# Determinant Firm Value Of The Banking Sector Listing On The Indonesia Stock Exchange: Mediated By Profitability

**Moeljadi, Kartika Hendra Titisari, Triningsih Sri Supriyati, Sherlinda Octa Yuniarsa**

**Abstract :** Firm Value (FV) is an important thing that must be achieved by a company. Knowing many factors that have an impact on high FV. This research was also investigates the determinant firm value (stock prices and stock returns) from 30 banking sector companies listed on the Indonesia Stock Exchange in the 2015-2018 period, which are net interest margin (NIM), loan to deposit ratio (LDR), equity on total assets (EOTA), and return on assets (ROA). Path analysis is used to test hypotheses. The results showed that NIM and EOTA had a direct effect on FV (stock prices), but did not affect FV (stock returns). LDR has no effect on FV (stock prices and stock returns). ROA is proven to mediate the influence of NIM on FV (share price). This research implies that banks must pay attention to factors both internal and external to increase investor confidence as reflected in stock prices. However, the increase in share prices that is not balanced with an increase in stock returns needs attention from banks and investors.

**Keywords:** stock prices, stock returns, interest rates, returns on assets JEL Classification G22, G24

————————————————◆————————————————

## 1 INTRODUCTION

Maximize the value of the company which means increasing the prosperity of shareholders is the main objective of the company (bank) (Brigham & Daves, 2011). Stock prices and stock returns are representative values to describe the company value (bank) and used as a consideration in making investment decisions by investors. Observe the average price of shares in the banking sector on the Indonesia Stock Exchange in the period 2015-2018 increased (Fiqure 1). But, this is not the case with average stock returns (Fiqure 2).



**Figure 1.** *Average stock prices and stock returns of the banking sector*

Knowing the factors that influence the bank's corporate value both stock prices and stock returns, is important for the company. Several factors that influence stock prices and stock returns have been examined by previous researchers, namely interest rates, liquidity, and bank overhead. The results of the study provide mixed empirical evidence (Chiang & Zheng, 2015; Ebenezer et al., 2019a; Ebenezer et al., 2019b;

_____

• *Moeljadi, Kartika Hendra Titisari, Triningsih Sri Supriyati, Sherlinda Octa Yuniarsa Corresponding E mail: kartikatitisari @gmail.com*

French & Taborda, 2018; Rahman et al., 2019; Tuna & Yildiz, 2016; Vaz et al., 2008). These variables also directly influence company profitability (Al-Jarrah et al., 2010; Hossain & Khalid, 2018; Petria et al., 2015; Tui et al., 2017) and profitability has a positive impact on firm value (Haryanti & Murtiasih, 2019; Sucuahi & Cambarihan, 2016; Zarrouk et al., 2015). This research places profitability as a mediating variable in the relationship of interest rates, liquidity, and bank overhead to stock prices and stock returns. On the other hand, in investment decisions, stock prices are the main information, but the phenomenon (Figure 1) turns out that the increase in stock prices is not accompanied by an increase in stock returns.

