

## FINANCIAL PERFORMANCE ANALYSIS OF PT TIMAH

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### ABSTRACT

*This study aims to evaluate the implications of the temporary closure of the tin market and the opening of a new Indonesian tin market, as well as the impact on the financial performance of PT Timah as the largest tin company in Indonesia. This study was motivated by the closing of the IDXC tin exchange in 2018 due to tin theft cases, as well as the opening of a new tin market at JFX. To determine the significance of this impact, a financial ratio analysis of PT Timah in the period of 2018 - 2020 was carried out. The data were collected from financial report and the period was divided into two periods: post (Q1 2018 to Q2 2019) and prior (Q3 2019 to Q2 2020). This study also used a paired t-test to see the significance of differences in financial ratios after and before the incident. This study only discusses the performance of PT Timah based on its financial aspects, and further studies are needed to evaluate the company's performance from a broader perspective.*

Key words: PT Timah, Tin, Mining, Financial Performance, Significance.

### I. INTRODUCTION

Indonesian tin deposits are mainly located in Bangka, Belitung, and Singkep islands. Tin mining was originally developed by Chinese capital and enterprise and then transferred to the Dutch colonial government in the mid-nineteenth century (Kaur & Diehl, 1996). Indonesia is the second-largest tin-producing country and the 4th highest tin resources country in the world (ITRI, 2016). Indonesia also owns tin reserves of up to 800,000 tons and is estimated to produce an average 82,000 tons per year (U.S Geological Survey, 2020). In 2015, around 70,900 tons of tin were mined. In Indonesia, there are resources and reserves available publicly and run by the state company, PT Timah. In 2015, PT Timah reserves around 328,392 tons of tin, and 84% of them are situated offshore (ITRI, 2016).

**Table 1. World tin mine production and reserves**  
Source: U.S Geological Survey 2020

Country	Mine Production		Reserves
	2018	2019	
United States	-	-	-
Australia	6,870	7,000	420,000
Bolivia	16,900	17,000	400,000
Brazil	17,100	17,000	700,000
Burma	54,600	54,000	100,000
China	90,000	85,000	1,100,000
Congo (Kinshasa)	7,400	10,000	150,000
Indonesia	85,000	80,000	800,000
Laos	1,100	1,000	NA
Malaysia	4,300	4,000	250,000
Nigeria	7,800	7,500	NA
Peru	18,600	18,500	110,000
Russia	1,400	1,400	350,000
Rwanda	2,400	3,000	NA
Vietnam	4,560	4,500	11,000
Other countries	310	1,400	350,000
<b>World total (rounded)</b>	<b>318,000</b>	<b>310,000</b>	<b>4,700,000</b>

In 2009, the Indonesian government launched a law on mineral and coal mining regulation under Law No. 4 of 2009 (ILO, 2009). The law is regulating mining business licensing and is referred to. According to PT Timah, this company holds IUP for 331,580 hectares onshore and 184,400 hectares offshore. PT Timah also owns smelters. All onshore and offshore tin ore is processed and shaped into several products such as tin bar, tin solder, low lead, tin alloy, tin chemical, and others (PT Timah TBK<sup>5</sup>).

PT Timah officially joined Indonesia Stock Exchange (now known as IDXC) in 2013 to sell their goods. This was exactly as required by the government at that time that every tin producer company must sell their goods through the tin markets effective on August 30, 2013. This regulation was based on the Regulation of Minister of Trade of Republic Indonesia Number 32 of 2013 articles number 11, paragraphs 1 and 3 (IDXC, 2013). In October 2018, the authorities sealed ready-to-export tin bars owned by IDXC member who was suspected of being illegal. This resulted in a delay of export through IDXC for 9 months (Suud, 2019).

