



The Effect of Growth Opportunity and Credit Risk on Firm Value and Profitability as Mediating Variables in Digital Banking

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ABSTRACT: The digital transformation phenomenon in the Indonesian banking industry is growing rapidly, marked by the emergence of digital banks offering fully technology-based services. This change is driving increased competition and creating new dynamics in assessing company value, particularly regarding growth opportunities and credit risk quality. This study aims to analyze the effect of growth opportunity and credit risk on company value, with profitability as a mediating variable. The study uses a quantitative approach with growth opportunity and credit risk as independent variables, profitability as a mediating variable, and company value as the dependent variable. The research sample consisted of six digital banks selected through purposive sampling with a total of 30 observations during the 2020–2024 period. Data were obtained from the companies' annual financial reports and official publications of the Indonesia Stock Exchange. Then, they were processed using panel regression with the EGLS method and the Sobel test using the Eviews 12 application. The results show that growth opportunity has a positive and significant effect on company value, while credit risk has a negative and significant effect. Credit risk also has a negative and significant effect on profitability, while growth opportunity has no significant effect on profitability. Furthermore, profitability has a positive and significant effect on company value, but does not mediate the relationship between growth opportunity and credit risk on company value. These findings suggest that the firm value of digital banks is more influenced by growth prospects and asset quality than the mediating pathway through profitability.

KEYWORDS: Credit Risk, Firm Value, Growth Opportunity, Profitability.

INTRODUCTION

The rapid development of information technology in recent years has significantly transformed the banking industry. Digital innovations such as internet banking and mobile banking have provided convenience for customers in conducting financial transactions. This transformation has progressed further with the emergence of digital-only banks, which allow customers to access banking services entirely through digital platforms without visiting physical branches. The COVID-19 pandemic also accelerated digital adoption, as mobility restrictions shifted economic activities from physical interactions to virtual transactions, encouraging banks to strengthen digital services to remain competitive and meet consumer expectations for fast, accessible, and secure financial services.

The rise of digital banks has reshaped the competitive landscape of the banking industry in Indonesia. Beyond improving operational efficiency and enhancing customer experience, digital transformation has also affected firm value. Investor perceptions toward digital bank performance are reflected in stock price movements, where fluctuations indicate expectations regarding future growth and the sustainability of digital banking business models. During 2020–2021, several digital banks experienced a sharp increase in firm value, driven by strong investor optimism toward industry expansion.

However, starting in 2022, the firm value of digital banks began to decline and remained relatively stable at lower levels through 2024. This trend reflects weakening investor enthusiasm, partly due to concerns over asset quality and the ability of banks to manage credit risk. Credit risk, measured using the Non-Performing Loan (NPL) ratio, is a crucial indicator for digital banks whose business models rely heavily on technology-based lending. A higher NPL ratio indicates a greater likelihood of uncollectible loans, increasing the potential for financial losses and negatively impacting firm value.

Firm value can also be influenced by growth opportunity, which represents a company's potential for future expansion. Companies with strong growth prospects tend to attract investors because they signal long-term profitability and improved financial performance.



Likewise, profitability plays an important role in strengthening investor confidence, as higher profitability reflects a firm's ability to generate income efficiently and sustain business operations.

In addition to growth opportunity, credit risk, and profitability, other factors such as liquidity and firm size may also affect firm value. Liquidity indicates a bank's ability to meet short-term obligations and maintain depositor confidence, which is particularly important for digital banks that are vulnerable to sudden fund withdrawals. Meanwhile, larger banks generally benefit from financial stability, easier access to funding, and higher operational efficiency.

Based on these dynamics, it becomes important to analyze the factors that influence the firm value of digital banks in Indonesia, particularly regarding growth opportunity and credit risk, as well as the mediating role of profitability. This study aims to provide empirical evidence on how these factors contribute to the changes in firm value within the rapidly evolving digital banking sector.

