



THE EFFECT OF FINTECH AND INTERNAL FACTORS ON BANK FINANCIAL STABILITY

Khairul Nasri¹, Trisha Clarette², Henny Setyo Lestari³, Farah Margaretha Leon⁴
^{1,2,3,4}(*Department of Economic and Business, Universitas Trisakti, DKI Jakarta, Indonesia*)

ABSTRACT

Financial Technology has become an important source of supporting financial services in many and various countries that made this research is conducted. Bank's Capital Adequacy Ratio (CAR) is a measurement of the adequacy of capital based on the ratio between equity/capital and total weighted assets according to bank weighted risk. Factors of bank capital adequacy are measured using the capital adequacy ratio or can be abbreviated as CAR. This ratio is the main indicator used by the Financial Services Authority in assessing the health of a bank in terms of financial condition. Capital adequacy is also an important factor for banks that must be met to develop business and accommodate possible risk of getting losses.

Loan to Deposit Ratio (LDR) shows the ratio between the total amount of credit extended by the bank and the funds received by the bank. LDR states how far the bank's ability to pay back the withdrawal of funds made by depositors by relying on the credit provided as a source of liquidity. Size of the bank which is measured as a logarithm of total assets. Furthermore, ROA is return on assets, return on assets shows the percentage of how profitable the company's assets are in generating income.

The sampling method used for this research is purposive sampling. Considerations are taken because this research focuses on certain objectives, namely companies with certain criteria. The sample of this research included companies in the banking sub-sector that are listed on the Indonesia Stock Exchange for 5 (five) years (2017-2021).

The result is Fintech dimension as measured using the number of ATMs and mobile banking users have no significant effect on financial stability in banking companies in Indonesia. The variable Capital Adequacy Ratio which can be used as a reference for information regarding capital adequacy which functions to accommodate the risk of loss that may be faced by banks has a significant influence on financial stability in banking companies in Indonesia. The Loan to Deposit Ratio variable is proven to have a significant influence on financial stability in banking companies in Indonesia. The Bank Size variable as measured by the total assets owned by the bank has no significant effect on the financial stability of banking companies in Indonesia. The variable Return on Assets which is used to make an assessment in utilizing the assets owned by the company to earn profit to obtain maximum profit has a significant influence on financial stability.

KEYWORDS – Financial Stability, Financial technology, ATM, M-Banking, CAR, LDR, Bank Size, RoA

1. INTRODUCTION

Financial Technology has supported financial services in many companies and countries. Financial technology has become popular since the 1990s, with strong global developments in the financial industry [2]. The accelerated growth of technology around the world also has an impact on fintech-based business strategies. Several countries in Southeast Asia, including Indonesia, are potential markets for fintech growth [3]. According to World Health Organization, the rapid changes in the digital world and the COVID-19 pandemic require MSMEs to increase and strengthen their dynamic capability activities to achieve competitive advantage in innovation performance between organizations. Southeast Asia is the second most affected region by the pandemic, with 26% positive cases and 19% mortality rate as of August 2020.

Among the positive impacts on financial institutions and the adoption of fintech by consumers is the growth in the use of digital payment media [4]. Fintech in Indonesia still has many development and improvement opportunities. This can be illustrated by the emergence of the Indonesian Fintech Association (AFI) in 2015 which attracted business actors to provide trusted and reliable partners to build a fintech [4]. Currently, 30% of companies in Indonesia are already using fintech, which has shown significant growth from 7% in 2006 and 2007 to 78% in 2017 with 135 to 140 companies. Fintech profiles in Indonesia per Sector in 2017 are Personal Financial planning 8.15%, crowdfunding 8.15%, lending 17.78%, aggregators 12.59%, payments 42.22%, and others 11.11%, 2017 last accessed on 16 February 2022). With this rapid development, it is estimated that the development of fintech in Indonesia will continue to increase. Organizational agility has been proven to help build competitive advantage in empirically uncertain environments related to dynamic capabilities that support IT and competitive performance [4].

