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Determinant of Profitability of State of Enterprise in Indonesia: Merger Case

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Abstract

The research is aimed to analyze determinants of profitability performance (ROA, ROE, and PER) of Indonesia's state-owned enterprises, using mergers and acquisitions a moderating factor. The research employs panel data analysis to estimate the effect of Revenue, Current Ratio, Debt to Equity Ratio, Exchange Rate, Oil Price, and COVID-19 on Profitability for the period of observation of 2010 – 2021. The result shows that Revenue performs significant impact on ROA, ROE, and PER. Moreover, the Current Ratio also performs significant impact on ROA, ROE, and PER. Furthermore, Debt to Equity Ratio performs significant impact on ROA and PER. In terms of the macroeconomic factor, the exchange rate significantly affects ROA and ROE. This research also reveals that investors use mergers and acquisitions news to seek for profits (through stock purchase) to earn potential higher capital gain. On the other hand, the empirical result indicates a significant difference of the company's performance (ROA and ROE) before and after the period of mergers and acquisitions. However, the difference seems to be insignificant for the Price to Earnings Ratio (PER). The empirical result implies the urgency to optimize the long run impact of mergers and acquisitions of Indonesia's state-owned enterprises.

Keywords: *Profitability, Revenue, Current Ratio, Debt to Equity Ratio, Exchange Rate, oil Price, COVID-19.*

Introduction

The government of Indonesia has offically launched a policy of consolidating ofstate-owned enterprises (holdingization) through merger and acquisition mechanism, which has attracted attentions from scholars. Initially, the policy was focused on banking sector, when Bank Indonesia initiated merger of state-owned banks, called *Single Presence Policy* (SPP) through Bank Indonesia Regulation No, 8/16/PBI/2006 which is technically like a single bank ownership. The main objective of the policy is to imprive competitive advantage and the economies of scales to achieve sustainability in the long run. However, the policy did not run well since many political parties disagreed with the initiatives despite a success story of merger practice performed by Semen Indonesia as the holdings for the state-owned cement companies of Indonesia. There were 119 state-owned enterprises during the period the initiative was taken, which was expected to reduce the numbers to only 85 SoEs in general, with a virtual holding scheme to execute the plan (Ministry of State-owned Enterprises, 2015). The smaller numbers of the state-onwed enterprises were expected to improve competitive advantage and to increase the economies of scales in the long-run.

Furthermore, a potetial increase in a company's value is also the main reason of merging these state-owned enterprises. Since 1988, SoEs' assets have increased from IDR. 438 trillion to IDR 7,212 trillion in 2017, which is equivalent to 15 times increase. Morover, the profit has increased from IDR 14 trillion in 1988 to Rp. 189 trillion in 2017 or is equivalent to 12 times increase (Ministry of State-Owned Enterprises, 2018). The assets would increase by 12 times for every increase in the profit by 1 time. These records imply a potential positive performance, primarily sustainability, in the long run. A potential increase in the company's economies of scale makes the holdingization initiatives relevant.

The government of Indonesia expected a merger for oil and gas companies by the end of 2018, with Pertamina as the holding (Ministry of State-Owned Enterprises, 2018). Subsequently, the government

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continued the policy by merging syariah bank under the state-owned bank including Mandiri Syariah, BRI Syariah, and BNI Syariah, which merged into Bank Syariah Indonesia (BSI). The policy had a positive implication regarding competitive advantage in the global context as we as stronger support towards small medium enterprises (SMEs) as the backbone of Indonesia's economy. After the merger of the state-owned Islamic banks, the government of Indonesia continued the policy in the food sector, which include PT Berdikari (Persero), PT Sang Hyang Seri (Persero), PT PPI (Persero), PT Perikanan Nusantara (Persero), Perum Perikanan Indonesia, PT Garam (Persero), PT Pertani (Persero), PT RNI (Persero), and PT BGR Logistics (Persero), where PT RNI (Persero) was appointed as the holding company (Ministry of State-owned Enterprises, 2021).

Gaughan (2018) expressed that mergers and acquisitions are part of corporate actions aimed at optimizing a company's performance in the long run. Mergers and acquisitions essentially drive resource improvement to support operations, particularly market share expansions. Furthermore, mergers and acquisitions also imply conglomerate objectives, where business entities intiate diversification strategies to mitigate risks arising from an unexpected dyanmic in the market (Gaughan, 2018). Nevertheless, the contribution of the state-owned enterprises remaiend less than expected. It is not only COVID-19 as the major factor, but also their past peformance. During the period of, the SoEs assets grew by 11% annually on average (Ministry of State-owned Enterprises, 2021). Furthermore, return on assets (ROA) achieved 2.4%, return on equity (ROE) is 7.3%, and return on investment (ROI) is 54.3%, on annual average respectively. Interestingly, the performance did not only slow down by 5.68% in 2017 (from the previous period of 2016 by 18.12%) but also experienced a significant decline by -1.61% and -9.48% in 2018 and 2019, respectively (Ministry of State-Owned Enterprises, 2021).

