DETERMINANTS OF CAPITAL STRUCTURE IN INDONESIAN COMPANIES FROM 2011 – 2022

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ABSTRACT

The purpose of this study is to examine the variables influencing capital structure in Indonesian businesses. The dependent factors in this case are the debt to asset ratio (DAR) and the debt-to-equity ratio (DER), while the independent variables are profitability, growth potential, size, dividend policy, liquidity, and business risk. All industries in Indonesia are represented in the research sample, except for the banking industry. The panel regression analytical method is used. Furthermore, Random Forest's variable importance analysis is used in this work. The outcome demonstrated that dividends, tangibility, profitability, and liquidity are important components of both DAR and DER models. Strong tangible assets raise both DAR and DER, but favorable profitability and liquidity typically lower them. Additionally, businesses that pay out larger dividends typically have smaller debt loads. Therefore, businesses should concentrate on sustaining strong profitability as it is closely related to sales. To guarantee continuous liquidity, which enables businesses to fulfill both short- and long-term obligations, care must be taken while paying out dividends.

Keywords: Capital Structure; Profitability; Growth Opportunities; Tangibility; Size; Dividend Policy And Liquidity

INTRODUCTION

According to records from PT Kustodian Sentral Efek Indonesia (KSEI), there are more than 10 million investors in the Indonesian capital market. This figure reflects a 33.53% increase from 7,489,337 at the end of 2021 to 10,000,628 as of November 3, 2022. The trend of this increasing number of investors has been evident since 2019 when the investor count stood at approximately 2,484,354 (KSEI, 2022). This indicates the high level of interest among both domestic and international communities in investing in Indonesian companies. However, this heightened interest in investing needs to be supported by an improvement in the performance of these companies. Investors are attracted to companies that exhibit strong performance. Those looking to invest should conduct thorough analysis and assessments before making investment decisions.

The advancements in technology and globalization in the present era undoubtedly require the ability to compete in a highly competitive business environment. This necessitates companies to make efforts to sustain the survival of their businesses. Companies are required not only to produce products and satisfy consumers but also to effectively manage their finances. Investors are inclined towards firms that not only produce goods or services and cater to consumer needs but also demonstrate a keen understanding of financial management Furthermore, in this volatile environment, attaining the ideal capital structure is crucial. The capacity of a firm to thrive in a market that is changing quickly can be dramatically impacted by finding the correct mix between debt and equity funding. A well-planned capital structure can also improve financial stability, which are highly attractive traits for investors and give businesses the resources they need to take advantage of growth prospects.

One of the crucial decisions in managing the financial function is determining the extent to which a company can meet its funding requirements for its operations or business expansion.

To fulfill these funding needs, a company can obtain funds from either internal financing or external financing. Meeting a company's funding needs from internal sources involves utilizing its equity capital, retained earnings, and reserves.

If the internal funding of a company is not enough for its capital structure, the company needs to get external fundings, such as from debts. While choosing the funding alternative, a company needs to consider a favorable combination between internal financing and external financing.

In other words, the company can create the optimal capital structure. Brigham & Houston (2019) define capital structure as the financing composition that refers to the ratio of equity, preferred stock, and long-term liabilities (Brigham & Houston, 2019). A company's capital structure is the composition of liability and equity (Ross, 2015). A company will choose the most optimal combination of internal and external financing in achieving the desired profitability. Shil et al. (2019) reveals that internal and external factors affect a company's capital structure (Shil et al., 2019). Internal factors include profitability, liquidity, age, size, tangibility, and others. Meanwhile, external factors affecting the capital structure include inflation, interest rates, and monetary policy (Shil et al., 2019).

Several research works have looked into what influences a company's capital structure decisions. Zafar et al. (2019) conducted a study to investigate the effects of three major theories of capital structure in sixteen Asian countries between 2008 and 2014. Chaklader and Chawla (2016) looked into the variables influencing India's capital structure between 2008 and 2015. They found that, for five of the six factors—profitability, size, tangibility, sales growth, and the non-debt tax shield—the trade-off theory holds true, but the pecking order theory only holds true for liquidity (Chaklader & Chawla, 2016). Another study by Saarani and Shahadan looked at the capital structure of Malaysian SMEs, specifically the Enterprise 50 (E50) SMEs, using accounting data covering the five years from 2005 to 2009. The results of the study (Saarani & Shahadan, 2013) indicate that size is important to consider when examining the long- and short-term components of debt structure. However, for SMEs, tangibility, liquidity, and profitability are important factors in determining capital structure. When it comes to long-term considerations, growth and age are very crucial, and taxes are not a major factor when deciding on capital structure.

Suhardjo et al. (2022) investigates the impact of profitability, company size, and liquidity on the capital structure of manufacturing firms listed on the Indonesian Stock Exchange between 2018 and 2020 in Indonesia. The findings demonstrate that the capital structure of mining sector businesses is unaffected by size or profitability. According to Chandra's (2014) research, profitability has a negative impact on the capital structure, whereas size and business risk have a positive impact (Chandra, 2014). These findings are in opposition to Chandra's findings.

Additionally, statistical analysis and data mining are combined in this study. To support the interpretation of the regression results, data mining is used to identify the significance of variables. Data mining algorithms use historical data to construct patterns, whereas traditional statistical methods use historical data to obtain model coefficients and forecast (Nisbet et al., 2018). It is anticipated that the results will be better explained and comprehended by combining these two approaches.

The contradictory findings of earlier research piqued the researcher's interest in looking into the capital structure further. Therefore, the main goal of the study is to look into how business risk, capital structure, profitability, growth prospects, tangibility, size, dividend policy, and liquidity are related to each other. The suggested title for this research is Determinants of Capital Structure in Indonesian Companies from 2011 to 2022.

LITERATURE REVIEW

Capital Structure

A company's capital structure, according to Baker & Martin (2011), is the mix of debt and equity used to finance its operations, productive assets, and future growth. A company's capital structure, according to Ross (2015), is the particular mix of long-term debt and equity that is utilized to finance operations.

The introduction of capital structure theory marked a turning point in its evolution. They contend that the debt and equity composition of a business has no bearing on its value. Their stance is that in the absence of bankruptcy-related taxation and expenses, a business should strive to achieve a harmonious equilibrium between the merits and demerits of debt (CFA Institute, 2023; Modigliani & Miller, 1963).

