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THE IMPACT OF GREEN ACCOUNTING, CAPITAL STRUCTURE, LIQUIDITY, GOOD CORPORATE GOVERNANCE AND GDP ON PROFITABILITY IN ENERGY SECTOR COMPANIES IN 2012-2022

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Abstract. *This research intends to explore the influence of green accounting, capital structure, liquidity, corporate governance, and GDP on the profitability of energy firms. The research methodology utilized for this examination consists of panel data regression analysis, utilizing a sample of 27 energy companies listed on the IDX over an 11-year period. The outcomes of this study indicate that green accounting (PROPER) and capital structure (DAR) negatively impact profitability, whereas institutional ownership, and GDP demonstrate a noteworthy influence on energy companies profitability. Furthermore, liquidity (CR) and the presence of board of directors and independent commissioners does not affect profitability. These results underscore the significance of a holistic approach in balancing environmental sustainability and financial performance. These conclusions can be utilized as a foundation for developing strategies that enhance the financial performance and sustainability of energy sector companies.*

Keywords: *Green accounting, capital structure, liquidity, good corporate governance, gross domestic product, energy, Indonesia*.

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Introduction

Indonesia possesses a multitude of abundant natural resources within its boundaries, offering a significant opportunity for economic growth and prosperity. It is imperative that these natural riches are harnessed and managed effectively to ensure the well-being and advancement of the Indonesian populace. Consequently, in the realm of managing natural resources, the primary emphasis ought to be on approaches that prioritize the protection and preservation of these resources, ensuring their enduring viability and sustainability (Mandagie et al., 2024). The energy sector, serving as a pivotal cornerstone of a nation's economy, holds immense importance as a catalyst for national advancement (Rheynaldi et al., 2023). Nonetheless, it's crucial to acknowledge that the energy industry plays a substantial role in the global output of greenhouse gas emissions.

Data collected by the International Energy Agency (IEA) reveals that greenhouse gas emissions originating from the energy sector have increased by over three times in the past two decades, rising from 10 Gigatons of CO2 in 1999 to 33 Gigatons of CO2 in 2019. Approximately 36% of the total global greenhouse gas emissions are attributed to the energy sector. Indonesia exhibits a notable reliance, approximately 90%, on fossil fuels, prompting efforts towards decarbonization. As of 2022, the energy and transportation sector accounted for 50.6% of the overall emissions, with a projected rise to 59% by 2030 (LCDI, 2020). The government of Indonesia has made a pledge to decrease carbon emissions through the expansion of new renewable energy sources (EBT) to diminish the reliance on fossil fuels. By the year 2024, the government aims to reach a target of 19.5% EBT in the main energy combination, with a particular emphasis on fostering renewable electricity production and the utilization of biofuels.

The ability of an organization to manage and regulate its resources, referred to as financial performance, is a crucial factor in evaluating the success of a business entity (Endri et al., 2021). The assessment of a company's success often revolves around the importance of profitability. Profitability not only serves as a crucial indicator of a company's performance but also signifies a higher return for its investors (Hossain, 2021). This particular indicator is impacted by a variety of internal and external factors, and therefore plays a crucial role in determining the success of a business (Joaqui-Barandica & Manotas-Duque, 2023). Through the inclusion of environmental considerations in financial decision-making processes, companies can improve their environmental performance while ensuring financial sustainability (Lindawati et al., 2022).

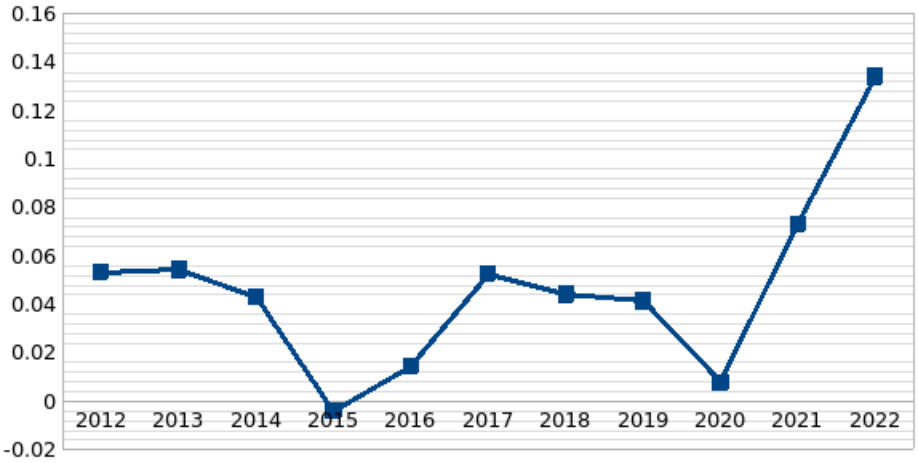

Figure 1. Graph of ROA Energy Sector 2012-2022

The decline in ROA was due to an increase in world oil prices due to geopolitical conflicts in the Middle East and increased energy demand from developing countries. It was also caused by the fall in world oil prices due to over supply and the global economic slowdown (OPEC, 2015). ROA increased in 2021 and continued to increase in 2022 to 13.42% as the economy recovered. The three largest coal producers - China, India and Indonesia - all produce record amounts in 2022 (IEA, 2023).

The Indonesian government has pledged its dedication to the realization of the SDG (Sustainable Development Goals) framework initiated by the United Nations and embraced by all participating nations. The SDG constitutes a set of 17 goals and 169 targets that world leaders have collectively committed to accomplishing over a period of 15 years, spanning from 2015 to 2030 (Bangsa, 2021).

Energy companies require a significant amount of capital investment in order to transition to renewable energy sources and diminish greenhouse gas emissions. This investment encompasses the enhancement of electricity infrastructure, which necessitates a considerable financial commitment. Hence, the financial structures within this industry may encompass a combination of debt and equity, along with contributions from governmental bodies and other entities. This scenario was evident in the case of PLN (Indonesian State Electricity Company), where by the

conclusion of 2019, the company had accumulated debts totalling 500 trillion Rupiah. This predicament arose due to PLN's lack of internal resources to undertake the 35,000 MW project, leading the company to opt for bank loans amounting to Rp 100 trillion annually (Meilanova, 2020).

