THE ANTECEDENTS OF FINANCIAL PERFORMANCE AND THEIR IMPLICATIONS FOR FIRM VALUE IN MINING SECTOR COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE

a Muhammad Astri Yulidar Abbas, b Djoko Setyadi, c Ardi Paminto, d Musdalifah Azis

ABSTRACT

Objective: This study aims to determine the financial performance and its implications for company value in mining sector companies listed on the Indonesia Stock Exchange.

Theoretical framework: Theoretical materials were based on international scientific publications, reports, scientific papers.

Method: This research uses quantitative research methods. The validation of multiple hypotheses in the initial framework provides empirical support for the theoretical propositions and conceptual framework put forward by Jensen and Meckling (1976), Sveiby (2010), and Stewart and Ruckdeschel (1998). Acceptance of the hypothesis in the second model is in line with the point of view expressed by Brigham et al. (2015), Freeman (2015), and Jensen & Meckling (1976).

Results and conclusion: The findings of this study indicate that the first model demonstrates a positive and statistically significant relationship between ownership structure, intellectual capital, and financial performance. Moreover, the moderation of intellectual capital in the context of the interaction between capital structure and financial performance demonstrates a noteworthy and unfavorable impact on financial performance. In contrast, it has been observed that both capital structure and exchange rates do not exert a substantial influence on financial performance. The findings of the second model indicate that various factors, such as capital structure, financial performance, ownership structure, and intellectual capital, have a statistically significant and positive impact on business value, with the exception of the exchange rate. In the present study, the findings pertaining to indirect influence through mediation reveal that the financial performance of firms plays a mediating role in the association between capital structure, ownership structure, exchange rates, and firm value.

Originality/value: The findings of the analysis indicate that the proposed hypotheses can be accepted, with the exception of a few hypotheses that were rejected due to the lack of substantial effects observed in the results. The internal role of a firm plays a crucial function in attaining optimal financial performance and determining the value of a mining company.

a Master in management, Mulawarman University, E-mail: threjuli@gmail.com, Orcid: https://orcid.org/0009-0003-8551-4106
b PhD in management, Mulawarman University, E-mail: djoko.setyadi@gmail.com, Orcid: https://orcid.org/0000-0002-1035-7966
c PhD in management, Mulawarman University, E-mail: ardi.paminto@feb.unmul.ac.id, Orcid: https://orcid.org/0000-0002-2354-0603
d PhD in management, Mulawarman University, E-mail: musdalifah.azis@feb.unmul.ac.id, Orcid: https://orcid.org/0000-0003-1627-2513
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OS ANTECEDENTES DO DESEMPENHO FINANCEIRO E SUAS IMPLICAÇÕES PARA O VALOR FIRME EM EMPRESAS DO SETOR DE MINERAÇÃO LISTADAS NA BOLSA DE VALORES DA INDONÉSIA

RESUMO

Objetivo: Este estudo visa determinar o desempenho financeiro e suas implicações para o valor da empresa em empresas do setor de mineração listadas na Bolsa de Valores da Indonésia.

Teórico estrutura: teórica materiais foram baseado ligado internacional publicações científicas, relatórios, artigos científicos.


Resultados e conclusão: Os resultados deste estudo indicam que o primeiro modelo demonstra uma relação positiva e estatisticamente significativa entre estrutura de propriedade, capital intelectual e desempenho financeiro. Além disso, a moderação do capital intelectual no contexto da interação entre a estrutura de capital e o desempenho financeiro demonstra um impacto notável e desfavorável no desempenho financeiro. Em contraste, observou-se que a estrutura de capital e as taxas de câmbio não exercem uma influência substancial sobre o desempenho financeiro. Os achados do segundo modelo indicam que vários fatores, como estrutura de capital, desempenho financeiro, estrutura de propriedade e capital intelectual, têm impacto estatisticamente significativo e positivo no valor dos negócios, com exceção da taxa de câmbio. No presente estudo, os achados relativos à influência indireta por meio da mediação revelam que o desempenho financeiro das empresas desempenha um papel mediador na associação entre estrutura de capital, estrutura acionista, taxas de câmbio e valor firme.

Originalidade/valor: Os resultados da análise indicam que as hipóteses propostas podem ser aceitas, com exceção de algumas hipóteses que foram rejeitadas devido à falta de efeitos substanciais observados nos resultados. O papel interno de uma empresa desempenha um papel crucial na obtenção de um desempenho financeiro ótimo e na determinação do valor de uma empresa mineira.

Palavras-chave: desempenho financeiro, valor de empresa, empresas do setor de mineração, bolsa de valores.

1 INTRODUCTION

Mining and mining service firms refer to enterprises involved in the extraction of natural resources, including but not limited to precious metals, coal, and petroleum. It has been observed that mining and commodity stocks exhibit a higher level of risk compared...
to other stocks. The magnitude of stock price variations is sufficiently significant to induce fast oscillations in value. Undoubtedly, such significant volatility might have an impact on the market value of the stocks. The fluctuations observed in mining companies exert a significant impact on the entirety of production processes and contemporary activities. Consequently, any price fluctuations, be it an increase or decrease, within mining companies have substantial ramifications on all economic activities and the global community's livelihood.

It is commonly acknowledged that engaging in long-term investment in commodity equities is not advisable when the mining company's commodity price changes are significant. This phenomenon occurs due to the inherent volatility of commodity prices, which can experience both downward and upward fluctuations. The outcome is contingent upon the decisions made by investors, who possess the agency to assume such risks. In instances where the risks are elevated, investors must seek commensurately larger returns on their investments in stocks. In recent years, the coal mining sector has emerged as the primary source of Non-Tax State Revenue (PNBP) derived from natural resources. In 2015, the land and building tax recorded its highest value, amounting to IDR 27 trillion.

Contribution by sector can be illustrated in the following graph:

Figure 1. JCI Sectoral Index Movement Chart for 2018-2019

Source: Bursa Efek Indonesia
Based on the graphical representation, it can be observed that the mining sector made a negative contribution of -12.82% to the trading index on the Indonesia Stock Exchange. This Figure 1 presents actual evidence to support the notion that the mining industry has a negligible impact on the trade index. This Figure 1 can also serve as an empirical indicator of the lack of demand for shares in the mining sector, thereby impacting the financial performance and overall value of mining businesses.

The Figure 2 below depicts the fluctuation of indices across several sectors.

According to the Figure 2, it can be observed that the mining sector exhibits a negative contribution of -27% to the trade index on the Indonesia Stock Exchange. In the year 2020-2021, there will be a notable integration of the mining sector into the energy sector, as indicated by a 10% increase in the sector’s activity compared to the preceding year, as depicted in the accompanying graph:
The aforementioned data offers factual evidence to support the notion that the mining industry has a limited impact on the trade index. This Figure 3 can also serve as an empirical indicator of the lack of demand for equities in the mining industry, thereby influencing the financial performance of mining businesses and subsequently impacting their overall worth.

A high company value is indicative of elevated shareholder wealth. The stock market price serves as a proxy for both shareholder and corporate wealth, as it reflects the outcomes of investment, financing, and asset management decisions. Stable and elevated stock prices are indicative of the company’s financial performance, hence fostering heightened market confidence. This evidence suggests that the present performance of the company can ensure its future prospects. Consequently, the primary objective of the company is to enhance its value by promoting the prosperity of its owners or shareholders (Brigham & Gapenski, 2014). This objective aligns with the overarching goal of the company. The objective of going public is to enhance shareholder welfare through the augmentation of the company’s worth (Salvatore, 2005). According to Keown (2010), the
The concept of firm value refers to the market value of a company's outstanding debt and equity securities.

The assessment of a company's value can be demonstrated by its financial statements, with particular emphasis on the financial situation report. This report encompasses historical financial data and income statements, enabling an evaluation of the company's annual profit generation. On the contrary, there exists a perspective that posits the valuation of a company extends beyond its financial statements. Instead, it encompasses the present value of the company's assets and the future value of its investments.

The evaluation of the company's performance can be observed by various factors, other than the rise in profits, which serves as an indicator of the company's capacity to meet its commitments to investors, shareholders, and other stakeholders. The valuation of a firm is also indicative of the financial resources or assets possessed by the company. The presence of strong corporate principles has the potential to entice external individuals to become part of the organization. Miller and Modigliani (1963) did a study examining the various aspects that impact the valuation of firms. Their research findings indicate that the value of a firm is contingent upon the earning potential of its assets.

