ISSN: 2338-8412 e-ISSN : 2716-4411

Ekombis Review – Jurnal Ilmiah Ekonomi dan Bisnis
Available online at : https://jurnal.unived.ac.id/index.php/er/index
DOI: https://doi.org/10.37676/ekombis.v14i4

The Effect of Profitability, Liquidity, Leverage, and Asset Efficiency on The Sustainable Growth Rate of Energy Sector Companies Listed on The Indonesian Stock Exchange 2021-2024

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How to Cite :
Situmorang, J. G. M., Astuti, S. (2026). The Effect Of Profitability, Liquidity, Leverage, and Asset Efficiency on The Sustainable Growth Rate Of Energy Sector Companies Listed on The Indonesian Stock Exchange 2021-2024 EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis, 13(1). DOI: https://doi.org/10.37676/ekombis.v14i4

ARTICLE HISTORY
Received [26 January 2026]
Revised [26 February 2026]
Accepted [October 2026]

KEYWORDS
Sustainable Growth Rate (SGR); Profitability; Liquidity; Leverage; Asset Efficiency; Energy Sector; Indonesia Stock Exchange; Firm Size

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ABSTRACT

This study aims to analyze the effect of profitability, liquidity, leverage, and asset efficiency on the Sustainable Growth Rate (SGR) of energy sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2021-2024, with firm size as a control variable. This study uses secondary data from annual financial statements selected through purposive sampling, resulting in 116 firm-year observations. The analysis was conducted using multiple linear regression. The results of the partial test (t-test) show thaZt profitability has a significant positive effect on SGR (sig. 0.000), liquidity has a significant negative effect on SGR (sig. 0.001), asset efficiency has a significant positive effect on SGR (sig. 0.003), while leverage does not show a significant effect on SGR (sig. 0.765). Simultaneous testing shows that the regression model is significant in explaining SGR variation (F = 25.802; sig. 0.000). The Adjusted R^2 value of 0.519 indicates that 51.9% of SGR variation can be explained by the variables in the model, while the remaining 48.1% is influenced by factors outside the model. These findings confirm that internal financial performance, particularly profitability, asset efficiency, and liquidity management, plays an important role in determining the sustainable growth capacity of companies in the energy sector.

INTRODUCTION

The energy sector is one of the strategic pillars of the Indonesian economy, contributing significantly to the national Gross Domestic Product (GDP) and state revenue. Based on a report by the Ministry of Energy and Mineral Resources of the Republic of Indonesia, the energy sector plays a dominant role in the export structure and has been a pillar of national economic stability during the post-pandemic recovery period. Globally, the International Energy Agency (2021) reported a rebound in global energy demand in line with the recovery of international economic activity. This condition was reinforced by the surge in energy commodity prices in 2022 due to supply chain disruptions and geopolitical dynamics as reported by the Commodity Markets Outlook (2023) These dynamics directly affected the financial performance of energy sector companies, particularly in terms of profits, cash flow, and funding decisions.

The 2021–2024 period represents a crucial phase for energy companies in Indonesia, marked by economic recovery, commodity price volatility, and increasing pressure on operational efficiency and business sustainability. In this context, the ability of companies to maintain stable growth without increasing their dependence on external funding has become a strategic issue. The concept of Sustainable Growth Rate (SGR) introduced by Higgins (1977) explains the maximum growth rate that a company can achieve without changing its capital structure or issuing new equity. SGR reflects the balance between profitability, dividend policy, leverage, and asset utilization efficiency as the main determinants of a company's internal growth.

Previous studies have shown mixed results regarding the determinants of SGR. Wijaya & Atahau (2021) found that profitability has a positive effect on sustainable growth. Conversely, Huda & Kholilah (2025) showed that in the energy sector, profitability does not always go hand in hand with increased sustainable growth due to high reinvestment requirements. Erawati et al. (2025) revealed that excessively high liquidity can actually suppress SGR because it reflects an accumulation of unproductive current assets. Meanwhile, Isnurhadi et al. (2023) emphasized the importance of liquidity management in maintaining corporate financial stability.

From a capital structure perspective, Vuković et al. (2022) state that excessive leverage can hinder sustainable growth because it increases financial risk. This finding is in line with the trade-off theory argument, which explains the optimal point of debt use in capital structure. Suhardjo et al. (2023) emphasize that disproportionate financing decisions in capital-intensive industries have the potential to disrupt long-term growth stability. In addition, asset efficiency, as measured by total asset turnover, also plays a role in increasing a company's ability to generate sales from its resources (Nugroho, 2020; Vuković et al., 2022). Companies with high asset efficiency tend to have better internal growth capacity.