Liquidity refers to a company's ability to satisfy its immediate financial responsibilities. The level of liquidity directly influences a company's profitability (Hossain, 2021). Energy firms with strong liquidity are better positioned to address domestic energy demand affected by Domestic Market Obligation (DMO) policies (IESR, 2023). During the COVID-19 pandemic, PLN encountered significant liquidity challenges due to a reduction in electricity consumption, leading to difficulties in settling foreign exchange debts while awaiting state reimbursement. PLN witnessed a notable decline in sales, coupled with a depreciation of the rupiah against the US dollar. Consequently, even a minor fluctuation in the exchange rate by Rp 1,000 could result in a substantial burden of Rp 9 trillion for PLN (Umah, 2020).

Due to the heightened emphasis on environmental consciousness and the adoption of sustainable practices, there has been a noticeable increase in scrutiny and attention towards the impact of corporate governance on a company's ecological performance and overall sustainability initiatives (Mandagie et al., 2024). The operational outcomes of companies in the energy sector are often impacted by a range of broader economic factors, which can significantly influence their financial performance. For example, fluctuations in oil and gas prices have the potential to create a ripple effect on electricity costs, thereby potentially affecting the profit margins of traditional energy companies (Uribe et al., 2022). The intricate interplay between corporate governance, economic factors, and environmental concerns underscores the complex dynamics at play within the energy industry and the importance of adopting sustainable strategies to ensure long-term success.

Literature Review

1. Legitimacy Theory

Legitimacy theory posits that organizations are under an obligation to take proactive measures to ensure that every operational endeavour they engage in adheres to the societal norms and regulations in place within the community (Yusnita, 2021). This theory advocates for the integration of green accounting practices by firms as a strategy to demonstrate their commitment to environmental stewardship (Aryani et al., 2023). As a result of the pressures emanating from the discourse on legitimacy, businesses have increasingly prioritized environmental concerns. It is imperative for companies to not only exhibit social responsibility but also demonstrate a commitment towards the ecosystem within which they function. Consequently, this dual focus enables firms to safeguard the environment for forthcoming generations while concurrently enhancing their financial performance over an extended period (Chairia et al., 2022; Novitasari & Bernawati, 2020)

2. Agency Theory

Agency theory recognizes the presence of possible conflicts of interest that may arise between shareholders and managers within a company (Boshnak, 2024). Taking into account that individuals affiliated with an organisation have various interests, agency theory clarifies their potential behavioural tendencies (Hidayah, 2023). In order to mitigate these conflicts, it is essential to implement measures of Good Corporate Governance (GCG) (Saftiana et al., 2017). Good Corporate Governance plays a crucial role in addressing agency issues by not only minimizing potential conflicts of interest but also by enhancing transparency, accountability, and the efficiency of decision-making processes within the organization (Sianturi et al., 2020). The implementation of GCG practices is crucial for fostering a harmonious relationship between stakeholders and ensuring the long-term sustainability and success of the company. By promoting ethical behaviour, fairness, and responsibility, GCG contributes to building trust and confidence among shareholders, managers, and other stakeholders. Overall, the adoption of GCG principles is fundamental for promoting a culture of integrity, trust, and responsible leadership within organizations, ultimately leading to improved performance and sustainable growth.

3. Stakeholder Theory

Stakeholder Theory highlights the significance of acknowledging the concerns and interests of all stakeholders involved, such as customers, employees, and the community, when making decisions within the corporate setting (Yusnita, 2021). It is imperative for the company to actively engage in efforts aimed at fostering positive and mutually beneficial relationships with these stakeholders, ensuring that their various needs and preferences are not only recognized but also effectively addressed and fulfilled. In doing so, the organization can enhance its overall sustainability and reputation, ultimately contributing to long-term success and competitiveness in the market (Boshnak, 2024).

4. Green Accounting, Capital Structure, Liquidity, Institutional Ownership, Board of Directors, Independent Commissioner, Gross Domestic Product on Profitability

The adoption of Green Accounting offers the promise of supporting businesses in reducing operating costs through enhanced energy efficiency and waste management, ultimately leading to higher profitability (Nurrasyidin et al., 2024). Maintaining an optimal capital structure is equally crucial in order to lower capital costs and enhance earnings (Sastra, 2019). Efficient cash management, as indicated by good liquidity, can enable firms to meet short-term obligations and prevent incurring additional expenses (Nurhayati et al., 2023). Institutional ownership is often associated with enhanced oversight and management, which can result in improved operational efficiency, thereby promoting sound corporate governance practices (Din et al., 2022). The crucial roles played by the Board of Directors and Independent Commissioners in corporate governance involve ensuring that decisions made are fair and advantageous to all stakeholders.

H1. Green Accounting, Capital Structure, Liquidity, Institutional Ownership, Board of Directors, Independent Commissioner and GDP simultaneously affect Profitability.

5. Green Accounting on Profitability

The adoption of green accounting practices by organizations requires strategic actions aimed at effectively supervising and protecting natural resources and ecosystems to enhance their ecological footprint and overall environmental sustainability (Lindawati et al., 2022). In the present research, the evaluation of green accounting was estimated through the utilization of the PROPER index, which stands for Program for Assessment of Company Performance Rating in Environmental Management. This index was specifically designed by the Ministry of Environment of the Republic of Indonesia for such purposes. According to Regulation Number 5 of 2011 issued by the Minister of State for the Environment, the criteria for PROPER assessment are categorized into five distinct colors, which are gold, green, blue, red, and black, outlining a comprehensive framework for evaluating environmental performance in companies within the region.

The participation of a company in the PROPER initiative demonstrates its commitment to environmental protection and serves as an indicator of its environmental effectiveness (Nurrasyidin et al., 2024). Moreover, the revelation of environmental expenses signifies the company's recognition of the significance of its societal surroundings, alongside its objective of attaining business profits (Dutta et al., 2020). The research conducted by (Aryani et al., 2023) indicated that green accounting has implications for the company's profitability. Conversely, in a separate study conducted by (Dita & Ervina, 2021), it was indicated that green accounting does not have any effect on the company's profitability.

