CEO international congress

COMMUNICATION ECONOMICS ORGANIZATION

9-11 December 2022 - Indonesia

5th PROCEEDINGS BOOK

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EDITORS

Assoc. Prof. Dr. Muhammad Ali Tarar

Enock Siankwilimba, PhD. Cand.

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International CEO

(Communication, Economics, Organization)

Social S ciences Congress

PROCEEDINGS

E-BOOK

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Presentation

We are delighted to introduce **Sekolah Tinggi Manajemen IPMI (IPMI - International Business School), Mohanlal Sukhadia University, Samarkand Branch of Tashkent University of Economics, International Vision University, Alfred Nobel University, International Gorazde University, Nişantaşı University, University of Prizren, Cyprus West University, Insec, NCM Publishing, CEO Tekmer, Universitas Bhayangkara, Knowledge Laboratory, Universitas Ghara Karya and Ostim Technical University** served as the vehicle of dissemination for a showpiece of articles at the **International CEO** (**C**ommunication, **E**conomics, **O**rganization) **Social Sciences Congress** (CEO SSC 2022, **Indonesia, Jakarta**) that was held online on Dec 9-11, 2022. CEO Congress aims to provide a platform for discussing the issues, challenges, opportunities and findings of **Communication, Economics, Organization and Social Science** research. The organizing committee with feedback from the division chairs and the members of the **scientific committee** foresaw an opportunity and research gap in the conference theme, that pitches for pressing issues in the business world.

Presentations are in Turkish & English & Indonesian. With the participation and contributions of academics from **34 countries**: ***Argentina, Azerbaijan, Belarus, Bosnia and Herzegovina, Indonesia, Ethiopia, Philippines, Ghana, South Korea, Georgia, India, Iraq, United Kingdom, Spain, Italy, Japan, Cameroon, Canada, Kyrgyzstan, Kosovo, North Cyprus, Cuba, Malaysia, Uzbekistan, Pakistan, Poland, Portugal, Romania, Tanzania, Turkey, Ukraine, USA, New Zealand.*** It is a great privilege for us to present the Abstract Book of **CEO SSC 2022** to the authors and delegates of the conference.

Several manuscripts from prestigious institutions could not be accepted due to the reviewing outcomes and our capacity constraints. Participation from **155 different institutions or universities**. The 3 days long conference gathered close to **445 national and international attendees** to enliven a constellation of contributions. **199** papers of the **273** papers approved to present at the congress are outside of Turkey. **73% of the papers presented at the congress are from outside Türkiye.** 5 awards were issued to distinguished papers, and a total of **273 oral presentations**.

On the day of completion of this journey, we are delighted with **a high level of satisfaction** and **aspiration.** It is important to offer our sincere thanks and gratitude to a range of organizations and individuals, without whom this year's conference would not take place. This conference would have not materialized without the efforts of the contributing **authors for sharing the fruit of their research and the reviewers for scrutinizing**, despite their busy schedules. We also thank **our members and colleagues who accepted the duty to participate in the Scientific Committee** and for their valuable help in the screening, selecting, and recommending best contributions.

All presentations made during the congress were published on the social media accounts of the CEO Congress.

Uluslararası CEO
(İletişim, Ekonomi, Organizasyon)
Sosyal Bilimler Kongresi

Sunuş

9-11 Aralık 2022 tarihlerinde "**5. Uluslararası CEO İletişim, Ekonomi ve Organizasyon Sosyal Bilimler Kongresi**" **IPMI Uluslararası İşletme Okulu** ev sahipliğinde **Endonezya**'nın başkenti Cakarta'da, Mohanlal Sukhadia University, **Samarkand Branch of Tashkent University of Economics,** International Vision University, **Alfred Nobel University,** International Gorazde University, **Nişantaşı Üniversitesi,** University of Prizren, **Cyprus West University,** Insec, **NCM Publishing,** CEO Tekmer, **Universitas Bhayangkara,** Knowledge Laboratory, **Universitas Ghara Karya** ve Ostim Teknik Üniversitesi iş birliği ile **online ve fiziki katılımlar** ile gerçekleşmiştir.

Kongremizde ***ABD, Arjantin, Azerbaycan, Belarus, Bosna Hersek, Endonezya, Etiyopya, Filipinler, Gana, Güney Kore, Gürcistan, Hindistan, Irak, İngiltere, İspanya, İtalya, Japonya, Kamerun, Kanada, Kırgızistan, Kosova, Kuzey Kıbrıs, Küba, Malezya, Ozbekistan, Pakistan, Polonya, Portekiz, Romanya, Tanzanya, Türkiye, Ukrayna, Yeni Zelanda, Zambiya*** gibi **34 ülkeden ve 155** kurum/üniversiteden **445 akademisyen** tarafından hazırlanan **273 bildiri** sunulmuştur.

Kongremize **343** bildiri özeti gönderilmiş, editör ve hakem süreçlerinden sonra bunlardan 303 tanesi sözlü sunuma kabul edilmiş, ancak **50 oturumda 273 bildirinin sunumu** gerçekleşmiştir. Sunulan bildiriler, **978-605-73822-7-6** ISBN'li bu e kitapta yayımlanmaktadır.

Kongrede sunulan 273 bilidirinin 199'u yurt dışındandır. Yayınlanan **bildirilerin %73'ü Türkiye dışındandır.**

Onaylı ve yayınlanan **273 bilidiriden ikisi Türkiye'den ve üçü yurt dışından olmak üzere beşine en iyi bildiri ödülü duyurulmuştur.**

Önceki Uluslararası CEO Kongre'lerde olduğu gibi 5. Uluslararası CEO Kongre'de de hem bildiri özet kitabında hem de tam metin kitabında yabancı oranı %50'den fazladır. Okumakta olduğunuz tam metin kitabında **yayınlanan tam metinlerin ise %73'ü Türkiye dışındandır** (127 yabancı, 48 Türkiye'den)**.**

Kongre esnasında gerçekleşen tüm sunumlar kongrenin sosyal medya hesaplarında yayımlanmıştır. Tekrar yararlanmak istendiği durumlarda CEO Congress sosyal medya hesaplarından izlenebilir.