The maximization of debt utilization, as proposed by Modigliani and Miller (1963) is subject to criticism from Scott (1977). In accordance with the trade-off theory, which he explains, the optimal method of financing is through a combination of equity and debt. As per Scott (1977), the trade-off theory considers various factors including interest expense deductions, corporate income tax, and the costs associated with financial distress, specifically bankruptcy costs. Businesses must make a trade-off between utilizing debt for investment and operational financing and the associated risks and benefits. To attain financial efficiency and mitigate undesirable risks, organizations must therefore find a harmonious equilibrium in their utilization of debt as a funding source (Scott, 1977).

Then, in support of the trade-off theory, Myers (1984) asserts that an organization determines the optimal objective leverage ratio. The determination of the intended leverage ratio involves a comparison between the tax benefits of interest earnings and the costs of bankruptcy, as stated by Myers (1984).

The Pecking Order Theory, initially introduced by Donaldson (1961), was later renamed the "pecking order theory" by Myers (1984). The term "pecking order" originates from the hypothesis' explanation of why organizations prefer particular funding sources to others. As their primary source of operational funding, businesses prefer retained earnings or internal financing, which consists of funds generated by the company's operations, according to the theory. As per the findings of Myers and Majluf (1984), if a business requires external funding, it will issue the most secure securities initially, such as bonds, followed by additional securities (e.g., convertible bonds), and ultimately, as an absolute last resort, new equity.

Jensen and Meckling (1979) propose the concept of agency relationship arises when a principal (owner) engages the service of an agent (manager), to conduct the company's activities. In agency theory, the principal refers to shareholders, while the agent represents the management responsible for running the company, entrusted by the shareholders to maximize shareholder wealth (Jensen & Meckling, 1979). The basic premise of agency theory is that managers tend to act in self-serving ways and may have goals that differ from those of the owners, which, if not adequately monitored, can lead them to take actions that are detrimental to the maximization of owner wealth (Jensen & Meckling, 1979). To guarantee that managers are genuinely followed to the interests of shareholders, shareholders must incur costs known as agency costs. Reducing the conflict between agents and principals can be achieved by aligning their interests, thus reducing agency costs. Capital structure can serve as a supervisory tool to discourage opportunistic behavior by managers and encourage them to work in line with corporate goals, ultimately leading to improved company performance, particularly in firms with weaker corporate governance practices.

Signaling theory is a concept in economics and finance that suggests individuals or organizations with access to more information can use their actions to signal their quality to others (Ross, 1977). This theory is particularly relevant in the context of corporate finance, where a company's capital structure and dividend policy can serve as a signal of its quality to outside parties. The theory posits that companies with higher-quality assets or prospects may choose to take on more debt or increase their dividend payouts to signal their confidence in their ability to meet their financial obligations and future prospects. Conversely, companies with lower-quality assets or prospects may choose to take on less debt or decrease their dividend payouts to avoid signaling their weakness.

Two variables are utilized to assess the capital structure in this study. By dividing total liabilities by total assets, one can obtain the debt to assets ratio, or DAR (Chandra, 2014). The metric employed to estimate capital design is the Debt to Asset Ratio (DAR), as it offers valuable insight into the organization's capacity to effectively manage the debt that sustains its resources. Zafar et al. (2019) state that the calculation of the Debt-to-Equity Ratio (DER) entails dividing the aggregate value of debts by the aggregate value of equity (Zafar et al., 2019).

Determinants of Capital Structure
Profitability

Profitability is a metric that measures a company's capacity to make profit within a defined timeframe (Darmawan & Sukartha, 2014). Profitability, as defined by Utami (2017), refers to the capacity of a company to make profit using its working capital (Utami, 2017). Profitability refers to the relationship between the revenue earned and the costs incurred by a firm when using its current assets and resources (Gitman and Zutter, 2015).

This study defines profitability as the return on assets (ROA) according to the research conducted by Chandra (2014), Shil et al. (2019), and Saarani and Shahadan (2013). This ratio is utilized to gauge the profitability of the company's investments by considering all of its assets. The calculation involves dividing the net profit by the total assets. Greater profitability is desirable as it signifies the company's capacity to create profit from its assets.

Zhang (2010) research investigates the determinants of the capital structure of 220 small and medium-sized enterprises (SMEs) in the British manufacturing industry. Zhang (2010) found that profitability has a favorable impact on capital structure. During the period of 2005 to 2009, Lim (2012) conducted a study on the factors that influence the capital structure of thirty-one Chinese financial service companies listed on the A-share market. In this study, Lim discovered a negative link between leverage and profitability. Gharaibeh and Al-Tahat (2020) conducted a study on the factors that influence the capital structure of 45 service organizations in Jordan. The study conducted by Gharaibeh and AL-Tahat (2020) found that profitability has a substantial negative effect on leverage. In a study conducted by Albayrak (2019), structural equation modeling (SEM) was employed to analyze a sample of 203 companies listed on the Istanbul Stock Exchange (ISE). Albayrak (2019) found that profitability had a detrimental effect on leverage.

According to the pecking order theory proposed by Myers and Majluf (1984), there is a negative relationship between profitability and debt. Consequently, organizations that achieve a good return on their investments typically have a lower reliance on debt. A high rate of return allows a corporation to internally finance a majority of its financial requirements. Greater profitability signifies that the organization is also generating larger earnings. Put simply, the company may utilize its own income to fund the majority of its requirements without depending on external loans. As the level of equity rises, the debt ratio typically declines, providing that

the quantity of debt remains relatively stable. This study uses the profitability ratio known as ROA (return on assets) to assess the company's capacity to make profits with its total assets. Profitability is assessed using the criteria established (Chandra, 2014). Thus, the proposed hypotheses are:

H$_{1a}$: Profitability has a negative and significant effect on DAR.
H$_{1b}$: Profitability has a negative and significant effect on DER.

Growth Opportunity

The term "growth opportunity" refers to the possibility for a company's investment to expand or increase in value (Filsaraei et al., 2016). Business growth opportunities pertain to the prospects for a corporation to substantially augment its net income, assets, and sales (Funk, 2022).

According to the pecking order theory proposed by Myers (1984), companies prefer utilizing their own profits (internal funds) rather than taking on debt. Debt is only considered when internal funds are inadequate. Nevertheless, organizations that have significant potential for growth may want supplementary capital to fuel their expansion initiatives. Consequently, a firm with greater growth prospects will be more inclined to increase its borrowing.