H2. Green Accounting partially affect Profitability.

6. Capital Structure on Profitability

The capital structure of a company involves an analysis of the various funding sources utilized in its operations, such as short-term debt, long-term debt, and equity (Luckieta et al., 2021). This research focuses on the impact of capital structure, specifically through the debt-to-asset ratio (DAR), on the company's profitability. Effective management of the capital structure can lead to the establishment of robust and steady financial positions for the organization (Boshnak, 2024). A study by (Anggraeni & Nasution, 2022) reveals that DAR has a detrimental effect on profitability.

Conversely, findings from a different study by (Maulita & Tania, 2018) suggest that DAR does not influence profitability.

H3. Capital Structure partially affect Profitability.

7. Liquidity on Profitability

Liquidity pertains to the rate at which an organization's assets can be transformed into cash to satisfy its financial commitments (Mandagie et al., 2024). Within this investigation, liquidity is assessed through the utilization of the current ratio (CR), which gauges the company's capacity to settle its short-term debts with its present assets. A heightened current ratio suggests that the company possesses greater liquidity (Chandra et al., 2019). Research conducted by (Sastra, 2019) suggests that liquidity has a substantial impact on profitability, in contrast to the findings of a study conducted by (Hossain, 2021) asserting that liquidity does not influence ROA.

H4. Liquidity partially affect Profitability.

8. Institutional Ownership on Profitability

Institutional ownership refers to the ownership of company shares by various institutions such as insurance companies, banks, investment firms, and other similar entities (Sianturi et al., 2020). Institutional investors possess a higher level of expertise in identifying discrepancies within a company, thus reducing the likelihood of being misled by management (Saftiana et al., 2017). A study conducted by (Din et al., 2022) also highlighted a positive correlation between institutional ownership and profitability. However, the findings of this research are in contrast to a study carried out by (Sianturi et al., 2020) which suggests that institutional ownership does not impact a company's profitability.

H5. Institutional Ownership partially affect Profitability.

9. Board of Directors on Profitability

The board of directors is responsible for overseeing the management team in the interests of shareholders and ensuring the allocation of essential resources (Vincent et al., 2023). According to a study by (Ni'mah & Syaiful, 2021), the board of directors does not impact profitability. Nevertheless, this finding contradicts the research by (Pratama et al., 2022), which suggests that the board of directors does influence the company's profitability level.

H6. Board of directors partially affect Profitability.

10. Independent Commissioners on Profitability

Independent commissioners play a crucial role in mitigating the risks associated with management decisions (Hapsari et al., 2019). (Ni'mah & Syaiful, 2021) found in their study that independent commissioners have a beneficial and notable impact on the profitability of an organization. Conversely, according to the research by (Sianturi et al., 2020), the presence of independent commissioners does not affect profitability.

H7. Independent Commissioners partially affect Profitability.

11. GDP on Profitability

Macroeconomic factors, like Gross Domestic Product (GDP), play a significant role in influencing the overall economy. A reduction in GDP serves as an indicator of a recession, which could potentially lower energy consumption and have an impact on the profitability of businesses in the energy sector. Research conducted by (Rezina et al., 2020) suggests a positive correlation between GDP and profitability. This finding contrasts with the study conducted by (Saputro, 2019), which argues that GDP does not have a direct impact on companies' profitability levels.

H8. GDP partially affect Profitability.

Methods

This research employs quantitative methodologies to assess the potential impact of green accounting, capital structure, liquidity, effective corporate governance, and GDP on profitability. Quantitative techniques utilize numerical data to examine the associations between various variables (Silaen, 2018). The study adopts a causal descriptive research approach, utilizing panel data. Panel data comprises observations of multiple units over various time points, where each unit

has a distinct identity (Wooldridge, 2018). The utilization of panel data in this investigation is a time-consuming process, spanning several years, to observe continuous changes over the specified duration.

Table 1. Sampling Characteristic

No.	Criteria	Total Company
1	Firms that have maintained a continuous presence on the IDX Energy Sector between the years 2012 and 2022.	44
2	Firms that have a consistent listing on the IDX Energy Sector but have not maintained a regular publication of annual reports from 2012 to 2022.	-17
3	Firms that are consistently included in the IDX within the Energy Sector, yet lack comprehensive data pertaining to the variables under investigation in this research.	0
The total number of samples that fulfil the specified criteria		27
The quantity of data that was analysed (27 x 11 years)		**297**

This study included all companies operating in the energy sector and listed on the Indonesia Stock Exchange as the entire population. The research employed a non-probability sampling technique, specifically purposive sampling. Purposive sampling is a deliberate method of sampling employed by researchers based on predetermined criteria (Creswell & Creswell, 2018). A total of 27 companies were selected as the sample for this study using the criteria outlined in Table 1. The following is a compilation of those selected companies.

Table 2. Research Sample List

No.	Code	Company Name
1	ABMM	ABM Investama Tbk.
2	ADRO	Adaro Energy Tbk.
3	AKRA	AKR Corporindo Tbk
4	ARII	Atlas Resources Tbk
5	BSSR	Baramulti Suksessarana Tbk
6	BULL	Buana Lintas Lautan Tbk
7	BUMI	Bumi Resources Tbk
8	CNKO	Exploitasi Energi Indonesia Tbk
9	DEWA	Darma Henwa Tbk
10	DOID	Delta Dunia Makmur Tbk
11	DSSA	Dian Swastatika Sentosa Tbk
12	ELSA	Elnusa Tbk
13	ENRG	Energi Mega Persada Tbk
14	HRUM	Harum Energy Tbk
15	INDY	Indika Energy Tbk
16	ITMA	Sumber Energi Andalan Tbk
17	ITMG	Indo Tambangraya Megah Tbk
18	MBSS	Mitrabahtera Segara Sejati Tbk
19	MEDC	Medco Energi Internasional Tbk
20	MYOH	Samindo Resources Tbk
21	PGAS	Perusahaan Gas Negara Tbk
22	PTBA	Bukit Asam Tbk
23	PTRO	Petrosea Tbk
24	RAJA	Rukun Raharja Tbk
25	SMMT	Golden Eagle Energy Tbk
26	TOBA	TBS Energi Bersama Tbk
27	WINS	Wintermar Offshore Marine Tbk

In this research, the independent variables encompass green accounting, which will be represented by **PROPER**, capital structure, which will be approximated by **DAR**, liquidity by **CR**, and corporate governance, which will be approximated by **institutional ownership, board of directors, independent commissioners**, and **GDP**. The dependent variable, profitability, will be measured using **ROA**.

