The Effect of Financing Decision on Firm Value: An Analysis of Mediation and Moderation

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ABSTRACT
This study aims to determine the effect of financing decisions proxied by the debt-equity ratio on firm value, mediated by profitability, and moderated by firm size, in technology sector companies that are publicly listed on the stock exchange for the 2020–2022 period. This study employed a quantitative research method utilizing a sample of 19 companies within the technology sector listed on the stock exchange during the aforementioned time frame. The sampling methodology employed was purposive sampling, which involves the selection of samples based on certain criteria. Secondary data served as the primary source of information, and the data analysis was conducted using the Conditional Process Analysis method developed by Hayes, with data processing facilitated by the SPSS software and Hayes’s Macro Process tools. The results of this study showed that financing decisions had a negative and significant effect on profitability value. Furthermore, firm size can moderate the effect of financing decisions on profitability. Financing decisions alone did not have a significant effect on firm value. Conversely, profitability had a positive and significant effect on firm value. Firm size could not moderate the effect of financing decisions on firm value. Firm size could moderate the effect of profitability on firm value. Profitability could mediate the effect of financing decisions on firm value. The results of this study highlight that the financing decision does not have a direct effect on firm value but must go through profitability.

Keywords: Financing decision, firm size, firm value, profitability.

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1. INTRODUCTION
In recent decades, there has been a substantial focus on and discourse regarding the influence of financing decisions on firm value. This heightened attention can be attributed to the increasing significance of financial strategy in businesses, particularly in emerging markets. Previous research has mostly concentrated on financial decisions linked to dividend policy (Bossman et al., 2022; Brunzell, Liljeblom, Löflund, & Vaihekoski, 2014; Tse, 2020) and investment decisions (Alghifari, Gunardi, Suteja, Nisa, & Amarananda, 2022; Suteja et al., 2023). Three crucial decisions that businesses make when managing their financial resources include financing decisions, investment decisions, and dividend policies (Beattie et al., 2006; Naranjo et al., 2022).

Financing decisions can be defined as the ratio between debt and equity in a firm's capital structure. DER (Debt-Equity Ratio) illustrates the extent to which a company relies on funds obtained through loans (debt) compared to funds obtained from shareholders (equity) to support its operations (Coleman, Cotei, & Farhat, 2016). The impact of financing decisions on firm value has been a topic of discussion. According to research Daas, Ahmad, & Mohammad, 2020), Pingkan & Pertiwi (2022), and Kanta et al. (2021), financing decisions impact firm value. However, research by Saliu et al. (2023) claims that financing decisions have a large negative impact on firm value, which contrasts with Habakkuk et al.'s findings that financing decisions have a positive but not significant impact on firm value. On the other hand, research conducted by Al-Nsour & Akram Al-Muhtadi's in 2019 and Efni (2017) indicates that financing decisions have no appreciable impact on the value of a firm. Nathaniel Santosa et al. (2022), Natsir & Yusbardini (2019), and Gunarwati et al. (2020) show that profitability can mediate the effect of financing decisions on firm value, while other studies have attempted to introduce a profitability mediating variable to fill this gap. Alghifari, Solikin, et al. (2022), however, demonstrate that profitability is unable to mediate the impact of decisions about financing on firm value.

The variation in research results regarding the impact of funding decisions on firm value can be attributed to several factors, including diverse research methodologies, variations in industrial contexts, diverse research timeframes, and variations in the data used. An analysis of findings from previous studies reveals persistent disparities in the conclusions drawn, whether pertaining to the direct influence of financing decisions on firm value or the indirect effects on profitability. Given these circumstances, the researcher expresses interest in conducting another study that incorporates firm size as a moderating variable and introduces a novel element. The model employed in this study can be summarized as depicted in Figure 1, utilizing profitability as a mediating variable and firm size moderation in the linkage between financing decisions and firm value.