The resulting demand for contactless banking transactions creates opportunities for the sector to grow even faster. Fintech companies offer a variety of innovative and distorted financial services. Fintech service providers use technology to disrupt financial services historically offered by existing banks and simultaneously create new financial services (e.g., peer-to-peer [P2P] lending and mobile phone payments. In doing so, they compete with banks in market segments and businesses but engage with a wider customer base and offer financial services that are easily accessible and low-cost [1].

Theoretically, increased competition could affect the financial stability of a bank. Based on this theoretical perspective, they hypothesized that an increase in competition caused by the rapid expansion of fintech companies could lower the market share and bank leases of relationship loans, which could also encourage banks to make risky investments, thereby reducing the Bank's financial stability. Nonetheless, fintech companies can put indirect pressure on banks to adopt fintech as part of their own services or also involve fintech service providers in their services, which can indeed help banks operate more efficiently, and maintain profitability, and thus remain financially stable. Thus, the influence of fintech companies on the financial stability of previous banks cannot be determine [5].

The novelty of this study is to add the influence of the Capital Adequacy Ratio and Loan to Deposit Ratio (LDR), Bank Size and RoA as additional independent variables, which in previous studies was assessed to have a relationship with the financial stability of banking companies.

2. LITERATURE REVIEW

This study offers to examine the influence of fintech and internal factors, namely Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Bank Size and Return of Assets (RoA) which are considered to influence the Bank's financial stability.

II.I Financial Technology (Fintech)

Fintech is a software-based business and modern technology that provides financial services [3]. The Technology Acceptance Model (TAM) is a model built to analyze and understand the factors that influence the acceptance of the use of computer technology, in this case fintech. Then three indicators are used to measure fintech services, namely Perceived Usefulness, Perceived Ease of Use, and Perceived of Risk.

Fintech is a service provided by banks but a new business model that really helps the community. Fintech provides services in the form of financial transactions without having to have an account like in banking in general. Fintech is still regulated by Bank Indonesia even though it is not a financial institution such as banking, this aims to protect consumers or the public. Bank Indonesia regulates fintech implementing companies to be required to register their companies with Bank Indonesia or the Financial Services Authority [6].

Bank Indonesia explained that fintech itself can replace the role of formal financial institutions such as banks [6]. In terms of payment systems, fintech plays a role in:

- 1) Providing a market for business actors
- 2) Becoming a tool for payment, settlement and clearing
- 3) Assisting the execution of investments more efficiently
- 4) Risk mitigating from conventional payment systems and also help those in need to save, borrow funds, and invest capital.

II.II Capital Adequacy Ratio (CAR)

The Capital Adequacy Ratio (CAR) of commercial banks is a measure of capital adequacy based on the ratio between equity capital and the bank's risk-weighted total assets [7]. The bank's capital adequacy factor can be measured using the capital adequacy ratio or CAR. This ratio can be used as the main indicator used by the Financial Services Authority in assessing the health of a bank. Capital adequacy itself is a fairly important factor for banks that must be met in the context of business development and also accommodate possible risk of loss [8]. Capital adequacy is measured by comparing the element of capital with risk-weighted assets (RWA), whereby the RWA is calculated based on a weighting factor based on the level of risk on balance sheet assets along with their administrative accounts [8].

II.III Loan to Deposit Ratio (LDR)

The Loan to Deposit Ratio (LDR) can show the ratio between the total amount of credit provided by the bank and the funds received by the bank. The LDR can also state how far a bank is able to repay withdrawals made by depositors by relying on credit provided as a source of liquidity. The higher the LDR, the riskier the liquidity condition of the bank, on the contrary, the lower the LDR, the less effective the bank will be in disbursing credit. And if the bank's LDR ratio is at the standard set by Bank Indonesia, then the return obtained by the bank will increase. The standard used by Bank Indonesia for the LDR ratio itself is 80% to 110% [9].

II.IV Bank Size and Return on Assets (RoA)

The control variables follow the banking literature on the determinants of financial stability [1]. Using the size of the bank which is measured as a logarithm of total assets. Furthermore, ROA is return on assets, return on assets shows the percentage of how profitable the company's assets are in generating income.

