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IS P2P LENDING EMERGING AS A NEW THREAT TO BANK CREDITS?

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Abstract: The emergence of fintech is one of the newest business models in the financial sector. One of fintech's service products is P2P platforms. Since the P2P platform first emerged, it has experienced drastic and significant changes. The banking sector, which distributes credits to consumers in the form of working capital credit, consumption credit, and investment credit, has a major contribution to Indonesia's economic growth and must be cautious of the significant growth of P2P lending. This empirical study aims to examine the impact of P2P lending on working capital credit, consumption credit, and investment credit in Indonesia throughout 2022. This empirical study uses secondary data obtained from the Financial Services Authority (OJK) website from January 2022 to December 2022 which is then analyzed using panel data regression. The results of this empirical study show that P2P lending does not significantly affect working capital credit and investment credit, but instead has a significant positive effect on consumption credit.

Keywords: P2P lending, bank credit, working capital, consumption, investment

INTRODUCTION

Over the past few decades, the financial industry has experienced significant changes because of technology (Elsaid, 2021). One of the new business models in the financial sector is financial technology (fintech). Fintech is a term that refers to financial innovation with the use of information technology (IT) to provide financial services to meet public demands in terms of financial services to create a larger impact on the financial markets (Shahzad et al., 2022; Shin & Choi, 2019; Taujanskaitė & Kuizinaitė, 2022; Wang et al., 2022). One of

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the fintech service products is peer-to-peer (P2P) lending, a financial solution where borrowers and lenders are connected directly without the need for financial institutions as an intermediary.

Over the last few years, P2P platforms have developed rapidly in Indonesia as reported in the annual report of the Financial Services Authority (OJK) which shows that the accumulated amount of P2P loan disbursement continues to increase significantly every year as shown in Figure 1. From 2018-2022, the greatest increase in P2P loan disbursement was between 2018 and 2019 where the P2P loan disbursement increased by 259.56% from Rp. 22,666.07 billion in 2018 to Rp. 81,497.51 billion in 2019. The accumulated amount of P2P loan disbursement increased by 91.30% to Rp 155,902.55 billion in 2020. In 2021, this amount increased by another 89.77% to Rp 295,852.59 from the previous year. This accumulated amount then increases further by 78.47%, reaching Rp 528,006.33 billion in 2022. The banking sector in Indonesia must be vigilant enough to anticipate the probability that P2P platforms will become potential competitors in the future because P2P platforms are growing very rapidly in Indonesia (Kohardinata & Widianingsih, 2023).

Bank credits play an important role in supporting the economic growth of a country (Rodríguez & Chávez, 2023). Several research papers show that bank credits improve a country's economic growth. Imoughele and Ismaila (2013), in their research paper, mentioned that bank credit has a significant positive effect on the output of the agricultural sector in Nigeria. The banking sector should be willing to provide credit (both short-term and long-term) for each sector because they will most likely contribute to economic growth. Likewise, Rodríguez & Chávez (2023) mentioned that bank credit has a significant positive effect on the manufacturing sector in Mexico. Credit distributed to this sector contributes 12-13% to Mexico's total GDP (Gross Domestic Product) and is further expected to provide a greater stimulus for economic growth.

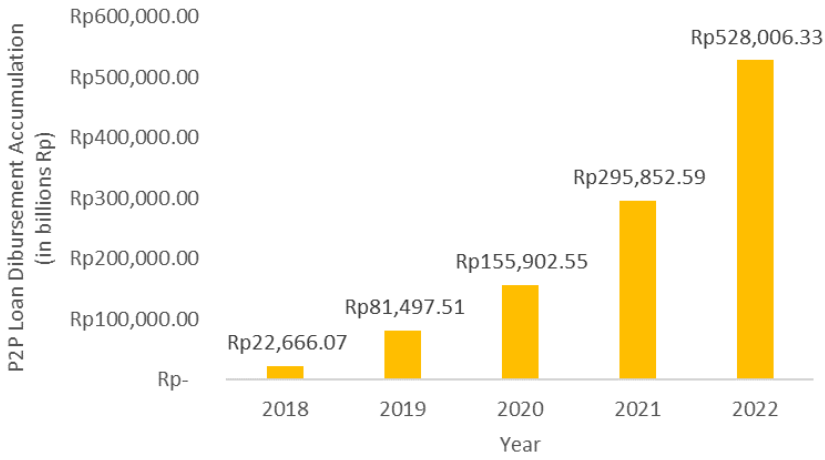

Figure 1 P2P Lending Disbursement Accumulation in Indonesia (2018-2022)
Source: Financial Services Authority (2022)