Zafar et al. (2019) conducted research which discovered that Growth Opportunity has a favorable and substantial influence on capital structure. This conclusion is further corroborated by Chandra's research in 2014. Nevertheless, the findings of this study contradict the capital structure of Small Medium Enterprises (SMEs) in Malaysia, namely the Enterprise 50 (E50) SMEs. The research conducted by Saarani and Shahadan (2013) discovered that growth opportunity had a detrimental effect on the capital structure. In a study conducted by Saif-Alyousfi et al. (2020), which examined 827 non-financial enterprises listed in the Malaysian stock market between 2008 and 2017, it was discovered that growth potential had a detrimental effect on the capital structure. Growth prospects are quantified by calculating the percentage change in Total Sales (Chandra, 2014). Growth opportunities are quantified by the market-to-book ratio, as indicated by the studies conducted by Gharaibeh & Al-Tahat (2020) and Zafar et al. (2019). Therefore, in model 2, the market-to-book ratio is employed (Gharaibeh & AL-Tahat, 2020; Zafar et al., 2019). Thus, the proposed hypotheses are:

H$_{2a}$: Growth opportunities have a positive and significant effect on DAR.
H$_{2b}$: Growth opportunities have a positive and significant effect on DER.

Tangibility

Tangibility, as defined by Alexiev (2018), refers to the extent to which physical components, such as the connection between services and tangible objects, have a dominant influence on the offering (Alexiev et al., 2018). According to Palliam et al. (2013), the level of tangibility of a company's assets is an important factor in defining its capital structure (Palliam et al., 2013).

Scott (1977) says in the trade-off theory, the capital structure decision of a corporation should take into account the risk of bankruptcy (Scott, 1977). In order to secure loans, a corporation must provide sufficient collateral, thus mitigating the possibility of bankruptcy (Gharaibeh & AL-Tahat, 2020). This implies that as tangibility increases, so does the level of debt. Put simply, tangibility has a favorable impact on the capital structure. Shah & Khan (2017) studies on non-financial enterprises listed on PSE Pakistan from 2005 to 2014. The research reveals that tangibility has a favorable impact on the capital structure of Pakistani non-financial firms (Shah & Khan, 2017). Shil et al. (2019) also discovered a positive impact through tangibility. The researchers analyzed the financial statements of companies in the

pharmaceutical, textile, and banking industries listed on the Dhaka Stock Exchange (DSE) over the period of 2012 to 2016 (Shil et al., 2019).

According to the agency cost theory, asset tangibility has a detrimental impact on capital structure. This is because when a company has a high proportion of fixed assets used as collateral, there is less conflict between managers and shareholders. This is because managers do not have sufficient free cash to engage in business development. Asset tangibility in a corporation reduces the risk of insiders taking resources for themselves, and it is connected to the expenses of debt and financial funds (Prieto & Lee, 2019). Grossman and Hart (1982) suggest that corporations should raise their debt levels when they have limited collateral. This is beneficial for overseeing managerial operations. Consequently, the presence of tangibility has an adverse effect on the composition of capital. Zafar et al. (2019) discovered a similar detrimental impact in their study on the Asian emergent market (Zafar et al., 2019). The measurement of tangibility in this study is based on the ratio of total fixed assets to total assets, as defined by Chandra (2014). Thus, the proposed hypotheses are:

H$_{3a}$: Tangibility has a negative signicant effect on the DAR.
H$_{3b}$: Tangibility has a negative signicant effect on the DER.

Company Size

Corporation size refers to the magnitude of a corporation, which is determined by factors such as total assets, total sales, total earnings, tax expense, and other relevant indicators (Brigham & Houston, 2019). According to the trade-off theory, larger companies may prefer to use debt financing instead of equity financing in order to keep control. This preference is based on the benefits of diversification, reduced risk, and lesser vulnerability to bankruptcy that larger firms typically enjoy. Rajan and Zingales (1995) conducts research that reveals larger organizations possess a higher capacity to diversify their investments (Rajan & Zingales, 1995). This ability reduces their susceptibility to financial issues. Put simply, a company's financial fundamentals become more robust as its size increases.

As a corporation grows, its financial fundamentals improve. The robustness of these financial foundations leads to reduced financing expenses for the company. Reduced interest rates incentivize enterprises to increase their borrowing (Chandra, 2014). Therefore, the size of a corporation has a beneficial impact on its capital structure. This is consistent with the findings of Albayrak (2019), Shah and Khan (2017) as demonstrated in their respective research studies. The size of a company is determined by the natural logarithm (Ln) of its revenue (Chandra, 2014). Thus, the proposed hypotheses are:

H$_{4a}$: Company size has a positive and significant effect on the DAR.
H$_{4b}$: Company size has a positive and significant effect on the DER.

Dividend

The amount of a company's profits given to a shareholder is known as a dividend. Though some businesses also offer stock dividends, cash payouts are the most typical kind of dividend. Though they can also be paid out monthly or annually, dividends are normally paid out every quarter. The board of directors of the corporation decides on distributions and announces them in advance. For a number of reasons, including demonstrating their financial health and luring in new or existing investors, companies pay dividends (Amond, 2024).

Myers (1984) proposed the pecking order theory, which states that dividend policies are based on the expected cash flow and return on investment. (Chandra, 2014). It is advisable to keep the dividend payout at a minimal level. A too large dividend distribution diminishes the internal source of cash. This necessitates the corporation to increasingly depend on external

sources of money, such as debt. Put simply, when the amount of dividends distributed by a corporation increases, the company's requirement for debt also increases (Chandra, 2014). Dividends have a favorable impact on the capital structure. Jiang and Jiranyakul (2013) corroborate the results of this investigation (Jiang & Jiranyakul, 2013). This study quantifies dividends by calculating the ratio of dividend per share to earnings per share. Dividends are quantified by dividing the dividend per share by the earnings per share (Chandra, 2014). Thus, the proposed hypotheses are:

H5a: Dividend has a positive significant effect on the DAR.
H5b: Dividend has a positive significant effect on the DER.

Liquidity

Liquidity pertains to the velocity and simplicity with which an asset can be transformed into cash (Ross, 2015). This study will assess liquidity by calculating the ratio of current assets to current liabilities, as discussed in the research conducted by Zafar et al. (2019), Saarani & Shahadan (2013) and Zafar at al. (2019). Kasmir (2014) defines the current ratio as a measure of a company's ability to swiftly and fully fulfill its short-term financial commitments when they are due for payment (Kasmir, 2014). Companies with a high current ratio demonstrate a substantial proportion of current assets in relation to current liabilities.