The study undertaken by Dwijayanti et al (2011) examines the impact of financial performance on firm value, specifically focusing on the relationship between ROA and EVA with stock returns in subsequent periods. (Klimovskikh et al., 2023) The findings of this research indicate a positive and statistically significant association between ROA, EVA, and stock returns. Hence, the return on assets (ROA) is considered as one of the determinants affecting the valuation of a corporation. Contrasting findings were reported by Carningsih (2012) in their study, revealing a negative association between Return on Assets (ROA) and business value.

According to signaling theory, the earnings of a corporation might serve as a favorable indication of its future prospects. The consistent year-on-year improvement in profit growth serves as a favorable indicator of the company's performance. Furthermore, it should be noted that a rise in profitability would inevitably exert influence on the overall worth of the organization, commonly referred to as the firm's value. This, in turn, will be duly manifested in the valuation of its shares. Therefore, the stock value serves as a suitable indicator for assessing the efficacy of a firm, leading to the commonly held belief that maximizing the company's worth is synonymous with maximizing shareholder value.
wealth. The evaluation of a company's shares can be determined by analyzing the returns earned by its shareholders. According to Ross (2002), shareholders might realize returns through the receipt of cash dividends or through fluctuations in share values over a given time frame.

Capital structure theory posits that a company's financial policy is crucial in determining the optimal mix of debt and equity, with the ultimate goal of maximizing the firm’s value. The ideal capital structure of a corporation entails a strategic blend of debt and equity, sourced externally, with the objective of maximizing the company's stock value. The company's management establishes a designated capital structure at any particular point in time, which may represent the most favorable structure, albeit subject to potential modifications in the target over time. Several elements play a significant role in determining a company's capital structure. These aspects include the stability of sales, the composition of assets, the level of operating leverage, the availability of growth prospects, the profitability levels, the impact of income taxes, and the measures taken by management, among others.

Additional variables that influence the capital structure of a corporation include the size of the organization, as larger firms typically encounter less difficulty in securing loans in comparison to smaller enterprises. Hence, by the acquisition of a loan, the organization can facilitate further advancements (Mai, 2006). The capital structure refers to the aggregate pool of financial resources available to organizations, which can be derived through long-term debt and equity (Gitman, 2006). According to Jensen and Meckling (1976), the utilization of debt for financing a company's operations is contingent upon the proportion of ownership held by institutions and management.

The assessment of financial performance holds significant importance within the context of a coal mining enterprise, typically gauged through the utilization of a profitability ratio, such as Return on Assets (ROA). The enhancement of profitability yields a favorable impact on the financial performance of the firm, facilitating the attainment of the objective to maximize company value. This outcome is likely to be met with a favourable response from investors, leading to an upsurge in the demand for shares and subsequently driving up share prices. The return on assets (ROA) is a metric that can be used to assess profitability ratios. Ross (2007) defines Return on Assets (ROA) as the metric that measures the ratio of a company's net income to its total assets. The Return on Assets (ROA) metric is utilized to evaluate the level of profitability achieved by a
company in relation to its assets and overall value. Additionally, ROA is subject to various factors such as capital structure, ownership structure, and exchange rates, as highlighted in the studies conducted by Mujahid and Akhtar (2014), Zakaria et al. (2014), Hess et al. (2010), Fauzi and Locke (2012), Pathirawasam and Wickremasinghe (2012), Vintilă and Gherghina (2014), and Setiawanta et al. (2021). This demonstrates that the core financial variable plays a crucial role in attaining the company's return on assets (ROA) metric.

Similarly, the valuation of a firm is significantly impacted by factors such as its capital structure (De Miguel et al., 2004), ownership structure (Hess et al., 2010; Pathirawasam & Wickremasinghe, 2012), and currency rate (Flota, 2009). According to the study conducted by Doidge et al. in 2006, The financial performance aspect holds considerable significance in this particular scenario, since it exerts a substantial influence on the value of the firm (Wenjuan et al., 2011; Ramezani et al., 2002).

The influence of intellectual moderation is a crucial determinant in the association between capital structure and financial success (Baba & Baba, 2021; Ling, 2012). Furthermore, it is worth noting that financial performance plays a significant role as an intermediary factor between capital structure and firm value. De Miguel, Pindado, and De La Torre (2004). Similarly, the involvement of financial performance serves as an intermediary in the association between ownership structure and firm value (Kokoreva & Stepanova, 2013), as well as in the connection between exchange rates and firm value (Hasnawati, 2005).

The worth of a firm is significantly influenced by the success of the company, which is assessed by financial indicators. Similarly, the financial success of a company is influenced by various aspects such as its capital structure, ownership structure, and fluctuations in exchange rates. Therefore, it is imperative to conduct additional research in order to assess the worth of the firm and ascertain its impact on sector stock price indexes, particularly in the context of mining companies. This evaluation should encompass both internal and external variables influencing the company, as well as its financial performance and overall value.

The objective of this study was to examine the impact of capital structure, ownership structure, and exchange rates on financial performance.
2 MATERIALS AND METHODS

2.1 TYPE RESEARCH

This particular form of investigation employs a quantitative methodology. The primary rationale behind employing quantitative research lies in the examination of theories through the collection of numerical data, followed by statistical analysis. Hence, quantitative research typically encompasses the utilization of data collection devices, and quantitative approaches primarily focus on drawing generalizations about the target population under investigation (Zikmund et al., 2010).

Research can be categorized according to its intended objective. According to Saunders and Tosey (2013), research is commonly categorized into three types: exploratory, descriptive, and explanatory. However, Cooper and Schindler (2003) classify research as descriptive and causal. Explanatory studies, also known as causal studies, are research endeavors that aim to establish causal links between variables. The primary focus in this instance pertains to the examination of the circumstances or issue in order to elucidate the correlation between variables (Saunders & Tosey, 2013). Explanatory studies are specifically designed to investigate the causal relationship between two events (Hair, Jr, 2015). This study employs a quantitative descriptive approach, utilizing secondary data obtained from financial reports sourced directly from the www.idex.com website.

2.2 RESEARCH SCOPE

The focus of this study is on the mining sub-sector businesses that are publicly listed on the Indonesia Stock Exchange over the time frame of 2018 to 2021.

2.3 RESEARCH DURATION

The research was carried out from October 2022 to the day of the dissertation defense.
2.4 TYPE AND SOURCE OF DATA

2.4.1 Data primer

This study does not employ primary data collection methods; instead, it relies on secondary data sources, specifically financial records released by the Indonesia Stock Exchange.

2.4.2 Secondary data

Secondary data refers to information that is collected indirectly, typically through intermediaries or individuals who have previously documented it. The study utilized secondary data from a combination of published and unpublished literature sources. Secondary data refers to information that is derived from papers or reports that have through a rigorous validation process and have been published.

2.4.3 Population and research sample

The study focuses on the population of mining sector businesses that are publicly listed on the Indonesian Stock Exchange. According to Sekaran and Bougie (2016: 235), the population refers to the entirety of individuals or items that are taken into account in statistical investigations. The study encompasses the entire population of mining industry public businesses that are listed on the Indonesia Stock Exchange (IDX). The mining sector on the Indonesia Stock Exchange comprises a total of 41 listed companies, which are further categorized into various sub-sectors, as outlined in Table 1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Mining Sub Sector and Issuers</th>
<th>Initial</th>
<th>IPO Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PT Adaro Energy Tbk ADRO</td>
<td>16-Jul-2008</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PT Atlas Resources Tbk ARII</td>
<td>8-Nov-2011</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PT. Borneo Olah Sarana Sukses Tbk BOSS</td>
<td>15 Feb 2018</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PT Bumi Resources Minerals Tbk BRMS</td>
<td>09-Dec-2010</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>PT Baramulti Suskessarana Tbk BSSR</td>
<td>8-Nov-2012</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PT Bumi Resources Tbk BUMI</td>
<td>30-Jul-1990</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>PT Bayan Resources Tbk BYAN</td>
<td>12-Aug-2008</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PT Darma Henwa Tbk DEWA</td>
<td>26-Sep-2007</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>PT Delta Dunia Makmur Tbk DOID</td>
<td>15-Jun-2001</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>PT Afa Energi Investama Tbk FIRE</td>
<td>09 Juni 2017</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>PT Garda Tujul Buana Tbk GTBO</td>
<td>9-Jul-2009</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>PT Harum Energy Tbk HRUM</td>
<td>6-Oct-2010</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>PT Indo Tambangraya Megah Tbk ITMG</td>
<td>18-Dec-2007</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>PT Resource Alam Indonesia Tbk KKGI</td>
<td>1-Jul-1991</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>PT Mitrabara Adiperdana Tbk MBAP</td>
<td>10-Jul-2014</td>
<td></td>
</tr>
</tbody>
</table>
The study employed a purposive sampling technique for the sampling approach. The sample for this study was gathered using the purposive sampling method, with specific criteria used to determine the inclusion of participants:

1) From 2012 to 2021, a total of 41 firms operating in the coal mining sector were listed on the Indonesia Stock Exchange.