Although a number of studies have examined the factors that influence SGR, most of them still focus on the manufacturing sector or cross-industry. Research that specifically analyzes the energy sector in Indonesia, taking into account capital-intensive characteristics, commodity price volatility, and long-term investment needs, is still limited. In addition, previous studies have not simultaneously included asset efficiency and firm size in their analysis models, resulting in empirical gaps that need to be further explored.

Based on this background, this study aims to examine the effect of profitability, liquidity, leverage, and asset efficiency on the Sustainable Growth Rate of energy sector companies listed on the Indonesia Stock Exchange for the period 2021–2024, incorporating firm size as a control variable. A quantitative approach was used, utilizing annual financial statement data analyzed using multiple linear regression. This study is expected to contribute empirically to the financial management literature, particularly regarding the determinants of sustainable growth in capital-intensive industries in Indonesia.

LITERATURE REVIEW

Signaling Theory

Signaling Theory, introduced by Spence (1973), posits that information asymmetry requires parties with superior information—namely management—to provide signals to external parties such as investors or creditors to reduce uncertainty. In the corporate finance context, signals take the form of performance information including profitability, liquidity, leverage, asset efficiency, and company growth (Ross, 1977); (Connelly et al., 2011). Financial ratios such as ROA, DER, CR, and TATO become financial signals reflecting a company's capacity to create sustainable growth. High profitability constitutes a strong signal of good growth opportunities and operational efficiency, while excessively high liquidity can become a negative signal indicating idle assets not being utilized productively (Erawati et al., 2025). Firm size also serves as a credibility signal, as large companies are generally considered more stable, transparent, and reputable, thus obtaining greater investor confidence (Khoerunnisa & Muslih, 2024).

Pecking Order Theory

Myers & Majluf (1984) explain that companies have a preference hierarchy in choosing funding sources, prioritizing internal funding such as retained earnings, then debt, and finally new equity issuance to reduce information costs and avoid negative market signals. Companies with high profitability have more retained earnings that can be used to finance growth without increasing leverage Vuković et al. (2022), while companies whose operational growth exceeds internal funding capacity will turn to debt-based funding to maintain growth. Companies with ideal debt-to-equity ratios and retention ratios tend to have more stable sustainable growth in the SGR context (Nugroho, 2020). Large companies generally find it easier to obtain debt due to high creditor confidence levels, strengthening the argument that company size reinforces the relationship between leverage and profitability toward SGR.

Sustainable Growth Rate

Sustainable Growth Rate (SGR), introduced by Higgins (1977), represents the maximum growth rate a company can achieve without seeking new external funding while maintaining existing capital structure, reflecting a company's ability to finance growth through retained earnings. SGR functions as an important tool for management and investors to evaluate the balance between profitability, dividend policy, asset efficiency, and capital structure (Priyanto & Robiyanto, 2020). High SGR indicates sustainable growth capacity with internal funding, serving as a positive signal of fundamental strength and financial stability to investors. Companies with SGR lower than actual growth rate may experience internal capital shortages and need external debt or equity (Isnurhadi et al., 2023). Financial factors such as profitability, liquidity, leverage, asset efficiency, and company size significantly affect SGR levels, with SGR serving not only as a growth measure but also as an indicator of a company's ability to maintain balance between investment, financing, and dividend policy (Huda & Kholilah 2025; Erawati et al., 2025).

Profitability

Profitability represents a company's ability to generate profit from owned assets, reflecting management efficiency in managing resources (Yulia et al., 2025). According to Pecking Order Theory, companies with high profitability prefer using internal funds to finance growth rather than external debt, reducing agency costs and financial risks while supporting sustainable growth (Myers & Majluf, 1984). High profitability increases SGR because net profit from assets can be reinvested to expand production capacity without adding debt, directly strengthening internal capital structure and investor confidence in company financial prospects (Saputri et al., 2024; Aqila & Prasetiono, 2023). Empirical evidence in the Indonesian energy sector also indicates that profitability, particularly Return on Assets (ROA), plays a significant role in

reflecting firm performance and value creation capacity (Sriyanti et al., 2026). From Signaling Theory perspective, profitability functions as a positive signal of financial health and internal growth potential, with companies demonstrating high ROA providing market signals of effective asset management for sustainable profit generation (Huda & Kholilah, 2025).

