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THE LONG-TERM PERFORMANCE OF CAPITAL EXPENDITURE FROM A FUNDAMENTAL PERSPECTIVE: EVIDENCE FROM INDONESIA

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ABSTRACT

This study aims to identify the effect of capital expenditure on the long-term performance on companies listed on the Indonesia Stock Exchange (IDX). Fundamental measurements were used as the internal perspective of performance; This study also tries to fill the gap due to the lack of studies that discuss capital expenditure in Indonesia by providing empirical evidence regarding capital expenditure in the context of Indonesia's stock market. Capital expenditure is represented by the growth of fixed assets for the current period. The long-term performance utilizes earnings persistence and is measured using the regression of ROA and ROE for the past six years, and then the coefficients are determined using the lags of ROA and ROE in the three years after capital expenditure. The sample comprises 60 "big cap" companies listed on the IDX at the beginning of the sample period (in 2016) and for four years of the sampling period (2016–2019) with a total of 240 observations. The companies sampled should fulfill the criteria of having complete financial data for the six years before the sampling period. The hypothesis testing proves that capital expenditure impacts long-term performance, with no evidence to the contrary. Additional testing utilizing the control variables generated additional interesting results with important implications.

Contribution/Originality: This study utilizes the earnings persistence concept to measure the impact of capital expenditure on firms' long-term financial performance. Fundamental measurements are used to identify the impact of capital expenditure on long-term performance as the internal perspective of firm performance, which previous studies have not used.

1. INTRODUCTION

One of a company's most critical decisions is how it manages its capital. Capital expenditure is a strategic decision made by management on how to spend a company's capital, whether on the acquisition of plant assets, equipment replacement, or research and development expenditures, which are expected to provide returns for the company. Capital investment affects firm growth and can have a significant impact on firm value, according to financial economists (Chan, Gau, & Wang, 1995; McConnell & Muscarella, 1985). Decisions on capital expenditure can determine a company's future performance. These important managerial decisions carry risks and rewards for stakeholders, including companies, managers, investors, creditors, and employees, in the subsequent years (Kim & Byunghwan, 2018). Capital expenditure decisions have a strategic focus as firms carefully select capital investment projects in order to generate commensurate returns (Kim, Saha, & Bose, 2021).

Capital expenditure is known to influence market or firm value (Brailsford & Yeoh, 2004; Chen, Ho, & Shih, 2007; Majanga, 2018), market or investor response (Akbar, Shah, & Saadi, 2008; Burton, 2005; Chen & Chang, 2020), and firm performance (Kim et al., 2021; Moser, Isaksson, Okwir, & Seifert, 2021; Turner & Hesford, 2019). However, information regarding capital expenditure can be seen as both favorable and unfavorable. When investors perceive capital expenditure as favorable information, this implies that the company sets a strategic plan for future expansion, which will result in an expected return. When a company uses external financing as a tool to support expansion, this signals to the market that the company's fundamentals are strong (Zhao, Qu, & Luo, 2019). Only strong companies risk financial difficulties when their debt portion is high. Corporate capital expenditure is associated with positive stock returns through the signaling of positive information regarding a firm's future cash flow prospects (Chen et al., 2007). Increases in capital expenditures are also likely to be associated with increased investment opportunities. On the other hand, decisions regarding capital expenditure could also be perceived as unfavorable information when investors perceive it as overinvestment (Titman, John, Xie, Wei, & Xie, 2003), which could result in a decrease in firm value (Cordis & Kirby, 2017; Hsiao & Li, 2013).

The effect of capital expenditure on company performance can also be seen from short-term and long-term performance perspectives. Some amount of capital expenditure by a company will take time to realize and receive financial results from investments. Committing a significant portion of economic resources to long-term capital investments is critical to a company's long-term viability (Kim & Byunghwan, 2018). In other words, a relatively significant amount of funds invested in capital expenditure projects rarely results in the short-term financial performance of the firm. Previous research, however, has revealed inconclusive results, with some claiming that capital expenditure has a short-term effect (Ball, Sadka, & Sadka, 2009; Kim, 2001; Turner & Hesford, 2019), while others found a long-term effect on company performance (Canace, Jackson, & Ma, 2018; Chen & Chang, 2020; Kothari, Laguerre, & Leone, 2002; Moser et al., 2021). Therefore, this study focuses on the effect of capital expenditure on companies' long-term performance.

This study fills the gap by using the ROA and ROE of a company to measure its ability to perform. Most previous studies only use external perspectives to describe firm performance. For example, Kim et al. (2021) and Moser et al. (2021) used market value, while Turner and Hesford (2019) used revenue and customer satisfaction to measure firm performance. Our study also associates the earnings persistence concept with long-term firm performance, which no previous study has used. Earnings persistence refers to the sustainability of current earnings in the long run and is often associated with the quality of earnings. Earnings persistence reflects the quality of a firm's profits and demonstrates that the firm can retain earnings over time rather than only in the event of a specific activity (Fatma & Hidayat, 2019). This study investigates how a company realizes its capital expenditure plan that is reflected in its long-term financial performance. High earnings persistence means they are successfully optimizing capital expenditure projects to retain earnings in the long run instead of short-term performance, such as market reactions or investors' responses.

Capital expenditure is a common term in the Indonesian stock market community. Despite the known importance of capital expenditure information for investors and management, there are few empirical studies that discuss capital expenditure in the context of Indonesia's stock market. Most previous studies related to capital expenditure in Indonesia have only discussed capital expenditure in the governmental context (Ghozali, 2020; Kuntari, Jatmiko, & Prabowo, 2019; Saud, Asterina, & Trisha, 2020). This study tries to fill the gap by providing empirical evidence regarding capital expenditure information regarding Indonesia's stock market. The results of this study provide important information for investors and management.

