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DOES P2P LENDING HAVE AN IMPACT ON REGIONAL ECONOMIC GROWTH? EVIDENCE FROM JAVA PROVINCES

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Abstract

It is generally admitted that a relationship exists between financial system development and economic growth, although the nexus between these two is complex. Due to the advancement of technology, P2P lending has become a growing industry in Indonesia as an alternative credit different from a conventional bank, which also might contribute to fostering economic growth. This paper's purpose is to analyze the contribution of P2P lending to Product Domestic Regional Bruto (PDRB) in 5 provinces in Java, which are Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, and East Java, using fixed effect panel regressions from Q1-2020 to Q2-2022 period. This paper finds a significant and positive impact of P2P lending on real PDRB growth, with a 0,0754% magnitude. Although there is a positive impact, many challenges still need to be overcome in the P2P lending industry.

Keywords: *Credit; Economic Growth; P2P Lending*

INTRODUCTION

In the last few years, Indonesia has been one of the countries which experienced a significant increase in internet users. With over 277,9 million Indonesian population, the penetration of Internet users has already reached 204,7 million people, which means around 73,7% of the Indonesian population has been connected to the Internet (Hootsuite & We Are Social, 2022; Siste et al., 2021). Due to the advancement of such technology, there are numerous disruptions in many aspects, one of which is in Indonesia's financial services.

As of now, many conventional financial services have shifted toward digital. At the same time, plenty of startups entered financial services in Indonesia and coined a term popularly called Financial Technology (fintech) (Kaur et al., 2021; Pu et al., 2021).

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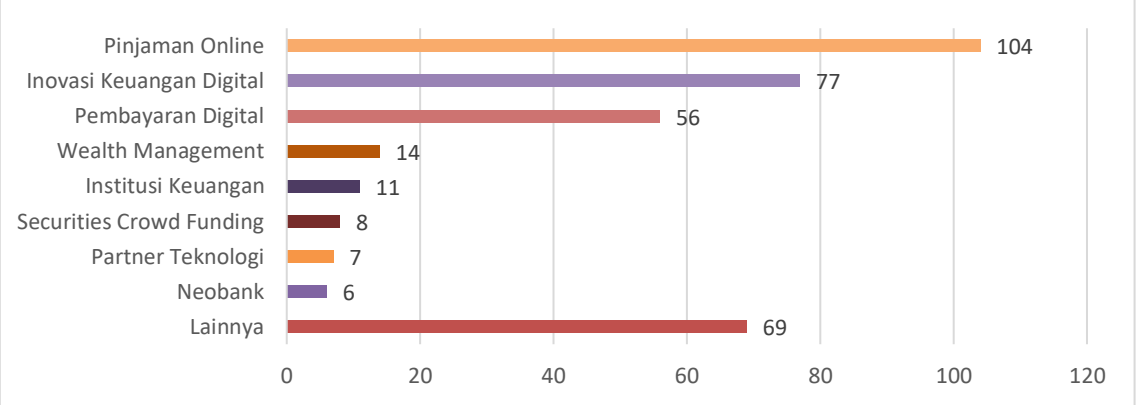
Based on Bank Indonesia (Indonesia Central Bank) regulation number 19/12/PBI/2017on the implementation of financial technology (Bank Indonesia, 2017), fintech can be defined as the use of technology in the financial system that creates a product, service, as well as business model which can give an impact on financial system stability, security, continuity, efficiency, as well as monetary stability.