Kongrenin bilim insanlarına, kamu ve özel sektör ile STK'ların yönetiminin etkinliğine katkı bulunmasını temenni eder, bildirileriyle katkıda bulunan akademisyenler ile düzenleme kurulu, danışma kurulu, bilim ve hakem kurulundaki meslektaşlarımıza ziyadesiyle teşekkür ederiz.

A Special Thanks To…

Below is a list of individuals who have supported **CEO Congress 2022 Indonesia** by donating some of their time. It is these people who make our work possible and have been a great help. We would like to say a special THANK YOU for all those listed below.

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1. **Authors:** Öğr.Gör.Dr. Pınar AVCI, Öğr.Gör. Esra YAŞAR, Doç Dr. Sevgi SÜMERLİ SARIGÜL
   Title: The Role of Financial Sector Development, Clean Energy Consumption and Human Capital in Environmental Degradation in Turkey
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   Title: Ceo Nasıl Başladı? İletişim, Ekonomi, Organizasyon Odaklı İlk Kongrenin Anatomisi

Outside Türkiye

1 **Authors:** Melitta ARUAN, Roy SEMBEL, Melinda MALAU
Title: Moderating Role of Financial Technology towards the Effects of Financial Performance, GCG and Macroeconomic on Stock Returns of Indonesia Category 4 Banks

2 **Authors:** Maria Zia, Dr. Muhammad Zia-ur-Rehman, Syed Muhammad Wafa ur Rahman
Title: Emotional Exhaustion (EE) and its impact on Turnover Intention: The role of Organizational Commitment

3 **Authors:** Mr. Bagawan Kagurnita Krisatio SOENARJONO, Prof. Ir. M. Aman WIRAKARTAKUSUMAH, PhD., Ms. Liza Agustina Maureen NELLOH
Title: The Antecedents of Subscriber Intention of Indonesian Young Generations Upon Spotify

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Moderator of the Session: Dr. **Souvik Dasgupta,** Presidency University, Kolkata – **India**

CONTENTS

FINANCIAL PERFORMANCE ANALYSIS AND THE EFFECT OF PROFITABILITY AND MARKET RETURN ON THE STOCK RETURN OF PT. ADARO ENERGY INDONESIA TBK - A COAL MINING COMPANY IN INDONESIA

Benny HALIM
Executive MBA Student of IPMI International Business School
benny.halim@ipmi.ac.id
0000-0003-1328-7146

Prof. Ir. H. M. Roy SEMBEL MBA.,Ph.D.,CSA.,CIB.,CIIM
Professor and Senior Lecturer at IPMI International Business School
roy.sembel@ipmi.ac.id
0000-0002-9023-9976

Dr. Melinda MALAU SE., MM., CPA., CBV., CFRM., CFA
Senior Lecturer at Universitas Kristen Indonesia
melinda.malau@uki.ac.id
0000-0002-6576-3063

ABSTRACT

The aim of this study is to analyze the financial performance of a coal mining company listed in Indonesia Stock Exchange (IDX), PT. Adaro Energy Indonesia Tbk (ADRO). A financial ratio analysis is applied to compare ADRO financial performance position relative to its competitors and industry average; and to analyze factors affecting ADRO stock return and profitability. The selected ratios and indicators include ROA, DER, DAR, Asset Turnover, Current Ratios, Profit Margin, ROE, Market Return and Stock Return. This research uses quantitative research method, and purposive sampling technique in collecting the required data. The sample consists of 40 quarterly financial reports of ADRO and coal mining companies representative of the industry, from 2012 to 2021. ADRO's quarterly reports are then compared against ADRO's closest competitor, PT Indika Energy Tbk (INDY), and with the average coal mining industry metrics. Based on the financial performance analysis, ADRO has a relatively remarkable financial performance compared to its competitor and average industry in terms of profitability and liquidity. Despite positive trend on profitability and solvency, ADRO's asset-use efficiency is found to be fairly concerning. In terms of factors that predict ADRO stock returns, this research found that fundamental factors have statistically limited effect on stock returns. It also reveals that only profitability is affected by fundamental financial factors such as asset turnover and financial leverage. The findings in this study provide investors in the coal mining industry with key insights on how stock returns and financial performance of a coal mining company are affected by certain fundamental financial factors. The study also features potential macroeconomic variables as the determinants in predicting coal mining company stock return.

***Keywords*:** financial analysis, profitability, stock return, coal mining company

INTRODUCTION

Investors or researchers who aimed to study the financial performance of a firm should investigate accounting profitability and market performance of that particular firm among other things (Gentry & Shen, 2010). The market value of a company, measured by the company's stock price, is affected by the external macroeconomic factors as represented in the dynamics of stock market returns (Ma et al., 2022). To gain competitive advantage in the market, management of the company should manage the business in the most effective and efficient manner (Sari, 2019). Understanding how numerous factors influence the profitability and market value of a firm, is therefore critical for investment decision-making purposes.

Financial performance can be derived from the firm's financial statements and measured using financial ratio analysis. The financial ratios commonly used to measure a company's financial performance are Return on Asset, Debt to Equity ratios and Debt to Asset ratios, Asset Turnover, Current Ratios, Profit Margin and Return on Equity. Further analysis of the impact of financial and market factors such as profitability and Market Return on Stock Return, would provide good indication on such ability.

To demonstrate the effects of the mentioned factors on a company's performance, this study selected a coal mining company, PT. Adaro Energy Indonesia Tbk (ADRO). A coal mining company is purposely selected for this study as the coal mining industry largely contributes to economic growth of Indonesia. Indonesia, one of the largest coal producers and exporters, relies on this commodity as the driver to the Indonesian economy. Mining companies in Indonesia play an essential role in boosting Indonesia's commodity export activities and attracting foreign investments in Indonesia (Laksana, 2022). According to the (bp Statistical Review of World Energy, 2022), Indonesia ranks second as a coal-producing country in the world with an estimated production of 614 million tons per year with coal reserves estimated at 34.9 billion tons. GDP from Mining in Indonesia has grown to IDR 218.7 Trillion in the Q3 of 2022 from IDR 211.5 Trillion in Q2 of 2022 (Trading Economics, 2022)

This research paper aims to analyze the financial performance of one of the largest coal mining companies in Indonesia, PT. Adaro Energy Indonesia Tbk (ADRO), with market capitalization most recently reported at Rp 108.6 trillion (Yahoo Finance, 2022a). Last reported in 2021, ADRO produced 43.2 million tonnes of coal (PT Adaro Energy Indonesia Tbk, 2021).