Using data from companies listed on the Indonesia stock market, our study uses the earnings persistence concept to measure the impact of capital expenditure on a firm's long-term financial performance. We contribute to the literature as one of the few studies that identifies the impact of capital expenditure on long-term performance. Furthermore, this study complements a previous study by Juniarti & Toly (2021) that also investigated the impact

of capital expenditure on long-term performance. However, the previous studies measure long-term performance from external perspectives, which include positive market reactions and investor responses. This study focuses on how capital expenditure plans are realized and how they impact the company's long-term performance.

The rest of this paper is structured as follows: Section 2 comprises a review of the literature and the hypothesis development, Section 3 describes the research methodology used in the study, Section 4 contains the findings and discussions, and Section 5 presents the conclusions.

2. LITERATURE REVIEW

2.1. Resource-Based Theory

Resource-based theory explains how company resources can create a company's competitive advantage (Barney, 1991). This theory assumes that all company resources, both tangible and intangible assets, are heterogeneously distributed within the company. A corporation is a collection of physical, human, and organizational resources. Company resources will potentially provide a sustained competitive advantage if they are comprised of four attributes. First, these resources must be valuable and capable of capitalizing on opportunities or mitigating threats in the company's environment. Second, these resources must be scarce among the company's competitors. Third, the resources must not be perfectly replicable. Fourth, these resources must not have strategically equivalent substitutes. Resources are considered valuable when they can support the company in implementing strategies that can increase the efficiency and effectiveness of the company.

A company's capital expenditure plan implies that it has a future strategy to optimize its resources to improve its performance. Capital expenditure is a strategic management decision to spend the company's capital, whether on the acquisition of plant assets, equipment replacement, or R&D expenditures, which are expected to provide returns for the company. Therefore, capital expenditure decisions can be considered as a strategic investment in particular strategic projects (Kim et al., 2021) that involve high levels of risk, produce intangible outcomes, and have a significant long-term impact on corporate performance (Alkaraan & Northcott, 2006).

2.2. Capital Expenditure

The use of new technology and capital-intensive production processes are the primary drivers of the modern economy (Juniarti & Toly, 2021). Companies need capital expenditure to optimize these investment opportunities. Capital expenditure aims to add value to existing fixed assets that have a useful life beyond the taxable year (McConnell & Muscarella, 1985). This refers to important capital budgeting decisions, such as plant expansion or equipment replacement (Jiang, Chen, & Huang, 2006). Capital expenditure is the use of funds by companies to purchase or increase investment in physical assets, such as buildings, machinery, and equipment, which have economic benefits for increasing production capacity or implementing investment projects that can increase the company's long-term profits. The capital expenditure type in this study refers to a company that expands by opening new factories, new branches, or offices, announcements of factory modernization, or additional capital budgets.

2.3. Hypothesis Development

Previous studies have shown the influence of capital expenditure on firm value, market or investor responses, and firm performance. A study by Majanga (2018) reviewed data collected from published annual reports from 2007 to 2015 on the Malawi stock exchange and found that there is a positive relationship between capital expenditure and firm value, which is reflected in the firms' future stock prices. Chen and Chang (2020) studied capital expenditure announcements of Taiwanese business group-affiliated firms and discovered that the announcing firms' stock price reactions are positively associated with both stock price reactions and long-term performance. Finally, a study by Kim et al. (2021) examined the association between capital expenditures and the earnings performance of

loss-making firms using a sample of 24,030 observations from 2006 to 2015. They discovered that loss-making firms' capital expenditures have a greater influence on the absolute value of near-term earnings performance.

Capital expenditure decisions can also be seen from their impact on short-term and long-term performance. Despite some previous studies trying to address this time perspective issue, there are still relatively few studies that have investigated this perspective in greater detail. Furthermore, a significant amount of funds invested in capital expenditure projects rarely resulted in the short-term financial performance of the firm. However, mixed and inconclusive results from previous studies show that some studies found that capital expenditure has a short-term effect, whereas others have found a long-term effect on company performance. For example, Turner and Hesford (2019) investigated the impact of renovation capital expenditure on multiple measures of hotel property performance. They conducted analyses of short-term and long-term impacts on performance following the renovation of the hotel. They discovered that while renovation capital expenditures have a significant short-term benefit in terms of increased revenue, profitability gains, higher customer satisfaction, and lower repair and maintenance costs, they have a significant long-term negative impact on revenue and profitability. In another example, Moser et al. (2021) attempted to evaluate the interplay between market conditions, capital expenditure, manufacturing flexibility, and production capacity in order to effectively analyze the consequences of manufacturing investments in the mining, oil and gas sectors in both the short and long terms. They attempted to develop a firm value driver model, which shows that higher capital expenditure will impact higher market valuation in the long term due to higher production capacity.

The long-term impact of capital expenditure on firm performance could also be associated with the earnings persistence concept. Earnings persistence reflects the quality of a firm's profits and demonstrates that the firm can retain earnings over time rather than only in the event of a specific activity (Fatma & Hidayat, 2019). Consequently, a better quality of profit could be a pivotal factor in the influence of capital expenditure on firm value or market value since investors value more companies with persistent earnings than transitory earnings (Wang, 2014). This study investigates whether capital expenditure initiator companies are able to successfully implement capital expenditure projects to retain earnings in the long run. Based on the above description, the following hypothesis is developed:

Hypothesis: Capital expenditure positively impacts a firm's long-term performance.

