

Fintech Lending: Analysis of the Response and Existence of Peer to Peer Lending Growth in Indonesia

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ABSTRACT

The development of Financial Technology / Fintech, namely peer-to-peer (P2P) lending in Indonesia has experienced rapid growth. This study aims to identify the response and existence of Fintech lending and analyze the determinants that have the potential to differentiate the response of Fintech growth in Indonesia during a certain period. The analysis method uses several stages, namely Klassen typology analysis and multiple linear regression model analysis. The research data comes from quantitative data on Fintech Lending in Indonesia which is officially registered with the Financial Services Authority (OJK) from 2021 to 2023. The variables used include P2P Lending loan volume, investor fund volume, default rate, accessibility, interest rates, and inflation on the growth of Fintech-lending transactions. The results show that loan volume, investor fund volume and default rate have an influence on the growth of Fintech-lending in Indonesia. In addition, DKI-Jakarta is an area in quadrant III (vulnerable and risky), while Gorontalo is an area with the potential to develop in quadrant IV. The regions that are in the growing but risky criteria are Banten, West Java, Central Java, D.I.Yogyakarta, East Java, NTB, Central Sulawesi, South Sulawesi, and West Sumatra. This study provides important insights into the dynamics of Fintech-lending growth in Indonesia and becomes an analysis of policy considerations to support the development of a healthy and sustainable fintech-lending sector. These findings are relevant for policymakers, industry practitioners, and researchers interested in inclusive finance and financial innovation in developing countries.

Keyword: Fintech-lending, Growth, Klassen Typology, Regression, Indonesia

INTRODUCTION

The development of financial technology or called Fintech, especially peer-to-peer lending, has become a phenomenon that has developed quite significantly in the financial landscape in Indonesia (Silalahi, 2021; Pratiwi et al, 2021). Adaptation to technological developments, especially the use of digital finance including Fintech-lending, stimulates economic productivity and consumption and production behavior patterns in society (Nopiah et al, 2024; Nopiah et al, 2024). The existence of Fintech-lending growth is supported by the development of digital technology so that the creation of financial access innovations is developing rapidly and can support sustainable national economic growth and increase financial inclusion (Aprita, 2021; Wibowo, 2019; Arseto & Soemitra, 2022). The growth of Fintech-lending has proven to be a significant innovation in the financial industry that continues to grow and adapt amidst regulatory and competitive challenges. Meanwhile, sustainable existence is demonstrated through market growth, technological innovation, and contributions to financial inclusion.

Fintech-lending as a disruptive innovation in the digital financial industry has received various responses from various stakeholders so that the existence of Fintech-lending is also considered a viable alternative to traditional financial institutions. The growth of fintech

lending requires great attention, especially in terms of risk management aspects such as the existence of illegal fintech lending and the potential for indications of default rates or moral hazard risks carried out by debtors. Although this has been regulated and supervised by the Financial Services Authority (OJK) and Bank Indonesia (BI), these regulations are considered ineffective in providing strict sanctions for violations committed by illegal fintech lending entities in order to protect consumers and minimize moral hazard behavior to protect producers. This causes mitigation in the growth of fintech lending to not be implemented well enough, especially in Indonesia (Machrusyah et al, 2020). The growth of Fintech-lending is not only influenced by external factors originating from consumer characteristics, but is also influenced by internal factors such as the statistical conditions of Fintech-lending finances and macroeconomic factors such as interest rates and inflation.

The condition of financial statistics in the Fintech-lending industry plays a crucial role in determining the growth and sustainability of the platform (Tao et al, 2017; Zhao et al, 2017). Fintech-lending financial statistics provide an overview of financial metrics that are indicators of Fintech-lending health and performance (Serrano-Cinca & Gutiérrez-Nieto, 2016; Wang et al, 2020). Several important aspects of financial statistics that affect the growth of Fintech-lending such as loan volume growth, investor confidence, number of borrowers, accessibility and risk management (Xia et al, 2017; Ge et al, 2017). The interpretation and quality of the financial statistics of Fintech-lending will have an impact on its growth. This is reflected in transparency, consistency, and compliance with applicable accounting standards, which are key to building stakeholder trust (Agarwal & Zhang, 2020).