LITERATURE REVIEW

Signaling Theory

According to Spence (1973), Signaling Theory states that information asymmetry between management and external parties can influence investor perceptions. Managers, who possess better internal information regarding the company's prospects, can send signals to the market through their financial decisions. These signals help investors assess the firm's true condition and future performance. In the context of banking, indicators such as growth opportunity, NPL levels, and financial performance metrics can serve as signals regarding the firm's operational strength and risk profile. A high growth opportunity signals positive future prospects, attracting investor confidence. Conversely, an increasing NPL ratio may signal declining credit quality and heightened risk, which can negatively affect the firm's perceived value. Signaling Theory highlights that managerial decisions and financial indicators play an important role in shaping investor perceptions and ultimately influencing firm value.

Trade-Off Theory

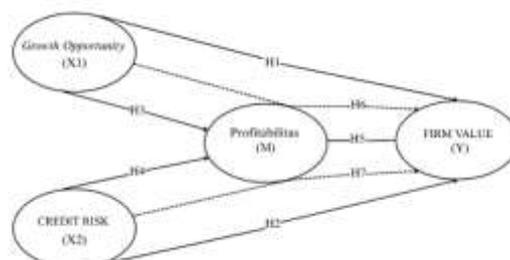
According to Kraus and Litzenberger (1973), the Trade-Off Theory explains that a firm determines its capital structure by balancing the benefits and costs of debt usage. Companies aim to reach an optimal level of leverage by considering the tax advantages of debt (tax shields) and the potential financial distress costs that arise when debt becomes excessive. In essence, firms will avoid additional debt financing if the probability of bankruptcy and the associated distress costs outweigh the benefits gained from tax savings. Within the banking industry, this theory provides insight into how funding decisions should account for growth opportunities and credit risk indicators such as the Non-Performing Loan (NPL) ratio. Firms with high growth opportunities tend to be more conservative in using debt, as future uncertainty increases the potential for distress. On the other hand, banks experiencing higher credit risk may reduce leverage to maintain financial stability and protect firm value. Trade-Off Theory emphasizes that firm value can be enhanced when management is able to carefully balance the trade-off between the benefits and risks of debt.

Firm Value. A high value indicates a company's success in improving investor welfare (Sari, 2023). Audited financial statements serve as the basis for assessment because they depict the company's overall financial condition (Setiani, 2023). In general, a high company value indicates increased shareholder prosperity and is a key indicator of market perception (Yasinta, 2023).

Growth Opportunity. According to (Salsabilla & Rahmawati, 2021), companies with high growth opportunities tend to expand assets and increase business capacity (Setiawan, 2022). Growth prospects influence financing and investment decisions as companies seek to optimize these opportunities (Harahap, 2020). Growth opportunities also reflect management's effectiveness in utilizing resources to create value (Nathania & Tjakrawala, 2024). (Natsir & Yusbardini, 2020) explain that growth opportunities represent a company's potential to expand its business activities while improving future performance.

Risiko Kredit. According to (Pardede et al., 2024), high levels of non-performing loans can reduce a company's profits and asset quality (Eka Putri et al., 2022). In banking, credit risk arises when borrowers fail to repay loans in full, resulting in bank losses (Jazilah, 2025). This risk can arise from various lending activities and interbank transactions (Wahyu & Budianto, 2023).

Profitabilitas. According to (Anthony & Nuryasman, 2025), ratios such as ROA or ROE are used to measure a company's effectiveness in managing resources (Lisandrina & Muchtar, 2023). High profitability increases investor confidence because it reflects healthy company performance and potential for sustainable growth (Rais, 2025).



RESEARCH QUESTIONS

1. Does growth opportunity affect firm value?
2. Does credit risk affect firm value?
3. Does growth opportunity affect profitability?
4. Does credit risk affect profitability?
5. Does profitability affect firm value?
6. Does profitability mediate the effect of growth opportunity on firm value?
7. Does profitability mediate the effect of credit risk on firm value?

METHODS AND MATERIAL

This research employs a quantitative approach with an associative design, aiming to examine the relationship between growth opportunity, non-performing loans (NPL), and firm value in digital banks listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The study uses secondary data obtained from the official website of the Indonesia Stock Exchange and company annual reports. The data collected include annual financial statements, specifically total assets, total equity, total loans, NPL ratios, market capitalization, share prices, and indicators used to calculate firm value such as Price to Book Value (PBV). The sampling technique used in this research is purposive sampling, where the selected companies must meet specific criteria: (1) digital banks listed on the IDX during the 2020–2024 period, (2) consistently publishing complete annual financial statements throughout the observation years, and (3) having available data on growth opportunity, NPL, and firm value. The final sample consists of digital banks that meet all the required criteria.

