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Analyzes the Impact of Monetary Variables and Fintech on Financial System Stability in Indonesia: The Error Correction Model

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ABSTRACT

Purpose — The objective of this study is to examine how monetary variables and financial technology affect the stability of Indonesia's financial system.

Method — The study analyzed data from 2018.1 to 2022.12 using the Error Correction Model (ECM) regression analysis method, drawing on data from the Indonesian Banking Statistics, Payment System Statistics and Bank Indonesia (bi.go.id)

Result — The results of the study showed that inflation and the money supply had a positive and significant impact on financial system stability in the long run, while having a positive but insignificant impact in the short run. Interest rates had a positive but insignificant impact on financial system stability, both in the short and long term. Exchange rates had a negative and insignificant impact on Financial System Stability in both short and long terms. E-money had a negative and significant impact in the long run, while having a positive but insignificant impact in the short term on financial system stability. TKB-Fintech had a negative and insignificant impact in the long run, while having a positive and significant impact in the short term on financial system stability. TWP-Fintech had a positive but insignificant impact on Financial System Stability in both the long and short term. Lastly, P2P Lending had a positive and significant impact on both the long and short term financial system stability. This study provides a significant contribution to the literature on the influence of monetary variables and fintech on financial system stability. The study also provides policy implications for regulators and fintech industry players.

Novelty — To assess financial system stability, the study considered several variables, including inflation, money supply, interest rates, exchange rates, e-money, TKB-Fintech, TWP-Fintech, and P2P Lending.

Keywords: Financial System Stability, monetary variables, financial technology, P2P Lending

INTRODUCTION

The financial system plays a very important role in a country's economy as it is responsible for allocating funds from firms that have a surplus to firms that have a deficit, setting prices, and managing risks properly and supporting economic growth. In other words, if the financial system is unstable and not working properly, financial transactions will not run smoothly. To understand the stability of the financial system, we must do and study what can cause instability in finance. Financial system instability can be caused by many factors and fluctuations, which usually consist of market disruptions caused by structural and behavioral elements. This can be attributed to market failure itself from both external (international) and internal (domestic). (Bank Indonesia, 2020).

The increasing influence of international sources (financial globalization) which is also supported by technological developments has resulted in an increasingly integrated financial system without time and regional boundaries. In addition, the financial system is increasingly integrated along with the emergence of new innovations for financial products that are more complex, dynamic and diverse. These developments can cause the sources of triggering financial system instability to increase and become more diverse, which in turn can make overcoming such instability more difficult. (Financial Services Authority, 2017).

Indonesia experienced valuable lessons during the crisis in 1998, when the costs associated with the crisis were very high. This was indicated by the financial system stability index in the danger zone. Restoring public confidence in the financial system also took a long time. A stable financial system is essential for building and maintaining a sustainable economy, as the 1998 Crisis showed. An unstable financial system is often subject to various disruptions that disrupt the business cycle. Therefore, it is crucial to prevent or

mitigate the risks of various possible financial system instabilities, especially to prevent larger losses. In theory, capital flow, exchange rate, BI rate, inflation, and bad debt ratio are some of the components that affect financial system stability. (Financial Services Authority, 2017).

Interest rates, E-money, inflation, Money Supply, and foreign exchange rates are some of the important monetary indicators that affect financial system stability. Financial stability can be achieved by controlling inflation and interest rates. Indonesia's inflation and interest rates tend to move volatile. BI said annual inflation in 2018 reached 3.13%. Bank Indonesia stated that the unsubsidized fuel oil (BBM) price hike was the main factor causing inflation, with the BBM hike's share of 0.26% to last year's inflation, resulting in an interest rate hike in 2018 of 6.00 percent. The bank stated that this increase enhances efforts to bring down the current account deficit to a safe limit and increase the attractiveness of domestic financial assets in anticipation of rising global interest rates in the coming years. (Bank Indonesia, 2020)

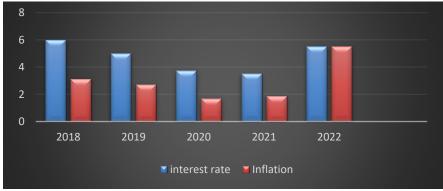


Chart 1. Indonesian interest Rate and Inflation Data 2018 -2022

Source: Bank Indonesia (2023)

According to data from Bank Indonesia (BI), the number of electronic money in circulation has reached 772.57 million units in November 2022, an increase of 34.28% from the previous period. In addition, the Central Statistics Agency (BPS) recorded a money supply (M2) of 8,271,838.10 billion rupiah in 2023. Data from Bank Indonesia also shows that the value of e-money transactions and the growth of the money supply (M2) in Indonesia have a positive correlation that supports the country's economy. An increase in the money supply and e-Money can have a positive impact on the stability of Indonesia's financial system. Non-cash payment systems, such as e-Money, can improve transaction efficiency and support overall economic growth. However, keep in mind that the use of e-Money also requires close supervision to ensure transaction security and consumer protection.