In August 2019, another physical tin market was opened in Jakarta Futures Exchange (JFX) under the rules of trade ministry (permendag) number 53 of 2018. This rule gave Bappepti or the Commodity Futures Trading Regulatory Agency, an echelon I unit under the Ministry of Trade, the ability to create more than one tin market in Indonesia. Bappepti issues licenses for commodity exchanges that meet the requirements to participate in tin bars trading (JFX) and make them one of the tin exchanges besides the IDXC. This action creates a controversial and anomaly in the policy. The presence of two markets will damage the reference price and causing the decline of tin. This would also confuse the buyer in using the price reference. Also, Indonesia as a country with the second-largest tin reserves in the world, wants to be a part of world tin price determinants (R.D., 2020).

In this paper, financial performance analysis is needed to see if there is a change in company performance before and after entering the two markets. The study of the financial performance of an industry can help to reveal the impact of times, technology, and environmental changes, and using ratio analysis as sources (Dheeriya, 1993). Financial ratio analysis is useful to measure the performance of a small business and can be used to predict failure (Edimister, 1972). This study was conducted to see the significance of PT Timah's performance, before and after entering both exchanges. This study was also conducted to see whether or not there were significant differences related to sales efficiency before and after joining both exchanges.

## **II. LITERATURE REVIEW**

### **History of Tin Mining in Indonesia**

The oldest recorded tin deposit discovered in 1710 on the island of Bangka. At that time, Bangka was under the control of the sultan of Palembang. The Sultan of Palembang then granted the tin trade monopoly to the Dutch East India Company (VOC). In 1812, the British took over Bangka and Belitung Island's mineral rights. Shortly after, Bangka and Belitung returned to the Dutch government following the Treaty of London 1814. The mining was operated under the Netherlands East Indies (NEI). In 1913, a state concern Bangka Tinwinning (BTW) established and operated the mining in Bangka. In 1928, a tin mining concession was given to Billiton Joint Mining Company (GMB). In Singkep Area, tin mining started in 1889 under the Singkep Company of the Sultan of Lingga. In 1934 the Singkep Company was taken as a GMB subsidiary. Other companies were Stannum Company (1925), which operated in Bangkinang, and NI Tin Exploitation Company (1926). During that period, tin workers from China are employed in many mining sites. Chinese miners had two major effects on the dynamics of Indonesian tin mining at that time: Chinese miners adopt the technology of water control systems from their homeland while also being able to do work effectively and efficiently (Kaur and Diehl, 1996). The tin mining remained operated until the Japanese occupation in 1942. At the end of the Japanese occupation (1945), most of the mining sites were damaged because of neglect. After Indonesian independence, all tin mining sites were operated under GMB for five years. The tension between the Dutch and the Indonesian government happened and resulted in the takeover of Bangka, Belitung, and Singkep by the Indonesian government in 1953 (Kaur and Diehl, 1996).

### **PT Timah**

In the 1970s, tin mines were handed over to a national tin mining company, PT Timah (previously called PNT Timah). This is for the second time once again, the mining industry is held by both the government and private (Kaur and Diehl, 1996). PT Timah is a tin mining company and holds the biggest IUP, spread in Bangka Belitung Province and Riau Islands. In 1998, all of the mining facilities and assets were transferred to PT Tambang Timah, a subsidiary, due to capital contribution in the context of business expansion. In 2009, Law No. 4 of 2009 prohibits IUP to involve subsidiaries or other affiliates, except under the minister's permission. In 2010, PT Timah took over all the mining operations, and PT Tambang Timah was merged with PT Timah (Eliani & Wiryo, 2013). In 2020, PT Timah operated in three major areas: Bangka Belitung Island Province, Riau and Riau Islands. In Bangka Belitung Island Province, 122 IUP are located 288,729 ha in the onshore area and 139,663 ha in the offshore area. PT Timah also owns smelters with a capacity of 42,000 Mton per annum. In Riau and Riau Islands 7 IUP are located in a 45,009-ha offshore area, with 12,000 Mton p.a smelters capacity (PT Timah TBK<sup>1</sup>, 2020).