The amount of Fintech-lending loan funds is believed to have a positive impact on the growth of Fintech-lending. This is because with the increasing volume of Fintech-lending loans, there will be a tendency to create a positive network effect to attract more investors and borrowers (Zhang et al, 2019). Likewise, the availability of large investor funds will indicate the sustainability of Fintech-lending growth because the liquidity provided by investors will expand the market (Jiang et al, 2018). However, on the other hand, the default rate is also an important concern because it is related to the level of investor and borrower trust. The high default rate will affect investment decisions and the growth of Fintech-lending (Serrano-cinca, 2015). In addition to internal factors, the growth of Fintech-lending is also influenced by macroeconomic factors such as interest rates and inflation.

Competitive interest rates can attract more borrowers but must also consider the balance of risk to maintain investor interest (Wei & Lin, 2016). While inflation tends to drive the growth of Fintech-lending if the inflation rate is moderate. (Chen et al, 2018). The interaction between these factors creates complex dynamics in transaction growth. Fintech-lending. High loan volume can attract more investors, which in turn increases the volume of investor funds. However, if not managed properly, this can also increase the risk of default. Meanwhile, high accessibility can encourage transaction growth, but it also needs to be balanced with good risk management to keep the default rate low. Based on this, this research aims to analyze the growth of Fintech-lending transactions from internal and external factors in Indonesia.

LITERATURE REVIEW

Fintech-lending is known as marketplace lending and is one of the rapidly growing product innovations in the global digital financial industry. Various responses have emerged as evidence of the existence of these financial products, such as responses from consumers and

small and medium enterprises (SMEs), regulators, traditional financial institutions, and investors. A study by Jagtiani and Lemieux (2018) found that Fintech-lending helps expand credit access to underserved areas and consumer segments that have difficulty getting loans from banks. In addition, regulators are trying to respond to the development of Fintech-lending by balancing innovation and consumer protection. A study by Zetzsche et al (2017) stated that the regulatory approach is a form of supervision of Fintech-lending risk management but still supports digital financial innovation.

The response of traditional financial institutions to the development of Fintech-lending tends to be seen as a threat. However, over time, most traditional financial institutions have begun to collaborate and adopt similar technologies by developing their own platforms (Navaretti et al, 2018). Meanwhile, investors respond to Fintech-lending as an investment opportunity as a new asset class that is quite profitable. However, investor sentiment can fluctuate depending on the performance of the Fintech-lending platform (Chen et al, 2018). Fintech-lending has shown rapid growth in the global region and has become an important component in the global financial landscape (Zieger et al, 2020).

In addition, the existence of Fintech-lending is supported by continuous technological innovation where machine learning and big data have increased efficiency in the process of assessing the financial performance of Fintech-lending (Fuster et al, 2019). In terms of financial inclusion, Fintech-lending plays a role in helping to bridge the credit gap in developing countries (Gambacorta et al, 2019). Fintech lending also shows its existence in crisis resilience during the COVID-19 pandemic. The study by Ding et al (2021) found that Fintech-lending managed to adapt quickly to changes in market conditions during the crisis. The existence of Fintech-lending also creates the evolution of new business models (Cornelli et al, 2020).

The growth of Fintech-lending transactions, especially in the form of peer-to-peer (P2P) lending, has become a significant phenomenon in the Indonesian financial landscape. Several key factors have been identified as determinants of this growth, including a study by Rosavina et al (2019) which found that the volume of loans disbursed through the P2P Lending platform has a direct influence on the growth of P2P Lending transactions for Small and Micro Enterprises (MSMEs) in Indonesia. The increase in loan volume is positively correlated with the growth of fintech lending transactions, where the greater the volume of loans disbursed, the higher the level of transaction growth achieved.