Bank credit distributed by banks can be of several types, one of which is based on its use, consisting of working capital credit, consumption credit, and investment credit. Investment credit is credit used for project development or other investing activities of a company, whereas working capital credit is credit used to increase production levels in the operational activities of a company (Nurjannah & Nurhayati, 2017). Based on a report from the Financial Services Authority as shown in Figure 2, although working capital credit, consumption credit, and investment credit experienced a slightly increasing trend in the year 2022, working capital credit still has the highest amount of credit compared to the other two types of bank credit.

In recent years, P2P platforms have grown rapidly among individuals and businesses because P2P platforms become an alternative source of financing for them (Shahzad et al., 2022). One of the economic theories that can explain the effect of P2P lending on bank credit is the complementary theory. This theory states that P2P platforms can be a complement to traditional banks by providing borrowers with loans that they cannot obtain from banks (Cole et al., 2019).

Several studies have shown that the impact of P2P platforms on the banking industry is complementary because P2P platforms can serve sectors that are not served by banks. This complementary nature between P2P platforms and the banking industry occurs mainly because there is a collaboration between banks and P2P platforms where banks can gain new benefits from developing new customer segments, products and services, reaching out

to new markets as well as developing and accessing information technology (Elsaid, 2021; Kohardinata et al., 2020; Le et al., 2021).

In the context of Economics, consumer theory tells us how rational a customer makes consumption decisions (Levin & Milgrom, 2004). One of the common measurements from consumer theory is the utility function. The utility function describes the level of 'satisfaction' or 'happiness' that consumers will get if they consume goods or services (Chugh, 2014). In this case, the consumer theory states that if a consumer decides not to use a particular product or service, then to maintain his/her level of utility, that consumer must be given other goods or services. In other words, a consumer is willing to substitute a product or service with another product or service as long as the consumer's needs are still satisfied (Chugh, 2014).

According to consumer theory, there is a slight chance that P2P platforms will enter the financial industry as substitute products. P2P platforms can be a substitute for banks because P2P platforms and banks have one thing in common – providing loans to individuals and businesses (Kohardinata et al., 2020). A research study by Yudaruddin (2023) shows that fintech P2P harms banking performance. The higher the number of fintech firms, the lower the banking performance. On the contrary, Yudaruddin's research results also show that fintech P2P has a significant positive effect on Islamic banks where the performance of these banks increased. This is because Islamic banks, with a low market, have worked together with fintech, supported by the Financial Services Authority (OJK) and Bank Indonesia (BI). Hence, collaboration between fintech P2P and traditional banks opens up the possibility of reaching small and unserved markets.

Because banks play an important role in a country's economy, this study aims to obtain empirical evidence regarding the impact of P2P lending on bank credits based on the type of credit, namely working capital credit, consumption credit, and investment credit in the context of Indonesia.