3. RESEARCH METHOD

3.1. Sample

This study aims to identify the effect of capital expenditure on a firm's long-term performance. Leverage, firm size, competitiveness, and sector are the control variables. Capital expenditure is represented by the growth of fixed assets for the current period, where companies whose fixed assets are growing indicate that the company is making capital expenditures. The long-term performance will be measured using the regressions of ROA and ROE in the three years after capital expenditure projects. The sample of 60 companies was selected from those listed on the Indonesia Stock Exchange (IDX) that were classified as big cap companies at the beginning of the sampling period (in 2016), and these companies must have been listed on the IDX from at least 2015. Big cap companies were used for the study because they are generally more active in making capital expenditures and they are more concerned about showing future growth prospects and achieving investor appreciation.

3.2. Analysis Model

The proposed model uses two fundamental measurements that are commonly used to measure firms' financial performance, namely ROA and ROE. These two measurements were considered due to the unique relationship of firms' profitability with assets and equity. The model also includes several control variables that were simultaneously tested. Free cash flow is considered as a control variable since prior studies show that there is an

influence of free cash flow on performance (Park & Jang, 2013; Titman et al., 2003). Free cash flow is also closely related to capital expenditure as it exists when firms have poor growth opportunities (Brush, Bromiley, & Hendrickx, 2000). Only when a firm's potential investment opportunities are exhausted can operating cash flow be interpreted as free cash flow (Park & Jang, 2013). Arslan (2007) stated that the difference between operating cash flow and capital expenditure divided by total assets yields free cash flow.

One of the control variables that affects firm performance is leverage. Leverage is a ratio that explains a company's ability to meet its obligations and is a policy regarding how far a company uses external funding. A company may gain its fund for capital expenditure projects both from leverage and from its own capital where it has the option to obtain capital by issuing shares. Previous research has found a link between leverage and firm performance due to its correlation with company risk, which increases with an increase in the leverage ratio (Kim, Bae, & Oh, 2019; Rajverma, Arrawatia, Misra, & Chandra, 2019). High leverage raises the risk of insolvency, while low leverage causes equity dilution (Ibhagui & Olokoyo, 2018).

Firm size is also considered as control variable in this study since previous studies shows a positive influence on firm performance. This due to bigger firm size correlating with better ability to utilize economies of scale (Corvino, Caputo, Pironti, Doni, & Bianchi Martini, 2019; Ibhagui & Olokoyo, 2018). Larger companies have more flexibility since they have access to different channels of funding compared to smaller companies. Larger companies also have relatively more capable intellectual capital (Buallay & Hamdan, 2019) and, therefore, better capability to execute capital expenditure projects and maintain financial performance in the long run. Market competitiveness is also known as one of the factors that impact a firm's ability to perform (Javeed, Latief, & Lefen, 2020). Therefore, our study also utilized market competitiveness using the Herfindahl Index (HHI) to determine the impact on a firm's ability to maintain long-term performance.

This study's research model is as follows:

$$EP\_ROA_{i,t} = \beta_0 + \beta_1 GCAPEX_{i,t-1} + \beta_2 FCF_{i,t-1} + \beta_3 LEV_{i,t-1} + \beta_4 FSIZE_{i,t-1} + \beta_5 COMP_{i,t-1} + \beta_6 SECTOR_i + \varepsilon$$

$$EP\_ROE_{i,t} = \beta_0 + \beta_1 GCAPEX_{i,t-1} + \beta_2 FCF_{i,t-1} + \beta_3 LEV_{i,t-1} + \beta_4 FSIZE_{i,t-1} + \beta_5 COMP_{i,t-1} + \beta_6 SECTOR_i + \varepsilon$$

- Earnings Persistence (EP). The autoregression (AR1) model is used as tool in this study to measure the persistence of earnings. This model measures earnings persistence by using earnings data from several previous periods. Our study uses ROA and ROE to calculate EP. To calculate the long-term profit, we look for the coefficient using the autoregression models of ROA and ROE for the past six years. Next, to decide which coefficient to adopt, we use the lags of ROA and ROE three years after capital expenditure. For example, for capital expenditure in 2015, the coefficient for 2018 is used, and so on. The results of EP can be seen from the $\Phi 1,j$ coefficient, and if the result is closer to 1, then it is more persistent. The model is as follows:

$$X_{j,t} = \Phi_{0j} + \Phi_{1j} X_{j,t-1} + \mu_{j,t}$$

where:

$X_{j,t}$ = adjusted ROA in year t

$X_{j,t-1}$ = adjusted ROA in year t-1

Φ = vector of model coefficients

- Return on assets (ROA) is the indicator of financial performance measured by net income divided by total assets.
- Return on equity (ROE) is the indicator of financial performance measured by net income divided by shareholders' equity.
- Capital expenditure growth (GCAPEX) is the accumulation of capital spending in the current period and the previous period, and then divided by the prior period.
- Leverage (LEV) is measured by total debt divided by total assets (Dimitrov & Jain, 2008).
- Firm size (FSIZE) is the size of the company measured by the log market value of equity.

- Free cashflow (FCF) is measured by the operating income minus depreciation, interest expense, and dividends, then divided by total assets.
- Sector (SECTOR) is the industrial sector of the sample.
- Competition intensity (COMP) is the market competitiveness. We utilize the Herfindahl Index (HHI) using the following formula (Li, Poppo, & Zhou, 2008):

$$HHI_n = S1^2 + S2^2 + S3^2 + \ldots + Sn^2$$

where:

S1, S2 . . . Sn = market share of a firm in a similar industry.