In assessing the effectiveness of mergers and acquisitions, it must consider profitability as ROA (return on assets), ROE (return on equity), and PBV (price to book value). However, it can also be measured using other metrices of performance. Limbong et al. (2021) investigated determinants of profitability in publicly listed property and real estate companies. Moreover, Okerekeoti (2022) investigated the role of revenue as a determining factor of profitability in Nigeria's listed companies. Furthermore, Laitenen (2024) expressed that the expenditure structure is also a determinant of profitability. On the other hand, Aisyah and Umami (2022) expressed that financial ratios are determinant of company performance. Moreover, Talunohi and Bertuah (2022) also stated that profitability is the main indicators of company's performance.

To achieve a sustainable performance, a company must ensure its operating activities, which is supported by sufficient liquidity. In general, the liquidity ratio is the ratio of the company's ability to pay its short-term liabiilities, and it is expected that the ratio is greater than 1x (100 percent) to sufficiently support the operation. There are number of researchers examining the impact of the liquidity ratio on company's performance such as Kim et al., (1998) and Sari et al., (2018) who expressed that liquidity ratio has a significant impact on profitability and bonds ratings. Furthermore, Madushanka & Jathurika (2018) and Noor & Lodhi (2015) also expressed a similar result where liquidity ratio performed a positive impact on company's performance, mainly profitability and sustainability. Moreover, Sundas & Butt (2021) found a significant impact of the company's liquidity ratio on the performance of textile companies in Pakistan.

Furthermore, debt to equity ratio (or is commonly known as leverage ratio) is also an important determinant of a company's performance as it indicates a company's ability, as shown by equity, to pay its debts (Manurung, 2024). Banks refer to this ratio in granting approval of loans used by companies to increase their capital expenditure and/or working capital. If this ratio is more than 2 times, it indicates that the company has a lower ability to cover interest generated from loans which may lead to financial distress. This ability significantly influences company's performance in the long run (Khoiriah, 2022; Noviyati & Agustiningsih, 2023; Siswanto et al., 2022; Marmaya et al., 2018; and Buckley & Tian, 2017).

Besides fundamental factors, there are several macroeconomic factors that also have significant impact on a company's performance. The most common factor is the exchange rate which reflects economic differences between two or more countries in terms of currency level relative to other countries. Moreover, the level of exchange rate is determined by the level of inflation or interest rate in the country (Blanchard, 2021; Dornbusch, 2017). Therefore, a country must implement relevant mixed policies between monetary

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and fiscal policies to improve their product competitiveness globally in terms of price, which eventually affect company's performance producing the outputs (Alagbe et al., 2021; Belghitara et al., 2021; Wanjohi & Mungai, 2020; & Rahimian et al., 2022).

Moreover, oil price has been also considered as a important macroeconomic factor since its role as an input for production. Poghosyan & Hesse (2009) and Kaffash (2014) identified a significant implication of oil prices on banking performance for oil-exporting countries. Furthermore, Xu & Xie (2014), Lee & Lee (2019), and Osuma et al., (2019) expressed that oil price has a significant impact on banking sector performance. Moreover, Wattanatornand & Kanchanapoom (2012) also found a similar finding where oil price affected company's performance. Chaarani (2019) conducted research regarding oil prices and banking performance in the Middle East. Meanwhile, South & Rumengan (2023) discussed oil prices on the company's performance of the energy sector.

The period of observations of this reseach ranges from 2010 to 2021, where COVID-19 hit the global economy during the period of 2020, with a continous occurence until 2022 (Ministry of Health, 2022). Therefore, the research also uses COVID-19 pandemic as a dummy variable in the model considering the impact is coming from social and economic activities restriction policy during pandemic era, which eventually affect the entire company's performance and the economy. Several scholars indicated the significant impact of COVID-19 on the company's performance (Ciotti et al., 2020; Ngo, & Duong, 2024; Shen et al., 2020; Shaharuddin, 2021). Moreover, Daryanto et al., (2023) also expressed a significant impact of COVID-19 on company performance in the construction sector. Furthermore, Alsamhi et al., (2022) also found a significant impact COVID-19 and the company's performance in India.

In investigating the impact of merger and acquisition on a company's performance, the research uses dummy variabel as a moderating factor between fundamental financial indicators on a company's performance (Sharma et al., 1981; Manurung, 2024b, 2024c; and Baron and Kenny, 1986). The use of merger and acquisition as a moderating factor is mainly driven by the concept that this corporate action serves as a catalyst of fundamental performance (Gaughan, 2018). While the most common moderating factors are size (ln total asset) and risks, this research uses merger and acquisition to identify whether the impact of revenue, liquidity ratio, and leverage will be stronger when holdingization policy takes place during the period of observation.