Scott (1977) proposed the trade-off theory, which states that liquidity has a favorable impact on the capital structure. According to Scott (1977), a company's strong liquidity indicates a higher capacity to acquire debt. The outcome aligns with research conducted by Pahuja and Sahi (2012). A study conducted in India analyzed the companies listed on the Bombay Stock Exchange from 2008 to 2010 and discovered that liquidity has a strong and favorable impact on the capital structure.

In contrast, according to Myers (1984), the pecking order theory asserts that enterprises with ample cash are inclined to decrease their reliance on debt. Companies that possess a substantial quantity of current assets typically have ample internal resources available for financing purposes. Thus, firms with ample liquidity are inclined to minimize their reliance on debt, indicating a negative correlation between liquidity and capital structure (Myers, 1984). Zafar et al. concurs with this assertion. The research conducted in Asian Emerging Market found that liquidity has a large and negative impact on capital structure (Zafar et al., 2019). The study done by Chaklader and Chawla (2016) analyzed data from firms listed in NSE CNX 500 for the period 2008-2015. The research also discovered a negative correlation between liquidity and capital structure (Chaklader & Chawla, 2016). Prieto and Lee (2019) examine the factors that influence the financial structure of major Korean corporations between 2010 and 2017. Based on their research, a negative association exists between leverage and liquidity. Prieto & Lee (2019) assert that leverage is a representation of capital structure. Liquidity will be assessed by calculating the ratio of current assets to current liabilities, as stated in (Chandra, 2014). Thus, the proposed hypotheses are:

H6a: Liquidity has a negative significant effect on the DAR.
H6b: Liquidity has a negative significant effect on the DER.

Business Risk

Business risk refers to the potential for financial loss or negative impact on the value of a company's equity that arises from its operational activities. In the business environment, risk pertains to the implementation of risk management, which entails evaluating all stages and activities within a corporation (Crovini et al., 2020). The capital structure of a firm has a substantial correlation with the business risk in the financial industry (Elkhal, 2019).

Based on the trade-off principle, organizations that employ higher levels of leverage are more prone to encountering financial issues (Tudose, 2012). Elevated levels of volatility amplify the business risk of the corporation. The escalation in company risk leads to an elevated cost of funds (Chandra, 2014). Companies are compelled to decrease their reliance on debt due to the increase in the cost of funds. Consequently, organizations with elevated business risk will reduce their reliance on loans. This suggests that business risk has a detrimental impact on the capital structure.

Zafar et al. (2019) provided support for this research by conducting a comparable analysis on the Asian Emerging Market. They found that there is a notable inverse correlation between business risk and capital structure. Gharaibeh and Al-Tahat (2020) conducted a study on 45 enterprises in Jordan from 2014 to 2018 and arrived at the same conclusion in their research. The study conducted by Gharaibeh and AL-Tahat (2020) revealed a noteworthy inverse correlation between business risk and capital structure. Business risk is quantified by calculating the ratio of NOPAT (Net Operating Profit After Tax) to capital, as stated by Chandra in 2014. Business risk is quantified by calculating the standard deviation of profitability, namely the return on assets (ROA), as indicated by the studies conducted by Alipour et al. (2015) and Zafar et al. (2019). Therefore, in model 2, the standard deviation of profitability (ROA) is utilized, as stated by Alipour et al. (2015) and Zafar et al. (2019). Thus, the proposed hypotheses are:

H_{7a}: Business risk has a negative significant effect on the DAR.
H_{7b}: Business risk has a negative significant effect on the DER.

RESEARCH METHOD

Data

The population for this study comprises all the companies that have been listed on the Indonesia Stock Exchange (IDX) from 2011 to 2022. The data spans quarterly periods from 2011 to 2022. Given that enterprises in the financial sector typically have large leverage, they are excluded. According to Fama & French (1992), high leverage in non-financial enterprises may be a sign of financial distress. The data is sourced from Capital IQ and Capital IQ Pro. Winsorization is applied to the data at a 1% level to mitigate bias (Glen, 2023).

Empirical Model

This study uses the empirical model from Chandra's (2014) study (Chandra, 2014), which is:

$$Yit = \beta_0 + \beta_1 PROF + \beta_2 GO + \beta_3 TANG + \beta_4 SIZE + \beta_5 DIV + \beta_6 LIQ + \beta_7 BR + \varepsilon$$

Where:
Y_{it} : Capital Structure, measure by two proxies. Debt to asset ratio (total debts/total assets), Debt to equity ratio (total debt/total equity).
PROF : Profitability, measure by EBIT/Total asset.
GO1   : Growth Opportunity, measure by percentage of change in total sales
TANG : Tangibility, fixed assets/total assets.
SIZE   : Company Size, Ln(sales).
DIV   : Dividend, dividend per share/earnings per share.
LIQ   : Liquidity, current assets/current liabilities.
BR1   : Business Risk, NOPAT/Capital.
This study also tries to measure Growth Opportunity and Business Risk using other proxies.

GO2 : Growth Opportunity, measured by market to book ratio (market cap/book value equity) (Gharaibeh & AL-Tahat, 2020; Zafar et al., 2019).
BR2   : Business Risk, measure by standard deviation of return on assets (Alipour et al., 2015; Zafar et al., 2019).

RESULTS AND DISCUSSIONS

Descriptive Statistics

Descriptive statistics are used to summarize the variables. Descriptive statistics primarily include the maximum, minimum, mean, and standard deviation values. The table below displays the statistical descriptive data for each variable in this study:

Table 1. Descriptive Statistic

Variable	OBS	Mean	Std. dev.	Median	Min	Max
DAR	12,843	0.268	0.264	0.233	0	1.991
DER	12,843	1.291	2.157	0.866	-7.173	14.812
PROF	12,843	0.011	0.026	0.008	-0.109	0.115
GO1	12,843	0.023	0.088	0.012	-0.236	0.475
GO2	12,843	0.004	0.010	0.001	-0.006	0.070
TANG	12,843	0.538	0.232	0.551	0.047	0.963
SIZE	12,843	11.079	2.151	11.124	5.316	15.585
DIV	12,843	0.329	0.117	0	0	0.687
LIQ	12,843	2.357	2.869	1.505	0.094	22.561
BR1	12,843	0.027	0.041	0.019	-0.070	0.251
BR2	12,843	2.492	3.538	1.359	0.016	24.570

Based on the table 4.1 variable DAR has an average above the median, which is 0.2689744, meaning that many companies have debt to asset ratio values above the median. The standard deviation, which is 0.264435, indicates that the debt-to-equity ratio of each company does not vary too widely, although there is a reasonable degree of variation.