2) This study focuses on the examination of companies that have released audited financial reports throughout the quarterly period spanning from 2012 to 2021.

Based on the description above, the sample criteria can be found as shown on

Table 2:

<table>
<thead>
<tr>
<th>Kriteria Sampel Penelitian</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total population of mining companies on the IDX</td>
<td>41</td>
</tr>
<tr>
<td>2. Companies that are not listed on the IDX in the study period</td>
<td>0</td>
</tr>
<tr>
<td>3. Companies that do not have complete financial statements</td>
<td>7</td>
</tr>
<tr>
<td>4. The number of samples according to the criteria</td>
<td>34</td>
</tr>
</tbody>
</table>

Source: Prepared by the author.
This research utilizes financial report data, yearly reports, and macroeconomic factors, including exchange rates, specifically the rupiah exchange rate versus the US dollar. The data collection process is conducted on an annual basis, spanning from 2018 to 2021, resulting in a total of 136 data points or samples (34 data points each year for a period of 4 years).

2.4.4 Data collection technique

The authors employ the subsequent data collection approaches in order to acquire comprehensive and exhaustive data:

1) Gathering data from scholarly journals and papers that are pertinent to the study framework.

The data retrieval process involves downloading information from the Indonesia Stock Exchange, specifically focusing on the year relevant to the research subject.

3) This study examines documentation from many firm documents and frequently published media sources.

2.5 IDENTIFICATION AND DEFINITION OF OPERATIONAL VARIABLES

2.5.1 Variable classification

Once the research design, population, and research sample have been established, the subsequent task involves the identification of the research variables. The determination of research variables' measurement is contingent upon the inherent characteristics of the measurement and the methodology employed to ascertain its value inside the model. The categorization of research variables is determined by the presence of observable factors as well as latent variables. Observable variables are those that may be directly measured in a study by bringing together manifest variables or indicators. On the other hand, latent variables are unobservable and cannot be directly measured, but are estimated using certain indicators.

The process of ascertaining the worth of variables is categorized into exogenous variables and endogenous variables. Exogenous variables refer to variables in a model whose values are determined by factors external to the model. Exogenous constructs refer to independent variables that are not anticipated by other variables within the model, whereas endogenous variables are variables whose values are determined by equations or relationship models that are established. Endogenous constructions possess the ability to
forecast one or multiple other endogenous constructs, whereas exogenous constructs can
alone establish causal relationships with endogenous constructs. The detail was shown on
Table 3 below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Research variable</th>
<th>Notation</th>
<th>Variable Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Capital Structure</td>
<td>X₁</td>
<td>exogenous</td>
</tr>
<tr>
<td>2</td>
<td>Ownership Structure</td>
<td>X₂</td>
<td>exogenous</td>
</tr>
<tr>
<td>3</td>
<td>Exchange rate</td>
<td>X₃</td>
<td>exogenous</td>
</tr>
<tr>
<td>4</td>
<td>Intellectual Capital</td>
<td>Z</td>
<td>Mediators</td>
</tr>
<tr>
<td>5</td>
<td>Financial performance</td>
<td>Y₁</td>
<td>exogenous / Mediators</td>
</tr>
<tr>
<td>5</td>
<td>The value of the company</td>
<td>Y₂</td>
<td>exogenous</td>
</tr>
</tbody>
</table>

Source: Prepared by the author.

2.5.2 Variable operational definitions

The operational variable, also known as the operational definition of a variable,
involves identifying the construct by assigning different values to gain a comprehensive
understanding of the occurrence in order to facilitate measurement. The concept of
construct refers to an abstract representation of phenomena or the actual world, which is
necessary to be operationalized in order to conduct research.

This operationalization involves the measurement of variables using different
values (Cooper and Schindler, 2012: 106).

The present study outlines the structure for operationalizing the variables.

1) The Concept of Ownership Structure

The ownership structure in this particular context refers to the share ownership
structure, which specifically pertains to the proportion of shares held by insiders in
relation to those held by investors. Alternatively, the shareholding structure refers to the
distribution of institutional ownership, management ownership, and foreign ownership
within a company's shareholding composition. The primary objective of this research is
to examine the mining businesses that are publicly traded on the Indonesian Stock
Exchange.

2) The Concept of Capital Structure

The capital structure refers to the evaluation or equilibrium of a firm's long-term
financing, as demonstrated by the contrast between the aggregate obligations held by
mining companies and their own capital represented by total assets. The capital structure
represents the allocation of various financial commitments to fund investments. By
understanding the capital structure, investors can assess the risk and return equilibrium associated with their investments.

3) The Concept of Exchange Rates

The focus of this study pertains to the exchange rate of the Indonesian rupiah currency in relation to the United States dollar during a specific timeframe. The determination of the exchange rate is also achieved by utilizing the middle rate of the USD during the specified period of analysis.

4) The concept of intellectual capital, as defined in this research, encompasses the collective knowledge and expertise of individuals inside an organization. These individuals contribute to many forms of added value, such as competitive advantage, which ultimately supports the operational performance of mining firms.

The topic of discussion pertains to the financial performance of a certain entity. The study examines financial performance as an indicator of a mining company's financial state and its capacity to generate profits utilizing its total asset holdings.

6) Corporate Value Corporate value refers to the assessment made by investors regarding a company's proficiency, typically linked to the stock price of mining firms. Stock prices as shown on Table 4 are categorized as being comparatively affordable stock prices as shown on Table 4.

Table 4. Variable Operational Definitions and Variable Indicators

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Dimension</th>
<th>Indicator</th>
<th>Scale</th>
</tr>
</thead>
</table>
| The value of the company (Y2) | endogenous variable | Price Book Value = share price / book value of shares  
Initials = PBV | Ratio                     |
| Financial performance (Y1)   | endogenous variable / Mediator | Return On Assets = Net profit after tax / Total Assets (ROA)  
Initials = ROA | Ratio                     |
| Capital Structure (X1)       | endogenous variable | Debt Asset Ratio = Total Debt / Total Assets (DAR)  
Initials = DAR | Ratio                     |
| Ownership Structure (X1)     | endogenous variable | Total % of shares that are dominated by institutions  
Initials = credits | Ratio                     |
| Exchange rate (X3)           | endogenous variable | Exchange Rate = Bank Indonesia Rupiah Exchange Rate against US Dollars in the study period  
Initial = EXCHANGE | Ln Middle Exchange Rate of Rupiah to USD |
| Intellectual Capital (Z)     | Moderating variable | Value Added Intellectual Capital = VA = Out – In  
VACE = VA / CE | Ratio                     |
2.6 STATISTIC ANALYSIS

2.6.1 Path analysis statistical analysis tool

The hypothesis testing in this work utilized multiple linear regression analysis using the moderated regression analysis (MRA) model, as described by Raykov and Marcoulides (2008), Booth (2003), and Timm (2002). The resolution of the issues presented in this study involves a series of sequential stages, which are outlined as follows:

1) 1st stage

The path diagram model is determined based on the paradigm of the relationship between variables in the following manner as show on Figure 4.

### Table

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAHC = VA / HC</td>
<td></td>
</tr>
<tr>
<td>VASC = SC / VA</td>
<td></td>
</tr>
<tr>
<td>VAIC = VACE + VAHC + VASC</td>
<td></td>
</tr>
<tr>
<td>Inisial = VAIC</td>
<td></td>
</tr>
</tbody>
</table>

Source: Prepared by the author.
2) 2nd Stage

Make a path diagram of the structural equation as shown on Figure 5 below:

![Figure 5. Equation Path Diagram](image)

Source: Prepared by the author.

