The Influence of Internal and External Factors on Firm Value

Dewi Cahyani Pangestuti and Azzahra Meirizqi Louisa

Abstract — This research was conducted to analyze the effect of capital structure, liquidity, interest rates and exchange rates in influencing company value in mining sector companies listed on the Indonesia Stock Exchange (BEJ). Sampling technique using a purposive sampling method the mining company listed on the Indonesia Stock Exchange in the year 2016-2019 resulted in 37 companies that meet the criteria. Data analysis was performed using regression panel data with E-Views program 10 and a significance level of 5%. The results of the test were obtained that the capital structure influence significantly restricted a p-value of the company, liquidity does not have a significant effect on firm value, the interest rate does not have a significant effect on firm value, and the exchange rate stated with the middle rate has a significant negative effect on firm value.

Index Terms — Capital Structure; Liquidity; Interest Rate; Exchange Rate.

I. INTRODUCTION

As the world develops in the economic sector, energy demand also increases. The mining sector is one of the pillars of a country's economic development, because of its role as a provider of energy resources that are indispensable for a country’s economic growth.

The mining sector is one sector that is tightly regulated by various regulations (a heavily regulated industry), so the risk factor policy (policy risk) is one of the most dominant factors for investors to consider the decision to invest in a sector that is one of the leading sectors [1], [2]. Regulatory arrangements in the mining sector are not only dominated by the Ministry of Energy and Mineral Resources but also depend heavily on the regulations issued by the Ministry of Forestry, Ministry of Environment, Ministry of Finance, etc. Besides, in the era of regional autonomy, policies issued by local governments, be it at the provincial, district city levels will even have a direct impact on the mining sector.

Increasing company value is one of the main goals of the company. This is because shareholder wealth will increase if the value of the company increases, where the value of the company is reflected in its share price [3]. Thus, increasing the value of the company is the desire of the company and its shareholders. Firm value can be assessed from the profit approach [4]. Maximizing company value means maximizing market value through its share price which is the effect of all financial decisions taken by the company. The company value is the investor’s perception of the company's success rate, which makes the market and investors believe in its prospects. The company value can be indicated by the value of Price Book Value (PBV). PBV is the ratio between the prices per share with the book value of the company, where the company’s book value (book value share) is the equity ratio of ordinary shares with total outstanding shares [5].

Many factors affect firm value, including internal factors, namely profitability, solvency, liquidity, activity, and external factors such as foreign exchange rates, inflation, interest rates, political, economic, and social conditions. In this study, internal factors will focus on the problem of capital structure and liquidity. The capital structure explains that the company’s funding policy in determining the capital structure (a mix between debt and equity) aims to optimize firm value (value of the firm). Meanwhile, liquidity describes the ratio to measure a company's ability to meet its short-term obligations (or current) available to meet these obligations. Liquidity is not only concerned with the overall financial condition of a company but also concerning the ability to convert certain current assets into cash. Meanwhile, external factors will focus on interest rates and exchange rates or foreign exchange rates.

Some researchers previously have been conducting research on use company values and from the results of previous research, there is still some difference in the results. Research conducted by [6]-[11] states that the capital structure variables have a significant influence on use company values, whereas [12]-[15] states that the capital structure variables have influence is not significant to the value of the company.

Research conducted by [9], [16] stated that liquidity significant influence on then use values the company while...
[17]-[19] states that liquidity has no significant effect on the values of the company.

Research done by [20] states that the interest rate has a significant influence on then use values the company while the research was done by [21]-[25] states that the interest rate has no significant effect on then use values of the company.

Research done by [26] declare that the rate on the dollar has a significant influence on company value while a study was done by [24], [27], [28] has said that exchange rate of the dollar does not affect significantly on company values.

Previous research suggests that the results are not consistent, because the sectors examined different, different data analysis techniques and that is used is different, so need does study over up to get results that over one consistent one on one company one that one is different. This research, the first aims to know influence its structure of capital, liquidity, interest rate, and foreign exchange rate against the company. The purpose of this study is to describe the influence of internal factors such as capital structure and liquidity and external factors such as interest rates and the rupiah exchange rate. It is also hoped that this research can be used as a basis for decision making based on macroeconomic factors and commodity prices.