Variable DER has an average above the median, which is 1.291138, indicating that many companies have DER values above the median. This suggests that many companies have a higher debt to equity ratio compared to the median. The high standard deviation, which is 2.15741, implies that companies in this study have a significant variation in their debt-to-equity ratios, ranging from small to large, as evident from the difference between the minimum and maximum values.

Variable PROF has an average above the median, which is 0.0116691, indicating that many companies have profitability values above the median. This shows that, on average, companies have higher profitability compared to the median. The standard deviation, which is 0.0269685, suggests that profitability values for each company do not vary significantly.

Variable GO1 has an average above the median, which is 0.0231597, meaning that, on average, companies have Growth Opportunity values above the median. The standard deviation, which is 0.0886189, suggests that Growth Opportunity values for each company do not vary significantly. Variable GO 2 has an average above the median, which is 0.0048662, meaning that, on average, companies have Growth Opportunity values above the median. The standard deviation, which is 0.0103186, suggests that Growth Opportunity values for each company do not vary significantly.

Variable TANG has an average below the median, which is 0.5381011, indicating that most companies in the sample have a lower proportion of physical assets compared to non-physical or intangible assets. The standard deviation, with a value of 0.2321684, shows that the tangibility values for each company do not vary significantly, although there is some degree of variation.

Variable SIZE has an average below the median, which is 11.07952, meaning that most companies in the sample are smaller in size compared to the median. The standard deviation, which is relatively high at 2.151762, suggests that companies in Indonesia have varying sizes, ranging from small to large, as evident from the difference between the minimum and maximum values.

Variable DIV has an average above the median, which is 0.329683, indicating that, on average, companies distribute dividends above the median. The standard deviation, with a value of 0.1176043, shows that dividend distributions for each company do not vary significantly, although there is some degree of variation.

Variable LIQ has an average below the median, which is 2.357387, indicating that most companies in the sample have lower liquidity levels compared to the median. The standard deviation is 2.869918, indicating a significant variation in liquidity values among the companies in the sample.

Variable BR1 has an average above the median, which is 0.0270434 implies that most companies have business risk above the median. The standard deviation, with a value of 0.0419864, shows that business risk for each company does not vary significantly, although there is some degree of variation. Variable BR 2 has an average above the median, which is 2.49283 implies that most companies have business risk above the median. The relatively high standard deviation of 3.538471 indicates significant variation in business risk levels among the companies in the sample.

Random Forest

The initial stages of conducting a random forest regression involve selecting mtry and ntree. Mtry is determined using the formula from Breiman (2001) which is the square root of the number of independent variables (Breiman, 2001).

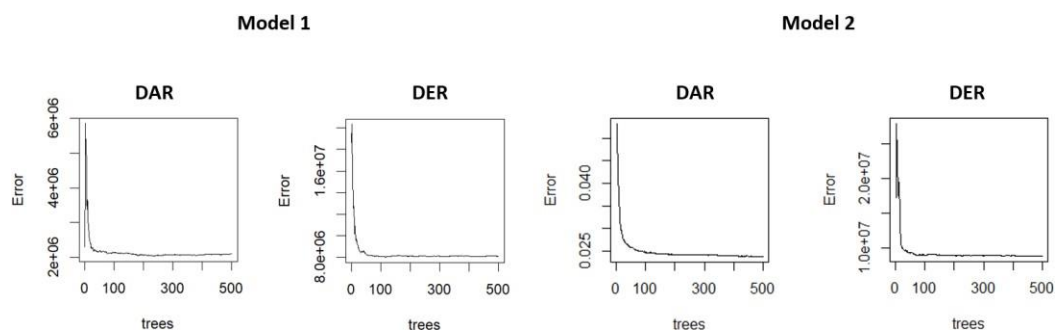**Figure 1. Out of Bag Error**

The figure above shows that the larger the ntree, the smaller the change in out of bag error. The ntree used in this study is 500, as seen from the graph above indicating that the error is stabilized at 500.

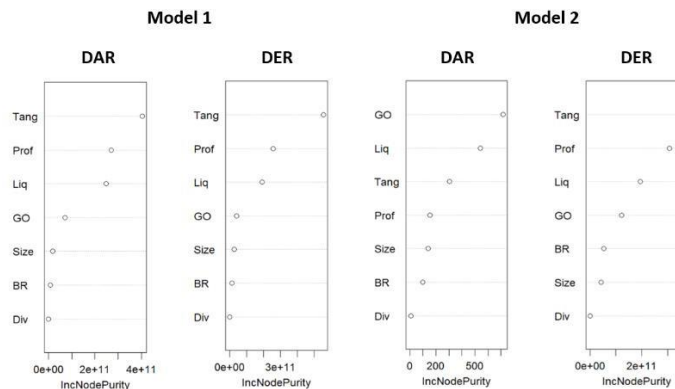**Figure 2. Variable Importance**

The variable importance is one of the outputs of the random forest. This variable importance shows which variables are influential in capital structure. IncNodePurity measures the increase in model error when a specific variable undergoes random permutation or shuffling (Breiman, 2001).

Based on figure 2, the variable importance plot of DAR and DER for model 1 has the same result. Figure above showed the order of the most important variable is tangibility, followed by profitability, liquidity, growth opportunity, size, business risk and dividend. For model 2, there is a difference in the order of variable importance between DAR and DER. In DAR, the most important variable order is growth opportunity, followed by liquidity, tangibility, profitability, size, business risk and dividend. While in DER the most important variable order is tangibility, followed by profitability, liquidity, growth opportunity, size, business risk and dividend.

Results and Empirical Interpretation

The chosen panel model regression is Fixed Effect. Before conducting panel regression, all problems with diagnostic test requirements, such as heteroscedasticity, autocorrelation, or cross-sectional dependence test, has been addressed by using Driscoll-Kraay Standard Errors regression.