## 2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The optimal investor decision by buying a combination of market portfolios and risk-free assets that produce the best tradeoff between return and risk (Scott, 2009). The company tries to control both internal and external factors to increase stock prices and stock returns. Vaz et al. (2008) founded that corporate / banking stock returns in Australia were positively affected by changes in official interest rates, in line with dividend theory. Stocks do not need to be negatively impacted when income effects dominate. These results are different from those in the US which are generally negatively affected. Banks in Australia are in a less competitive and concentrated environment and are able to manage income when exchange rates change compared to the US. The study was conducted in the period 1990 to 2005. Ebenezer et al. (2019a) said that with panel data from 63 commercial banks in ASEAN-5 countries from 2009 to 2017, provides empirical evidence that the ratio of loans to deposits has a positive effect on firm value. The ratio of liquid assets, interest rate risk (net interest margins and asset interest yield) negatively affects the value of the company. These results differ from studies in the same year, conducted by Ebenezer et al. (2019b) said that it was using a panel data for 16 banks operating in Nigeria during the period 2009 to 2017. Liquidity risk (ratio of loans to deposits and ratio of liquid assets) has a
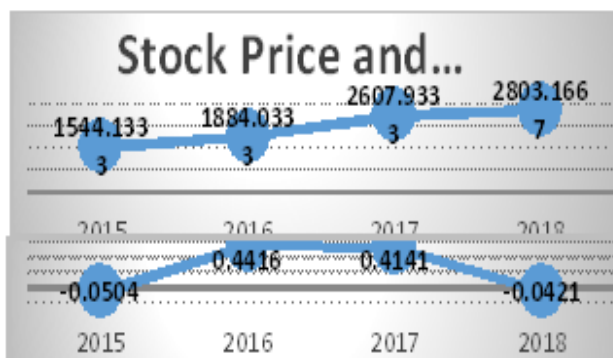
negative effect on firm value. Net interest margins and GDP have a negative impact on firm value. This study emphasizes and contributes to the dynamic role of liquidity risk and interest rate risk and their implications for the value of bank companies in Nigeria. Rahman et al. (2019) provided that empirical evidence that interest rates are a significant predictor of stock return predictions. The study was conducted in four equity markets in South Asia. Kasman et al. (2011) founded that changes in interest rates and exchange rates had a negative impact on banking stock returns on banking companies in Turkey. Further results show that interest rates and exchange rate volatility are the main determinants of stock return volatility. Chiang and Zheng (2015) examined with monthly data for 20 years on the G7 market and found that liquidity was positively correlated with stock returns. Research by Tui et al. (2017) said that in the banking industry on the Indonesia Stock Exchange from 2013 to 2015 with a sample of 40 banks, finding liquidity had a negative significant effect on firm value. French and Taborda (2018) examined companies in Brazil, Chile, Colombia, Mexico and Peru. The results showed that company-level liquidity was positively (negatively) related to returns. Liquidity is a less important risk factor in Latin America, increasing liquidity at the company level will increase returns. Tuna and Yildiz (2016) stated that analyze the effect of operational expenses consisting of research-development, marketing and general administrative items on company performance. 16 companies from 2008-2015 on the Istanbul Stock Exchange as a research sample. The analysis shows the long-term relationship between performance and operating expenses of the company (general administrative expenses, marketing-sales-distribution costs and development research costs). Long-term relationship analysis shows general administrative expenses and firm value have a negative impact, while marketing-sales-distribution and development research expenditures improve bank performance.    Bank's firm value is determined by several factors such as liquidity, interest rates, and bank overhead, the hypothesis of this study are:

H1: Increased bank interest rates increase bank value
H2: Increased bank liquidity increases bank firm value
H3: Increased bank overhead increases bank firm value

Al-Jarrah et al. (2010) provided that empirical evidence of the determinants of profitability of Jordanian banks during the 2000-2006 period. The most important internal determinants of bank profitability are the ratio of loans to total assets, operating expense ratios, capital structure, savings ratios and non-operational expenditure ratios. Tui et al. (2017) said that in the banking industry on the Indonesia Stock Exchange in the period 213 to 2015 with a sample of 40 banks, found that liquidity capital had a positive effect on profitability and a negative effect on firm value. While, profitability has a positive effect on firm value. This research also found that intellectual capital had a positive effect on profitability and firm value, while company size had no effect. Petria et al. (2015) examined that the main determinants of bank profitability in EU27 in the 2004-2011 period. The results showed credit and liquidity risks, management efficiency, business diversification, market / competition concentration and economic growth have an effect on bank profitability. Hossain and Khalid (2018)

discussed that with a sample of companies in Bangladesh in the pre-crisis period (2002-2006) and the crisis situation (2008-2008). Bank specific characteristics (internal factors) (Equity Over Total Assets (ETA), Cost-Income Ratio (CIR), Loan Loss Provision for Total Loans (LLPOTL), Annual Deposit Growth (YGD), Net Interest Income from Net Revenues (NII) ) and industry-specific characteristics (external factors), which include Effective Tax Rates (ETR), Real GDP Growth (RGG), Government Bonds (TBDiff), Inflation Growth (IG) affect to bank profitability. This research also found that macroeconomic factors did not affect on bank profitability. Research Zarrouk et al. (2015) stated that 51 Islamic banks operating in the Middle East and North Africa (MENA) region from 1994 to 2012. Profitability is positively influenced by bank cost effectiveness, asset quality and capitalization rates. The results also shown that non-financial activities enable Islamic banks to get higher profits. Inflation rate is negatively related to the profitability of Islamic banks. Furthermore, this study also provides empirical evidence that the determinants of profitability do not differ significantly between Islamic and conventional banks. Many factors are considered the same in explaining the profitability of conventional and Islamic banks. Haryanti and Murtiasih (2019) examined that the state-owned banking companies listed on the IDX in the 2019-2018 period, finding profitability that ROA proxied had a positive effect on stock prices. Sucuahi and Cambarihan (2016) provided that empirical evidence of profitability increasing the value of companies proxied by Tobin's Q. Research was conducted on 86 companies on the Philippine Stock Exchange (PSE) in 2014. Bank's firm value is also affected by profitability. While, bank profitability is influenced by interest rates, liquidity, and bank overhead, the research hypothesis is formulated as follows:

H4: Profitability mediates the influence of bank interest rates on firm value
H5: Profitability mediates the effect of bank liquidity on firm value
H6: Profitability mediates the effect of overhead banks on firm value

The research model is presented in Figure 2.