PT Timah shareholders are 65% owned by PT Inalum (persero) owned by the Indonesian government, and the rest owned by the public (35%) (PT Timah TBK<sup>4</sup>). PT Timah began to be listed in the Indonesian Stock Exchange (previously called Jakarta Stock Exchange) in October 1995. Under PT Timah not only operated in tin mining, industry, and trading but also in transportation and service. PT Timah's main activities include performing in tin mining operations, as well as the marketing services to the business groups. PT Timah also owns several subsidiaries in workshop and shipbuilding, engineering services, tin mining, tin consulting, tin research services, and non-tin mining. About 95% of tin produced by PT Timah's are exported to Singapore (56%), the Netherlands, India, Japan, and Taiwan (PT Timah TBK<sup>2</sup>). Tin export from Indonesia in 2017 and 2018 significantly increased. Almost 100% of Indonesian tin export volume came from PT Timah (PT Timah TBK<sup>1</sup>, 2020).

### **Previous research on financial analysis and variables to measure**

In research of the US mineral and mining financial analysis (Dheeriya, 1993) using ratio analysis and a simplified statement of cash flow. Financial ratio analysis is often used to calculate the qualities of a company. Various ratios are calculated and compared over a period of time. Sometimes it is named as trend analysis of ratios. This is helpful to suggest historical trends and can be used as a warning signal or for a casting system. Dheeriya's research (1993) was conducted using various ratios in the categories of liquidity, leverage, activity, and profitability. Another similar study about financial performance analysis was done for the cement industry, aviation industry (Daryanto, 2018), and coal mining industry in Indonesia (Giovani and Daryanto, 2020). Pankoff and Virgil (1970) stated that "firms' past records are useful to the extent that they help users make decisions about uncertain future".

### Liquidity Ratios

In previous research (Dheeriyaa, 1993) liquidity ratios that used are current and quick ratios. The current ratio is the most widely used ratio to measure liquidity (Ross, et al, 2017) and defined as  $\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$ . There are lots of factors that affect the current ratio such as the company's size, accessibility to source for short-term financing, and the business's volatility. The more predictable the cash flows of a business, the smaller the appropriate current ratio (Gitman, et al, 2012). If the current ratio is below 1, it means that the company's current liability is greater than its current assets. This shows the company is unable to pay its liability.

The quick ratio is also known as acid-test, is defined as similar with the current ratio except excludes its inventory. It is because inventory known as the least liquid current assets. Large inventory could be a problem when the emergency time comes and become difficult to convert inventory into cash. Keeping inventories for a long time will lead to risks of damage, obsolete, or loss. Low liquidity of inventory is usually caused by two primary factors: the inventory cannot be easily sold, and the inventory is sold on credit, so it converted to account receivable become turns into cash. Buying inventory using cash will reduce the quick ratio and does not affect the current ratio. The quick ratio is defined as  $\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$  (Gitman, et al, 2012; Ross, et al, 2017).

### Leverage Ratios

Liquidity and leverage ratios can be useful for predicting problems that will lead to disaster in the future. When a company has poor performance, it can be seen when it has difficulty paying bills on time. As a result, the company took out additional loans to deal with the crisis. When this happens continuously, it can cause debt to accumulate and become bankrupt. The leverage ratio helps measure the extent to which a company can pay off debt. The leverage ratio can be calculated using the debt ratio, debt to equity ratio, and fixed charge coverage ratio (Dheeriyaa, 1993).

The debt ratio will help to calculate all debts of all maturities to all creditors. The debt ratio will make a difference depending on whether capital structure matters. The easiest way to calculate the total debt ratio is using the Total Debt ratio =  $\frac{\text{Total assets} - \text{Total equity}}{\text{Total assets}}$  formula. The debt-to-equity ratio is calculated using Debt-equity ratio =  $\frac{\text{Total debt}}{\text{Total equity}}$  (Ross, et al, 2017).

Total debt to assets will help to show how the company has used debt to finance its assets. This ratio is defined as Total Debt to assets ratio =  $\frac{\text{Total liabilities}}{\text{Total assets}}$ .