Therefore, the research is aimed to empirically identifiy the role of merger and acquisition (as a proxy of holdingization policy) on company's performance with several performance indicators such as profitability measures including Return on Asset (ROA) and Return on Equity (ROE) and market value indicator Price to Earnings Ratio (P/E Ratio). The research uses revenue, liquidity ratio, and leverage as fundamental factors to be independent variables, and macroeconomic factors as controlling variables in our empirical model.

The results of the empirical data processing in this study will serve as a strategic evaluation of the holding company policy when linked to the stated objectives and the historical performance achievements since the policy was implemented. The main focus of the analysis in this research emphasizes the holding company policy in the context of objectives and achievements, as well as recommendations that should be provided in the corporate, business, and functional aspects to achieve these goals effectively and sustainably. The results will serve as a strategic evaluation of the holdingization policy relative to the main objectives. The focus of the analysis emphasizes the holding company policy in the context of objectives and achievements, as well as recommendations at the corporate, business, and functional levels to achieve these goals effectively and sustainably.

Literature Review

Profitability has been the main objective of any company, where in the context of state-owned enterprises profitability is aimed to increase contribution to the state revenue. Companies should generate profit to increase capital, and therefore contribute dividends to the country. The state-owned enterprises can increase their capital through increasing profits ($\pi 1$, $\pi 2$, ….., $\pi \sim$) and/or by issuing stocks, including the public ones

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(Svitek, 2001). In the other hand, companies can also issue long-term debt to increse its capital (Kleff & Weber, 2008). The profits of state-owned enterprises is obtained under the assumption that r, i, and α are constant (Jiang, 2010; Manurung et al., 2020; Manurung & Hutahayan, 2020; Manurung & Kartika, 2020) as follows:

$$\pi = (1 - T) * \{r * A - (FC - Q * v) - iD\} \quad (1)$$

T = Tax; A = Total Asset; FC = Fixed Cost; E = Equity; r = Expected Return; Q = Total Outputs (Productions), V = Variable Cost, D = Interest-bearing Loan; i = Interest Rate

If Equation 1 is rearranged into a profit equation to, if A = D + E, it can be obtained:

$$\frac{\pi}{(1-T)} = \{r * (D + E) - (FC + Q * v) - i * D\} \quad (2)$$

$$\frac{\pi}{(1-T)} = \{(r - i) * D + r * E - (\mathrm{FC} + \mathrm{Q} * \mathrm{v})\} \quad (3)$$

If equation 3 is divided by E (Equity), it becomes as follows:

$$\frac{\pi}{E} = (1 - T) * \{(r - i) * \frac{D}{E} + r - \frac{(FC+Q*v)}{E}\} \quad (4)$$

$$\frac{\partial \frac{\pi}{E}}{\partial \frac{D}{E}} = (1 - T) * (r - i) \quad (5)$$

Based on the above Equation (5), the maximum profit occurs when Equation (7) equals zero. The maximum profit occurs when r = i, and where D/E is also optimal.

Equation (4) also expresses that Return on Equity (ROE) can be affected by taxes, expected rate of return, interest expenses, debt to equity ratio, company's fixed costs, and the cost of goods sold. Subsequently, Equation (3) is divided by A (Total Asset) resulting in the following equation:

$$\frac{\pi}{A} = (1 - T) * \{(r - i) * \frac{D}{A} + r - \frac{(FC+Q*v)}{A}\} \quad (6)$$

$$\frac{\partial \frac{\pi}{A}}{\partial \frac{D}{A}} = (1 - T) * (r - i) \quad (7)$$

Based on Equation (7), the maximum profit occurs when equation (7) also equals zero. The maximum Return on Equity (ROE) occurs when r = i, where D/A is also optimal.

Furthermore, Equation (6) also states that Return on Asset (ROA) can be affected by taxes, expected rate of return, interest expenses, debt to equity ratio, company's fixed costs, and the cost of goods sold.

Panel Data Model

This research use Model data Panel to estimate relationship some independent variable to determine Profitability as dependent variable which Return on Asset, Return on Equity and Price Earnings Ratio and Revenue, Current Ratio, Debt to Equity Ratio, Exchange Rate, Oil Price and Covid-19 Era which is all as independent variable. Merger and Acquisition is used as moderating variable. Model Data Panel is appropriate for data small which short time series and small company as sample. Besides that, model data panel also show time and the cross-section as sample. Gujarati (2003), Wooldridge (2002), Greene (2008), Biorn (2017), Sul (2019) and Manurung (2024b) stated model data panel is as follows:

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Pooled Data Model

Pooled Data Model is model that data combine all together and the model is as follows:

$$Y_{i,t} = \beta_1 + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + \mu_{i,t} \quad (7)$$

$$i = 1, 2, \dots, k; \quad t = 1, 2, \dots, n$$

X's are non-stochastic and $E(\mu_{it}) \sim N(0, \sigma^2)$

Fixed Effect Model

FEM is a model that μ_i and X's are assumed correlated.

$$Y_{i,t} = \beta_{1i} + \beta_2 X_{1i,t} + \beta_3 X_{2i,t} + \mu_{i,t} \quad (8)$$

$$i = 1, 2, \dots, k; \quad t = 1, 2, \dots, n$$

Random Effect Model (REM)

REM is a model that ε_i and X's are assumed uncorrelated.

$$Y_{i,t} = \beta_{1i} + \beta_2 X_{1i,t} + \beta_3 X_{2i,t} + \mu_{i,t} \quad (9)$$

$$\beta_{1i} = \beta_1 + \varepsilon_i$$

$$i = 1, 2, \dots, k; \quad t = 1, 2, \dots, n$$

μ_i is a random error with a mean value of zero and variance of σ_ε^2. Judge (1982), Wooldridge (2002), Biorn (2017), Sul (2019) and Manurung (2024b) stated that how we choose FEM or REM as follows:

- When T (number of time series data) is large and N (the number of cross-sectional units) is small, Fixed Effect Model (FEM) may be preferable.
- When N is large and T is small, if we strongly believe that the individual, or cross-sectional, units in our sample are not random drawings from a larger sample, Fixed Effect Model (FEM) is appropriate. If the cross-sectional units in the sample are regarded as random drawings, the Random Effect Model (REM) is appropriate.
- When individual error component ε_i and one or more regressors are correlated, Fixed Effect Model (FEM) is an unbiased estimator
- Random Effect Model (REM) estimators are more efficient than Fixed Effect Model (FEM) Estimators, when N is large, and T is small and if the assumptions underlying Random Effect Model (REM) hold.

Source of Data

The data is obtained from the financial reports of the publicly listed companies along the observation period of 2010 – 2021; thus, the research uses secondary data from the annual reports and from Indonesia Stock Exchange. Moreover, the macroeconomic indicators data is obtained from Bank Indonsia covering the

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period of 2010 – 2021. The data is to support the empirical model built using theoretical foundations and previous empirical studies.

Discussions

The discussion is divided into two main categories, which begins with the analysis of descriptive statistics, correlation analysis among variables, and is followed by causal analysis.

Descriptive Statistics

In this section, descriptive statistics are provided to describe the data profile of each variable being observed through our empirical model. The descriptive statistics are provided in the following table.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Skew	Kurt	JB Tets
Return on Asset	132	1.6602	0.9572	-2.3900	3.3400	-1.2630	2.9550	0.0000
Return on Equity	132	2.5196	0.8651	-1.6200	3.6700	-1.8890	4.8210	0.0000
P/E Ratio	132	2.6083	0.5548	0.8500	4.0500	-0.3810	0.1800	0.1850
Revenue	132	1.7033	0.1056	1.5700	1.9200	0.7820	-0.5980	0.0000
Current Ratio	132	25.3303	3.6631	17.7900	31.2500	-0.5200	-0.6300	0.0170
Debt to Equity Ratio	132	2.6403	0.9255	-0.1200	3.9500	-0.8160	0.2390	0.0000
Exchange Rate	132	0.0297	0.0735	-0.1251	0.1342	-0.6240	-1.277	0.0000
Oil Price	132	0.1007	0.1673	-0.4138	0.2403	-0.3310	-0.908	0.0310

Source: Author's Calculations (2024)

The Return on Asset (ROA) variable has a minimum value of -2.39%, with a maximum value of 3.34%, a mean value of 1.6602%, and a standard deviation of 0.9572. This data shows that the ROA data points are close to one another, especially to their central value, as indicated by the relatively small standard deviation. Moreover, when observing the minimum data with the median or mean value and the maximum value, it appears that the mean value is closer to the maximum ones. Moreover, ROA is normally distributed as indicated by the Jarque Bera value which is greater than the table value. The normal distribution enables the variable to be analyzed using least square model.

Moreover, the Return on Equity (ROE) variable has a minimum value of -1.62%, a maximum value of 3.67%, a mean value of 2.5196%, and a standard deviation of 0.8561. It indicates that the data of ROE is still distributed close to the mean value indicated by the relatively small standard deviation, which is almost the same as the ROA variable. The mean value of the ROE is closer to the maximum value. In general, the higher valur of ROE, compared to ROA, since the equity value of lower than the total asset value.