In addition, the availability of funds from investors is a crucial factor in driving the growth of Fintech-lending transactions. A study by Damayanti & Asandimitra (2021) stated that the increase in the volume of investor funds contributed significantly to the growth of Fintech-lending, namely the greater the investor funds, the higher the potential for transaction growth obtained. This must also be followed by the default rate (TWP) or the level of loan default. A low default rate will tend to increase investor confidence in investing funds in Fintech-lending, which will encourage the growth of Fintech-lending transactions and vice versa (Thakor & Merton, 2018). The role of accessibility is also no less important in the existence of Fintech-lending growth. A study by Raharja et al (2021) found that the number of Fintech-lending organizers is positively correlated with the growth of Fintech-lending transactions, where the more Fintech-lending platforms there are, the more transaction growth will increase, assuming that Fintech-lending is officially registered with the OJK.

In addition to internal Fintech-lending variables, the growth of Fintech-lending transactions is also thought to be influenced by external factors such as macroeconomic variables, namely interest rates and inflation. A study by Suryono et al (2019) found that

interest rates have a significant effect on the growth of Fintech-lending transactions. This is because competitive interest rates can attract investors so that the growth of Fintech-lending transactions improves. In contrast to the inflation factor, a study by Nuryakin et al (2019) found that high inflation triggers instability in the growth of Fintech-lending transactions. This is because inflation at a moderate level can still encourage the growth of Fintech-lending transactions, but high inflation can hinder the growth of Fintech-lending transactions due to economic uncertainty.

METHOD

This study uses a quantitative descriptive and explanatory analysis approach. The purpose of this approach is to provide an overview of the existence of Fintech-lending growth in Indonesia and to justify the level of depth of data analysis with appropriate scientific explanations. The unit of analysis used is Indonesia with the period 2021-2023. This research has a time-series data structure, namely the use of data based on a certain time period. Time-series data uses monthly data from January 2021 to December 2022. The data source comes from secondary data, namely the Financial Services Authority / OJK publication report on Fintech statistics. The amount of data used is 36 months in Indonesia. Meanwhile, in mapping the growth conditions of Fintech-lending transactions, it is estimated based on the transaction area / province in Indonesia. The analysis method used in this research consists of two (2) parts, namely the Klassen typology analysis method and the time-series linear regression method.

1. Klassen Typology Klassen

The Klassen typology method is usually used to obtain an overview of the economic structure of a region (Nasution, 2020). Basically, the description of the regional economic structure is measured by economic growth and per capita income. However, in this research, the Klassen typology method was replicated to obtain an overview of the growth structure of Fintech-lending per province in Indonesia. This grouping is divided into four (4) main quadrants (quadrant I - quadrant IV) which are calculated through the growth in the number of loan disbursements and the growth in the default rate (default) in Fintech-lending. Then the following grouping chart is obtained:

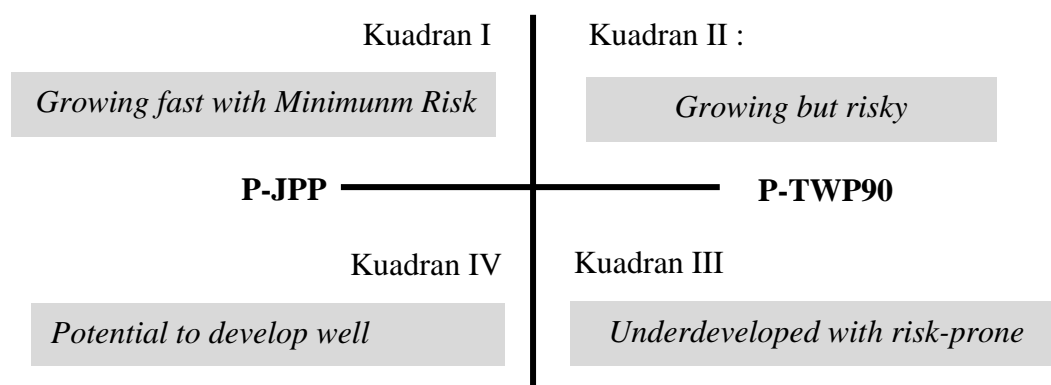


Figure 1. Fintech-lending Response Based on Klassen Typology Grouping

Description:

- Quadrant I: if P-JPP >0 and P-TWP <0 then the area with Fintech-lending is growing fast and has minimum risk
- Quadrant II: if P-JPP >0 and P-TWP >0 then areas with Fintech-lending that are growing but have risks
- Quadrant III: if P-JPP <0 and P-TWP >0 then areas with Fintech-lending are less developed and prone to risk
- Quadrant IV: if P-JPP < 0 and P-TWP <0 means areas with Fintech-lending have the potential to develop well
- P-JPP is the growth in the number of Fintech-lending loans and P-TWP is the growth in the default/failure rate for Fintech-lending borrowers.

2. Multiple Linear Regression Method

The multiple linear regression method in this research aims to analyze the influence of observed variables with dependent variables (Nopiah et al, 2024). The observed variables consist of internal variables of Fintech-lending institutions such as loan fund volume, investor fund volume, accessibility/number of Fintech-lending organizers, and default rates; and external variables such as interest rates and inflation. The regression model can be denoted as follows:

$$Growth_Finlend_t = \beta_{0t} + \sum \beta_{internal_var_t} + \sum \beta_{Eksternal_var_t} + \mu_t \dots \dots \dots (1)$$

$$Growth_Finlend_t = \beta_{0t} Vol_pinj + \beta_{1t} Vol_invest + \beta_{2t} Akses + \beta_{3t} TWP90 + \beta_{4t} Interet_rate + \beta_{5t} Inflasi + \mu_t \dots \dots \dots (2)$$

Description of model:

Growth_Finlend	: Fintech-lending growth (percent)
Vol_pinj	: Volume of loan funds provided to borrowers (billion)
Vol_invest	: Volume of funds provided by investors (billion)
Access	: Number of fintech-lending providers
TWP90	: Fintech-lending default rate (percent)
Interest_rate	: Interest rate (percent)
Inflation	: Monthly inflation rate (percent)
μ	: <i>error term</i>
t	: <i>time-series</i>

In addition, to ensure the robustness of regression where seeing the ability of a model can provide good and consistent results so that the regression results provide an analysis that is resistant to variables outside the model, the regression analysis is accompanied by a robustness regression test (Wooldridge, 2013). In addition, it is also a solution when experiencing classical assumption test disturbances such as abnormal residual distributions and/or others.

RESEARCH RESULTS AND DISCUSSION

The following research results are described using three approaches, namely descriptive analysis to see the response and existence of Fintech Lending growth in Indonesia, Klassen typology analysis to see an overview of the Fintech-lending growth structure of each province in Indonesia, and regression analysis to see the magnitude, direction and influence that are suspected to be factors in Fintech Lending growth.

1. Descriptive analysis

Figure 2 shows that Fintech-lending cash flow has increased exponentially or moved positively in 2023. This profitability achievement can allow investors to think conservatively to make profit achievements in investments in the digital financial business. Along with the growth of Fintech-lending cash flow, the increase in security and risk management (credit scoring) is also strengthened. This has direct implications for minimizing moral hazard behavior such as increasing default rates and maximizing improvements in loan quality. In addition, the growth in loan volume and the number of borrowers experienced relatively the same varying growth patterns.

