

Financial Performance Analysis and Financial Distress Prediction of Indonesia State-Owned Enterprises in The Construction Industry Listed on IDX Before and During Economic Crisis in the Covid-19 Pandemic Era (Period 2019 - 2021)

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ABSTRACT: The Covid-19 pandemic has brought an immense impact on Indonesia's economy. Indonesia officially went into recession after the Central Statistics Agency (BPS) announced negative GDP growth for two consecutive quarters, namely in the second quarter (-5.32%) and the third quarter (-3.49%) of 2020. Indonesia's contracted economy has caused depression in many Indonesian sectors. The results of a survey by BPS in 2020 noted that the construction sector was recorded as one of the sectors that experienced the most decline in revenue, which was 87.94%. This study aims to measure the financial performance and health condition of Indonesian construction SOEs listed on IDX namely ADHI, PTPP, WSKT, and WIKA based on the decree of the Ministry of SOEs no. KEP-100/MBU/2002 as well as the financial distress prediction (bankruptcy potential) by using the Altman Z-Score method for the period 2019 to 2021. The result of the financial health rank level of each company from 2019 to 2021: ADHI (BBB, CCC, and B), PTPP (BBB, B, and BB), WSKT (BB, CC, and B), and WIKA (A, B, and B) respectively. According to the Altman Z-score result, all companies experienced declining in the total Altman Z-score results from 2019 to 2021 and were interpreted as being in a state of financial distress, except for WSKT. This study will complete previous research with a different approach and focus that can give a more equipped view regarding the impact of Covid-19 on the construction industry in Indonesia.

KEYWORDS: Bankruptcy potential, Financial performance, Financial ratio analysis, Financial distress, Indonesian state-owned enterprises in the construction sector.

INTRODUCTION

The Covid-19 pandemic has had a negative impact on the Indonesian economy. In almost all sectors, the growth was slowed due to falling global and domestic demand accompanied by weakening international commodity prices. The outlook for economic growth in 2020, which was initially targeted at 5.3%, was revised down to -0.4-2.3% considering the slowdown in almost all components of GDP. As a result of this pandemic, Indonesia officially went into recession after the Central Statistics Agency (BPS) announced negative GDP growth for two consecutive quarters, namely in the second quarter (-5.32%) and the third quarter (-3.49%) of 2020. (DPR, 2020) Indonesia still recorded negative GDP growth until the next two quarters, even though the contraction actually kept on getting better. Indonesia's GDP was able to bounce back to record a positive number in Q2 2021 and until the end of Q4 2021, Indonesia continued to record positive GDP growth.

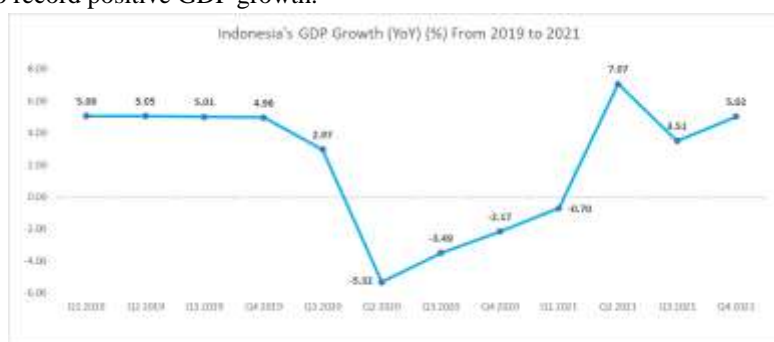


Figure-1.1: Indonesia's GDP Growth (YoY)



The construction industry in Indonesia become one of the most negatively impacted industries by the Covid-19 pandemic because almost all of the planned projects from the state’s nor regional’s expenditures budget were trimmed down and diverted to deal with Covid-19. With the outbreak of Covid-19, President Joko Widodo has allocated Rp 405 trillion of funds to deal with the pandemic and most of the funds were taken from the development budget which is considered not too urgent. (Hakim, 2020) This resulted in a massive budget change regarding which construction projects must be postponed and which are not. Therefore, the delay in the completion of the planned construction projects became inevitable.

Indonesian government’s seriousness in dealing with this national disaster became more visible with the issuance of the Government Regulation of the Republic of Indonesia No. 21 of 2020 concerning Large-Scale Social Restrictions (PSBB) in the Context of Accelerating the Handling of Covid-19. This regulation has further aggravated the impact of Covid-19 on the construction sector related to the limited distribution of materials due to the large-scale social restriction (PSBB) policy and the difficulty for workers to get to the project site as the number of workers was limited.

During the first pandemic year in 2020, all of Indonesia’s construction SOEs that are listed on IDX namely PT Adhi Karya (ADHI), PT Pembangunan Perumahan (PTPP), PT Waskita Karya (WSKT), and PT Wijaya Karya (WIKA) faced a similar issue which is a decrease in total revenue as compared to 2019. Even though the numbers in most of these companies were getting better in 2021 (except for WSKT), they still have not exceeded the 2019 record which is the year before the pandemic.

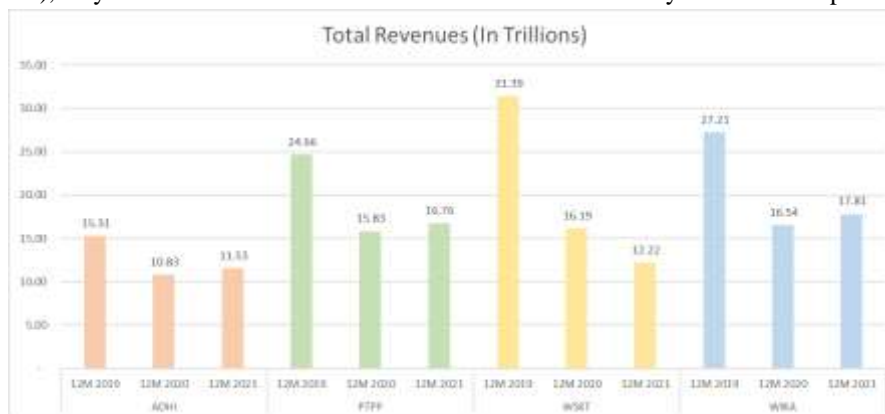


Figure-1.2: Total Revenues of ADHI, WIKA, PTPP, and WSKT from 2019 – 2021
Source: Companies’ Annual Reports from 2019 – 2021, Processed by Author (2022)

After looking at this condition, it will be useful to measure the financial performance and the financial health condition of construction service companies that are represented by ADHI, PTPP, WSKT, and WIKA as Indonesia’s SOEs in the construction sector listed on IDX before and during the Covid-19 pandemic in 2019 – 2021 with the use of the financial ratio analysis method. The ratios that will be measured are Return on Equity, Return on Investment, Current Ratio, Cash Ratio, Collection Period, Inventory Turnover, Total Asset Turnover, and Total Equity to Total Assets Ratio based on the decree of the Ministry of SOEs no. KEP-100/MBU/2002. Additionally, because the profitability of these companies worsen-off during the pandemic era, this study will also measure the bankruptcy potential of these companies using the Altman Z-score method as a supplementary predictive analysis to see their financial condition by analyzing the annual financial statements from 2019 to 2021.

LITERATURE REVIEW

I. Financial Performance

Financial performance is an attainment obtained by a company in a certain period which is described by the health condition of its financial statements (Dewi & Candradewi, 2018). Measuring financial performance is useful to gain information about a company’s financial condition which includes profitability, liquidity, activity, and solvency analysis which in turn gives an idea about a company’s growth potential. (Brazer & Daryanto, 2019) Financial performance can be measured by several analytical tools, one of which is through financial ratio analysis (Jumingan, 2006).



Financial ratio analysis is an activity to compare the numbers in the financial statements that can be done between one component with other components in one financial report. (Kasmir, 2014) This study will use the financial ratios with the guideline from the decree of the Ministry of SOEs no. KEP-100/MBU/2002 in assessing the financial performance of ADHI, PTPP, WSKT, and WIKA. This method was also conducted by Brazer and Daryanto (2020) in analyzing the financial performance of Indonesia's SOEs in the construction industry (ADHI, PTPP, WSKT, and WIKA) for the period of 2009 – 2018

II. Financial Distress

According to Marbun (2014), Financial distress is a condition where the company's operating cash flow is insufficient to meet its obligations to creditors, both principal and interest. Meanwhile, Brigham (2011) states that financial distress occurs when the company experiences an inability to complete its payments on time or the cash flow from the company does not go well. Financial distress can be used as an early signal of the possibility of bankruptcy in a company. All stakeholders must be careful if the company is showing signs or even has experienced financial distress. Because if the situation persists, it is possible that the company will go bankrupt in the future.