In Indonesia, the responsibilities of the fintech implementation are supervised by Bank Indonesia and the financial services authority (OJK), which can be divided according to the fintech business model. Bank Indonesia supervises the payment system, remittance, and e-money, while OJK oversees Peer-to-peer lending (P2P Lending), Equity Crowdfunding, and digital finance innovation (Fabe et al., 2022; Mursitama et al., 2023). Quoted by Nuryakin et al. (2019) and Hongmin & Gang (2022), the appearance of fintech offers some advantages, such as monetary policy transmission and increasing the velocity of money, which indicate an improvement in business sector productivity and ultimately affect economic growth. The number of fintech that are legal entities and operate in Indonesia with various business models can be seen in Figure 1 below:



Source: Aftech (2021) (processed)

Figure 1. The Number of Fintech Business Models in Indonesia

According to Aftech data in December 2021, there are 352 fintech in Indonesia, in which P2P lending is the primary business model with 104 entities. This significant number of P2P lending entitieses is one of the primary reasons why the author decided to make P2P lending a research object. Another reason is that the investment proportion in P2P lending is also the highest compared to other business models, as shown in Figure 2 below:

JURNAL PAMATOR
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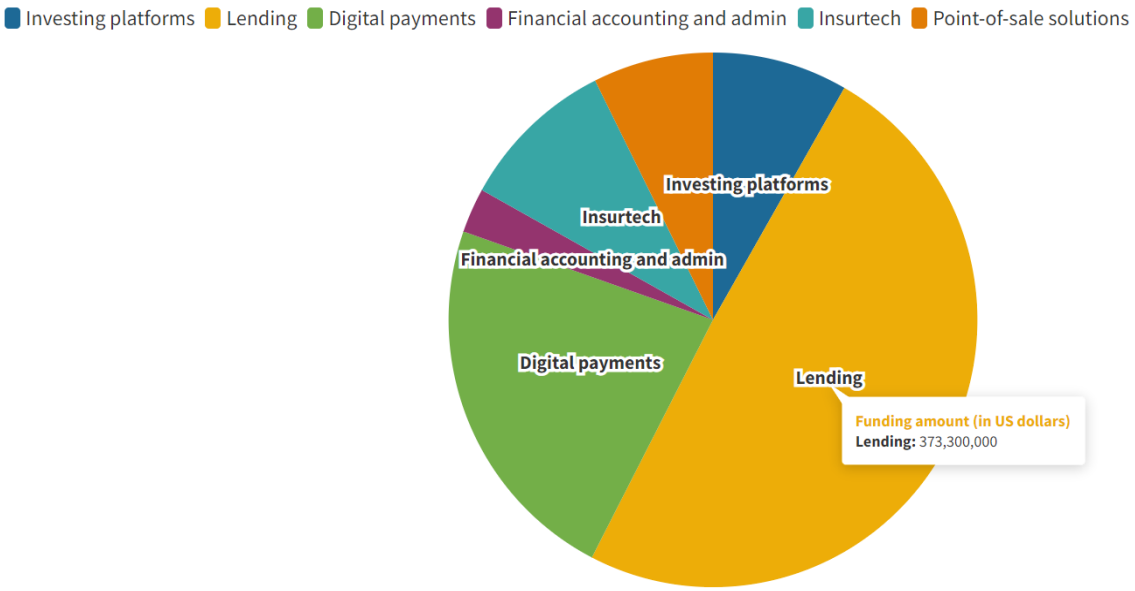

Source: Tech in Asia (2022)

Figure 2. The Fintech Investment Proportion in Indonesia

As seen in the figure above, P2P lending gains funding that reached US$373 million from investors, the highest investment in the fintech industry. The second highest investment is a digital payment that hit US$172,6, followed by insurtech making a US$72,5 million investment, and the last is the investing platform with US$62,7 million.

Seeing the development of P2P lending in Indonesia, it is interesting to discuss this phenomenon further. However, the author found there was still a tiny amount of research on P2P lending in Indonesia and its impact on the economy. Although there are few research numbers on fintech in Indonesia, several previous studies have attempted to make a research paper about this growing industry from different angles than what authors want to analyze. The first study on fintech was issued by LPEM FEB UI conducted by Nuryakin et al. with the title "Financial Technology in Indonesia: A Fragmented Instrument for Financial Inclusion?". This study aims to explain whether the presence of fintech will further promote financial inclusion or cause more fragmentation. This is because despite substantial growth in the fintech industry, those who enjoy this progress the most live in urban areas, followed by suburban residents, compared to rural areas (Nuryakin et al., 2019).