**Figure 2**. *Research model*

## 3 METHODS

Firm value is proxied by stock prices and stock returns. Interest rates are proxied by net interest margin (NIM), liquidity is proxied by loan to deposit ratio (LDR), bank overhead is proxied by equity on total assets (EOTA), and profitability is proxied by return on assets (ROA). The

research population includes all companies going public on the Indonesia Stock Exchange (IDX) bank sector, whose shares were actively traded in the 2015-2018 period, All populations that met the criteria are used as research samples. This research is used by sample that consisting of 30 companies. The company went public in the banking sector by 45. Excluded from the sample of 15 (including the Sharia sector: 3; listings after 2014: 4; and posted a loss: 8). The research was used panel data with 120 observations. This study has used a PLS approach to test the hypothesis. We present a path model for all latent variables in PLS, which consists of two elements: the outer model and the inner model to test the indicator measurement model and structural model.

# 4 RESULTS

**Table 1. Descriptive Statistics**

|  | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| NIM | 120 | 1.53 | 11.98 | 5.2868 | 1.67222 |
| LDR | 120 | 41.99 | 145.26 | 83.9987 | 15.10860 |
| EOTA | 120 | 6.60 | 38.55 | 15.6774 | 5.03982 |
| ROA | 120 | .09 | 4.19 | 1.7242 | 1.02356 |
| Stock Price | 120 | 4.13 | 10.17 | 6.7545 | 1.37338 |
| Stock Return | 120 | -.54 | 4.26 | .1903 | .66594 |

This research was used by formative indicators. Outer test models are presented in Table 2. All variables with p-values less than 0.05 and VIF less than 5, so for all variables were used really feasible. NIM, LDR, EOTA, ROA has predictive relevance for stock prices and stock returns. The inner model test presented in Table 3, shows for all robust models. Testing the Model's Goodness-of-Fit Test in Panel A, the model fulfills the criteria well. In panel B, R2 for the value of model 1 companies is 0.60 and model 2 is 0.32. Whereas, R2 for ROA is 0.51. NIM, LDR, EOTA, and ROA can be used to predict the value of a company that is proxied by stock prices and stock returns.

**Table 2.** Indicator Measurement Model Test Results

| Variable | NIM | LDR | EOTA | ROA | Stock Price | Stock Return | Type | P Value | VIF |
|---|---|---|---|---|---|---|---|---|---|
| NIM | 1 | 0 | 0 | 0 | 0 | 0 | Formative | <0,000 | 0,000 |
| LDR | 0 | 1 | 0 | 0 | 0 | 0 | Formative | <0,000 | 0,000 |
| EOTA | 0 | 0 | 1 | 0 | 0 | 0 | Formative | <0,000 | 0,000 |
| ROA | 0 | 0 | 0 | 1 | 0 | 0 | Formative | <0,000 | 0,000 |
| Stock Price | 0 | 0 | 0 | 0 | 1 | 0 | Formative | <0,000 | 0,000 |
| Stock return | 0 | 0 | 0 | 0 | 0 | 1 | Formative | <0,000 | 0,000 |

**Table 3.** Structural Model Analysis

| No | Model fit and quality indices | Kriteria Fit | Hasil Analisis Model 1 | Model 2 | Keterangan |
|---|---|---|---|---|---|
| **Panel A: Model's Goodness-of-Fit Test** | | | | | |
| 1 | Average path coefficient (APC) | P<0,05 | 0,262 P<0,001 | 0,226 P=0,002 | Good |
| 2 | Average R-squared (ARS) | P<0,05 | 0,555; P<0,001 | 0,414; P<0,001 | Good |
| 3 | Average adjusted R-squares (AARS) | P<0,05 | 0,541; P<0,001 | 0,396; P<0,001 | Good |
| 4 | Average block VIF (AVIF) | Acceptable if<=5, ideally <= 3,3 | 1,435 | 1,122 | Good |
| 5 | Average full collinearity. VIF (AFVIF) | Acceptable if<=5, ideally <= 3,3 | 1,828 | 1,404 | Good |
| 6 | TenenhausGof (GoF) | Small>=0,1 Medium >= 0,25 Large>= 0,36 | 0,745 | 0,644 | Good |
| 7 | Sympson's paradox ratio (SPR) | Acceptable if >=0,7, ideally = 1 | 1,000 | 0,857 | Ideal |
| 8 | R-squared contribution ratio (RSCR) | Acceptable if >=0,9, ideally = 1 | 1,000 | 0,996 | Ideal |
| 9 | Statistical suppression ratio (SSR) | Acceptable if >=0,7 | 1,000 | 1,000 | Good |
| 10 | Nonlinear bivariate causality direction ratio (NLBCDR) | Acceptable if >=0,7 | 0,857 | 0,714 | Good |
| **Panel B: Coefficient of Determination (R²) Test** | | | | | |
| CAR | | | 0,51 | 0,51 | feasible |
| Stock Price | | | 0,60 | | feasible |
| Stock Return | | | | 0,32 | |