Table 2. Panel Data Regression

Independent Variables	Model 1				Model 2			
	DAR		DER		DAR		DER	
	Coef,	P	Coef,	P	Coef,	P	Coef,	P
PROF	-0.934	0.000	-3.822	0.016	-0.838	0.000	-7.771	0.000
GO1	0.006	0.704	0.737	0.000				
GO2					-1.533	0.001	107.8276	0.000
TANG	0.088	0.000	-0.148	0.389	0.080	0.000	0.444	0.004
SIZE	0.004	0.124	0.137	0.000	0.004	0.178	0.129	0.000
DIV	-0.033	0.005	-0.168	0.085	-0.034	0.005	-0.154	0.033
LIQ	-0.009	0.000	-0.062	0.000	-0.008	0.000	-0.041	0.000
BR1	0.051	0.620	-3.225	0.001				
BR2					0.004	0.000	-0.019	0.039
Constant	0.209	0.000	0.105	0.732	0.214	0.000	0.664	0.046

R-Squared	0.0638	0.0169	0.0604	0.1619
Prob>F	0.000	0.000	0.000	0.000

The panel data regression results used DAR as dependent variable and DER to compare the result from both models. Both DAR and DER are used to measure the capital structure of the company. There are differences in the regression results between Model 1 and Model 2. This discrepancy arises because the variables growth opportunities and business risk are measured differently in each model. Model 2 employs measures based on the most recent research compared to Model 1. Furthermore, Model 2 exhibits a higher coefficient of determination than Model 1. Model 2 also has more significant variables compared to model 1. Growth opportunities and business risk, which are initially insignificant on DAR in model 1, become significant in model 2. Likewise, tangibility and dividends, which are insignificant on DER in model 1, become significant in model 2. Therefore model 2 is used in the empirical interpretation.

There are discrepancies in the regression results, particularly in relation to the significance level of the effect, as indicated by varying p values. The coefficient of determination demonstrates the extent to which independent variables affect the capital structure of the company, indicating the explanatory strength of the model. The coefficient of determination for the DER model is 0.1619. The coefficient of determination for the DAR model is 0.0604, which is rather low. The disparity in influence can be attributed to the greater number of significant independent variables in the DER model compared to the DAR model. It has been established that size has an impact on DER, but it does not affect Dar. The probability of the F value is 0.000 for each model, indicating that in both models, at least one variable is significant. The Prob F value can also serve as a modeling test, indicating statistical significance when it is below 0.05. The research model that establishes the relationship between the independent variable and the dependent variable is deemed satisfactory. However, it is essential to examine the impact of each variable on profitability to gain a comprehensive understanding of how each independent variable can influence the company's capital structure.

The profitability variable has a strong negative impact on both the DAR and the DER in the two models, suggesting that profitability plays a crucial role in determining the company's capital structure. These coefficient values indicate that Profitability has a greater impact on the Debt-to-Equity Ratio than on the Debt to Asset Ratio. Thus, there is support for both H1a and H1b. This finding is also consistent with research carried out by Gharaibeh & AL-Tahat (2020), Saarani & Shahadan (2013), Shah & Khan (2017), and Zafar et al. (2019) (Gharaibeh & AL-Tahat, 2020; Saarani & Shahadan, 2013; Shah & Khan, 2017; Zafar, at al., 2019). Based on the variable importance analysis in Random Forest, profitability is ranked fourth in DAR and second in DER, highlighting its substantial impact on capital structure.

Indonesian companies that are listed on the IDX and are more financially lucrative generally have reduced levels of debt in their capital structures. According to the Pecking Order Theory, corporations prioritize the utilization of internal money as their primary source of financing for investment projects. When there is not enough money available from within the company, they rely on borrowing money, and issuing shares of stock is seen as the final option (Myers, 1984). The negative link between profitability and capital structure provides evidence for this argument. Profitable organizations create higher levels of internal money, hence decreasing their dependence on external finance, particularly debt. Put simply, when organizations become more profitable, they are less inclined to rely on borrowing money to finance their operations. This aligns with the Pecking Order Theory's principle of prioritizing different sources of funding. Gharaibeh and AL-Tahat (2020) found that the profitability

coefficients for Jordanian service sector enterprises were statistically significant and negative, which provides support for the pecking order theory (Gharaibeh & AL-Tahat, 2020). Zafar et al. (2019) found that companies in 16 Asian countries also endorse the pecking order theory, which suggests a negative correlation between profitability and leverage. Nevertheless, the findings of Chandra's (2014) study on property and real estate sector companies listed on the IDX between 2010 and 2013 contradict this outcome (Chandra, 2014).

Managers might prioritize the optimal utilization of created income for company expansion instead of pursuing external finance alternatives. This is consistent with the theory's assertion that organizations prioritize internal funds as their main source of funding if those funds are accessible. This follows a hierarchy where internal funds are preferred over debt or equity financing. Hence, managers should contemplate utilizing current profits strategically to finance growth endeavors instead of predominantly depending on external borrowing.

The impact of Growth Opportunity (GO) on Debt Asset Ratio (DAR) is negative and statistically significant, whereas it is positive and statistically significant on Debt Equity Ratio (DER). Emphasizing the significance of Growth Opportunity on the company's financial structure. The coefficient value indicates that Growth Opportunity has a distinct impact on DAR and DER. Thus, H2b is corroborated whereas H2a is refuted. This finding contradicts the findings of Chandra's (2014) study on property and real estate businesses listed on the IDX between 2010 and 2013. This discrepancy arises due to the fact that past research has been focused on one specific industry and has been conducted at distinct time periods. Based on the variable importance analysis in Random Forest, growth prospects are ranked first in DAR and fourth in DER, demonstrating their strong relevance to the capital structure.

According to the DER (Debt-Equity Ratio), there is a clear and meaningful correlation between business growth and capital structure. High-growth enterprises tend to rely more on external borrowing. This observation is consistent with the concepts of the Pecking order theory (Myers & Majluf, 1984). During a period of accelerated company growth, there is an increased demand for money to facilitate expansion. Major corporations have greater prospects for expansion, so fostering investment in ventures with higher levels of risk, but eventually heightening the risk of insolvency (Albayrak, 2019). Consistent with Signaling theory, organizations that possess superior assets or prospects may opt to increase their debt levels as a means of demonstrating their belief in their capacity to fulfill their financial commitments (Spence, 1973).