II. LITERATURE REVIEW

Capital Structure and Company Value

The influence of the capital structure decision on the value of the company has been described in the capital structure theory [10]. Funding decisions using debt sources are carried out by management to achieve the company's financial status to achieve the company's goals. The traditional modality structure theory assumes that there is an optimal modal structure that can choose a choice of mode structure decisions so that it can decrease the cost of the mode and get the injection of the one. Another assumption from this traditional theory that company value can increase by improved leverage immediately [5]. By optimizing the debt and capital owned by the company, it will increase the stock price which makes the value of the company increase. Debt to Equity Ratio (DER) as a measuring tool for capital structure, because this ratio describes the source of company funding with the consideration that the greater the total debt, the higher the risk of the company facing bankruptcy, so it will be a negative response for investors [8], [29].

Liquidity and Company Value

The liquidity ratio can be used to measure the extent to which the company's ability to pay off its short-term obligations that are due soon [5]. If the company can pay off short-term obligations at maturity, the company can be said to be a liquid company. By increase, the liquidity, the company will shortly improve company value. The high liquidity ratio indicates the company's greater ability to meet its short-term obligations. The payment of dividends to shareholders is also one of the obligations that must be paid by the company, the higher the level of liquidity of a company, the higher the company's expectations of being able to pay dividends to shareholders. The current ratio (CR) is an indicator in measuring the level of liquidity, the current ratio measures the extent to which current assets that will be converted into cash will be able to cover current liabilities shortly [30], [31].

Interest Rate and Company Value

The loan interest rate is the amount of money that is obliged to the borrower with a calculation based on a percentage and is carried out based on a specified period [32], [33]. The high level of interest rates is an excess of money owned by a handful of people who used temporarily by people who needed to cover the shortfall, so by raising interest rates in a country would indicate investors to withdraw capital investment in the capital markets will impact the share price decline [6], [22], [24], [25], [34]. The decrease in stock price will impact the valuation by investors that the company's performance declined to create company value late there be decreased. The investor will contrast with other investments such as stocks, bonds and types of other investment, the interest rate that high would hurt the capital markets because investors would prefer investing in time deposits which have a level lower risk, so make stock company decline, shares fell cause the value of company go down. The increase in interest rates would encourage people to save, and reluctant to invest in the real sector [26], [35]. Investors will also bear the interest rate hike in the form of an increase in interest costs for the company. People do not want to be at risk of investing at high costs, as a result, the investment will not develop [36]. Many companies have difficulty maintaining their life, and this causes the company's performance to decline. The decline in company performance can result in a decrease in stock prices, which means that the company's value will also decrease [5].

Exchange rate to company value

The foreign exchange rate is the price of a country's currency in a country in commodity units (such as currency can be interpreted as a ratio of currency values). The exchange rate shows the price of a currency when exchanged with other currencies, [24], [32], [37]. The risk exchange rate is the risk caused by changes in the value of the investment to the currency exchange rate or also called exchange rate risk or currency risk. If the exchange rate increases, it means that the domestic currency has depreciated and the foreign currency has appreciated [34]. Conversely, a decrease in the exchange rate reflects an appreciation of the domestic currency and depreciation of foreign currencies. A currency is said to be convertible if that currency can be freely exchanged with the currencies of other countries. The absence of a convertible currency will complicate trade between countries because each will not accept the currency of its trading partner. Exchange rate foreign exchange impact on earnings of a company, because the company uses production materials from abroad will increase debt if the currency of domestic to foreign currencies decreased [6], [24], [36], [37].

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Empirical Research Methods

![Diagram showing company value influenced by capital structure, liquidity, interest rate, and exchange rate.]

Fig. 2. Thinking Framework.

Hypothesis
Based on the literature review and previous research, the hypotheses in this study are as follows:
H1: capital structure has a positive effect on firm value
H2: liquidity impact positively on the value of the company
H3: the interest rate has a negative effect on firm value.
H4: Exchange rate has a negative effect on firm value.

III. RESEARCH METHODOLOGY

A. Population and Sample
The sample used in this research is a mining company listed on the Indonesia Stock Exchange (IDX) with a 201-year observation period 2016-2019. The sampling technique used was purposive sampling technique, so 37 mining companies were selected as research samples with an observation period of 4 years so that the total sample data was 148 samples.