This study was conducted within the context of the Indonesian capital market, with the technology sector serving as a case in point. Based on index data published by the Indonesia Stock Exchange in 2021, the technology sector exhibited the most substantial increase compared to other sectors, amounting to an impressive 707.560%. However, the commendable performance of the technology sector proved to be short-lived, as 2022 brought a calamitous downturn for this sector within the capital market. In the domestic market, the technology sector emerged as the primary catalyst for the growth of the Jakarta Composite Index (IHSG). According to data from the Indonesia Stock Exchange, throughout 2022, the technology sector experienced a nearly 50% reduction or a correction of 42.61% within a year (CNBC Indonesia, 2023). This decline was the most pronounced compared to other sectors. The technology sector's lackluster performance is attributed to global sentiment pressure concerning the increase in the Fed's benchmark interest rate. The rise in the Fed's benchmark interest rate, subsequently followed by Bank Indonesia (BI), led to heightened lending rates, thereby increasing the interest
expenses for technology sector companies. This scenario prompted investors to shift their focus toward stocks with a more defensive posture against rising interest rates, as investors typically opt to safeguard their assets, rendering stocks with a higher risk propensity, such as technology stocks, less appealing (Kontan.co.id, 2022).

Based on the conceptual framework, the hypotheses of this research are:

H1. Financing decisions affect the firm value.
H2. Financing decisions affect profitability
H3. Profitability affects the firm value.
H4. Profitability mediates the effect of financing decisions on firm value.
H5. Firm size moderates the effect of financing decisions on firm value.
H6. Firm size moderates the effect of financing decisions on profitability.
H7. Firm size moderates the effect of profitability on firm value.

2. METHODS

Thirty-four companies in the technology sector listed on the Indonesia Stock Exchange in 2020–2022 constituted the study population. We excluded companies lacking complete financial data according to the variables studied, resulting in a total of 19 companies included in this study with a cumulative observation count of 57. The operationalization of the variables studied is shown in Table 1. The factors to be examined were financing decisions, as determined by the debt-to-equity ratio (DER). Profitability was determined by return on common equity (ROE); firm size was determined by the natural logarithm of total sales; and firm value was determined by price to book value (PBV). Next, verification analysis was employed to determine the relationship between two or more variables. This method was used to test the truth of a hypothesis. The data analysis method employed in this study involved Conditional Process Analysis utilizing SPSS and the PROCESS macros. This technique is apt when research aims to understand and describe the conditional nature of a mechanism by which one variable transmits its effect to another and resolves the hypothesis about the
contingency of an effect (Hayes, 2018). The Hayes model used was model 59, according to the proposed conceptual framework.

### Table 1 Operationalization of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Indicator</th>
<th>Formula</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing Decision (X)</td>
<td>Debt to Equity Ratio (DER)</td>
<td>Total Debt / Total Equity</td>
<td>(Al-Nsour &amp; Al-Muhtadi, 2019), (Alghifari, Solikin, et al., 2022), (Saliu et al., 2023)</td>
</tr>
<tr>
<td>Firm Value (Y)</td>
<td>Price to Book Value (PBV)</td>
<td>Market Price Per Share / Book Value Per Share</td>
<td>(Hirdinis, 2019), (Zagita &amp; Mujiyati, 2022), (Alghifari, Hermawan, Gunardi, Rahayu, &amp; Wibowo, 2022)</td>
</tr>
<tr>
<td>Profitability (M)</td>
<td>Return on Common Equity (ROE)</td>
<td>Net Income / Common Equity</td>
<td>(Susan et al., 2022), (Nguyen et al., 2019), (Almagribi, Lukviarman, &amp; Setiany, 2023), (Ayoush et al., 2021), (Puspaningsih &amp; Dayinta, 2022)</td>
</tr>
<tr>
<td>Firm Size (W)</td>
<td>Sales</td>
<td>Ln Sales</td>
<td>(Hartono, 2017), (Fathoni &amp; Syarifudin, 2021), (Laskar, Debnath, &amp; Gunardi, 2022)</td>
</tr>
</tbody>
</table>

