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The Role of Leverage Mediation on the Relationship of Capital Structure to Firm Value in the Mining Sector

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ABSTRACT

This study aims to examine the role of leverage as a mediator of the effect of capital structure on firm value, as well as to partially examine the capital structure of leverage and firm value in the mining sector listed on the Indonesia Stock Exchange. The population in this study amounted to 62 companies obtained using the purposive sampling method during the 2019-2021 period and based on predetermined criteria, a sample of 14 companies was obtained from 2019-2021 so that the total sample was 42 observation periods. In solving problems and hypotheses, method used is path analysis.

The results of the study show the role of leverage as a perfect mediator, in the sense that the effect of capital structure on firm value is largely determined by leverage, then partially capital structure, leverage has no significant effect on firm value, but the effect of capital structure on leverage has a positive and significant effect on the mining sector. on the Indonesia Stock Exchange for the period 2019-2021.

I. Introduction

Mining activities focus on the exploitation of natural resources such as coal mining, oil and gas mining, metal ore mining, rock quarrying, clay mining, sand mining, salt mining, mineral mining, as well as mining and chemicals. asphalt mining, fertilizer, gypsum mining, and limestone mining which are then processed to get scores in the hope that the agency will make a profit. Commodity products are printed in the mining industry, and their prices fluctuate according to the seasons, sometimes down and sometimes up again. The mining industry experienced a prolonged period of stagnation, which began in 2015 and continued until 2021, as global commodity prices fell, thus worsening mining-related business performance.

Mining companies in Indonesia are always trying to maintain their business excellence to increase Firm value. High Firm value can increase the welfare of shareholders. With this welfare guarantee, shareholders will not hesitate to invest their capital [1]. There are several factors that affect the value of the Firm including; capital structure, profitability, Firm size, leverage, and Firm growth [2]. Based on these factors, there are two important factors in increasing firm value, namely capital structure and leverage.

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This study describes how loan policy can affect firm value through its effect on capital structure. In particular, this study shows that although according to the trade-off theory, capital structure deviations can reduce firm value, there may be other effects that dominate the relationship between capital structure deviations and firm value. [3]. The first factor that affects the value of the Firm in this study is the capital structure, the capital structure is based on the essence of the trade off theory that the use of debt caused by the value of benefits and sacrifices is balanced. If the value of the benefits from the use of debt is greater then the Firm in adding debt is still allowed [4].

The capital structure is aimed at financing the Firm's operations which is described in the use of equity and debt, so the balance needs to be achieved in order to avoid risks and the return of the Firm's operational funds can be achieved as the objectives of the capital structure [5]. However, debt and equity are optimal in maximizing firm value when the targeted capital structure is between risk and decision making [6]. The above statement is confirmed in previous research proving that there is a positive and significant effect between the debt to asset ratio (DAR) on firm value [7]. Different results are shown by research findings [8] that DAR has a positive but not significant effect on firm value.

In addition to the capital structure, there are other factors that can affect the value of the Firm, namely leverage, which is the level of use of debt as a source of funds [9]. Leverage can be seen from the comparison of all debts with the Firm's total assets. Leverage in this study is proxied by the Debt to Equity Ratio (DER). The use of DER is done on the grounds that the Firm's ability to manage assets and the proportion of Firm assets originating from debt [10] and [11].

This study reflects leverage as an intervening variable because it reflects the Firm's ability to earn profits. Increased corporate profits reflect the value of the company. Firm value is related to other variables, namely capital structure and leverage. Previous research links firm value with leverage, according to [12] explained that the greater the leverage, the more capital structure financed by loans, so that the Firm's dependence on creditors is increasing. Whereas [3] in his research explains that the higher the leverage, the lower the confidence of investors who invest in shares. Excessive debt can also have a negative effect on firm value. The previous research according to [13] stated that leverage has a negative but significant effect on firm value.

The influence between the variables analyzed by the previous researchers is relevant to the signal theory [14], that the Firm can increase the value of the Firm through its reporting by sending signals through the annual financial report information. The more good information in the capital structure reporting, the better the prospects for the Firm's performance in the future. This will be captured by investors as a positive signal because the Firm will get a good rating in the eyes of investors through increasing the value of the Firm.

Based on the background and phenomena that have been described, the authors are interested in researching the title of the mediating role of leverage: the relationship of capital structure to the value of mining sector companies on the Indonesia Stock Exchange for the 2019-2021 period.

II. Methods

This study uses a quantitative approach by utilizing the financial statements of the mining sub-sector companies for the 2019-2021 period. The population is a total of 62 mining companies listed on the Indonesia Stock Exchange, then the sampling technique uses a purposive sampling technique, namely looking for research samples based on certain criteria so that the number of samples is 14 companies with an observation period of 3 years so that the total data tested is 42 time periods. observation.