Furthermore, the Price Earning Ratio (P/E Ratio) variable has a minimum value of 0.85%, a maximum value of 4.05%, a mean value of 2.6083%, and a standard deviation of 0.5548%. This data shows that the P/E Ratio data points are close to one another indicated by a relatively small standard deviation. On the other hand, the mean value appears to be closer to the maximum ones. Moreover, this data also shows that the stock price is still low leading to higher earnings per share ratio (EPS).

The Revenue variable has a minimum value of 1.57%, a maximum value of 1.9200%, a mean value of 1.7033%, and a standard deviation of 0.1056%. This data shows that the Revenue data points are close to one another indicated by a relatively small standar deviation, even lower than the variables mentioned above. This data also indicates that companies listed on Indonesia stock exchange have a relatively small variation compared to the previously described determinants.

Moreover, the Current Ratio (CR) variable has a minimum value of 17.79 times, a maximum value of 31.25 times, a mean value of 25.33 times, and a standard deviation of 3.63 times. This data shows that the Current

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Ratio (CR) data points are relatively far apart from one another to their central value indicated by a relatively high standard deviation. This finding also indicates that these companies have a high ability to their short-term liabilities. However, it also indicates that these companies did not manage their current assets optimally.

Furthermore, Debt to Equity Ratio (DER) variable has a minimum value of -0.12 times, a maximum value of 3.95 times, a mean value of 2.6403 times, and a standard deviation of 0.9255 times. This data indicates that Debt to Equity (DER) data points are close to one another indicated by a relatively smallstandard deviation, which is almost the same as the standard deviations indicated in Return on Asset (ROA) and Return on Equity (ROE) variables, and lower than Current Ratio (CR) value. Moreover, the descriptive statistics output shows the central value of Debt to Equity (DER) is closer to the maximum one.

Moreover, Exchange Rate (ER) variable is measured by the change in the annual exchange rate considering the main objective is to measure the impact of the change, where the Exchange Rate (ER) variable has a minimum value of -0.1251, a maximum value of 0.1342, a mean value of 0.0297, and a standard deviation of 0.0733. It indicates that the data point of Exchange Rate (ER) variable is close to one another indicated by a relatively small standard deviation, which happens to be the smallest compared to other variables. The central value of Echange Rate (ER) variable is closer to the maximum one. It indicates that the exchange rate changes are very small and the central bank managed to stabilize the exchange rate well.

Furthermore, the Oil Price (OP) variable has a minimum value of -0.4138, a maximum value of 0.2403%, a mean value of 0.1007, and a standard deviation of 0.1667. This data shows that the Oil Price (OP) data points are close to one another. Moreover, the central value is closer to the maximum one. Besdes, the standard deviation data is also relatively small compared to other variables. Moreover, it also explains that the change in oil prices was relatively small during the period of observation.

Based on the above descriptions, it can be concluded that the data has a central value closer to the maximum value. It means that the data strongly indicates a high value due to the maximum value. Moreover, the result also shows that the standard deviation is also small, which indicates that the variation is also small.

Correlation Analysis

Futher analysis discusses the correlation among variables used in this study exhibited in the following Table 2. The result shows significant correlations between several variables. Return on Equity (ROE) and Return on Asset (ROA) are significantly correlated at the 1% level of significance. Moreover, Current Ratio (CR) and Return on Asset (ROA) also significantly correlate at the 1% level of significance. Furthermore, Current Ratio (CR) and Return on Equity (ROE) significantly correlate at the 1% level of significance. Current Ratio (CR) and Price Earning Ratio (P/E Ratio) also significantly correlate at a 1% level of significance. On the other hand, Debt to Equity Ratio (DER) significantly correlates with Return on Asset (ROA) at a 1% level of significance. Moreover, Debt to Equity Ratio (DER) is significantly correlated with Return on Equity (ROE) at a 1% level of significance. Furthermore, Debt to Equity Ratio (DER) is significantly correlated with P/E Ratio at a 10% level of significance. Besides, Debt to Equity Ratio (DER) is significantly correlated with the Current Ratio (CR) at a 1% level of significance. Moreover, Exchange Rate (ER) is significantly correlated at 1% level of significance. Lastly, the Exchange Rate is significantly correlated with the Oil Price at a 1% level of significance.

Table 2. Correlation Analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Return on Asset	1.000						
(2) Return on Equity	0.893***	1.000					
(3) P/E Ratio	0.135	0.133	1.000				
(4) Revenue	0.101	0.136	-0.210**	1.000			
(5) Current Ratio	0.479***	0.439***	0.288***	-0.134	1.000		
(6) Debt to Equity Ratio	-0.393***	-0.178**	0.296***	-0.163*	-0.224***	1.000	
(7) Exchange Rate	0.027	0.006	0.132	-0.605***	0.060	0.010	1.000
(8) Oil Price	0.027	0.022	-0.016	0.012	-0.027	-0.076	0.243***

**** p<0.01, ** p<0.05, * p<0.1*

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Source: Author's Calculations (2024)

Therefore, the above results provide input regarding the urgency to further analyze the causality using the maximum likelihood method.