Liquidity

Liquidity describes a company's ability to meet short-term obligations using current assets such as cash, receivables, and inventory (Erawati et al., 2025). While higher liquidity increases capacity to pay short-term debt without financial difficulties, excessively high liquidity can indicate accumulation of unproductive current assets, reducing investment potential in income-generating assets and becoming a negative signal of inefficient fund utilization for expansion (Ajayi & Lawal, 2021; Spence, 1973). Research shows that while liquidity maintains financial and operational stability, high liquidity levels can decrease SGR because productive assets become suboptimal, particularly in capital-intensive industries like energy (Junaidi et al., 2019; Vuković et al., 2022). Liquidity's effect on SGR is less significant compared to profit margin and asset efficiency, potentially negatively impacting SGR by showing imbalance between financial security and expansion potential (Ferrouhi, 2014).

Leverage

Leverage describes the extent to which companies use external funding in their capital structure to finance operations and investments, with optimal levels reflecting the firm's ability to utilize debt for value creation without imposing excessive financial burden (Madbouly, 2019). A company's debt level affects its capacity to allocate resources efficiently and manage financial risk, which in turn influences sustainable growth policies (Rahman et al., 2026). Leverage may contribute positively to Sustainable Growth Rate (SGR) when debt is directed toward productive and profit-generating assets that enhance operational performance (Pulukadang & Hanggraeni, 2026). According to Pecking Order Theory, firms prioritize internal financing before resorting to external debt, yet leverage remains relevant in supporting growth when maintained within safe and manageable limits (Myers & Majluf, 1984). However, excessive leverage can deteriorate financial stability through increased long-term interest burdens, potentially reducing sustainable growth capacity and increasing bankruptcy risk (Vuković et al., 2022; Harahap et al., 2022).

Asset Efficiency

Asset efficiency describes a company's ability to utilize total owned assets to generate sales or income optimally, commonly measured through Total Asset Turnover (TATO) ratio comparing net sales to average total assets (Vuković et al., 2022; Nugroho, 2020). High asset efficiency shows effective asset conversion into income without holding assets in unproductive forms such as accumulated receivables or excess inventory, with companies demonstrating high efficiency tending to have strong internal funding capacity and reduced dependence on external sources according to Pecking Order Theory (Aqila & Prasetiono, 2023; Myers & Majluf, 1984). Asset efficiency has a close relationship with SGR by describing company ability to maintain stable growth without adding external financing burdens, with research showing that optimal asset management increases sales and profits, strengthening sustainable growth capacity particularly in capital-intensive sectors (Vuković et al., 2022; Saputri et al., 2024; Dandy et al. (2026). Low asset efficiency causes imbalance between sales growth and asset usage, ultimately suppressing SGR levels and making asset efficiency a strategic factor for growth sustainability through direct relation to productivity, profitability, and long-term financial stability (Rosiati et al., 2023).

Firm Size

Firm size represents fundamental characteristics reflecting operational capacity and financial ability of an entity, describing the magnitude of economic resources owned including total assets, income, and capital used for operations (Brigham & Houston, 2019). Large companies generally have wider access to external funding sources, higher operational efficiency, and better ability to manage business risks compared to small companies, functioning as a positive signal to investors regarding stability, reputation, and capacity to survive amid economic uncertainty (Febriani et al., 2022; Spence, 1973). Firm size plays an important role in explaining SGR variation between companies, with large companies tending to have more stable capital structures and greater ability to manage internal and external capital for sustainable growth, while small companies often face capital access limitations suppressing sustainable growth rates (Vuković et al., 2022; Destikasari & Tandika (2022). According to Pecking Order Theory, large companies tend to rely on internal funding first before seeking external sources, making their growth more stable and sustainable, with firm size used as a control variable to control the influence of company scale on relationships between independent variables and SGR (Myers & Majluf, 1984).