Financial Distress is the result of a firm's poor management that can be caused by both internal and external factors. For the internal factors, it could be from mismanagement, excessive expansion, high production costs, ineffective sales force, etc. While for the external factor, it is generally from the macroeconomic condition such as the weakening of the country's economy. (Zulkarnain, 2020) Specifically in this study, the Covid-19 pandemic that happened in Indonesia could be an example of an external factor that can cause a company to experience financial distress.

III. Predicting Company Bankruptcy Potential: The Altman Z-Score's Model Approach

In 1968, Edward Altman introduced Z-Score Analysis, which is an analysis that connects various ratios in financial statements and combined them into an equation to obtain a Z-score, where the Z-score here is a value to predict the company's bankruptcy. (Purnajaya & Merkusiwaty, 2014). In the first version, Altman designed the Z-score to predict the bankruptcy of a public manufacturing company. But then in 1995, Altman modified the Z-score equation by re-estimating the variables so that the Altman Z-Score bankruptcy prediction model could not only be used by manufacturing companies that went public, but also by non-manufacturing companies and private companies that did not have a stock market value. (Ramadhani & Lukviarman, 2009)

This study is conducted using the modified Altman Z-score model considering that the samples of this study are public construction companies, which can be classified as non-manufacturing public companies and there is previous related research conducted by Kurniawan et al (2022) and Marpaung et al (2021) also used the same modified Altman Z-score formula in evaluating financial distress level of Indonesia construction SOEs. The formula of the modified Altman Z-score is as follows:

$$Z\text{-Score} = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4$$

Note:

Z = Overall index

X1 = Net Working Capital/Total Assets

X2 = Retained Accumulated Earnings/Total Assets

X3 = Earnings Before Interest and Taxes (EBIT)/Total Assets

X4 = Market Value of Equity/Total Liabilities

If the Z-score > 2.60, the company is not experiencing bankruptcy (safe zone). If $1.10 \leq Z\text{-score} \leq 2.60$, the company is in financial difficulties but still can be saved (grey zone). If Z-score < 1.10, the company is in financial distress and has a high potential of bankruptcy (distress zone).

RESEARCH METHODOLOGY

This study uses a descriptive research method with the quantitative approach and is carried out by analyzing the financial report data of the companies' financial statements which are then processed into several financial ratios. There are two analyses



conducted in this study, namely financial ratio analysis to measure the companies' financial performance and Altman Z-score analysis in order to measure the companies' bankruptcy potential. The data is collected from the audited annual reports period 2019 – 2021 of Indonesia's SOEs which are listed on IDX namely ADHI, PTPP, WSKT, and WIKA as the objects of this research to represent the construction industry.

I. The Decree of the Ministry of State-Owned Enterprises

In 2002, the Indonesian Government under the Ministry of SOE issued a mandatory guidance to measure the financial performance and health condition of the Indonesian SOEs named the decree of the Ministry of State-Owned Enterprises No.KEP-100/MBU/2002. This guidance includes the financial ratio as one of the indicators to measure the Indonesian SOEs' financial performance and health condition and is still used in the present. This financial evaluation is divided into financial services and non-financial services. There are three evaluation methods, which are financial, operational, and administrative aspects. In the evaluation of the financial aspect, the total weight of infrastructure is 50, and non-infrastructure is 70 (Table 2.1). The ratios evaluated to measure the company's financial health are return on equity, return on investment, cash ratio, current ratio, collection period, days in inventory, total asset turnover, and total equity to total asset ratio. In order to determine a company's health rank level, we need to sum all the scores of the eight ratios of a company in the same year and then divide the result by the maximum weight of non-infra in table 2.1. And then the assessment of the financial health ranking will follow the following rules in table 2.2.

Table-2.1: Total Maximum Weight

Indicators	Weight	
	Infra	Non-Infra
Return on Equity (ROE)	15	20
Return on Investment (ROI)	10	15
Cash ratio	3	5
Current ratio	4	5
Collection period	4	5
Days in inventory	4	5
Total asset turnover	4	5
Total Equity to Total Asset	6	10
Total Weight	50	70

Source: The Decree of the Ministry of SOEs no. KEP-100/MBU/2002

Table-2.2: Health Level Category, Rank, and Total Score Guideline

Company's Health Rank Guideline		
Category	Rank	Total Score (TS)
Healthy	AAA	TS > 95
	AA	80 < TS ≤ 95
	A	65 < TS ≤ 80
Less Healthy	BBB	50 < TS ≤ 65
	BB	40 < TS ≤ 50
	B	30 < TS ≤ 40
Unhealthy	CCC	20 < TS ≤ 30
	CC	10 < TS ≤ 20
	C	TS ≤ 10

Source: The Decree of the Ministry of SOEs no. KEP-100/MBU/2002



A. Profitability Ratio

A.1. Return on Equity

Return on equity measures a company’s effectiveness in generating profit from utilizing its equity or the funds invested by the shareholders. (Anthony, 2012) The formula to calculate this ratio is as follows:

$$ROE = \frac{Net\ Income}{Shareholders'Equity} \times 100\%$$

A.2. Return on Investment

Return on investment shows a return earned from a company’s employed capital. This ratio is also used to show a company’s efficiency in managing its investment. (Arsita, 2021) The formula to calculate this ratio can be expressed as:

$$ROI = \frac{EBIT + Depreciation}{Total\ Assets - Fixed\ Assets} \times 100\%$$

After all profitability ratios are calculated, the ratios are validated into assessment score following the guidance in table 2.3.

Table-2.3: Profitability Ratio Assessment Score

ROE (%)	Skor		ROI (%)	Skor	
	Infra	Non Infra		Infra	Non Infra
15 < ROE	15	20	18 < ROI	10	15
13 < ROE <= 15	13,5	18	15 < ROI <= 18	9	13,5
11 < ROE <= 13	12	16	13 < ROI <= 15	8	12
9 < ROE <= 11	10,5	14	12 < ROI <= 13	7	10,5
7,9 < ROE <= 9	9	12	10,5 < ROI <= 12	6	9
6,6 < ROE <= 7,9	7,5	10	9 < ROI <= 10,5	5	7,5
5,3 < ROE <= 6,6	6	8,5	7 < ROI <= 9	4	6
4 < ROE <= 5,3	5	7	5 < ROI <= 7	3,5	5
2,5 < ROE <= 4	4	5,5	3 < ROI <= 5	3	4
1 < ROE <= 2,5	3	4	1 < ROI <= 3	2,5	3
0 < ROE <= 1	1,5	2	0 < ROI <= 1	2	2
ROE < 0	1	0	ROI < 0	0	1

Source: The Decree of the Ministry of SOEs no. KEP-100/MBU/2002

B. Liquidity Ratio

B.1. Cash Ratio

Cash ratio measures the company’s ability to meet its current liabilities with cash and cash equivalents. (Anthony, 2012) The mathematical formula of this ratio can be expressed as:

$$Cash\ Ratio = \frac{cash + cash\ equivalent}{current\ liabilities} \times 100\%$$

B.2. Current Ratio

Current ratio is used to measure the company’s ability to fork out its current liabilities with its current assets. (Anthony, 2012) This ratio can be calculated by using the following formula:

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities} \times 100\%$$

After calculating all liquidity ratios, the ratios are validated into assessment score following the guidance in table 2.4.



Table-2.4: Liquidity Ratio Assessment Score

Cash Ratio = x (%)	Skor	
	Infra	Non Infra
x >= 35	3	5
25 <= x < 35	2,5	4
15 <= x < 25	2	3
10 <= x < 15	1,5	2
5 <= x < 10	1	1
0 <= x < 5	0	0

Current Ratio = x (%)	Skor	
	Infra	Non Infra
125 <= x	3	5
110 <= x < 125	2,5	4
100 <= x < 110	2	3
95 <= x < 100	1,5	2
90 <= x < 95	1	1
x < 90	0	0

Source: The Decree of the Ministry of SOEs no. KEP-100/MBU/2002

C. Activity Ratio

C.1. Collection Period

Collection Period is the length of time it takes for a company to receive payments in form of account receivables. In other words, it is the number of days to collect the receivables. (Daryanto, 2019) The formula to calculate this ratio is as follows:

$$Collection\ Period = \left(\frac{Average\ Accounts\ Receivable}{Sales\ Revenue} \right) \times 365\ days$$

C.2. Days in Inventory

Days in inventory is an indicator of how fast the company has used the inventory to produce goods and services that are sold. (Drake & Fabozzi, 2012) It tells the company how many days it takes per year for them to sell its inventory. The mathematical formula can be expressed as:

$$Days\ in\ Inventory = \frac{Average\ Inventory}{Sales\ Revenue} \times 365\ days$$

C.3. Total Asset Turnover

Total asset turnover can be defined as how many times the company’s total assets are generating revenue. (Drake & Fabozzi, 2012) The formula to calculate this ratio can be expressed as:

$$Total\ Asset\ Turnover = \left(\frac{Sales\ Revenue}{Total\ Assets} \right) \times 100\%$$

After calculating all activity ratios, the ratios are validated into assessment score following the guidance in table 2.5.



