

# The effect of profitability and bank size on firm value sustainability: The mediating role of capital structure

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# THE EFFECT OF PROFITABILITY AND BANK SIZE ON FIRM VALUE SUSTAINABILITY: THE MEDIATING ROLE OF CAPITAL STRUCTURE

## Abstract

Sustainable firm value is the central concept for corporations, including the banking industry. This study examines the effect of profitability and bank size on firm value through capital structure. This study surveyed six banks registered in BUKU 4-member commercial banks operating in Indonesia that have been listed on the Indonesian Stock Exchange and implemented digital banking practices from 2007 to 2019. The six banks are Bank Mandiri, Bank Rakyat Indonesia, Bank Negara Indonesia, Bank Central Asia, Bank CIMB Niaga, and Bank Panin. Data collection is carried out by tracing the banks' reports from the Bloomberg system terminal. Data analysis used a two-stage least squares technique. The results showed that profitability negatively and significantly affected the capital structure with a coefficient of  $-0.374$ . Moreover, bank size influences the capital structure with a negative coefficient value of  $-0.334$ . In addition, profitability positively affects firm value with a coefficient value of  $0.387$ . Furthermore, bank size influences capital structure with a beta coefficient value of  $0.158$ . Finally, the bank size affects firm value with a coefficient value of  $-0.419$ . These findings provide an insight for bank management to enhance firm value by assessing profitability, bank size, and capital structure. This study also contributes to the ongoing research in financial management.

## Keywords

bank size, capital structure, firm value, profitability

## JEL Classification

G21, G32, H81

## INTRODUCTION

The development of information technology today requires companies, including banks, to adopt the technology into their operational systems. In the banking concept, the application of information technology is realized in digital banking systems such as automatic teller machines (ATMs), mobile banking, and internet banking. This system strongly supports banks in improving consumer services and increasing their competitive advantage. Nevertheless, a bank still has limitations that must follow the banking rules set by government financial authorities. Meanwhile, start-up companies in the financial industry with the concept of peer-to-peer lending are developing rapidly. This peer-to-peer lending platform is also called financial technology (Fintech). The advantage of this peer-to-peer lending platform lies in a looser regulatory system compared to the conventional banking system. In addition, the peer-to-peer lending platform uses a very advanced information technology system so that the process can be carried out online. This peer-to-peer lending platform is a very worrying competitor for conventional banking players. Therefore, companies in the banking industry must anticipate it if they want to survive and

compete. Besides, bank management should also pay attention to the company's ability to increase the capital required for the company's growth. The bank can obtain the capital from several sources, such as shareholders' equities, loans from creditors, or an initial public offer (IPO). Especially in searching for funds through an IPO, potential investors first observe the prospects of related companies, such as profitability or firm value. In addition, bank shareholders also monitor and insist the bank management enhance the company's firm value. Therefore, the bank management has the primary task of enhancing the firm value of the bank. Indeed, bank companies have anticipated the trends discussed above in various strategies.

First, banking companies have adopted information technology as a digital banking platform that suits a company's requirements. Therefore, applying digital banking will benefit the company through higher profitability. Second, instead of competing with fintech providers, banking companies have collaborated to benefit from fintech platform advantages. This collaboration will increase the scale of bank companies or what is called bank size. Third, in fulfilling the working capital requirement, the bank management has various options such as shareholder equities, loans from creditors, or the offer in the stock exchange market. The selection of these funding sources will define the company's capital structure. However, the shareholder usually insists on the management to enhance the firm value and profitability. Moreover, the investor assesses the firm value of the bank prior to investing. Therefore, those actions taken by the bank management need to investigate the relationship between profitability, bank size, capital structure, and firm value. This research will investigate whether the anticipatory banking steps, namely, increasing profitability through the application of digital banking, cooperation with fintech, and the capital structure, influence the firm value of banking companies.

As a basis for developing relationships between the factors mentioned above, this study has reviewed several studies that are relevant to the phenomena discussed above as follows. Several previous studies have proposed factors that can increase the firm value of banks. Research by Bell and Filatotchev (2014) and Sucuahi and Cambarihan (2016) shows that the higher the bank profitability will increase the firm value bank. A bank's ability to generate net profit by utilizing the entire resources will increase investor appreciation, as reflected in the higher firm value. In addition to the profitability, capital structure also significantly impacts the firm value of banks (Kodongo et al., 2014). This is because the proportion of funding derived from loans will affect a bank's profitability. Moreover, other studies have also shown that bank size contributes to the increase in firm value. The larger the size of a bank, the more difficult it is to go bankrupt, so it is suspected that the size of the bank (bank size) also affects the firm value and capital structure. Kodongo et al. (2014) found that bank size affects the firm value of banks. The larger bank size indicates the growth of the bank, which will increase investor confidence in the bank's financial performance, which will be reflected in the increasing firm value. Furthermore, other studies have shown that bank size also affects the capital structure of banks (Anarfo, 2015). The larger the bank size will affect a company's capital structure, which further affects the firm value.

The description above shows that the firm value of a bank can be influenced by several factors such as profitability, bank size, and capital structure. However, the study only focused on the direct relationship between the two constructs. This research proposes a model that simultaneously involves profitability, size, capital structure, and firm value. The model will test the effect of profitability and bank size on firm value through a capital structure. Based on this model, there are two groups of research questions that will be assessed, namely: 1) whether profitability, bank size, and capital structure have a direct effect on firm value, and 2) whether profitability and bank size have an indirect effect on firm value through capital structure. The novelty of this study is a research model that has never existed. The contribution of this research will provide insights to banking practitioners to be able to increase firm value. Furthermore, this research is expected to contribute to research related to banking management.

## 1. LITERATURE REVIEW

A company is defined as a transaction institution whose organizational goals differ from the owners. The separation of roles between the owner and a company's management allows the company to increase the efficiency of transactions compared to direct exchanges between consumers. Companies are institutions that have an essential role in the economy (Novitasari & Tarigan, 2022). A company's ability to perform vertical integration determines how it divides its scope between market creation and organizational activities. The separation between owners and management of the company aims to increase its operational efficiency and make it easier for owners to control the company to increase company value (Hutahayan, 2020). The company's organizational decisions only influence the owner of the company regarding the equity (capital) that has been invested (Cancela et al., 2020; Basana & Tarigan, 2021).