### Activity Ratios

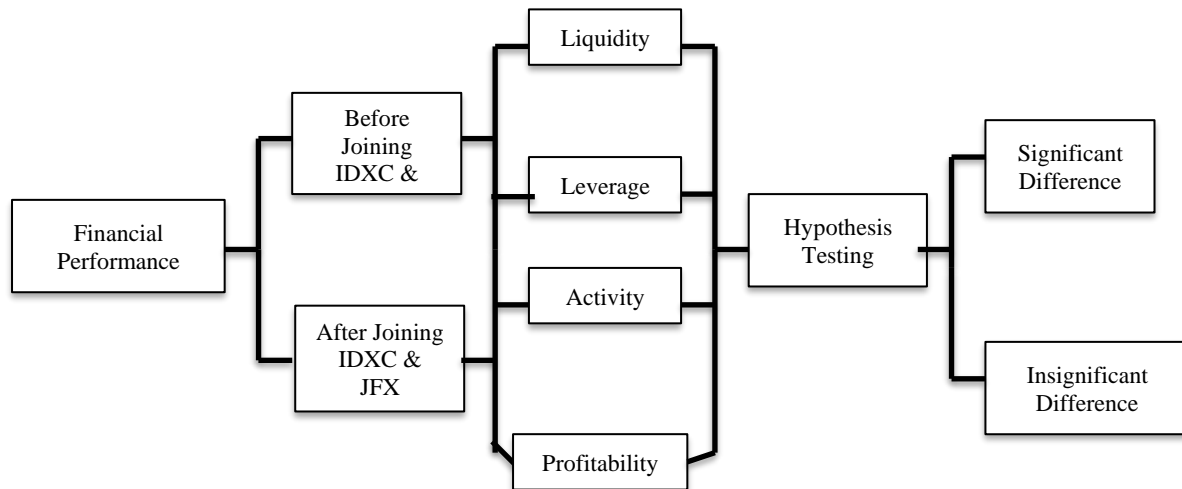
The activity ratio can be used to see how well the company is to operate. Known also as asset management ratio or utilization ratio. It can be seen how efficient they are using their resources to generate sales and maintenance it. This ratio is focusing on two important current assets, inventory and receivables. Inventory turnover described as the number of times inventories are sold or consumed in a period time. The formula of inventory turnover is defined as  $\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Inventory}}$ . Receivable's turnover is a measurement for how fast the company can collect sales. The receivables turnover is defined as  $\text{Receivable's turnover} = \frac{\text{Sales}}{\text{Accounts receivable}}$ . Total asset turnover is described as a comparison of total sales to its asset base. This measurement will show the company's efficiency in producing sales. A company with a high total asset turnover ratio can operate with fewer assets, less debt, and equity to operate. This will lead to a greater return for shareholders. Total asset turnover can be defined as  $\text{Asset turnover} = \frac{\text{Sales}}{\text{Total assets}}$  (Ross, et al, 2017). Equity turnover is described as how much revenue the shareholder's equity can generate over the course of a year. Equity turnover is defined as  $\text{Equity turnover} = \frac{\text{Sales}}{\text{Average shareholder's Equity}}$  (Daryanto, et al. 2019).

### Profitability Ratios

Profitability ratios are a measurement to assess a company's ability to generate profit and value for its shareholders. This ratio will help us to see how efficient the company is using its assets, managing its operation and generating profits (Ross, et al, 2017). In this ratio, the measurement will be using profit margin, return on assets (ROA), and return on equity (ROE). Profit margin is a ratio calculated using the company's profit or sales minus all expenses divided by its revenue. This ratio will tell how well the company handled its finance in general. Profit margin can be defined as  $\text{Profit margin} = \frac{\text{Net income}}{\text{Sales}}$  (Ross, et al, 2017). Return on assets (ROA) is an indicator of how profitable a company's asset is in generating revenue. The result shows how efficient the company is using its assets to generate earnings. ROA can be defined as  $\text{Return on Asset} = \frac{\text{Net income}}{\text{Total asset}}$ . ROE measures the income earned by the company on its equity capital. ROE measures the return earned on the common stockholders' investment in the company. ROE is the true bottom-line measure of performance. Sometimes ROE called as return on net worth. ROE usually measured as  $\text{Return on Equity} = \frac{\text{Net income}}{\text{Total equity}}$  (Ross, et al, 2017; Gitman, et al, 2012).

