

## **FINANCIAL PERFORMANCE ANALYSIS USING DUPONT RATIO: TECHNOLOGY SECTOR DURING 2019-2020 PERIOD**

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### **Abstract**

Based on resilience theory, this study aims to determine the extent of the financial performance of technology sector by using the Du Pont System method for 2 (two) years (2019-2020). The data analysis technique used is quantitative and qualitative approach by comparing two means value of the Du Pont ratio within two countries, namely Indonesia and China. The results of this study indicate that technology sector in 2019-2020 tends to rise, indicating that management is able to obtain good performance. Based on the average results of the company's in technology sector ROI calculation for two years it can be concluded that the financial performance of company's in technology sector is in a healthy condition, because of the average ROI rate for two years above the ROI assessment standard.

**Keywords:** *financial performance, DuPont, Technology sector, ROI, ROA, ROE*

### **INTRODUCTION**

The Covid-19 pandemic has a negative impact on almost every aspect of human life, including the social and economic sectors. The technology sector is actually improving, despite the significant negative effects on all facets of the global economy. The constituent shares of companies in the technology sector have historically increased by 1103.93 percent as of June 30, 2021, compared to only 48.04 percent and 35.32 percent for shares in the IDX Industry and Basic sectors, respectively, according to the Indonesia Stock Exchange's (IDX) June 2021 report. The technology industry's quick expansion and development provides a challenge for technology industry issuers because of the connotations associated with significant initial software and hardware investments, operational costs, maintenance, system and human resource development (Sima et al., 2020); (Dwivedi et al., 2021) (Javaid et al., 2021); (Podger, 2020); (Mcewan & College, 2010); (Al Umar & Nur Savitri, 2020); (Aryani & Suhindarto, 2021)

The idea of resilience is congruent with the advancement of technology. Maintaining the adaptability of institutional, social, economic, and environmental systems and behavior is the aim of resilience. By enabling all economic potential to be resilient in the face of

economic uncertainty and the challenges provided by an increasingly complex global competitive environment, the concept of resilience is put into effect. The company controls uncertainty by foreseeing all factors that contribute to the industry's vulnerability in order to guarantee the ongoing improvement of the technology sector and Indonesia's overall economic resilience.

Previous research primarily examined individual financial ratios, so it was impossible to show how one ratio affected another. Due to this assessment of specific ratios, it can be difficult for researchers to come at comprehensive conclusions. This study compares how successfully IT companies in China and Indonesia performed before and during the epidemic, taking into account both their potential and the concept of resilience. In this study, the DuPont system must be investigated in order to determine how issuers in the technology sector perform. The combined ROA, ROE, and ROI can be calculated using the DuPont system. So that investors can take them into consideration when making investment decisions, this study emphasizes the differences in each nation's resilience features.

## **LITERATURE REVIEW**

### **Shareholder theory and resiliency**

Whether it be the management team or external investors, a shareholder is a stakeholder who actively participates in maximizing the company's wealth. According to this hypothesis, issues will arise when ownership and control of a corporation are separated since shareholders' interests diverge from those of management's interests as agents. In order to prevent anything from happening that could subsequently affect the shareholder, shareholders have a responsibility to monitor and supervise management performance (Abdillah, 2018). While shareholders expect rewards in the form of dividends and capital gains, the company requires shareholders to raise cash. As a result, the business must be able to improve performance in any circumstances, including those caused by the Covid-19 epidemic. This talent is referred to as resilient power.

Personal strengths—internal resources or talents associated to healthy development and a successful life—can be considered as indicators of resilience. Accordingly, it is mentioned in (Paranhos et al., 2019); (Béné et al., 2014)

Bernard employed resilience research to examine a company's resilience by evaluating its performance. This idea is crucial for determining how businesses might create the best financial performance to support a nation's sustainable economy. It refers to the shared commitment of organizational members as a determining factor for success on the basis of a common confidence in the collective ability to adapt to change (Dalton & Gottlieb, 2003).