The diagram Figure 5 is composed of two structural equations where X1, X2 and X3 are the exogenous variables Y1 as well as Y2 and the moderator variable Z.

1) Y1 = a + b1X1 + b2X2 + b3X3 + b4Z + b5Z*X1 + e (as substructural equation 1)

2) Y2 = a + b1Y1 + b1X1 + b1X2 + b3X3 + b4Z*Y3 + e as substructural equation 2)

3) 3rd Stage

Analysis using IBM SPSS is comprised of two steps. The first is the analysis for substructure 1 and the second for substructure 2.

Substructure 1
The substructural equation:

Y1 = a + b1X1 + b2X2 + b3X3 + b4Z + b5Z*X1 + e
Where:

\[ Y1 = \text{Financial Performance} \]
\[ X1 = \text{Capital Structure} \]
\[ X2 = \text{Ownership Structure} \]
\[ X3 = \text{Exchange Rate} \]
\[ Z = \text{Intellectual Capital} \]
\[ e = \text{errors} \]

Sub structure 2
Analysis
The sub structural equation is:

\[ Y2 = a + b1Y1 + b1X1 + b1X2 + b3X3 + b4Z\ast Y3 + e \]

The sub-structural equation 2 is the same as the sub-structural equation of the model that has been proposed

2.6.2 Data due diligence

This study utilizes secondary data sourced from the Indonesia Stock Exchange (IDX) and employs a linear regression model to conduct the analysis. Consequently, it is necessary to assess the classical assumptions to ensure the validity of the research data. In order to facilitate further analysis, it is important to do data testing on many aspects including data normality, heteroscedasticity, multicollinearity, and autocorrelation.

2.6.3 Hypothesis test

Hypothesis testing will be conducted in the event that the model constructed in this study satisfies the criteria for model testing. Once the model has been constructed, the test is conducted by evaluating the path coefficient or path loading, as well as the probability value or p-value. In the context of significance testing with a predetermined error rate of \( \alpha = 5\% \), it may be concluded that the p-value must be less than 0.05 in order to reject the null hypothesis. Given an error rate of \( \alpha = 10\% \), it may be concluded that the p-value is less than 0.1.

Hypothesis testing is conducted to examine the direct impact of the independent variable on the dependent variable. Indirect influence can occur through the utilization of moderator variables and intervening variables.
3 DISCUSSION RESULT

The present study conducted research by presenting the outcomes and conducting data analysis using secondary data obtained from the websites www.idx.com and ^JKSE. The data analysis was performed in accordance with the predetermined sample criteria established for this study. The data gathering procedures were modified to align with the research period spanning from 2018 to 2021. The obtained data satisfied the specified requirements for the sample, which included firms in the mining sector that were listed on the Indonesia Stock Exchange and possessed comprehensive (audited) and uninterrupted financial report data during the duration of the study.

The aforementioned data as shown on Table 5 are manually entered into the Excel program for each individual post, which is prepared for various research variables. These variables include the calculation of debt to asset ratios, company ownership structure, exchange rates, intellectual capital, return on assets, and private book to value. The data was collected from a sample of 34 companies, with the primary currency units being the United States Dollar (USD) and the Indonesian Rupiah (IDR). Furthermore, comprehensive data regarding the intermediate exchange rate between the Indonesian rupiah and the United States dollar is also compiled. The data is presented using two different currencies, including the inclusion of complete units, thousands, and millions.

All data pertaining to the variable are completely comparable, with precision maintained up to two decimal places. In order to prepare the data for input into the IBM SPSS application, the initial stage is doing a data normality analysis. This analysis entails utilizing the one sample Kolmogorov-Smirnov (KS) approach, which employs the Kolmogorov-Smirnov criteria. In order to address outlier data in regression analysis, it is necessary to adhere to the guidelines outlined in the Casewise technique.

<table>
<thead>
<tr>
<th>No</th>
<th>Companies Name</th>
<th>Companies Code</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PT Adaro Energy Tbk</td>
<td>ADRO</td>
<td>in thousand USD</td>
</tr>
<tr>
<td>2</td>
<td>PT Atlas Resources Tbk</td>
<td>ARII</td>
<td>in thousand USD</td>
</tr>
<tr>
<td>3</td>
<td>PT. Borneo Olah Sarana Sukses Tbk</td>
<td>BOSS</td>
<td>In Rp</td>
</tr>
<tr>
<td>4</td>
<td>PT Bumi Resources Minerals Tbk</td>
<td>BRMS</td>
<td>In USD</td>
</tr>
<tr>
<td>5</td>
<td>PT Baramulti Sukses Sarana Tbk</td>
<td>BSSR</td>
<td>In USD</td>
</tr>
<tr>
<td>6</td>
<td>PT Bumi Resources Tbk</td>
<td>BUMI</td>
<td>In USD</td>
</tr>
<tr>
<td>7</td>
<td>PT Bayan Resources Tbk</td>
<td>BYAN</td>
<td>In USD</td>
</tr>
<tr>
<td>8</td>
<td>PT Darma Henwa Tbk</td>
<td>DEWA</td>
<td>In USD</td>
</tr>
<tr>
<td>9</td>
<td>PT Delta Dunia Makmur Tbk</td>
<td>DOID</td>
<td>In USD</td>
</tr>
<tr>
<td>10</td>
<td>PT Afa Energi Investama Tbk</td>
<td>FIRE</td>
<td>In USD</td>
</tr>
</tbody>
</table>
Based on these 34 companies, in 4 years they produced 136 observational data. All currency data is converted into full rupiah.

3.1 ANALYSIS AND RESEARCH RESULTS

3.1.1 Preliminary data analysis

The comprehensive recapitulation of data for each variable is conducted based on the research period from 2018 to 2021, and includes the conversion of USD currency into the local currency, rupiah. Similarly, the median value is transformed into natural logarithm (Ln) form in order to generate the corresponding value of each variable with two decimal places.
3.1.2 Testing against classical assumptions

The inclusion of classical assumption testing is a necessary component when employing linear regression with the Ordinary Least Square method. This is done to ensure that the resulting regression equation is accurate in its estimation, free from bias, and exhibits consistency. The classical assumption is a prerequisite for the validity of the OLS linear regression model as an estimator.

The purpose of this analysis is to do a data normality test on substructures 1 and 2.

1. Assessing the normality of the data is a crucial and necessary step in order to mitigate any biases in subsequent analyses. The normality test is conducted utilizing the Kolmogorov-Smirnov normality test, which is employed to ascertain the normal distribution of residual values. An essential characteristic of a robust regression model is the presence of residual values that follow a normal distribution. The process of decision making is a critical aspect in which:

2. If the p-value is greater than 0.05, it can be concluded that the residual values follow a normal distribution. If the p-value is less than 0.05, it can be concluded that the residuals do not follow a normal distribution.

3. The output displays the findings of the analysis of unstandardized residuals.

<table>
<thead>
<tr>
<th>Table 6. Uji One-Sample Kolmogorov – Smirnov</th>
<th>Unstandardized Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>133</td>
</tr>
<tr>
<td>Uniform Parameters</td>
<td>Minimum</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
</tr>
<tr>
<td>Most Extreme Difference</td>
<td>Absolute</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>0.828</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.499</td>
</tr>
<tr>
<td>Exact Sig. (2-tailed)</td>
<td>0.451</td>
</tr>
<tr>
<td>Point Probability</td>
<td>0.000</td>
</tr>
</tbody>
</table>

a. Test distribution is uniform  
b. User-Specified  
c. There are 108 values outside the specified distribution range. These values are skipped  
Source: Output – Base on data 2023

Based on the outcomes of the normality test, it can be inferred that the Kolmogorov-Smirnov Z value of 0.828 is greater than the significance level of 0.05. Similarly, the Asymptotic Significance (2-tailed) value of 0.499 and the Exact
Significance (2-tailed) value of 0.451 are both greater than 0.05. Consequently, it can be deduced that the residual values exhibit a normal distribution. The initial experiment had a dataset consisting of 136 observations. The first Kolmogorov-Smirnov test indicated that the values were either unstandardized and less than 0.05, or not normally distributed. The indicator suggests that there are potentially three data points that can be classified as outliers. There is a dataset consisting of 133 observations that follow a normal distribution and are prepared for analysis in the subsequent stage. The detail is shown on Table 6.