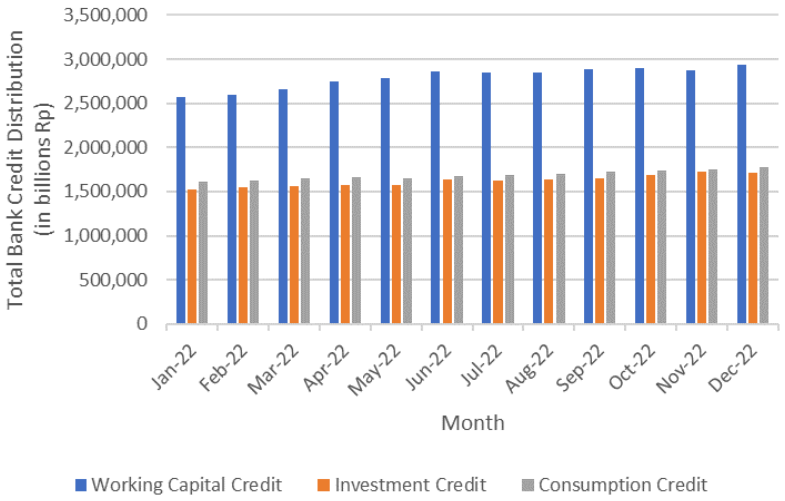

Figure 2 Total Bank Credit Distribution by Type (Jan 2022-Dec 2022)
Source: Financial Services Authority (2022)

METHOD

This study uses panel data regression to obtain empirical evidence regarding the effect of P2P lending on working capital credit, consumption credit, and investment credit in 33 provinces in Indonesia. The data used in this study is secondary data obtained from the Financial Services Authority website from January 2022 to December 2022.

The equation models used to examine the effect of P2P lending on working capital credit, consumption credit, and investment credit are as follows:

$$MK_{it} = \alpha + \beta_1 P2P_{it} + \beta_2 NPL_{it} + \beta_3 TPF_{it} + \varepsilon_t \quad \text{..... (1)}$$

$$I_{it} = \alpha + \beta_1 P2P_{it} + \beta_2 NPL_{it} + \beta_3 TPF_{it} + \varepsilon_t \quad \text{..... (2)}$$

$$K_{it} = \alpha + \beta_1 P2P_{it} + \beta_2 NPL_{it} + \beta_3 TPF_{it} + \varepsilon_t \quad \text{.....(3)}$$

where:

MK_{it} : Working capital credit in the province i in the month t

I_{it} : Investment credit in the province i in the month t

K_{it} : Consumption credit in the province i in the month t

$P2P_{it}$: P2P loans in the province i in the month t

TPF_{it} : Third-party funds in the province i in the month t

NPL_{it} : Non-performing loans in the province i in the month t

i : Province in Indonesia

t : Month (from January to December)

ε : Regression error

α : Constant

β : Estimation result parameters

The dependent variables used in equation models (1), (2), and (3) are working capital credit (MK), consumption credit (K), and investment credit (I). The independent variable used is P2P loans (P2P) and the controlled variables are third-party funds and non-performing loans. Research studies by Stanley et al. (2024), Yudhistira & Sugiastuti (2023), and Rahmayanti (2024) showed that third-party funds have a significant positive effect on bank credit distribution. Third-party funds are one of the bank's sources to finance lending activities Rahmayanti (2024). They also represent the bank's ability to distribute credit to consumers, which means that the greater the number of third-party funds the bank has, the greater the ability of the bank to distribute credit (Yudhistira & Sugiastuti, 2023). Research studies by Sari et al. (2021), Cintiya & Riswan (2022), and Sugiharti & Diana (2022) showed that non-performing loans have no significant effect on bank credit distribution. Before distributing credit, banks are required to conduct, review, and monitor the use of credit and the debtor's compliance in fulfilling its obligations (Cintiya & Riswan, 2022). Because of this strict protocol, even if the values of non-performing loans fluctuate, the bank can still control it because the values are still within reasonable limits therefore the distribution of bank credit cannot be affected by non-performing loans (Sugiharti & Diana, 2022).

Definition of Variables

A P2P loan is a loan obtained from P2P platforms where borrowers and lenders meet without needing an official traditional financial institution as an intermediary (Serrano-Cinca et al., 2015; Wei et al., 2018; Yang et al., 2020). Working capital credit is the credit banks provide to creditors in the form of loans to meet working capital needs. Investment credit is the credit banks provide to individuals or businesses in the form of loans to meet investment needs. Consumption credit is the credit banks provide to individuals or

businesses to fulfill personal needs. NPL is a financial condition where debtors are unable to pay their installments to the bank based on the agreement between the bank and the debtor (Tangngisalu et al., 2020). The higher the value of NPL, the more problematic loans there are in the bank. On the other hand, a low value of NPL indicates that the bank has good asset quality (Eng, 2013). Third-party funds are bank funds originating from the public. These third-party funds can be in the form of current accounts, savings, and time deposits (Anggari & Dana, 2020). Savings is a deposit of money from a portion of people's income that is kept in the bank for future use, whereas a deposit is a form of investment where withdrawals can only be made within a certain period and it is considered to be the safest type of investment (Meilanti & Fitria, 2021). A current account is a public savings account where withdrawals can be made at any time (Hasibuan et al., 2022).