### III. RESEARCH MODEL

This research model will show the process of measuring financial performance and examines the differences in the performance of PT Timah before and after joining both local tin markets, IDXC and JFX. The study will be done using a model, adjustments to the previous study by Daryanto, et al (2019).



### IV. HYPOTHESIS

- H1: using the current ratio, there is a significant difference in financial performance before and after joining both exchanges.
- H2: using quick ratio, there is a significant difference in financial performance before and after joining both exchanges.
- H3: using debt ratio, there is a significant difference in financial performance before and after joining both exchanges.
- H4: using debt to equity ratio, there is a significant difference in financial performance before and after joining both exchanges.
- H5: using total debt to asset ratio, there is a significant difference in financial performance before and after joining both exchanges.
- H6: using inventory turnover, there is a significant difference in financial performance before and after joining both exchanges.
- H7: using receivable turnover, there is a significant difference in financial performance before and after joining both exchanges.
- H8: using asset turnover, there is a significant difference in financial performance before and after joining both exchanges.
- H9: using equity turnover, there is a significant difference in financial performance before and after joining both exchanges.
- H10: using profit margin, there is a significant difference in financial performance before and after joining both exchanges.
- H11: using the return on asset ratio, there is a significant difference in financial performance before and after joining both exchanges.
- H12: using the return on equity ratio, there is a significant difference in financial performance before and after joining both exchanges.

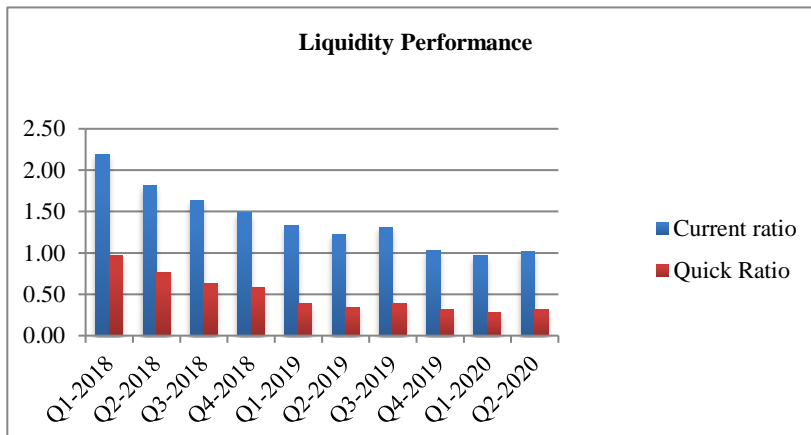
### V. METHODOLOGY

This research will be done using the descriptive financial ratio measurement from the secondary data available. Data were collected from the annual report of PT Timah from the first quarter of 2018 (Q1 2018) until the second quarter of 2020 (Q2 2020). The first quarter of 2018 (Q1 2018) until the second quarter of 2019 (Q2 2019) categorized as the 'before' joining IDXC and JFX period, while the third quarter of 2019 (Q3 2019) until the second quarter of 2020 (Q2 2020) categorized as the 'after' period. This study uses some of the tools, which are relevant to the analysis of the financial performance such as imperative statements, trend analysis and ratio analysis. The analysis ratio includes liquidity ratio, leverage ratio, activity ratio and profitability ratio. From these ratios, listed 12 variables includes current ratio, quick ratio, total debt ratio, total debt to assets ratio, debt to equity ratio, inventory turnover, receivable turnover, assets turnover, equity turnover, profit margin, ROA and ROE. The study was only limited to 10 periods in 3 years of financial data, and purely based on secondary data from annual reports. A paired T-test was also needed to be done to the results of financial performance analysis to see how significant the difference of the company's performance before and after both markets. Paired t-test also called a dependent sample t-test, is a procedure to determine whether statistical evidence exists that the mean difference between related paired items or the outcome observed is significantly different or not (Kim, 2015).