For the purpose of analyzing ADRO relative financial performance, PT Indika Energy Tbk (INDY), will be selected as ADRO's closest competitor since INDY has the most similar nature of business as ADRO, and is operating in an identical industry. INDY was officially established in 2000 and has been publicly listed on IDX since 2008 (PT Indika Energy Tbk, 2021). As the business progressed, INDY has progressed to be a leading diversified company which comprised of energy, minerals and infrastructure businesses with current market capitalization of 13.9 trillion Rupiah (Yahoo Finance, 2022b). The coal mining business of INDY was reported to produce 35.8 million tons of coal in 2021.

Problem Statements

Being the main contributor to Indonesia economic growth, coal mining sectors had been one of the main focus of investors. Given the highly competitive landscape in the coal mining sector, investors need to consider:

- What are the suitable measures to evaluate the financial performance of a particular coal mining company and its competitiveness in the industry?
- What are the financial factors that may have significant impacts on a coal mining company value and profitability?

Research Questions

Based on the problem statements and the background context described previously, this study would focus on the coal mining sector in Indonesia by analyzing the financial performance of a publicly listed coal mining company in Indonesia, ADRO, and how market return affects its economic value as represented by the stock return. The following are the research questions as the main focus of this study:

- How is the financial performance of ADRO for the past 10 years and if compared to ADRO's main competitors and industry average?
- What financial factors are attributable to ADRO stock returns?
    1. Does Market Return affect Stock Return of ADRO?
    2. Does Leverage affect Stock Return of ADRO?
    3. Does Liquidity affect Stock Return of ADRO?
    4. Does Asset Turnover affect Stock Return of ADRO?
    5. Does Profitability affect Stock Return of ADRO?
- What financial factors are attributable to ADRO profitability?
    1. Does Leverage affects Profitability of ADRO?
    2. Does Liquidity affects Profitability of ADRO?
    3. Does Asset Turnover affects Profitability of ADRO?
    4. Does Working Capital Turnover affects Profitability of ADRO?

LITERATURE REVIEW

Important measures of a company success in achieving profitability and financial sustainability are sourced from the company financial statements (Demmer, 2015). Companies listed on stock exchanges publish annual and quarterly financial reports, allowing investors to gain a better understanding of the firm's business performance by performing a thorough financial analysis. Reddy & Narayan (2016) stated that studying the relationship between financial ratios and stock performance has been a prevalent subject for numerous studies in the finance field until today. Bayrakdaroglu et al., 2017) investigated the effects of financial information on stock prices and exclusively, how profitability ratios relate to the company's stock returns.

To evaluate the success of a company in enhancing firm value, analysts often use financial performance measures as the main indicators (Malau, 2017). According to the Efficient Market Hypothesis, company stock prices reflect all the fundamental factors about the company should the market is perfectly efficient (Fama, 1965). In a perfectly efficient capital market, an optimistic firm's financial performance should be reflected in the market by an increase in that firm's share price (or positive stock returns).

This study focuses on the coal mining sector in Indonesia by analyzing a publicly listed coal mining company in Indonesia, ADRO, as this industry sector has not been explored. This research explored what have been demonstrated in prior studies about financial performance and stock returns, however applied in different industry sectors. Research conducted by Asmirantho & Somantri (2017) examines the effect of liquidity, solvency, profitability and market ratios on the stock price of a pharmaceutical company listed on the Indonesia Stock Exchange during the period 2012-2016. The study incorporates Current Ratio (CR), Debt-to-Equity Ratio (DER), Total Assets Turnover (TATO), Return on Equity (ROE), and Earnings per Share (EPS) in the model as predictors of stock returns. Their research concludes that CR, DER, TATO, ROE lack the statistical significance to explain the variance in the stock price of the selected pharmaceutical companies. Another research by Yap & Firnanti (2019) also reveal that Return-on-Assets (ROA) and ROE do not significantly influence stock returns. On the contrary, there are prior studies that found significant correlation between ROA, ROE, debt-to-asset ratio (DAR), DER and stock returns. They discovered that ROA and ROE have significantly positive effects on stock return, while DAR and DER are negatively associated with stock returns (Nurhakim et al., 2016; Nurhikmawaty et al., 2020; Saleh, 2015).

This study aims to examine the potential relations between a company's fundamental financial factors and stock returns of a coal mining company in Indonesia. In addition, there was still limited research that observed the impact of these fundamental factors on stock returns of a coal mining company in Indonesia.

Ratio Analysis

Ratio analysis in this study aims to analyze ADRO financial performance relative to INDY (ADRO's closest competitor) and the coal mining industry in Indonesia. The financial ratios included in the analysis are ROA, ROE, Asset Turnover, Debt Equity Ratios, Financial Leverage, and Current ratios.

ROA and ROE are profitability ratios most frequently used to predict stock prices or stock returns. According to Ristyawan (2019), the company's ability to generate profits for shareholders can be analyzed by interpreting its ROE. The higher the ROE, the more efficient a company is in utilizing the shareholders' capital to generate profits. ROA is also a useful profitability measure that assesses the ability of a company in utilizing assets to generate profits (Malau, 2020; Kowoon et al., 2022).

Liquidity ratios are used to measure the company's ability to pay off short-term obligations at maturity and its operational activities (Anthony et al., 2011). Yap & Firnanti (2019) stated that a high Quick Ratio indicated that the company was highly capable in financing its short-term obligations and more able to distribute dividends to investors, increasing the investors' confidence in their capital invested in the company.

An efficiency measure commonly used by analysts was asset turnover, which measured a company's efficiency in utilizing their assets base for revenue generation.