The Effect of Profitability on Sustainable Growth Rate

Profitability represents a company's ability to generate profit from owned assets, reflecting management efficiency in managing resources (Yulia et al., 2025). According to Pecking Order Theory, companies with high profitability prefer using internal funds to finance growth rather than external debt, reducing agency costs and financial risks while supporting sustainable growth (Myers & Majluf, 1984). High profitability increases SGR because net profit from assets can be reinvested to expand production capacity without adding debt, directly strengthening internal capital structure and investor confidence in company financial prospects (Saputri, 2024;Aqila & Prasetiono, 2023). From Signaling Theory perspective, profitability functions as a positive signal of financial health and internal growth potential, with companies demonstrating high ROA providing market signals of effective asset management for sustainable profit generation (Huda & Kholilah, 2025). Empirical studies by Huda & Kholilah (2025), Erawati et al. (2025), and Vuković et al. (2022) consistently found positive relationships between profitability and sustainable growth.

- H1: Profitability has a positive significant effect on Sustainable Growth Rate

The Effect of Liquidity on Sustainable Growth Rate

Liquidity describes a company's ability to meet short-term obligations using current assets such as cash, receivables, and inventory (Erawati et al., 2025). While higher liquidity increases capacity to pay short-term debt without financial difficulties, excessively high liquidity can indicate accumulation of unproductive current assets, reducing investment potential in income-generating assets and becoming a negative signal of inefficient fund utilization for expansion (Ajayi & Lawal 2021; Spence 1973). Research shows that while liquidity maintains financial and operational stability, high liquidity levels can decrease SGR because productive assets become suboptimal, particularly in capital-intensive industries like energy (Junaidi et al., 2019;Vuković et al., 2022). From a Signaling Theory perspective, excessive liquidity signals to the market that management is not efficiently utilizing available funds for growth and expansion opportunities.

- H2: Liquidity has a negative significant effect on Sustainable Growth Rate

The Effect of Leverage on Sustainable Growth Rate

Leverage describes the extent to which companies use external funding in their capital structure to finance operations and investments, with optimal levels showing ability to utilize debt for value creation without excessive financial burden (Madbouly, 2019). According to Pecking Order Theory, companies prefer internal funding before turning to debt or new equity, with leverage playing an important role in supporting SGR when used within manageable safe limits (Myers & Majluf, 1984). A company's debt level affects its ability to allocate resources efficiently, face financial risks, and determine sustainable growth policies, with leverage potentially playing a positive role toward SGR if used to increase productive profit-generating assets (Huda & Kholilah, 2025). However, excessive leverage can worsen financial conditions through increasing long-term interest burdens that reduce sustainable growth capacity, necessitating optimal debt ratio maintenance to avoid liquidity pressure and bankruptcy risk (Vuković et al., 2022; Harahap et al. 2022).

- H3: Leverage has a positive significant effect on Sustainable Growth Rate

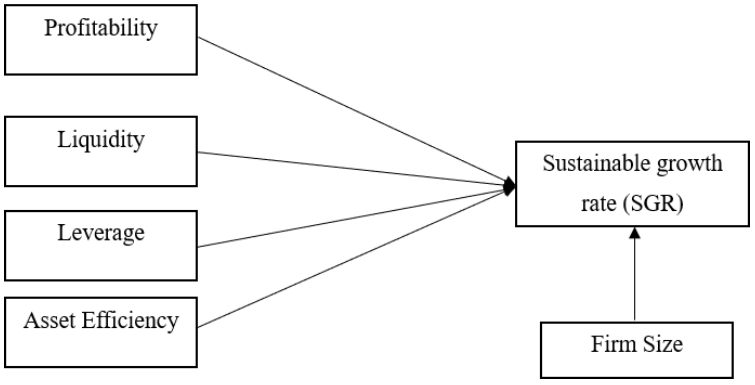
The Effect of Asset Efficiency on Sustainable Growth Rate

Asset efficiency describes a company's ability to utilize total owned assets to generate sales or income optimally, commonly measured through Total Asset Turnover (TATO) ratio comparing net sales to average total assets (Vuković et al., 2022;Nugroho 2020). High asset efficiency shows effective asset conversion into income without holding assets in unproductive forms such as accumulated receivables or excess inventory, with companies demonstrating high efficiency tending to have strong internal funding capacity and reduced dependence on external sources according to Pecking Order Theory (Aqila & Prasetiono, 2023; Myers & Majluf 1984). Asset efficiency has a close relationship with SGR by describing company ability to maintain stable growth without adding external financing burdens, with research showing that optimal asset management increases sales and profits, strengthening sustainable growth capacity particularly in capital-intensive sectors(Vuković et al., 2022;Saputri et al., 2024).