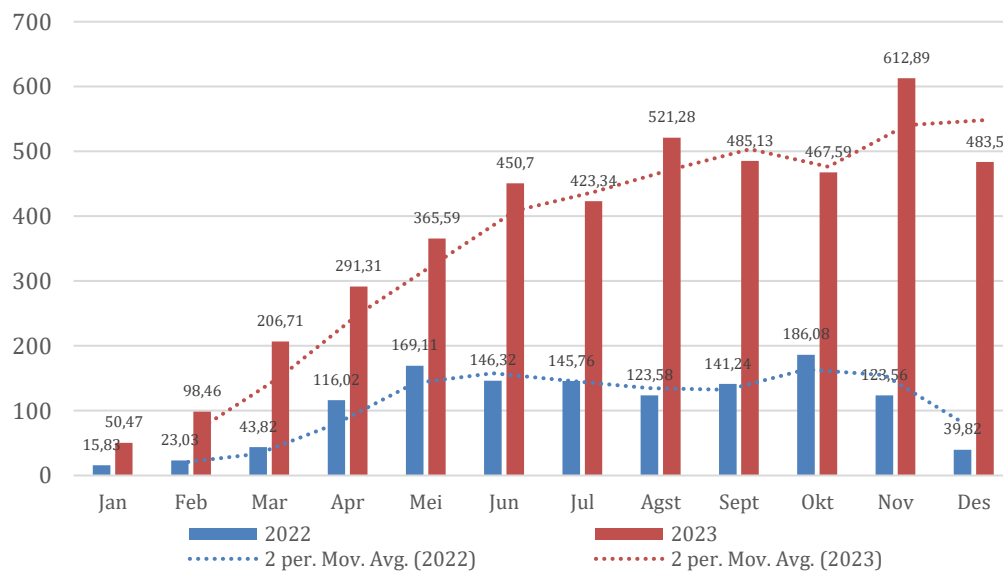


Figure 2. Fintech Lending Cash Flow Between 2022 and 2023

Source: data processed by author, 2024

In Figure 3 in the second semester of 2023, the number of borrowers experienced a sharp contraction from August to September, but the loan volume actually increased from 0.78 percent to 1.25 percent. The increase and decrease in loan volume and the number of loans are thought to be influenced by the demand factor for Fintech-lending.

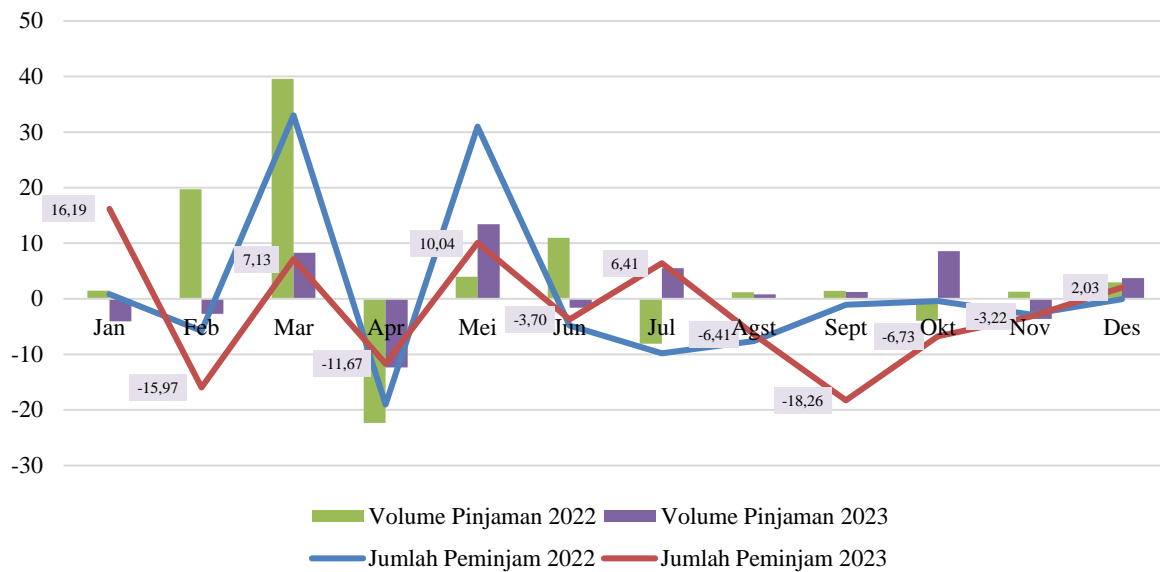


Figure 3. Growth in loan volume and number of Fintech-lending borrowers from 2022 to 2023
Source: data processed by author, 2024