Financial ratios generally used to indicate company's solvency and the degree of leverage are DAR and DER. The higher the proportion of debt relative to asset, the greater the financial risk borne by the company. A higher financial risk will result in investors demanding a higher return, which would increase the company overall cost of capital (Kurniawan, 2021).

DuPont Analysis

The DuPont analysis is a framework for analyzing fundamental performance of a firm pioneered by the DuPont Corporation in 1920s. It is a useful technique used to deconstruct ROE to further investigate the main drivers of the company's profitability. As explained by Anthony et al. (2011), the DuPont model helps to gain a better understanding on how operating, financing, and investment decisions impact company financial performance.

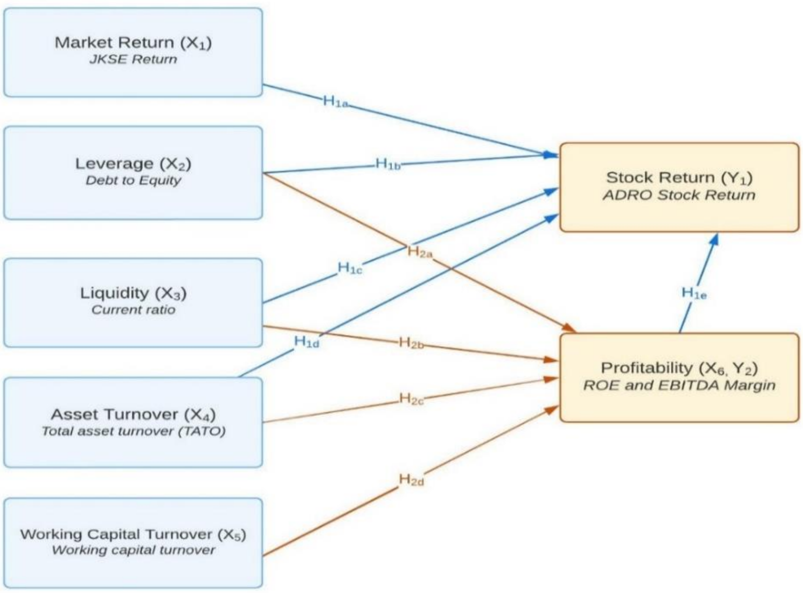
The DuPont framework highlights three major financial aspects that drive ROE: operating efficiency, asset use efficiency and financial leverage. Operating efficiency is measured by net profit margin or net income divided by total sales or revenue. Asset use efficiency is measured by the asset turnover ratio. Leverage is measured by the equity multiplier, often estimated by the proportion of debt relative to equity.

Stock Return

Fundamental analysis allows investors to analyze the company's financial condition, future financial prospects and to predict movements of stock returns. For instance, higher financial performance is associated with higher stock price in the stock market (Richard A. Brealey et al., 2007; Tandelilin, 2010).

Hypothesis Development

Figure 0.14 Research Hypothesis Framework



The Effect of Market Return on Stock Returns

Company stock returns and market returns are correlated, an increasing trend of a company's stock returns will positively affect the overall market return. However, the positive association is also conditional on the returns earned by the remaining companies within the same market. Market returns have statistically significant positive relationship with company stock returns (Din, 2017).

H1a: Market return positively affects stock return of ADRO

The Effect of Leverage on Stock Returns

Leverage is commonly measured by total debt to total assets ratio, DER, and the equity multiplier (Lenka, 2017). The positive effect of financial leverage, or equity multiplier, is to determine the extent to which additional resources can lead to an improvement of the company stock return (Vintila & Duca, 2012). However, based on research by Sausan et al. (2020), there is a negative impact of DER on Stock Return, highly leveraged firms are more likely to have lower stock prices compared to low leveraged firms.

H2: Leverage positively affects stock return of ADRO

The Effect of Liquidity on Stock Return

Liquidity measured by Current Ratio indicates a company's ability to pay its short-term financial obligations. A high level of liquidity implies that the company is highly capable in meeting its short-term obligation and low liquidity reflects the opposite. Nonetheless, an excessively high level of liquidity is found to be detrimental to the company as high proportion of idle assets that do not earn the companies additional improvement in firm value (Puspitaningtyas, 2017; (Puspitaningtyas & Kurniawan, 2012)).

H3: Liquidity negatively affects stock return of ADRO

The Effect of Total Asset Turnover on Stock Returns

The operating performance of a firm can be examined by interpreting their asset turnover ratio. Effective asset utilization measured by asset turnover metric is widely believed to be positively related to a firm's stock performance in the market, which is evident in the study conducted by (Aryanti & Mawardi, 2016

H4: Turnover positively affects stock return of ADRO

The Effect of Profitability on Stock Returns

Profitability indicates a company's ability to earn profit from the funds invested in the company assets ((Puspitaningtyas, 2017). This measure of financial performance signifies how well the company in allocating their capital to earn the required rate of return (usually measured by profit margins or ROE). (Er & Vuran, 2012) further found in their study that profitability is one of the main factors that significantly affect company stock returns.

H5: Profitability positively affects stock return of ADRO

The Effect of Leverage on Profitability

One of the ways to improve company profit is through financial leverage and utilizing debt as an instrument to improve company returns. According to a study by Taqi et al. (2020), companies in the fuel and energy sector may enhance their financial performance by improving their capital structure, which would then translate into profitability in the long term.

H2a: Leverage positively affects profitability of ADRO

The Effect of Liquidity on Profitability

Liquidity is often measured by current ratio as an indicator that measure the company's ability to service current liabilities with current assets. The ability of a company to remain liquid is positively correlated with firm’s profitability as revealed by Ehiedu (2014).

H2b: Liquidity positively affect profitability of ADRO

The Effect of Total Asset Turnover and Working Capital Turnover on Profitability

Numerous studies have explored the effects of asset turnover on a company’s profitability. The total asset turnover ratio (TATO) is a metric that measures a company’s ability in using its assets to generate revenues. (Okwuosa, 2005) stated that the total asset turnover indicates the efficiency of an enterprise in managing total assets to generate maximum income. (Mubiatiningrum, 2007) suggests that net working capital turnover significantly influences a company’s return on assets; and the effect is positive.