Determining Best Estimation Model

Determining the best estimation model for panel data regression can be done through 3 approaches, which are ordinary least squares (OLS), fixed effect (FE), and random effect (RE). Ordinary least squares (OLS) ignore the cross-section and time-series of the data and assume that the data has the same regression coefficient (Gujarati & Porter, 2008). The fixed effect (FE) model allows heterogeneity among subjects by allowing each entity to have its intercept value (Gujarati & Porter, 2008). Even though the intercept value may differ in each subject, the intercept of each entity does not vary from time to time. This is why this model is called "fixed". In contrast to the fixed effect (FE) model where each entity has its intercept value, the random effect (RE) model has an intercept value that represents the average value of all intercepts (cross-section) and an error component that represents the deviation of each individual from the average value (Gujarati & Porter, 2008).

To determine the best estimation model, several tests must be carried out. The first test to be done is the Chow test to determine between the ordinary least squares (OLS) or fixed effect (FE) model. Next, the Hausman test is used to determine between fixed effect (FE) or random effect (RE) model. Finally, the Lagrange Multiplier test is used to determine between the ordinary least squares (OLS) or random effect (RE) model.

Classical Assumptions of Panel Data Regression

The classical assumptions of panel data regression used in this study are multicollinearity and heteroscedasticity tests. The multicollinearity test used in this study is variance inflation factor (VIF) where there is an indication of multicollinearity if the mean

VIF value is greater than 10. Since there were indications of multicollinearity during the test, the researchers retested after eliminating the variable that indicated multicollinearity. However, the results of the new test showed no difference in the main variable (P2P loans) before and after eliminating the variable. The heteroscedasticity test uses robust standard errors since there was an indication of heteroscedasticity within the data (value less than 0.05).

RESULTS

Descriptive Statistics Results

Table 1 shows the descriptive statistics for variables working capital credit, investment credit, consumption credit, P2P loans, third-party funds (TPF) and non-performing loans (NPL) in 33 provinces in Indonesia from January 2022 to December 2022. P2P loans have an average value of 568.9999 with a standard deviation of 1212.561. Working capital credit has an average value of 82713.61 with a standard deviation of 248469.1; investment credit has an average value of 47569.53 with a standard deviation of 174342.3; consumption credit has an average value of 51118.68 with a standard deviation of 89396.94. For the controlled variables, third-party funds (TPF) have an average value of 231012.9 with a standard deviation of 685191.1 and non-performing loans have an average value of 5287.62 with a standard deviation of 13695.36.

Table 1 Descriptive Statistics

No.	Variable	Mean	Std. Dev	Min	Max
1	Working Capital Credit	82713.61	248469.1	2547.89	1525941
2	Investment Credit	47569.53	174342.3	564.65	1088516
3	Consumption Credit	51118.68	89396.94	5489.28	515034.9
4	P2P Loans	568.9999	1212.561	10.72	6552.89
5	Third-Party Funds (TPF)	231012.9	685191.1	5703.83	4373923
6	Non-performing Loans (NPL)	5287.62	13695.36	149.99	81655.66

Best Estimation Model Results

Table 2 column a shows the test between P2P loans and working capital credit. The

result from the Chow test shows a significant result of 0.0000 so the best estimation model is fixed effect (FE). The Hausman test shows a significant result of 0.0036 so the best estimation model chosen for working capital credit is fixed effect (FE).

Table 2 column b shows the test between P2P loans and investment credit. The result from the Chow test shows a significant result of 0.0000 so the best estimation model is the fixed effect (FE). The Hausman test shows a significant result of 0.0000 so the best estimation model chosen for investment credit is the fixed effect (FE).