Table-2.5: Activity Ratio Assessment Score

CP = x (hari)	Perbaikan = x (hari)	Skor	
		Infra	Non Infra
x ≤ 60	x > 35	4	5
60 < x ≤ 90	30 < x ≤ 35	3,5	4,5
90 < x ≤ 120	25 < x ≤ 30	3	4
120 < x ≤ 150	20 < x ≤ 25	2,5	3,5
150 < x ≤ 180	15 < x ≤ 20	2	3
180 < x ≤ 210	10 < x ≤ 15	1,6	2,4
210 < x ≤ 240	6 < x ≤ 10	1,2	1,8
240 < x ≤ 270	3 < x ≤ 6	0,8	1,2
270 < x ≤ 300	1 < x ≤ 3	0,4	0,6
300 < x	0 < x ≤ 1	0	0

PP = x (hari)	Perbaikan (hari)	Skor	
		Infra	Non Infra
x ≤ 60	35 < x	4	5
60 < x ≤ 90	30 < x ≤ 35	3,5	4,5
90 < x ≤ 120	25 < x ≤ 30	3	4
120 < x ≤ 150	20 < x ≤ 25	2,5	3,5
150 < x ≤ 180	15 < x ≤ 20	2	3
180 < x ≤ 210	10 < x ≤ 15	1,6	2,4
210 < x ≤ 240	6 < x ≤ 10	1,2	1,8
240 < x ≤ 270	3 < x ≤ 6	0,8	1,2
270 < x ≤ 300	1 < x ≤ 3	0,4	0,6
300 < x	0 < x ≤ 1	0	0

TATO = x (%)	Perbaikan = x (%)	Skor	
		Infra	Non Infra
120 < x	20 < x	4	5
105 < x ≤ 120	15 < x ≤ 20	3,5	4,5
90 < x ≤ 105	10 < x ≤ 15	3	4
75 < x ≤ 90	5 < x ≤ 10	2,5	3,5
60 < x ≤ 75	0 < x ≤ 5	2	3
40 < x ≤ 60	x ≤ 0	1,5	2,5
20 < x ≤ 40	x < 0	1	2
x ≤ 20	x < 0	0,5	1,5

Source: The Decree of the Ministry of SOEs no. KEP-100/MBU/2002

D. Solvency Ratio

D.1. Total Equity to Total Asset

Total equity to total asset ratio measures the amount of equity that the company has when compared to its total assets. (Kantrovich, 2011) The mathematical formula of this ratio can be expressed as:

$$Total\ Equity\ to\ Total\ Asset = \left(\frac{Total\ Equity}{Total\ Assets} \right) \times 100\%$$

After calculating the solvency ratio, the ratio is validated into assessment score following the guidance in table 2.6.



Table-2.6: Solvency Ratio Assessment Score

TMS thd TA (%) = x	Skor	
	Infra	Non Infra
x < 0	0	0
0 <= x < 10	2	4
10 <= x < 20	3	6
20 <= x < 30	4	7,25
30 <= x < 40	6	10
40 <= x < 50	5,5	9
50 <= x < 60	5	8,5
60 <= x < 70	4,5	8
70 <= x < 80	4,25	7,5
80 <= x < 90	4	7
90 <= x < 100	3,5	6,5

Source: The Decree of the Ministry of SOEs no. KEP-100/MBU/2002

II. Altman Z-Score Variables' Definition

A. Working Capital to Total Asset (X1)

This X1 variable is used to measure a company's liquidity by dividing net working capital by total assets. Net working capital is obtained by subtracting total current liabilities from current assets. If the net working capital is negative, which later results in a negative value of X1, it indicates that the company will face difficulties to cover its short-term obligations with its current assets and later will possibly lead to experiencing financial distress. (Kurniawan et al, 2022) The formula of X1 is:

$$X1 = \left(\frac{\text{Net Working Capital}}{\text{Total Assets}} \right)$$

B. Retained Earnings to Total Asset (X2)

This variable reflects a company's effectiveness in using its assets to accumulate earnings (profitability). When the retained earnings are high, a company can finance its assets through profits and reduce the tendency to add more debts and hence reduce the possibility to have financial distress. (Marpaung et al, 2021) The formula to calculate X2 can be expressed as:

$$X2 = \left(\frac{\text{Retained Earnings}}{\text{Total Assets}} \right)$$

C. Earnings Before Interests and Taxes to Total Asset (X3)

The X3 variable measures a company's asset's productivity to generate EBIT. When the EBIT value is high, it indicates the company's management effectiveness in controlling its operational costs so that the company becomes more productive and efficient, hence reducing the possibility of experiencing financial distress. (Marpaung et al, 2021) The formula to calculate X3 is as follows:

$$X3 = \left(\frac{\text{EBIT}}{\text{Total Assets}} \right)$$

D. Market Value of Equity to Total Liabilities (X4)

This variable measures a company's ability to meet its obligations from its market value of equity. The higher the X4 variable, indicates that the company will have a better ability to meet its liabilities with its total market equity, thus reducing the possibility of experiencing financial distress. (Kurniawan et al, 2022) The formula of X4 is:

$$X4 = \left(\frac{\text{Market Value of Equity}}{\text{Total Liabilities}} \right)$$



LITERATURE REVIEW

A. Financial Ratio Analysis

A.1. PT Adhi Karya (ADHI)

Profitability Ratio

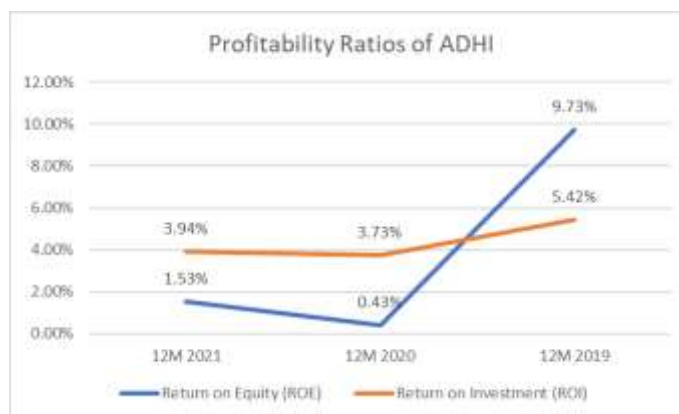


Figure-3.1: Profitability Ratios Result of ADHI from 2019 to 2021 (Authors, 2022)

Figure 3.1 shows the profitability ratios of ADHI including ROE and ROI from 2019 to 2021. ADHI’s ROE in 2019 was 9.73% and then decreased very significantly to 0.43% in 2020 and then increased again to 1.53% in 2021. While for the ROI, in 2019 the value was 5.42% and then decreased to 3.73% and increased a little bit in 2021 to 3.94%. The decrease of both the ROE and ROI of ADHI during the Covid-19 pandemic era was attributable to the plummet of both revenues and net income of ADHI during that time. From 2019 to 2020, ADHI’s revenue decreased by around 29% from IDR 15.31 trillion to IDR 10.83 trillion and then increased by 6.49% to IDR 11.53 trillion in 2021. While for the net income, from 2019 to 2020, ADHI’s net income decreased by around 96% from IDR 665 billion to IDR 23.7 billion and then increase by 265% to IDR 86.5 billion in 2021.