Table 3. Research Variable

Variable	Proxies	Indicator
Green Accounting	PROPER	Ratings: • Gold – Excellent – 5 • Green – Good – 4 • Blue – Fair – 3 • Red – Poor – 2 • Black – Very poor -1
Capital Structure	Debt to Asset Ratio (DAR)	$\frac{Total\ \ Debt}{Total\ \ Assets}$
Liquidity	Current Ratio (CR)	$\frac{Current\ \ Assets}{Current\ \ Liabilities}$
Good Corporate Governance	Institutional Ownership	$\frac{Number\ \ of\ \ Shares\ \ Institutional\ \ Ownership}{Total\ \ Outstanding\ \ Shares}$
	Board of Directors	$\Sigma Total\ \ of\ \ Board\ \ Directors$
	Independent Commissioner	$\frac{\Sigma Independent\ \ Commissioners}{\Sigma Total\ \ of\ \ Board\ \ Commissioners}$
GDP	GDP	$C+I+G+(X-M)$
Profitability	ROA	$\frac{Net\ \ Income}{Total\ \ Assets}$

Results

In the context of estimating models using panel data, there exist three distinct approaches that can be employed, specifically the common effect model (CEM), fixed effect model (FEM), and random effect model (REM) (Basuki, 2021). To ascertain the suitable regression model to utilize, three crucial testing procedures need to be undertaken. These testing phases comprise the Chow test, the Hausman test, and the Lagrange Multiplier test, all of which aid in determining the most appropriate choice between FEM, REM, or CEM (Rifkhan, 2022).

3.1 Chow Test

The chow test serves as a valuable tool in assessing the superiority of the FEM method over the CEM method.

Table 4. Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.01	-26263	0
Cross-section Chi-square	99.09	26	0

Source: Output EViews 12

According to the findings of the test, the optimal choice of model for this research is **FEM**. The subsequent procedure following the Chow test involves conducting the Hausman test.

3.2 Hausman Test

The Hausman test is a statistical method utilized to determine whether FEM or REM is the optimal choice for conducting panel data analysis.

Table 5. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq Statistic	Chi-Sq d.f.	Prob.
Cross-section random	23.62	7	0

Source: Output EViews 12

According to the findings of the Hausman test, the most appropriate model for this research study is FEM.

Based on the outcomes of the Chow test and the Hausman test, the most suitable model for this study is determined to be **FEM**. Consequently, the Lagrange Multiplier (LM) test is deemed unnecessary for this analysis (Basuki, 2021).

3.3 Panel Data Regression

According to the outcomes of the panel data regression analyses conducted, which encompassed the Chow test and the Hausman test, the fixed effect model emerges as the most suitable panel data regression model for this study. Subsequently, the findings obtained through the utilization of the fixed effect model are presented below.

Table 6. Panel Data Regression

Variable	Coefficient	Std. Error	t-Stat	Prob
C	-0.02	0.03	-0.68	0.5
PROPER	-0.01	0	-4.34	0
DAR	-0.06	0.03	-2.18	0.03
CR	0	0	1.07	0.29
Ins_Own	0.03	0.01	2.22	0.03
Brd_Dr	0	0	1.29	0.2
Ind_Com	0.06	0.04	1.39	0.17
GDP	0	0	3.35	0
Effects Specification				
Cross-Section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.58	Mean dependent var		0.07
Adjusted R-squared	0.53	S.D. dependent var		0.14
S.E. of regression	0.09	Sum squared resid		2.37
F-statistic	11.2	Durbin-Watson stat		1.32
Prob(F-statistic)	0			
Unweighted Statistics				
R-squared	0.48	Mean dependent var		0.05
Sum squared resid	2.51	Durbin-Watson stat		1.46

Source: Output EViews 12

According to the information provided in Table 5, the resulting equation can be derived as follows:

$$ROA = – 0.02266 – 0.00968\ (PROPER) – 0.06117\ (DAR) + newline + 0.00199\ (CR) + \\ + 0.03104\ (Ins\_Own) + 0.00447\ (Brd\_Dr) + 0.05800\ (Ind\_Com) + 3.28330298716e\text{-}09\ (GDP) \quad (1)$$

3.4 Simultaneous F Test

Table 7. Simultaneous Test Result

R-squared	0.584347
S.E. of regression	0.09
F-statistic	11.2
Prob(F-statistic)	0

Source: Output EViews 12

The statistical findings provided indicate that through simultaneous hypothesis testing or F-test, a probability value of 0.000000 is obtained for the F-statistic. This result signifies that simultaneously, the independent variables exert a substantial impact on the dependent variable. Basically, the estimated regression model efficiently reveals the interplay among the variables analysed, underscoring its significance.

3.5 Partial T-test

Table 8. Partial Test Result

Variable	Coefficient	Std. Error	t-Stat	Prob
C	-0.02	0.03	-0.68	0.5
PROPER	-0.01	0	-4.34	**0**
DAR	-0.06	0.03	-2.18	**0.03**
CR	0	0	1.07	0.29
Ins_Own	0.03	0.01	2.22	**0.03**
Brd_Dr	0	0	1.29	0.2
Ind_Com	0.06	0.04	1.39	0.17
GDP	0	0	3.35	**0**

An analysis of the partial test results provided above reveals the following findings:

1. The test results indicate that the probability value for the Green Accounting (PROPER) variable is **0.0000**, which is lower than the established significance level of > 0.05 or 5%. Moreover, the regression coefficient is **-0.009682**. Thus, it can be inferred that Green Accounting (PROPER) significantly impacts Profitability, with negative coefficients suggesting that an increase in PROPER leads to a decrease in Profitability.