### 1.1. Profitability

Profitability is often used as an indicator to determine the performance and efficiency of a bank (Teixeira et al., 2021). Profitability plays a vital role in every bank's operation, which is assessed using its profitability achievement (Kurniati, 2019; Dzeha et al., 2022). Banks, as economic agents, can maximize profits from the process and function of financial intermediation (Kuisi et al., 2019). In addition, banks use working capital to provide a comfortable level of liquidity to ensure sustainability by increasing profitability (Aldubhani et al., 2022; Abdullah et al., 2022). The achievement desired by shareholders from banking operations is to maximize the profitability by utilizing the equity they have invested (Kamaliah, 2020; Sabrin et al., 2016). One of the profitability measurements is return on equity (Shaik, 2021; Amponsah-Kwatiah & Asiamah, 2021; Teixeira et al., 2021; Aldubhani et al., 2022; Abdul-lah et al., 2022). Return on Equity (ROE) measures banking performance by looking at the bank's ability to generate net income by utilizing its total equity (Teixeira et al., 2021; Aldubhani et al., 2022; Abdullah et al., 2022).

On the other hand, profit maximization is always what shareholders want the most with the expectation of receiving maximum dividends or share

prices (Pan & Xu, 2020; Teixeira et al., 2021). When the banks make a profit, the management can distribute profits to shareholders through the return on investment, capital gains on bank shares, and dividends (Kurniati, 2019). Banks, therefore, must maximize profits because bank shareholders, as suppliers of capital, have the right to claim a portion of the profits earned (Aldubhani et al., 2022; Abdullah et al., 2022; Basana & Tarigan, 2021). For that reason, bank management can choose a combination of operational costs and the cost of Banking services offered to maximize the profit (Andrews et al., 2018; Adjei-Frimpong et al., 2014).

Profitability is a company's ability to generate net income from equity investments (Shaik, 2021). Bitar et al. (2018) found that financial managers use retained earnings as the first choice in fulfilling funds and debt as the second option to increase profitability. Potential investors and shareholders consider profitability ratios related to sharing prices and receiving dividends (Mulchandani et al., 2020; Al-Kayed et al., 2014). Profitability ratios can be measured from the sales approach and the investment approach (Ter-Mkrtchyan & Franklin, 2020). This financial ratio shows investment efficiency in capital management (Sabrin et al., 2016; Basana & Tarigan, 2021). At the same time, Carosi (2016) proved that the greater the company's profitability, the more profit share will be distributed. Furthermore, profitability positively affects firm value (Bell & Filatotchev, 2014; Sucuahi & Cambarihan, 2016). This result means that a high bank's profitability achievement will increase the bank's firm value.

### 1.2. Capital structure

A bank's capital structure reflects the ratio of the total debt to the total equity of a bank (Tin and Diaz, 2017). In addition, the bank's capital structure reflects its financial strength (Hasan et al., 2021). Moreover, the ability of banks to determine the capital structure effectively can assess the level of risk faced and maintain the low operating cost efficiency and make the profitable investment (Dang & Do, 2021; Bitar et al., 2018). Banks with lower operating costs will reduce the agency costs of capital (Ter-Mkrtchyan & Franklin, 2020). This condition causes banks to manage an optimal capital structure and save internal resources for long-



term investment. Al-Kayed et al. (2014) argue that the decision of a company's capital structure must be related to its impact on firm value. If the capital structure decision can affect firm value, the company wants to have a capital structure that can maximize firm value (Dang & Do, 2021; Liu et al., 2020). Therefore, the company's goal must maximize firm value through capital structure decisions (Bawa & Basu, 2020). The decision to determine the composition of debt and equity aims to find the optimal capital structure to maximize shareholder wealth (A. Chowdhury & S. Chowdhury, 2010). Companies that can minimize the weighted average cost of capital will maximize firm value (Anarfo & Appiahene, 2017). Meanwhile, Liao et al. (2022) and Doorasamy (2021) stated that capital structure affected the firm value.

Furthermore, capital structure refers to a company's debt and equity composition (Bawa & Basu, 2020). Companies can raise funds from external or internal sources by retaining a portion of net income rather than distributing it in dividends to shareholders (Aldubhani et al., 2022; Abdullah et al., 2022). Pecking order theory suggests that managers prioritize retained earnings to finance company activities, and if they still need more funds, companies can issue debt securities as a last resort. Banks also prioritized internal funding over external funding to reduce bank operational costs (Bitar et al., 2018). As a result, the bank's internal funding source is not distributed to shareholders in dividends, known as retained earnings (Mulchandani et al., 2020). The greater the profit the bank earns, the greater the retained earnings (Carosi, 2016; Anarfo & Appiahene, 2017). Therefore, the need to get loans from external parties is reduced or will reduce the capital structure. Bawa and Basu (2020) and Anarfo and Appiahene (2017) found that bank profitability influences capital structure.

Previous studies indicated that bank profitability and bank size affect the capital structure of a bank (Shaik, 2021; Mulchandani et al., 2020). The higher profitability and bank size, the better the bank's capital structure. Pecking order theory states that if internal funding sources enlarge, it reduces the dependence on debt funding, or the capital structure will decrease (Chaklader & Padmapriya, 2021; Mohammad, 2021; Daskalakis et al., 2014; Kirimi

et al., 2022). Kamaliah (2020) stated that when a bank is listed on the stock exchange will increase firm value. On the other hand, the higher the bank's profitability reflects, the higher the bank's ability to generate net profit (Al-Kayed et al., 2014). Past studies show that bank capital structure affects the firm value (Liu et al., 2020; Liao et al., 2022; Kurshev & Strebulaev, 2015). Moreover, Chodorow-Reich et al. (2022) and Hasan et al. (2021) found that bank size affected firm value.