4. ANALYSIS AND DISCUSSION

4.1. Descriptive Analysis

The study sample of 60 big cap companies listed on the Indonesia Stock Exchange from 2016–2019 gives a total sample size of 230, which fulfills the criteria. To calculate the earnings persistence, the company sample should fulfill the criteria, which is to have complete financial data for the past six years. Ten samples were excluded due to incomplete financial data. The composition of all industrial sectors used in our sample is shown in Table 1.

Table 1. Sample per industrial sector.

No.	Sector	Sample	%
1	Basic Material	36	15.65%
2	Consumer CYC	8	3.48%
3	Consumer NCY	44	19.13%
4	Energy	32	13.91%
5	Financial	56	24.35%
6	Healthcare	4	1.74%
7	Industrial	6	2.61%
8	Infrastructure	24	10.43%
9	Property	16	6.96%
10	Technology	4	1.74%
	Total	230	100.00%

Note: Consumer CYC = Consumer cyclical stocks; Consumer NCY = Consumer non-cyclical stocks.

Table 2 displays the descriptive statistics for all industries combined. The results show that there is normal variation, as evidenced by low standard deviations and a reasonable distance between the minimum and maximum values. Both earnings persistence measurements, LAGROA and LAGROE, show small standard deviations with means close to one, meaning that the data are homogeneous in their ability to create earnings persistence.

Table 2. Descriptive statistics.

Variable	Min.	Max.	Mean	Std. Dev.
LAGROA	-0.129	0.192	-0.002	0.026
LAGROE	-0.312	0.420	-0.001	0.059
ROA	-0.141	0.498	0.066	0.090
ROE	-0.285	1.451	0.142	0.219
GCAPEX	-0.299	1.676	0.106	0.204
FCF	-2060.526	1.663	-45.254	213.495
COMP	0.034	0.254	0.057	0.046
FSIZE	9.000	12.000	10.672	0.655
(N = 230)				

Note: LAGROA = lagged of return on assets; LAGROE = lagged of return on equity; ROA = return on assets (net income/total assets); ROE = return on equity (net income/shareholders' equity); GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity).

Table 3 shows the mean for each variable in each sector. The results show that the technology sector invests the most in capital expenditure projects. The technology and healthcare sectors show the highest market competitiveness. Interestingly, these two highly competitive sectors also show high capital expenditure.

Table 3. Means of variables per sector.

Sector	LAGROA	LAGROE	ROA	ROE	GCAPEX	FCF	LEV	COMP	FSIZE
Basic Materials	0.000	0.000	0.037	0.065	0.080	-24.421	0.502	0.040	10.500
Consumer CYC	-0.008	-0.002	0.105	0.152	0.072	0.615	0.291	0.128	
Consumer NCY	-0.008	-0.005	0.143	0.324	0.118	0.334	0.176	0.034	10.593
Energy	0.005	0.006	0.109	0.170	0.119	-301.935	0.257	0.040	10.500
Financial	0.001	0.010	0.019	0.089	0.097	0.041	0.378	0.037	10.208
Healthcare	-0.007	-0.009	0.126	0.153	0.115	0.278	0.031	0.252	10.250
Industrial	-0.001	-0.004	0.072	0.129	0.079	0.437	0.160	0.156	10.875
Infrastructure	0.000	-0.011	0.012	0.076	0.148	0.546	1.778	0.059	9.500
Property	-0.013	-0.026	0.052	0.082	0.070	0.129	0.287	0.076	
Technology	0.003	0.004	0.011	0.010	0.233	0.140	0.081	0.254	10.750

Note: LAGROA = lagged of return on assets; LAGROE = lagged of return on equity; ROA = return on assets (net income/total assets); ROE = return on equity (net income/shareholders' equity); GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); LEV = leverage (total debt/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity).

Table 4 shows that LAGROA has high positive correlations and is statistically significant in relation to LAGROE. LAGROA also has very low positive correlations and is statistically significant in relation to ROA, ROE, GCAPEX and FSIZE. GCAPEX has very low positive correlations and is statistically significant in relation to LAGROA and ROA, while it is not statistically significant in relation to LAGROE and ROE. Leverage shows very low negative correlations and is statistically significant in relation to LAGROE and ROE, and firm size shows very low negative correlations with leverage.

Table 4. Correlations matrix.

Correlations									
Variable	**LAGROA**	**LAGROE**	**ROA**	**ROE**	**GCAPEX**	**FCF**	**LEV**	**COMP**	**FSIZE**
LGROA	1								
LAGROE	0.845**	1							
ROA	0.259**	0.280**	1						
ROE	0.176**	0.314**	0.861	1					
GCAPEX	0.183**	0.115	0.136*	0.062	1				
FCF	-0.168*	-0.096	-0.174	-0.062	-0.039	1			
LEV	0.003	-0.164*	-0.291	-0.134*	0.092	0.107	1		
COMP	-0.032	-0.041	-0.007	-0.091	0.029	0.078	-0.075	1	
FSIZE	0.217*	0.275**	0.209*	0.188	-0.129	-0.055	-0.218*	0.118	1

Note: ** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed). LAGROA = lagged of return on assets; LAGROE = lagged of return on equity; ROA = return on assets (net income/total asset); ROE = return on equity (net income/shareholders' equity); GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); LEV = leverage (total debt/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity).