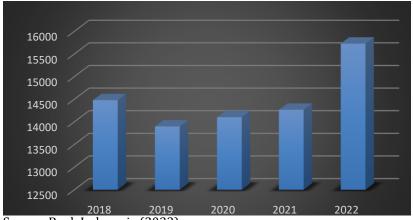


Chart 2. Money Supply and E-moneyData 2018 -2022

Source: Bank Indonesia (2023)

Monetary variables that can affect Indonesia's financial stability system are foreign exchange rates, according to Bank Indonesia, on November 7, 2023, the middle rate of the United States Dollar (USD) is Rp15,550.00 In addition, buying and selling rates also affect foreign exchange transactions. Changes in currency exchange rates can affect purchasing power, inflation, and capital flows, which in turn can affect the stability of Indonesia's financial system. Therefore, appropriate supervision and policies are needed to maintain financial system stability in the face of fluctuations in foreign exchange rates.

Chart 3. Foreign Exchange Rate Data 2018 – 2022



Source: Bank Indonesia (2023)

In addition, an indicator that can affect financial system stability is Fintech or Financial Technology. Fintech is an innovation in the field of financial services with a touch of modern technology that provides convenience for the community by providing easier and more efficient access. The development of fintech in Indonesia continues to increase and contribute to economic growth significantly and positively. However, previous research related to the influence of fintech on financial system stability is still very rare and is still limited to literature studies and not yet empirical research. Therefore, this study aims to determine the effect of fintech P2P lending, fintech emoney payments, money supply inflation, interest rates, and rupiah exchange rates, TKB_Lending, TWP_Lending on financial system stability in Indonesia. This research is important to provide a better understanding of the influence of fintech and monetary variables on financial system stability in Indonesia and can provide input for government policies and financial institutions in regulating the development of fintech in Indonesia.

200000 150000 100000 155902,5542 50000 81497,51083 22666,0695 13609,3568719528,2848 0 2018 2019 2020 2021 2022

Chart 4. Indonesian P2P Lending Data 2018 -2022

Source: OJK (2023)

Indonesia's financial system has been stable and resilient to severe shocks, according to the Financial System Stability Assessment by the International Monetary Fund. However, with the rise of financial technology (FinTech) companies, there is a need to investigate the impact of FinTech and monetary variables on financial system stability in Indonesia. Several studies have been conducted on this topic, such as those examining the impact of fintech loan expansion on financial system stability in Indonesia.

Financial stability is very important in the economy because it will ensure smooth financial transactions in the economy, so that economic production activities can run effectively and ultimately encourage economic growth. Financial stability is defined as a condition that allows the national financial system to operate effectively and efficiently and is resistant to internal and external vulnerabilities, so that the allocation of financial resources can contribute to economic growth and stability (Bank Indonesia, n.d.). Among the many challenges faced by the monetary sector in maintaining the stability of the Indonesian financial system, the development of research on the impact of monetary policy on financial system stability has been widely conducted. Because it has an important meaning in the world of economics and politics. And in the financial sector, financial system stability is currently a top priority for countries in the context of a complicated global economy.

Inflation is one of many variables that affect financial system stability. According to research (Salamat, 2021), and (Dhal et al., 2011), inflation affects India, Jordan, and other European countries. This means that high inflation will lead to an unstable financial system, and conversely, low inflation will ensure a stable financial system. This also happens in Indonesia where Inflation in the long run according to (Wiku, 2021; Syaputra & Adry, 2019; Rahma, 2018), the higher the inflation rate, the higher the benchmark interest rate so that it will attract the money supply in the community to banks. Thus, people become less interested in making loans. While in the short term in the study (Novella & Syofyan, 2019) said that changes in inflation have no effect on changes in financial system stability. Although inflation can provide a positive response, no matter how high inflation is, it still cannot contribute to financial system stability. According to research conducted by (Bandoi et al. 2009), low and stable inflation creates good economic conditions to overcome the emergence of conflicts or compromises between price stability and financial stability. Financial stability is when the allocation of savings to investment is guaranteed to take place automatically and efficiently without interruption. According to research (Alshubiri, 2017), the stability of the Omani financial system is not affected by inflation.