Research conducted by Arner et al. entitled "The Evolution of FinTech: A New Post-Crisis Paradigm?" This research discusses the history and evolution of fintech, because according to Arner the relationship between finance and technology has a long history and has evolved over time. Arner divides the evolution of fintech into three main categories, namely New Term for an Old Sector (1866-1987), the era when the analogue became digital, which was marked by the use of the Translantic cable in 1866. Second, fintech 2.0 (1987-2008) was marked for the first time by the beginning of a modern foundation with the presence of a formal legal approach to fintech. Finally, fintech 3.0 (2008-present), where fintech in this period has the characteristics of competition and diversity which brings opportunities and risks at the same time (Arner

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
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ISSN: 1829 -7935 (Print)

et al., 2019).

Another study on fintech is conducted by the Institute for Development of Economics and Finance (Indef) titled "The Impact of P2P Lending on the National Economy". In this study, Indef highlights the impact of P2P lending on the national economy through the productive sector on GDP using the input-output (I-O) metric approach. In addition, this study also highlights the effect of fintech on employment, inequality, and poverty. Based on this research result, fintech can indirectly and directly increase engagement for 362 thousand people. Regarding labor absorption, fintech P2P lending has an impact on reducing inequality (Gini index) by 0.01% and lowering the poverty rate by 177 thousand people. Finally, fintech also positively impacts the Gross Domestic Product (GDP) with more than IDR 60 trillion (INDEF, 2019). Another study on fintech was conducted by Hodula (2022) with the title "Fintech Credit, Big Tech Credit and Income Inequality", which attempted to explain the relationship between the growth of fintech and big tech credit on income inequality. The results of this study show that increasing credit distribution from fintech and big tech credit can reduce income inequality, but this can only happen in countries that already have a high level of financial inclusion.

Another research was conducted by Sari & Falianty (2021) titled "Financial Inclusion And Income Inequality: Does Financial Structure Matter?". This research seeks to analyze the impact of financial inclusion on income inequality conditional in the financial structure using panel data method in 33 provinces in Indonesia from 2010 to 2020. The results of this study indicate that financial inclusion does not significantly impact income inequality in Indonesia, nor does it affect the financial structure. However, this study also produces other findings, where provinces in the high category of HDI scores indicate financial inclusion and financial structure negatively and significantly impact income inequality.

Garcia-Escribano & Han (2015) manage research entitled "Credit Expansion in Emerging Markets: Propeller of Growth?" for country-level studies. This study examines the effect of corporate, consumer, and home loan growth on GDP in several emerging market countries. Although this study does not explicitly address P2P lending, this research demonstrates the effect of banks' corporate, consumer, and housing loans on GDP using a panel data approach at the country level. Control variables in this study include short-term interest rates, exchange rates, private bonds, government consumption, equity, loans, and global interest rates. This study found that corporate, consumer, and housing credit growth significantly impacted economic growth in emerging market countries.

The author realizes there are still very few studies on fintech, especially in Indonesia. The major reason is that the available data still needs to be improved, including the data on P2P lending in Indonesia. Besides that, studying P2P lending and its impact on the economy is challenging, considering the P2P industry is relatively new in Indonesia and still growing. As far as the author knows, this is the first study that focuses on the impact of P2P lending on regional economic growth (GRDP), especially in provinces on Java Island, using a quantitative methodology and panel data approach. According to the OJK, the differences in empirical methods, such as the period in which the research is carried out and the samples used, will influence the development of credit and economic growth, which can have a positive or negative

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
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ISSN: 1829 -7935 (Print)

relationship (OJK, 2019). As such, this study aims to analyze how substantial the influence of credit provided by P2P lending has on the Gross Regional Domestic Product (GRDP), which is in the context of cross-regional or provincial studies in Java.