4.2. Hypothesis Testing

This study aims to investigate how a company realizes its capital expenditure plan and how this is reflected in its long-term financial performance. A significant amount of money invested in capital expenditure projects logically results in long-term financial performance. Therefore, the hypothesis testing assesses firm performance three years after capital expenditure projects are completed. Prior studies emphasize more on the short-term performance and external measures such as market response and investor reaction. This study focuses on the benefits realized after capital expenditure and assesses the long-term performance implications of capital expenditure using fundamental measurements and the earnings persistence (EP) concept.

First, we used ROA to examine the impact of capital expenditure on firm performance as measured by EP. The results in Table 5 show that GCAPEX has a significant positive relationship with EP (0.01). The results also show that the control variable FSIZE has a significant positive association with EP (0.05). This indicates that capital

expenditure affects long-term firm performance, thus confirming the hypothesis. The size of the firm also determines its ability to create long-term performance. In this study, we use big capitalization firms. Therefore, it can be concluded that capital expenditure projects can impact long-term fundamental performance in big capitalization firms. Using ROA, the model can explain up to a 9.5% change in the persistence of earnings variable.

Table 5. Hypothesis testing using LAGROA.

LAGROA	Coefficient	t-Stat.	Sig.
GCAPEX	0.280	2.816	***
FCF	-0.114	-1.148	
LEV	-0.108	-0.995	
COMP	-0.199	-1.382	
FSIZE	0.265	2.557	**
SECTOR	0.195	1.336	
C	-0.154	-2.641	***
R^2	0.153		
Adjusted R^2	0.095		
F-stat		2.647	
Prob (F-statistic)		0.021	**

Note: *** Correlation is significant at the 0.01 level (2-tailed); ** Correlation is significant at the 0.05 level (2-tailed).
LAGROA = lagged of return on assets; GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); LEV = leverage (total debt/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity); SECTOR = industrial sector; C = constant.

The hypothesis was also tested using ROE measurement proxied by EP. The results, shown in Table 6, show that GCAPEX has a significant positive relationship with EP (0.1). Therefore, the hypothesis is also confirmed using LAGROE as the measurement for long-term performance. It is therefore confirmed that capital expenditure influences long-term firm performance. Although the association of GCAPEX with LAGROE shows a lower significance level, the EP model using the ROE measurement shows a more significant model for predicting long-term performance. This is shown by the LAGROE model, which is significant at 0.01, whereas the LAGROA model is significant at 0.05. Therefore, the LAGROE model generates more exciting results for the control variables.

Table 6. Hypothesis testing using LAGROE.

LAGROE	Coefficient	t-stat.	Sig.
GCAPEX	0.170	1.875	*
FCF	-0.032	-0.353	
LEV	-0.471	-4.777	***
COMP	-0.277	-2.112	**
FSIZE	0.241	2.559	**
SECTOR	0.174	1.308	
C	-0.284	-2.401	**
R^2	0.298		
Adjusted R^2	0.250		
F-stat		6.216	
Prob (F-statistic)		0.000	***

Note: *** Correlation is significant at the 0.01 level (2-tailed); ** Correlation is significant at the 0.05 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).
LAGROE = lagged of return on equity; GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); LEV= leverage (total debt/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity); SECTOR = industrial sector; C = constant.

The LAGROE model shows a similar result to the LAGROA model for the FSIZE control variable, which is significantly positive with EP (0.05). These differences emerge from the LEV control variable, which shows a

significant negative impact on EP (0.01). This means that the ability of a firm to achieve long-term performance is also determined by the amount of leverage. If the company has a high level of debt, it will result in a lower ability to perform in the long term, and vice versa. The COMP control variable, which represents competitiveness, also has a significant negative impact on EP (0.05). This indicates that companies in a highly competitive market will struggle more to achieve long-term performance.

Both ROA and ROE, as fundamental measurements, confirm that capital expenditure influences long-term firm performance. However, there were differences between the two measurement models. In comparison, the adjusted R^2 for testing the hypothesis using the LAGROA model is only 9.5%, which is lower than the adjusted R^2 of 25.0% in the LAGROE model. Also, the F-stat in the LAGROA model (2.647) is lower than that of the LAGROE model (6.216). As a result, model associations generated using LAGROE better explain the change in EP than models generated using LAGROA. In other words, fundamental measurements using ROE better explain the influence of capital expenditure decisions on long-term firm performance.

4.3. Robustness Test

To further test the research hypothesis, this study tests the impact of capital expenditure on short-term firm performance. Researchers generally use the same fundamental measurements of ROA and ROE. However, the difference does not incorporate EP to observe the results of the short-term impact. The underlying argument is that a company committing a certain amount of capital expenditure will take time to receive financial results from investment. Therefore, capital expenditure projects should impact long-term firm performance and rarely result in short-term financial performance. Table 7 shows the results of the robustness test using ROA where no significant short-term impact can be observed from capital expenditure on short-term ROA. The same result was also obtained from the robustness test using ROE (see Table 8), which shows no significant short-term impact. This result confirms the previous testing, which shows the long-term impact of capital expenditure and no proof of any short-term impact.

The control variable results of the robustness test are similar to the long-term impact testing. The FSIZE control variable shows a significant positive impact on ROA (0.1) and ROE (0.05), whereas market competitiveness has a significant negative impact on ROE (0.1). Firm size and market competitiveness play important roles in a firm's ability to produce both short-term and long-term financial performance. This highlights the significance of this study's findings. Capital expenditure can be a game changer and a unique predictor of firm performance in the long run since firm size and market competitiveness are important in both the short-term and the long-term.

Table 7. Robustness test using ROA.