The research period covers five years, from 2020 to 2024, to capture the latest financial performance and structural changes occurring in digital banking. The data analysis method used is multiple linear regression, which allows testing the influence of growth opportunity and NPL on firm value. The analysis includes descriptive statistics, classical assumption tests, coefficient of determination (R²), partial t-tests, and simultaneous F-tests. All statistical tests were conducted using SPSS to ensure the accuracy and validity of the findings.

Tabel 1. Operational Research Variable

Variable	Size	Scale	Source
Growth Opportunity (X1)	$\text{Growth Opportunity} = \frac{\text{Total Asset (t)} - \text{Total Asset (t-1)}}{\text{Total Asset (t-1)}}$	Ratio	Annual financial report https://www.idx.co.id/id
Credit Risk (X2)	$\text{NPL} = \frac{\text{Total Non - Performing Loans}}{\text{Total Loans}} \times 100\%$	Ratio	Annual financial report https://www.idx.co.id/id
Profitabilitas (M)	$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$	Ratio	Annual financial report https://www.idx.co.id/id
Firm Value (Y)	$\text{PBV} = \frac{\text{Stock Market Price}}{\text{Stock Book Value}}$	Ratio	Annual financial report https://www.idx.co.id/id



The research model uses panel data regression analysis with the following regression equation:

1. model 1: $M = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$
2. model 2: $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 M + \epsilon$

RESULTS AND DISCUSSION

Descriptive Statistical Test

Table 2. Descriptive Statistical Test

	PBV	GO	NPL	ROA
Mean	7.782794	0.410696	0.027603	0.050289
Median	3.681282	0.132220	0.017953	0.045046
Maximum	63.42254	4.648229	0.101528	0.195839
Minimum	0.817108	-0.397957	0.000000	0.001073
Std. Dev.	13.18510	0.901200	0.027314	0.039087
Skewness	3.119517	3.622394	1.159947	1.668916
Kurtosis	12.46769	17.56249	3.625811	7.452330

Source: Data processing using E-views 12

PBV ranged from 0.817 to 63.423 with an average of 7.78. Growth opportunity (GO) ranged from -0.398 to 4.648 with an average of 0.41. Credit risk (NPL) ranged from 0.00 to 0.10 with an average of 0.028. Profitability (ROA) ranged from 0.001 to 0.196 with an average of 0.05.

Multikolinearitas Test

Table 3. Uji Multikolinearitas

	PBV	GO	NPL	ROA
PBV	1.000000	0.381447	-0.370005	0.369057
GO	0.381447	1.000000	-0.275912	0.001090
NPL	-0.370005	-0.275912	1.000000	-0.256988
ROA	0.369057	0.001090	-0.256988	1.000000

Source: Data processing using E-views 12

The results of the multicollinearity test conducted using E-Views 12 software found that the correlation level between variables did not exceed 0.8. Therefore, based on the results of the multicollinearity test, there is no problem of multicollinearity between the variables in this study.

Heteroskedastisitas Test

Table 4. Uji Heteroskedastisitas

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.003653	3.667213	1.091743	0.2850
GO	0.893484	1.838136	0.486082	0.6310
NPL	-69.33545	62.75616	-1.104839	0.2793
ROA	71.51355	42.15060	1.696620	0.1017

Source: Data processing using E-views 12

All independent variables (GO, NPL, and ROA) had significance values of 0.6310, 0.2793, and 0.1017, respectively, all greater than 0.05. Therefore, it can be concluded that the regression model in this study does not contain heteroscedasticity and has met the assumption of homoscedasticity.