B. Variable Measurement
Dependent Variable
The value of the company is an asset, the value of the share price that comes from cash flow which is an assessment of the company’s real performance. Firm value can be measured by price-book value (PBV) which is formulated by:

\[
PBV = \frac{\text{Price Per Share}}{\text{Book Value Per Share}}
\]

Independent Variable
a. Capital Structure
Capital structure is a company’s ability to create an optimal mix of funding sources that will minimize its overall capital costs. Liquidity is measured by the Debt to Equity Ratio (DER) formula with the formula:

\[
DER = \frac{\text{Total Liabilities}}{\text{Stockholders Equity}}
\]

b. Liquidity
Liquidity is a ratio that describes the ability of a company to meet its short-term obligations in a timely manner. Liquidity is measured Current Ratio (CR) with the formula:

\[
CR = \frac{\text{Current assets}}{\text{Current liabilities}}
\]

c. Interest Rate
The interest rate or what is currently more commonly referred to as the BI 7 days rate is a policy interest rate that reflects the monetary policy stance set by Bank Indonesia and announced to the public. BI 7 days rate is a policy that becomes an instrument to rapidly influence the money market, banking, and real sectors. BI 7 days rate data in this study were taken from the official website of Bank Indonesia (www.bi.go.id) for the period 2016 - 2019.
d. Exchange Rate
The exchange rate is the price of a country’s currency in exchange for another country’s currency. The exchange rate is measured by finding the average exchange rate for each year and changing its form to 

Ln. In this study, the exchange rate data was taken from the official website of Bank Indonesia (www.bi.go.id) in the period 2016-2019.

C. Data Collection Technique
The type of data in this study using secondary data namely financial reports mining companies listed on the Stock Exchange the period 2016-2019, which is obtained through the website Indonesia Stock Exchange is www.idx.co.id, the data rate and exchange rate obtained from www.bi.go.id.

D. Analysis Technique
The data analysis technique used in this research is quantitative analysis. Analysis and hypothesis testing of the data was carried out using Eviews version 10. To determine the capital structure, liquidity, interest rates, and exchange rates on firm value, this study uses panel data regression analysis, because the data used is a combination of time series and cross-section data. The general form of the panel data regression equation is as follows:

\[
Y_{it} = \alpha + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_3 + \beta_4 X_4 + \mu_i t
\]

Where:
\(Y_{it}\) = Firm value
\(X_1\) = Capital Structure
\(X_2\) = Liquidity
\(X_3\) = Interest rate
\(X_4\) = Exchange rate
\(\beta\) = Constant
\(i\) = Company Name
\(t\) = Period of Time
\(\mu\) = Error Term

IV. RESULTS AND DISCUSSION

A. Selection of Panel Data Regression Model
In choosing the right model for processing and analyzing research data, the researchers performed the F Restricted test, the Haussmann test, and the Lagrange Multiplier test.

| TABLE 1: F Restricted Test (Pooled Least Square vs Fixed Effect Model) |
|-------------------------|-----------------|-------|-----|
| Effects Test            | Statistic       | d.f.  | Prob. |
| Cross-section F         | 3.584176        | (36,107) | 0.0000 |
| Cross-section Chi-square| 117.087466      | 36    | 0.0000 |

N use-values the probability of Cross Section Chi-Square in
this study amounted to 0.0000 or lower than the level of confidence 0.05 or 5%. Then H0 is rejected and Ha is accepted, so based on the results of the F test, the best model used in the study between pooled least square and the fixed effect model is the fixed effect model.

<table>
<thead>
<tr>
<th>TABLE 2: HAUSMANN TEST TABLE (FIXED EFFECT MODEL VS RANDOM EFFECT MODEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Summary</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Cross-section random</td>
</tr>
</tbody>
</table>

Based on the table above, the probability value of the chi-square cross-section in this study is 1.0000 and is greater than 0.05 or 5%, then H0 is accepted and H1 is rejected. So based on the Haussmann test above, the most suitable model to use between the random effect model and the fixed effect model is the random effect model.

<table>
<thead>
<tr>
<th>TABLE 3: LAGRANGE MULTIPLIER TEST</th>
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<tbody>
<tr>
<td>Cross-section</td>
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<td>---------------------------------------------------------------</td>
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<tr>
<td>Breusch-Pagan</td>
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<td>(0.0000)</td>
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</table>

Based on the table on the top of the value of the probability of a cross-section of chi-square is 0.0000 and is smaller than 0.05 or 5%, then H0 is rejected and H1 accepted. So, based on the results of the Lagrange multiplier test above, the model that is most suitable for use between the fixed effect model and the random effect model is the random effect model.

<table>
<thead>
<tr>
<th>TABLE 4: PANEL DATA REGRESSION MODEL</th>
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<tr>
<td>Variable</td>
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<tr>
<td>C</td>
</tr>
<tr>
<td>DER</td>
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<tr>
<td>CR</td>
</tr>
<tr>
<td>Interest rate</td>
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<tr>
<td>Exchange rate</td>
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</table>

Based on the test results on the panel data regression model, the regression model equation is as follows:

\[ \text{PBV} = 63.64713 + 0.727011 \text{DER} + 0.003600 \text{CR} + 23.51655 \text{Interest Rate} -6.792945 \text{Exchange Rate} \]

From the regression equation above, it can be described as follows:

1. Based on the results of the test regression, note that the value of the constants of 6.359510. It can be concluded that if the value of the variable capital structure (DER), liquidity (CR), interest rates, and exchange rates are considered constant or equal to 0 (zero), then the value of the firm value (PBV) is 63.64713.