3. DEVELOPMENT OF HYPOTHESIS

III.I The effect of fintech on bank financial stability

Fintech has a significant influence on bank financial stability [1]. When market-level indicators are ignored, the development of fintech innovation does not have an overall impact on the stability of financial institutions. This can be explained by the positive and negative effects of offsetting fintech innovation [10]. Theoretically, several media argue that an increase in applications can increase or decrease a bank's financial stability. Given this argument, we posit that increased competition in the financial sector due to the rapid growth of fintech companies could reduce banks' profits from lending, thereby adversely affecting their share price. As a result, banks are forced to make risky investments, which will eventually lead to a reduction in their financial stability.

With the increasing presence of fintech in the financial system, banks may be forced to adopt fintech services in their banking business, which can ultimately help them operate efficiently and maintain their customer base and revenue, thereby maintaining their financial stability. Given this background, determining the impact fintech on bank financial stability is not possible without empirical investigations. Therefore, we conducted tests in Indonesia, where the development of fintech companies has been significant from time to time.

Hypothesis 1: There is an influence between fintech and bank financial stability.

III.II The effect of Capital Adequacy Ratio (CAR) on bank financial stability

The Capital Adequacy Ratio affects the financial stability of banks in Vietnam [11]. States that there is a positive influence between CAR on Financial Stability [12]. CAR has a negative effect on financial stability. So, the second hypothesis is formulated as follows [10]:

Hypothesis 2: There is an influence between Capital Adequacy Ratio (CAR) and bank financial stability.

III.III The effect of Loan to Deposit Ratio (LDR) on bank financial stability

According to research conducted found that the loan to deposit ratio has a significant positive effect on the stability of the financial system in Indonesia in the short term [13]. Suspects that an increase in LDR will have a positive impact on credit growth thereby disrupting financial stability [14], whereas LDR will have a negative impact on financial stability [15]. So, the third hypothesis is formulated as follows:

Hypothesis 3: There is an influence between loan to deposit ratio and bank financial stability.

III.IV Effect of Bank Size, ROA on bank financial stability

Large banks show greater stability at a higher level of competition than small banks [16]. According to research results, bank size is another potential driver of bank financial stability so that it has a significant influence on financial stability [1]. Based on the results of processing the data obtained, it turns out that the bank size factor has a (negative) effect on bank financial stability [17]. The relationship between profitability (proxied by the ROA ratio) and bank financial stability is significantly positive. Return on assets is another potential driver of bank financial stability so that it has a significant influence on financial stability [1]. Profitability (ROA) has a positive correlation with the financial stability of commercial banks [7].

Hypothesis 4: There is an influence between bank size and bank financial stability.

Hypothesis 5: There is an influence between ROA and bank financial stability.

4. RESEARCH METHODOLOGY

IV.I Research Design

Descriptive statistics are used to provide a description of research data presented on the basis of maximum, minimum, average and standard deviation values. To meet the requirements of the regression test, several classic assumption tests such as normality, autocorrelation, heteroscedasticity, and multicollinearity tests have been performed. The results show that the data meets the requirements for hypothesis testing. In this study, we will analyze the effect of Fintech, Capital Adequacy Ratio, Loan to Deposit Ratio, Bank Size, and RoA on Financial Stability in Banks operating in Indonesia and those listed on the Indonesia Stock Exchange (IDX) in the 2017-2021 period [13].