Liquidity Ratio

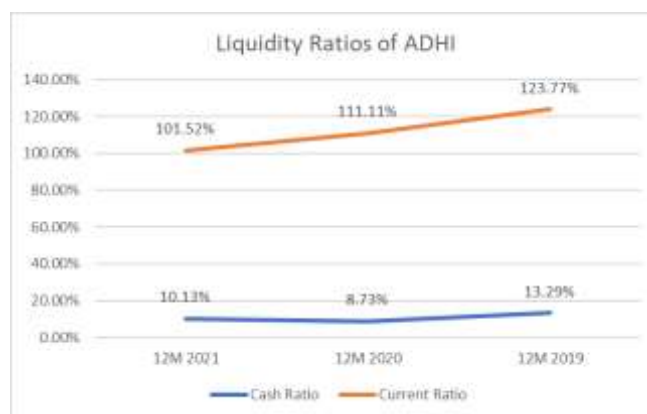


Figure-3.2: Liquidity Ratios Result of ADHI from 2019 to 2021 (Authors, 2022)

Figure 3.2 shows the liquidity ratios of ADHI namely the cash ratio and current ratio from 2019 to 2021. ADHI’s cash ratio in 2019 was 13.29% then decreased to 8.73% in 2020 and then increased again to 10.13% in 2021. While for the current ratio, in 2019 the value was 123.77% and then decreased to 111.11% and 101.52% in 2020 and 2021 respectively. The decrease of ADHI’s cash ratio and current ratio during the Covid-19 pandemic era (especially in the first year of the pandemic) was caused by the current liabilities value that kept on increasing from IDR 24,5 trillion in 2019, IDR 27,1 trillion in 2020, and IDR 31,1 trillion in 2021. While at the same time the cash and cash equivalents’ as well as the current assets’ value tend to be stable.

Activity Ratio

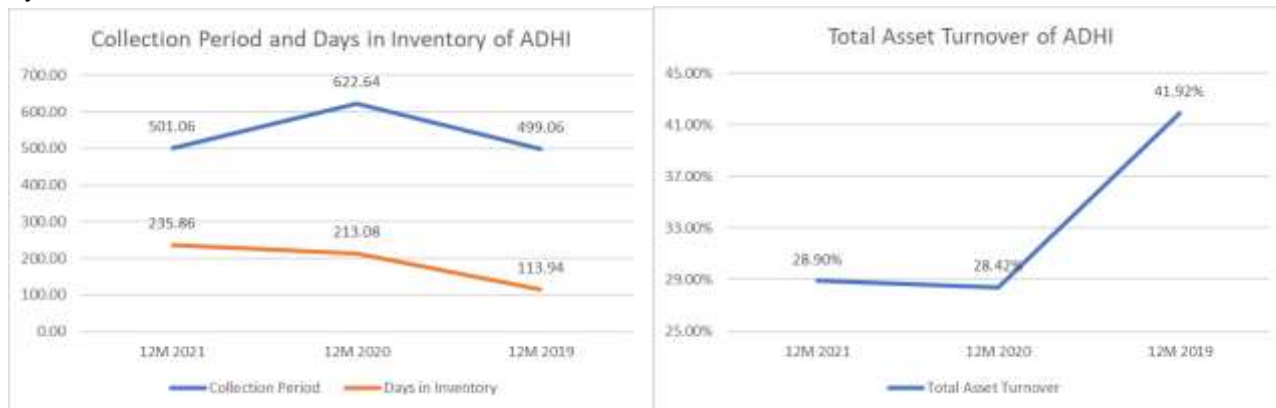


Figure-3.3: Activity Ratios Result of ADHI from 2019 to 2021 (Authors, 2022)

Figure 3.3 shows the activity ratios of ADHI which includes collection period, days in inventory, and total asset turnover from 2019 to 2021. ADHI’s collection period in 2019 was 499.06 days and then increased to 622.64 days in 2020 and then decreased to 501.06 days in 2021. From the collection period trend, it can be said that ADHI experienced more difficulties in collecting its receivables during 2020 represented by an increase in the collection period. For the days in inventory, in 2019 the value was 113.94 days and then increased to 213.08 days and 235.86 days in 2020 and 2021 respectively. From the days in inventory pattern, it can be seen that ADHI continued to experience difficulties to convert its inventories into sales from 2019 to 2021 represented by a gradual increase in the number of days in inventory. While for ADHI’s total asset turnover, in 2019 the value was 41.92%, then decreased quite significantly to 28.42% in 2020 and increased a little bit to 28.90% in 2021 but still much lower than that in 2019. It shows that the Covid-19 pandemic was negatively impacting ADHI’s ability to convert its assets into revenues.

Solvency Ratio

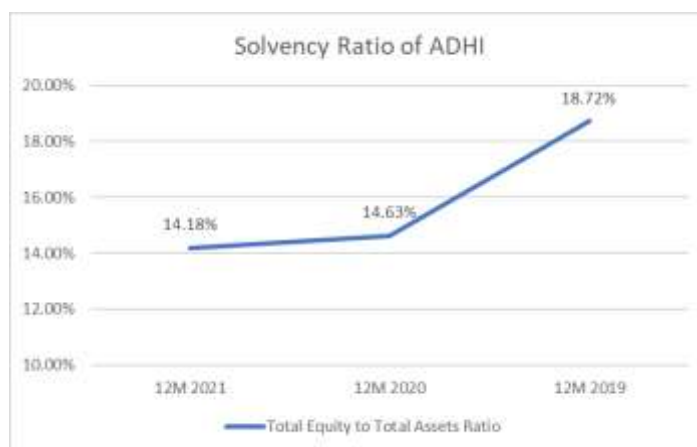


Figure-3.4: Solvency Ratio Result of ADHI from 2019 to 2021 (Authors, 2022)

Figure 3.4 shows the solvency ratio of ADHI which is represented by the total equity to total assets (TETA) ratio from 2019 to 2021. ADHI’s TETA ratio decreased during the covid-19 pandemic era in Indonesia, namely from 18.72% in 2019 to 14.63% in 2020 and 14.18% in 2021. It indicates that from 2019 to 2021 the company financed its assets more through debt financing or in other words the company is getting more leveraged. It can also be seen from the number of ADHI’s total liabilities from 2019 to 2021 that kept on increasing from IDR 29.6 trillion in 2019 to IDR 32.5 trillion in 2020 to IDR 34.2 trillion in 2021.



A.2. PT Pembangunan Perumahan (PTPP)

Profitability Ratio



Figure-3.5: Profitability Ratios Result of PTPP from 2019 to 2021 (Authors, 2022)

The profitability ratios of PTPP including ROE and ROI from 2019 to 2021 can be seen in figure 3.5. PTPP’s ROE in 2019 was 6.97% and then decreased significantly to 1.90% in 2020 and increased again to 2.52% in 2021. While for the ROI, in 2019 the value was 6.34% and then decreased to 4.32% and increased again to 5.26% in 2021. The decrease of profitability ratios follows the patterns of PTPP’s top line and bottom line. During the Covid-19 pandemic era, both revenues and net income of PTPP was decreasing in 2020 and then increased in 2021. PTPP’s revenue in 2019 was IDR 24.66 trillion and then decreased 35.80% to IDR 15.83 trillion in 2020 and then increased 5.89% to IDR 16.76 in 2021. While the net income in 2019 IDR 1.21 trillion and then decreased very significantly around 77.96% to IDR 0.27 trillion in 2020 and then increased 35.74% to IDR 0.36 trillion in 2021.

Liquidity Ratio

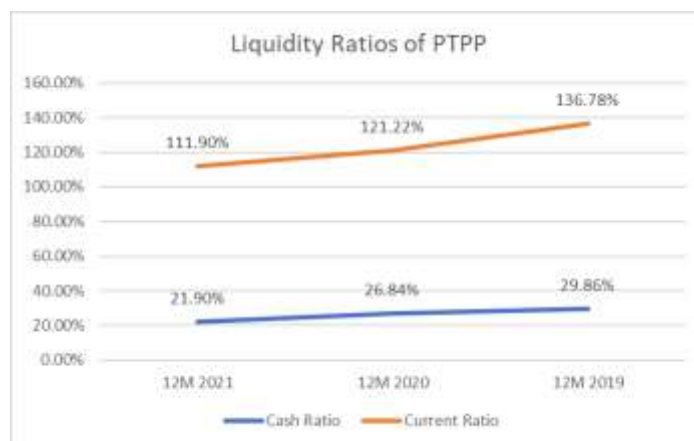


Figure-3.6: Liquidity Ratios Result of PTPP from 2019 to 2021 (Authors, 2022)

Figure 3.6 shows the result of PTPP’s liquidity ratios namely the cash ratio and current ratio from 2019 to 2021. PTPP’s cash ratio in 2019 was 29.86% then continued decreasing to 26.84% and 21.90% in 2020 and 2021 respectively. While for the current ratio, in 2019 the value was 136.78% and then decreased to 121.22% and 111.90% in 2020 and 2021 respectively. The decrease of PTPP’s cash ratio and current ratio from 2019 to 2021 was caused by the cash and cash equivalents account and current assets account that continued to decrease from 2019 to 2021 while the current liabilities didn’t change much. The cash and cash equivalents of PTPP from 2019 to 2021 was IDR 9.1 trillion, IDR 7.5 trillion, and IDR 6.6 trillion respectively. While the current assets from 2019 to 2021 was IDR 41.7 trillion, IDR 33.9 trillion, and IDR 33.7 trillion respectively.