Table 2 Best Estimation Model

No.	Model Determination Test	Working Capital Credit (a)	Investment Credit (b)	Consumption Credit (c)
1	Chow Test	0.0000	0.0000	0.0000
2	Hausman Test	0.0036	0.0000	0.1028
3	Lagrange Multiplier Test	-	-	0.0000
4	Results	FE	FE	RE

Key: FE = fixed effect; RE = random effect

Table 2 column c shows the test between P2P loans and consumption credit. The result from the Chow test shows a significant result of 0.0000 so the best estimation model is the fixed effect (FE). The Hausman test shows an insignificant result of 0.1028 so the best estimation model chosen for working capital credit is the random effect (RE). The Lagrange Multiplier test is carried out to choose between random effect (RE) and ordinary least square (OLS) models. The result from this test shows a significant result of 0.0000 so the best estimation model for consumption credit is the random effect (RE).

Classical Assumptions and Panel Data Regression Test Results

Table 3 row no. 7 shows that the multicollinearity test results for working capital credit, investment credit, and consumption credit variables are 2.98. Table 3 column a shows the effect of P2P loans on working capital credit using the fixed effect (FE) model. Row no. 1 column a shows that P2P loans have no effect significant effect on working capital credit with a coefficient of 26.70683. The next 2 rows show that the controlled variables, third-party funds (TPF) and non-performing loans (NPL), also do not have a significant effect on working capital credit with coefficients of 0.1541404 and -6.886554 respectively. The F-test on row no. 5 shows a significant value such that the model can describe the effect of P2P loans being tested. Row no. 6 column a shows that the R-squared

value of this model is 0.5610, which means the model can explain working capital credit of 56.10%.

Table 3 column b shows the effect of P2P loans on investment credit using the fixed effect (FE) model. Row no. 1 column a shows that P2P loans have no effect significant effect on investment credit with a coefficient of 5.527357. The next 2 rows show that the controlled variables, third-party funds (TPF) and non-performing loans (NPL), also do not have a significant effect on investment credit with coefficients of 0.1395303 and -3.991871 respectively. The F-test on row no. 5 shows a significant value such that the model can describe the effect of P2P loans being tested. Row no. 6 column a shows that the R-squared value of this model is 0.7562, which means the model can explain investment credit of 75.62%.

Table 3 column c shows the effect of P2P loans on consumption credit using the random effect (RE) model. Row no. 1 column c shows that P2P loans have a significant positive effect on working capital credit with a coefficient of 7.838352. The next 2 rows show that the controlled variables, third-party funds (TPF) and non-performing loans (NPL), also have a significant positive effect on consumption credit with coefficients of 0.1172291 and -0.3252408 respectively. The F-test on row no.5 shows a significant value such that the model can describe the effect of P2P loans being tested. Row no. 6 column a shows that the R-squared value of this model is 0.7265, which means the model can explain investment credit of 72.65%.

Table 3 Classical Assumptions and Panel Data Regressions Test

No.	Description	Working Capital Credit (a)	Investment Credit (b)	Consumption Credit (c)
1	P2P Loans	26.70683 (0.090)	5.527357 (0.054)	7.838352 (0.000)
2	TPF	0.1541404 (0.217)	0.1395303 (0.064)	0.1172291 (0.000)
3	NPL	-6.886554 (0.161)	-3.991871 (0.185)	-.3252408 (0.015)
4	Cons	67782.5 (0.160)	33298.66 (0.293)	21296.97 (0.000)
5	Prob > F	0.0000	0.0000	0.0000
6	R-squared	0.5610	0.7562	0.7265
7	Mean VIF	2.98	2.98	2.98

DISCUSSION

Based on the research results, it can be concluded that P2P loans have no significant effect on working capital credit and investment credit. On the other hand, P2P loans have a significant positive effect on consumer credit. This proves that P2P platforms may be complementary to the banking sector. The results of this research are different from the results obtained by Kohardinata and Widianingsih (2023) where the growth of P2P loans had no effect on the growth of investment credit and consumption credit but instead, P2P loans had a negative effect on the growth of working capital credit.