### 3. RESULTS

The results of descriptive statistics for 19 technology sector companies are shown in Table 2. The descriptive statistical test indicates that financing decisions proxied by DER have a minimum value of 0.03 and a maximum value of 54.98, with an average value of 2.1388 and a standard deviation of 7.97499. The firm value variable proxied by PBV has a minimum value of 0.25 and a maximum value of 138.50, with an average value of 8.7768 and a standard deviation of 21.72624. The profitability variable proxied by ROE has a minimum value of -3.323 and a maximum value of 0.888, with an average value of 0.044993 and a standard deviation of 0.569980. The firm size variable as measured by Ln Total Sales has a minimum value of 18.46 and a maximum value of 30.67, with an average value of 27.7198 and a standard deviation of 2.60601.

### Table 2 Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DER</td>
<td>57</td>
<td>0.03</td>
<td>54.98</td>
<td>2.1388</td>
<td>7.97499</td>
</tr>
<tr>
<td>PBV</td>
<td>57</td>
<td>0.25</td>
<td>138.50</td>
<td>8.7768</td>
<td>21.72624</td>
</tr>
<tr>
<td>ROE</td>
<td>57</td>
<td>-3.323</td>
<td>.888</td>
<td>-.04493</td>
<td>.569980</td>
</tr>
<tr>
<td>Ln Sales</td>
<td>57</td>
<td>18.46</td>
<td>30.67</td>
<td>27.7198</td>
<td>2.60601</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results obtained from the calculation of the conditional process analysis model 59 from Hayes, as presented in Table 3, show that financing decisions have no effect on firm value (b = -120.1103; p > 0.05); financing decisions affect profitability with a negative relationship (b = -3.5765; p < 0.05); profitability has a significant effect on firm value with a negative relationship (b = -303.1034; p < 0.05); firm size does not moderate the effect of financing decisions on firm value (b = 4.0703; p > 0.05), firm size moderates the effect of financing decisions on profitability (b = -0.1194, t = 2.9646; p < 0.05), firm size moderates the effect of profitability on firm value (b = -10.5116; p < 0.05). The results of the F test on models 1 and 2 show a significance value of p < 0.05, affirming that the model 1 and 2 tests were feasible for use in research. The results
of the Sobel test show that the \( p \) value was 0.01848131 < 0.05. This indicated that profitability mediates the effect of financing decisions on firm value in the technology sector in 2020–2021. The results of the test for the coefficient of determination in models 1 and 2 obtained R-square values of 0.7729 and 0.2929, respectively.

### Table 3 Results of Conditional Process Analysis Model 59

#### Model 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>( b )</th>
<th>( SE )</th>
<th>( p )</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.9609</td>
<td>0.5691</td>
<td>0.0972</td>
<td></td>
</tr>
<tr>
<td>Financing Decisions</td>
<td>-3.5765</td>
<td>1.189</td>
<td>0.004</td>
<td>Significant</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.0398</td>
<td>0.0202</td>
<td>0.0541</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Financing Decisions x Firm Size</td>
<td>0.1194</td>
<td>0.0403</td>
<td>0.0045</td>
<td>Significant</td>
</tr>
</tbody>
</table>

\( R^2 = 0.5974; \, F = 26.2129; \, P < 0.05 \)

#### Model 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>( b )</th>
<th>( SE )</th>
<th>( p )</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>189.9153</td>
<td>41.1716</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Financing Decisions</td>
<td>-120.1103</td>
<td>73.8047</td>
<td>0.1098</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Profitability</td>
<td>303.1034</td>
<td>79.9988</td>
<td>0.0004</td>
<td>Significant</td>
</tr>
<tr>
<td>Firm Size</td>
<td>-6.3418</td>
<td>1.4385</td>
<td>0.0001</td>
<td>Significant</td>
</tr>
<tr>
<td>Financing Decisions x Firm Size</td>
<td>4.0703</td>
<td>2.4933</td>
<td>0.1087</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Profitability x Firm Size</td>
<td>-10.5116</td>
<td>2.822</td>
<td>0.0005</td>
<td>Significant</td>
</tr>
</tbody>
</table>