### **DuPont System**

The DuPont System was used to examine the financial performance growth in this study. Financial managers should adopt this strategy because it can highlight the variables that have the greatest impact on the relationship between profit margin and total asset

turnover relative to ROA. Additionally, by employing this technique, load control and the effectiveness of asset turnover brought on by increased sales may both be examined (Nurlaela et al., 2019). The DuPont system is a method created by the DuPont Company to assess how well a business is able to produce a profit and recover its capital (Melvin et al., 2004). By integrating activity ratios and profit-to-sales margins, financial analysis utilizing the DuPont System offers the advantage of illuminating how those ratios interact to determine profitability and assets. The DuPont technique uses a more integrated approach to provide information on the different elements that affect how profitable a firm is. In order to better understand the elements influencing how effectively the company manages its resources and improve future financial planning, DuPont's method analyzes financial statements in depth, using the structure of the financial statements as an element of analysis.

The DuPont System's Financial Analysis approach is one of the relevant financial performance measuring instruments used to see the extent of a company's effectiveness in corporate investment decision making or ROI. Here some ratios use in DuPont system. (1) Profitability Ratio. The profitability ratio is an ability achieved by a company in a given period. The profitability ratio, namely the margin of profit on sales, the return on capital, and the return on investment, then profitability is calculated as follows:

Profit margin on sales:  $\text{Net Profit Margin} = (\text{Net Profit} / \text{Net Income}) \times 100$

Return on Capital:

$\text{Return on Total Asset (ROA)} = (\text{Net Profit} / \text{Total Assets}) \times 100\%$

$\text{Return on Investment: (ROI)} = (\text{Net Profit Margin} \times \text{Asset Turn Over}) \times 100\%$

The amount of ROI is influenced by two factors: The turnover rate of assets used for operations and Profit Margin, which is the amount of operating profit expressed in percentage and amount of net sales. This profit margin measures the level of profit that a company can achieve in relation to its sales. The greater the ROI, the better the development of the company. In managing the assets he has in generating profits. This is because the ROI consists of several elements, namely sales, assets used, and return on sales obtained by the company. This ROI figure will provide important information when compared to the municipality used as a standard. So the comparison of ROI for several consecutive periods will be more accurate. Based on this ROI trend, it can be assessed the development of the effectiveness of the company's business operations, whether it shows an increase or decrease.

(2) Return on Capital. Return on Net Worth: is the ratio of net after tax to capital the rate of return of shareholders.

(3) Activity Ratio. Activity ratio is a ratio that indicates the effectiveness of a change in using its assets. This ratio is used to assess how efficiently a company can utilize and manage the resources the company has. Commonly used activity ratios are (Rashid, 2018): (a) Receivable Turnover Ratio. An overly high Receivable Turnover Ratio indicates the possibility of not returning higher receivables. Conversely, a number that is too low is biased so it is an indication of a receivable policy that is too strict.  $\text{Receivable Turnover} = \text{Sales} / \text{Average Receivables}$ . (b) Inventory Turnover Ratio. Inventory Turnover Ratio measures the efficiency of managing the inventory of trade goods. Therefore, the higher

the rotating inventory the more effectively the company manages the company and considered sales to run well.  $\text{Inventory Turnover} = \text{Cost of Goods Sold}/\text{Inventory}$ . (c) Fixed Asset Turnover Ratio. This ratio measures the effectiveness of the use of funds embedded in fixed prices generated by each rupiah invested in fixed assets.  $\text{Fixed Asset Turnover} = \text{Sales}/\text{Total Fixed Assets}$ . (d) Total Asset Turnover Ratio. A ratio that indicates the effectiveness of the use of all the company's assets in order to generate sales or describes several rupiah of net sales that can be generated by each rupiah invested in the form of company property.  $\text{Total Asset Turnover} = \text{Total Asset Sales}$ .

The use of the above ratios individually has its drawbacks, that is, (a) There is often difficulty comparing the rate of return of a company with other companies due to different accounting treatments (Arr et al., n.d.) and (b) Analysis rate of return cannot be used to compare between two or more companies with satisfactory results (Mohanasundari et al., 2020)

The DuPont system addresses both weaknesses by combining ROI, ROA, and ROE ratios. Therefore, the hypothesis of this study is

H1a : “There is a difference between the company's performance before the Covid-19 pandemic and after the Covid-19 pandemic in Indonesia.”