Statistical Performance Difference Tests

The statistical difference (t-test) output is addressed to identify whether there is potential significant difference of performance of the state-owned enterprises before and after the period the holdingization policy is taken as a preliminary analysis before going further to the causality analysis. There result exhibits a significant difference in ROA performance before and after the merger and acquisition actions at a 5% level of significance. The similar result is also exhibited from the Return on Equiaty (ROE) variable, with a 5% level of significance. Moreover, the result also indicates a significant difference in Revenue and Current Ratio (CR) performance before and after merger and acquisition actions at a 1% level of significance, respectively. Moreover, Debt to Equity Ratio (DER) also exhibits a similar result of a significant difference before and after merger and acquisition actions at a 5% level of significance. However, it was found that there was no significant difference in P/E Ratio performance before and after the merger and acquisition actions as indicated by a higher than 10% p-value.

Table 3. Statistical Performance Differences (t-test)

Variables	t stat	p-value	Notes
Return on Asset	2.1901	0.0303	significant
Return on Equity	2.2278	0.0276	significant
P/E Ratio	1.6511	0.1011	insignificant
Revenue	3.7269	0.0003	significant
Current Ratio	4.1846	0.0001	significant
Debt to Equity Ratio	2.2268	0.0277	significant

Source: Author's Calculations (2024)

Causality Analysis

As previously mentioned, this research includes state-owned enterprises (SoEs) status as an independent variable, and their samples are also included in this study. The model of the research results is shown in Table 4.

Revenue is an important factor for a company's performance as it indicates the amount of money obtained from its operating activities (Manurung, 2024). If a company does not generate sufficient revenue, or even no revenue at all, the company must face a serious problem of performance. The empirical result shows that revenue positively and significantly affects Return on Asset (ROA) and Return on Equity (ROE). The empirical output indicates a 5% level of significance regarding the impact of Revenue on Return on Asset (ROA), and a 1% level of significance regarding the impact of Revenue on the Return on Equity (ROE). As the p-value is larger than 10%, then Revenue is not considered to have significant on P/E Ratio. These empirical outputs are consistent with several previous research by Halian et al., (2020), Limbong et al., (2021), Okerekeoti (2022), Laitenen (2024), Aisyah &Umami (2022), and Talunohi & Bertuah (2022).

Furthermore, the research also uses variable of liquidity ratio, which is current ratio which hypothetically affects company's profitability performance. Mathematically, the current ratio is obtained from the current assets and the current liabilities. The ratio indicates the company's ability to meet its current liabilities (White et al., 20). The empirical result shows that Current Ratio (CR) variable has a positive and significant effect on Return on Asset (ROA), Return on Equity (ROE), and Price to Earnings Ratio (PER) at a 1% level of significance, respectively. These empirical results are consistent with the previous studies by Kim et al., (1998), Sari et al., (2018), Madushanka & Jathurika (2018), Noor & Lodhi (2015), and Sundas & Butt (2021).

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Further analysis focuses on the impact of Debt to Equity (DER) on the company's performance, considering the important role of this factor in the company's leverage. Conceptually, Debt to Equity Ratio (DER) indicates the company's ability to meet its long-term liabilities. The empirical result shows that Debt to Equity Ratio (DER) exhibits a negative and significant effect on Return on Asset (ROA) and Return on Equity (ROE) at a 1% level of significance. It indicates a higher DER will result in lower ROA and ROE, which imply the urgency to manage DER better to encourage company's sustainability in the long run. However, the impact is insignificant towards the Price to Earnings Ratio (PER) indicated by the p-value which is larger than the 10% level of significance. The empirical results on the Return on Asset (ROA) and the Return on Equity (ROE) are consistent with the previous studies performed by Khoiriah (2022), Noviyati & Agustiningsih (2023), Siswanto et al., (2022), Marmaya et al., (2018), and Buckley & Tian (2017).

Besides fundamental variables, this research also uses macroeconomic variables as the external factors that are hypothetically considered to have impact on company's performance. The first macroeconomic variable is the exchange rate which indicates the ability of an economic agent (both households and business entities) to afford goods and services from other countries. If the exchange rate exists, this implies that a country engaging in a trade has relatively higher inflation or interest rates than a country involved in the trade transactions. The empirical result shows that exchange rates do not perform significant impact on the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) as indicated by the p-values which are larger than the 10% level of significance.

The second macroeconomic factor is the oil price, considering oil is the source energy (input) for production activities. As one of the oil-producing countries, changes in oil price would affect Indonesia's economy throught the impact to the business entities. However, the empirical evidence indicates that oil price does not have significant impact on the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) as indicated by the p-values which are larger than the 10% level of significance.