According to the Trade-off Theory, companies that experience stronger growth may choose to increase their leverage or debt to fund their expansion strategies. As a firm expands, it may necessitate greater capital to allocate towards new initiatives, acquisitions, or expansions (Scott, 1977). Hence, companies undergoing rapid growth may opt to employ more external funding, typically in the form of debt, to bolster their expansion efforts. This supports the findings of Budhidharma et al. (2023) who conducted research on the financial difficulties faced by Indonesian enterprises from 2005 to 2020. Companies use debt to facilitate their expansion, but they must exercise caution to prevent overreliance on borrowing (Budhidharma et al., 2023). Regarding DAR, it is seen that when the firm grows, there is a notable adverse effect on the capital structure. This suggests that the company prefers to use its own cash rather than depending on external sources. This is consistent with the study conducted by Alipour et al. (2015) on non-financial companies listed on the Tehran Stock Exchange in Iran. A corporation that is experiencing rapid growth is often assumed to have a potentially enough amount of internal capital available (Alipour et al., 2015).

Companies undergoing rapid growth may opt to utilize additional external sources of capital to accommodate their expansion strategies. Fast-growing companies frequently have

more capital requirements to sustain their growth, and utilizing external funding, such as borrowing, might be a feasible approach. Managers must exercise caution and employ a strategic approach while using debt financing, considering the accompanying risks. It is advisable for them to evaluate the most advantageous combination of internal funds and external borrowing, ensuring that it is in line with their growth and financial well-being.

The presence of tangibility has a strong positive impact on both DAR (Debt Asset Ratio) and DER (Debt Equity Ratio), suggesting that the influence of tangibility on the capital structure of the company is significant. These coefficient values indicate that tangibility has a greater impact on the Debt-to-Equity Ratio than on the Debt to Asset Ratio. Based on these findings, there is no evidence to establish H3a and H3b. Nevertheless, these discoveries are consistent with the trade-off paradigm. These findings are consistent with the investigations undertaken by Agyei et al. (2020), Gharaibeh (2015), M'ng et al. (2017), and Nasimi (2016). Based on the variable importance analysis in Random Forest, tangibility is ranked third in DAR and first in DER, suggesting that it has a strong influence on capital structure.

The correlation between the degree of tangibility and both DAR and DER suggest that Indonesian enterprises with greater tangibility tend to incorporate debt as a substantial element in their capital structure. They might utilize their tangible assets as collateral to obtain loans at reduced interest rates. This is consistent with the Trade-Off Theory, which posits that corporations strive to strike an equilibrium between the advantages of debt, such as tax deductibility, and the drawbacks and uncertainties associated with debt (Scott., 1977). Tangibility refers to the degree to which a corporation holds tangible assets that may be utilized as collateral to secure loans. Within the framework of the Trade-Off Theory, having greater physical assets can be used as collateral to secure loans (Agyei et al., 2020). This allows the organization to have more flexibility in using debt as an extra means of financing. The study conducted by M'ng et al. (2017) discovered a substantial negative correlation between tangibility and leverage in both Malaysian and Singaporean listed companies.

Nevertheless, Chandra's (2014) research on property and real estate sector companies on the IDX over the period of 2010-2013 diverges from this. The reason for this is that the previous research was exclusively carried out inside the property and real estate industry, which frequently received money prior to the completion of their projects. This method diminishes their debt and hence exerts a detrimental influence.

Managers should strategically use tangible assets to obtain advantageous terms for debt borrowing. It is recommended that companies effectively utilize their physical assets, which may allow them to borrow money at reduced rates. Managers should be cautious to find a balance, taking into account the possible hazards that come with large levels of debt. This observation highlights the importance of careful management of assets to maximize financial leverage while limiting the dangers involved.

The variable of business Size is only statistically significant in relation to DER, suggesting that the impact of business size on the capital structure of the company is not as powerful as the other variables. From the above coefficient values, it can be inferred that Company Size has a more pronounced impact on the DER in comparison to the DAR. Thus, H4b is corroborated while H4a is not substantiated. This finding is consistent with the study conducted by Chandra (2014), which confirms that the size of a company has a large and favorable impact on its capital structure (Chandra, 2014). This study provides additional evidence that aligns with the findings of Albayrak (2019), M'ng et al. (2017), and Zafar et al. (2019) (Albayrak, 2019; M'ng et al., 2017; Zafar et al., 2019). According to the variable importance analysis in Random Forest, size is ranked fifth in DAR (Decision Average

Reduction) and sixth in DER (Decision Error Reduction). This indicates that the size of the company is comparatively less important when compared to other characteristics.

This outcome is consistent with the trade-off theory. According to the trade-off principle, larger organizations are expected to have greater diversification, lower risk, and reduced susceptibility to bankruptcy (Scott, 1977). M'ng et al. (2017) propose a substantial and favorable correlation between the size of a company and its level of leverage in Malaysia, Singapore, and Thailand. Furthermore, the size of a corporation is regarded as a proxy for the unequal access to information that exists between investors and management in the capital market. The reason for this is that large firms are perceived to have greater transparency and higher levels of leverage, enabling them to issue more debt at a reduced cost (M'ng et al., 2017). There is a notable positive correlation between the size of companies listed on the Istanbul Stock Exchange and their level of leverage. Companies may choose debt financing instead of equity financing to maintain control. Consequently, it is expected that larger organizations would possess a greater degree of leverage, as stated by Albayrak (2019).

Managers should be aware that larger organizations often depend more on using debt to finance their capital structures (Chandra, 2014). This suggests that larger companies may have an advantage in obtaining loans because of their size, assets, or reputation. As a result, they can maintain a well-balanced combination of debt and equity to maximize their financial leverage. Therefore, managers of larger organizations should evaluate their financial requirements and utilize their size advantage to get suitable levels of debt, considering the related expenses and potential hazards.

The dividend variable has a statistically significant negative impact on both the DAR and DER models, suggesting that dividends play a crucial role in shaping the company's capital structure. As dividends increase, the company's reliance on external sources such as debt and equity for financing its operations or investments decreases. Thus, there is no support for H5a and H5b. According to the variable importance in Random Forest, the dividend is ranked eighth in both DAR and DER. This implies that the dividend holds less significance in this scenario.

Companies that distribute dividends use this action as a means of advertising their financial strength, primarily to demonstrate their success, in line with signaling theory. As a result, they typically favor self-financing to showcase their stability and financial strength (Ross, 1977). These findings align with the research undertaken by Hapsari et al. (2016), which discovered a substantial negative correlation between dividends and DER in manufacturing businesses listed in IDX during the period of 2010-2013 (Hapsari et al., 2016).