ROA	Coefficients	t-stat.	Sig.
GCAPEX	0.130	1,270	
FCF	-0.013	-0.127	
LEV	-0.169	-1.509	
COMP	-0.094	-0.633	
FSIZE	0.199	1.857	*
SECTOR	-0.013	-0.086	
C	-0.284	-1.362	
R^2	0.095		
Adjusted R^2	0.034		
F-stat		1.546	
Prob (F-statistic)		0.173	

Note: * Correlation is significant at the 0.05 level (2-tailed). ROA = return on assets (net income/total asset); GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); LEV = leverage (total debt/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity); SECTOR = industrial sector; C = constant.

Table 8. Robustness test using ROE.

ROE	Coefficients	t-Stat	Sig.
GCAPEX	0.012	0.112	
FCF	0.042	0.411	
LEV	-0.099	-0.880	
COMP	-0.291	-1.939	*
FSIZE	0.217	2.012	**
SECTOR	0.138	0.910	
C	-0.853	-1.572	
R^2	0.082		
Adjusted R^2	0.020		
F-stat		1.313	
Prob (F-statistic)		0.260	

Note: ** Correlation is significant at the 0.05 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed). ROE = return on equity (net income/shareholders' equity); GCAPEX = capital expenditure growth; FCF = free cashflow ((operating income–(depreciation, interest expense, dividend))/total assets); LEV = leverage (total debt/total assets); COMP = market competitiveness; FSIZE = firm size (log market value of equity); SECTOR = industrial sector; C = constant.

5. DISCUSSION

Managerial decisions regarding capital expenditure have been known to determine the risks and rewards for all stakeholders in the subsequent years (Kim & Byunghwan, 2018). Therefore, understanding the impact of capital expenditure on firm performance is important for decision-makers. The main finding of this study is from the perspective of long-term performance. Specifically, our study analyzes big capitalization companies and proves that capital expenditure impacts long-term performance, with no proof of any impact in the short term. The results of this study contribute to the discussion regarding the inconsistent results of previous studies in which capital expenditure was found to have both a short-term effect (Ball et al., 2009; Kim, 2001; Turner & Hesford, 2019) and a long-term effect (Canace et al., 2018; Chen & Chang, 2020; Kothari et al., 2002; Moser et al., 2021) on company performance.

According to resource-based theory, a company's capital expenditure plan implies that they have a strategy to optimize resources to improve performance in the future. This signal will arguably result in the short-term and external-based measurements of firm performance, as in most previous studies. The external-based measurement of firm performance refers to market value (Kim et al., 2021; Moser et al., 2021) and market or investor responses (Akbar et al., 2008; Burton, 2005; Chen & Chang, 2020; Juniarti & Toly, 2021). This study complements previous studies by using fundamental measurements (ROA and ROE) to confirm the influence of capital expenditure on long-term firm performance. Thus, the results have important implications for investors and management.

This study offers important insights for investors in Indonesia's stock market since there are very few studies that discuss capital expenditure or capital investment in this context. Most studies related to capital expenditure in Indonesia only discuss it in the governmental context despite the significance of capital expenditure information for both investors and management in Indonesia's stock market (Ghozali, 2020; Kuntari et al., 2019; Saud et al., 2020). The findings show that capital expenditure improves fundamental long-term firm performance. This could serve as confirmation for investors in Indonesia's stock market, as previous studies have found that investors respond positively to capital expenditure decisions (Chen & Chang, 2020; Juniarti & Toly, 2021). In other words, the results of this study provide empirical evidence justifying positive investor responses due to the fundamental long-term impact of capital expenditure decisions.

There are some important implications that emerge from this study for both investors and management. First, the results will help investors to understand that capital expenditure takes time to show results in financial performance. Thus, capital expenditure should not be used as a predictor of short-term investment decisions. Second, the results of this study are relevant for investors in big capitalization companies since it utilizes big

capitalization companies as the sample. Investors who invest in big cap companies still consider fundamental measurements before making a decision. Therefore, the fundamental long-term impact of capital expenditure will be an important justification for investment decisions.

Another important implication for investors arises from the fact that firm size and market competitiveness play an important role in a firm's ability to perform financially in the short-term and long-term. This means that capital expenditure can be a game changer and a unique predictor of a firm's fundamental performance in the long run. However, investors should also be aware of the way a company maintains its debt level and understand the company's industry competitiveness since these two factors negatively impact financial performance in the long run (Ahmed & Afza, 2019; Ibhagui & Olokoyo, 2018; Kim et al., 2019; Rajverma et al., 2019).

A company's management plays an important role as the decision maker of the capital expenditure plan. The implication of this study is that management should not only focus on the short-term impact of capital expenditure decisions, which has been done in many previous studies by focusing on market response, share performance, and investor reaction. This applies especially to big capitalization companies since capital expenditure shows results in the long run. Management should focus on successfully realizing the capital expenditure plan so that, in the long run, it will affect the company's financial performance. The final implication is that management should be aware of debt level and market competitiveness. Compiling control variable results on a firm's long-term performance reveals that while capital expenditure projects can positively influence a firm's performance, debt level and the level of market competition negatively impact financial performance in the long run.

6. CONCLUSION

Capital expenditure has been known to influence firm performance from different time perspectives. Using fundamental financial measurements, this study investigates the long-term impact of capital expenditure decisions on firm performance. This study demonstrates that capital expenditure has a positive and significant long-term impact on firm financial performance. The robustness test showed no short-term impact. Therefore, it can be concluded that when a company commits some amount of capital expenditure, it will take time to receive financial results from investments. A relatively significant amount of funds invested in capital expenditure projects rarely results in the short-term financial performance of a firm. Additional testing shows the uniqueness of capital expenditure in predicting future financial performance. However, investors and management should be aware of other factors that adversely affect financial performance. There are very few studies discussing CAPEX in the Indonesian stock market context. Therefore, this study provides important insights for investors and managers of companies in the Indonesian stock market. The results of this study provide empirical evidence justifying a positive investor response due to the fundamental long-term impact of capital expenditure decisions.