### 1.3. Bank size

Bank size is a fundamental characteristic of the company and is an important variable (Dang, Li, & Yang, 2018). Chaklader and Padmapriya (2021) stated that the pecking order theory related to the capital structure is only found in large companies. Bank size affects financial performance, especially profitability (Kirimi et al., 2022; Almazari, 2014). The larger the bank size, the greater the opportunity for banks to enjoy an economy of scale (Chodorow-Reich et al., 2022). So, banks with larger sizes will operate more efficiently than banks with smaller sizes (Mohammad, 2021; Nguyen et al., 2021). This means that the larger bank size will increase profitability (Nelly, Ambrose, & George, 2019). As measured by total assets, bank size represents the bank's ability to generate revenue and profitability (Kurshev and Strebulaev, 2015). In addition, the larger the bank size, the greater the bank's ability to generate revenue and profitability (Tharu & Shrestha, 2019). Bank size is measured by the total assets owned by the bank. Past studies found that the greater the total assets, the bigger opportunity a bank to gain access to funding from the public and distribute it in the form of loans (credit) to debtors (Nzioka, 2013; Dzeha et al., 2022). Therefore, a larger bank size means that the bank can operate more safely and efficiently to increase profitability (AlFadhli & AlAli, 2021).

Almazari (2014) and Danyali (2018) found that bank size affected bank profitability. Subsequently, the ability of banks to increase their profit will increase the firm value (Bell et al., 2014; Sucuahi and Cambarihan, 2016; Adjei-Frimpong et al., 2014). In addition, the collaboration of banks with larger firm sizes will facilitate banks to increase their profitability (AlFadhli & AlAli, 2021). Several studies have found that firm size significantly affects prof-

itability (Nzioka, 2013; Shubita, 2021; Doorasamy, 2021; Kodongo et al., 2014; Bawa and Basu, 2020). Meanwhile, Kodongo et al. (2014) found that the capital structure of companies did not affect firm value. The bank operation requires an accurate, timely system to provide excellent customer service. Therefore, banks are continuously adopting and implementing information technology to support a firm's process to provide the best services for customers (Novitasari & Tarigan, 2022; Baek, 2022). In addition, banks should realize on an ongoing basis to adopt information technology to improve customer service operations and product development, particularly in the current fierce competition (Chauhan et al., 2022; Danyali, 2018; Danyali, 2018). Moreover, banks require effective governance by allocating resources efficiently to increase firm value (Novitasari & Tarigan, 2022).

However, banks with large bank sizes face a high volume of processes and transactions. Therefore, banks need to develop their technology either by implementing digitalization or by collaborating with fintech to meet the demands of the financial market (Hasan et al., 2021). Thus, large bank sizes enable banks to collaborate with fintech (Nguyen et al., 2021). Larger companies are relatively more difficult to fail and liquidate, so it will be easier to obtain financing from external sources (Daskalakis et al., 2014). Firm size also represents the volatility of company assets (Almazari, 2014; Shubita, 2021). The larger the company's assets, the lower asset volatility (Baek, 2022). The management can borrow at more favorable interest rates (Al-Eitan et al., 2022). Most empirical studies state that firm size positively affects capital structure (Mohammad, 2021). Credit rating agencies also monitor the solvency of large companies to reduce information asymmetry between companies and outside investors (Kirimi et al., 2022). Information disclosure of large companies can reduce misunderstandings of information about companies compared to small companies (Baek, 2022). The bank size, the greater the bank's ability to fund the bank funding needs with equity by issuing new shares (Al-Eitan et al., 2022; Liao et al., 2022; Carosi, 2016).

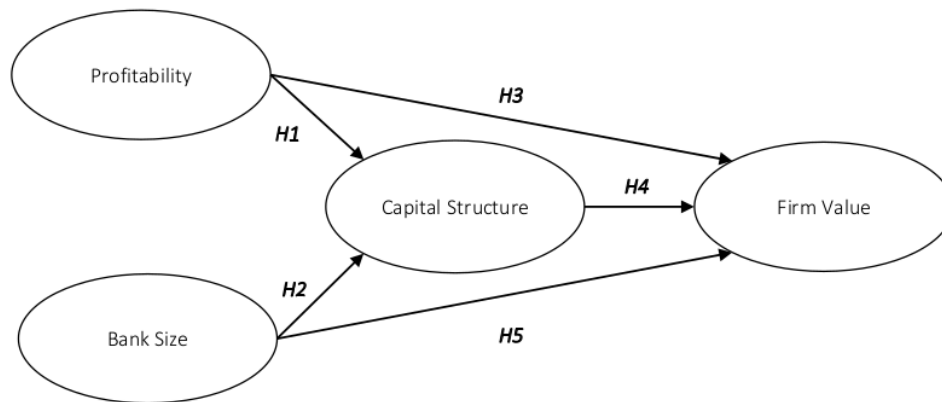
The size of a large company indicates that the company is experiencing growth (Shubita, 2021). If the company's value increases, investors will re-

spond positively to this kind of good performance growth—the greater the total assets, the larger the company's size (Mohammad, 2021). Thus, the company's size, as reflected by the number of assets owned, influences firm value (Al-Eitan et al., 2022). In addition, a firm's value will affect investors' expectations of the dividends that the company will distribute (Mulchandani et al., 2020; Kumaraswamy et al., 2017).

#### 1.4. Firm value

Inefficiency is a source of bank profitability problems related to bank size (Carosi, 2016; AlFadhli & AlAli, 2021). The larger the bank's size, the less efficient the operational process and transaction. Therefore, it is necessary to study the effect of increasing bank size on firm value due to increased consolidation in the banking systems (Kirimi et al., 2022). Financial performance is the work the bank achieves in a certain period and is stated in the company's financial statements (Dang & Do, 2021). The firm's theory reveals the importance of separating roles between owners and company organizations (Doorasamy, 2021). Separation of roles helps companies to be able to choose efficient business activities and provide reasonable incentives for employees and enable companies to maximize profits (Cancela et al., 2020). Therefore, the increased firm value reflects the bank's success in improving its financial performance (Pan & Xu, 2020).