IV.II Variable and Measurement

The variable and measurement used in this study intend to determine the relationship between the independent variables and the control variables on the dependent variable, each of which is described as follows:

Variable	Measurement
Financial Stability	$Z - score_{i,t} = [ROA_{i,t} + CAR_{i,t} / SDROA_{i,t}]$
Fintech	Banking product innovation variables, namely: mobile banking, and the number of ATMs.
Capital Adequacy Ratio	$\frac{\text{Own Capital (Core + Supplementary)}}{\text{Risk Weighted Assets}}$
Loan to Deposit Ratio	$\frac{\text{Total Loans}}{\text{Total Deposits}}$
Bank Size	Log(Total Asset)
ROA	Return on Assets

IV.III Sampling Method

The sampling method used for this research is purposive sampling. Considerations are taken because this research focuses on certain objectives, namely companies with certain criteria. The sample of this research includes companies in the banking sub-sector that are listed on the Indonesia Stock Exchange for 5 (five) years (2017-2021). The sample selection criteria are as follows:

- a. Banking company listed on the Indonesia Stock Exchange for the 2017-2021 period.
- b. Financial statements ending December 31 and have been audited.
- c. Using Rupiah as the unit of currency for financial statements.
- d. Have complete data related to variable measurement.

The data collection method used is a secondary data collection method where the data obtained is taken from companies that have published their data. Observational data were taken from 25 companies in the banking sub-sector with an observation period of 5 years so that the number of observations was 125 data.

IV.IV Multiple Regression Models

The Regression Model in this study can be written by referring to Safiullah and Paramati (2022), with the addition of 2 independent variables [1]:

$$FSit = \alpha + \beta_{FinTech} + \beta_{CAR}it + \beta_{LDR}it + \beta_{BS}it + \beta_{RoA} + it\omega$$

Where:

- FS : Financial Stability
- FinTech : Financial Technology
- CAR : Capital Adequacy Ratio
- LDR : Loan to Deposit Ratio
- BS : Bank Size
- RoA : Return on Asset
- it : Refer to Bank and Year
- ω it : Error

5. FINDINGS

V.I Descriptive Statistics

Descriptive statistics describe or describe a data that is seen from the average value (mean), median, maximum value, minimum value and standard deviation for the data used in this study. Table 5.1 shows the results of testing the descriptive analysis data which explains the variables consisting of financial stability as the dependent variable and Financial Technology (Fintech), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Bank Size and RoA as independent variables, based on the results of data processing using EViews, the results of the descriptive analysis are obtained as follows:

Table 5.1 Descriptive Statistics

	FS	RoA	CAR	LDR	BS	ATM	M-Banking
Mean	59.06861	0.005608	0.166610	1.212803	18.54050	6.803759	11.64442
Median	40.94131	0.010188	0.158750	1.184693	18.60460	6.746412	11.15009
Maximum	270.4793	0.031343	0.278276	2.784152	21.26885	11.30299	17.22640
Minimum	-8.088794	-0.180363	0.063498	1.019700	15.32706	2.833213	7.847242
Std. Dev	55.02793	0.024679	0.043565	0.227350	1.409468	2.064662	2.308450
Skewness	1.873430	-4.483181	0.263143	4.263766	0.029855	0.253337	0.998586
Kurtosis	6.606678	30.09077	2.593726	26.62326	2.497751	2.484478	3.196210
Jarque-Bera	140.8703	4241.175	2.302271	3285.298	1.332391	2.721260	20.97496
Probability	0.000000	0.000000	0.316277	0.000000	0.513659	0.256499	0.000028
Sum	7383.576	0.701048	20.82624	151.6004	2317.563	850.4699	1455.552
Sum Sq.Dev	375481.1	0.075522	0.235338	6.409290	246.3386	528.5910	660.7889
Observation	125	125	125	125	125	125	125

Based on the table above, it shows that the total number of observations processed by the authors is 125 consisting of 25 commercial banks and the time of research from the 2017 - 2021 period. The following is description of the descriptive statistics of each research variable:

- ATMs have an average value (mean) of 6.803759 with a median of 6.746412. Meanwhile the maximum value is 11.30299 which is the value of PT Bank Raya Indonesia Tbk in 2020, and the minimum value is 2.833213 which is the ATM value of PT Bank QNB Indonesia in 2019. The standard deviation of ATM is 2.064662 which is smaller than the average value (mean) shows that the distribution of variable data is small or there are no data gaps
- M-Banking has an average value (mean) of 11.64442 with a median of 11.15009. Meanwhile the maximum value is 17.22640 which is the value of PT Bank Rakyat Indonesia Tbk in 2017, and the minimum value is 7.847242 which is the M-Banking value of PT Bank Victoria International in 2017. The standard deviation of M-Banking is 2.308450 which is smaller than the value the average (mean) shows that the distribution of variable data is small or there are no data gaps.
- Capital Adequacy Ratio (CAR) has an average value (mean) of 0.166610 with a median of 0.158750. Meanwhile the maximum value is 0.278276 which is the value of PT Bank Sinarmas Tbk in 2019, and the

minimum value is 0.063498 which is the RoA value of PT Bank KB Bukopin in 2017. The standard deviation of CAR is 0.043565 which is smaller than the average value (mean) shows that the distribution of variable data is small or there are no data gaps.

- Loan to Deposit ratio (LDR) has an average value (mean) of 1.212803 with a median of 1.184693. meanwhile the maximum value is 2.784152 which is the value of PT Bank Pan Indonesia Tbk in 2020, and the minimum value is 1.019700 which is the LDR value of PT Bank Mega in 2017. The standard deviation of the LDR is 0.227350 which is smaller than the average value (mean) shows that the distribution of variable data is small or there are no data gaps.
- Bank Size has an average value (mean) of 18.54050 with a median of 18.60460. Meanwhile the maximum value is 21.26885 which is the value of PT Bank Mandiri Tbk in 2021, and the minimum value is 15.32706 which is the Bank Size value of PT Bank Neo Commerce in 2018 Tbk. The standard deviation of Bank Size is 1.409568, which is smaller than the mean, indicating that the distribution of variable data is small or there are no data gaps.
- Financial performance (RoA) has an average value (mean) of 0.005608 with a median of 0.010188. Meanwhile the maximum value is 0.031343 which is the value of PT Bank Central Asia Tbk in 2018, and the minimum value is -0.1800363 which is the RoA value of PT Bank Raya Indonesia Tbk. The standard deviation of the RoA is 0.024679 which is greater than the average value (mean) indicating that the distribution of variable data is quite large or there are data gaps.

V.II Panel Data Regression Analysis

Panel data regression analysis in this study aims to find the relationship between the independent variable and the dependent variable through the influence of Financial Technology (Fintech), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Bank Size, RoA. The model used in this study This is a random effect model, this model was selected after testing the selection of the panel data regression model, namely:

➤ Chow Test

Chow test is conducted to determine the best model between Common Effects Model and Fixed Effects Model. The following are the test results from the Chow Test:

Table 5.2 Chow Test

Chow Test					
Effects Test	Model	Prob.	Hypothesis	Conclusion	
Cross-Section Chi-Square	Model 1 (Financial Stability)	0.0000	Ha Accepted	Fixed Effects Model	

The results show that the value of Prob. Cross-Section Chi-Square model 1 of $0.0000 < 0.05$, Ha Accepted. It can be concluded that the best model chosen is the Fixed Effects Model.

➤ Hausman Test

Hausman test is carried out to determine the best model between the Fixed Effects Model and the Random Effects Model. The following are the test results from the Hausman Test:

Table 5.3 Hausman Test

Hausman Test					
Effects Test	Model	Prob.	Hypothesis	Conclusion	
Cross-Section Random	Model 1 (Financial Stability)	0.6917	Ha Rejected	Random Effects Model	

The results show that the value of Prob. Cross-Section Random model 1 of $0.6917 > 0.05$, Ha Rejected. It can be concluded that the best model chosen is the Random Effects Model.

➤ LM Test

The LM Test was conducted to determine the best model between the Common Effects Model and the Random Effects Model. The following are the test results from the LM Test:

Table 5.4 LM Test

LM Test					
Effects Test		Model	Prob.	Hypothesis	Conclusion
Cross-Section One-Sided	Model 1 (Financial Stability)	0.0000	Ha Accepted	Random Effects Model	

The results show that the value of Prob. Cross-Section One-Sided model 1 of $0.0000 < 0.05$, Ha Accepted. It can be concluded that the best model chosen is the Random Effects Model.