In addition to inflation variables, monetary sector variables such as interest rates, BI rates have a negative impact on financial system stability in the long term and short term (Wiku & Ayuningtyas, 2021) these findings According to the assumption (Fatoni & Sidiq, 2019) that there is a negative relationship between interest rates and financial system stability. In addition, factors within the monetary sector, such as the exchange rate, affect financial system stability. Although it does not have a short-term impact, there is evidence that the exchange rate affects the stability of Indonesia's financial system in the long run. (Evi et al., 2019). This shows the research hypothesis that the influence of the exchange rate will make the financial system more unstable. Exchange rates emphasize the relationship between financial asset prices and economic activity. The exchange rate increases the stability of the financial system. In addition, the health of the banking system also seems to affect financial stability. expressed in metrics such as capital adequacy ratio, debt-to-deposit ratio (LDR), non-performing loans (NPL), and debt-to-deposit ratio (Sysoyeva, 2020; Candra et al., 2019; Dewi, 2017). Haryati (2009) The exchange rate has a positive and significant effect on credit extended due to different economic structures that affect credit growth in each bank group. Research shows that the exchange rate has a positive and significant influence on total bank credit in Indonesia (Bahri, 2013).

Fintech developments in payments will make economic transactions more efficient so that it will increase production in the economy. But in other payment fintech innovations that will ease payment transactions, encouraging an increase in mass consumption that occurs when the increase does not coincide with an increase in output will increase inflation in the economy. This is the inflation metric At some point, this will undermine the stability of the financial system. Start by defining fintech lending. Loans via fintech) on the one hand will make it easier for businesses to get capital sources, but there are also fintech lenders whose ease of use is for data source loans. Potential for defaults that can ultimately have a negative impact on the stability of the monetary system. (Saraswati et al. 2021) Research related to the effect of fintech on financial system stability has been conducted by Vučinić, (2020) It is stated that fintech can create space for financial services to develop, but also pose risks to the financial system. Likewise with research (Gray & Leibrock, 2017) Fintech is said to have the potential to pose systemic risks to the financial system that have an impact on financial system stability. Block chain is a more specialized type of fintech that focuses on leasing data for the purposes of hacking, theft, and breaches, and this will pose risks that could potentially lead to the collapse of the financial system. (Jameaba, 2020) In terms of fintech lending, research (Gates & Steinberger, 2011) shows that China's stable financial system is influenced by fintech P2P lending. The growth of P2P financing will have an impact on residential property growth, potentially increasing the risk of rising bay rental rates, which in turn has an adverse impact on financial system stability.



Chart 5. Indonesian TKB & TWP Fintech Data 2018 -2022

Source: OJK (2023)

These studies suggest that FinTech may have an impact on financial system stability in Indonesia, and further research is needed to fully understand this impact. In addition, it is important to consider the role of monetary variables, such as interest rates and inflation, in relation to FinTech and financial system stability. Overall, this study aims to provide insight into the potential risks and benefits of FinTech and monetary variables to Indonesia's financial system stability.

METHOD

To analyze the effect of fintech and monetary variables on financial system stability in Indonesia, this study uses an explanatory and descriptive approach. This study uses secondary data. The dependent variable is the stability of the Indonesian financial system proxied by Z-score data. While the independent variables are data on money supply, interest rates, exchange rates, e-money, TKB-Fintech, TWP-Fintech, and P2P Lending. obtained from Indonesian Banking Statistics (SPI) Indonesia and Bank Indonesia (bi.go.id) from 2018 to 2022 and available in monthly form and then taken from January 2018 to December 2022.

In this study, Error Correction Model (ECM) analysis technique is used to identify the long-run and short-run impact of monetary policy on financial system stability in Indonesia. The purpose of this test is to find whether there is a long-run and short-run equilibrium relationship that occurs due to cointegration of the research variables. Stationarity test (unit root test), cointegration test, long-run and short-run estimation are some stages of Error Correction Model (ECM) estimation (Basuki, 2015). This research uses the Eviews-12 program. The model parameters used in this study are as follows:

Model 1 (long-term):

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SKKIt= \beta0+ \beta1SBIt+ \beta2EMt+ \beta3INFt + \beta4JUBt + \beta5KVAt \beta6JUBt + \beta7P2Pt + \beta8TKBt \beta9TWPt \beta10ECTt + et.....(1)
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Model 2 (short term):

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DSKKIt= \beta0+ \beta1DSBIt+ \beta2DEMt+ \beta3DINFt+ \beta4DJUBt+ \beta5DKVAt \beta6DJUBt+ \beta7DP2Pt+ \beta8DTKBt \beta9DTWPt \beta10DECTt+ et.....(2)
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Keterangan:

SKKI : Indonesian Financial Stability System (Billion Rupiah)

SBI : Indonesia Interest Rate (%)

EM : E-Money (Ribuan)
INF : Inflation (%)

JUB : Money Supply (Thousands)

KVA : Foreign Exchange Rate (Against Dollar)

P2P : P2P Lending (Thousands)

TKB : TKB_Fintech (%)
TWP : TWP_Fintech (%)
ECT : Error Corection Term

β0 : Konstanta β1, β2, β3, β4 : Koefisien Regesi

et : Variable interference or error term t : Time period 2018M1 – 2022M12

Hypotheses development

Hipotesis merupakan jawaban sementara atau dugaan terhadap rumusan masalah penelitian, sesuai dengan rumusan masalah, hipotesis dalam penelitian ini dirumuskan sebagai berikut : "Adakah pengaruh variabel moneter dan Fintech terhadap stabilitas sistem keuangan Indonesia?"

H₀₁: Tidak terdapat pengaruh signifikan variabel suku Bunga terhadap stabilitas sistem keuangan Indonesia.

 H_{a1} : Terdapat pengaruh signifikan variabel suku Bunga terhadap stabilitas sistem keuangan Indonesia.

 H_{02} : Tidak terdapat pengaruh signifikan variabel E-money terhadap stabilitas sistem keuangan Indonesia.

H_{a2}: Terdapat pengaruh signifikan variabel E-money terhadap stabilitas sistem keuangan Indonesia.

- H₀₃: Tidak terdapat pengaruh signifikan variabel inflasi terhadap stabilitas sistem keuangan Indonesia.
- Ha3: Terdapat pengaruh signifikan variabel inflasi terhadap stabilitas sistem keuangan Indonesia.
- H_{04} : Tidak terdapat pengaruh signifikan variabel jumlah uang beredar terhadap stabilitas sistem keuangan Indonesia.
- H_{a4}: Terdapat pengaruh signifikan variabel jumlah uang beredar terhadap stabilitas sistem keuangan Indonesia.
- H_{05} : Tidak terdapat pengaruh signifikan variabel kurs valuta asing terhadap stabilitas sistem keuangan Indonesia.
- H_{a5} : Terdapat pengaruh signifikan variabel kurs valuta asing terhadap stabilitas sistem keuangan Indonesia.
- H_{06} : Tidak terdapat pengaruh signifikan variabel P2P Lending terhadap stabilitas sistem keuangan Indonesia.
- H_{a6} : Terdapat pengaruh signifikan variabel P2P Lending terhadap stabilitas sistem keuangan Indonesia.
- H_{07} : Tidak terdapat pengaruh signifikan variabel TKB-Fintech terhadap stabilitas sistem keuangan Indonesia.
- H_{a7} : Terdapat pengaruh signifikan variabel TKB-Fintech terhadap stabilitas sistem keuangan Indonesia
- H₀₇: Tidak terdapat pengaruh signifikan variabel TWP-Fintech terhadap stabilitas sistem keuangan Indonesia.
- H_{a7}: Terdapat pengaruh signifikan variabel TWP-Fintech terhadap stabilitas sistem keuangan Indonesia.

RESULT AND DISCUSSION

Unit Root Test

The first stage to be performed is the unit root test or stationary test. All variables in the research model, which are based on the Augmented Dickey-Fuller (ADF) statistical test, are tested in stages for data stationarity. Table 1 shows the results of the data stationarity test for the variables used to evaluate the effect of the independent variables on the dependent variable. The data stationarity test at the first level of differentiation shows that the variables are all stationary. If the ADF count value is greater than its table alpha value at 5% alpha value, the estimated variables can proceed with cointegration testing.

Table 1. Unit Root Test Results

Variables	Probability	Description	
SSK	0.0000	Stationary	
Interest Rate	0.0000	Stationary	
E-money	0.0049	Stationary	
Inflation	0.0000	Stationary	
JUB	0.0000	Stationary	
Rates	0.0000	Stationary	
P2P_Lending	0.0006	Stationary	
TKB_Fintech	0.0000	Stationary	
TWP_Fintech	0.0001	Stationary	

Source: Dilah data, 2023

Cointegrity Test

After knowing that the data is stationary, the next step is to find out whether the data is cointegrated. The cointegration test is conducted to provide an initial indication that the model used has a long-term relationship (cointegration relation). (Basuki, 2015). To find out whether the data is cointegrated or not is done by forming residuals that must be stationary at the level level with the name Error Corection Term (ECt). The residual results are stationary at the level data shown in table 2, with a significant probability value at 5% alpha, which is 0.0359. This indicates that all independent variables are related and cointegrated to Indonesia's Financial System Stability (SSK).