2. The hypothesis test results partially demonstrate that the probability value for the Capital Structure (DAR) is **0.0302**, with a regression coefficient of **-0.061178**. Indicating that Capital Structure partially exerts a significant negative influence on Profitability. An increase in DAR is associated with a decrease in Profitability.

3. The partial hypothesis testing results reveal that the probability value for Liquidity (CR) is **0.2878**, higher than the significance level of 0.05. Thus, it can be asserted that, according to this partial analysis, Liquidity does not exert a significant impact on Profitability.

4. The Institutional Ownership variable's probability value, as determined by the partial test, is **0.0275**, with a regression coefficient of **0.031046**. Since this value is less than the significance level of 0.05. Hence, Institutional Ownership partially exerts a significant positive influence on Profitability, with an increase in Institutional Ownership associated with an increase in Profitability.

5. For the Board of Directors variable, the probability value from the partial test is **0.1979**, exceeding the significance level of 0.05. Additionally, the regression coefficient is **0.004476**. Thus, it is concluded that the Board of Directors do not significantly influence Profitability based on this test.

6. The Independent Commissioner variable has a probability value of **0.1661**, with a regression coefficient of **0.058003**. Since this value is higher than the significance level of 0.05. This indicates that Independent Commissioners do not have a significant influence on Profitability according to this partial test.

7. The statistical analysis of the partial test results for the Gross Domestic Product (GDP) variable reveals a probability value of **0.0009**, along with a regression coefficient of **3.28E-09**. In summary, the partial GDP variable is shown to have a significant positive impact on Profitability, indicating that an increase in GDP leads to an increase in Profitability.

Discussion

The utilization of green accounting may influence the financial outcomes of companies by impacting both revenues and expenses (Aryani et al., 2023). While this approach can potentially boost a company's revenue by expanding market access or enhancing reputation, it can also lead to additional expenses like environmental audits, waste management, or investments in eco-friendly technologies. If these expenditures are not counterbalanced by higher earnings or alternative cost-reducing strategies, it might diminish the profitability of firms in the short run (Ningsih & Rachmawati, 2017). The adoption of renewable energy is on the rise, particularly in developed nations such as America and Europe. Companies in this sector must transition from conventional to sustainable energy sources to ensure business sustainability moving forward (Rhamadanty, 2024).

This outcome aligns with the evaluation conducted (Pratama & Mulyani, 2024), indicating a negative impact of green accounting on profitability, contrary to the findings of (Dita & Ervina,

2021) suggesting no influence of green accounting on company financial performance. Conversely, a study by (Putri et al., 2019) reveals a notably positive impact of green accounting on profitability.

A significant amount of debt can impact the perceptions of company risk by investors and creditors, potentially leading to reduced confidence from investors and higher capital costs. This situation may necessitate offering increased yields to attract investments, which could subsequently harm profitability (Prabowo & Sutanto, 2019). Consequently, preserving an optimal balance in the capital structure is critical for elevating profitability and proficiently mitigating financial risks (Nurhayati et al., 2023). The outcomes of this study are consistent with earlier research conducted by (Fathoni & Syarifudin, 2021) and (Anggraeni & Nasution, 2022), pointing to a negative connection between Debt to Asset Ratio (DAR) and Return on Assets (ROA). This contrasts with the results of (Luckieta et al., 2021), whose study suggests a positive relationship between DAR and ROA.

Adequate liquidity represents the ability of an organization to satisfy its short-term financial responsibilities without the need to liquidate valuable assets or encounter financial hurdles. The ability to meet these immediate responsibilities holds significance as it showcases the financial well-being of the company, fostering trust among investors and creditors (Nurhayati et al., 2023). This aligns with Stakeholder Theory's fundamental principles, underlining the significance of meeting direct financial obligations to maintain stakeholder trust and ensure operational (Fernando et al., 2024). It is anticipated that increased profitability can be realised through a more restricted distribution of capital to investments characterised by increased liquidity. As such, the reciprocal dynamic linking liquidity and profitability stands out as an idea that can be analysed and articulated in the domain of financial management and investment methodologies (Rolle et al., 2020). The outcomes of this research correspond with the conclusions drawn in studies carried out by (Satria, 2022), which posits that liquidity exerts no influence on profitability. Conversely, the study by (Sastra, 2019) and (Prabowo & Sutanto, 2019) indicates that liquidity exerts an influence on profitability.

The presence of institutional investors typically results in enhanced oversight and more proficient administration, leading to increased operational efficiency and enhanced business strategy within the organization (Hapsari et al., 2019). The beneficial impact of institutional ownership on financial performance stems from the superior resources, knowledge, and experience possessed by institutional investors in monitoring and overseeing corporate managerial performance (Abedin et al., 2022). This dynamic can motivate management to operate with greater effectiveness and efficiency in steering the company, subsequently boosting profitability (Din et al., 2022). These conclusions align with the research findings of (Nuridah et al., 2023), which indicate a significant impact between institutional ownership and profitability.

In the context of management theory and practice, the key role of overseeing and formulating strategic decisions for a company is assigned to the board of directors (Pratama et al., 2022). Issues of coordination and sluggish decision-making may arise with a large board of directors, which could impede effectiveness (Mandagie et al., 2024). These findings align with previous research by (Ni’mah & Syaiful, 2021), which posits that the board of directors does not impact profitability.

Independent commissioners primarily focus on supervising and advising the board of directors (Nuridah et al., 2023). By effectively supervising, independent commissioners can prompt management to enhance decision-making and policies, thereby boosting the company's profitability (Hapsari et al., 2019). The outcomes of this study are consistent with the conclusions drawn by (Sianturi et al., 2020). Nevertheless, this contradicts the conclusions drawn by (Nuridah et al., 2023) and (Pratama et al., 2022), which suggest that Independent Commissioners do influence profitability. The significant finding of the limited impact of both the Board of Directors and Independent Commissioners on profitability challenges the Agency Theory's emphasis on the significance of corporate governance structures, contradicting the research by (Shukla et al., 2020).