H1b : “There is a difference between the company's performance before the Covid-19 pandemic and after the Covid-19 pandemic in China”

## **RESEARCH METHOD**

The type of data used in this study is quantitative data and belongs to the comparative test type. The approach used is descriptive study, which is a method carried out with attention to a phenomenon in real-life context, especially contemporary phenomena. The approval of this study is to find out if there are differences in company performance before and during the Covid-19 pandemic in technology sector.

### **Population and Sample**

Companies in the technology sector in Asia in the last 2 years (2019 to 2020) have increased. During the Covid-19 pandemic, almost all sectors experienced a decline but this condition did not hinder the development of the technology business. So in this study the sample used is an industrial technology company in Asia where its shares are entered and listed in the technology sector, the website of the Indonesia Stock Exchange (IDX) and the Shanghai Stock Exchange (SSE).

In this study, the methods for data analysis are normality tests and comparative tests. Paired sample t-test and Wilcoxon signed rank test used in comparative test.

### **Normality Test**

The normality test is conducted to find out whether the data from the research variables is distributed normally or not. This normality test is carried out using the Kolmogorof-Smirnov Test. The residual is said to be normal if the significant value of Kolmogorov-Smirnov is greater than 0.05 (Drezner et al., 2010), if the value less than 0,05, the data considered as not normally distributed. If the data is distributed normally, then the test

performed is paired sample t-test. Meanwhile, if the data is not distributed normally, then the test carried out is a wilcoxon signed rank test.

#### Comparative test

The Comparative Test Analysis used in the study was used to measure the performance of DuPont's systems in 2019 and 2020. This study compared financial ratios before and during the Covid-19 pandemic, so the test conducted was a paired sample t-test. The paired sample t-test is performed with the aim of finding out whether different treatments or circumstances will give different results on statistical averages. From the test results, if the significance > 0.05, then the data has no difference, while if the significance < 0.05, then the data has a difference (Sanders, 2016)

#### Wilcoxon Signed Rank Test

This test is done if the research data is not distributed normally. This test is to find out the differences in a study of different treatments and circumstances. These test criteria are:

1. Determine significant levels, that is 5% ( $\alpha=0,05$ )
2. Determine test criteria taken based on the following criteria:  
If sig. < 5%, then Ho is rejected and Ha is accepted  
If sig. > 5%, then Ho is accepted and Ha is rejected.

Table 1. One-Sample Kolmogorov-Smirnov Test

		INDONESIA		CHINA	
		2019	2020	2019	2020
		19	19	219	219
Normal Parameters <sup>a,b</sup>	Mean	159637514	40543237	35471511	-10773590
	Std. Deviation	336538536	300691386	342576039	444004438
Most Extreme Differences	Absolute	.315	.215	.335	.370
	Positive	.315	.140	.248	.285
	Negative	-.265	-.215	-.335	-.370
Test Statistic		.315	.215	.335	.370
Asymp. Sig. (2-tailed)		.000 <sup>c</sup>	.020 <sup>c</sup>	.000 <sup>c</sup>	.000 <sup>c</sup>

Source: SPSS output

## RESULTS AND DISCUSSION

In this section will be displayed the results of the normality test to determine the method of testing the difference in financial performance to be used.

Table 1 above shows that DuPont's average ratio to technology sector companies in Indonesia and China both before and after the Covid-19 pandemic shows a probability of significance smaller than 0.05. This indicates that the DuPont ratio is not distributed normally. So, another test performed is the wilcoxon signed rank test.

Table 2. Wilcoxon Signed Ranks Test

	<b>INDONESIA</b>	<b>CHINA</b>
N	19	219
Z	-2.213 <sup>b</sup>	-2.506 <sup>b</sup>
Asymp. Sig. (2-tailed)	.027	.012

Table 2 shows the difference between DuPont's average differences in both countries. In cases in Indonesia and China statistically show a difference between conditions before and after the pandemic.