**VI. RESULTS AND DISCUSSION**

**Liquidity Performance**

**Figure 1. Liquidity Performance Ratio of PT Timah**

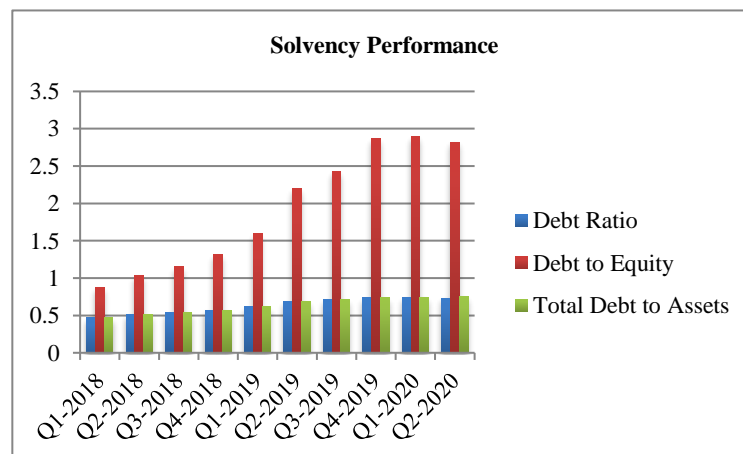


The bar graph above shows the percentage of current ratio and a quick ratio of PT Timah from the Q1 of 2018 to the Q2 of 2020. There was a visible decline from both ratios, showing that the Q2 quarter of 2020 (1.01) was slightly increasing for both ratios. During this period (Q3 2019) was where PT Timah joined both IDXC and JFX and increased their selling and generated cash more. The lowest current ratio was in the Q1 of 2020 (0.97) indicates the company debts during this period are greater than the assets. As in the quick ratio, where 1 considered as good, PT Timah was never passed the number during the calculated period. The highest was in the Q1 of 2018 (0.96), and the lowest was in the Q1 of 2020 (0.28). This could be an indication that the company was not able to fully pay its current liabilities during the period.

**Solvency Performance**

The graph below shows the solvency performance of PT Timah from the Q1 of 2018 to the Q2 of 2020. The debt ratio is gradually increasing during the counted periods. The highest was during the Q4 of 2019 and the Q1 of 2020 with 0.74, which obviously happened after PT Timah joined both, IDXC and JFX. If the ratio was less than 1, it shows the company has fewer liabilities than its assets. With the highest debt ratio, but still, less than 1, means PT Timah hasn't put the company at risk of loans, and a big part of the assets was funded by equity. This is in line with the debt-to-equity ratio of PT Timah, gradually increasing to almost 3. This company is seen to be able to pay off its long-term debt. In total debt to assets ratio, shows how PT Timah always is less than 1, which means the company owns more assets than liabilities also able to meet its obligations by selling the assets if needed.

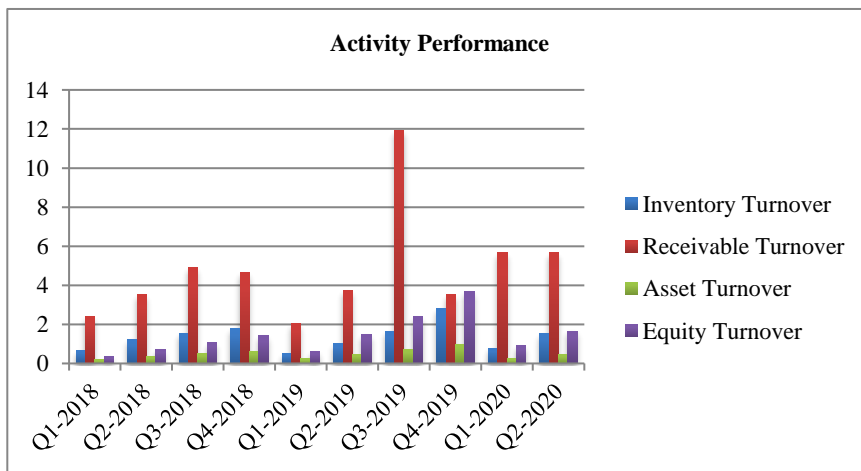
**Figure 2. Solvency Performance Ratio of PT Timah**