This study focuses on big capitalization companies since they are generally more active in making capital expenditures, and they are more concerned about showing future growth prospects and attracting investors. Thus, not all public companies were used as samples in this study; public companies with small capitalizations are not represented, and future studies should investigate the generalizability of the results of this study.

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REFERENCES

Ahmed, N., & Afza, T. (2019). Capital structure, competitive intensity and firm performance: Evidence from Pakistan. *Journal of Advances in Management Research, 16*(5), 796-813.Available at: https://doi.org/10.1108/jamr-02-2019-0018.

Akbar, S., Shah, S. Z. A., & Saadi, I. (2008). Stock market reaction to capital expenditure announcements by UK firms. *Applied Financial Economics*, *18*(8), 617-627.Available at: https://doi.org/10.1080/09603100701222234.

Alkaraan, F., & Northcott, D. (2006). Strategic capital investment decision-making: A role for emergent analysis tools?: A study of practice in large UK manufacturing companies. *The British Accounting Review*, *38*(2), 149-173.Available at: https://doi.org/10.1016/j.bar.2005.10.003.

Arslan, Ö. (2007). Does free cash flow anomaly exist in an emerging market? Evidence from the Istanbul stock exchange. *International Research Journal of Finance and Economics*, *11*, 163–171.

Ball, R., Sadka, G., & Sadka, R. (2009). Aggregate earnings and asset prices. *Journal of Accounting Research*, *47*(5), 1097-1133.Available at: https://doi.org/10.1111/j.1475-679x.2009.00351.x.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.Available at: https://doi.org/10.1177/014920639101700108.

Brailsford, T. J., & Yeoh, D. (2004). Agency problems and capital expenditure announcements. *The Journal of Business*, *77*(2), 223-256.Available at: https://doi.org/10.1086/381274.

Brush, T. H., Bromiley, P., & Hendrickx, M. (2000). The free cash flow hypothesis for sales growth and firm performance. *Strategic Management Journal*, *21*(4), 455-472.Available at: https://doi.org/10.1002/(sici)1097-0266(200004)21:4%3C455::aid-smj83%3E3.0.co;2-p.

Buallay, A., & Hamdan, A. (2019). The relationship between corporate governance and intellectual capital: The moderating role of firm size. *Management*, *61*(2), 384-401.Available at: https://doi.org/10.1108/ijlma-02-2018-0033.

Burton, B. (2005). Concurrent capital expenditure and the stock market reaction to corporate alliance announcements. *Applied Financial Economics*, *15*(10), 715-729.Available at: https://doi.org/10.1080/09603100500077060.

Canace, T. G., Jackson, S. B., & Ma, T. (2018). R&D investments, capital expenditures, and earnings thresholds. *Review of Accounting Studies*, *23*(1), 265-295.Available at: https://doi.org/10.1007/s11142-017-9428-9.

Chan, S. H., Gau, G. W., & Wang, K. (1995). Stock market reaction to capital investment decisions: Evidence from business relocations. *Journal of Financial and Quantitative Analysis*, *30*(1), 81-100.Available at: https://doi.org/10.2307/2331254.

Chen, I.-F., & Chang, S.-C. (2020). Spillover effects of capital expenditure announcements within business groups. *British Journal of Management*, *31*(4), 709-727.Available at: https://doi.org/10.1111/1467-8551.12379.

Chen, S.-S., Ho, L.-C., & Shih, Y.-C. (2007). Intra-Industry effects of corporate capital investment announcements. *Financial Management*, *36*(2), 1-21.Available at: https://doi.org/10.1111/j.1755-053x.2007.tb00089.x.

Cordis, A. S., & Kirby, C. (2017). Capital expenditures and firm performance: Evidence from a cross-sectional analysis of stock returns. *Accounting & Finance*, *57*(4), 1019-1042.Available at: https://doi.org/10.1111/acfi.12193.

Corvino, A., Caputo, F., Pironti, M., Doni, F., & Bianchi Martini, S. (2019). The moderating effect of firm size on relational capital and firm performance: Evidence from Europe. *Journal of Intellectual Capital*, *20*(4), 510-532.Available at: https://doi.org/10.1108/jic-03-2019-0044.

Dimitrov, V., & Jain, P. C. (2008). The value-relevance of changes in financial leverage beyond growth in assets and GAAP earnings. *Journal of Accounting, Auditing & Finance*, *23*(2), 191-222.Available at: https://doi.org/10.1177/0148558x0802300204.

Fatma, N., & Hidayat, W. (2019). Earnings persistence, earnings power, and equity valuation in consumer goods firms. *Asian Journal of Accounting Research*, *5*(1), 3-13.Available at: https://doi.org/10.1108/ajar-05-2019-0041.

Ghozali, I. (2020). Fiscal decentralisation and capital expenditure composition of regional government in Indonesia. *International Journal of Trade and Global Markets*, *13*(1), 81-88.Available at: https://doi.org/10.1504/ijtgm.2020.104909.

Hsiao, P., & Li, D. (2013). Different capital investment measures and their associations with future stock returns. *International Journal of Business*, *18*(2), 99-118.