RESEARCH METHODS

The data used in the preparation of this thesis is quantitative data, which is adjusted for the research period, namely Q1-2020 to Q2-2022. The determination of this period is not only due to the limited data available; it is also intended that this thesis be based on actual and up-to-date data and take into account the data and information that form the basis for the preparation of this study come from reliable sources. Table 1 below is the data source for this article:

Table 1. Research Data Sources

No.	Data Name	Obtained from
1	Fintech Lending Statistics	*OJK*
2	The Regional Economics and Financial Statistics	*Bank Indonesia*
3	Regional Economics Report	*Bank Indonesia*
4	GRDP, Government Consumption, Population, labor	Statistics Agency for Each Province & Bank Indonesia
5	Covid Case Data	datacovid.go.id

Source: Processed by Author

This research uses the panel data method. Panel data combines time series and cross-section data, where the same units or individuals are measured and observed over a certain period. In the regression model estimation method using panel data, the author uses the fixed effect model because it can eliminate bias compared to other panel data models, especially for biases caused by unobservable time-invariant variables. Fixed effect means an object has a fixed intercept value for various periods. Likewise, the regression coefficient has a fixed magnitude from time to time.

In conducting research using panel data with several periods, each researcher must control for serial correlation problems when estimating standard errors. In his book "Data Analysis for Business, Economics, and Policy," Béké & Kézdi (2021) argues that the way to do this is to make clustered standard errors. The standard error in the fixed effect regression will be estimated at the level of cross-sectional units, where, in this study, the data level is the provincial level. Thus, the standard error is robust to serial correlation and heteroscedasticity. The panel data log-log model that will be used in this study is as follows:

$$Log\_PDRB_{it} = \beta_0 + \beta_1 Log\_P2P_{it} + \theta + Log\_A'_{\gamma} + \varepsilon_{it}$$

Log_PDRB_{it} = GRDP
β_0 = Intercept
$\beta_1 Log\_P2P_{it}$ = P2P Lending distribution to each region
θ = interaction between time trend and regional fixed effect

JURNAL PAMATOR
Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

$Log\_A'_\gamma$ = Set of Control Variables, consist of

Working Capital Loan (KMK	Government Consumption (KP)
Investment Loan (KI)	Labour (PB)
Consumption Loan (KK)	Population (Pop)
MSME Loan (KUM)	Covid Positive Case (KPC)

RESULT AND DISCUSSION

Both bank and P2P lending can provide loans to the people; however, according to the OJK, there are fundamental differences between banks and P2P lending, which are summarized as follows:

Table 2. The Fundamental Differences Between Banking Credit and P2P Lending Part 1

No.	Differences	Bank	P2P Lending
1	Business Activities	Collect savings from the public and distribute loans for various needs such as MSME, corporate, retail, and consumer loans. Apart from that, it is also used to carry out various payment transactions and sell investment products.	P2P lending is a platform (application/website) where intermediaries lend between lenders and debtors based on agreements through an electronic system.
2	Source of Fund	Savings, deposits, demand deposits, owner's capital, and issuance of debt securities.	Individuals or legal entities that have funds and wish to lend them.
3	Authority to Grant Restructuring	Bank.	Funds' owner or lender. Credit restructuring can be given after approval by the lender through a P2P lending intermediary.
4	Lender	Bank.	Individuals or legal entities owning funds (not fintech lending companies).
5	Risk of Loan Distribution	Risk Borne by Bank	The risk is borne by the lender, not by P2P lending.
6	Supervision	Supervised by Bank	Supervised by P2P lending Companies.