1) Multicollinearity Test on Sub Structures 1 and 2

The multicollinearity test is employed to assess the presence of a correlation among the independent variables in a regression model. An ideal regression model should exhibit a lack of connection among its independent variables. The prevailing approach involves examining the Variation Inflation Factor (VIF) and tolerance values inside the regression model. A regression model is considered to be free from multicollinearity if the Variance Inflation Factor (VIF) value is less than 10 and the tolerance is greater than 0.1 as shown on Table 7.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>-18.118</td>
<td>9.932</td>
<td>-1.824</td>
<td>0.070</td>
<td>0.930 1.075</td>
</tr>
<tr>
<td>DAR</td>
<td>-0.021</td>
<td>0.020</td>
<td>-0.080</td>
<td>-1.044</td>
<td>0.298 0.959 1.043</td>
</tr>
<tr>
<td>SKS</td>
<td>0.002</td>
<td>0.001</td>
<td>0.218</td>
<td>2.872</td>
<td>0.005 0.959 1.043</td>
</tr>
<tr>
<td>KURS</td>
<td>1.885</td>
<td>1.039</td>
<td>-0.200</td>
<td>1.814</td>
<td>0.072 0.945 1.058</td>
</tr>
<tr>
<td>VAIC</td>
<td>0.025</td>
<td>0.004</td>
<td>-0.269</td>
<td>5.763</td>
<td>0.000 0.191 5.242</td>
</tr>
<tr>
<td>DAR*VAIC</td>
<td>-0.025</td>
<td>0.006</td>
<td>0.121</td>
<td>-4.391</td>
<td>0.000 0.196 5.106</td>
</tr>
</tbody>
</table>

Table 7. Sub Structure Multicollinearity Test 1

Source: Output – Base on data 2023

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>69.842</td>
<td>124.537</td>
<td>0.561</td>
<td>0.576</td>
<td>0.897 1.115</td>
</tr>
<tr>
<td>DAR</td>
<td>1.810</td>
<td>0.250</td>
<td>0.518</td>
<td>7.252</td>
<td>0.000 0.941 1.062</td>
</tr>
<tr>
<td>SKS</td>
<td>0.018</td>
<td>0.008</td>
<td>0.147</td>
<td>2.079</td>
<td>0.040 0.954 1.048</td>
</tr>
<tr>
<td>KURS</td>
<td>-7.404</td>
<td>13.029</td>
<td>-0.041</td>
<td>-0.568</td>
<td>0.571 0.941 1.063</td>
</tr>
<tr>
<td>ROA</td>
<td>5.677</td>
<td>0.980</td>
<td>0.424</td>
<td>5.795</td>
<td>0.000 0.897 1.115</td>
</tr>
</tbody>
</table>

Table 8. Sub Structure Multicollinearity Test 2

Source: Output – Base on data 2023
The results of the multicollinearity analysis as shown in Table 8, show that all VIF values are <10 and all tolerance values are >0.1 so it can be concluded that there are no symptoms of multicollinearity in the regression model.

1) Heteroscedasticity Test on Sub Structures 1 and 2

The heteroscedasticity test is employed to examine whether there exists a disparity in variance across the residuals across different observations inside the regression model. An optimal regression model is characterized by the absence of heteroscedasticity.

The Spearman correlation test was conducted to analyze the test results. The findings indicate that the unstandardized residual values of substructures 1 and 2 exhibit significance levels greater than 0.05. This observation indicates the absence of heteroscedasticity symptoms in the regression model. Similarly, the Scatterplot model illustrates that the two sets of data points exhibit a dispersed arrangement without a discernible pattern above and along the horizontal axis representing zero on the Y axis. Based on the analysis conducted, it can be inferred that there is no presence of heteroscedasticity in the regression model.

2) Autocorrelation Test on Sub Structures 1 and 2

The autocorrelation test is employed to examine the presence of a regression correlation between the residuals observed in the current time period (t) and the residuals observed in the preceding time period (t-1). Autocorrelation issues are not present in a well-performing regression model. The Durbin-Watson test (DW test) was employed as the testing methodology.

The study encompasses a dataset consisting of 133 observations, denoted as "n". Sub-structure 1 has 5 independent variables, whilst sub-structure 2 comprises 4 independent variables. Substructure 1 yields a value of \( dl = 1.6397 \) and \( du = 1.7954 \). The regression analysis of sub structure 1 yields a Durbin-Watson statistic (DW) value of 1.917. In order to establish the condition \( du < dw < 4 - du = 1.7954 < 1.917 < 2.2046 \), it is necessary to ensure the absence of autocorrelation symptoms in sub-structural regression model 1.

Moreover, sub-structure 2 yields a DW value of 1.812, with a sample size (n) of 133 and an independent variable of 4. The sub-structure 2 yields a value of \( dl = 1.6554 \) and \( du = 1.7791 \). Based on the provided information, it can be inferred that the inequality \( du < dw < 4 - du = 1.7791 < 1.841 < 2.2209 \) holds, indicating the presence of autocorrelation in the sub-structural regression model 2.
3.2 RESULTS OF INFERENTIAL STATISTICAL ANALYSIS

3.2.1 Analysis of sub-structure equations 1

1) Equation Analysis

Analysis of the structural equation is as follows:

\[ Y_1 = PY_1X_1 + PY_1X_2 + PY_1X_3 + PY_1Z + PY_1X_1Z + \epsilon_1 \]

Where:

- \( Y_1 = \) ROA
- \( X_1 = \) DAR
- \( X_2 = \) credits
- \( X_3 = \) EXCHANGE
- \( Z = \) VAIC
- \( X_1*Z = \) DAR*VAIC
- \( \epsilon_1 = \) Error

3.2.2 Interpretation of sub structure analysis results 1

1) Simultaneous Effect of DAR, SKS, KURS, VAIC and DAR*VAIC on ROA

This model uses a confidence interval of 95 percent or a probability level of 5 percent. To determine the effect of capital structure, ownership structure and exchange rate on exports simultaneously, it can be seen in the summary model as follows:

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.549*</td>
<td>.301</td>
<td>.273</td>
<td>0.18384</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), DAR*VAIC, DAR, SKS, KURS, VAIC

b. Dependent Variable: ROA

Source: Output – Base on data 2023

Table 9 shows that the magnitude of the R Square number is 0.301 or indicates that the simultaneous influence of DAR, SKS, KURS, VAIC and DAR*VAIC on ROA is 30.1 percent, while the remaining 69.9 percent is influenced by other factors. ROA variability can be explained using the variables DAR, SKS, KURS, VAIC and DAR*VAIC. To find out the regression model, it can be seen from the simultaneous testing or the F value in the ANOVA table as follows:
As for the calculation of the F value is with the provisions where:

If the calculated F value > table F value, then it is classified as significant

If the calculated F value < table F value, then it is classified as insignificant

When determining the degrees of freedom (df) for a statistical calculation, the numerator is obtained by subtracting 1 from the number of variables, resulting in 5. Similarly, the denominator is obtained by subtracting 5 from the number of cases, resulting in 128. Under the above circumstances, a value of 2.29 is retrieved from the F table. Based on the findings presented in Table 10, it can be observed that the computed F value of 10.932 exceeds the critical F value of 2.29. This suggests the presence of a significant linear association between the variables DAR, SKS, EXCHANGE, VAIC, and DAR*VAIC with the dependent variable ROA. Similarly, when a significance value of 0.000 < 0.05 is employed, it signifies the presence of a linear association.