**Table 4. Path Analysis**

| Path | | | Koef. Jalur | P Value | Ket | Koef. Jalur | P Value | Ket |
|---|---|---|---|---|---|---|---|---|
| | | | Model 1 | | | Model 2 | | |
| NIM | → | Stock Price | 0,15** | P=0,05 | Sig. | | | |
| NIM | → | Stock Return | | | | 0,05 | P=0,31 | Not Sig. |
| NIM | → | ROA | 0,63*** | P=0,01 | Sig. | 0,63*** | P=0,01 | Sig |
| LDR | → | Stock Price | 0,05 | P=0,30 | Not Sig. | | | |
| LDR | → | Stock Return | | | | 0,03 | P=0,36 | Not Sig. |
| LDR | → | ROA | 0,13* | P=0,07 | Sig. | 0,13* | P=0,07 | Sig |
| EOTA | → | Stock Price | 0,15** | P=0,05 | Sig. | | | |
| EOTA | → | Stock Return | | | | 0,54*** | P=0,01 | Not sig. |
| EOTA | → | ROA | 0,07 | P=0,23 | Not Sig. | 0,07 | P=0,23 | Not Sig |
| ROA | → | Stock Price | 0,66*** | P=0,01 | Sig. | | | |
| ROA | → | Stock Return | | | | 0,14** | P=0,06 | Not Sig. |
| NIM → ROA → Stock Price | | | 1,67 | P=0,095 | Sig. | | | |
| LDR → ROA → Stock Price | | | 0,52 | P=0,60 | Not Sig. | | | |

*sig 10%, **sig 5%, ***sig 1%

Furthermore, the hypothesis test using the path analysis presented in Table 4. H1 and H3 supported empirical evidence for model 1, but it was not consistent with the results of the analysis of model 2 which was not significant. Increased interest rates and bank overhead increase stock prices and have no impact on stock returns. This means that the higher the net interest income and bank capitalization, the higher the stock price, but not the case with stock returns.Whereas, H2 is consistently not supported by empirical evidence in both research models. The level of bank liquidity is not a concern for investors, which is possible indeed the main source of bank funding is indeed from customer deposits. So that investor confidence is more influenced by other variables. The direct relationship of profitability to stock returns is not significant, so the mediating role of ROA in model 2 is not supported by empirical evidence and subsequently not analyzed in this research. Likewise, H6, because the direct relationship of EOTA to ROA is not significant. H4 is proven ROA mediated by the influence of NIM on stock prices. Net interest income in addition to directly affecting stock prices also has an impact on increasing profitability and subsequently increasing share prices. An interesting finding is a significant direct relationship between LDR on ROA and ROA on stock prices, but through continued by analysis of the sobel test, so ROA does not significantly mediation by the effect of LDR on stock prices.

# 5 CONCLUSIONS

This research was investigates about determinant firm value (stock prices and stock returns) by 30 banking sector companies on the Indonesia Stock Exchange in the 2015-2018 period. It further tests, the role of profitability (ROA) as a mediating variable in the relationship between NIM, LDR, and EOTA to FV. The results showed that NIM and EOTA had a direct effect on stock prices, but did not affect on stock returns. LDR has no effect on stock prices and stock returns. ROA is proven to mediate by the influence between NIM and stock price FV. This research was implies that banking companies must pay attention to internal and external factors to increase investor confidence as reflected in stock prices. However, the increase in share prices that is not balanced with an increase in stock returns needs attention from investors and banks.

