Governance (ESG) factor shows that companies that implement ESG generally have higher profitability (ROCE), although it is followed by greater volatility. ESG companies also tend to have healthier debt structures and better asset efficiency than non-ESG companies. As for profitability and stock returns, the pandemic is an important turning point. Before the pandemic, the relationship between profitability (ROCE) and stock

returns was weak; however, post-pandemic, the correlation strengthened, especially in non-state-owned companies, indicating a shift in investor behavior that is more rational and fundamental-based. Comparisons between SOEs and non-SOEs show that SOEs excel in working capital efficiency and stability, but are still weak in terms of asset efficiency and funding structure. Meanwhile, non-SOEs are more adaptive, efficient in operations, but have more volatile profitability and stability. Thus, the Covid-19 pandemic has become a transformative moment in the way the market assesses the performance of infrastructure companies. Efficiency, sustainability, and good governance are becoming increasingly important as signals to investors. Thus, companies that are able to adapt internally and respond appropriately to external factors, including ESG and market conditions, have a greater chance of surviving and growing in the post-pandemic era.

REFERENCES

[1] Adam, H., Achsani, N. A., Sembel, R. H. M., & Sari, L. K. (2024). Bibliometric analysis of business performance dynamics in the infrastructure sector. *Edelweiss Applied Science and Technology*, *8*(6), 6335–6359. https://doi.org/10.55214/25768484.v8i6.3378

[2] Al Amosh, H., Khatib, S. F. A., & Ananzeh, H. (2023). Environmental, social and governance impact on financial performance: evidence from the Levant countries. *Corporate Governance: The International Journal of Business in Society*, *23*(3), 493–513. https://doi.org/10.1108/CG-03-2022-0105

[3] Amrulah, M. N. R., & Iskandar, R. (2022). Pengaruh Indeks Harga Saham Gabungan, Nilai Tukar dan Return On Assets terhadap Return Saham. *Jurnal Ilmu Akuntansi Mulawarman*, *7*(1), 1–13.

[4] Benyamin, P. L., & Soekarno, S. (2023). Capital Structure Determinants of Public Infrastructure Companies in Indonesia. *International Journal of Current Science Research and Review*, *06*(02), 1017–1027. https://doi.org/10.47191/ijcsrr/V6-i2-18

[5] Chen, Z., Harford, J., & Kamara, A. (2019). Operating Leverage, Profitability, and Capital Structure. *Journal of Financial and Quantitative Analysis*, *54*(1), 369–392. https://doi.org/10.1017/S0022109018000595

[6] DJKN Kemenkeu. (2020). *Peran BUMN dalam Pemulihan Ekonomi Nasional (PEN)*. https://www.djkn.kemenkeu.go.id/artikel/baca/13437/Peran-BUMN-dalam-Pemulihan-Ekonomi-Nasional-PEN.html

[7] Dong, B. (2023). A Systematic Review of the ESG Strategy Literature and Future Outlook. *Frontiers in Sustainable Development*, *3*(4), 105–112. https://doi.org/10.54691/fsd.v3i4.4784

[8] Hastalona, D., & Sadalia, I. (2021). Literature Review ESG and Sustainability Finance. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, *4*(3), 3548–3557. https://www.bircu-journal.com/index.php/birci/article/view/2122

[9] Indonesia Portal Informasi. (2020). *Kasus Covid-19 Pertama, Masyarakat Jangan Panik*. https://indonesia.go.id/narasi/indonesia-dalam-angka/ekonomi/kasus-covid-19-pertama-masyarakat-jangan-panik

[10] Katusiime, L. (2021). COVID 19 and Bank Profitability in Low Income Countries: The Case of Uganda. *Journal of Risk and Financial Management*, *14*(12). https://doi.org/10.3390/jrfm14120588

[11] Kemenkes RI. (n.d.). *Situasi Terkini Perkembangan Coronavirus Disease (COVID-19)*.

[12] Kemenkeu RI. (2024). *Informasi APBN 2024 : Mempercepat Transformasi Ekonomi yang Inklusif dan Berkelanjutan*. Kementerian Keuangan Republik Indonesia.