2. The capital structure regression coefficient value as measured by debt to equity ratio (DER) is 0.727011, stating that if the DER value increases by 1 (assuming that the coefficient value of other variables remains or does not change), then the Firm Value (PBV) will experience an increase of 0.727011. The results show that the coefficient is positive, meaning that the capital structure and firm value have a positive relationship.

3. Value of regression coefficients liquidations as measured by the Current Ratio (CR) of 0.003600, stating that if the value of ROE experienced a rise of 1 (assuming that the value of other variable coefficients fixed or unchanged), the Corporate Value (PBV) will have increased by 0.003600. The results show that the coefficient is positive, meaning that profitability and firm value have a positive relationship.

4. The regression coefficient value of the cash rate is 23.51655, which states that if the interest rate increases by 1 (assuming that the coefficient value of other variables is constant or unchanged), then the Firm Value (PBV) will decrease by 23.51655. The results show that the coefficient is positive, meaning that interest rates and firm value have a positive relationship.

5. The value of the exchange rate regression coefficient is -6.792945, which states that if the value of the exchange rate increases by 1 (assuming that the coefficient value of other variables remains or does not change), then the Firm Value (PBV) will decrease by -6.792945. The results show that the coefficient is negative, meaning that the exchange rate and firm value have a negative relationship.

B. Hypothesis Test

Partial test (t-test)

1. The Effect of Capital Structure (DER) on Firm Value (PBV). Based on the analysis, capital structure variables measured by the debt to equity ratio (DER) shows the value \( t_{\text{statistic}} \) or \( t_{\text{counted}} \) smaller than \( t_{\text{table}} \), namely 12.25938 > 1.97658. While the probability value indicates the numbers are much smaller than 0.05, which amounted to 0.0000 or 0.0000 < 0.05, then H0 is rejected and H1 accepted. So it can be interpreted that the capital structure variable (DER) has a significant effect on firm value (PBV).

2. Effect Liquidity (CR) on the Company Value (PBV). Based on the analysis, the variables of profitability as measured by the current ratio (CR) indicates the value \( t_{\text{statistic}} \) or \( t_{\text{counted}} \) smaller than \( t_{\text{table}} \), namely 0.067723 < 1.97658. While the probability value indicates the numbers are more substantial than 0.05, which amounted to 0.9461 or 0.9461 > 0.05, then H0 is accepted and H1 rejected. So it can be interpreted that the liquidity variable does not have a significant effect on firm value (PBV).

3. The Effect of Interest Rates on Firm Value (PBV). Based on the analysis, the variable interest indicates the value \( t_{\text{statistic}} \) or \( t_{\text{counted}} \) smaller than \( t_{\text{table}} \), namely 1.405473 < 1.98638. While the probability value shows a number greater than 0.05, which is equal to 0.1620 or 0.1620 > 0.05, then H0 is accepted and H1 rejected. So it can be interpreted that the interest rate variable has no significant effect on firm value (PBV).

4. Effect of exchange rates on the Company Value (PBV). Base results of the analysis, the variable rate shows the value \( t_{\text{statistic}} \) or \( t_{\text{counted}} \) greater than \( t_{\text{table}} \), namely -2.058010 > 1.97658. While the probability value indicates the numbers are much smaller than 0.05, which amounted to 0.0414 or 0.0414 < 0.05, then H0 is rejected and H1 accepted. So it can be interpreted that the exchange rate variable has a significant and negative effect on firm value (PBV).

Determination Coefficient Test (R²)

The results of the coefficient of determination test can be seen from the adjusted R-square value. Based on the analysis, it shows that the value of the Adjusted R-Square coefficient of
The Effect of Capital Structure on Firm Value

Based on the results of the test partial that the capital structure as measured by debt to equity ratio (DER) showed the value \( t^{\text{counted}} \) \( > t_{\text{table}} \), namely 12.25938 > 1.97658. While the probability value is 0.000<0.05, then \( H_0 \) is rejected and \( H_1 \) is accepted. It can be concluded that capital structure has a significant effect on firm value so that the first hypothesis (\( H_1 \)) of this study is accepted. The results of this study are in line with the trade-off theory which states that companies exchange the tax benefits of debt financing with problems caused by potential bankruptcy.