2) Partial Effect of DAR, SKS, KURS, VAIC and DAR*VAIC on ROA

The partial effect of DAR, SKS, KURS, VAIC, and DAR*VAIC on ROA is assessed, followed by the application of a t-test. The degree of the influence is then examined using the Beta number or Standardized Coefficient, as presented in Table 11:

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.847</td>
<td>5</td>
<td>0.369</td>
<td>10.932</td>
<td>0.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>4.292</td>
<td>127</td>
<td>0.034</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6.140</td>
<td>132</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10. ANOVA Sub Struktur 1

Table 11. Coefficients* Sub Struktur 1

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-18.118</td>
<td>9.932</td>
<td>-1.824</td>
<td>0.070</td>
</tr>
<tr>
<td>DAR</td>
<td>-0.021</td>
<td>0.020</td>
<td>-0.080</td>
<td>-1.044</td>
</tr>
<tr>
<td>SKS</td>
<td>0.002</td>
<td>0.001</td>
<td>0.218</td>
<td>2.872</td>
</tr>
<tr>
<td>KURS</td>
<td>1.885</td>
<td>1.039</td>
<td>0.138</td>
<td>1.814</td>
</tr>
<tr>
<td>VAIC</td>
<td>0.025</td>
<td>0.004</td>
<td>0.979</td>
<td>5.763</td>
</tr>
<tr>
<td>DAR*VAIC</td>
<td>-0.025</td>
<td>0.006</td>
<td>-0.736</td>
<td>-4.391</td>
</tr>
</tbody>
</table>

Table 11. Coefficients* Sub Struktur 1

In Table 11, the calculation of the value of t is under the conditions where:

If the t count value > t table value or -t count < -t table, then it is classified as significant. If the value of T count < value of T table or – t count > - t table, then it is
classified as not significant. The significance level with one side or with a probability of 0.05 and the degrees of freedom (df) with the condition that df = n-k-1 or n = 133 – 5 - 1 = 127. And with these conditions the number t table is obtained with a 2-sided test (0.025) is 1.979.

In Table 11 it can be seen that the t-count DAR value is -1.044 > -t table is -1.979 or with a Sig. 0.298 > 0.05, or shows no significant effect. So it can be seen that there is no linear relationship between DAR and ROA. The SKS variable obtains a calculated t value of 2.872 > 1.979 and a Sig. 0.000 <0.05 which indicates a significant effect on ROA. The KURS variable obtained a calculated t value of 1.814 <1.979 and a Sig. 0.072 > 0.05 which shows no significant effect on ROA.

Furthermore, the VAIC variable obtained a calculated t value of 5.763 > 1.979 and a Sig. 0.000 <0.05 which indicates a significant effect on ROA. Then the DAR*VAIC variable obtained a calculated t value of -4.391 < -1.979 and a Sig. 0.000 <0.05 which indicates a significant effect on ROA.

### 3.2.3 Analysis of sub-structure equations 2

#### 3.2.3.1 Equation analysis

Analysis of the structural equation is as follows:

\[ Y_2 = PY_2X_1 + PY_2Y_1 + PY_2X_2 + PY_2X_3 + PY_2X_4 + PY_2M + \epsilon_2 \]

Where:

- \( Y_2 = PBV \)
- \( Y_1 = ROA \)
- \( X_1 = DAR \)
- \( X_2 = \text{credits} \)
- \( X_3 = \text{EXCHANGE} \)
- \( X_4 = VAIC \)
- \( \epsilon_1 = \text{Error} \)

### 3.2.4 Interpretation of sub structure analysis results 2

1) Effect of ROA, DAR, SKS, EXCHANGE, VAIC on PBV

This model uses a confidence interval of 95 percent or a probability level of 5 percent. To determine the effect of ROA, DAR, SKS, KURS and VAIC simultaneously on PBV, it can be seen in the summary model as shown in Table 12:
Table 12. Model Summary Sub Structure 2

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.637</td>
<td>.405</td>
<td>.382</td>
<td>2.27098</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ROA, DAR, SKS, KURS, VAIC
b. Dependent Variable: PBV
Source: Output – Base on data 2023

Table 12 shows that the magnitude of the R Square number is 0.386 or indicates that the simultaneous influence of DAR, ROA, SKS, KURS and VAIC on PBV is 40.5 percent, while the remaining 59.5 percent is influenced by other factors. PBV variability can be explained using DAR, ROA, SKS and KURS.

To find out whether the regression model is correct and meets the requirements, it is necessary to test simultaneously or the F value in the ANOVA Table 13 as follows:

Table 13. ANOVA Sub Structure 2

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>446.437</td>
<td>5</td>
<td>89.287</td>
<td>17.313</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>654.985</td>
<td>127</td>
<td>5.157</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1101.422</td>
<td>132</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: PBV
b. Predictors: (Constant), ROA, DAR, SKS, KURS, VAIC
Source: Output – Base on data 2023

In calculating the degrees of freedom (df) with the provisions of the numerator: the number of variables – 1 or 6 – 1 = 5; and denominator: number of cases – 5 or 133 – 5 = 128. With these conditions, an F table number of 2.29 is obtained. From the results of the calculations in Table 13, it is obtained that the F count is 17.313 > F table 2.29 or indicates that there is a linear relationship between DAR, ROA, SKS, KURS and VAIC to PBV. Likewise, the use of a significance number of 0.000 <0.05 indicates a linear relationship.

2) Partial Effect of DAR, ROA, SKS, KURS, and VAIC on PBV

To see the magnitude of the influence of the variables DAR, ROA, SKS, KURS partially on PBV, the t test is used, while to see the magnitude of the influence the Beta number or Standardized Coefficient is used in Table 14 as follows:
The significance level is 0.05 in the 2-tailed test (0.05/2 = 0.025) and the degrees of freedom (df) with the condition that df = n - k -1 or 133 - 5 -1 = 127. And with these conditions the number t table is obtained of 1.979. In Table 14 it can be seen that the calculated t value of the DAR variable is 7.262 > t table of 1.979 or with a Sig. 0.000 <0.000, or indicates that DAR has a positive and significant effect on PBV. Furthermore, the SKS obtained a calculated t value of 1.665 <1.979 and a Sig. 0.098 > 0.05 which indicates that SKS has a positive but not significant effect on PBV. Next, KURS obtained a calculated t value of -0.275 > -1.979 and a Sig. 0.784 > 0.05 or indicating that the KURS has no significant effect on PBV. Then the VAIC obtained a calculated t value of 2.051 and a Sig. 0.042 <0.05 or shows a positive and significant impact on PBV. Likewise, ROA obtained a t-value of 6.215 > 1.979 and a Sig. 0.000 < 0.05 or positive and significant effect on PBV.

2) Indirect Influence of DAR, SKS, KURS and VAIC on PBV Through Intervening ROA

To see the magnitude of the influence of DAR, SKS and KURS indirectly on PBV through intervening ROA, it can be explained through the following description:

(a) Use of the Sobel Test Mediation Formulation (Preacher & Hayes, 2008):
The basis for making a decision on indirect influence through mediation is:
• If the value of Z < 1.96 then it is stated that it is unable to mediate the relationship between the influence of the independent variable on the dependent variable and vice versa applies
• If the Z value > 1.96 then it is declared capable of mediating the relationship between the influence of the independent variable on the dependent variable

The Sobel Test formulation is as follows:
\[ \frac{ab}{\sqrt{(b^2SEa^2) + (a^2SEb^2)}} \]

Where:

- \(a\) = regression coefficient of the independent variable on the mediating variable
- \(b\) = regression coefficient of the mediating variable on the dependent variable
- \(SEa\) = Standard error of estimation from the influence of the independent variable on the mediating variable
- \(SEb\) = Standard error of estimation of the effect of the mediating variable on the dependent variable

Based on the Sobel Test Formulation calculations, a description can be made into the following Table 15:

<table>
<thead>
<tr>
<th>No</th>
<th>Remarks</th>
<th>(Z) count based on Sobel Test</th>
<th>(Z) against standard 1.96</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DAR (\rightarrow) ROA (\rightarrow) PBV</td>
<td>4.7210</td>
<td>4.7210 &gt; 1.96</td>
<td>significant</td>
</tr>
<tr>
<td>2</td>
<td>SKS (\rightarrow) ROA (\rightarrow) PBV</td>
<td>1.6845</td>
<td>1.6845 &lt; 1.96</td>
<td>Not significant</td>
</tr>
<tr>
<td>3</td>
<td>KURS (\rightarrow) ROA (\rightarrow) PBV</td>
<td>1.7313</td>
<td>1.7313 &lt; 1.96</td>
<td>Not significant</td>
</tr>
<tr>
<td>4</td>
<td>VAIC (\rightarrow) ROA (\rightarrow) PBV</td>
<td>-1.9725</td>
<td>-1.9725 &lt; -1.96</td>
<td>significant</td>
</tr>
</tbody>
</table>

Source: Output – Based on data 2023

### 3.2.5 Influence calculation

Based on all the calculations that have been made on sub-structure 1 and sub-structure 2, it is possible to calculate the effect of all of these sub-structures in the following description:

1) Direct Effect

a) Effect of DAR on ROA

\[ X_1 \rightarrow Y_1 = -0.080 \]

b) Effect of SKS on ROA

\[ X_2 \rightarrow Y_1 = 0.218 \]

c) Effect of EXCHANGE on ROA

\[ X_3 \rightarrow Y_1 = 0.138 \]
d) Effect of VAIC on ROA

\[ Z \rightarrow Y_1 = 0.979 \]

e) Effect of DAR on PBV

\[ X_1 \rightarrow Y_2 = 0.513 \]

f) Effect of SKS on PBV

\[ X_2 \rightarrow Y_2 = 0.119 \]

g) Effect of EXCHANGE on PBV

\[ X_3 \rightarrow Y_2 = -0.020 \]

h) Effect of ROA on PBV

\[ Y_1 \rightarrow Y_2 = 0.474 \]

i) Effect of VAIC on PBV

\[ Z \rightarrow Y_2 = -0.153 \]

Based on this description, a description can be made into the following Table 16:

<table>
<thead>
<tr>
<th>No</th>
<th>Remark</th>
<th>Results Analysis</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( X_1 \rightarrow Y_1 )</td>
<td>-0.080</td>
<td>0.298</td>
</tr>
<tr>
<td>2</td>
<td>( X_2 \rightarrow Y_1 )</td>
<td>0.218</td>
<td>0.005</td>
</tr>
<tr>
<td>3</td>
<td>( X_3 \rightarrow Y_1 )</td>
<td>0.138</td>
<td>0.072</td>
</tr>
<tr>
<td>4</td>
<td>( Z \rightarrow Y_1 )</td>
<td>0.979</td>
<td>0.000</td>
</tr>
<tr>
<td>5</td>
<td>( X_1 \times Z \rightarrow Y_1 )</td>
<td>-0.736</td>
<td>0.000</td>
</tr>
<tr>
<td>6</td>
<td>( X_1 \rightarrow Y_2 )</td>
<td>0.513</td>
<td>0.000</td>
</tr>
<tr>
<td>7</td>
<td>( X_2 \rightarrow Y_2 )</td>
<td>0.119</td>
<td>0.098</td>
</tr>
<tr>
<td>8</td>
<td>( X_3 \rightarrow Y_2 )</td>
<td>-0.042</td>
<td>0.784</td>
</tr>
<tr>
<td>9</td>
<td>( Y_1 \rightarrow Y_2 )</td>
<td>0.474</td>
<td>0.000</td>
</tr>
<tr>
<td>10</td>
<td>( Z \rightarrow Y_2 )</td>
<td>-0.153</td>
<td>0.042</td>
</tr>
</tbody>
</table>

Source: Output – Based on data 2023
1) Indirect Effect (Indirect Effect)
   a. Effect of VAIC moderation on the relationship between DAR and ROA as shown on Table 17.

\[ X_1*Z \rightarrow Y_1 = (-0.736 \times 0.474) = -0.3488 \]

b. Effect of DAR on PBV through ROA

\[ X_1 \rightarrow Y_1 \rightarrow Y_2 = (-0.080 \times 0.474) = -0.0379 \]

c. Effect of SKS on PBV through ROA

\[ X_2 \rightarrow Y_1 \rightarrow Y_2 = (0.218 \times 0.474) = 0.1033 \]

d. Effect of EXCHANGE on PBV through ROA

\[ X_3 \rightarrow Y_1 \rightarrow Y_2 = (0.138 \times 0.474) = 0.0654 \]

Table 17. Outcome of Indirect Influence

<table>
<thead>
<tr>
<th>No</th>
<th>Remark</th>
<th>Results Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( X_1*Z \rightarrow Y_1 ) ((-0.736 \times 0.474))</td>
<td>-0.3488</td>
</tr>
<tr>
<td>2</td>
<td>( X_1 \rightarrow Y_1 \rightarrow Y_2 ) ((-0.080 \times 0.474))</td>
<td>-0.0379</td>
</tr>
<tr>
<td>3</td>
<td>( X_2 \rightarrow Y_1 \rightarrow Y_2 ) ((0.218 \times 0.474))</td>
<td>0.1033</td>
</tr>
<tr>
<td>4</td>
<td>( X_3 \rightarrow Y_1 \rightarrow Y_2 ) ((0.138 \times 0.474))</td>
<td>0.0654</td>
</tr>
</tbody>
</table>

Source: Output – Based on data 2023

1) Total Effect (Total Effect)
   a. Effect of DAR on PBV through ROA as shown on Table 18.

\[ X_1 \rightarrow Y_1 + Y_1 \rightarrow Y_2 = (-0.080 + 0.474) = 0.394 \]

b. Effect of SKS on PBV through ROA

\[ X_2 \rightarrow Y_1 + Y_1 \rightarrow Y_2 = (0.218 + 0.474) = 0.692 \]

c. Effect of EXCHANGE on PBV through ROA
X3 → Y1 + Y1 → Y2 = (0.138 + 0.474) = 0.612.

<table>
<thead>
<tr>
<th>No</th>
<th>Keterangan</th>
<th>Hasil Analisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X1 → Y1 + Y1 → Y2</td>
<td>(-0.080 + 0.474)</td>
</tr>
<tr>
<td>2</td>
<td>X2 → Y1 + Y1 → Y2</td>
<td>(0.218 + 0.474)</td>
</tr>
<tr>
<td>3</td>
<td>X3 → Y1 + Y1 → Y2</td>
<td>(0.138 + 0.474)</td>
</tr>
</tbody>
</table>

Source: Output – Based on data 2023

### 3.2.6 Path diagram results

Based on the calculation results of direct influence, indirect influence and total influence, the path diagram model can be described as Figure 6 below:

![Path Diagram](image)

Source: Output – Based on data 2023

Based on Figure 6, a structural equation can also be arranged into the equation model as follows:

1) Sub Structure 1: 
   
   \[ \text{ROA} = -0.080 \text{DAR} + 0.218 \text{SKS} + 0.138 \text{KURS} + 0.979 \text{VAIC} - 0.736 \text{DAR} \_ \text{VAIC} + e1 \]

2) Sub Structure 2: 
   
   \[ \text{PBV} = 0.513 \text{DAR} + 0.119 \text{SKS} - 0.020 \text{KURS} - 0.153 \text{VAIC} \]
+ 0.474 ROA + €2

3.2.7 Conclusion of statistical analysis

Based on the description and the path diagram, several conclusions can be put forward on the results of the analysis as follows:

1) The effect of DAR on ROA is -0.080 with a value of Sig. 0.298 > 0.05 or not significant.
2) The effect of SKS on ROA is 0.218 with a Sig.0.005 value <0.05 or significant.
3) The effect of EXCHANGE on ROA is 0.138 with a value of Sig.0.072 > 0.05 or not significant.
4) The effect of VAIC on ROA is 0.979 with a Sig.0.000 value <0.05 or significant.
5) The moderating effect of DAR_VAIC on ROA is -0.736 with a Sig. 0.000 <0.05 or significant.
6) The influence of other variables outside the sub-structural model 1 is 0.699
7) The effect of DAR on PBV is 0.513 with a Sig.0.000 value <0.05 or significant.
8) The effect of ROA on PBV is 0.474 with a Sig.0.000 value <0.05 or significant.
9) The effect of SKS on PBV is 0.119 with a value of Sig. 0.098 > 0.05 or not significant.
10) The effect of the EXCHANGE on PBV is -0.020 with a value of Sig. 0.784 > 0.05 or not significant.
11) The effect of VAIC on PBV is -0.153 with a value of Sig. 0.042 < 0.05 or significant.
12) The influence of other variables outside the sub-structural model 2 is 0.595
13) The effect of DAR on PBV through ROA with a significance level of 4.7210 > 1.96 or classified as significant.
14) The effect of SKS on PBV through ROA with a significance level of 1.6845 <1.96 or classified as insignificant.
15) The effect of EXCHANGE on PBV through ROA with a significance level of 1.7313 <1.96 or classified as insignificant.
16) The effect of VAIC on PBV through ROA with a significance level of -1.9725 < -1.96 or classified as significant.