Activity Ratio



Figure-3.7: Activity Ratios Result of PTPP from 2019 to 2021 (Authors, 2022)

Figure 3.7 represents PTPP’s activity ratios from 2019 to 2021 which includes the collection period, days in inventory, and total asset turnover. PTPP’s collection period in 2019 was 338.25 days and then continued to decrease to 294.89 days in 2020 and 279.30 days in 2021. From this result, it can be said that the covid-19 pandemic didn’t really bring a negative impact on the collection period of PTPP because the number kept on decreasing from 2019 to 2021. Meaning that PTPP’s ability to collect its receivables is getting better or faster from 2019 to 2021. For PTPP’s days in inventory, the value in 2019 was 93.82 days and then increased to 219.61 days and 237.64 days in 2020 and 2021 respectively. From the days in inventory pattern, it can be seen that the covid-19 pandemic has negatively impacted PTPP’s ability to convert its inventories into sales from 2019 to 2021 represented by an increase in the number of days in inventory from 2019 to 2021. While for PTPP’s total asset turnover, in 2019 the value was 41.68%, then decreased quite significantly to 29.61% in 2020 and increased a little bit to 30.17% in 2021 but still much lower than that in 2019. It shows that the Covid-19 pandemic also negatively impacted PTPP’s ability to convert its assets into revenues.

Solvency Ratio

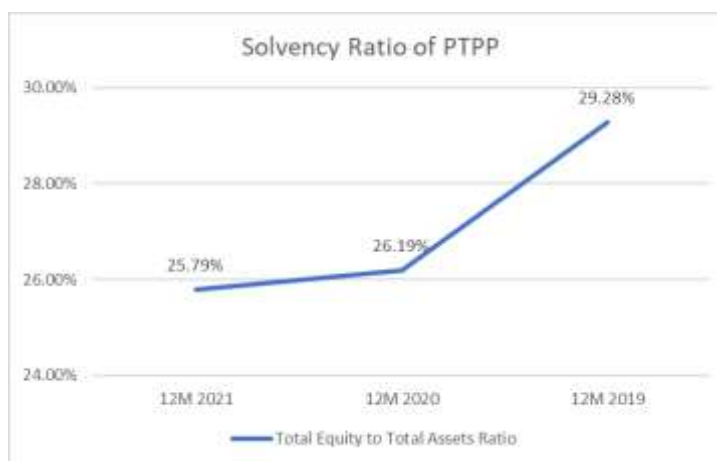


Figure-3.8: Solvency Ratio Result of PTPP from 2019 to 2021 (Authors, 2022)

Figure 3.8 shows the TETA ratio of PTPP from 2019 to 2021 which represents the solvency ratio of the company. PTPP’s TETA ratio continued to decrease during the covid-19 pandemic era in Indonesia, namely from 29.28% in 2019 to 26.19% in 2020 to 25.79% in 2021. It shows that from 2019 to 2021 PTPP continued to increase the debt (or liabilities) proportion in its capital in order to finance its assets or in other words the company got more leveraged from 2019 to 2021.

A.3. PT Waskita Karya (WSKT)

Profitability Ratio

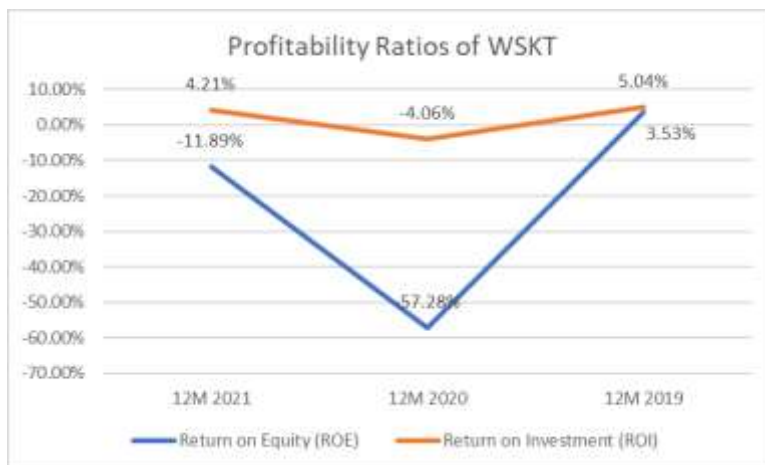


Figure-3.9: Profitability Ratios Result of WSKT from 2019 to 2021 (Authors, 2022)

Figure 3.9 shows the ROE and ROI of WSKT which represents the profitability ratios of WSKT from 2019 to 2021. ROE of WSKT in 2019 was 3.53% and then decreased very significantly to -57.28% in 2020 and then increased to -11.89% in 2021. For the ROI, in 2019 the value was 5.04% and then decreased significantly to -4.06% and increased again to 4.21% in 2021. WSKT’s decreasing ROE and ROI during the Covid-19 pandemic era was caused by the decreased of both revenues and net income of ADHI during that time. From 2019 to 2020, WSKT’s revenue decreased by around 48.42% from IDR 31.39 trillion to IDR 16.19 trillion and then decreased again around 24.50% to IDR 12.22 trillion in 2021. For the net income, from 2019 to 2020, WSKT’s net income decreased by around 1022.90% from IDR 1.03 trillion to IDR -9.50 trillion (net loss) and then increased by around 80.64% to IDR -1.84 trillion (net loss) in 2021.

Liquidity Ratio

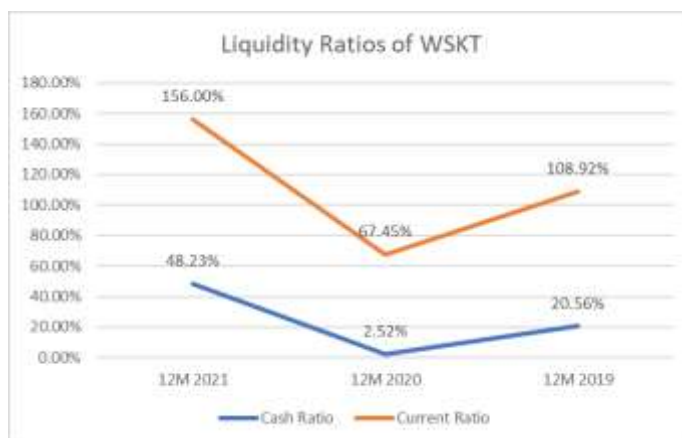


Figure-3.10: Liquidity Ratios Result of WSKT from 2019 to 2021 (Authors, 2022)

The liquidity ratios of WSKT including the cash ratio and current ratio from 2019 to 2021 can be seen in figure 4.10. Cash ratio of WSKT in 2019 was 20.56% then decreased significantly to 2.52% in 2020 and then increased again to 48.23% in 2021. While for WSKT’s current ratio, in 2019 the value was 108.92% and then decreased to 67.45% in 2020 and increased significantly to 156.00% in 2021. The decrease in WSKT’s cash ratio and current ratio in 2020 was caused by the decrease of both cash and cash equivalent as well as current assets and an increase in WSKT’s current liabilities from 2019 to 2020. But in 2021 the company’s cash and cash equivalent as well as current assets were increased again.

Activity Ratio



Figure-3.11: Activity Ratios Result of WSKT from 2019 to 2021 (Authors, 2022)

Figure 3.11 represents the activity ratios of WSKT which includes the collection period, days in inventory, and total asset turnover from 2019 to 2021. WSKT’s collection period continued to increase from 2019 to 2021 namely from 198.17 days to 298.23 days to 341.60 days respectively. From this result, it can be said that the covid-19 pandemic has brought a negative impact on WSKT’s collection period because WSKT’s ability to collect its receivables is getting worse or longer from 2019 to 2021. For the days in inventory of WSKT, the value also kept on increasing from 2019 to 2021 namely from 51.99 days to 94.89 days to 130.04 days respectively. From the days in inventory result, it can also be said that the covid-19 pandemic has negatively impacted the company’s ability to convert its inventories into sales which is represented by an increase in the number of days in inventory from 2019 to 2021. While for the total asset turnover of WSKT, the number kept on decreasing from 2019 to 2021 namely from 25.60% to 15.33% to 11.80% respectively. It also shows that the Covid-19 pandemic in Indonesia has impacted WSKT’s ability to convert its assets into revenues negatively.