Autokorelasi Test

Table 5. Uji Autokorelasi

R-squared	0.635990	Mean dependent var	1.624636
Adjusted R-squared	0.593989	S.D. dependent var	1.218081
S.E. of regression	0.709130	Sum squared resid	13.07448
F-statistic	15.14222	Durbin-Watson stat	1.673235
Prob(F-statistic)	0.000007		

Source: Data processing using E-views 12

Nilai DW dibandingkan dengan nilai batas bawah (dL) dan batas atas (dU) pada tabel Durbin-Watson dengan taraf signifikansi 5%, jumlah variabel independen (k) sebanyak 3, dan jumlah sampel (n) sebanyak 30. Berdasarkan tabel Durbin-Watson, diperoleh nilai dL = 1,2138 dan dU = 1,6498. Dengan demikian diperoleh hasil: $dU < DW < 4$ dengan hasil $1,6498 < 1,6732 < 2,3502$

Test T.

Model 1:

Table 6. Uji t Model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.064197	0.006836	9.391490	0.0000
GO	-0.003939	0.003647	-1.080103	0.2897
NPL	-0.378884	0.181058	-2.092611	0.0459

Source: Data processing using E-views 12

Model 2:

Table 7. Uji t Model 2

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	1.183038	0.223603	5.290799	0.0000
GO	0.374510	0.146957	2.548425	0.0171
NPL	-14.85220	3.968072	-3.742926	0.0009
ROA	8.375962	2.276236	3.679743	0.0011

Source: Data processing using E-views 12

Growth opportunity was shown to have no significant effect on profitability ($p = 0.2897$), thus H3 was rejected. This indicates that growth opportunities have not been able to increase the ROA of digital banks. Conversely, credit risk had a negative and significant effect on profitability ($p = 0.0459$), thus H4 was accepted; the higher the NPL, the lower the digital bank's profit. For firm value, growth opportunity had a positive and significant effect ($p = 0.0171$), thus H1 was accepted. This means that growth opportunities are viewed by investors as a positive signal that increases the company's valuation. Credit risk had a negative and significant effect on firm value ($p = 0.0009$), thus H2 was accepted; high NPLs reduce market confidence and depress PBV. Profitability also had a positive and significant effect on firm value ($p = 0.0011$), thus H5 was accepted; high ROA strengthens investors assessment of the prospects of digital banks.

Tabel 8. Uji Sobel

Variable	Indirect Effect	p-value
GO	-0.0329	0.3000
NPL	-3.17292	0.0689

Source: Calculation Table Test



Sobel test. According to (Natsir & Yusbardini, 2020) the Sobel test calculation is carried out based on the regression coefficient values and standard errors obtained from the results of the first and second stage regression analysis using E-Views 12. In the mediation test, profitability does not mediate the relationship between growth opportunity and firm value ($p = 0.3000$), so H6 is rejected. Similarly, profitability does not mediate the effect of credit risk on firm value ($p = 0.0689$), so H7 is also rejected.

Table 9. Research Summary Results

No	Hypothesis	Variable	P-Value	Conclusion
1	H1: Growth opportunity has a positive effect on firm value in digital banks.	$X1 \rightarrow Y$	0.0171	H1 Accepted
2	H2: Credit risk has a negative effect on firm value in digital banks.	$X2 \rightarrow Y$	0.0009	H2 Accepted
3	H3: Growth opportunity has a positive effect on profitability in digital banks.	$X1 \rightarrow M$	0.2897	H3 Rejected
4	H4: Credit risk has a negative effect on profitability in digital banks.	$X2 \rightarrow M$	0.0459	H4 Accepted
5	H5: Profitability has a positive effect on firm value in digital banks.	$M \rightarrow Y$	0.0011	H5 Accepted
6	H6: Profitability mediates the effect of growth opportunity on firm value in digital banks.	$X1 \rightarrow M \rightarrow Y$	0.3000	H6 Rejected
7	H7: Profitability mediates the effect of credit risk on firm value in digital banks.	$X2 \rightarrow M \rightarrow Y$	0.0689	H7 Rejected

Source: Data processing using E-views 12

Table 10. Uji t Model 1

R-squared	0.635990	Mean dependent var	1.624636
Adjusted R-squared	0.593989	S.D. dependent var	1.218081
S.E. of regression	0.709130	Sum squared resid	13.07448
F-statistic	15.14222	Durbin-Watson stat	1.673235
Prob(F-statistic)	0.000007		

Source: Data processing using E-views 12

Coefficient of Determination Test. Of 0.593989, equivalent to 59.39%. This value indicates that the growth opportunity, credit risk, and profitability variables together explain 59.39% of the firm's value, while the remaining 40.61% is explained by factors outside this research model.