- H4: Asset Efficiency has a positive significant effect on Sustainable Growth Rate

Based on the discussion above with the development of hypotheses, the formulation of the framework of this research is as follows:

Figure 1. Conceptual Framework



Processed Data, 2026

METHODS

This study employs a quantitative research design to examine the effect of profitability, liquidity, leverage, and asset efficiency on sustainable growth rate (SGR) among energy sector companies listed on the Indonesia Stock Exchange during the 2021-2024 period. To ensure clarity and consistency in variable measurement, each research variable is operationally defined based on its conceptual meaning and measurement indicators. Sustainable growth rate is measured using the formula SGR = (ROE × b) / (1 - ROE × b), while profitability, liquidity, leverage, and asset efficiency are measured using financial ratios derived from firms' annual reports. The detailed operational definitions and measurement methods of all variables used in this study are presented in Table 1.

Table 1. Operational Definition and Measurement of Research Variables

Variabel	Definition	Formula	Reference
Sustainable Growth Rate (SGR) (Y)	Sustainable Growth Rate is the maximum growth rate a company can achieve using internal funding sources without increasing external funding and while maintaining the company's capital structure and dividend policies. SGR reflects a company's ability to maintain long-term growth through retained earnings.	**SGR = (ROE × b) / 1 – (ROE × b)**	Higgins (1977);Brigham & Houston (2019); Huda & Kholilah (2025); Erawati et al. (2025); Priyanto & Robiyanto (2020); Parapat et al. (2024)
Profitability (ROA) (X1)	Profitability is a company's ability to generate profits through the utilization of all its assets. A high level of profitability indicates the company's efficiency in managing its assets, thereby supporting sustainable growth.	**ROA = Net Income / Total Assets**	Brigham & Houston (2019); Huda & Kholilah (2025); Nugroho (2023)
Liquidity (CR) (X2)	Liquidity indicates a company's ability to meet its short-term obligations using its current assets. A good liquidity ratio indicates that the company is in a healthy financial condition and is able to maintain its operations.	**CR = Current Assets / Current Liabilities**	Van Horne & Wachowicz (2009); Brigham & Houston (2019); Erawati (2025)
Leverage (DER) (X3)	Leverage is the level of debt usage in a company's capital structure, which shows the extent to which the company uses external funds to finance its assets. A high level of leverage can increase a company's growth potential but also increases financial risk.	**DER = Total Debt / Total Equity**	Myers (1984); Brigham & Houston (2019); Huda & Kholilah (2025); Parapat et al. (2024)
Asset Efficiency (TATO) (X4)	Asset efficiency indicates a company's ability to utilize all of its assets to generate sales. A higher asset turnover indicates more effective use of assets in supporting the company's operational activities.	**TATO = Sales / Total Assets**	Higgins (2012); Suhardjo et al. (2024); Parapat et al. (2024)

Firm Size (SIZE) (X5)	Firm size indicates the scale of a company based on its total assets. Large companies generally have broader access to funding and greater financial stability than small companies.	**SIZE = Ln (Total Assets)**	Brigham & Houston (2019); Huda & Kholilah (2025); Nugroho (2023)

The sampling technique used in this study is purposive sampling, with several criteria applied to obtain firms that meet the research objectives. The population consists of 90 energy sector companies consistently listed on the Indonesia Stock Exchange (IDX) during the 2021-2024 period. From this population, 24 companies were excluded due to inconsistency in listing status during the observation period, and 25 companies were excluded due to delisting or suspension. All remaining companies disclosed complete data for the research variables, namely profitability, liquidity, leverage, asset efficiency, and firm size. Therefore, the final sample consisted of 41 companies. With a four-year observation period, this study obtained 164 firm-year observations. After removing 48 outlier observations to improve data normality and model reliability, the final number of observations used in the analysis was 116.

Data analysis was conducted using descriptive statistics, classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation), and multiple linear regression analysis with SPSS version 26. The regression model employed in this study is:

$$SGR_i = \beta_0 + \beta_1 \text{ROA}_i + \beta_2 \text{CR}_i + \beta_3 \text{DER}_i + \beta_4 \text{TATO}_i + \beta_5 \text{SIZE}_i + \epsilon_i$$

Description:

SGR_i : Sustainable growth rate
ROA_i : Profitability
CR_i : Liquidity
DER_i : Leverage
TATO_i : Asset Efficiency
SIZE_i : Firm size
β_0 : Constant
$\beta_0 \dots \beta_5$: Regression coefficients
ϵ_i : Error coefficient