The management of corporate companies has the task of increasing firm value (Doorasamy, 2021; Cancela et al., 2020; Dang, Li, & Yang, 2018). Banks in their operations have a separation between management and the owners (Ter-Mkrtchyan & Franklin, 2020; Hutahayan, 2020). Therefore, the greater the firm value serves as a signal for investors' greater appreciation (Pan & Xu, 2020). Following the advanced digital technology, banks must also adopt digital banking in their daily operations to support the crucial role of intermediary institutions in the financial system (Banna & Alam, 2021; Chauhan et al., 2022). Firm value reflects a bank's investment, financial, and dividend decisions (Rajhans, 2013). Many investors use the present value of all outstanding company shares as a proxy for firm value (Andrews et al., 2018). If there is a change in the composition of a bank's



**Figure 1.** Research model framework

capital structure, it will be able to increase its market value (A. Chowdhury & S. Chowdhury, 2010). Banks that can minimize the cost of capital can maximize their firm value (Hasan et al., 2021). In addition, firm value positively impacts shareholders by increasing control to improve corporate governance (Cancela et al., 2020).

Based on the above literature review and the relationship between the constructs, the framework of the research concept is depicted in Figure 1.

The following hypotheses are determined based on the model depicted in Figure 1.

*H1: Profitability affects capital structure.*

*H2: Bank size influences capital structure.*

*H3: Profitability impacts firm value.*

*H4: Capital structure affects firm value.*

*H5: Bank size affects firm value.*

## 2. METHODS

This study used quantitative research to examine the relationship between constructs defined previously over a certain period (Gumanti et al., 2018; Sekaran & Bougie, 2016). The research examined the influence of profitability, capital structure, and bank size on firm value. Profitability reflects the

bank's ability to generate net income by leveraging its overall equity. This study used Return on Equity (ROE) to measure a bank's profitability which was adopted from various previous studies (Shaik, 2021; Amponsah-Kwatiah & Asiamah, 2021; Teixeira et al., 2021; Aldubhani et al., 2022; Abdullah et al., 2022). Return of equity is measured using formula (1) as follows:

$$\text{Return on equity (ROE)} = \frac{\text{Net Income}}{\text{Total Equity}} \quad (1)$$

Bank size represents the volatility of bank assets. The larger the bank's assets, the smaller the level of asset volatility (Kurshev & Strebulaev, 2015). Guizani (2021) and Dang and Do (2021) stated that the larger the bank size is, the greater the ability of banks to fund the needs of bank funds with the total equity held by issuing new shares.

Furthermore, capital structure is calculated by dividing total debt against total equity.

$$\text{Capital structure} = \frac{\text{Total Debt}}{\text{Total Equity}} \quad (2)$$

Firm value is seen as the risk-adjusted net present value of future profit expectations as the best indicator for future profits (Chauvin & Hirschey, 1994; Bell et al., 2014; Sucuahi & Cambarihan, 2016). The company's market value can be measured using Tobin's Q by comparing the equity market value and the book value of total debt with the book value of total assets and total debt (Sucuahi & Cambarihan, 2016).



$$Q = \frac{(EMV + D)}{(EBV + D)}, \quad (3)$$

where  $Q$  = Firm Value;  $EMV$  = Equity Market Value;  $D$  = Book Value of Total Debt;  $EBV$  = Equity Book Value.

The population used in this study is commercial banks listed in BUKU's 4-member commercial bank operating in Indonesia (Gumanti et al., 2018). The BUKU 4-commercial bank contains the list of all commercial banks operating in Indonesia, adopting digital banking, and being listed on the Indonesia Stock Exchange. Banks are declared to have digital banking when the banks already have used ATMs (Automatic Teller Machines), mobile banking, phone banking, and internet banking (Banna & Alam, 2021). Based on this criteria, six banks from the BUKU 4 commercial banks are eligible for this study sample. They are Bank Mandiri, Bank Rakyat Indonesia, Bank Negara Indonesia, Bank Central Asia, Bank CIMB Niaga, and Bank Panin. Based on the data retrieved from the Bloomberg terminal obtained in Table 1. Table 1 shows the bank's profitability as measured by return on equity with an average value of 17.982 percent with a standard deviation reflecting volatility return on equity of 7.6384 percent and a minimum value of 1.5 percent; and a maximum value of 35.89 percent. This result shows the ability of banks to generate net income by utilizing all the equity owned.

This study's data type is secondary data collected through data tracing on the Bloomberg systems terminal. Furthermore, data is analyzed to examine the influence of profitability, bank size on firm value through the mediating role of capital structure. Data analysis is conducted using a two-stage least square tool with panel data (Al-Eitan et al., 2022). The study used the two-stage least squares method, calculating the two-stage least squares (2SLS) estimate. The 2SLS

includes variable types: exogenous and endogenous. It is defined as follows: An endogenous variable is a response variable that will be derived from an exogenous variable. The two-stage least squares method is motivated by a research model whose relationship is simultaneous. The determinant model for the capital structure is as follows.

Stage 1 Model

$$CS = \beta_0 + \beta_1 \cdot ROE + \beta_2 \cdot BS, \quad (4)$$

where  $CS$  = Capital structure;  $\beta_0$  = Constant;  $\beta_1$  = Regression coefficient of Return on Equity;  $ROE$  = Return on Equity;  $\beta_2$  = Bank size regression coefficient;  $BS$  = Bank size.

Stage 2 Model

$$FV = \beta_0 + \beta_3 \cdot ROE + \beta_4 \cdot BS + \beta_5 \cdot CS, \quad (5)$$

where  $FV$  = Firm value;  $\beta_0$  = Constant;  $\beta_3$  = Regression coefficient of expectations of Return on Equity;  $\beta_4$  = Bank size regression coefficient;  $\beta_5$  = Capital structure regression coefficient;  $ROE$  = Return on Equity;  $BS$  = Bank size;  $CS$  = Capital structure.

### 3. RESULTS

#### 3.1. Descriptive statistics

The first step of analysis is a descriptive assessment to present the number of samples, minimum, maximum, mean, and standard deviation, as shown in Table 1.