Source: OJK, Processed by Author

Based on the table above, although both banks and P2P lending can deliver credit, there are clear distinctions between the two, as seen from business activities, sources of loan funds, authority to grant restructuring, lenders, risk, and supervision. Apart from

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

the aspects described above, a study conducted by Tambunan et al. (2021) entitled "The Development of MSMEs and the Growth of Peer-to-Peer (P2P) Lending in Indonesia" attempts to classify the differences between banking and P2P lending, which can be seen in the table below:

Table 3. The Fundamental Difference Between Banking Credit and P2P Lending Part 2

No.	Major Aspect	Bank	P2P Lending
1	Interest rate	Low-Medium	Medium-High
2	Amount of Loan	High	Low
3	Collateral	Yes	No
4	Party Involved	Borrower and Bank	Borrower, Lender, Platform
5	Regulation/Supervision	Strict	Loose
6	Process	Complex and Slow	Simple & Fast
7	Transaction cost	High	Low

Source: Tulus Tambunan, The Development of MSMEs and the Growth of Peer-to-Peer (P2P) Lending in Indonesia.

As shown in the table above, 7 other aspects that differentiate bank and P2P lending are interest rates, loan amounts, collateral, parties involved, regulations, lending processes, and transaction costs. As such, one can notice that the interest rate for P2P lending loans is higher than that for bank loans. The higher interest rate is because of the implication of no collateral imposed when making loans through P2P lending. Therefore, since collateral is not the main requirement for borrowing through P2P lending, the loan amount will also be smaller than the loan that banks can provide because OJK regulations limit it.

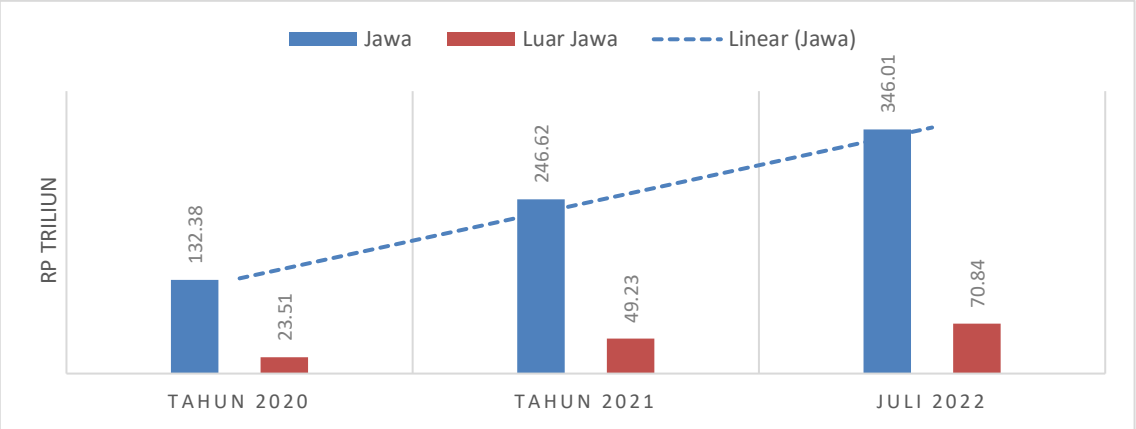
On the other hand, collateral has often been deemed an obstacle for middle-income groups and micro industries when they try to make loans. Because no collateral is needed to make a loan, some people borrow money through P2P lending companies (Tambunan et al., 2021). This shows that P2P lending has incredible potential to become an alternative credit for MSME players, startups, and the lower middle-income class who have difficulty making loans through banks. Another reason people make loans through P2P lending companies is that the lending process is considered faster than the bank. Moreover, lending does not thoroughly look at data from credit bureaus. However, it uses alternative credit scoring that metrics based on borrower data. The metrics include telecommunications data, e-commerce transactions, e-wallet transactions, social media data, Payment Point Online Banking (PPOB) data consisting of payments for electricity (PLN), National Health Care System (BPJS), private insurance, credit, internet, to game vouchers. Due to this fact, P2P lending is considered capable of solving some of the bank's existing problems and, therefore, can provide loans to those whom traditional financial service institutions have not served (Oh & Rosenkranz, 2022).