DISCUSSION

H1: Effect of Growth Opportunity on Firm Value

The findings indicate that growth opportunity has a positive and significant effect on the firm value of digital banks. The greater the growth prospects a bank possesses—such as service expansion, technological innovation, and user-base development—the higher the market's assessment of its future performance. These conditions show that growth opportunities act as positive signals to investors and contribute to increasing firm value, as they reflect the company's potential to generate stronger performance in the future.

H2: Effect of Credit Risk on Firm Value

The study reveals that credit risk, reflected through rising levels of non-performing loans, has a negative and significant effect on firm value. An increase in NPLs is perceived as a decline in asset quality, causing investor concerns and leading to a

decrease in firm value. Since digital banks generally operate with higher levels of risk, the market becomes more sensitive to fluctuations in NPLs, as rising credit risk increases loss provisions and puts pressure on the bank's capital.

H3: Effect of Growth Opportunity on Profitability

The results show that growth opportunity does not have a significant effect on profitability as measured by ROA. Although growth prospects are theoretically expected to improve profitability, in digital banks this impact has not yet materialized due to high expansion costs, technological investment, and customer acquisition expenses. This indicates that growth opportunities have not directly translated into increased profitability within an industry still undergoing development.

H4: Effect of Credit Risk on Profitability

Credit risk is found to have a negative effect on the profitability of digital banks. An increase in non-performing loans requires banks to allocate larger loss provisions, thus reducing the profit generated. Additionally, the rapid, technology-driven lending model increases the potential for risk if not supported by strong risk management. These findings highlight that credit quality plays a crucial role in determining a bank's profitability.

H5: Effect of Profitability on Firm Value

Profitability measured by ROA has a positive and significant effect on firm value. Digital banks with higher earnings are perceived as having stronger performance and better future prospects, thereby increasing investor confidence. Profitability serves as an important signal to the market that the company is effectively managing its assets, which ultimately enhances firm value.

H6: Profitability as a Mediator between Growth Opportunity and Firm Value

The results show that profitability does not mediate the relationship between growth opportunity and firm value. Although growth opportunity influences firm value, this effect does not occur through profitability. This is because digital banks are still in a phase of intensive expansion, causing the benefits of growth to be perceived more through market expectations rather than through current earnings performance.

H7: Profitability as a Mediator between Credit Risk and Firm Value

Profitability also does not mediate the relationship between credit risk and firm value. Firm value is more directly affected by increases in credit risk without passing through changes in profitability. Investors tend to respond immediately to rising NPLs as a signal of deteriorating asset quality, causing firm value to decline before the effect is reflected in profit. This indicates that the digital banking industry is highly sensitive to credit risk, making the mediating effect of profitability insignificant.

CONCLUSION AND SUGGESTIONS

Conclusion

Based on the test results and discussion, it can be concluded that: growth opportunity has a positive and significant effect on firm value, while credit risk has a negative and significant effect. Regarding performance, growth opportunity does not significantly affect profitability, while credit risk has a negative and significant effect on digital bank profitability. Profitability also has a positive and significant effect on firm value. However, profitability is unable to mediate the effect of growth opportunity or credit risk on firm value. These findings emphasize the importance of credit risk management and improving profit performance as key factors in maintaining firm value. Furthermore, companies need to consider the effectiveness of their growth strategies and asset quality, while investors are advised to assess growth prospects, NPL levels, and profitability when assessing the attractiveness of digital banks.

Suggestion

- Increase the sample size by including other digital banks, including foreign digital banks or conventional banks undergoing digital transformation, to achieve more comprehensive research results.
- Use a more complex or non-linear analysis model to capture the more dynamic relationship between NPL, ROA, growth opportunity, and firm value.
- Extending the research period (longitudinal) to observe changes in company value over the long term and considering the influence of technological developments, OJK regulations, and macroeconomic conditions.



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