The results of this research prove that P2P platforms do not disrupt the working capital credit and investment credit markets because P2P platforms already have their market. However, P2P platforms are complementary to the consumer credit market. The complementary theory states that P2P platforms are complementary to the consumer credit market because banks and P2P platforms serve different types of markets. Banks usually serve consumers or borrowers who have good credit scores and have a stable financial status. On the contrary, P2P platforms tend to be more inclusive and are willing to serve borrowers with lower credit scores (Elsaid, 2021; Le et al., 2021). Furthermore, loan disbursement made by P2P platforms to the productive sector has decreased from 2021 to 2022 as seen in Figure 3. From March 2022 to December 2022, loan disbursement to the productive sector did not reach 50% of the total loan disbursement. This means that most of the loan disbursed is channelled to non-productive credit (consumption credit).

In 2022, the majority of commodities frequently consumed by the public experienced an increase in prices. These commodities include fuel, rice, salt, chicken eggs and many more (Badan Pusat Statistik, 2023). Small communities with low incomes find it difficult to obtain credit from banks due to strict regulations and policies. Therefore, these small communities tend to borrow from P2P platforms to meet their daily needs. Sabar and Kuslin (2018) in their research results said that consumers are most likely to obtain credit or loans when there is an increase in commodity prices (inflation) because they feel that they are still able to pay the interest rates.

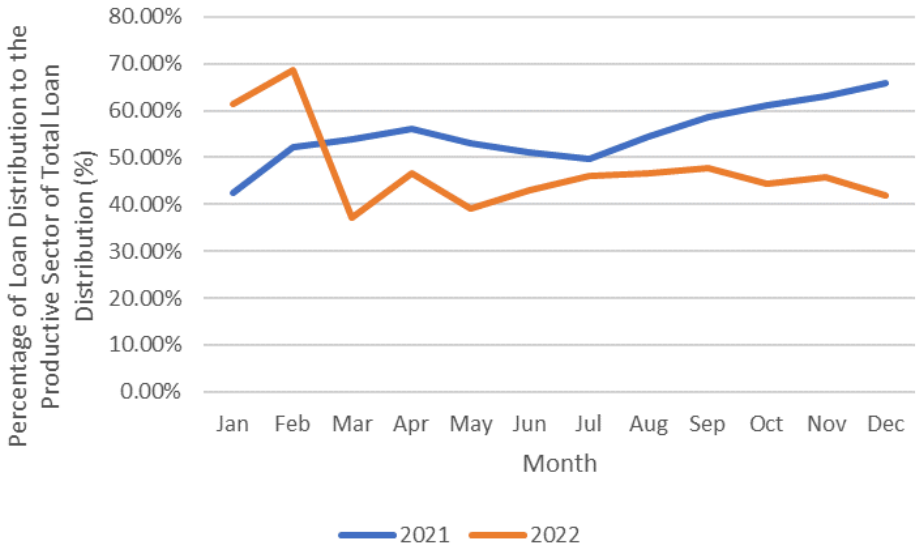

Figure 3 Percentage of Loan Distribution to the Productive Sector of Total Loan Distribution
Source: Financial Services Authority (2022)

Conclusion, Limitations, and Suggestions

This empirical study aims to examine the effect of P2P loans on working capital credit, investment credit, and consumption credit in Indonesia in 2022. The results of the research show that P2P loans do not have a significant effect on working capital credit and investment credit. However, P2P lending has a significant positive effect on consumer credit.

The researchers hope that the results of this research will provide benefits to the banking sector in anticipating the growth of P2P platforms which have the possibility of replacing traditional banks. Hence, the banking sector should collaborate with P2P platforms or information technology to expand its market and provide more efficient services to consumers. The results of this research are also valuable for the government, as a policy maker, to optimize the stability and efficiency of the banking sector so that the banking sector can work together with P2P platforms to further improve and advance the financial sector.

One of the limitations of this research is that the scope of this research is only limited to commercial banks. Therefore, for future research, the researchers suggest using data from rural banks since commercial and rural banks operate differently. Future research could also

examine the effect of P2P lending on bank credits in different countries because the results of this research may only apply to some countries due to various rules and regulations.

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