Based on the variables used and the random effect model selected in this study, the multiple regression equation model is obtained as follows:

$$FSit = 76. + 0.666449ATMit - 1.799284MBit + 449.0393CARit - 5.462823LDRit - 3.779331BSit + 212.3415RoAit$$

V.III Partial Test (T-Test)

Partial test (t-test) is used to determine the magnitude of the influence of one independent variable individually on the dependent variable. The independent variables in this study are Financial Technology (Fintech), Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Bank Size, and RoA, while the dependent variable in this study is financial stability. H0 is accepted and H1,2,3,4,5 is rejected if t count and Sig value > 0.05 it can be concluded that an effect is not significant meaning that there is no partial effect between the independent variable on the dependent variable otherwise if H0 is rejected and H1 is accepted if t count and Sig value < 0.05 this result shows that there is a significant influence of the dependent variable. Partial test results can be seen in table 5.2.

Table 5.5 T-Test

Model 1 Random Effects Model Dependent Variable: Financial Stability				
Variables	Coefficient	Prob.	Hypothesis	Conclusion
C	76.17661	0.4666		
Return on Assets	212.3415	0.0000	Ha Accepted	Significant effect
Capital Adequacy Ratio	449.0393	0.0000	Ha Accepted	Significant effect
Loan to Deposit Ratio	-5.462823	0.0493	Ha Accepted	Significant effect
Bank Size	-3.779331	0.4565	Ha Rejected	No significant effect
ATM	0.666449	0.8949	Ha Rejected	No significant effect
Mobile Banking	-1.799284	0.2781	Ha Rejected	No significant effect

- Return on Assets has a significant effect on Financial Stability. Variable Return on Assets has a prob value. of $0.0000 < 0.05$, then the Return on Assets has a significant effect on Financial Stability. Ha accepted.
- Capital Adequacy Ratio has a significant effect on Financial Stability. Variable Capital Adequacy Ratio has a prob value. of $0.0000 < 0.05$, then the Capital Adequacy Ratio has a significant effect on Financial Stability. Ha accepted.
- The Loan to Deposit Ratio has a significant effect on the Financial Stability Variable Loan to Deposit Ratio has a prob value. of $0.0000 < 0.05$, then the Loan to Deposit Ratio has a significant effect on Financial Stability. Ha accepted.
- Bank Size has a significant effect on Financial Stability Variable Bank Size has a prob value. of $0.4565 > 0.05$, then Bank Size has no effect on Financial Stability. Ha rejected.
- ATM has a significant effect on the Financial Stability Variable ATM has a prob value. of $0.8949 > 0.05$, then ATM has no effect on Financial Stability. Ha rejected.
- Mobile Banking has a significant effect on the Financial Stability Variable Mobile Banking has a prob value. of $0.2781 > 0.05$, then Mobile Banking has no effect on Financial Stability. Ha rejected.

6. CONCLUSION

Based on the results of the research conducted, the following conclusions were obtained:

1. Fintech variables as measured using the number of ATMs and mobile banking users have no significant effect on financial stability in banking companies in Indonesia.
2. The variable Capital Adequacy Ratio which can be used as a reference for information regarding capital adequacy which functions to accommodate the risk of loss that may be faced by banks has a significant influence on financial stability in banking companies in Indonesia.
3. The Loan to Deposit Ratio variable, which is often used by investors in observing the condition of a bank, whether it is feasible to operate, and what its financial condition is, whether the receipt of funds increases, or

decreases is proven to have a significant influence on financial stability in banking companies in Indonesia.

4. The Bank Size variable as measured by the total assets owned by the bank has no significant effect on the financial stability of banking companies in Indonesia.

5. The variable Return on Assets which is used to make an assessment in utilizing the assets owned by the company to earn profit to obtain maximum profit has a significant influence on financial stability.