[13] Khurriah, H., & Istifadah, N. (2019). The Role of Infrastructure in Indonesia's Economic Growth. *International Journal of Advances in Scientific Research and Engineering*, *5*(7), 215–222. https://doi.org/10.31695/IJASRE.2019.33447

[14] Lv, X., Lien, D., & Yu, C. (2020). Who affects who? Oil price against the stock return of oil-related companies: Evidence from the U.S. and China. *International Review of Economics and Finance*, *67*, 85–100. https://doi.org/10.1016/j.iref.2020.01.002

[15] Mamesah, G. H., Harikatan, K., Hutapea, L. C. M., & Palalangan, M. C. (2023). The comparison and relationship of IHSG, NIKKEI, and NASDAQ. *The Contrarian : Finance, Accounting, and Business Research*, *1*(2), 41–47. https://doi.org/10.58784/cfabr.10

[16] Meghanathi, P., & Chakrawal, A. (2021). Impact of Financial Leverage on Profitability of Reliance Industries LTD. *Journal La Bisecoman*, *2*(5), 15–22. https://doi.org/10.37899/journallabisecoman.v2i5.493

[17] Okta, S., & Hariasih, M. (2021). The Effect of Company Size, Sales Growth, Profitability and Leverage on Stock Returns in Food And Beverage Companies Listed on the Indonesia Stock Exchange (IDX). *Indonesian Journal of Innovation Studies*, *16*, 1–17. https://doi.org/10.21070/ijins.v16i.559

[18] Paul, S. C., Bhowmik, P. K., & Famanna, M. N. (2021). Impact of Liquidity on Profitability: A Study on the Commercial Banks in Bangladesh. *Advances in Management and Applied Economics*, *11*(1), 73–90. https://doi.org/10.47260/amae/1114

[19] Pianta, M., & Lucchese, M. (2020). Rethinking the European Green Deal: An Industrial Policy for a Just Transition in Europe. *Review of Radical Political Economics*, *52*(4), 633–641. https://doi.org/10.1177/0486613420938207

[20] Saleh, M. M. A., Jaradat, M. M., Wedyan, L. M., & Saleh, H. M. I. (2021). The Impact of Liquidity and Leverage on Profitability in Industrial Sector in Jordan. *Research in World Economy*, *12*(1), 394–405. https://doi.org/10.5430/rwe.v12n1p394

[21] Savio, R., D'Andrassi, E., & Ventimiglia, F. (2023). A Systematic Literature Review on ESG during the COVID-19 Pandemic. *Sustainability (Switzerland)*, *15*(3), 1–17. https://doi.org/10.3390/su15032020

[22] Simbolon, L., & Purwanto. (2018). The Influence of Macroeconomic Factors on Stock Price: The Case of Real Estate and Property Companies. In *Global Tensions in Financial Markets* (pp. 19–39). Semantic Scholar. https://doi.org/10.1108/S0196-382120170000034010

[23] Sugiyono, S. (2019). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Alfabeta.

[24] Thamrin, J., & Sembel, R. (2020). The Effect of Company's Fundamental, Market Return and Macroeconomic to Stock Return: A Case Study of Consumer Goods Companies Listed in BEI Period 2009-2018. *International Journal of Business Studies*, *4*(3), 184–197. https://doi.org/10.32924/ijbs.v4i3.115

[25] Walker, P. G. T., Whittaker, C., Watson, O. J., Baguelin, M., Winskill, P., Hamlet, A., Djafaara, B. A., Cucunubá, Z., Olivera Mesa, D., Green, W., Thompson, H., Nayagam, S., Ainslie, K. E. C., Bhatia, S., Bhatt, S., Boonyasiri, A., Boyd, O., Brazeau, N. F., Cattarino, L., … Ghani, A. C. (2020). The impact of COVID-19 and strategies for mitigation and suppression in low- and middle-income countries. *Science*, *369*(6502), 413–422. https://doi.org/10.1126/science.abc0035

[26] Yoshino, N., Azhgaliyeva, D., & Mishra, R. (2020). Financing infrastructure using floating-interest-rate infrastructure bond. *Journal of Infrastructure, Policy and Development*, *4*(2), 306–315. https://doi.org/10.24294/jipd.v4i2.1236