2. Klassen Typology Analysis

The Figure 4 shows the classification of Fintech-lending based on the region which aims to be able to make an intervention plan for the development of Fintech-lending per region. Based on the results of the Klassen typology, DKI Jakarta occupies a development that is very prone to risk. This is indicated by the position of the growth in the number of loan disbursements decreasing accompanied by an increasing default rate in quadrant III. Gorontalo Province is in the classification of quadrant IV which indicates that Gorontalo has a low growth in the number of Fintech-lending loan disbursements but the default rate is also low so it can be said that Gorontalo still has the potential to develop. Quadrant II shows a region that has the characteristics of good growth but is also at risk. This is based on the growth in the number of loan disbursements increasing but there is a risk of an increasing default rate. The regions in quadrant II include the Special Region of Yogyakarta, Central Sulawesi, South Sulawesi, Central Java, East Java, West Java, West Sumatra, and West Nusa Tenggara.

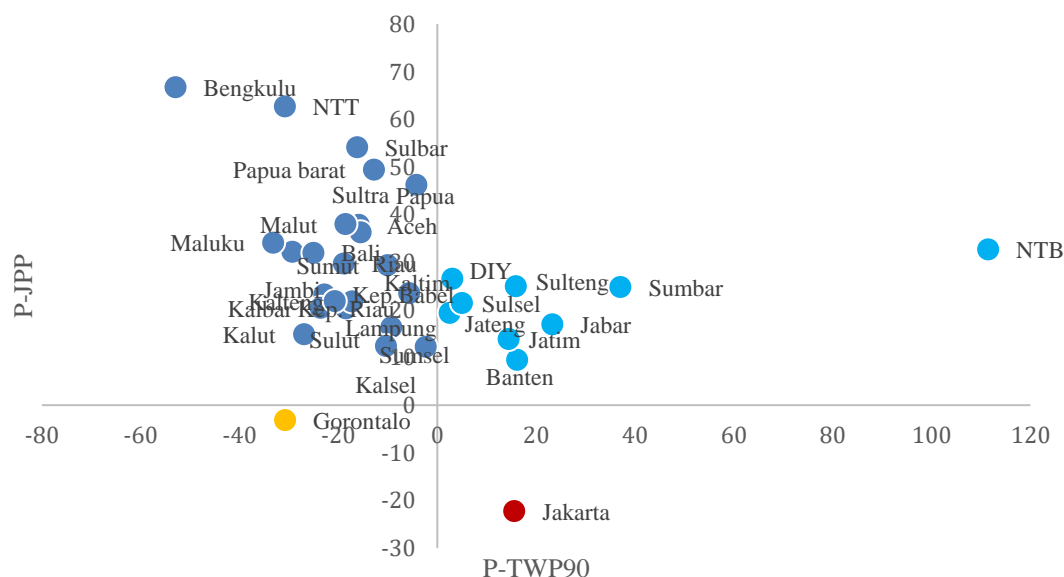


Figure 4. Class typology - classification of Fintech-lending by region

Source: data processed by author, 2024

Regions that have characteristics of rapid growth and minimal risk are in quadrant I, namely the growth in the number of Fintech-lending loan distributions is increasing and the default rate is low. These regions include Bengkulu, Central Nusa Tenggara, West Sulawesi, West Papua, Papua, Southeast Sulawesi, Aceh, East Kalimantan, Bali, North Maluku, Maluku, West Kalimantan, Jambi, North Sumatra, Riau, Bangka Belitung Islands, North Kalimantan, North Sulawesi, South Sumatra, Lampung, Riau Islands, and South Kalimantan.

This Klassen typology analysis is very useful for seeing the relationship between fintech lending growth and default rates by region. Based on the study of Syaifullah & Alamsyah (2018), it states that mapping and classifying regions based on certain main variables will provide a visual depiction of how the two variables interact in various regions. From the Klassen typology above, the placement of regions in different quadrants can identify certain patterns and regional trends in the adoption of Fintech-lending and its risk management (Ningsih & Choi, 2021; Hasan et al, 2020). In addition, it also helps identify factors that may influence the relationship between Fintech-lending growth and default rates in various regions (Widyastuti et al, 2021; Milian et al, 2019).