Solvency Ratio

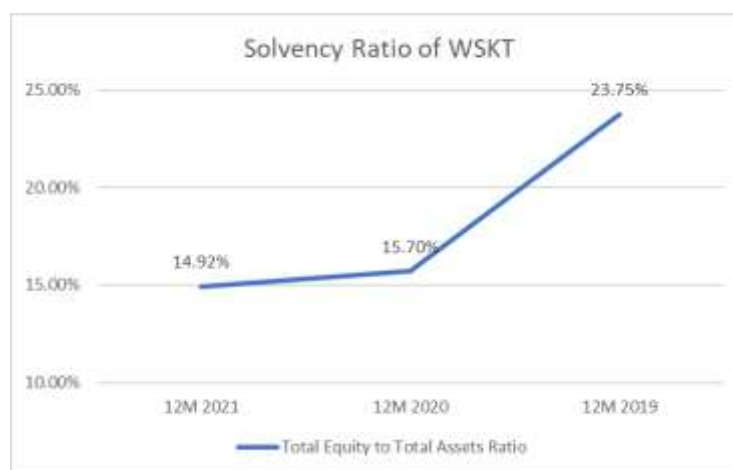


Figure-3.12: Solvency Ratio Result of WSKT from 2019 to 2021 (Authors, 2022)

The TETA ratio which represents the solvency ratio of WSKT from 2019 to 2021 can be seen in figure 3.12. WSKT’s TETA ratio value in 2019 was 23.75% then decreased to 15.70% in 2020 and decreased again to 14.92% in 2021. From this result, we can see that the proportion of equity in WSKT’s assets is getting lower and lower from 2019 to 2021. It indicates that WSKT was getting more leveraged by using more debt in its capital proportion to finance its assets from 2019 to 2021.

A.4. PT Wijaya Karya (WIKA)

Profitability Ratio



Figure-3.13: Profitability Ratios Result of WIKA from 2019 to 2021 (Authors, 2022)

The profitability ratios including ROE and ROI of WIKA from 2019 to 2021 can be seen in figure 3.13. WIKA’s ROE in 2019 continued to decrease from 13.64% in 2019 to 1.94% in 2020 and 1.23% in 2021. Similarly, WIKA’s ROI also continued to decrease from 2019 to 2021 from 8.77% to 3.97% to 3.58% respectively. It can be seen that both of WIKA’s ROE and ROI experienced a larger decline from 2019 to 2020 compared to 2020 to 2021. WIKA’s decreasing ROE and ROI was primarily caused by the decrease of the company’s net income from 2019 to 2021. In 2020, WIKA experienced a decline in net income of around 88.16% from IDR 2.62 trillion in 2019 to IDR 0.31 billion in 2020. In 2021, the net income even more decreased by 30.89% to IDR 0.21 trillion.

Liquidity Ratio

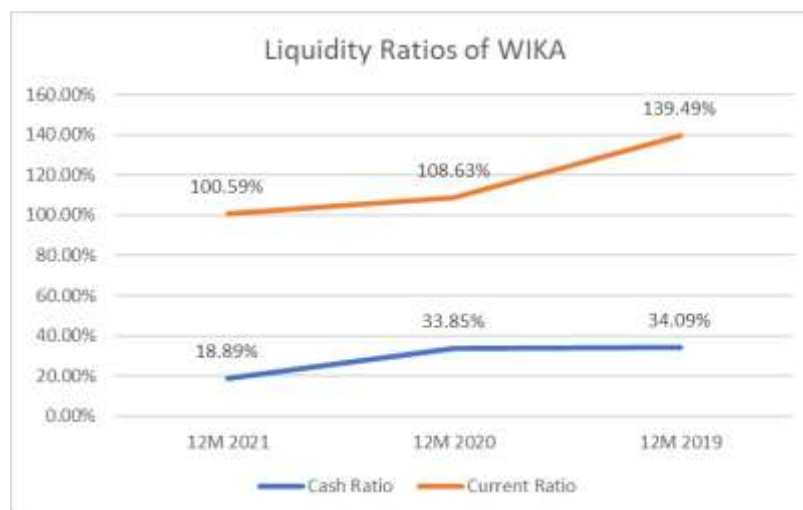


Figure-3.14: Liquidity Ratios Result of WIKA from 2019 to 2021 (Authors, 2022)

Figure 3.14 shows WIKA’s liquidity ratios result which includes cash ratio and current ratio from 2019 to 2021. WIKA’s cash ratio in 2019 was 34.09% then continued to decrease to 33.85% in 2020 and 18.89% in 2021. For the current ratio, in 2019 the value was 139.49% and then continued decreasing to 108.63% in 2020 and 100.59% in 2021. The decrease of both liquidity ratios was as the result of the increase of current liabilities and the decline of both cash and cash equivalents and current assets of WIKA during the Covid-19 pandemic years.

Activity Ratio



Figure-3.15: Activity Ratios Result of WIKA from 2019 to 2021 (Authors, 2022)

The activity ratios of WIKA which includes collection period, days in inventory, and total asset turnover from 2019 to 2021 can be seen in figure 3.15. WIKA’s collection period in 2019 was 287.69 days and then spiked to 426.22 days in 2020 and then decreased again to 223.18 days in 2021. From the collection period trend, it can be said that WIKA used to experienced difficulties in collecting its receivables during 2020 but in 2021 the management has done great initiatives to lower its collection period even lower than the 2019 record. For the days in inventory, in 2019 the value was 91.94 days and then continued to increase to 216.60 days in 2020 and 224.09 days in 2021. From the days in inventory result, it indicates that WIKA continued to experience difficulties to convert its inventories into sales from 2019 to 2021. While for the total asset turnover, in 2019 the value was 43.81%, then decreased quite significantly to 24.28% in 2020 and then increased a little bit to 25.67% in 2021 but still much lower the 2019 record. It shows that during the covid-19 pandemic era in Indonesia, WIKA experienced difficulties to convert its assets into revenues but in 2021 the company has improved compared to 2020.

Solvency Ratio



Figure-3.16: Solvency Ratio Result of ADHI from 2019 to 2021 (Authors, 2022)

Figure 3.16 shows the solvency ratio of WIKA which is represented by the TETA ratio from 2019 to 2021. The result shows that the number decreased from 2019 to 2021 but increased again a little bit in 2021. WSKT’s TETA ratio value in 2019 was 30.94% and then decreased to 24.46% in 2020 and then slightly increased to 25.13% in 2021. From this result, we can see that the company’s getting more leveraged by using more debt than shareholders’ equity in its capital proportions during the covid-19 pandemic era in Indonesia even though in 2021 the company was less leveraged compared to 2020.

B. Validation Testing

The validation testing used to examine the financial health rank (or level) and status of ADHI, PTPP, WSKT, and WIKA from 2019 to 2021 by using the decree of the Ministry of SOE No. KEP-100/MBU/2002 as the guideline to validate the findings. Table 3.1 to 3.4 shows the validation tests result of ADHI, PTPP, WSKT, and WIKA from 2019 to 2021.



B.1. Financial Health Assessment of PT Adhi Karya (ADHI)

Table 3.1 shows ADHI’s financial health rank and status from 2019 to 2021. During the period the total score of ADHI was 37.50, 20.80, and 22.80 respectively. Then the total weight is calculated by dividing the total score by its maximum score which is 70 (for non-infra companies) and convert it into percentage by multiplying 100%. The total weight of ADHI from 2019 to 2021 was 53.57%, 29.71%, and 32.57%. With this total weight result, ADHI’s financial health rank can be categorized as BBB, CCC, and B while the health status can be classified as less healthy, unhealthy, and less healthy sequentially from 2019 to 2021.