The case of Indonesia and China has something in common, that financial performance differs between before and during the pandemic. However, the mean value of the two countries shows a different situation where Indonesia's condition shows positive performance while China's condition shows negative conditions. Indonesian data provides an idea that the financial performance of the technology industry has good durability. Pandemic conditions do not have a negative impact on the technology sector because it is precisely during the pandemic that the Indonesian government refocuses the budget in the field of health recovery which is proven to be able to suppress the increase of covid-19 sufferers. The digital economy in Indonesia in 2020 grew 11% compared to the previous year despite the Covid-19 pandemic. This figure is the highest compared to Malaysia, the Philippines, Singapore, Thailand and Vietnam. This is driven by changes in people's behavior during the pandemic. People who are more active at home prefer to do less contact economy such as shopping online, and doing work activities through virtual meetings. Based on data from the Indonesian Ecommerce Association (iDEA) as of May 2021, the number of MSME actors who have already online boarding is only 13.7 million players or about 21 percent of the total existing MSMEs in the country. Minister of Trade Muhammad Lutfi said, in 2020 Indonesia's gross domestic product (GDP) amounting to Rp. 15,400 trillion. of the number Of these, the digital economy's contribution is 4% of GDP (Gaziz et al., 2020). In addition, in the field of government, business and education have changed the work system in the office to a system of working from home with the help of technology so that full restrictions are not carried out. The synchronization of these two things encourages faster health recovery and changes activities towards normal through increased utilization of technology. However, macro-wise, the impact of synchronization has not reaped significant results, economic growth at the national level has experienced negative growth, although the percentage is smaller than estimated.

Different conditions are experienced by China. The high number of residents causes the handling of covid-19 to have a higher level of difficulty so it requires greater costs. In addition, the handling of the difference with full restrictions and aggressive detection causes the Chinese government to fully focus on health recovery (Sharma et al., 2016). This condition caused the country's overall financial performance to decline tremendously with the aim of speeding up the total health recovery. As a result, the Chinese government

can immediately restore both health and the economy in early 2021 to reach 18.3% (yoy)(Li & Fu, 2017). The negative performance of China's technology sector is also due to a new draft rule issued by china's market operator, the State Administration for Market Regulation (SAMR). This regulation aims to stop unfair competition on the internet. The regulation covers a wide range of areas from prohibitions on how companies can use data to removing fake product reviews. Some forms of prohibition include that operators should not provide false data, such as the number of clicks on a content, operators should not hide negative reviews and only promote positive reviews, internet platforms should not use data, algorithms, and other technical means to influence user choice, or other methods of conducting so-called traffic hijacking, and operators should not use data and algorithms to collect and analyze competitors' trading information. This regulation shows the tight supervision of the government in the field of information technology. In addition, the draft SAMR rules highlight the market regulator's push to tighten laws around antitrust and competition. Early in 2021, the authority announced antitrust guidelines called platform economics

Pembahasan mengemukakan interpretasi hasil, pengembangan argumen dengan mengaitkan hasil, teori, dan pendapat, termasuk perbandingan dengan hasil penelitian sebelumnya. Penting juga untuk meningkatkan kemungkinan hasil penelitiannya memberikan kontribusi bagi pengembangan ilmu pengetahuan. Bagian ini tidak menulis ulang data hasil penelitian.

## CONCLUSION

Based on the analysis and discussion of the hypothesis testing that has been carried out, several conclusions can be made regarding the results of the DuPont analysis calculations for the 2019 and 2020 periods for Indonesia and China, the average Du Pont in 2020 has decreased compared to 2019. so rapidly in the era of the covid pandemic, it can be seen from the results of the analysis that Indonesia has done tends to be better than China. This is because China has implemented a lockdown so that funding from investors is reduced while startup companies in Indonesia have experienced a rapid increase during the covid-19 pandemic. Startup companies that are part of the digital economy contribute 4% of GDP.

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