Table 1 shows the bank's profitability as measured by return on equity with an average value of 17.982 percent with a standard deviation reflecting volatility return on equity of 7.6384 percent and a minimum value of 1.5 percent; and a maximum

**Table 1.** Descriptive statistics

Descriptive	N	Minimum	Maximum	Mean	Standard deviation
Return on equity (Percentage)	66	1.50	35.89	17.982	7.6384
Bank Size	66	64,391.90	1,296,898.30	456,688.15	312,095.5450
Capital Structure (Percentage)	66	6.30	144.68	53.276	29.3920
Firm Value	66	0.92	1.59	1.1363	0.1528

*Notes:* This table presents descriptive statistics for the return on equity, bank size, capital structure, and firm value. The sample consists of digital banking companies listed from 2007 to 2019.



value of 35.89 percent. This result shows the ability of banks to generate net income by utilizing all the equity owned.

The data retrieved from the Bloomberg systems terminal is shown in Table 1. The bank's profitability as measured by return on equity has an average value of 17.982 percent with a standard deviation, reflecting volatility return on equity, is 7.6384 percent. The minimum value is 1.5 percent, and the maximum value is 35.89 percent. This result shows the ability of banks to generate net income by utilizing all the equity owned.

The capital structure presented in Table 1, as measured by the debt-to-equity ratio, has an average value of 53.276 percent, with a standard deviation reflecting capital structure volatility of 29.3920 percent, with a minimum value of 6.3, and a maximum value of 144.68 percent. The results of the descriptive analysis of bank size variables presented in Table 1 have a value in billions of rupiahs. The descriptive value of the bank size variable as measured by the total asset bank has an average value of 456.688 trillion rupiahs with a standard deviation that reflects the volatility of total assets (bank size) of 312,095.5450 trillion rupiahs, with a minimum value of 64,391.90 trillion rupiahs and a maximum value of 1,296,898.30 trillion rupiahs. The descriptive value of the firm value of bank variable measured by Tobin's Q has an average value of 1.1363, with a standard deviation reflecting the volatility of the firm value of 0.1528 and a minimum value of 0.92; and a maximum value of 1.59. This result shows that the market appreciates the financial performance of BUKU 4-member banks.

### 3.2. Inferential statistics

The inferential analysis is used to examine the relationship between two constructs. Based on Table 2, the first hypothesis (*H1*), the effect of profitability on capital structure, is supported by the beta coefficient value of  $-0.374$ , the significant value of  $0.000 < 0.05$ , and t-statistic  $2.060 (> 1.96)$ . The profitability negatively affects the capital structure.

The second hypothesis (*H2*) states that bank size affects capital structure. This hypothesis is supported by data with a negative beta coefficient value of  $-0.334$ , a sig value of  $0.000 < 0.05$ , or t-statistic  $3.633 (> 1.96)$ . The F-value was obtained at 16,892, and sig.  $0.000 < 0.05$  implies that profitability and bank size simultaneously impact capital structure. The R-square value of 0.682 indicates that the model can explain the variance of capital structure by 68.20%.

Proceeding with the second model, namely the influence of profitability, bank size, and capital structure on firm value, the result is shown in Table 3.

It was found that the third hypothesis (*H3*), about the effect of profitability on firm value, is supported by the beta coefficient value of 0.387, value of sig.  $0.000 < 0.05$ , and t-statistic 4.839 ( $> 1.96$ ). Furthermore, the fourth hypothesis (*H4*), namely, capital structure affects the firm, is also accepted with the beta coefficient value of  $-0.218$ , sig. value of  $0.002 < 0.05$  and t-statistic value of 4.883. This result shows that the increasing capital structure with total debt compared to total equity has a negative impact on firm value.

**Table 2.** Capital structure as a dependent variable

Measurement Item	Unstandardized B	Coefficient Std Error	Beta	t	Sig
Constant	24,821.08	4497.648	—	5.519	.000
Bank Size	-3.105	1.608	-.334	-3.633	.000
Profitability	-1.497	.369	-.374	-2.060	.000

Note: F-Value = 16,892 and Sig. 0.000; R-Square = 0.682.

**Table 3.** Results of data firm value as a dependent variable

Measurement Item	Unstandardized B	Coefficient Std Error	Beta	t	Sig
Constant	778.590	178.474	—	4.362	.000
Profitability	0.366	.014	.387	4.839	.000
Capital structure	-0.218	.004	-.419	-4.883	.002
Bank Size	0.466	.132	.158	5.011	.000

Note: F-Value = 34.689 and Sig. 0.000; R-Square = 0.750.

**Table 4.** Hypothesis assessment summary

Hypothesis	Coefficient	p-values	Decision
Profitability → Capital Structure	-1.497	0.000	Accepted
Bank Size → Capital Structure	-3.105	0.000	Accepted
Profitability → Firm value	0.366	0.000	Accepted
Capital Structure → Firm value	-0.218	0.002	Accepted
Bank Size → Firm value	0.466	0.000	Accepted

Finally, the fifth hypothesis (*H5*) is supported. Bank size has a positive and significant influence on firm value with a beta coefficient value of 0.466, significance value of  $0.000 < 0.05$ , or t-statistic 5.011 ( $> 1.96$ ). The F-value was obtained at 34,689, and a sig.  $0.000 < 0.05$ . It implies that profitability, bank size, and capital structure affect firm value simultaneously. An R-square value of 0.750 indicates that the model can explain the firm value of 75.50%. The results in Table 2 and Table 3 can be summarized in Table 4.

## 4. DISCUSSION

The first hypothesis was supported, which implies that retained earnings are a part of net income that is not distributed to shareholders in the form of dividends as suggested by previous studies (Aldubhani et al., 2022; Abdullah et al., 2022). The analysis result shows that the bank profitability increase in the previous period impacts a bank's capital structure decline. Moreover, the greater the profit obtained by the bank, the more excellent the opportunity to increase retained earnings in the next year, which is in line with a past study (Mulchandani et al., 2020). So that, the need to sharpen external parties will be reduced, further lowering the capital structure (Bitar et al., 2018; Tin & Diaz, 2017). The banking industry in Indonesia has reached a mature stage in the life cycle industry, where many banks have implemented digital banking (Banna & Alam, 2021). The results of this study are in line with the results of Tin and Diaz (2017), which found that banks' profitability had a significant effect on the capital structure.

The second hypothesis indicated that the higher the bank size, the stronger the influence of decreasing capital structure. In addition, the larger the bank size also indicates the more significant the ability to repay loan funds from customers (Danyali, 2018). Customers and the ability of the

bank to maintain the level of security of customer funds (Ansari & Goyal, 2014). This study's results align with the results of Guizani (2021) and Dang and Do (2021), which found that bank size significantly affects capital structure.