RESULTS

Descriptive Statistical Analysis

Table 2. Descriptive Statistics Test Results

Descriptive Statistics					
	N	Min	Max	Mean	Std. Dev
Sustainable growth rate	116	-,0163	,3375	,0894	,0716
Profitability	116	,0007	,4768	,0859	,0921
Liquidity	116	,0000	9,5762	2,0130	1,6063
Leverage	116	,0170	10,7907	,9733	1,3761
Asset Efficiency	116	,0009	3,1828	0,6805	,4907
Firm Size	116	26,236	42,9809	30,3815	3,0118
Valid N (listwise)	116				

Processed data using SPSS version 26 (2026)

Table 2 shows that SGR has an average of 0.0894 (SD = 0.0716), indicating that energy sector companies can grow by around 8.94% per year using internal funds without increasing debt or issuing new shares. Profitability (ROA) has an average of 0.0859 (SD = 0.0921), reflecting variations in the ability of energy sector companies to generate net income from total assets. Liquidity (CR) has an average of 2.0130 (SD = 1.6063), indicating that current assets are 2.01 times greater than current liabilities, reflecting fairly healthy liquidity conditions. Leverage (DER) has an average of 0.9733 (SD = 1.3761), indicating a relatively balanced capital structure between debt and equity. Asset efficiency (TATO) has an average of 0.6805 (SD = 0.4907), reflecting the capital-intensive nature of the energy sector. The average firm size (SIZE) is 30.3815 (SD = 3.012), representing total assets of around IDR 14.73 trillion ($e^{39.38}$).

Classical Assumption Test

Classical Assumption tests covering normality, multicollinearity, heteroscedasticity, and autocorrelation are carried out prior to regression estimation to verify model reliability.

Table 3. Classical Assumption Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		116
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	,048583
Most Extreme Differences	Absolute	,052
	Positive	,041
	Negative	-,052
Test Statistic		.052
Asymp. Sig. (2-tailed)[c]		.200[c.d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Processed data using SPSS version 26 (2026)

The Kolmogorov-Smirnov test results show a significance value greater than 0.05, indicating that the residuals are normally distributed. Thus, the research data meets the assumption of normality.

Table 4. Multicollinearity Test Results

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF
1	(Constant)	-,070	,049			
	Profitabilitas	,485	,056	,624	,808	1,237
	Likuiditas	-,011	,003	-,243	,873	1,146
	Leverage	-,001	,004	,023	,727	1,376
	Efisiensi Aset	,033	,011	,226	,778	1,285
	Ukuran Perusahaan	-,004	,002	,163	,953	1,049
a. Dependent Variable: Sustainable growth Rate						

Processed data using SPSS version 26 (2026)

The tolerance values of all variables are above 0.10 and the VIF values are below 10. This indicates that there is no multicollinearity between the independent variables in the regression model.

Table 5. Heteroscedasticity Test Results

Coefficients[a]						
Model				Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,010	,029		-,355	,723
	Profitabilitas	,034	,033	,106	1,035	,303
	Likuiditas	-,001	,002	-,081	-,814	,418
	Leverage	,000	,002	-,007	-,066	,948
	Efisiensi Aset	,006	,006	,105	,997	,321
	Ukuran Perusahaan	,001	,001	,151	1,595	,114
a. Dependent Variable: ABS_RES						

Processed data using SPSS version 26 (2026)

The test results show that all variables have significance values above 0.05. Thus, the regression model does not experience heteroscedasticity and the residual variance is constant.

Table 6. Autocorrelation Test Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,735[a]	,540	,519	,049675	1,911
a. Predictors: (Constant), Ukuran Perusahaan, Leverage, Profitabilitas, Likuiditas, Efisiensi Aset					
b. Dependent Variable: Sustainable growth Rate					

Processed data using SPSS version 26 (2026)

Table 5 shows the Durbin-Watson value of 1.911 is within the acceptable range (dU < dW < 4-dU; 1.8872 < 1.911 < 2.1128), confirming that the model does not exhibit autocorrelation and is appropriate for regression analysis.