\( R^2 = 0.2929; \, F = 4.2257; \, P < 0.05 \)

#### Mediation Models

<table>
<thead>
<tr>
<th>Model Test</th>
<th>( t )</th>
<th>( SE )</th>
<th>( p )</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sobel Test</td>
<td>-2.3558312</td>
<td>460.1551547</td>
<td>0.0184813</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Note: \( b \) = Coefficient; \( SE \) = Standard Error; \( P \) = Probability

### 4. DISCUSSION

Financing decisions have no effect on the firm value within the technology sector, indicating that the level of debt for the firm’s operations has no effect on firm value. This outcome could be due to the neutrality aspect of information, as investors and the market have good access to firm financial information, including capital structure and funding policies. In many cases, firm decisions regarding funding and capital structure have been reflected in the firm's share price. In other words, the firm value has reflected market expectations regarding the funding policy. Therefore, the results of this study deviate from the results of previous research by Alghifari, Solikin, et al. (2022), Hirdinis M. (2019), Habakkuk et al. (2023), Saliu et al. (2023), and Firaz & Mulyani (2022), which state that debt to equity has an effect on firm value. However, these findings align with the research conducted by Al-Nsour & Al-Muhtadi (2019).

Conversely, financing decisions have a negative effect on the profitability of technology sector companies, meaning that high levels of debt have a negative effect on profitability. This situation is not in line with the trade-off theory, which states that the use of large amounts of debt will lead to a reduction in taxes due to the deductibility of interest payments as a business expense, rendering debt a cost-effective financing option and allowing more of the firm’s operating profits to accrue to investors. However, the high debt makes the debt burden even bigger and can reduce profit levels as operational earnings must be allocated to servicing debts before being distributed to investors in the form of dividends. In addition, the decrease in investor participation can reduce one of the firm’s funding sources from the investor side, leading to reduced capital allocation for improving operational performance and hindering the generation
of firm profits. These research findings are not in line with research conducted by Nguyen et al. (2019) and Nugraha et al. (2021), which state that the value of debt to equity has a positive effect on profitability. Instead, they are in line with research conducted by Ayoush et al. (2021), Natsir & Yusbardini (2019), and Alghifari et al. (2023), which state that financing decisions have a negative effect on profitability.

Profitability has a positive effect on firm value within the technology sector, implying that higher profitability values correspond to higher firm values. High profits serve as indicators that the firm has good financial performance, which in turn garners favor among investors. This is because, in general, investors will look for companies with a high level of profitability, as it signifies a profitable return on investment. For this reason, companies with high levels of profitability will be able to attract investors to invest in them. This situation can lead to an increase in demand for the company’s shares, increasing share prices, and, correspondingly, an augmentation of the firm's overall value. The results of this study are not in line with research conducted by Al-Nsour & Al-Muhtadi (2019), Yuliyanti et al. (2021), and Panjaitan & Supriati (2023), which state that profitability does not affect firm value. However, these findings are in line with research conducted by Alghifari et al. (2022), Zagita & Mujiyati (2022), and Rahma Aryani et al. (2022), which states that profitability affects firm value.

Profitability mediates the effect of financing decisions on firm value within the technology sector, meaning that the use of debt can increase firm value due to increased profitability. In other words, a large debt-to-equity ratio has not been able to increase the value of the firm if the firm's profitability is in a bad position. For this reason, companies must optimize their debt utilization to maximize profit generation. High profits will be able to increase the value of the firm. Therefore, it is suggested that firm management have the ability to manage its equity in such a way as to optimize debt usage to yield maximum profits. Companies that are able to maintain high profitability tend to garner trust from investors, thereby maintaining a consistently high firm value. The results of this study diverge from research conducted by Alghifari et al. (2022), Hirdinis M. (2019), and Firaz & Mulyani (2022), which state that profitability cannot mediate the effect of financing decisions on firm value. Conversely, these findings align with research conducted by Natsir & Yusbardini (2019) and Pustika et al. (2022), which state that profitability can mediate the effect of financing decisions on firm value.