The Distribution of P2P Lending Credit

The accumulation of lending or credit through P2P lending companies in Indonesia is recorded as still experiencing rapid growth from year to year, as can be seen from the

JURNAL PAMATOR
Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

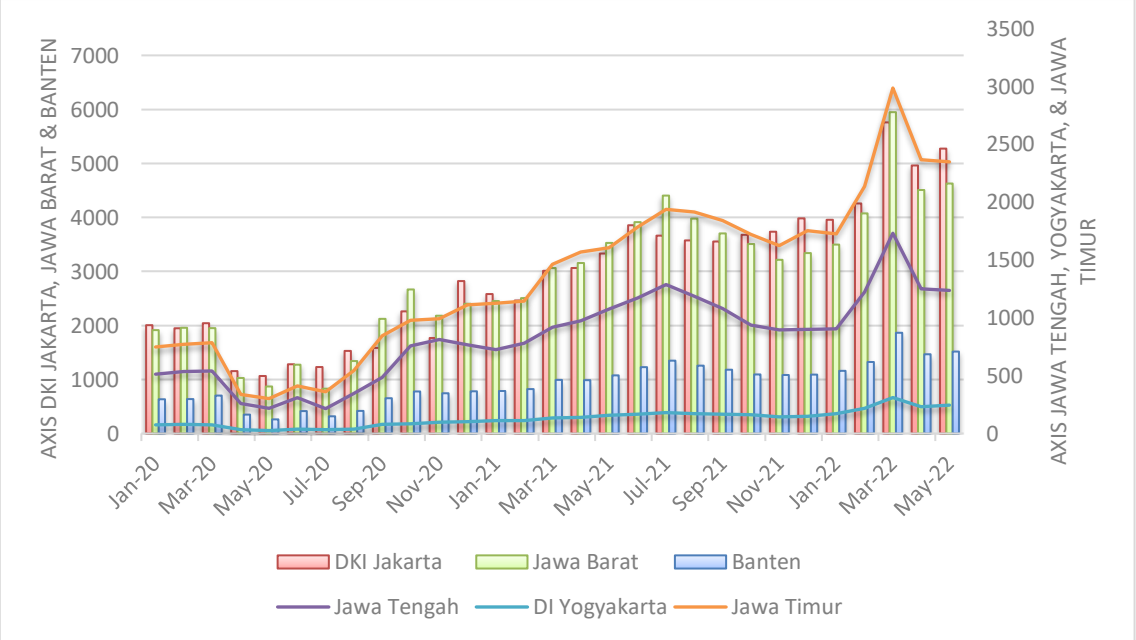
graph below:



Source: Fintech Lending Statistics, OJK (Processed)

Figure 3. Accumulated Distribution of P2P Lending in Java and Outside Java 2020 – July 2022

The data above shows that the total accumulation of P2P lending until 2021 reaches Rp295.85 trillion. However, credit distribution is still highly concentrated in Java because Rp246.62 trillion is circulating in Java and only Rp49.23 trillion flows outside Java. Seeing the significant loan disbursement figures from P2P lending on the island of Java caused the author to focus on each province in Java. When viewed in more detail, the distribution of P2P lending loans in each province of Java Island will be as follows:



Source: Fintech Lending Statistics, OJK (Processed)

Figure 4. Disbursement of P2P Lending Loans to Every Province in Java Island, the Year 2020 - May 2022 in Billion

JURNAL PAMATOR
Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

It was recorded based on the data above that DKI Jakarta and West Java led the distribution of loans from P2P lending in Indonesia in May 2022 with a value of 5,273.89 billion and 4,627.44 billion, respectively. East Java followed them with a credit value of 2,345.70 billion, Banten with a credit distribution of 1,516.13 billion, Central Java with 1,363.11 billion, and DI Yogyakarta with a credit distribution of 243.57 billion. The data also shows a decline in lending in March 2020, then stagnant until July 2020. This decline in credit lending is in line with the decline in economic growth in 2020 caused by the COVID-19 pandemic. The loan disbursement amount to each province has gradually improved starting in early 2021, in line with the first time the vaccination program started.