The third hypothesis testing result shows that the higher the profitability, the stronger the influence of firm value. This result means that the higher the achievement of bank profitability will increase the firm value of the bank (Bell et al., 2014; Sucuahi & Cambarihan, 2016). This result shows that the bank already has a reasonable and appropriate asset-liability management. Furthermore, the prospect of good bank financial performance will strengthen investor confidence in the bank's ability to pay dividends that will continue to grow because the source of dividend distribution funds is obtained from the net income obtained by the bank (Mulchandani et al., 2020). After all, banks are companies that regularly distribute dividends because banks are at a mature stage in the life cycle industry, where opportunities for diversification of services are limited (Kumaraswamy et al., 2017). This finding indicates that digital banking implementation is a system that customers and investors expect. This study's results align with the research of Bell et al. (2014) and Sucuahi and Cambarihan (2016). They found bank profitability had a significant effect on firm value of banks.

Furthermore, the fourth hypothesis was accepted. The lower the capital structure, the stronger the influence on firm value. However, Kodongo et al. (2014) found that capital structure did not affect firm value. This result indicates that the bank will try to offset the equity held with debt, especially when internal funding is insufficient. This finding is considered positive by the market because with the decline in debt, a bank's responsibility to pay interest and prin-

capital on loans decreases, increasing the bank's firm value (Dzeha et al., 2022). The negative influence of capital structure of bank on firm value of bank, as revealed by Liao et al. (2022) and Liu et al. (2020), states that the lower the capital structure, the lower the bank's dependence on debt. In addition, if the bank owes too much, it will increase the loan's potential default risk of interest and principal (Doorasamy, 2021). If the bank's assets have been used up to pay off bank debts, then the investors will not get a share of the bank's assets. This condition is good news for investors, which impacts the increasing interest of investors in buying bank shares. The results of this study are in line with the findings of Kodongo et al. (2014), Liao et al. (2022), and Liu et al. (2020), who stated that the capital structure of companies (including banks) affects the firm value of companies (including banks).

Finally, the fifth hypothesis was also supported. The larger the bank size, the stronger the influence on firm value. Firm value is a picture that shareholders can expect regarding the bank's future. This finding is in line with the research results of Kodongo et al. (2014), who found that a larger bank size will enlarge the ability of banks to fund through increased retained earnings. These findings suggest that the amount of bank size is reflected in total assets, reflecting the great potential to provide welfare to shareholders in the future (Kuisi et al., 2019), as evidenced in this study. These findings show that banks' increase in firm value that implements digitalization can attract market appreciation. This study's findings align with the results of Kodongo et al. (2014), who found that bank size had a significant effect on the firm value of banks.

## CONCLUSION

The initial goal of this study is to examine the effect of profitability and bank size on firm value with the mediating role of capital structure with the unit analysis of banks that implemented a digital banking system. For this purpose, this study has proposed a model involving five constructs simultaneously, and five hypotheses have been developed to be examined. Data is collected from six banks through the Bloomberg system terminal. The analysis result indicated that all five hypotheses were supported by empirical data collected. The result of the study is summarized as follows. First, a bank's profitability significantly and negatively affected the capital structure. Second, bank size has a negative and significant influence on capital structure. Third, in addition, profitability affects firm value. The higher the profit, the higher the firm value. Fourth, a bank's capital structure affects firm value positively and significantly. Lastly, bank size has a significant effect on firm value. The research proposes practical contributions for managers and top management to benefit from digital banking incentives. Banks that implement digital banking will maintain the sustainability of their business in an integrated and sustainable manner. Adopting digital banking enables banks to adjust to the development of digital technology that has changed the way people behave and interact in everyday life. This study also could contribute to the current research in financial management theory.

## MANAGERIAL IMPLICATION

In today's competition in the banking industry, the management must run their business activities by adopting the information technology. Banks also should place the innovation process at the center of all bank activities. In addition, a bank must use data to create new businesses, improve income, and retain customers. Banks with a digital banking system can optimize their resources and run efficient business processes to reduce costs. Cost reduction will affect the increase in profitability of a bank. A bank's profitability increased by increasing the potential to increase retained earnings which is one of the bank's internal funding sources. Adopting digital banking enables banks to adjust to the development of digital technology that has changed the way people behave and interact in everyday life. Banks should tailor their business strategy following the customer expectations, namely bank services that are fast, simple,



and safe. This study also provides investor insight to evaluate how banks have adopted information technology in digital banking in their operations. The level of bank adoption of digital banking for asset-liability management contributes significantly to profitability. The findings of this study also mean that banks that do not adopt digital banking will be abandoned by their customers. The investors who own shares of go public banks that do not plan to adopt digital banking must sell the stock immediately before the stock price declines.

## AUTHOR CONTRIBUTIONS

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Software: Nanik Linawati.

Validation: Nanik Linawati, Siti Aisjah.

Formal analysis: Nanik Linawati.