REFERENCES

1. Safiullah, M. and Paramati, S. R. (2022). The impact of FinTech firms on bank financial stability. *Electronic Commerce Research*. <https://doi.org/10.1007/s10660-022-09595-z>
2. Khuong, N. V., Phuong, N. T. T., Liem, N. T., Thuy, C. T. M., and Son, T. H. (2022). Factors Affecting the Intention to Use Financial Technology among Vietnamese Youth: Research in the Time of COVID-19 and Beyond. *Economies*, 10(3). <https://doi.org/10.3390/economies10030057>
3. Misni Mulasiwi, C. and Odia Julialevi, K. *Motif Dan Kepuasan Penggunaan* (Vol. 27, Issue 1).
4. Herdinata, Christian, and Fransisca D. Pranatasari. 2022. Impact of COVID-19 on Organizational Support in Financial Technology. *Economies* 10: 183. <https://doi.org/10.3390/economies10080183>
5. Safullah, M. (2021). Financial stability efficiency of Islamic and conventional banks. *Pacific-Basin Finance Journal*, 68, 101587.
6. Budi Rahardjo, et al. (2019) Pengaruh Financial Technology (Fintech) Terhadap Perkembangan Umkm Di Kota Magelang.
7. Sang, N. M. (2021). Capital adequacy ratio and a bank's financial stability in Vietnam. *Banks and Bank Systems*, 16(4), 61–71. [https://doi.org/10.21511/bbs.16\(4\).2021.06](https://doi.org/10.21511/bbs.16(4).2021.06)
8. Tedi Rustendi, (2019). Pengaruh Kecukupan Modal terhadap Stabilitas Keuangan Bank.
9. Ayem, S., & Wahyuni, S. (2017). Pengaruh Loan To Deposit Ratio, Capital Adequacy Ratio, Return On Asset Dannon Perfoming Loan Terhadap Return Saham. *Jurnal Akuntansi*, 5(1), 71. <https://doi.org/10.24964/ja.v5i1.258>
10. Stankevičienė, J., & Kabulova, J. (2022). Financial technology impact on stability of financial institutions. *Technological and Economic Development of Economy*, 28(4), 1089–1114. <https://doi.org/10.3846/tede.2022.17093>
11. Sang, N. M. (2021). Capital adequacy ratio and a bank's financial stability in Vietnam. *Banks and Bank Systems*, 16(4), 61–71. [https://doi.org/10.21511/bbs.16\(4\).2021](https://doi.org/10.21511/bbs.16(4).2021)
12. Violeta Ketaren, E., & Mulyo Haryanto, A. Pengaruh Kinerja Keuangan Terhadap Stabilitas Perbankan Yang Terdaftar Di Bursa Efek Indonesia (Studi Kasus Pada Bank Yang Terdaftar Di BEI Tahun 2014-2018). *Diponegoro Journal of Management*, 9(2), 1–13. <http://ejournal-s1.undip.ac.id/index.php/dbr>
13. Heniwati, E. (2019a). Studi Empiris Kekuatan Stabilitas Keuangan Perbankan Syariah di Indonesia. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, 8(2), 147. <https://doi.org/10.26418/jebik.v8i2.28015>
14. Lorenčić, Eva & Festić, Mejra. (2021). Macroprudential Policy Versus Other Economic Policies. *Croatian Economic Survey*. 23. 33-66. 10.15179/ces.23.2.2.
15. Lorenčić, E., & Festić, M. (2021). The Impact of Seven Macroprudential Policy Instruments on Financial Stability in Six Euro Area Economies. In *Review of Economic Perspectives* (Vol. 21, Issue 3, pp. 259–290). Sciendo. <https://doi.org/10.2478/revecp-2021-0012>
16. Srivastava, B., Singh, S. and Jain, S. (2022), "Bank competition, risk-taking and financial stability: insights from an emerging economy", *Competitiveness Review*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/CR-10-2021-0143>
17. Sutandijo, S., & Sugiyarti, L. . (2022). Ukuran Bank, Manajemen Laba, Dan Stabilitas Keuangan Bank. *Scientific Journal Of Reflection: Economic, Accounting, Management And Business*, 5(2), 310-320. <https://doi.org/10.37481/sjr.v5i2.466>