H2c: Total Asset Turnover positively affects profitability of ADRO
H2d: Working Capital Turnover positively affects profitability of ADRO

METHODOLOGY

Research Method

The research adopted Quantitative Research Method and aimed to find cause and effect relations by testing hypotheses proposed in the study with different statistical research methods.

The research commenced from identifying research topic, literature review and problem definition, developing research question, constructing a research design, data collection and pre-test, data analysis, and completed with conclusions, and recommendations.

The research procedures conducted aim to assess ADRO financial performance through data analysis and to assess the association between the dependent variable (ADRO stock returns and profitability) and multiple independent variables (financial ratios). This study uses statistical procedures that are primarily econometrics-based methods using Ordinary Least Squares (OLS) regression to test each of the hypotheses.

Firstly, the research starts with descriptive statistical after all the required data variables are collected to gain a better understanding of the data and the features of the data. To analyze the financial performance of ADRO, financial data collected from ADRO financial statements are then evaluated to compute the financial ratios. The ratios are analyzed as per the DuPont framework to study ADRO's drivers of financial performance.

The next part of the research is to construct regression models to study the determinants of ADRO stock performance and profitability. In selecting the regression model, the variables of each regression model are tested to assess whether any violations of the OLS Assumptions are made. The classical OLS assumptions tests include linearity test, assessment of multicollinearity between variables, autocorrelation test and heteroskedasticity test. After a regression model is selected, a significance test is performed to assess the significance of the relation between the independent variables and the dependent variable in question. The results of the significance test are analyzed to study the significance effect of the independent variables. The results of all tests are finally analyzed to produce insights and as evidence in support or opposition of the proposed hypotheses.

Data Collection

This research adopts a quantitative research method, with a purposive sampling technique to collect the required sample data. It is a non-probability sampling technique to select sample data needed for research. Coal mining companies listed in IDX is selected as the population data. The sample data uses a sample of 40 quarters (2012 – 2021) from financial reports of public-listed coal mining companies in Indonesia that are representative of the industry including ADRO, as source of dataset. First, this research will analyze ADRO financial performance by comparing ADRO financial performance position with its closest competitor and the coal mining industry by applying ratio analysis and the DuPont framework. The same dataset will then be analyzed using multiple regression statistical methods using a combination of Microsoft Excel and R statistical tools, to determine the fundamental financial factors that affect profitability and ADRO stock returns in the market.

Sample Data

The sample examined consist of 40 quarterly financial reports (from 2012 to 2021) of ADRO, INDY and six other coal mining companies in Indonesia that are representatives of the coal mining industry. The quarterly financial reports of ADRO will then be compared against INDY, which is also listed in IDX, as one of its closest competitors in the coal mining sector; also compared with the industry average of coal mining companies.

Hypotheses Testing

Based on the research conceptual model provided in prior sections, the regression models of the research to answer the two problem statements are as follows:

- The first regression equation model to test factors that affect ADRO's stock return is:

$$\boldsymbol{Y_{1,i} = \beta_0 + \beta_1 X_{1,i} + \beta_2 X_{2,i} + \beta_3 X_{3,i} + \beta_4 X_{4,i} + \beta_5 X_{6,i} + \varepsilon_i}$$

(Equation 1)

The second regression equation model to test factors that affect profitability of ADRO:

-

$$Y_{2,i} = \gamma_0 + \gamma_1 X_{2,i} + \gamma_2 X_{3,i} + \gamma_3 X_{4,i} + \gamma_4 X_{5,i} + \varepsilon_i$$

(Equation 2)

With details of the variables as follows:

Y_1: ADRO Stock Return as a dependent variable for the first regression equation
X_1: Market Return (JSE stock return) as an independent variable for Equation 1
X_2: Leverage (debt to equity) as an independent variable for both Equation 1 and 2
X_3: Liquidity (current ratio) as an independent variable for both Equation 1 and 2
X_4: Asset Turnover (total asset turnover ratio or TATO) as an independent variable for both Equation 1 and 2
X_5: Working capital turnover as an independent variable for Equation 2
X_6: Profitability Ratio (ROE) as an independent variable to predict ADRO stock returns for the first regression equation (Equation 1)
Y_2: Profitability Ratio (EBITDA Margin) and as a dependent variable for the second regression equation (Equation 2) to predict profitability.

Tests for the Ordinary Least Squares (OLS) Assumptions

The regression model must satisfy the Ordinary Least Squares (OLS) assumptions for the model to be valid in verifying the proposed hypothesis. Key OLS assumptions are the (1) variables linearity, (2) zero conditional mean (3) no multi-collinearity (4) homoskedasticity and no auto-correlation. After completing all the of the above OLS Assumption tests, then the regression models are further analyzed by observing the **F-Test, t-test, and p-value** of the predictors in each model**:**

- If the p-value is lower than 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted.
- If the p-value is greater than 0.05, the null hypothesis cannot be rejected. No strong evidence to support the alternate hypothesis or lacks of statistical significance.

RESULTS, ANALYSIS AND DISCUSSION

ADRO Financial Performance Analysis

Table 0.19 ADRO Income Trend from 2012-2021

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Revenue growth	58%	-27%	-4%	11%	29%	-6%	-19%	1%	-12%	-7%
Net Income growth	549%	-64%	-9%	-11%	57%	126%	-18%	-20%	-40%	-31%
EBIT growth	436%	-54%	-31%	-6%	62%	77%	-33%	-8%	-36%	-35%

Net Profit Margin	25.8%	6.3%	12.6%	13.2%	16.5%	13.5%	5.6%	5.5%	7.0%	10.3%

Despite the volatile income trend from 2012 to 2020, with a few of negative income growths during the period, ADRO has recovered well in the most recent financial year. In 2021, ADRO experienced exponential positive growth in net income by 549%, as shown in Table 0.19. The impact of drastic changes as a result of a global pandemic is optimistic for ADRO, which is evident in the drastic income growth in the last financial year. The significant variations in ADRO's income is most likely due to the fluctuations in the commodity market for the past 10 year. The spike in commodity price because of the pandemic also substantially contributed to the exponential revenue growth that ADRO experienced in 2021.