The potential increase in economic activity may lead to a more favourable climate for financial investments within the energy industry. Energy corporations are likely to show heightened

interest in investing in various aspects such as exploration, production, and infrastructure, expecting sustained economic growth to drive energy consumption. Such investments have the potential to enhance operational efficiency and boost capacity, ultimately fostering long-term financial gains (van Niekerk, 2024). This research presents a contrast to the findings of prior studies conducted by (de Leon, 2020; Rolle et al., 2020), which did not observe any significant relationship between GDP and profitability.

Conclusion

The research emphasizes the importance of a well-rounded approach in handling environmental sustainability and financial performance. By investigating the impacts of green accounting, capital structure, liquidity, institutional ownership, board of directors, independent commissioners, and GDP, companies in the energy sector can achieve a harmonious balance between environmental responsibility and financial prosperity. The study reveals that although green accounting practices are crucial for environmental sustainability, they can have a negative effect on the profitability of energy companies. This implies that investments in sustainable environmental practices may increase operational expenses and decrease short-term profits. Nevertheless, effective management of capital structure, liquidity, corporate governance, and GDP can enhance financial performance. The results provide valuable insights for decision-makers, investors, and policymakers to formulate strategies that promote both financial success and sustainability within the energy industry.

The research aligns with the Legitimacy Theory, emphasizing the importance of companies demonstrating commitment to social and environmental responsibility for their long-term survival, despite the potential increase in costs that could impact profitability. It also supports the Stakeholder Theory, highlighting that organisations need to incorporate the heterogeneous interests of various stakeholders in their financial and operational governance. However, the research indicates that merely applying Agency Theory in corporate governance may not be adequate, as the presence of board directors and independent directors has a limited impact on profit trends.

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References

Abedin, S. H., Haque, H., Shahjahan, T., & Kabir, M. N. (2022). Institutional Ownership and Firm Performance: Evidence from an Emerging Economy. Journal of Risk and Financial Management, 15(12). https://doi.org/10.3390/jrfm15120567

Anggraeni, S. W., & Nasution, R. (2022). Pengaruh Debt To Asset Ratio (DAR) Dan Total Asset Turnover (TATO) Terhadap Return On Asset (ROA) Pada Perusahaan Sub Sektor Semen. Jurnal Sinar Manajemen, 9(3), 342–356. https://doi.org/https://doi.org/10.56338/jsm.v9i3.2582

Aryani, L., Hizazi, A., & Herawaty, N. (2023). The Effect of Green Accounting, Financial Performance on Company Value with Profitability as an Intervening Variable (Study on Mining Sector Companies Listed on IDX For The Period 2018-2021). American International Journal of Business Management, 6(5), 51–61. https://www.aijbm.com/wp-content/uploads/2023/05/G655161.pdf

Bangsa, Y. B. K. (2021, December 10). Yuk, Kenalan dengan Sustainable Development Goals (SDGs)! Yayasan Bangun Kecerdasan Bangsa. https://www.ybkb.or.id/yuk-kenalan-dengan-sustainable-development-goals-sdgs/

Basuki, Dr. A. T. (2021). Analisis Data Panel dalam Penelitian Ekonomi dan Bisnis (Dilengkapi dengan Penggunaan EVIEWS) (1st ed.). Katalog Dalam Terbitan (KDT).

Boshnak, H. A. (2024). The impact of corporate governance and ownership structure on the capital structure decisions of Saudi listed firms. Journal of Management and Governance. https://doi.org/10.1007/s10997-024-09706-y

Chairia, Veronika Br Ginting, J., Ramles, P., & Ginting, F. (2022). Implementasi Green Accounting (Akuntansi Lingkungan) DI Indonesia: Studi Literatur. Jurnal Akuntansi Published by Program Studi Akuntansi STIE Sultan Agung, 8(1), 40–49. https://doi.org/https://doi.org/10.37403/financial.v8i1.368

Chandra, T., Junaedi, A. T., Wijaya, E., Suharti, S., Mimelientesa, I., & Ng, M. (2019). The effect of capital structure on profitability and stock returns. Journal of Chinese Economic and Foreign Trade Studies, 12(2), 74–89. https://doi.org/10.1108/jcefts-11-2018-0042

Creswell, J. W., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (5th ed.). SAGE. https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf

de Leon, M. V. (2020). The impact of credit risk and macroeconomic factors on profitability: The case of the ASEAN banks. Banks and Bank Systems, 15(1), 21–29. https://doi.org/10.21511/bbs.15(1).2020.03

Din, S. U., Arshad Khan, M., Khan, M. J., & Khan, M. Y. (2022). Ownership structure and corporate financial performance in an emerging market: a dynamic panel data analysis. International Journal of Emerging Markets, 17(8), 1973–1997. https://doi.org/10.1108/IJOEM-03-2019-0220

Dita, E. M. A., & Ervina, D. (2021). Pengaruh Green Accounting, Kinerja Lingkungan dan Ukuran Perusahaan Terhadap Financial performance (Studi Kasus pada Perusahaan Sektor Pertambangan. JFAS: Journal of Finance and Accounting Studies, 3(2), 72–84. https://doi.org/10.33752/jfas.v3i2.272

Dutta, T. K., Raju, V., & Kassim, R.-N. M. (2020). Green Accounting in Achieving Higher Corporate Profitability and Sustainability in Ready Made Garment Industry in Bangladesh: A Conceptual Analysis. International Journal of Innovation, Creativity and Change, 10(10), 178–187. https://www.ijicc.net/images/vol10iss10/101014_Dutta_2020_E_R.pdf

Endri, E., Ridho, A. M., Marlapa, E., & Susanto, H. (2021). Capital structure and profitability: Evidence from mining companies in Indonesia. Montenegrin Journal of Economics, 17(4), 135–146. https://doi.org/10.14254/1800-5845/2021.17-4.12

Fathoni, R., & Syarifudin. (2021). Pengaruh Struktur Modal Terhadap Profitabilitas dengan Ukuran Perusahaan Sebagai Variabel Moderasi (Studi pada Perusahaan dalam Indeks JII Periode 2017-2019). Jurnal Ilmiah Ekonomi Islam, 7(03), 1347–1356. https://doi.org/10.29040/jiei.v7i3.2761