Table-3.1: Financial Health Rank Assessment of ADHI (2019 – 2021)

Financial Performance	ADHI					
	12M 2021	Score	12M 2020	Score	12M 2019	Score
Return on Equity (ROE) [Net income / Total equity] x 100%	1.53%	4	0.43%	2	9.73%	14
Return on Investment (ROI) [((EBIT + Depreciation) / (Total assets - Fixed assets)) x 100%]	3.94%	4	3.73%	4	5.42%	5
Cash Ratio (((Cash + Cash equivalent) / (Current liabilities)) x 100%)	10.13%	2	8.73%	1	13.29%	2
Current Ratio [(Current assets / Current liabilities) x 100%]	101.52%	3	111.11%	4	123.77%	4
Collection Period (Accounts Receivable / Sales revenue) x 365 days	501.06	0	622.64	0	499.06	0
Days in Inventory (Inventory / Sales revenue) x 365 days	235.86	1.8	213.08	1.8	113.94	4
Total Asset Turnover (Sales revenue / Total assets) x 100%	28.90%	2	28.42%	2	41.92%	2.5
Total Equity to Total Assets Ratio (Total equity / Total assets) x 100%	14.18%	6	14.63%	6	18.72%	6
Total Score		22.80		20.80		37.50
Total Weight		32.57%		29.71%		53.57%
Health Rank		B		CCC		BBB
Health Status		Less Healthy		Unhealthy		Less Healthy

B.2. Financial Health Assessment of PT Pembangunan Perumahan (PTPP)

Table 3.2 shows financial health rank and status of PTPP from 2019 to 2021. During that period the total score of PTPP was 37.75, 27.65, and 29.15 respectively. Then the total weight is calculated by dividing the total score by its maximum score which is 70 (for non-infra companies) and convert it into percentage by multiplying 100%. The total weight of PTPP from 2019 to 2021 was 53.93%, 39.50%, and 41.64%. With this total weight result, PTPP’s financial health rank can be categorized as BBB, B, and BB while the health status can be classified as less healthy, less healthy, and less healthy respectively from 2019 to 2021.

Table-3.2: Financial Health Rank Assessment of PTPP (2019 – 2021)

Financial Performance	PTPP					
	12M 2021	Score	12M 2020	Score	12M 2019	Score
Return on Equity (ROE) [Net income / Total equity] x 100%	2.52%	5.5	1.90%	4	6.97%	10
Return on Investment (ROI) [((EBIT + Depreciation) / (Total assets - Fixed assets)) x 100%]	5.26%	5	4.32%	4	6.34%	5
Cash Ratio (((Cash + Cash equivalent) / (Current liabilities)) x 100%)	21.90%	3	26.84%	4	29.86%	4
Current Ratio [(Current assets / Current liabilities) x 100%]	111.90%	4	121.22%	4	136.78%	5
Collection Period (Accounts Receivable / Sales revenue) x 365 days	279.30	0.6	294.89	0.6	338.25	0
Days in Inventory (Inventory / Sales revenue) x 365 days	237.64	1.8	219.61	1.8	93.82	4
Total Asset Turnover (Sales revenue / Total assets) x 100%	30.17%	2	29.61%	2	41.68%	2.5
Total Equity to Total Assets Ratio (Total equity / Total assets) x 100%	25.79%	7.25	26.19%	7.25	29.28%	7.25
Total Score		29.15		27.65		37.75
Total Weight		41.64%		39.50%		53.93%
Health Rank		BB		B		BBB
Health Status		Less Healthy		Less Healthy		Less Healthy

Source: Processed by Authors, 2022



B.3. Financial Health Assessment of PT Waskita Karya (WSKT)

Table 3.3 shows WSKT’s financial health rank and status from 2019 to 2021. During the period, WSKT’s total score was 33.15, 13.10, and 25.00 respectively. Then the total weight is calculated by dividing the total score by its maximum score which is 70 (for non-infra companies) and convert into percentage by multiplying 100%. WSKT’s total weight from 2019 to 2021 was 47.36%, 18.71%, and 35.71%. With this total weight result, WSKT’s financial health rank can be categorized as BB, CC, and B while the health status can be classified as less healthy, unhealthy, and less healthy sequentially from 2019 to 2021.

Table-3.3: Financial Health Rank Assessment of WSKT (2019 – 2021)

Financial Performance	WSKT					
	12M 2021	Score	12M 2020	Score	12M 2019	Score
Return on Equity (ROE) <small>[(Net income / Total equity) x 100%]</small>	-11.89%	0	-57.28%	0	3.53%	5.5
Return on Investment (ROI) <small>(((EBIT + Depreciation) / (Total assets - Fixed assets)) x 100%)</small>	4.21%	4	-4.06%	1	5.04%	5
Cash Ratio <small>(((Cash + Cash equivalent) / (Current liabilities)) x 100%)</small>	48.23%	5	2.52%	0	20.56%	3
Current Ratio <small>[(Current assets / Current liabilities) x 100%]</small>	156.00%	5	67.45%	0	108.92%	3
Collection Period <small>(Accounts Receivable / Sales revenue) x 365 days</small>	341.60	0	298.23	0.6	198.17	2.4
Days in Inventory <small>(Inventory / Sales revenue) x 365 days</small>	130.04	3.5	94.89	4	51.99	5
Total Asset Turnover <small>(Sales revenue / Total assets) x 100%</small>	11.80%	1.5	15.33%	1.5	25.60%	2
Total Equity to Total Assets Ratio <small>(Total equity / Total assets) x 100%</small>	14.92%	6	15.70%	6	23.75%	7.25
Total Score		25.00		13.10		33.15
Total Weight		35.71%		18.71%		47.36%
Health Rank		B		CC		BB
Health Status		Less Healthy		Unhealthy		Less Healthy

Source: Processed by Authors, 2022

B.4. Financial Health Assessment of PT Wijaya Karya (WIKA)

Table 3.4 shows the financial health rank and status of WIKA from 2019 to 2021. The total score of WIKA during that period was 50.10, 26.05, and 26.85 respectively. Then the total weight is calculated by dividing the total score by its maximum score which is 70 (for non-infra companies) and convert into percentage by multiplying 100%. The total weight of WIKA from 2019 to 2021 was 71.57%, 37.21%, and 38.36%. With this total weight result, WIKA’s financial health rank can be classified as A, B, and B while the health status can be categorized as healthy, less healthy, and less healthy sequentially from 2019 to 2021.

Table-3.4: Financial Health Rank Assessment of WIKA (2019 – 2021)

Financial Performance	WIKA					
	12M 2021	Score	12M 2020	Score	12M 2019	Score
Return on Equity (ROE) <small>[(Net income / Total equity) x 100%]</small>	1.23%	4	1.94%	4	13.64%	18
Return on Investment (ROI) <small>(((EBIT + Depreciation) / (Total assets - Fixed assets)) x 100%)</small>	3.58%	4	3.97%	4	8.77%	6
Cash Ratio <small>(((Cash + Cash equivalent) / (Current liabilities)) x 100%)</small>	18.89%	3	33.85%	4	34.09%	4
Current Ratio <small>[(Current assets / Current liabilities) x 100%]</small>	100.59%	3	108.63%	3	139.49%	5
Collection Period <small>(Accounts Receivable / Sales revenue) x 365 days</small>	223.18	1.8	426.22	0	287.69	0.6
Days in Inventory <small>(Inventory / Sales revenue) x 365 days</small>	224.09	1.8	216.60	1.8	91.94	4
Total Asset Turnover <small>(Sales revenue / Total assets) x 100%</small>	25.67%	2	24.28%	2	43.81%	2.5
Total Equity to Total Assets Ratio <small>(Total equity / Total assets) x 100%</small>	25.13%	7.25	24.46%	7.25	30.94%	10
Total Score		26.85		26.05		50.10
Total Weight		38.36%		37.21%		71.57%
Health Rank		B		B		A
Health Status		Less Healthy		Less Healthy		Healthy

Source: Processed by Authors, 2022



C. Financial Distress Prediction

Table 3.5 shows the data or items that are used to calculate the Altman’s variable operational (X1, X2, X3, and X4). The data consists of Net Working Capital, Total Assets, Retained Accumulated Earnings, EBIT (Earnings Before Interest and Tax), Market Value of Equity, and Total Liabilities.