Table 0.20 Summary of ADRO, INDY, and industry average financial ratios

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	10-year Average
Return on Assets (ADRO)	**14.7%**	**2.3%**	**6.1%**	**6.9%**	**8.0%**	**5.5%**	**2.4%**	**2.8%**	**3.4%**	**6.2%**	**5.8%**
Return on Assets (INDY)	1.8%	(2.9%)	0.1%	2.7%	11.8%	(5.2%)	(3.5%)	(1.3%)	(2.3%)	4.0%	0.5%
Return on Assets (Industry)	17.5%	2.3%	6.4%	14.0%	13.8%	3.8%	(6.7%)	1.7%	2.7%	7.0%	6.3%
Return on Equity (ADRO)	**24.5%**	**4.0%**	**10.5%**	**11.4%**	**13.6%**	**9.5%**	**4.6%**	**5.7%**	**7.4%**	**14.1%**	**10.5%**
Return on Equity (INDY)	7.2%	(10.8%)	0.5%	8.7%	34.7%	(13.3%)	(8.8%)	(3.3%)	(5.4%)	9.3%	1.9%
Return on Equity (Industry)	20.4%	11.2%	11.0%	10.9%	16.6%	10.1%	(0.5%)	2.0%	15.0%	(42.8%)	4.1%
Current Ratio (ADRO)	**2.08**	**1.51**	**1.71**	**1.96**	**2.56**	**2.47**	**2.40**	**1.64**	**1.77**	**1.57**	**1.97**
Current Ratio (Industry)	2.00	1.69	1.50	1.51	1.62	1.67	1.64	1.49	2.06	2.38	1.75
Current Ratio (INDY)	1.84	1.97	2.01	2.18	2.05	2.13	1.64	2.10	2.19	1.31	1.94
Debt to Equity (ADRO)	**0.22**	**0.24**	**0.28**	**0.21**	**0.21**	**0.23**	**0.37**	**0.30**	**0.33**	**0.37**	**0.28**
Debt to Equity (INDY)	1.49	1.59	1.18	1.21	1.20	0.98	0.92	1.01	1.03	0.74	1.14
Debt to Equity (Industry)	0.27	0.39	(0.43)	(0.64)	0.19	1.23	1.98	1.11	0.88	6.19	1.12
Total Debt to Total Assets (ADRO)	**0.22**	**0.24**	**0.28**	**0.21**	**0.21**	**0.23**	**0.37**	**0.30**	**0.33**	**0.37**	**0.28**
Total Debt to Total Assets (INDY)	0.36	0.39	0.34	0.37	0.37	0.40	0.36	0.40	0.42	0.32	0.37
Total Debt to Total Assets (Industry)	0.23	0.30	0.29	0.28	0.28	0.52	0.52	0.41	0.38	0.34	0.36
TATO (ADRO)	**0.57**	**0.37**	**0.48**	**0.52**	**0.49**	**0.40**	**0.43**	**0.51**	**0.49**	**0.60**	**0.49**
TATO (INDY)	0.85	0.58	0.76	0.81	0.40	0.39	0.49	0.48	0.37	0.34	0.55
TATO (Industry)	0.85	0.58	0.72	0.86	0.67	0.51	0.55	0.64	0.70	0.71	0.68

Table 0.20 illustrates the key financial ratios that indicate ADRO relative financial performance and position over the 10-year-period from 2012 to 2021. From 2020 to 2021, the company ROE and ROA grew significantly. In comparison to the coal industry and its closest competitor (INDY), although the ROA is slightly below the industry average in 2021, ADRO still outperformed its competitor by 12%. In the past 20 years, ADRO has maintained positive ROA and ROE, indicating that the management has efficiently managed the company asset

base and investor's capital to generate returns for the capital providers. ADRO had successfully achieved a 24.5% of ROE, outperforming both INDY and the industry average in 2021.

In terms of financial leverage, ADRO maintained consistent proportion of debt financing as indicated by the stable DER over the past 10 years, at 0.51 on average. A relatively low proportion of debt implies that ADRO is financed more on equity, so that the company is less financially risky compared to the overall mining industry and its competitor. Furthermore, ADRO's current ratios are consistent in the range between 1.5 to 2 which shows that the company has no issues in servicing short-term obligations. Despite the satisfactory liquidity and profitability performance, ADRO's low asset turnover ratio (i.e., TATO) is concerning compared to its competitor and the coal industry. Low asset turnover ratios may suggest that the existing asset base is not managed efficiently to generate maximum revenues.

DuPont Analysis of ADRO Financial Performance

Return on equity of ADRO faced a remarkable growth over the last 10 financial years from 14.10 % to 24.46. Particularly, ADRO's ROE improved substantially in 2021 by 20.5%. This surge in ROE may be supported by the improvement of both asset turnover ratios and net income in the most recent financial year. Deconstructing ADRO's ROE further by applying the DuPont Framework Analysis into three main aspects:

- **Operating efficiency –** Operating efficiency is represented by the profit margin ratio (net income divided by total revenues). As shown in Table 0.20, ADRO profit margin grew significantly from 2020 to 2021 by almost three times (from 6.3% in 2020 to 25.8% in 2021). The increase can be explained by the increasing trend of overall revenues owing to the bullish commodity market in the last financial year.
- **Financial Leverage** - The average of debt-to-equity ratios for the past ten years for ADRO is 0.51 times, and the most recent financial year at 0.37, lower compared to the prior year. From Table 0.20, it can be seen that ADRO is financed less on debt, as shown by the overall decreasing trend in debt-to-equity and debt-to asset ratios.
- **Asset use efficiency –** Although the ratio is relatively low compared to the industry average and INDY, ADRO improved its asset base efficiency from 2020 to 2021 which may contribute to the growth in 2021 ROE. Nonetheless, ADRO's TATO is still considered low (less than 1x), suggesting less efficient asset use in generating sales. This is evident in ADRO most recent annual report that shows a decreasing trend of coal production (PT Adaro Energy Indonesia Tbk, 2021), despite the bullish market for commodity in 2020 and 2021. Other supply chain challenges such as unfavorable weather, labor and equipment supply constraint, outbreak of COVID-19 that occurred during the year (PT Adaro Energy Indonesia Tbk, 2021), also faced by ADRO in 2021 that adversely affected ADRO's productivity and asset efficiency.