Table 7. Multiple Linear Regression Test Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	-,070	,049		-1,415	,160
	Profitabilitas	,485	,056	,624	8,675	,000
	Likuiditas	-,011	,003	-,243	-3,509	,001
	Leverage	-,001	,004	-,023	-,299	,765
	Efisiensi Aset	,033	,011	,226	3,078	,003
	Ukuran Perusahaan	,004	,002	,163	2,465	,015
a. Dependent Variable: Sustainable growth Rate						

Processed data using SPSS version 26 (2026)

The results were then entered into a multiple linear regression equation to obtain the following equation:

$$SGR = -0{,}070 + 0{,}485\ ROA - 0{,}011\ CR - 0{,}001\ DER + 0{,}033\ TATO + 0{,}004\ SIZE + \varepsilon$$

The constant value of -0.070 indicates that when all independent variables are zero, SGR equals -0.070 or -7.0%. The t-test results show that profitability, liquidity, asset efficiency, and firm size significantly affect SGR with significance values below 0.05. Profitability has a coefficient of 0.485, liquidity has a coefficient of -0.011, asset efficiency has a coefficient of 0.033, and firm size has a coefficient of 0.004. Conversely, leverage does not show significant effect with a significance value of 0.765 (> 0.05).

Hypothesis Testing

Table 8. Simultaneous Test Results (F Test)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	,318	5	,064	25,802	.000[b]
	Residual	,271	110	,002		
	Total	,590	115			
a. Dependent Variable: Sustainable growth Rate						
b. Predictors: (Constant), Ukuran Perusahaan, Leverage, Profitabilitas, Likuiditas, Efisiensi Aset						

Processed data using SPSS version 26 (2026)

The significance value of the F test is 0.000 (< 0.05), indicating that all independent variables simultaneously have a significant effect on the Sustainable Growth Rate.

Table 9. Results of the Coefficient of Determination Test (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,735[a]	,540	,519	,0496746
a. Predictors: (Constant), Ukuran Perusahaan, Leverage, Profitabilitas, Likuiditas, Efisiensi Aset				

Processed data using SPSS version 26 (2026)

The Adjusted R^2 value of 0.519 indicates that 51.9% of the variation in Sustainable Growth Rate can be explained by the independent variables in the model, while the rest is influenced by other factors outside the study.

Table 10. Partial Test (t-test)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	-,070	,049		-1,415	,160
	Profitabilitas	,485	,056	,624	8,675	,000
	Likuiditas	-,011	,003	-,243	-3,509	,001
	Leverage	-,001	,004	-,023	-,299	,765
	Efisiensi Aset	,033	,011	,226	3,078	,003
	Ukuran Perusahaan	,004	,002	,163	2,465	,015
a. Dependent Variable: Sustainable growth Rate						

Processed data using SPSS version 26 (2026)

The t-test results shows that profitability (ROA) has a positive and significant effect on SGR with a coefficient of 0.485 and significance of 0.000 (< 0.05), thus H_1 is accepted. Liquidity (CR) has a negative and significant effect on SGR with a coefficient of -0.011 and significance of 0.001 (< 0.05), thus H_2 is accepted. Leverage (DER) does not have a significant effect on SGR with

a coefficient of -0.001 and significance of 0.765 (> 0.05), thus H_3 is rejected. Asset Efficiency (TATO) has a positive and significant effect on SGR with a coefficient of 0.033 and significance of 0.003 (< 0.05), thus H_4 is accepted. Firm Size (SIZE) as control variable has a positive and significant effect on SGR with a coefficient of 0.004 and significance of 0.015 (< 0.05).

DISCUSSION

The Effect of Profitability on Sustainable Growth Rate

The research findings indicate that profitability has a positive and significant effect on sustainable growth rate (sig. 0.000 < 0.05), confirming H_1. This result aligns with Pecking Order Theory (Myers & Majluf, 1984), which suggests that companies with high profitability possess greater retained earnings that can be utilized to finance growth without increasing leverage or issuing new equity. In the context of Indonesia's energy sector during 2021-2024, characterized by high capital requirements for exploration and energy transition, profitability becomes a crucial factor. Companies with high ROA demonstrate superior flexibility in funding investments without being burdened by debt costs. These findings are consistent with empirical studies by Wijaya & Atahau (2021), Erawati et al. (2025), and Vuković et al. (2022), all of which found a positive relationship between profitability and sustainable growth.

The Effect of Liquidity on Sustainable Growth Rate

The results demonstrate that liquidity has a negative and significant effect on sustainable growth rate (sig. 0.001 < 0.05), supporting the H_2. Companies with excessively high cash holdings experience lower growth rates because funds that could be allocated to productive investments remain idle in cash or uncollected receivables. In the capital-intensive energy sector, idle cash represents a waste of opportunity. These funds would be better allocated to exploration, infrastructure, or revenue-generating technology rather than accumulated as high liquidity. This finding is supported by Erawati et al. (2025) and Vuković et al. (2022), who also found that excessive liquidity actually hinders sustainable growth. From a Signaling Theory perspective (Spence, 1973), excessively high liquidity can become a negative signal indicating inefficient fund utilization by management for expansion and growth support.