Table.2 Cointegration Test Results

Variables	Probability	Description
ECT	0.0359	Stationary

Source: Data processed 2023

Long-Term Estimation Results

From the long-term estimation results below, it can be interpreted that the regression results for Indonesia's financial system stability (SSK) are as follows: Interest rate and TWB- Fintech variables have a positive and insignificant effect, while the E-money variable has a negative and significant effect. Furthermore, inflation, money supply and P2P Lending variables have a significant positive effect, while the exchange rate variable, and TKB_Fintech have a negative and insignificant effect. Furthermore, in the F significance test, it is known that the probability value of F statistics is 0.000000 less than $\alpha = 5\%$, which means that together the independent variables have a significant influence on the variable Stability of the Indonesian financial system. The R-Square value is 0.717278. This means that the variables of interest rates, E-money, Inflation, money supply, foreign exchange rates, P2P_Lending, TKB_Fintech, and TWP_Fintech are able to explain the SSK variable by 71.72% and the remaining 28.28% is explained by other variables not included in the research model.

Table 3. Long-Term Estimation Results

Variables	Coefficient	Probability
С	3.204840	0.0567
SBI	0.122131	0.3767
EM	-1.90E-07	0.0020
INF	0.660140	0.0000
JUB	9.91E-07	0.0000
KVA	-0.000191	0.3244
P2P	145E-05	0.0112
TKB	-0.035144	0.7465
TWP	0.214696	0.1945
R-squared	0.717278	
Prob(F-statistic)	0.00000	

Source: Data processed, (2023)

Short-term Estimation Results

Table 4. Short-Term Estimation Results Using ECM

Variables	Coefficient	Probability
С	-0.018237	0.7427
D(SBI)	0.011637	0.9616
D(EM)	5.49E-09	0.9457

D(INF)	0.189621	0.2169	
D(JUB)	7.80E-07	0.1326	
D(KVA)	-8.61E-05	0.5037	
D(P2P)	1.18E-05	0.0025	
D(TKB)	0.008671	0.8985	
D(TWP)	0.102657	03591	
ECT(-1)	-0.211973	0.0264	
R-squared	0.497095		
Prob(F-statistic)	0.000041		
-			

Source: Data processed, 2023

The estimation results shown in the table above show that the Error Corection Term (ECT) coefficient value in the model is significant and negative for the estimation of the stability of the Indonesian financial system. The ECM estimation results show that, both in the short term and long term, the variables discussed in this study have a significant impact on the Indonesian financial system. The SSK variable in the short term has an R-squared value of 0.497095, or 49.7%. which is able to explain the SSK variable in the short term, the remaining 50.3% is explained by other variables not included in the research model. The estimation results above show that changes in interest rates, E-money, inflation, money supply, TKB_Lending and TWP_Lending have a positive and insignificant impact on the stability of the Indonesian financial system in the short term. While the exchange rate variable has a negative and insignificant impact on SSK, while P2P_Lending is also positive and significant on SSK. Finally, the ECT coefficient is generated from the short-term equation using the ECM method. According to Widarjono (2007), this coefficient measures the regressive response for each period that deviates from equilibrium. How fast it takes to get the equilibrium value is explained by the ECT imbalance in the form of the absolute value of the ECT coefficient of 0.211973, indicating that the difference between the stability of the Indonesian financial system and its equilibrium value is 0.211973 which will be adjusted within 1 year.

Discussion

Based on the test results conducted by the author, four of the Eight independent variables studied have a significant effect on the stability of the Indonesian financial system in the long-term. The first variable is Emoney which has a negative and significant effect on the stability of the Indonesian financial system (SSKI). This means that every increase in E-money by one unit results in a decrease in the number of Indonesian financial system stability by 1.90 units.

E-money has a negative and significant impact on the stability of Indonesia's financial system for several reasons, including: E-money may increase credit risk. When people use e-money, they tend to spend more money than when they use cash. This is because e-money is easier to use and can be used to make online transactions. Increased spending can increase credit risk, as people may not be able to repay their loans. E-money can then increase liquidity risk. E-money is stored in electronic form, which can make it more difficult to liquidate. If there is a financial crisis, people may withdraw their money from e-money, which can make it difficult for financial institutions to meet demand. And lastly, e-money may increase the risk of volatility. E-money can appreciate or depreciate quickly, which can make the financial system more vulnerable to volatility.