The Liquidity variable has a strong negative impact on the DAR (Debt Asset Ratio) and the DER (Debt Equity Ratio), suggesting that profitability plays a crucial role in determining the company's capital structure. From the above coefficient values, it can be inferred that Liquidity has a more pronounced impact on the DER in comparison to the DAR. Thus, there is support for both H6a and H6b. This outcome aligns with the pecking order idea. This study aligns with the research undertaken by Agyei et al. (2020), Prieto and Lee (2019), Zafar et al. (2019), Chaklader and Chawla (2016) (Agyei et al., 2020; Chaklader & Chawla, 2016; Prieto & Lee, 2019; Zafar et al., 2019). According to the variable importance in Random Forest, liquidity is ranked second in DAR (Debt Asset Ratio) and third in DER (Debt Equity Ratio), suggesting that it has a considerable impact on capital structure.

This outcome aligns with the pecking order idea. Companies that have a significant amount of readily available cash or assets that can be easily converted into cash are more likely to decrease their reliance on borrowing money (Myers, 1984). A corporation with robust liquidity would give higher importance to internal funding over external funding sources, aligning with the pecking order theory (Chaklader & Chawla, 2016). Companies with lower

levels of liquidity in their equity tend to employ higher levels of debt in their capital structures. The reason for this is because organizations with high liquidity can generate greater amounts of cash inflows for their business operations, which enables them to rely less on debt in their overall capital structure. In contrast, companies with limited liquidity may depend more on external funding and adopt a more assertive capital structure, as they may be required to issue shares in order to finance their investments. The findings of this study align with the research conducted by Prieto & Lee (2019) on Korean enterprises and Zafar et al. (2019) on 16 Asian countries (Prieto & Lee, 2019; Zafar et al., 2019). Nevertheless, this outcome contradicts the findings of Chandra's research completed in 2014 (Chandra, 2014).

Managers might infer from this that organizations with higher liquidity generally have a lower ratio of debt to capital structure. Therefore, managers should contemplate employing cash created from within the organization and ensuring sufficient liquidity to decrease dependence on external funding, particularly debt. They may prioritize the optimization of internal resources to finance investments and operational requirements, which could potentially decrease financial susceptibility and reliance on external financing sources.

The Business Risk variable has a strong positive impact on the DAR and a strong negative impact on the DER. From the above coefficient values, it can be inferred that business risk exerts a more pronounced impact on the DER in comparison to the DAR. Thus, H6a is not substantiated, whereas H6b is substantiated. This finding contradicts the findings of a study undertaken by Chandra (2014) on firms in the property and real estate industry listed on the IDX between 2010 and 2013. According to the variable importance in Random Forest, business risk is ranked sixth in DAR and fifth in DER. This implies that the significance of business risk is significantly lower in comparison to other variables.

The inverse correlation between Business Risk and DER is consistent with the trade-off paradigm. Trade-off theory suggests that organizations with greater business risk typically choose to have lower amounts of debt in their capital structures. An elevated business risk increases the likelihood of failing to repay debt, which in turn increases the expenses related to financial hardship (Zafar et al., 2019). Businesses encountering increased risks may benefit from exercising prudence while acquiring debt, thus assuring a more balanced and less leveraged financial position. This may entail implementing financial strategies that favor equity financing or maintaining conservative debt levels to offset the potential negative consequences of heightened risk.

The summary of this study is derived from the findings of profitability, liquidity, tangibility, and dividends, as these factors demonstrate strong resilience in both the DAR and DER models. The findings indicate that enterprises with strong profitability and liquidity are likely to have a lower debt-to-assets ratio (DAR) and debt-to-equity ratio (DER). Conversely, firms with significant tangible assets tend to have greater DAR and DER. Conversely, the findings also indicate that companies that pay larger dividends generally have lower levels of debt. Hence, it is crucial for organizations to uphold a favorable level of profit as it is intricately linked to sales (Budhidharma et al., 2023). The findings also indicate that companies that distribute dividends tend to possess a lower level of debt in their capital structure. Nevertheless, companies must exercise caution when issuing dividends to ensure the preservation of their liquidity. This entails ensuring that companies can meet their short-term and long-term obligations.

CONCLUSION

This study investigates the factors that influence the capital structure of non-financial public businesses listed on the Indonesia Stock Exchange between 2011 and 2022. This study examines the impact of many characteristics specific to a company, such as profitability, growth potential, tangibility, size, dividend policy, liquidity, and business risk, on the decisions made by public listed firms regarding their capital structure.

Regression analysis is performed within the random forest framework to identify the significant variables in the model. According to the random forest results, there is a discrepancy in the ranking of variable importance between DAR and DER. The variable order in DAR is determined by the importance of each factor. Growth opportunity is the most significant, followed by liquidity, tangibility, profitability, size, business risk, and dividend. In DER analysis, the variable order of importance is as follows: tangibility, profitability, liquidity, growth opportunity, scale, business risk, and dividend.

The research summary is based on the findings related to profitability, liquidity, tangibility, and dividends, which indicate strong performance in both the DAR and DER models. The results suggest that having high profitability and liquidity is linked to a lower debt-to-assets ratio (DAR) and debt-to-equity ratio (DER), whereas having substantial tangible assets relates to higher levels of both ratios. Additionally, the analysis indicates that companies that provide bigger dividends generally have lower levels of debt. Therefore, maintaining a strong level of profitability is essential as it is closely tied to sales. Moreover, corporations that distribute dividends typically exhibit a lower level of debt in their overall financial framework. However, it is important to use prudence while distributing dividends to protect the company's liquidity and ensure that both short-term and long-term obligations can be met. The research findings offer significant guidance for both investors and the public. Their emphasis lies on the significance of directing attention towards financially resilient companies characterized by sustained profitability, strong liquidity, and substantial assets. These traits are found to be associated with reduced levels of debt ratios in companies.

Given the persistently poor coefficient determinations in this investigation, there remain numerous unaccounted-for components. Thus, I present a few recommendations for forthcoming research endeavors. Future research should investigate the company's capital structure policies by including additional variables, such as external influences like macroeconomic conditions. To enhance future research, it is recommended to prolong the study duration to facilitate a more thorough examination. This extension will allow for enough time to collect a large amount of data, do thorough analyses, and test more advanced models. It is advisable to concentrate on a particular industry while analyzing capital structure. By adopting this strategic approach, a more comprehensive examination of the distinct financial attributes within the selected sector will be facilitated, leading to an enhanced comprehension of how industry-specific elements, such as levels of risk, regulatory frameworks, and market dynamics, impact firms' choices about financing.

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