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## REFERENCES

1. Abdullah, M. A. H., & Iqbal, M. S. (2022). Impact of working capital management on firm profitability and liquidity: the moderating role of family ownership. *Accounting Research Journal*. <https://doi.org/10.1108/ARJ-07-2021-0212>
2. Adjei-Frimpong, K., Gan, C., & Hu, B. (2014). Cost efficiency of Ghana's Banking industry: A panel data analysis. *The International Journal of Business and Finance Research*, 8(2), 69-86. <https://ssrn.com/abstract=2322961>
3. Aldubhani, M. A. D., Wang, J., Gong, T., & Maudhah, R. A. (2022). Impact of working capital management on profitability: Evidence from listed companies in Qatar. *Journal of Money and Business*. <https://doi.org/10.1108/JMB-08-2021-0032>
4. Al-Eitan, G. N., Al-Own, B., & Bani-Khalid, T. (2022). financial inclusion indicators affect profitability of Jordanian commercial Banks: Panel data analysis. *Economics*, 10(2), 38. <https://doi.org/10.3390/economics10020038>
5. AlFadhli, M. S., & AlAli, M. S. (2021). The Effect of Bank Size on Financial Performance: A Case Study on Kuwaiti Banks. *Journal of Insurance and Financial Management*, 4(3), 11-15.
6. Al-Kayed, L. T., Zain, S. R. S. M., & Duasa, J. (2014). The relationship between capital structure and performance of Islamic Banks. *Journal of Islamic Accounting and Business Research*, 5(2), 158-181. <https://doi.org/10.1108/JIABR-04-2012-0024>
7. Almazari, A. A. (2014). Impact of internal factors on Bank profitability: Comparative study between Saudi Arabia and Jordan. *Journal of Applied Finance & Banking*, 4, 125-140.
8. Amponsah-Kwatiah, K., & Asiamah, M. (2021). Working capital management and profitability of listed manufacturing firms in Ghana. *International Journal of Productivity and Performance Management*, 70(7), 1751-1771. <https://doi.org/10.1108/IJPPM-02-2020-0043>
9. Anarfo, E. B., & Appiahene, E. (2017). The impact of capital structure on Banks' profitability in Africa. *Journal of Accounting and Finance*, 17, 55-66.
10. Andrews, A., Sen, P., & Stephan, J. (2018). Analysts' forecasts and uncertainty about firm value. *Review of Accounting and Finance*, 17(3), 298-315. <https://doi.org/10.1108/RAF-09-2016-0146>
11. Ansari, J., & Goyal, A. (2014). Bank competition, managerial efficiency and the interest rate pass-through in India. *Contemporary Studies in Economic and Financial Analysis*, 317-339. <https://doi.org/10.1108/S1569-375920140000096013>
12. Baek, S. (2022). Information acquisition and asset price volatility. *Finance Research Letters*, 46, Part A: 102236. <https://doi.org/10.1016/j.frl.2021.102236>



13. Banna, H., & Alam, M. R. (2021). Impact of digital financial inclusion on ASEAN Banking stability: implications for the post-Covid-19 era. *Studies in Economics and Finance*, 38(2), 504-523. <https://doi.org/10.1108/SEF-09-2020-0388>
14. Basana, S. R., & Tarigan, Z. J. H. (2021). The effect of essential information and disposition effect on shifting decision investment. *Accounting*, 8(2), 264-276. <https://doi.org/10.5267/j.ac.2021.6.015>
15. Bawa, J. K., & Basu, S. (2020). Restructuring assets reform, 2013: Impact of operational ability, liquidity, Bank capital, profitability and capital on Bank credit risk. *IIMB Management Review*, 32(3), 267-279. <https://doi.org/10.1016/j.iimb.2019.10.009>
16. Bell, R. G., Filatotchev, I., & Aguilera, R. A. (2014). Corporate governance and investors' perceptions of foreign IPO value: an institutional perspective. *Academy of Management Journal*, 57(1), 301-320. <https://doi.org/10.5465/amj.2011.0146>
17. Bitar, M., Pukthuanthong, K., & Walker, T. (2018). The effect of capital ratios on the risk, efficiency and profitability of Banks: Evidence from OECD countries. *Journal of International Financial Markets, Institutions and Money*, 53, 227-262. <https://doi.org/10.1016/j.intfin.2017.12.002>
18. Cancela, B. L., Neves, M. E. D., Rodrigues, L. L., & Dias, A. C. G. (2020). The influence of corporate governance on corporate sustainability: new evidence using panel data in the Iberian macroeconomic environment. *International Journal of Accounting & Information Management*, 28(4), 785-806. <https://doi.org/10.1108/IJAIM-05-2020-0068>
19. Carosi, A. (2016). Do local causations matter? The effect of firm location on the relations of ROE, R&D, and firm size with market-to-book. *Journal of Corporate Finance*, 41, 388-409. <https://doi.org/10.1016/j.jcorpfin.2016.10.008>
20. Chaklader, B., & Padmapriya, B. (2021). Impact of cash surplus on firm's capital structure: validation of pecking order theory. *Managerial Finance*, 47(12), 1801-1816. <https://doi.org/10.1108/MF-08-2020-0417>
21. Chauhan, S., Akhtar, A., & Gupta, A. (2022). Customer experience in digital Banking: a review and future research directions. *International Journal of Quality and Service Sciences*, 14(2), 311-348. <https://doi.org/10.1108/IJQSS-02-2021-0027>
22. Chodorow-Reich, G., Darmouni, O., Luck, S., & Plosser, M. (2022). Bank liquidity provision across the firm size distribution. *Journal of Financial Economics*, 144(3), 908-932. <https://doi.org/10.1016/j.jfineco.2021.06.035>
23. Chowdhury, A., & Chowdhury, S. P. (2010). Impact of capital structure on firm's value: Evidence from Bangladesh. *Business and Economic Horizons*, 3(3), 111-122. <https://doi.org/10.15208/beh.2010.32>
24. Dang, C., Li, Z., & Yang, C. (2018). Measuring Firm Size in Empirical Corporate Finance. *Journal of Banking & Finance*, 86, 159-176. <https://doi.org/10.1016/j.jbankfin.2017.09.006>
25. Danyali, A. A. (2018). Factors influencing customers' change of behaviors from online Banking to mobile Banking in Tejarat Bank, Iran. *Journal of Organizational Change Management*, 31(6), 1226-1233. <https://doi.org/10.1108/JOCM-07-2017-0269>
26. Daskalakis, N., Eriotis, N., Thanou, E., & Vasilou, D. (2014). Capital structure and size: new evidence across the broad spectrum of SMEs. *Managerial Finance*, 40(12), 1207-1222. <https://doi.org/10.1108/MF-11-2013-0325>
27. Dzeha, G. C., Boachie, C., Krieshe, M., & Kusi, B.A. (2022). Monetary policy decisions and Bank profitability: evidence from an emerging economy. *International Journal of Emerging Markets*. <https://doi.org/10.1108/IJOEM-08-2020-0992>
28. Guizani, M. (2021). The determinants of capital structure of Islamic and conventional Banks: an autoregressive distributed lag approach. *Journal of Islamic Accounting and Business Research*, 12(1), 131-147. <https://doi.org/10.1108/JIABR-06-2020-0177>
29. Gumanti, T. A., Moeljadi, & Utami, E. S. (2018). *Metode Penelitian Keuangan [Financial Research Methods]*. Mitra Wacana Media, Jakarta, Indonesia.
30. Hasan, M. M., Lobo, G. J., & Qiu, B. (2021). Organizational capital, corporate tax avoidance, and firm value. *Journal of Corporate Finance*, 70, 102050. <https://doi.org/10.1016/j.jcorpfin.2021.102050>
31. Hutahayan, B. (2020). The mediating role of human capital and management accounting information system in the relationship between innovation strategy and internal process performance and the impact on corporate financial performance. *Benchmarking: An International Journal*, 27(4), 1289-1318. <https://doi.org/10.1108/BIJ-02-2018-0034>
32. Kamaliah. (2020). Disclosure of corporate social responsibility (CSR) and its implications on company value as a result of the impact of corporate governance and profitability. *International Journal of Law and Management*, 62(4), 339-354. <https://doi.org/10.1108/IJLMA-08-2017-0197>
33. Kirimi, P. N., Kariuki, S. N., & Ocharo, K. N. (2022). Moderating effect of Bank size on the relationship between financial soundness and financial performance. *African Journal of Economic and Management Studies*, 13(1), 62-75. <https://doi.org/10.1108/AJEMS-07-2021-0316>
34. Kodongo, O., Mokoaleli-Mokoteli, T., & Maina, L. N. (2014). Capital Structure, Profitability and Firm Value: Panel Evidence of Listed Firms in Kenya. *Munich Personal RePEc Archive (MPRA)*, 1-19.
35. Kuisi, B. A., Nortey, O. A., & Dzeha, G. C. (2019). Central Bank independence and economic welfare in Africa: do institutional quality and levels of central Bank independence matter? *Review of Development Finance*, 9(1), 79-93.