According to Nugroho et al (2018), this regional classification can provide an evaluation of Fintech-lending performance and the effectiveness of default risk management in various regions to maintain financial stability. The allocation of resources becomes more efficient and focuses on areas that need support and supervision for both policy makers and industry players (Imam, 2018). By using the Klassen typology analysis, we can gain a deeper and more structured understanding of the dynamics of fintech lending growth and default risk in various regions. This in turn can support more informed decision-making and more effective development strategies for the fintech lending industry.

3. Multiple Regression Analysis

To test how internal and macroeconomic variables influence the growth of Fintech-lending, multiple linear regression is carried out as described in table 1. The results show that

the volume of Fintech-lending loans has a significant and positive effect on the growth of Fintech-lending with a significance level of 5 percent. The loan volume that increases by 1 unit will increase the growth of Fintech-lending by 0.05 percent. However, the results of the study showed that there was a negative and significant relationship between funds invested by investors and the growth of Fintech-lending. The results show that an increase in the volume of investor funds in Fintech lending by 1 unit will reduce the growth of Fintech-lending by 0.029 percent. This is contrary to the research hypothesis which assumes that the volume of investor funds has a positive relationship with the growth of Fintech-lending in Indonesia.

In addition, the default rate / default rate shows a significant and negative effect on the growth of Fintech-lending in Indonesia. This is in line with the research hypothesis. Furthermore, accessibility variables such as the number of Fintech-lending organizers and macroeconomic variables such as interest rates and inflation show no significant effect on the growth of Fintech-lending in Indonesia. Based on the results of this study, loan volume is one of the important factors influencing the growth of the P2P lending platform. In general, the higher the volume of loans distributed through the P2P lending platform, the greater the potential for growth of the platform. The greater the volume of loans distributed, the greater the income obtained by the P2P lending platform through service fees or interest. This allows the platform to invest more in technology development, marketing, and market expansion (Wei & Lin, 2016).

Zhang et al (2019) study found that increasing loan volume can attract more borrowers and lenders to the platform, creating a positive network effect. The more users, the more attractive the platform is to new users. Likewise, Chen & Lai's (2017) study found that high loan volume can indicate that the platform is trusted by many users, which in turn can attract more investors and borrowers. With larger loan volumes, platforms can offer more loan options to investors, allowing for better risk diversification (Wang et al, 2015). In addition, increasing loan volumes allows platforms to achieve economies of scale, reducing operating costs per transaction and increasing efficiency (Serrano-Cinca et al, 2015).

Table 1. The Result of Multiple Regression

Independent Variables	Model (1)	Model (2)	Model (3)	Model (4)
Volume of loans	0.005** (0.0019)	0.00463** (0.00178)	0.00471** (0.0019)	0.0051** (0.00186)
Volume of Investor Fund	-0.0029* (0.0017)	-0.00265* (0.00154)	-0.0027 (0.00169)	-0.00298* (0.00159)
Wanprestasi Level	-1220.2* (636.302)	-1237.91** (524.09)	-1286.39** (628.81)	-1273.26** (527.74)
Number of Fintech Lending	-0.0675 (0.2341)	-0.0381 (0.2263)	-0.04132 (0.2311)	-0.0693 (0.2300)
Interest Rate	-0.4153 (2.6778)	-	0.3636 (2.5079)	-
Inflation	-5.3877 (6.2831)	-	-	-5.0572 (5.8136)
Constanta	6.3485 (31.686)	2.463 (30.730)	2.5057 (31.228)	6.1558 (31.142)
F-Statistic	0.1370	0.0556	0.1052	0.0793
R-Squared	0.1188	0.2508	0.2513	0.2692

Description: The dependent variable is the growth of Fintech-lending. Significance level 1% (<0.01 ***; 5% (<0.05)**; and 10% (<0.1)* with Robustness test.