Fernando, K., Jocelyn, H., Frista, F., & Kurniawan, B. (2024). The Effect of Green Accounting Disclosure on the Firm Value of Listed Mining and Agriculture Companies in Southeast Asia Countries. International Journal of Energy Economics and Policy, 14(1), 377–382. https://doi.org/10.32479/ijeep.15151

Hapsari, D. W., Qashash, V., & Manurung, D. T. H. (2019). Implikasi Corporate Governance Dalam Pelaksanaan Integrated Reporting Pada Bumn Nonkeuangan. Jurnal Akuntansi Multiparadigma, 10(3). https://doi.org/10.21776/ub.jamal.2019.10.3.31

Hidayah, R. A. N. (2023). Pengaruh Struktur Kepemilikan dan Pengendalian Internal Terhadap Penghindaran Pajak [Universitas Islam Negeri Raden Mas Said Surakarta]. https://eprints.iain-surakarta.ac.id/6587/1/SKRIPSI_RIZKY%20ADHA%20N%20H_195221150.pdf

Hossain, T. (2021). Determinants of profitability: A study on manufacturing companies listed on the dhaka stock exchange. Asian Economic and Financial Review, 10(12), 1496–1508. https://doi.org/10.18488/journal.aefr.2020.1012.1496.1508

IEA. (2023, July 27). Global coal demand set to remain at record levels in 2023. International Energy Agency. https://www.iea.org/news/global-coal-demand-set-to-remain-at-record-levels-in-2023

IESR. (2023, December). Indonesia Energy Transition Outlook 2024: Tracking Progress of Energy Transition in Indonesia: The Trend and Transformation in Achieving Indonesia Net Zero Ambition. Institute for Essential Services Reform.

Joaqui-Barandica, O., & Manotas-Duque, D. F. (2023). How do Climate and Macroeconomic Factors Affect the Profitability of the Energy Sector? International Journal of Energy Economics and Policy, 13(4), 444–454. https://doi.org/10.32479/ijeep.14303

LCDI. (2020). Energi. https://lcdi-indonesia.id/grk-energi/

Lindawati, A. S. L., Ramadhani, V., Oktavianie, H., & Kathera, V. (2022). The Effect of Green Accounting and CSR Disclosure to Profitability of LQ 45 Companies in Indonesia. ACM International Conference Proceeding Series, 75–82. https://doi.org/10.1145/3537693.3537705

Luckieta, M., Amran, A., & Alamsyah, D. P. (2021). Pengaruh DAR dan Ukuran Perusahaan Terhadap ROA Perusahaan yang Terdaftar Di LQ45 Pada BEI. Jurnal Ekonomi & Manajemen Universitas Bina Sarana Informatika, 19(1). https://doi.org/10.31294/jp.v17i2

Mandagie, W. C., Susanto, K. P., Endri, E., & Wiwaha, A. (2024). Corporate governance, financial performance and sustainability disclosure: Evidence from Indonesian energy companies. Uncertain Supply Chain Management, 12(3), 1791–1800. https://doi.org/10.5267/j.uscm.2024.3.003

Maulita, D., & Tania, I. (2018). Pengaruh Debt to Equity Ratio (DER), Debt to Asset Ratio (DAR), dan Long Term Debt to Equity Ratio (LDER) Terhadap Profitabilitas. Jurnal Akuntansi, 5(2), 132–137. https://doi.org/http://doi.org/10.5281/zenodo.1311575

Meilanova, D. R. (2020, July 27). Utang PLN Hampir Rp500 Triliun, Bisa Bangkrut? Bisnis.Com. https://ekonomi.bisnis.com/read/20200727/44/1271750/utang-pln-hampir-rp500-triliun-bisa-bangkrut.

Ni'mah, M. L., & Syaiful. (2021). The Effect Of Good Corporate Governance, Corporate Social Responsibility On Corporate Profitability. Journal Universitas Muhammadiyah Gresik Engineering, Social Science, and Health International Conference (UMGESHIC), 1(2). https://doi.org/http://dx.doi.org/10.30587/umgeshic.v1i2.3377

Ningsih, W. F., & Rachmawati, R. (2017). Implementasi Green Accounting dalam Meningkatkan Kinerja Perusahaan. JABE (Journal of Applied Business and Economic), 4(2), 149–158. https://doi.org/http://dx.doi.org/10.30998/jabe.v4i2.2142

Novitasari, D., & Bernawati, Y. (2020). The Impact of Good Corporate Governance on the Disclosure of Corporate Social Responsibility. International Journal of Innovation, Creativity and Change. Www.Ijicc.Net, 10(12), 265–276. www.ijicc.net

Nurhayati, Budiyanti, H., Nurman, Anwar, & Amin, A. M. (2023). Pengaruh Struktur Modal dan Likuiditas Terhadap Profitabilitas Studi Kasus pada Perusahaan Pertambangan Sub Sektor Batu Bara yang Terdaftar di Bursa Efek Indonesia Periode 2015 - 2022. Jurnal Mirai Management, 8, 326–337. https://doi.org/https://doi.org/10.37531/mirai.v8i3.5920

Nuridah, S., Merliyana, Sagitarius, E., & Surachman, S. N. (2023). Pengaruh Good Corporate Governance Terhadap Profitabilitas Merliyana STIE Indonesia Jakarta. Jurnal Ekonomi, Bisnis Dan Manajemen, 2(2), 1–10. https://doi.org/https://doi.org/10.58192/ebismen.v2i2.773

Nurrasyidin, M., Meutia, M., Bastian, E., & Yulianto, A. S. (2024). The Effect of Green Accounting and Corporate Social Responsibility Implementation on the Profitability of Mining Companies. Corporate and Business Strategy Review, 5(3), 8–16. https://doi.org/10.22495/cbsrv5i3art1

OPEC. (2015). Annual Report.