The second variable is inflation which has a positive and significant effect on the stability of the Indonesian financial system (SSKI). This means that any increase in inflation by 1%, causes an increase in the financial system stability rate of 0.66%, This means that high inflation will cause the financial system to be unstable, and conversely, low inflation will ensure a stable financial system. High inflation can cause instability in the financial system. Banks and financial institutions may be exposed to higher risks due to fluctuations in prices and interest rates. Borrowers can also suffer as inflation eats away at the true value of their loan.

In Indonesia or any other country, financial system stability is essential to create a healthy and sustainable economic climate. To address the negative impact of inflation on financial system stability, the Indonesian government usually takes measures to control inflation through appropriate monetary and fiscal policies. As the central bank, Bank Indonesia (BI) is responsible for maintaining price stability and keeping inflation within target limits. Other measures include price controls, production cost controls and a balanced

economic recovery. Keep in mind that economic conditions and global factors can affect inflation and financial system stability, so effective policy coordination is needed to achieve long-term economic stability.

The third variable is the money supply which has a positive and significant impact on the stability of the Indonesian financial system. This means that every increase in money supply by one unit, causes an increase in SSK by 9.91 units. There are driving factors that cause the money supply to affect the stability of the Indonesian financial system including, adequate money supply can support economic growth. High economic growth can increase people's income and consumption, which can increase demand for credit and investment. This can increase the stability of the financial system, as financial institutions have more opportunities to generate profits. Then an adequate money supply can reduce the risk of bad debts. When the money supply is adequate, it is easier for people to get loans. This can increase people's access to credit, which can reduce the risk of poverty and inequality. And an adequate money supply can improve the efficiency of the financial system. When money supply is adequate, it is easier for financial institutions to meet the demand for credit and investment. This can improve the efficiency of the financial system, as financial institutions can focus on their core activities.

The last variable is P2P_Lending which has a positive and significant impact on the stability of the Indonesian financial system. This means that every increase in P2P_Lending by 1 unit, the stability of the Indonesian financial system will increase by 145 units. P2P lending has a positive and significant effect on the stability of the Indonesian financial system for several reasons, among others: P2P lending can increase people's access to credit. P2P lending can provide access to credit to people who do not have access to traditional financial institutions, such as banks. This can help to reduce poverty and inequality. P2P lending can improve the efficiency of the financial system. P2P lending can bring borrowers and lenders together directly, without going through traditional financial institutions. This can improve the efficiency of the financial system, as traditional financial institutions do not need to be involved in the lending process. P2P lending can reduce the risk of bad debts. P2P lending uses technology to assess credit risk, which can help to reduce the risk of bad debts.

From the short-term estimation results above the regression results for Indonesia's financial system stability, only the P2P_Lending variable has a significant effect in the short term, while the other variables have no significant effect. Financial system stability in the short term is influenced only by SSK fluctuations one year in the past.

CONCLUSION

In this study, the Error Correction Model (ECM) method is basically used to analyze economic phenomena in the long run and short run. ECM prerequisites include stationarity test and degree of integration, cointegration test, and long-run and short-run equations. Based on this study, there are several conclusions that can be drawn. First, money supply has a positive and significant impact on the stability of the Indonesian financial system. Second, interest rates, E-money, inflation, money supply, foreign exchange rates, P2P Lending, TKB_Fintech, and TWP_Fintech together have a significant influence on the stability of the Indonesian financial system. Third, interest rates, E-money, inflation, money supply, TKB_Lending, and TWP_Lending have a positive but insignificant impact on the stability of the Indonesian financial system in the short term.

The limitations of this study are policy changes where government fluctuations or regulations regarding the financial sector can affect the results of research and analysis of financial systems. External factors, such as global economic conditions, can affect the SSKI and result in changes that are difficult to predict. Prediction models must be complex to develop the right model to predict a good financial stability system, requiring sophisticated and updated analysis techniques. Financial system stability must be faced carefully to overcome these limitations to provide a more comprehensive understanding. For further research, it is expected to develop more and analyze other factors that can affect financial system stability in Indonesia and in other countries.