Lastly, the research also includes COVID-19 variable as a dummy variable, considering the implication if this pandemic period on the economy. The result shows that in the case of Indonesia's state-owned enterprises, COVID-19 pandemic does not perform significant impact on the company's performance indicated by the p-values of the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) which are larger than the 10% level of significance.

Table 4. Empirical Output (Generalized Least Square)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	ROA	ROA - MA	ROE	ROE - MA	P/E Ratio	P/E Ratio - MA
revenue	1.816**	2.043**	2.446***	2.556***	-0.280	-0.618
	(0.874)	(0.878)	(0.841)	(0.859)	(0.545)	(0.465)
revenue_ma		-0.0296		-0.486		2.695
		(1.535)		(1.502)		(0.814)
cr	0.114***	0.135***	0.109***	0.115***	0.0543***	0.0702***
	(0.0194)	(0.0217)	(0.0186)	(0.0212)	(0.0121)	(0.0115)
cr_ma		-0.0353		0.0168		-0.220***
		(0.0795)		(0.0778)		(0.0422)
der	-0.275***	-0.323***	-0.0268	-0.0416	0.220***	0.167***
	(0.0775)	(0.0794)	(0.0745)	(0.0777)	(0.0483)	(0.0421)
der_ma		0.373		0.182		0.0459
		(0.328)		(0.321)		(0.174)
er_	1.724	1.658	1.966	1.989	0.579	0.0599
	(1.266)	(1.249)	(1.218)	(1.222)	(0.789)	(0.662)
oilprice_	-0.0768	-0.0872	-0.0464	-0.0596	0.0190	-0.0191

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VARIABLES	(1) ROA	(2) ROA - MA	(3) ROE	(4) ROE - MA	(5) P/E Ratio	(6) P/E Ratio - MA
	(0.428)	(0.426)	(0.411)	(0.417)	(0.267)	(0.226)
covid	0.0876	0.0926	0.0919	0.100	0.0335	0.0227
	(0.189)	(0.188)	(0.182)	(0.184)	(0.118)	(0.0996)
constant	-3.658**	-4.483**	-4.407***	-4.710***	1.105	1.455
	(1.735)	(1.784)	(1.668)	(1.745)	(1.081)	(0.946)
Observations	132	132	132	132	132	132
Number of firm	11	11	11	11	11	11

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

After identifying the impact of both fundamental and macroeconomic factors on the company's performance, the research enters the main section which is the implications of mergers and acquisitions (as the proxy of holdingization policy) on the company's performance. Based on the theoretical framework of mergers and acquisitions, the research uses the variable as moderating factors between fundamental factors and the company's performance. The result shows that mergers and acquisitions do not significantly catalyze the influence of revenue on company's profitability performance indicated by the the p-values of the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) which are larger than the 10% level of significance. However, the interaction between mergers and acquisitions with the current ratio exhibits a slightly different result, where it is significant towards Price to Earnings Ratio (P/E Ratio) as indicated by the 1% level of significance. Furthermore, the interaction between mergers and acquisitions and debt to equity ratio does not perform significant on the company's performance as indicated by the p-values of the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) which are larger than the 10% level of significance.

Moreover, the analysis is conducted on the state-owned enterprises using the Ordinary Least Square estimation technique, which was previously provided with the Generalized Least Square model. The result is exhibited in Table 5.

As provided in the Table 4, Revenue has a positive and significant impact on the company's profitability performance (ROA and ROE) at a 5% level of significance. However, the effect tends to be negative on the Price to Earnings Ratio (PER) at a 10% level of significance. These results are consistent with the previous studies from Halian et al., (2020), Limbong et al., (2021), Okerekeoti (2022), Laitenen (2024), Aisyah & Umami (2022), and Talunohi & Bertuah (2022).

Moreover, Debt to Equity Ratio (DER) also performs a significant and negative effect on the Return on Asset (ROA) at a 5% level of significance. Moreover, Debt to Equity Ratio (DER) also performs a positive and significant effect on the Price to Earnings Ratio (PER) at a 10% level of significance. However, the impact of Debt to Equity (DER) is not significant towards the Return on Equity (ROE) as indicated by the p-value which is larger than the 10% level of significance. The results are consistent with the previous studies from Khoiriah (2022), Noviyati & Agustiningsih (2023), Siswanto et al., (2022), Marmaya et al., (2018), and Buckley & Tian (2017).

Furthermore, COVID-19 is also included given the hypothesis regarding the impact on the company's performance and on the overall economy. The empirical findings express that COVID-19 significantly affects both Return on Asset (ROA) and Return on Equity at a 10% level of significance, while affecting Price to Earnings Ratio (PER) at a 5% level of significance. The results are consistent with several previous studies regarding the impact of COVID-19 pandemic from Ciotti et al., (2020), Ngo & Duong (2024), Daryanto et al., (2023), Shen et al., (2020), Alsamhi et al., (2022), and Shaharuddin (2021).