Traditional modal structure theory assumes that there is an optimal capital structure. The assumption of this optimal modal structure explains that the company can choose to choose an alternative mode structure decision so that it can decrease the cost of the mode and get the injection and get the best injection. Another assumption from this traditional theory is that the total value of the company can be increased by increasing the level of leverage usage carefully. The results of this study are in line with the results of research [6]-[11],[29] that optimizing the debt owed by the company will increase the stock price which in turn increases the firm’s value.

Effect of Liquidity on Company Value

Based on the analysis, profitability as measured by the current ratio (CR) indicates the value \( t^{\text{counted}} \) \( < t_{\text{table}} \), namely 0.067723 < 1.97658. While the value of probability indicates the numbers are more substantial than 0.05, that is equal to 0.9461 or 0.9461 > 0.05, then \( H_0 \) is accepted and \( H_1 \) rejected. It can be concluded that liquidity has no significant effect on the value of the company, so the hypothesis second (\( H_2 \)) of this study was rejected. The liquidity ratio can be used to measure a company’s ability to meet short-term needs. If value low current ratio, working capital indicates the company does not rotate properly and indicates that the company’s performance did not go to well [5]. Instead increased liquidity indicates the condition of the company is currently well that it will increase the value company and be an attraction for investors [9], [16], [30], [31]. However, the results of this study indicate that mining stock investors are not affected by the liquidity of the company because investors realize that mining companies use their assets in fixed assets not current assets a lot. So that many of the assets are embedded in the form of fixed assets in the form of equipment and machines used in the mining production process. The results of this study are supported by previous studies [17]-[19].

The Effect of Interest Rates on Firm Value

Based on the results of panel data regression, the interest rate shows the value of \( t^{\text{counted}} < t_{\text{table}} \), namely 1.405473 < 1.98638. While the probability value shows a number greater than 0.05, which is equal to 0.1620 or 0.1620> 0.05. It can be concluded that interest rates have no significant effect on firm value so that the third hypothesis (\( H_3 \)) of this study is rejected. The results of this study are different from the theory that interest rates will have a negative impact on the high capital market because investors would prefer investing in time deposits which have a lower level of risk so make stocks of the company experienced a decline. The price of the shares drops will cause the company value go down [6], [22], [24], [25], [34]. The increase in interest rates would encourage people to save, and reluctant to invest in the real sector [26], [35]. Investors will also bear the interest rate hike in the form of an increase in interest costs for the company. People do not want to be at risk of investing at high costs, as a result, the investment will not develop. Many companies have difficulty maintaining their life, and this causes the company's performance to decline. The decline in company performance can result in a decrease in stock prices, which means that the company's value will also decrease [5].

However, in the case of this study, mining stock investors are not too affected by changes in interest rates because investors in Indonesia tend to have a short-term orientation so that the trading activities of shares are more active and are not affected by the prevailing interest rates. The results of this study are consistent with research [21]-[25].

The Effect of Exchange Rate on Firm Value

Based on the results of panel data regression that inflation shows the value of \( t^{\text{counted}} > t_{\text{table}} \), -2.058010 > -1.97658. And the value of probability indicates the numbers are much smaller than 0.05, which amounted to 0.0414 or 0.0414 < 0.05, then \( H_0 \) is rejected and \( H_1 \) accepted. It can be concluded that the exchange rate affects negatively significantly to the value of the company, so that hypothesis to four (\( H_4 \)) research is accepted. The exchange rate of currency or exchange rate is a comparison between the value of a country’s currency with another country or the price of a currency against other currencies [24], [32], [37]. The exchange rate is one of the most important prices in an open economy, given its enormous influence on the current account balance and other macroeconomic variables. Foreign exchange rates have a negative and significant effect on firm value. This is because if the value of the rupiah decreases, the public will switch to buying US Dollars, so the capital market will have no traction because the return from buying foreign currency produces a higher return when compared to buying and selling shares. The results of this study indicate that the exchange rate can affect the value of mining companies [6], [24], [36], [37].

V. CONCLUSION

Capital structure and exchange rate showed a significant effect on the value of the company in the mining sector companies listed on the Indonesian Stock Exchange (BEI) in the period 2016-2019. While liquidity and interest rates showed no significant effect on the results of the company's value in the mining sector companies listed on the Indonesia Stock Exchange.
Exchange in the period 2016-2019. Limitations in this study are the existence of other external factors that influence firm value apart from interest rates and exchange rates such as inflation, political, economic, and social conditions. And internal factors besides capital structure and liquidity such as profitability and activity ratios. Suggestions for further research can add external factors and other internal factors besides those used in this study and extend the research period.

REFERENCES

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