Table 1. Research Sample of Mining Companies 2019-2021

No	Stock Code	Firm Name
1	ADRO	PT. Adaro Energy Indonesia, Tbk
2	ANTM	PT. Aneka Tambang, Tbk
3	BAJA	PT. Saranacentral Bajatama, Tbk
4	BESS	PT. Batulicin Nusantara Maritim, Tbk
5	BSSR	PT. Baramulti Suksessarana, Tbk

6	BYAN	PT. Bayan Resources, Tbk
7	HRUM	PT. Harum Energy, Tbk
8	IFSH	PT. Ifishdeco, Tbk
9	ITMG	PT. Indo Tambangraya Megah, Tbk
10	MBAP	PT. Mitrabara Adiperdana, Tbk
11	MDKA	PT. Merdeka Cooper Gold, Tbk
12	PTBA	PT. Bukit Asam, Tbk
13	PTIS	PT. Indo Straits, Tbk
14	TBMS	PT. Tembaga Mulia Semanan, Tbk

Source: Data processed, 2022

This research uses equipment path analysis method with PLS software. Path analysis is used to test the strength of the direct and indirect relationships of the various variables being tested. In this study, there is a mediating variable, namely leverage on the effect of capital structure on firm value. This model interprets the results the same as the regression starting by looking at the results of the R-square test on each dependent latent variable, changes in the R-square value can be used to assess the effect of certain independent latent variables on the dependent latent variable [15]. The research equation model is as follows:

$$Z = a + bX + e \quad \ldots\ldots\ldots\ldots \text{ Equation 1}$$

$$Y = a + b_1X + b_2Z + e \quad \ldots\ldots \text{ Equation 2}$$

The path diagram is based on a conceptual framework developed from previous research and the theory used. In this study, it is presented in the form of a path diagram as follows:

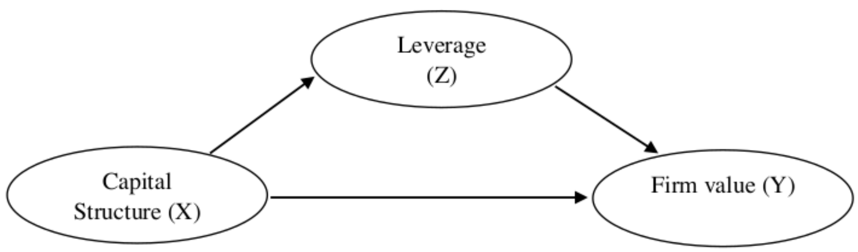

Figure 1. Research Conceptual Framework

III. Result and Discussion

a. Capital Structure

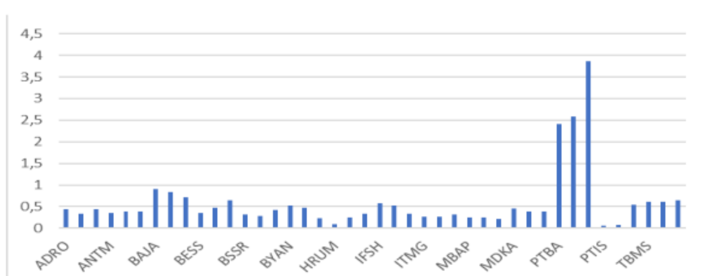

Figure 2. Development of Mining Firm Capital Structure for the period 2019-2021

Based on the chart above, the lowest agency score for the year of observation can be seen that the Firm PT. Indo Straits, Tbk (PTIS) which has a debt to assets ratio (DAR) score of 0.07, while the

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highest agency score for the year of observation can be seen that PT. Bukit Asam, Tbk (PTBA) with a debt to assets ratio (DAR) score of 3.89. PT. Bukit Asam, Tbk (PTBA) experienced a capital structure growth for the period of 2021 by 50%, namely in 2020 of Rp. 24,056,755 million to Rp. 36,123,703 million in 2021 which dominates in still comes from equity by 67%.

b. Leverage

Figure 3. Development of Mining Firm Leverage for the period 2019-2021

Based on the chart above, the lowest agency score for the year of observation can be seen that the Firm PT. Adaro Energy Indonesia, Tbk (ADRO) which has a debt to equity ratio (DER) score of 0.04, while the highest agency score for the year of observation can be seen that PT. Saranacentral Bajatama, Tbk (BAJA) with a debt to equity ratio (DER) score of 10.28.

c. Firm Value

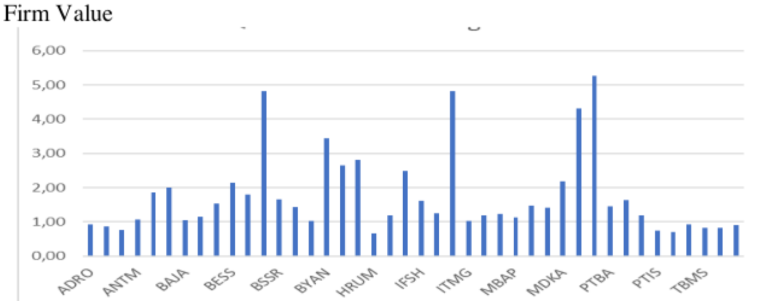

Figure 4. Development of Mining Firm Value for the period 2019-2021

Based on the chart above, the lowest agency score for the year of observation can be seen that the Firm PT. Harum Energy, Tbk (HRUM) which has a Tobins'Q score of 0.67, while the highest score for the year of observation can be seen that PT. Merdeka Cooper Gold, Tbk (MDKA) with a TOBINSQ score of 5.27. The Firm value of PT. Merdeka Cooper Gold, Tbk (MDKA) contributed from stable stock price movements from the first quarter of 2021 amounting to Rp. 1,015 and increased in the fourth quarter with a closing price of Rp. 2,430.