Based on this description, it can be shown in Table 19:
4 DISCUSSION

4.1 EFFECT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE

Based on Table 19 Substructure Coefficients 1, Figure 6 and Path Diagram Results, Table 19 Hypothesis Testing Results, it can be seen that the capital structure proxied by DAR has a direct, negative but not significant effect on financial performance proxied by ROA. This is evidenced by the acquisition of a t count value of $-1.044 > t_{table} -1.979$ or with a significance level of $0.0298 > 0.05$. These results also show that the effect of DAR on the resulting ROA is $0.080$ or 8 percent of the effect. This also shows that there is no significant direct impact of DAR on ROA, where the higher the DAR value, the less impact on the ROA value. This finding also proves that there is sufficient statistical evidence that hypothesis 1 (H1) is rejected.

This also shows that there is no significant direct impact of DAR on ROA, where the higher the DAR value, the less impact on the ROA value. This finding also proves that there is sufficient statistical evidence that hypothesis 1 (H1) is rejected.

The results of this study are not in line with the theory presented by Brigham & Houston (2007), where the use of a large number of liabilities will increase the risk borne by shareholders. In addition, it is not in line with Signaling theory which states that current conditions are a signal for future prospects (Ehrhardt & Brigham, 2014). So that this should require a balance between the amount of capital and the capital needed so that the company is able to prosper the shareholders. But on the other hand, these findings confirm previous studies by Moussa & Aymen (2014) and Moradi et al., (2012) where capital structure, in this case DAR, has no significant effect on financial performance. Furthermore, these findings also do not confirm studies by Chisti et al., (2013), Quang & Xin (2014), Mireku et al (2014), and Mumtaz et al (2013) where capital structure has a significant effect on financial performance.

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In general, the results of this study support several previous studies and make it possible that the capital structure factor proxied by DAR, in this case the mining companies on the IDX which are dominated by coal mining companies, has no impact on financial performance proxied by ROA. The realization of the acquisition of the DAR value in 2018-2021 shows that the average liability is 0.59 times or 59 percent of the total assets. While the average ROA value in the 2018-2021 period shows a figure of 0.06 or reaching 6 percent and shows that the rate of return on assets only reaches 6 percent. So it is concluded that with a high DAR value or reaching 59 percent it cannot increase the ROA value. Other results also show that the higher or lower the DAR value has no impact on the movement of the ROA value.

The DAR value of mining companies on the IDX in the period 2018-2021 consists of: 0.80; 0.56; 0.50; and 0.50 or is stable. Meanwhile, the ROA value of mining companies in the same period is the average value of each: 0.10; 0.01; 0.03 and 0.12, so they are not affected by fluctuations in the DAR value.

This situation also refers to the fact that the mining business listed on the IDX during the study period required a sizable source of funds, but an unstable market rate resulted in a small rate of return on assets and was not proportional to the level of existing liabilities. The use of funds points towards the development of the company’s long-term investment.

### 4.2 EFFECT OF OWNERSHIP STRUCTURE ON FINANCIAL PERFORMANCE

Based on Table 18 Substructure Coefficients 1, Figure 6 and Path Diagram Results, Table 17 Hypothesis Testing Results, it can be seen that the shareholding structure proxied by SKS has a direct, positive and significant effect on financial performance proxied by ROA. This is evidenced by the acquisition of a t count of 2.872 > t table of 1.979 or with a significance level of 0.005 <0.05. These results also show that the effect of SKS on the resulting ROA is 0.218 or 21.8 percent of the effect.

This also shows that there is a significant direct impact of SKS on ROA, where the higher the credit score, the higher the ROA value. This finding also proves that there is sufficient statistical evidence that hypothesis 2 (H2) is accepted.

The results of this study confirm the theory put forward by Brigham & Houston in which the agency theory adheres to the principle that company ownership is determined by share ownership as the owner's mandate to the agent (Jensen & Meckling, 1976). So
that the share ownership structure has a significant impact on the company's financial performance. Other things were also found in this study and were able to confirm the previous study by Ozen & Ozer (2018) where the share ownership structure has a significant effect on the return on assets of a company.

The share ownership structure (SKS) in this case experienced significant fluctuations in value from 2018-2021, with the respective values being: 58.60; 59.26; 51.03 and 60.30 or generally tend to increase and so does the ROA value in the same period which tends to increase as well. So that the SKS is able to have an impact on ROA physically.

The situation based on the results of this study can be understood that the existence of institutional ownership such as companies in the mining sector will encourage an increase in more optimal supervision. If an institution is dissatisfied with the existing managerial performance, it is very likely that the institution will sell or release its shares to the market. The change in institutional ownership behavior from passive to active can be a factor that can increase managerial accountability so that managers will act seriously and be more careful in carrying out company activities and operations. So that in this way the efforts of these managers are directly able to improve the performance of the company's organization on all lines and including in the operational sector which is able to produce a high level of efficiency. Work is more effective and efficient, reducing the cost of production and increasing sales significantly so that the company's profits will also increase.

4.3 EFFECT OF EXCHANGE RATES ON FINANCIAL PERFORMANCE

Based on Table 10 Substructure Coefficients 1, Figure 6 and Path Diagram Results, Table 18 Hypothesis Testing Results, it can be seen that the exchange rate proxied by EXCHANGE has a direct, positive but not significant effect on financial performance proxied by ROA. This is evidenced by the acquisition of a t count value of 1.814 <t table 1.979 or with a significance level of 0.072> 0.05. These results also show that the effect of the KURS on the resulting ROA is 0.138 or 13.8 percent of the effect.

This also shows that there is a direct, insignificant impact of the KURS on ROA, where the higher the KURS value, it does not cause an increase or decrease in the ROA value. This finding also proves that there is sufficient statistical evidence that hypothesis 3 (H3) is rejected.
The findings in this study are not in line with the opinion of Adler & Dumas (1984), that exchange rate exposure is a regression coefficient and explains changes in stock prices by changes in market indices and exchange rates. Furthermore, the results of this study do not confirm empirical studies by Christoffersen (2012) and Guay & Kothari (2003), where transactional risk on the other hand can be defined as "the probability of loss and gain due to the effect of exchange rate fluctuations on expected cash flows." Transactional risk is the risk caused by variations between the exchange rates on the transaction date and the date of futures contracts in foreign currencies.

Likewise these findings do not confirm the study of Luehrman (1991), in the literature to date showing that exchange rate exposure varies across industries. Investigates two industries in particular: the automobile world and the steel industry. Using daily and weekly data, he assesses the impact of changes in real exchange rates on industry cash flows. Furthermore, the results of the study of Fraser & Pantzalis, 2004; Muller & Verschoor, 2006 shows where the exchange rate has an impact on firm profitability.

The results of this study are also able to show that unlike various other companies, the exchange rate does not have a significant impact on the ROA value of mining companies on the IDX. The exchange rates analyzed in this study are from 2018-2021 and under these conditions the average exchange rate is IDR 14,189 per 1 USD. During the four-year period, there was no significant change in the exchange rate. This condition makes most mining company transactions using the USD currency have no effect on the company's ROA value. Exchange rates that do not move significantly show that the government is able to reduce the inflation rate and make it stable. The high and low value of the rupiah in the study period had no impact on the profitability of mining companies on the IDX. Exchange rates tend to be stable. This can be seen from the period 2018-2021 the USD exchange rate against the Rupiah consists of: Rp. 14,481, Rp. 13,901, Rp. 14,105 and Rp. 14,269, respectively. Judging from these results, it shows that there is no significant price movement or fluctuation and tends to be flat. Meanwhile, the ROA value generated by the company in the same period shows fluctuations that are relatively not far apart in the 2018-2021 period.

This also has an impact on all transactions that also depend on the company's operations. The possibility of getting a bigger profit from the difference in exchange rates will increasingly not be realized properly with a stable exchange rate. While the use of
the USD exchange rate is the main currency in transactions at mining companies, so that there is no significant change in exchange rate volatility, it will not be significant for the company's operations.

5 CONCLUSION

As for based on the results of the analysis and discussion, the following conclusions can be put forward:

1) DAR has a direct but not significant negative effect on ROA. This shows that there is no influence or impact of the DAR value on the company's ROA.

2) SKS directly has a positive and significant effect on ROA and conditions indicate that the higher the credit score, the ROA value will also be progressively higher and vice versa.

3) EXCHANGE directly has a positive but not significant effect on ROA and this shows that the EXCHANGE does not have an impact on the value of ROA.
REFERENCES