Source: data processed by the author, 2024

On the contrary, this study shows that the volume of investor funds has a negative effect on the growth of Fintech-lending. This is suspected to be due to measurement error. In addition, the discussion of Fintech lending which is not always intuitive is also a suspected factor why the volume of investor funds can have a negative effect on the growth of Fintech-lending. A study by Zhang et al, (2019) states that when the volume of investor funds is too high compared to loan demand, this can cause market imbalance. Investors may have difficulty finding suitable investment opportunities, which can reduce the rate of return and reduce the attractiveness of the platform. Furthermore, a study by Wang et al, (2021) added that the pressure to channel large investor funds can encourage platforms to lower credit assessment standards, resulting in increased risk and potential long-term losses. In addition, there is interest rate competition between Fintech-lending platforms which can reduce the attractiveness of the platform for new investors (Chen et al, 2018). The study by Serrano-Cinca & Gutiérrez-Nieto (2016) stated that there is a paradox in Fintech-lending, namely that the volume of investor funds that are too large can reduce the operational efficiency of the platform if the infrastructure is unable to handle the increase in scale properly.

The default rate or default rate refers to the percentage of loans that are not repaid according to the agreement. A high default rate can have a significant negative impact on the growth of the Fintech-lending platform. The default rate has a significant negative impact on the growth of the P2P lending platform. The studies by Serrano-Cinca et al (2015) and Emekter et al. (2015) found that a high default rate can reduce investor confidence in the platform, resulting in a decrease in the number of investors and investment volume. High defaults can reduce the profitability of the platform and investors, which in turn can hinder the growth and expansion of the platform (Xu and Chau, 2018). In addition, Wang et al., (2019) study stated that high default rates can trigger stricter regulatory oversight, which can limit growth and innovation in the Fintech-lending industry. Platforms will need to invest more resources in risk management and debt collection, which can reduce operational efficiency and hinder growth (Chen et al., 2017). Platforms that are able to manage and minimize default rates tend to experience faster and more sustainable growth. Therefore, effective risk management and accurate credit assessment are critical to the long-term success of Fintech-lending platforms.

Based on the research results, Fintech lending can be one of the driving factors for healthy and sustainable economic development in the era of technological development, especially in the development of financial markets. To achieve this, related agencies need strengthening both in terms of regulation and non-regulation, including 1) development of a framework and evaluation of adaptive and proportional regulations to accommodate innovation in Fintech-lending and consumer protection such as the formation of a regulatory sandbox and a risk-based regulatory approach that adjusts the level of supervision to the platform's risk profile (Pranata & Farandy, 2019; Thakor & Merton, 2018); 2) increasing digital financial literacy such as integration into the school curriculum and public education campaigns about Fintech-lending (Wulandari et al, 2021); 3) encouraging innovation and competition by providing tax incentives for investment in the Fintech sector and cooperation facilities between Fintech-lending and traditional financial institutions (Suryono et al, 2021); 4) Development and strengthening of digital infrastructure such as expanding the inclusiveness of broadband

networks and cybersecurity (Raharja et al, 2020); 5) Encourage financial inclusion such as providing incentives for platforms that are able to serve the MSME segment and communities in 3T areas (Sari & Dwilita, 2020); 6) carry out international collaboration such as being active in international forums and adopting global best practices related to Fintech-lending (Ziegler et al, 2020); and 7) Increase research and development on Fintech-lending (Wang et al, 2021).

CONCLUSIONS AND RECOMMENDATION

The rapid development of information technology has brought significant changes in various aspects of life including the financial sector, namely the existence of Financial Technology Peer-to-Peer Lending in Indonesia. This research found that loan volume, investor fund volume and default rate have an influence on the growth of fintech-lending in Indonesia. In addition, DKI-Jakarta is an area in quadrant III (vulnerable and risky), while Gorontalo is a potential area to develop in quadrant IV. Areas that are in the criteria for growth but at risk are Banten, West Java, Central Java, D.I.Yogyakarta, East Java, NTB, Central Sulawesi, South Sulawesi, and West Sumatra. This finding provides an analysis of considerations for related agencies in supporting the strengthening of policy regulations and legal frameworks in the supervision and operation of Fintech-lending in Indonesia. Strengthening adaptive and proportional regulations, increasing financial literacy and digital financial inclusion, and strengthening digital infrastructure such as broadband and internet access, as well as strengthening consumer protection regulations and risk management.

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