The Effect of Leverage on Sustainable Growth Rate

Leverage does not show a significant effect on sustainable growth rate (sig. 0.765 > 0.05), leading to the rejection of the H_3. Although the coefficient is negative, its influence is very small and statistically insignificant. Adding or reducing debt does not significantly impact the sustainable growth of energy companies during the research period. The high volatility of energy commodity prices causes companies to be more cautious in increasing debt. With an average DER of companies in the sample already relatively balanced (0.97), there is limited room for aggressive leverage expansion. Companies focus more on internal fund efficiency rather than debt-based expansion amid energy transition conditions and economic uncertainty. This finding differs from initial theoretical expectations based on Pecking Order Theory but aligns with Vuković et al. (2022), who found that excessive leverage can hinder sustainable growth.

The Effect of Asset Efficiency on Sustainable Growth Rate

The research findings indicate that asset efficiency has a positive and significant effect on sustainable growth rate (sig. 0.003 < 0.05), confirming the H_4. This result demonstrates that companies able to optimize asset usage to generate sales have greater capacity for sustainable growth. In the capital-intensive energy sector, asset efficiency becomes an important factor because companies must maximize returns from large infrastructure investments such as exploration facilities, production equipment, and distribution networks. According to Pecking Order Theory (Myers & Majluf, 1984), companies with high asset efficiency tend to have stronger internal funding capacity, thereby reducing dependence on external sources. These findings are

consistent with empirical studies by Vuković et al. (2022), Saputri et al. (2024), and Parapat et al. (2024), which found that asset efficiency positively affects sustainable growth. Although the energy sector has a relatively low average TATO (0.68) due to its capital-intensive nature, companies able to increase their asset efficiency demonstrate better ability to convert assets into revenue, thereby strengthening their sustainable growth capacity.

CONCLUSION

This study aims to analyze the effect of profitability, liquidity, leverage, and asset efficiency on the Sustainable Growth Rate (SGR) of energy sector companies listed on the Indonesian Stock Exchange (IDX) for the period 2021–2024, with firm size as a control variable. The results show that profitability has a positive and significant effect on SGR (β = 0.485; sig. = 0.000), meaning that the higher a company's ability to generate profits from its assets, the greater its internal funding capacity to support sustainable growth. Conversely, liquidity has a negative and significant effect on SGR (β = −0.011; sig. = 0.001), indicating that excess current assets actually reduce growth potential because funds are not used productively.

Meanwhile, asset efficiency also has a positive and significant effect on SGR (β = 0.033; sig. = 0.003), demonstrating that companies able to optimize asset usage to generate sales have greater capacity for sustainable growth without relying on external financing. Leverage, however, does not have a significant effect on SGR (sig. = 0.765), showing that in the capital-intensive energy sector during 2021–2024, the sustainability of growth is more determined by the ability to generate profits and the efficiency of asset utilization than by debt structure. As a control variable, firm size shows a positive and significant effect on SGR (β = 0.004; sig. = 0.015), confirming that larger companies tend to have higher sustainable growth rates due to broader access to funding and more stable capital structures. Simultaneously, all independent variables and the control variable have a significant effect on SGR (F = 25.802; sig. = 0.000), with the model explaining 51.9% of SGR variation (Adjusted R^2 = 0.519).

LIMITATION

This study has several limitations. First, the research objects only cover companies in the energy sector, so the results cannot be generalized to other sectors with different operational characteristics. Second, the relatively short observation period (2021–2024) coincides with commodity price volatility and the dynamics of energy transition, which may affect companies' financial performance patterns. Third, the research model only uses financial ratio variables, so it does not include non-financial factors such as ESG performance, corporate governance quality, managerial policies, and macroeconomic conditions. Fourth, the removal of 48 outlier observations (approximately 29% of initial data) may reduce the representativeness of findings for companies with extreme financial conditions. Therefore, further research is recommended to expand the sector coverage, extend the observation period to 7–10 years, incorporate non-financial and governance variables, and apply alternative methods such as panel data regression or structural equation modeling to produce more comprehensive and robust results.

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