36. Kurniati, S. (2019). Stock returns and financial performance as mediation variables in the influence of good corporate governance on corporate value. *Corporate Governance*, 19(6), 1289-1309. <https://doi.org/10.1108/CG-10-2018-0308>
37. Kurshev, A., & Strebulaev, I. A. (2015). Firm Size and Capital Structure. *The Quarterly Journal of Finance*, 5(3), 1550008. <https://doi.org/10.1142/S2010139215500081>
38. Liao, Y., Huang, P., & Ni, Y. (2022). Convertible bond issuance volume, capital structure, and firm value. *The North American Journal of Economics and Finance*, 60, 101673. <https://doi.org/10.1016/j.najef.2022.101673>
39. Liu, H., Chiang, Y.-M., & Tsaic, H.-J. (2020). The impact of loan rollover restrictions on capital structure adjustments, leverage deviations, and firm values. *Pacific-Basin Finance Journal*, 62, 101384. <https://doi.org/10.1016/j.pacfin.2020.101384>
40. Mohammad, K. U. (2021). How Bank capital structure decision-making change in recessions: Covid-19 evidence from Pakistan. *Asian Journal of Economics and Banking*. <https://doi.org/10.1108/AJEB-04-2021-0049>
41. Mulchandani, K., Mulchandani, K., & Wasan, P. (2020). Dividends and earnings quality: Evidence from India. *IIMB Management Review*, 32(2), 166-176. <https://doi.org/10.1016/j.iimb.2019.10.001>
42. Nelly, K. M., Ambrose, J., & George, K. (2019). Bank size and financial risk exposure on financial performance of commercial Banks in Kenya. *International Journal of Financial Research*, 10(6), 250-264. <https://doi.org/10.5430/ijfr.v10n6p250>
43. Nguyen, L., Tran, S., & Ho, T. (2021). Fintech credit, Bank regulations and Bank performance: a cross-country analysis. *Asia-Pacific Journal of Business Administration* <https://doi.org/10.1108/APJBA-05-2021-0196>
44. Novitasari, M., & Tarigan, Z. J. H. (2022). The Role of Green Innovation in the Effect of Corporate Social Responsibility on Firm Performance. *Economies*, 10(5), 117. <https://doi.org/10.3390/economies10050117>
45. Nzioka, P. K. (2013). The Relationship Between Firm Size and Financial Performance of Commercial Banks in Kenya. Nairobi: University of Nairobi.
46. Pan, S., & Xu, Z. R. (2020). The association of analysts' cash flow forecasts with stock recommendation profitability. *International Journal of Accounting & Information Management*, 28(2), 343-361. <https://doi.org/10.1108/IJAIM-05-2019-0055>
47. Rajhans, R. K. (2013). Financial Determinants of Firm's Value Evidence from Indian Firms. *International Journal of Business Economics & Management Research*, 3(5).
48. Sabrin, B. S., Sujono, Dedy Takdir, D., & Syaifudin, D. (2016). The Effect of Profitability on Firm Value in Manufacturing. *The International Journal of Engineering and Science (IJES)*, 5(10), 81-89.
49. Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. United Kingdom: John Wiley & Sons.
50. Sucuahi, W., & Cambarian, J. M. (2016). Influence of Profitability to the Firm Value of Diversified Companies in the Philippines. *Accounting and Finance Research*, 5(2), 149-153. <https://doi.org/10.5430/afr.v5n2p149>
51. Teixeira, J. C., Vieira, C., & Ferreira, P. (2021). The Effects of Government Bonds on Liquidity Risk and Bank Profitability in Cape Verde. *Int. J. Financial Stud.*, 9(1), 2. <https://doi.org/10.3390/ijfs9010002>
52. Ter-Mkrtchyan, A., & Franklin, A. L. (2020). Global Financial System Outcomes after 2008: A Longitudinal Comparison. *Economies*, 8(1), 24. <https://doi.org/10.3390/economies8010024>
53. Tharu, N. K., & Shrestha, Y. M. (2019). The Influence of Bank Size on Profitability: An Application of Statistics. *International Journal of Financial, Accounting, and Management*, 1(2), 81-89.
54. Tin, T. T., & Diaz, J. F. (2017). Determinants of Bank's Capital Structure: Evidence from Vietnamese Commercial Banks. *Asian Journal of Finance & Accounting*, 9(1), 351. <https://doi.org/10.5296/ajfa.v9i1.11150>

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