# 6 ACKNOWLEDGMENT

# 7 REFERENCE

[1]. Al-Jarrah, I. M., Ziadat, K. N., & El-Rimawi, S. Y. (2010). The Determinants of the Jordanian's Banks Profitability: A Cointegration Approach Jordan Journal of Business Administration, 6(2). doi:https://journals.ju.edu.jo/JJBA/article/view/167

[2]. Brigham, E. F., & Daves, P. R. (2011). Intermediate Financial Management. United States: Thomson Higher Education.

[3]. Chiang, T. C., & Zheng, D. (2015). Liquidity and stock returns: Evidence from international markets. Global Finance Journal. doi:https://doi.org/10.1016/j.gfj.2015.04.005

[4]. Ebenezer, O. O., Islam, M. A., Yusoff, W. S., & Rahman, S. (2019a). The Effects of Liquidity Risk and Interest-Rate Risk on Profitability and Firm Value among Banks in ASEAN-5 Countries Journal of Reviews on Global Economics, 8, 337-349. doi:http://dx.doi.org/10.6000/1929-7092.2019.08.29

[5]. Ebenezer, O. O., Islam, M. A., Yusoff, W. S., & Sobhani, F. A. (2019b). Exploring Liquidity Risk and Interest-Rate Risk: Implications forProfitability and Firm Value in Nigerian Banks Journal of Reviews on Global Economics, 8, 315-326. doi:http://www.lifescienceglobal.com/pms/index.php/jrge/article/view/5978

[6]. French, J. J., & Taborda, R. (2018). Disentangling the relationship between liquidity and returns in Latin America. Global Finance Journal 36, 36, 23-40. doi:http://doi.org/10.1016/j.gfj.2017.10.006

[7]. Haryanti, Y., & Murtiasih, S. (2019). The Effects of DER, ROA and DPR on Stock Price with EPS as the Moderating Variable in SOE  IOSR Journal of Business and Management (IOSR-JBM), 21(7), 1-8. doi:http://dx.doi.org/10.9790/487X-2107040108

[8]. Hossain, A., & Khalid, M. S. (2018). Determinants of Bank Profitability before and during Crisis: Evidence from Bangladesh. International Journal of Finance and Accounting, 7(5). doi:http://dx.doi.org/10.5923/j.ijfa.20180705.02

[9]. Kasman, S., Vardar, G., & Tunç, G. (2011). The impact of interest rate and exchange rate volatility on banks' stock returns and volatility: Evidence from Turkey. Economic Modelling, 28, 1328-1334. doi:http://dx.doi.org/10.1016/j.econmod.2011.01.015

[10]. Petria, N., Capraru, B., & Ihnatov, I. (2015). Determinants of banks' profitability: evidence from EU 27 banking systems  Procedia Economics and Finance 20, 518-524. doi:http://creativecommons.org/licenses/by-nc-nd/4.0/

[11]. Rahman, M. L., Shamsuddin, A., & Lee, D. (2019). Predictive power of dividend yields and interest rates for stock returns in South Asia: Evidence from a bias-corrected estimator. International Review of Economics and Finance, 2, 207-280. doi:http://doi.org/10.1016/j.iref.2019.04.010

[12]. Scott, W. R. (2009). Financial Accounting Theory: Canada Prentice Hall.

[13]. Sucuahi, W., & Cambarihan, J. M. (2016). Influence of Profitability to the Firm Value of Diversified Companies in the Philippines Accounting and Finance Research, 5(2). doi:http://dx.doi.org/10.5430/afr.v5n2p149

[14]. Tui, S., Nurnajamuddin, M., Sufri, M., & Nirwana, A. (2017). Determinants of Profitability and Firm Value: Evidence from Indonesian Banks International Journal of Management & Social Sciences, 7(1), 84-95. doi:http://dx.doi.org/10.21013/jmss.v7.n1.p10

[15]. Tuna, G., & Yildiz, Ş. (2016). The Impact of Operating expenditures on Firm Performance in Turkey: Evidence from Technology Sector. ЕКОНОМИКА, 62(4), 1-16. doi:http://dx.doi.org/10.5937/ekonomika1604001T

[16]. Vaz, J. J., Ariff, M., & Brooks, R. D. (2008). The effect of interest rate changes on bank stock returns. Investment Management and Financial Innovations, 5(4). doi:https://businessperspectives.org/journals/investment-management-and-financial-innovations/issue-4-cont-6/the-effect-of-interest-rate-changes-on-bank-stock-returns

[17]. Zarrouk, H., Jedidia, K. B., & Moualhi, M. (2015). Is Islamic bank profitability driven by same forces as conventional banks? International Journal of Islamic and Middle Eastern Finance and Management, 9(1), 46-66. doi:http://dx.doi.org/10.1108/IMEFM-12-2014-0120