Ibhagui, O. W., & Olokoyo, F. O. (2018). Leverage and firm performance: New evidence on the role of firm size. *The North American Journal of Economics and Finance*, *45*, 57-82.Available at: https://doi.org/10.1016/j.najef.2018.02.002.

Javeed, S. A., Latief, R., & Lefen, L. (2020). An analysis of relationship between environmental regulations and firm performance with moderating effects of product market competition: Empirical evidence from Pakistan. *Journal of Cleaner Production*, *254*, 120197.Available at: https://doi.org/10.1016/j.jclepro.2020.120197.

Jiang, C. H., Chen, H. L., & Huang, Y. S. (2006). Capital expenditures and corporate earnings: Evidence from the Taiwan stock exchange. *Managerial Finance*, *32*(11), 853–861.Available at: https://doi.org/10.1108/03074350610703812.

Juniarti, & Toly, A. A. (2021). Does the market react to the reputation of capital expenditure? *Asian Economic and Financial Review*, *11*(10), 781–793.Available at: https://doi.org/10.18488/JOURNAL.AEFR.2021.1110.781.793.

Kim, S. (2001). The near-term financial performance of capital expenditures: A managerial perspective. *Managerial Finance*, *27*(8), 48-62.Available at: https://doi.org/10.1108/03074350110767330.

Kim, S., & Byunghwan, L. B. (2018). The value relevance of capital expenditures and the business cycle. *Studies in Economics and Finance*, *35*(3), 386-406.Available at: https://doi.org/10.1108/sef-03-2017-0063.

Kim, S., Saha, A., & Bose, S. (2021). Do capital expenditures influence earnings performance: Evidence from loss-making firms. *Accounting & Finance*, *61*(S1), 2539-2575.Available at: https://doi.org/10.1111/acfi.12675.

Kim, S.-J., Bae, J., & Oh, H. (2019). Financing strategically: The moderation effect of marketing activities on the bifurcated relationship between debt level and firm valuation of small and medium enterprises. *The North American Journal of Economics and Finance*, *48*, 663-681.Available at: https://doi.org/10.1016/j.najef.2018.08.008.

Kothari, S., Laguerre, T. E., & Leone, A. J. (2002). Capitalization versus expensing: Evidence on the uncertainty of future earnings from capital expenditures versus R&D outlays. *Review of Accounting Studies*, *7*(4), 355-382.

Kuntari, Y., Jatmiko, T., & Prabowo, W. (2019). Capital expenditure of local governments characteristics of audit committee and integrated reporting view project the relationship between corporate social responsibility disclosure and earnings management: Is it a complement mechanism or a substitute mechanism? View project. Retrieved from https://www.researchgate.net/publication/335338150.

Li, J. J., Poppo, L., & Zhou, K. Z. (2008). Do managerial ties in China always produce value? Competition, uncertainty, and domestic vs. foreign firms. *Strategic Management Journal*, *29*(4), 383-400.Available at: https://doi.org/10.1002/smj.665.

Majanga, B. B. (2018). Corporate CAPEX and market capitalization of firms on Malawi stock exchange: An empirical study. *Journal of Financial Reporting and Accounting*, *16*(1), 108-119.Available at: https://doi.org/10.1108/jfra-10-2016-0080.

McConnell, J. J., & Muscarella, C. J. (1985). Corporate capital expenditure decisions and the market value of the firm. *Journal of Financial Economics*, *14*(3), 399-422.Available at: https://doi.org/10.1016/0304-405x(85)90006-6.

Moser, P., Isaksson, O., Okwir, S., & Seifert, R. W. (2021). Manufacturing management in process industries: The impact of market conditions and capital expenditure on firm performance. *IEEE Transactions on Engineering Management*, *68*(3), 810–822.Available at: https://doi.org/10.1109/TEM.2019.2914995.

Park, K., & Jang, S. S. (2013). Capital structure, free cash flow, diversification and firm performance: A holistic analysis. *International Journal of Hospitality Management*, *33*, 51-63.Available at: https://doi.org/10.1016/j.ijhm.2013.01.007.

Rajverma, A. K., Arrawatia, R., Misra, A. K., & Chandra, A. (2019). Ownership structure influencing the joint determination of dividend, leverage, and cost of capital. *Cogent Economics & Finance*, *7*(1), 1600462.Available at: https://doi.org/10.1080/23322039.2019.1600462.

Saud, I. M., Asterina, E., & Trisha, G. F. (2020). Factors affecting capital expenditure allocation: Empirical evidence from Regency/City government in Indonesia. *Journal of Accounting and Investment*, *21*(2), 289-311.Available at: https://doi.org/10.18196/jai.2102150.

Titman, S., John, K. C., Xie, W. F., Wei, K. C. J., & Xie, F. (2003). Nber working paper series capital investments and stock returns capital investments and stock returns capital investments and stock returns. Retrieved from http://www.nber.org/papers/w9951.

Turner, M. J., & Hesford, J. W. (2019). The impact of renovation capital expenditure on hotel property performance. *Cornell Hospitality Quarterly*, *60*(1), 25-39.Available at: https://doi.org/10.1177/1938965518779538.

Wang, Z. (2014). Measuring investors' assessment of earnings persistence: Do investors see through smoothed earnings? *Review of Quantitative Finance and Accounting*, *42*(4), 691-708.Available at: https://doi.org/10.1007/s11156-013-0358-8.

Zhao, C., Qu, X., & Luo, S. (2019). Impact of the InnoCom program on corporate innovation performance in China: Evidence from Shanghai. *Technological Forecasting and Social Change*, *146*, 103-118.Available at: https://doi.org/10.1016/j.techfore.2019.05.024.