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Moreover, the Current Ratio (CR) as one of fundamental factors does not perform significant impact on the company's performance, as indicated by the p-values of the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) which are larger than the 10% level of significance.

Furthermore, the reseach also employs macroeconomic factors including exchange rates and oil prices. The empirical results expres that exchange rates significantly affect the Return on Asset (ROA) and the Return on Equity (ROE) at a 10% level of significance, respectively, while the effect is not significant towards Price to Earnings Ratio (PER) as indicated by the p-value which is larger than 10%. Moreover, the second macroeconomic factor which is oil price performs no significant impact on the overall company's performance, as indicated by the p-values of the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) which are larger than the 10% level of significance.

Table 5. Empirical Output (Least Square Dummy Variables)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	ROA	ROA - MA	ROE	ROE - MA	P/E Ratio	P/E Ratio - MA
revenue	1.687**	1.439	2.117**	1.924**	-0.813**	-0.711*
	(0.818)	(0.911)	(0.839)	(0.934)	(0.400)	(0.397)
revenue_ma		-1.776		-1.893		1.913***
		(1.317)		(1.365)		(0.665)
cr	0.0617	0.00879	0.0664	0.0120	0.00238	0.0473
	(0.0733)	(0.0963)	(0.0772)	(0.101)	(0.0473)	(0.0417)
cr_ma		0.133*		0.139*		-0.121***
		(0.0781)		(0.0805)		(0.0395)
der	-0.207**	-0.238**	-0.0771	-0.115	0.0971	0.134*
	(0.0894)	(0.0919)	(0.0911)	(0.0923)	(0.0743)	(0.0749)
der_ma		-0.000873		0.0596		-0.214**
		(0.227)		(0.235)		(0.107)
er_	1.767*	1.867*	1.827*	1.948*	0.308	0.210
	(1.028)	(1.011)	(1.065)	(1.042)	(0.504)	(0.504)
oilprice_	-0.0829	-0.125	-0.0766	-0.113	-0.0326	0.0168
	(0.176)	(0.197)	(0.182)	(0.203)	(0.0821)	(0.0932)
covid	0.0903	0.101	0.0866	0.0962	0.0227	0.00547
	(0.0757)*	(0.0815)*	(0.0794)*	(0.0847)*	(0.0388)**	(0.0421)**
Constant	-2.803	-0.962	-2.314	-0.514	3.393**	1.988
	(2.901)	(3.696)	(3.021)	(3.854)	(1.701)	(1.478)
Observations	132	132	132	132	132	132
R-squared	0.648	0.658	0.543	0.556	0.723	0.747

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Therefore, it can be concluded that the interaction between mergers and acquisitions and the fundamental factors have various significant impacts on the company's performance. The interaction between mergers and acqusitions and revenue performs a significant impact on the Return on Asset (ROA) and the Return on Equity (ROE) at a 10% level of significance and affecting Price to Earnings Ratio (PER) at a 1% level of significance. Moreover, the interaction between mergers and acqusitions and the current ratio performs significantly affect the Return on Asset (ROA) and the Return on Equity (ROE) at a 10% level of significance, however, the effect is significant on the Price to Earnings Ratio at 10% level of significance.

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Lastly, the interaction between mergers and acqusitions and debt to equity ratio is only significant towards Price to Earnings Ratio (PER) at a 10% level of significance, and insignificant towards Return on Asset (ROA) and Return on Equity (ROE) as indicated by the p-values which are larger than the 10% level of significance.

Conclusions

According to the above empirical findings, it ca be concluded several important points as the basis for policy recommendations as follows.

- Revenue has a significant impact on the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio)

- Current Ratio (CR) has a significant impact on the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) from both Generalized Least Square and Least Square Dummy Variables models.

- Debt to Equity Ratio (DER) has significant impact on the Return on Asset (ROA) and Price to Earnings Ratio (P/E Ratio), and is insignificant towards the Return on Equity (ROE) using both Generalized Least Square and Least Square Dummy Variable models.

- Exchange Rate (ER) indicates a significant impact on both the Return on Asset (ROA) and the Return on Equity (ROE) using Least Square Dummy Variable model.

- COVID-19 significantly affects the Return on Asset (ROA) and the Return on Equity (ROE) and is insignificant towards Price to Earnings Ratio (PER) using Generalized Least Square model. However, COVID-19 significantly affects the Return on Asset (ROA), the Return on Equity (ROE), and the Price to Earnings Ratio (P/E Ratio) using Least Square Dummy Variable model.

- Mergers and acquisitions, which is a moderating variable for fundamental factors on the company's performance in this research, has a significant effect on the Price to Earnings Ratio (PER). It indicates that investors use merges and acquisitions news to earn potential higher capital gain.

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