IV. Discussion

Inner Model Analysis Results

Table 2. Value of R Square

	R Square	*Adjusted R Square*
Leverage (DER)	0.616	0.606
Firm Value (Tobins'Q)	0.063	0.015

Source: Data processed, 2022.

Based on the table above, it can be seen that the R Square value in the leverage model (DER) and the firm value (Tobins'Q) are 0.616 and 0.063, respectively. This means that in the leverage model (DER), the leverage variable (DER) is able to explain the effect on the variable 61.6% and the remaining 38.4% is explained by other variables not included in the study. While in the firm value model (tobins'Q), the capital structure and leverage variables are able to explain the effect on the firm value variable (tobins'Q) of 6.30% and the remaining 93.70% is explained by other variables not included in the study.

Table 3. *Path coeficients*

	Original Sample	*T Statistic*	*P Value*	Hasil
Capital Structure → Leverge	0.785	8.009	0.000	Accept
Capital Structure → Firm Value	0.038	0.172	0.865	Rejected
Leverage → Firm Value	0.223	1.019	0.315	Rejected
Capital Structure → Leverage → Firm Value	0.319	2.820	0.043	Accept

Source: Data processed, 2022.

H1. Capital Structure to Leverage
The results of the research on the relationship between capital structure and leverage are p value 0.000 <0.05 and path coefficient 0.789. This means that the capital structure has a positive and significant effect on leverage. This shows that the high or low level of capital structure will have a significant effect on leverage. This research is in line with research [3] and [16] The capital structure is aimed at financing the Firm's operations which is described in the use of equity and debt, so achieving a balance needs to be done in order to avoid risk and the return of the Firm's operational funds can be achieved as the goal of the capital structure [5].

H2. Capital Structure to Firm Value
The results of the research on the relationship between capital structure and firm value are p-value 0.865 > 0.05 and path coefficient 0.038. This means that the capital structure has no significant effect on firm value. This shows that the high or low level of capital structure has no significant effect on firm value. This research is in line with [8] that the Firm's debt policy in strengthening the capital structure if it is not placed in productive activities will have a negative impact on the value of the Firm.

H3. Leverage to Firm Value
The results of this study, p value 0.315 > 0.05 and path coefficient 0.223. This means that leverage has no significant effect on firm value. This shows that the high or low level of leverage will affect the value of the Firm but does not provide significant significance. Companies that use excessive financing can make a positive contribution if used in productive project activities, so as to increase profits and good Firm value. The value of the Firm that gives a bad image is the result of excess debt [17], However, debt that is managed properly can give a positive signal, according to research [18]. This becomes a burden for the Firm because it can reduce investor confidence in the value of the Firm. This research is in line with research [19] and [20] which proves that leverage does not significantly affect the level of firm value.

H4. Capital Structure on Leverage-Mediated Firm Value
The results of the research on the mediating role of leverage on the effect of capital structure on firm value are p-value 0.043 <0.05 and path coefficient 0.319. This means that leverage as a mediating variable contributes to the effect of capital structure on firm value. This study shows that although according to the trade-off theory, capital structure deviations can reduce firm value, there may be other effects that dominate the relationship between capital structure deviations and firm value [3] namely leverage. The capital structure is based on the essence of the trade off theory that the use of debt caused by the value of benefits and sacrifices is balanced. If the value of the benefits from the use of debt is greater then the Firm in adding debt is still allowed [4]. The results of the study are in line with [16] which indicates that leverage is an assessor of how much use of funds provided by

creditors, so that if investors see the risk of high leverage, it is possible not to look at investing in the Firm due to concerns that these assets are obtained from debt and it is difficult to pay off obligations on time.

V. Conclusions

Based on the results of research on the mediating role of leverage on the effect of capital structure on the value of companies in the mining sector listed on the Indonesia Stock Exchange. then, some conclusions can be described as follows; 1) The results of the partial analysis test show that the capital structure has a positive and significant effect on leverage. 2) The effect of capital structure has no significant effect on firm value. 3) The effect of leverage has no significant effect on firm value. 4) The results of the mediation test show that leverage acts as a perfect mediator, in the sense that the effect of capital structure on firm value is largely determined by leverage. This indicates that the financial activities of banking companies because if they do not use debt, the possibility of the Firm to expand its business and increase profits will be smaller.

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