For this reason, it can be understood that the remarkable improvement in ROE is largely affected by a market factor – a surge in commodity prices in the market – which increases ADRO's total revenues and profit despite the inefficient asset use in production. The DuPont framework pinpoints the main drivers of ADRO's ROE, particularly in 2021. The analysis reveals that the exponential growth in 2021's ROE is least likely to be affected by a highly efficient asset utilization nor increase in financial leverage. The bullish commodity market, increase in commodity price, contribute largely to the improvement in ADRO's profit, and in turn, increases its ROE ratio. Nonetheless, the positive effect of increasing coal price is partially offset by the reduction in coal production by ADRO.

The Effects of Financial Performance on ADRO Stock Returns

The first regression model as expressed in (Equation 1 intends to predict stock returns of ADRO (dependent variable) with market return, leverage, liquidity, asset turnover, profitability as the independent variables. The hypothesis addressed by the first regression model are as follows:

H1a: Market Return positively affects stock return of ADRO
H1b: Leverage positively affects stock return of ADRO
H1c: Liquidity negatively affects stock return of ADRO
H1d: Asset Turnover positively affects stock return of ADRO
H1e: Profitability positively affects stock return of ADRO

After assessing the first linear regression model (Equation 1), the tests indicated that all OLS Assumption is satisfied. The residuals plot of the variables in the regression model satisfies the normality and zero conditional mean of OLS assumption. The Variance inflation factor (VIF), which measures the level of multicollinearity in the multiple regression variables, for all predictors in the first regression model do not exceed 5 (the acceptable benchmark for level of multi-collinearity). Thus, the statistical test indicates that multi-collinearity is not present among the variables. The regression model also passed the auto-correlation test, in that the error terms in the regression model are independently and identically distributed.

1st Regression Model

$$Y_1 = 0.23227 + 0.51398X_1 - 0.01036X_2 - 0.01811X_3 - 2.20684X_4 + 3.32041X_6 + \varepsilon$$

Table 0.21 Regression summary of the first regression model

Regression Statistics	
Multiple R	0.40205
R Square	0.16164
Adjusted R Square	0.03835
Standard Error	0.14757
Observations	40

ANOVA

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	5	0.14276	0.02855	1.31108	0.28258
Residual	34	0.74041	0.02178		
Total	39	0.88317			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.23227	0.26870	0.86441	0.39342

Quarterly JKSE Return	0.51398	0.35348	1.45405	0.15510
Debt to Equity	-0.01036	0.13976	-0.07412	0.94135
Current Ratio	-0.01811	0.06438	-0.28128	0.78020
Asset Turnover	-2.20684	1.99591	-1.10568	0.27663
Return on Equity	3.32041	1.89009	1.75675	0.08796*

The regression coefficients suggest the following:

- ADRO Stock Returns are negatively related with the level of leverage, liquidity, asset turnover as measured by debt-to-equity, current ratio, and TATO respectively.
- ADRO Stock Returns are positively related with profitability, and market return as measured by ROE and JKSE Return.

Based on the regression summary results, the value of determination coefficient or R-squared generated from the first regression model is relatively small (R^2 = 0. 16164). This indicates that only 16.2% of the variation in ADRO stock returns are explained by the variation in the independent variables (leverage, liquidity, asset turnover, profitability, market return). The remaining 84% of variance is explained by other variables not observed in the model, represented in the error term, ε.

The F-value is 1.31108, which is relatively low suggesting that the joint effect of the variables on ADRO stock returns is potentially not statistically significant. Furthermore, the p-values of each independent variable are higher than the 5% significance level threshold (0.05) for the leverage, liquidity, asset turnover, profitability, market return measures. However, at the 10% significance level, ROE shows statistically significant positive effect on ADRO stock returns. Nonetheless, at the 5% significance level, there is no strong evidence to support the proposed hypothesis (*H1a, H1b, H1c, H1d, H1e*) as the null hypothesis fail to be rejected, none of the variables have statistically significant effect on stock returns.

The Effect of Financial Performance on ADRO Profitability

The second regression equation model (Equation 2) tests the statistical significance and the predictive influence of the selected financial factors on the level of profitability of ADRO. Profitability metric used in the model is EBITDA Margin rather than ROE, the common measure of profitability. Considering ADRO is an asset-intensive company that has a substantial amount of fixed assets, hence, significant amount of depreciation, EBITDA Margin is a more suitable profitability metric as the ratio factors out the effect of depreciation. The following group of hypotheses addressed by the second model are:

H2a: Leverage positively affect profitability of ADRO
H2b: Liquidity positively affect profitability of ADRO
H2c: Asset Turnover positively affect profitability of ADRO
H2d: Working capital turnover positively affect profitability of ADRO

Similar to the OLS assumptions tests performed on the first regression model, the OLS assumptions tests on the second regression model (Equation 2) are also required and tested with similar method and the result is the proposed regression model as expressed in Equation 2 also satisfies the key OLS Assumptions.

2nd Regression Model

$$Y_2 = -0.698192 - 0.136754X_2 + 0.131610X_3 + 4.479759X_4 + 0.047775X_5 + \varepsilon$$

Table 0.22 Regression summary of the second regression model

Regression Statistics	
Multiple R	0.859645
R Square	0.738989
Adjusted R Square	0.709160
Standard Error	0.067124
Observations	40

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	0.44649	0.11162	24.77354	0.000000001
Residual	35	0.15770	0.00451		
Total	39	0.60419			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.698192	0.120973	-5.771448	0.000002
Debt to Equity	-0.136754	0.066008	-2.071765	0.045720
Current Ratio	0.131610	0.042599	3.089478	0.003915
Asset Turnover	4.479759	0.585903	7.645909	0.000000
Working Capital Turnover	0.047775	0.052922	0.902748	0.372831

The regression coefficients and p-values suggest the following:

- The level of ADRO profitability is negatively related with the level of leverage as measured by the debt-to-equity ratio. Profitability is expected to decrease for every increase in the degree of financial leverage. As shown by the p-values, the negative effect is statistically significant at the 5% significance level.
- The level of ADRO profitability is positively related with liquidity as measured by Current Ratio. The effect is statistically significant as the p-values is below the significance level of 5%. Hence, there is strong statistical evidence to reject the null hypothesis.
- The level of ADRO profitability is positively related with total asset turnover. Profitability (EBITDA Margin) is expected to increase by 0.027 for every one

percentage point increase in TATO, implying that the higher efficiency ADRO in generating sales through utilizing its total assets, higher profitability is expected

- The effect of working capital turnover on ADRO profitability is not statistically significant since the p-values is significantly larger than 5%. Hence, there is no strong statistical evidence to reject the null hypothesis.