Prabowo, R., & Sutanto, A. (2019). Analisis Pengaruh Struktur Modal, dan Likuiditas terhadap Profitabilitas pada Perusahaan Sektor Otomotif di indonesia. Jurnal Samudra Ekonomi Dan Bisnis, 10(1), 1–11. https://doi.org/10.33059/jseb.v10i1.1120

Pratama, M. C., Munir, M., & Ambarwati, D. (2022). Pengaruh Good Corporate Governance Terhadap Profitabilitas (Studi Kasus pada Perusahaan Perbankan yang Terdaftar di BEI Periode Tahun 2014-2020). OPTIMAL: Jurnal Ekonomi Dan Manajemen, 2(3), 300–317. https://doi.org/https://doi.org/10.55606/optimal.v2i3.511

Pratama, Y. N., & Mulyani, S. D. (2024). Pengaruh Akuntansi Hijau, Kinerja Lingkungan, dan Likuiditas Terhadap Profitabilitas dengan Ukuran Perusahaan Sebagai Variabel Moderasi. Jurnal Ekonomi Trisakti, 4(1), 595–604. https://doi.org/10.25105/jet.v4i1.19197

Putri, A. M., Hidayati, N., & Amin, M. (2019). Dampak Penerapan Green Accounting Dan Kinerja Lingkungan Terhadap Profitabilitas Perusahaan Manufaktur Di Bursa Efek Indonesia. E-JRA: E_Jurnal Ilmiah Riset Akuntansi, 8(4), 149–164. https://jim.unisma.ac.id/index.php/jra/article/view/4043

Rezina, S., Ashraf, A., & Khan, Md. A. (2020). An Inferential Study on the Profitability Determinants of the Cement Industry in Bangladesh. Asian Finance & Banking Review, 4(2), 8–21. https://doi.org/10.46281/asfbr.v4i2.684

Rhamadanty, S. (2024, March 31). Kinerja Perusahaan Tambang dan Energi Merosot di 2023, Cermati Pemicunya. Kontan.Co.Id. https://industri.kontan.co.id/news/kinerja-perusahaan-tambang-dan-energi-merosot-di-2023-cermati-pemicunya

Rheynaldi, P. K., Endri, E., Minanari, M., Ferranti, P. A., & Karyatun, S. (2023). Energy Price and Stock Return: Evidence of Energy Sector Companies in Indonesia. International Journal of Energy Economics and Policy, 13(5), 31–36. https://doi.org/10.32479/ijeep.14544

Rifkhan. (2022). Membaca Hasil Regresi Data Panel (M. Dewi, Ed.). Cipta Media Nusantara.

Rolle, J.-A., Herani, M., & Javed, B. (2020). Factors influencing profitability of conventional banks as measured by Tobin's q: evidence from banking sector of Pakistan. In The Business and Management Review (Vol. 11).

Saftiana, Y., Mukhtaruddin, Putri, K. W., & Ferina, I. S. (2017). Corporate governance quality, firm size and earnings management: Empirical study in Indonesia stock exchange. Investment Management and Financial Innovations, 14(4), 105–120. https://doi.org/10.21511/imfi.14(4).2017.10

Saputro, S. H. (2019). Analisis Pengaruh Variabel Makroekonomi Terhadap Profitabilitas Pada Perusahaan Pertambangan. MONETER : Jurnal Akuntansi Dan Keuangan, 6(1), 91–96. https://doi.org/https://doi.org/10.31294/moneter.v6i1.5407

Sastra, E. (2019). Pengaruh Modal Kerja, Likuiditas, Struktur Modal Terhadap Profitabilitas Perusahaan Manufaktur 2012 – 2014. Jurnal Ekonomi, 24(1), 80–93. https://doi.org/10.24912/je.v24i1.454

Satria, R. (2022). Pengaruh Current Ratio (CR) dan Debt to Equity Ratio (DER) Terhadap Return on Asset (ROA) pada PT. Mayora Indah Tbk Periode 2009-2020. Scientific Journal of Reflection: Economic, Accounting, Management and Business, 5(2), 440–447. https://doi.org/10.37481/sjr.v5i2.479

Shukla, A., Narayanasamy, S., & Krishnakumar, R. (2020). Impact of board size on the accounting returns and the asset quality of Indian banks. International Journal of Law and Management, 62(4), 297–313. https://doi.org/10.1108/IJLMA-12-2018-0271

Sianturi, N. E., Marbun, P., Manalu, S. D., & Munawarah. (2020). Pengaruh Good Corporate Governance Terhadap Profitabilitas Perusahaan yang Memperoleh Penghargaan GCG Award Info Artikel Abstract. Journal of Accounting for Sustainable Society (JASS), 2(1), 23–32. https://doi.org/10.35310/jass.v2i01.599

Silaen, Drs. S. (2018). Metodologi Penelitian Sosial Untuk Penulisan Skripsi dan Tesis. In Media.

Umah, A. (2020, April 24). Utang Rp 35 T Jatuh Tempo Tahun Ini, Apa Kabar Keuangan PLN? CNBC Indonesia. https://www.cnbcindonesia.com/news/20200424112710-4-154152/utang-rp-35-t-jatuh-tempo-tahun-ini-apa-kabar-keuangan-pln

Uribe, J. M., Mosquera-López, S., & Arenas, O. J. (2022). Assessing the relationship between electricity and natural gas prices in European markets in times of distress. Energy Policy, 166. https://doi.org/10.1016/j.enpol.2022.113018

van Niekerk, A. J. (2024). Economic Inclusion: Green Finance and the SDGs. Sustainability (Switzerland), 16(3). https://doi.org/10.3390/su16031128

Vincent, K., Modjo, M. I., & Limijaya, A. (2023). The Effect of Corporate Governance Regulation on the Profitability of Insurance Companies in Indonesia. E3S Web of Conferences, 426. https://doi.org/10.1051/e3sconf/202342602095

Wooldridge, J. M. (2018). Econometric Analysis of Cross Section and Panel Data (7th ed.). MIT Press.

Yusnita, H. (2021). Peran Environmental Performance Terhadap Profitabilitas Perusahaan Manufaktur Yang Mengikuti Program Proper PADA TAHUN 2017-2019 Dengan Determinan Green Accounting. Jurnal Akuntansi Dan Bisnis Krisnadwipayana, 8(2). https://doi.org/10.35137/jabk.v8i2.53