**Activity Performance**

The graph below shows how PT Timah in activity performance. In inventory turnover ratio, it shows the velocity of merchandises moves through a business. The highest was in the Q4 2019, and the lowest was in the Q1 of 2019. This might be related to the fact that in Q4 2018 the IDX was closed due to the tin scandal and reopened in Q2 2019. It is also related to how PT Timah joined JFX in Q1 of 2019. This condition is also linked to receivable turnover ratios. The ratio shows how effective the company collecting the receivables or money owned by clients. The highest was in Q3 2019 and the lowest was in Q1 2019. On the asset turnover ratio, which can be used as an indicator of the efficiency with which a company is deploying its assets in generating revenue, the highest was in the Q4 of 2019 and the lowest was in the Q1 of 2018. In Q4 of 2019, every asset of 1 rupiah will generate 0.95 rupiahs of sales, while in Q1 of 2018 every 1 rupiah of assets will generate 0.18 rupiah of sales. In the equity turnover, we will see how much the money is invested to generate sales revenue. The highest was in the period of Q4 2019, and the lowest was in Q1 2018. In Q4 2019, the value was 3.67, which means every 1 Rupiah of shareholder equity generates 3.67 sales. In Q1 2018, the value was 0.33 which means every 1 Rupiah of shareholder equity only generates 0.33 sales. In Q1 2020 there was also a decrease in equity turnover, to a value of 0.99.

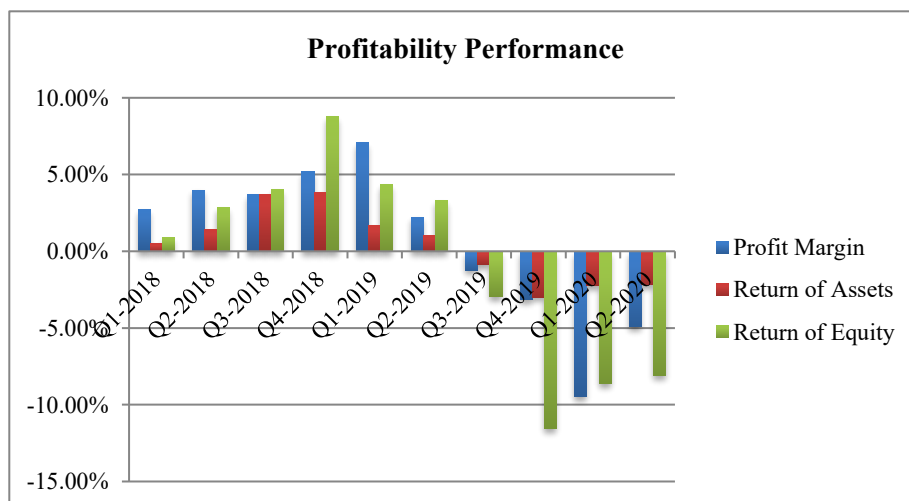
**Figure 3. Activity Performance Ratio of PT Timah**



**Profitability Performance**

The bar chart below shows information about the percentage of profit margin, ROA, and ROE of PT Timah between Q1 of 2018 and Q2 of 2020. The highest profit margin was in the Q1 of 2019, which means the company was able to control its cost, providing their goods at a price significantly higher than the costs. The lowest was in the Q1 of 2020 after PT Timah joined both markets, that indicates the company was not able to provide goods with a price higher than the cost. The highest ROA was in Q3 of 2018 (3.8%), which indicates a high net income, and the lowest in Q4 of 2019 (-2.99%) which could indicate the company losing the money or buying up assets to generate more profits in the future. The highest ROE was in the Q4 of 2018 (8.81%) and the lowest was in the Q4 of 2019 (-11.58%). This significant decline in 4 periods length happened right after PT Timah joined both markets (Q3 2019). Declining in ROE could be an indication of a company becoming less efficient in creating profits and shareholders' value.