Based on the regression summary results, the value of determination coefficient or R-squared generated from the second regression model is relatively high (R^2 = 0.739). This indicates that 74% of the variations in ADRO's level of profitability (i.e., EBITDA Margin) is explained by the variations in the independent variables (leverage, liquidity, asset turnover and working capital turnover). The remaining 26% of variance is explained by other variables not observed in the model, represented in the error term, ε.

The F-value is 24.77354, which is significantly high, suggesting that the joint effect of the independent variables on ADRO profitability is statistically significant. Furthermore, the considerably low *p*-value of TATO indicates that this financial metric has positive statistically significant effect on profitability. The low p-values imply that the null hypothesis – indicating that TATO has no impact on profitability – can be strongly rejected, supporting the proposed hypothesis *H2c.* The *p*-value for Current Ratio and Debt to Equity ratio are also below 0.05 that suggests a statistically significant effect on ADRO profitability. In contrast, working capital ratio appears to lack the statistical significance in predicting ADRO level of profitability as its p-values is clearly larger than 0.05. The result indicates that only leverage, liquidity and total asset turnover that have statistically significant effect on profitability.

CONCLUSION, LIMITATION, IMPLICATIONS AND RECOMMENDATIONS

Conclusion

Based on the comparative analysis of ADRO's financial performance, this study concludes that the company has performed relatively well financially especially in earning positive returns and maintaining moderate level of liquidity. These are evident in the growing profitability ratios and stable proportion of debts over the last ten financial years. Nonetheless, the concerning low asset turnover ratios suggest that ADRO management has failed to efficiently utilize their existing capital to generate maximum revenues. The DuPont ratio analysis shows as to whether the three fundamental factors (operating efficiency, asset-use efficiency, and financial leverage) are the actual key drivers of ADRO's positive returns. The analysis showed that the rise in commodity prices as a result of a macroeconomic shock (i.e., COVID-19 pandemic) was the likely explanation for ADRO's improvement of profitability. The decline in coal production, asset-use efficiency and financial leverage are not the factors improving the company's returns.

The first regression analysis reveals that none of the fundamental financial factors have statistically significant impacts in predicting ADRO stock returns. The low R-squared value of the model indicates that ADRO stock return is most likely affected by other unobserved factors – price fluctuations of coal in the market being one of the examples. It is out of the scope of this study to examine the effects of external market-generated metrics as this study focuses on the impacts of a firm's fundamental financials on company stock returns. The results in this study also explain the semi-efficiency of the Indonesian capital market, particularly in the coal mining sector. No fundamental factors having significant impact on ADRO stock returns implied that majority of the investors in the market do not rely on fundamental financial factors in making investment decisions.

The second regression analysis revealed that improvement in the company's financial fundamentals, particularly liquidity and total asset turnover, was positively linked with improvement in profitability. According to Munawar (2019), the high amount of productive assets will improve sales and positively affect profitability. This is consistent with the result of this study in analyzing the effect of asset turnover on profitability

In conclusion, the results from the ratio analysis and regression models are consistent. Both analyses reveal that stock returns and a company's value on the commodity sector is largely affected by external shocks, and that, investors in this sector relies less on fundamental factors, and more on market-generated information.

Limitation

The results of the multiple linear regression analysis indicates that the explanatory ability of financial performance in predicting the company stock returns and profitability is still limited. There are still other unobserved variables that potentially have significant impact on a coal mining company profitability and share prices in the market, for instance, coal price fluctuations and other macroeconomic factors. Future research can further explore how these external factors affect company share price and profitability. Incorporating both financial performance (as demonstrated in this study) with key external market factors may improve the statistical model in explaining variances in company stock returns and profitability.

Theoretical Implications

Results in this study adds important insight about the key drivers of stock returns and profitability within the coal mining industry in Indonesia. It had discovered that factors such as liquidity, leverage, asset efficiency and profitability, have no significant impact on a coal mining company stock return. External factors such as macroeconomic shocks that eventually alter the demand and supply trend in the market plays a more vital role in stock prices fluctuations compared to the firm's financial fundamentals.

Practical Implications

The findings in this study have emphasized better understanding of the market which represent external factors (e.g. political climate, fluctuations in the economy, interest, and inflation rate trends), and the firm's fundamental factors would facilitate the development of more advanced economic models in predicting company financial performance in the relevant market. Very useful for shareholders' investment decision-making purposes and the company's management in directing their focus to key aspects that eventually enhance the firm value.

Recommendations

For analyzing coal mining company stock returns, investors should include the effects of external market factors (e.g., demand and supply trend in the industry sector, macroeconomic factors, political climate, commodity price fluctuations) in addition to the company's financial performance. Market-oriented approach in evaluating company stock returns is preferred, also for reasons related to the evaded relevance of reported accounting information. (Lev & Gu, 2016) stated that the usefulness of financial information has rapidly dissipated between 2003 and 2013 as more and more companies rely on non-GAAP earnings information. Hence, investors should be more resourceful in gathering the right information – both financial and non-financial, internally and market generated – for making the most reasonable investment decisions.

The regression analysis discovered that changes in Total Asset Turnover (TATO) has the largest and most statistically significant effect on ADRO profitability. This finding suggests that companies, especially asset-intensive companies such as coal mining firms, need to focus on asset and cost efficiency to improve their profitability (Endri et al., 2021). Leverage and liquidity are also another significant determinants of ADRO profitability. A company's ability to control its financial risk through its capital structure management and to manage its liquidity are therefore, priorities in improving profit metrics.

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