Firm size cannot moderate the effect of financing decisions on firm value within the technology sector. This implies that firm size cannot significantly strengthen or weaken the effect of financing decisions on firm value. This situation arises because the size of the firm may not necessarily be able to increase debt as a source of funding for its operations. Paradoxically, larger firms tend to carry higher levels of debt, which can pose challenges in effectively and efficiently managing their financial resources. Consequently, this can lead to a reduction in the firm's value. These findings are not in line with research that has been conducted by Yuliyanti et al. (2021) and Panjaitan & Supriyati (2023), which states that firm size can moderate the effect of financing decisions on firm value. However, they are in line with research conducted by Rasyid & Hastuti (2022) and Putri & Hastuti (2022), which states that profitability can moderate the effect of financing decisions on firm value.

Firm size moderates the effect of financing decisions on the profitability of technology sector companies. In this context, the size of the firm can strengthen or weaken the effect of financing decisions on firm value. The size of the firm calculated using Ln sales will increase the firm's chances of obtaining funding from external parties in the form of debt. This is because creditors prefer companies that have a large level of firm size due to their perceived ability to default on debt repayments. By
increasing the opportunity to obtain funds, the firm also has a greater opportunity to benefit from managing debt funding sources. The results of this study are in line with research conducted by Fathoni and Syarifudin (2021) and Prabhasyahranii and Khuzaini (2022), which state that firm size can moderate the effect of financing decisions on profitability.

In the technology sector, firm size can moderate (weaken) the impact of profitability on firm value. This means that the size of the firm can affect the level of profitability it achieves, which in turn can reduce its overall firm value. It's important to note that larger firm size does not guarantee the ability to generate substantial profits. This could be attributed to the fact that larger firms typically incur higher operational costs, such as increased labor costs, building rental and maintenance costs, administrative costs, and other general costs. These escalating costs become a reduction in the profits that the firm gets. Decreasing the level of corporate profits can have an impact on decreasing the value of the firm. That way, firm size weakens the effect of profitability on firm value. The results of this study are not in line with research that has been conducted by Yuliyanti et al. (2021) and Alghifari et al. (2022), which states that firm size cannot moderate the effect of profitability on firm value. However, they are in line with research conducted by Aryani et al. (2022), Pingkan & Pertwi (2022), and Panjaitan & Supriyati (2023), which states that firm size can moderate the effect of profitability on firm value.

5. CONCLUSION

Based on the test results and discussion, we draw the following conclusions: (1) financing decisions do not have a significant effect on firm value; (2) financing decisions have a negative and significant effect on profitability; (3) profitability has a positive and significant effect on firm value; (4) profitability can mediate the effect of financing decisions on firm value; (5) firm size cannot moderate the effect of financing decisions on firm value; (6) firm size can moderate the effect of financing decisions on profitability; (7) firm size can moderate the effect of profitability on firm value.

This research resulted in a contribution to the existing theory that financing decisions do not directly affect firm value but rather channel their impact through profitability. Technology sector companies are advised to pay increased attention to the composition of the firm's funding sources, maintain the consistency of the firm's values by increasing the profit level or net profit of the firm, and maintain the consistency of the firm's value by increasing total sales so that the size of the firm can grow bigger than before. For prospective investors considering investments in firm shares, it is recommended to focus more on paying attention to other financial factors such as the size of the firm, the level of firm debt, and the level of firm profits relative to the size of the firm. Future researchers who will conduct research in a similar field of study are suggested to be able to conduct research with different variable units, such as investment decisions and dividend decisions. Research can also use samples from other industrial sectors listed on the Indonesia Stock Exchange over more extended periods to produce better and more accurate research results and can use the latest research methods with the hope of providing a clearer picture of the factors that affect the value of the firm. Regulators are expected to be able to determine capital market and investment policies while taking into account the perspectives of both investors and companies to foster an improved capital market environment.
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