Table-3.5: Source of Data for the Variable Operational of ADHI, PTPP, WSKT, and WIKA from 2019 – 2021 (In billion)

Company	Period	Net Working Capital	Total Assets	Retained Accumulated Earnings	EBIT	Market Value of Equity	Total Liabilities
ADHI	2019	5,821.98	36,515.83	3,397.43	1,728.84	4,255.22	29,681.54
	2020	3,007.85	38,093.89	1,989.82	1,150.86	5,465.90	32,519.08
	2021	473.49	39,900.34	2,041.38	1,307.57	3,186.96	34,242.63
PTPP	2019	11,213.60	59,165.55	5,904.24	2,806.99	9,888.84	41,839.42
	2020	5,938.11	53,472.45	3,149.26	1,650.26	11,562.81	39,465.46
	2021	3,586.19	55,573.84	3,390.26	2,311.03	6,137.90	41,243.69
WSKT	2019	4,014.35	122,589.26	10,233.41	5,655.60	17,857.28	93,470.79
	2020	-15,699.07	105,588.96	-440.12	-4,134.58	17,374.66	89,011.41
	2021	15,288.32	103,601.61	-5,961.14	3,994.26	16,710.59	88,140.18
WIKA	2019	11,986.01	62,110.85	7,261.13	4,369.69	18,029.60	42,895.11
	2020	3,812.48	68,109.19	4,390.06	1,932.65	17,805.35	51,451.76
	2021	217.06	69,385.79	4,457.01	1,766.47	9,911.80	51,950.72

Source: Processed by Authors, 2022

C.1. Altman Z-score Analysis of ADHI

Table-3.6: Altman Z-Score Calculation Result of ADHI (2019 – 2021)

Altman Z-score	ADHI		
	12M 2021	12M 2020	12M 2019
X1 Net Working Capital / Total Assets	0.012	0.079	0.159
X2 Retained Accumulated Earnings / Total Assets	0.051	0.052	0.093
X3 EBIT / Total Assets	0.033	0.030	0.047
X4 Market Value of Equity / Total Liabilities	0.093	0.168	0.143
Total Altman Z-score	0.563	1.068	1.818
Interpretation	Distress zone	Distress zone	Grey zone

Source: Processed by Authors, 2022

Table 3.6 shows the total Altman Z-score and interpretation results of ADHI from 2019 to 2021. The overall ADHI’s Altman Z-score result shows decreasing in value for each year from 2019 to 2021 namely from 1.818 to 1.068 to 0.563 with the interpretation as grey zone, distress zone, and distress zone respectively. This result shows that ADHI’s bankruptcy potential is getting higher from 2019 to 2021 since the Altman Z-score kept on decreasing. The Covid-19 pandemic that happened in Indonesia during 2020 - 2021 really brought a negative impact on ADHI’s liquidity (represented by X1), profitability (represented by X2), efficiency (represented by X3), and net worth (represented by X4) performance and led ADHI to a state of distress in 2020 and 2021.



C.2. Altman Z-score Analysis of PTPP

Table 3.7: Altman Z-Score Calculation Result of PTPP (2019 – 2021)

Altman Z-score	PTPP		
	12M 2021	12M 2020	12M 2019
X1 Net Working Capital / Total Assets	0.065	0.111	0.190
X2 Retained Accumulated Earnings / Total Assets	0.061	0.059	0.100
X3 EBIT / Total Assets	0.042	0.031	0.047
X4 Market Value of Equity / Total Liabilities	0.149	0.293	0.236
Total Altman Z-score	1.058	1.436	2.136
Interpretation	Distress zone	Grey zone	Grey zone

Source: Processed by Authors, 2022

Table 3.7 shows PTPP’s total Altman Z-score and interpretation results from 2019 to 2021. The total Altman Z-score result of PTPP also decreased for each year from 2019 to 2021 namely from 2.136 to 1.436 to 1.058 with the interpretation in grey zone, grey zone, and distress zone respectively. It indicates that PTPP’s bankruptcy potential is getting higher from 2019 to 2021 since the Altman Z-score kept on decreasing. But, only in 2021 that the company was categorized in a state of financial distress according to the Altman Z-score method. Overall, the Covid-19 pandemic has negatively impacted PTPP’s financial performance.

C.3. Altman Z-score Analysis of WSKT

Table 3.8: Altman Z-Score Calculation Result of WSKT (2019 – 2021)

Altman Z-score	WSKT		
	12M 2021	12M 2020	12M 2019
X1 Net Working Capital / Total Assets	0.148	-0.149	0.033
X2 Retained Accumulated Earnings / Total Assets	-0.058	-0.004	0.083
X3 EBIT / Total Assets	0.039	-0.039	0.046
X4 Market Value of Equity / Total Liabilities	0.190	0.195	0.191
Total Altman Z-score	1.239	-1.047	0.998
Interpretation	Grey zone	Distress zone	Distress zone

Source: Processed by Authors, 2022

Table 3.8 shows the total Altman Z-score and interpretation results of WSKT from 2019 to 2021. WSKT’s total Altman Z-score shows a negative result in 2020, while the value in 2019 and 2021 was still positive. The total Altman Z-score from 2019 to 2021 was 0.998, -1.047, 1.239 and were interpreted as distress zone, distress zone, and grey zone respectively. From this result, it can be concluded that WSKT was facing serious financial problems in 2020 and experienced financial distress which triggered by negative values of the net working capital in 2020 and the company’s record of net losses for two consecutive years which yielded negative retained accumulated earnings in 2020 and 2021.



C.4. Altman Z-score Analysis of WIKA

Table 3.9: Altman Z-Score Calculation Result of WIKA (2019 – 2021)

Altman Z-score	WIKA		
	12M 2021	12M 2020	12M 2019
X1 Net Working Capital / Total Assets	0.003	0.056	0.193
X2 Retained Accumulated Earnings / Total Assets	0.064	0.064	0.117
X3 EBIT / Total Assets	0.025	0.028	0.070
X4 Market Value of Equity / Total Liabilities	0.191	0.346	0.420
Total Altman Z-score	0.601	1.131	2.561
Interpretation	Distress zone	Grey zone	Grey zone

Source: Processed by Authors, 2022

Table 3.9 shows the total Altman Z-score and interpretation results of WIKA from 2019 to 2021. From the result, it can be said that the company’s risk of facing bankruptcy was getting higher since the number continued to decrease. The Altman Z-score values from 2019 to 2021 are 2.561, 1.131, and 0.601 with the interpretation as grey zone, grey zone, and distress zone respectively. The result shows that even though the Altman Z-score value kept on decreasing, only in 2021 the company was classified in the distress zone according to Altman Z-score model. Overall, WSKT’s financial performance was negatively impacted by the Covid-19 pandemic.

CONCLUSION

This study shows the financial performance, health condition, and bankruptcy potential of the four largest Indonesian construction SOEs namely ADHI, PTPP, WSKT, and WIKA as the representatives of the construction industry in Indonesia by using the financial ratio analysis with the validation using the decree of the Ministry of SOEs No. KEP-100/MBU/2002 to assess the financial health rank level as well as the Altman Z-score model to predict the bankruptcy potential. The result of the financial health rank level of each company from 2019 to 2021: ADHI (BBB, CCC, and B), PTPP (BBB, B, and BB), WSKT (BB, CC, and B), and WIKA (A, B, and B) respectively. From the bankruptcy potential analysis using the Altman Z-score method from 2019 to 2021, all companies experienced declining in the total Altman Z-score results during the Covid-19 pandemic era in Indonesia and were interpreted as being in a state of financial distress, except for WSKT which in 2021 the total Altman Z-Score increased drastically because in 2021 the company improved its liquidity significantly from financing activities.

Based on the financial ratio analysis result, it can be concluded that all companies experienced a decline in their financial performance which was also reflected in the worsen-off of the companies’ financial health rank level during the Covid-19 pandemic era in Indonesia. Similar to the Altman Z-score result, all companies experienced an increase in the risk of experiencing bankruptcy and financial distress especially during the first year of the pandemic. According to Brazer et al (2019), these Indonesian construction SOEs can improve their financial performance by doing operational efficiency, developing better collection strategies, and carefully managing the cash flow. While for the bankruptcy potential, Ross et al (2019) in Marpaung et al (2021) described that companies in a state of financial distress can reduce the risk of going bankrupt by cutting unnecessary costs and spendings, issuing new securities, assets divestment, financial restructuring, and negotiating with banks or creditors. Externally, the Indonesia Government may give support to these companies such as by giving credit relaxation policies or financial incentives in order to be able to continue the ongoing construction projects and start making new contractual infrastructure projects with these companies so that the companies can improve their top-line.

The result of this research will hopefully be useful for the business managers, government, shareholders, and academicians in understanding the influence Covid-19 has financially on the construction companies in Indonesia as well as an input in making strategies or formulating policies for the recovery of the construction industry in Indonesia after the pandemic era or in the future economic crisis.



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