REFERENCES

- 1. Aam Slamet Rusydiana, Lina Nugraha Rani, & Fatin Fadhilah Hasib. (2019). MANAKAH INDIKATOR TERPENTING STABILITAS SISTEM KEUANGAN? PERSPEKTIF MAKROPRUDENSIAL. Article in Jurnal Ekonomi dan Pembangunan · October 2019 DOI: 10.14203/JEP.27.1.2019.25-42
- 2. Awanti, E. (2017). Analisis Pengaruh Inklusi Keuangan Terhadap Stabilitas Sistem Keuangan Di Negara Berkembang Kawasan Asia Tenggara. Jurnal Ilmu Ekonomi Terapan, 2(2). https://doi.org/http://dx.doi.org/10.20473/jiet.v2i2.6080

- 3. Ahmad Fatoni, & Sahabudin Sidiq. (2019). ANALISIS PERBANDINGAN STABILITAS SISTEM PERBANKAN SYARIAH DAN KONVENSIONAL DI INDONESIA. Ekspansi: Jurnal Ekonomi, Keuangan, Perbankan dan Akuntansi Vol. 11, No. 2 (November 2019), Hal. 179 198
- 4. Azizoma, R., & Urwatun U. 2023. "Pengaruh Permodalan Rentabilitas Dan Likuiditas Terhadap Kinerja Keuangan Pada Bank Panin Dubai Syariah Periode 2018-2020." Al-Qashdu: Jurnal Ekonomi Dan Keuangan Syariah 3 (1): 1–18.
- 5. Bahri, S. (2013). Analisis Pengaruh Faktor-faktor Variabel Moneter Tehadap Total Kredit Perbankan di Indonesia. Fakutas ILmu Ekonomi DanBisnis Universitas Syarif Hidayatullah.
- 6. Bank Indonesia (2020). Ikhtisar Statistik Sistem Keuangan. https://www.bi.go.id/id/fungsi-utama/stabilitas-sistem-keuangan/ikhtisar/Default.aspx
- 7. Basuki. (2015). Regresi Dalam Penelitian Ekonomi Dan Bisnis. Yogyakarta: Danisa Media. [4] Hidayati, N., & SUGIYANTO, F. X. (2018). Analisis Dampak Bauran Kebijakan Moneter Dan Makroprudensial Terhadap Stabilitas Harga Dan Stabilitas Sistem Keuangan Di Indonesia (Doctoral dissertation, Fakultas Ekonomika dan Bisnis).
- 8. Cheng, X., & Degryse, H. (2010). The Impact of Bank and Non-Bank Financial Institutions on Local Economic Growth in China. Journal of Financial Services Research, 37(2–3), 179–199. https://doi.org/10.1007/s10693-009-0077-4
- 9. Evi S. Candra Wati, Tri Oldy Rotinsulu, & Hanly F. D.J Siwu. (2019). ANALISIS FAKTOR-FAKTOR YANG MEMPENGARUHI STABILITAS SISTEM KEUANGAN DI INDONESIA PERIODE 2013:Q1 2018:Q4 Jurnal Berkala Ilmiah Efisiensi Volume 19 No. 03 Tahun 2019
- 10. Firdha Aksari Anindyntha , & Setyo Wahyu Sulistyono. (2022). Pengaruh inklusi keuangan dengan integrasi fintech pada stabilitas keuangan di Indonesia. INOVASI: Jurnal Ekonomi, Keuangan dan Manajemen
- 11. Fitri Rusdianasari. (2018). Peran Inklusi Keuangan melalui Integrasi Fintech dalam Stabilitas Sistem Keuangan Indonesia. JURNAL EKONOMI KUANTITATIF TERAPAN Vol. 11 No. 2 AGUSTUS 2018
- 12. Gabor, D., & Brooks, S. (2016). The Digital Revolution in Financial Inclusion: International Development in the Fintech Era. New Political Economy, 423–436.
- 13. Hardianto, F. N. (2008). Pengaruh Variabel Moneter Terhadap Indeks harga Saham Sektor Keuangan di indonesia: Error Correction Model. JURNAL EKONOMI PEMBANGUNAN: Kajian Ekonomi Negara Berkembang, 13(0), 231–242.
- 14. Hanivan, H., & Nasrudin, N. (2019). A financial inclusion index for Indonesia. Buletin Ekonomi Moneter Dan Perbankan, 22(3), 351–366. https://doi.org/10.21098/bemp.v22i3.1056
- 15. Hisyam Rifqi Madani. (2021). IMPLEMENTASI PENGGUNAAN KECERDASAN BUATAN PADA INDUSTRI FINTECH SYARIAH. Jurnal Geuthèë: Penelitian Multidisiplin Vol. 04, No. 03, (Desember, 2021), pp. 128-141.
- 16. Jameaba, M.-S. (2020). Digitization Revolution, FinTech Disruption, and Financial stability: Using the Case of Indonesian Banking Ecosystem to highlight wide-ranging digitization opportunities and major challenges 1–44
- 17. Kartika Dewi, Resti & Gilang Gemilang, Sabrang (2021) "Literasi Keuangan dan Pengelolaan Keuangan Keluarga Generasi Milenial" JPIn: Jurnal Pendidik Indonesia p-ISSN 2722-8134, e-ISSN 2620-8466 Volume 4, No.2
- 18. Kompas,(2023). Nilai Tukar Rupiah 2022 Melemah 9,31 Persen. https://www.kompas.id/baca/ekonomi/2023/01/01/nilai-tukar-rupiah-2022-melemah931-persen
- 19. Khan, S. H. R. (2011). Financial inclusion and financial stability: are they two sides of the same coin? Indian Bankers Association & Indian Overseas Bank, Chennai, November, 1–12. https://www.bis.org/review/r111229f.pdf
- 20. Milena Vučinić.(2020). Fintech and Financial Stability Potential Influence of FinTechon Financial Stability, Risks and Benefits. Journal of Central Banking Theory and Practice, 2020, 2, pp. 43-66
- 21. Otoritas jasa keuangan (2023). Definisi Stabilitas Sistem Keuangan. https://ojk.go.id/id/kanal/perbankan/stabilitas-sistem-keuangan/Pages/Ikhtisar.aspx
- 22. Otoritas jasa keuangan (2023). STATISTIK PERBANKAN INDONESIA. https://ojk.go.id/id/kanal/perbankan/data-dan-statistik/statistik-perbankanindonesia/default.aspx
- 23. Ramlall, I. (2018), "FinTech and the Financial Stability Board", Understanding Financial Stability (The Theory and Practice of Financial Stability, Vol. 1), Emerald Publishing Limited, Bingley, pp. 71-81. https://doi.org/10.1108/978-1-78756-833-420181016
- 24. Rusydiana, A. S., Rani, L. N., & Hasib, F. F. (2019). Manakah Indikator Terpenting Stabilitas Sistem Keuangan?: Perspektif Makroprudensial. Jurnal Ekonomi dan Pembangunan, 27(1), 25-42.