**Figure 4. Profitability Performance Ratio of PT Timah**



**Hypothesis Testing**

Table 2 shows the outcome from Paired T-test of PT Timah between periods counted. Eight hypotheses are accepted, and the rest is rejected. In liquidity performance, the current ratio and the quick ratio has a significant difference in the period before and after PT Timah joined both IDXC and JFX market with p-value  $\leq \alpha$  which is  $0.004 < 0.05$  and  $0.009 < 0.05$  respectively. This is strongly showing that joining both market IDXC and JFX significantly affects PT Timah, especially in their current ratio and quick ratio. In solvency performance, debt ratio, debt to equity and total debt to asset ratio also has a significant difference in the period before and after PT Timah joined both markets. With p-value  $\leq \alpha$ , which is  $0.001, < 0.001$  and  $< 0.001$  respectively. While in debt ratios, with negative means, it shows how this case affects PT Timah in a negative way, significantly. Lastly, in profitability performance, profit margin, ROA, and ROE also show a significant difference of PT Timah before and after joining both markets, with p-value  $0.023, 0.026,$  and  $0.025$  respectively. On the other side, the rest ratio that is rejected in activity performance statistically has no significant changes to PT Timah, and the null hypotheses are accepted.

**Table 2. Hypothesis testing results**

DESCRIPTION	PERIOD	MEANS	STD. DEVIATION	PAIRED T TEST	Sig.	DECISION
CURRENT RATIO	BEFORE	0.702	0.173	8.09	0.004	Accept the hypothesis
	AFTER					
QUICK RATIO	BEFORE	0.407	0.136	5.972	0.009	Accept the hypothesis
	AFTER					
DEBT RATIO	BEFORE	-0.211	0.034	-12.205	0.001	Accept the hypothesis
	AFTER					
DEBT TO EQUITY	BEFORE	-1.656	0.158	-20.849	<0.001	Accept the hypothesis
	AFTER					
TOTAL DEBT TO ASSET	BEFORE	-0.216	0.026	-16.446	<0.001	Accept the hypothesis
	AFTER					
INVENTORY TURNOVER	BEFORE	-0.28	1.185	-0.473	0.668	Reject the hypothesis
	AFTER					
RECEIVABLE TURNOVER	BEFORE	-2.926	4.455	-1.314	0.28	Reject the hypothesis
	AFTER					
ASSET TURNOVER	BEFORE	-0.141	0.485	-0.582	0.601	Reject the hypothesis
	AFTER					
EQUITY TURNOVER	BEFORE	-1.205	1.555	-1.55	0.219	Reject the hypothesis
	AFTER					
PROFIT MARGIN	BEFORE	0.86	0.039	4.324	0.023	Accept the hypothesis
	AFTER					
RETURN OF ASSET	BEFORE	3.94%	1.92%	4.107	0.026	Accept the hypothesis
	AFTER					
RETURN OF EQUITY	BEFORE	11.96%	5.683	4.208	0.025	Accept the hypothesis
	AFTER					

## CONCLUSIONS AND RECOMMENDATION

The purpose of this research is to measure PT Timah's financial performance, as the biggest player in tin mining in Indonesia. This research was also done to examine the significant difference in financial performance before and after joining both the tin market by IDXC and JFX, between the period of the first quarter of 2018 and the second quarter of 2020. The results show that in liquidity performance, PT Timah is declining and significantly different after joining both markets. In PT Timah's solvency performance, especially in debt to equity is rising, and these ratios are significantly affected after joining both markets. It also resulted in the same in profitability performance, with declining through the periods and it significantly different after PT Timah joined both markets. In conclusion, the joining of PT Timah in two Indonesian tin exchanges IDXC and JFX does not automatically improve the company's performance. It is estimated that this is due to the unsatisfactory price of tin in both markets, compared to another market such as LME. Currently, it is known that LME still influenced world tin's price at the most. PT Timah declining in performance was also expected due to an increase in debt. It is recommended for PT Timah to do company efficiently and reduce debt. It also recommended PT Timah postpone sales until the market price of tin on the local stock exchange improves.

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