- 25. Rezki Akbar Norrahman. (2023). Peran Fintech Dalam Transformasi Sektor Keuangan Syariah. JIBEMA: Jurnal Ilmu Bisnis, Ekonomi, Manajemen, dan Akuntansi Volume 1, No. 2, October 2023, p. 101-126
- 26. Sera Novella, & Syofriza Syofyan. (2018). PENGARUH SEKTOR MONETER TERHADAP STABILITAS SISTEM KEUANGAN DI INDONESIA. Media Ekonomi Vol. 26 No. 2 Oktober 2018: 89-102 DOI: http://dx.doi.org/10.25105/me.v26i2.5211
- 27. Swamy, V. (2014). Financial Inclusion, Gender Dimension, and Economic Impact on Poor Households. World Development, 56, 1–15. https://doi.org/10.1016/j.worlddev.2013.10.019
- 28. Syapriatama, I. (2017). Transmisi Kebijakan Moneter Jalur Pembiayaan Bank Syariah Di Indonesia. Iqtishoduna: Jurnal Ekonomi Syariah, 8(2). https://doi.org/https://doi.org/10.20414/iqtishaduna.v8i1.356
- 29. Tisnawati, B. D. S. N. M. PENGARUH FINANCIAL TECHNOLOGY TERHADAP STABILITAS SISTEM KEUANGAN DI INDONESIA: PENDEKATAN VECTOR ERROR CORRECTION MODEL.
- 30. Viphindrartin, S. (2021). Dampak Makro Ekonomi Terhadap Stabilitas Keuangan di Indonesia. Jurnal Manajemen Jayanegara, 13(1), 13–19. https://doi.org/10.52956/jmj.v13i1.27
- 31. Victor Murinde, Efthymios Rizopoulos, & Markos Zachariadis. (2022). The impact of the FinTech revolution on the future of banking: Opportunities and risks. International Review of Financial Analysis Volume 81, May 2022, 102103
- 32. Wahyudi, S. T., Nabella, R. S., & Badriyah, N. (2019). Analisis Pengaruh Siklus Keuangan Terhadap Stabilitas Sistem Keuangan Di Indonesia. Jurnal Ekonomi Dan Bisnis, 20(2), 87-95.
- 33. Wiku, F., & Ayuningtyas, F. J. (2021). Determinan Stabilitas Sistem Keuangan Di Indonesia Melalui Pendekatan Makroekonomi. Tirtayasa Ekonomika, 16(2), 214-237.