The Impact of P2P Lending Loan Distribution on Economic Growth to Each Province in Java from Q1 2020 to Q2 2022 Period

After looking at the P2P lending credit development data above, the factors that influence real GRDP, which are used as research variables, will be discussed. According to (Todaro & Smith, 2012), capital accumulation is one of the main components for creating economic growth in every country. Other than capital, economic growth is also influenced by various factors, ranging from government policies and consumption, individual consumption, labor, technological advances, population growth, credit distribution, and many others. Only variables whose data can be accessed and relevant to the research are used in this study. The variable data used is real GRDP, which is economic growth data at the provincial level, which is the dependent variable, then P2P, which is loan distribution data through P2P lending companies distributed to each province in Java, which is the variable of interest. Subsequently, the control variables used are Working Capital Loan (KMK), Investment Loan (KI), Consumption Loam (KK), MSME Loan (KUM), Government Consumption (KP), labor (PB), Population (Pop), and Covid Positive Cases (KPC), the following is a statistical summary of the quarterly data used in the study.

Table 4. Variable Statistical Summary

Variable	Unit	Obs	Mean	Std. dev	Min	Max
PDRB	Billion	60	274.235,3	161.198,2	23.697,2	485.414,7
P2P	Billion	60	1.726,248	1.554,36	37,51	6.552,89
KMK	Billion	60	327.677,6	306.300,6	17.080,66	1.110.123
KI	Billion	60	166.377	194.500,9	11.605	627.235
KK	Billion	60	162.203	97.609,48	19.671,45	356.092,7
KUM	Billion	60	111.946,2	58.385,02	16.278,49	188.254,7
KP	Billion	60	18.997,42	18.999,55	3.034,17	80,26
PB	Million	60	12,42	8,46	2,1	22,73
POP	Million	60	25,55	17,39	3,739	52,73
KPC	Thousand	60	68,43	97,53	0,011	389,92

Source: Processed by Author

From the data above, we can see a statistical summary for each variable used in the study, such as the number of observations, mean, standard deviation, and minimum and maximum values of each variable. This data also shows the following: 1) There is one dependent variable, namely GRDP, and nine independent variables, where the P2P

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
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ISSN: 1829 -7935 (Print)

variable is the variable of interest and the rest is the control variable; 2) Each variable has 60 observations, totaling 600 observations from all variables; and 3) Based on this data, it can be seen that it is balanced panel data.

All variables used in this study are then transformed into logarithms to be interpreted as elasticity or percentage (%). Through this data, the author carried out a panel data regression with a fixed effect (FE) approach, and the following results were obtained:

Table 5. Fixed Effect Panel Data Regression Result

	log_PDRB				
VARIABLES	(1)	(2)	(3)	(4)	(5)
log_P2P	0,0535***	0,0507***	0,0558**	0,0611***	0,0754***
	(0,00939)	(0,00553)	(0,0139)	(0,0109)	(0,0116)
log_KMK	0,0510	0,0387	0,0388	0,0412	0,145
	(0,0460)	(0,0427)	(0,0546)	(0,0617)	(0,0952)
log_KI	-0,0942**	-0,0920**	-0,0949**	-0,0562	-0,103
	(0,0327)	(0,0234)	(0,0251)	(0,0347)	(0,0753)
log_KK	0,0713**	0,0294	0,0512	-0,00680	-0,393**
	(0,0270)	(0,0192)	(0,0477)	(0,0703)	(0,190)
log_KUM	0,138*	0,205***	0,218***	0,0887*	0,236**
	(0,0613)	(0,0501)	(0,0520)	(0,0440)	(0,117)
log_KP	0,0146*	0,0126*	0,0157	0,0136	0,0163
	(0,00613)	(0,00548)	(0,00896)	(0,00876)	(0,0121)
log_PB		-0,181**	-0,211**	-0,0679	-0,0789
		(0,0474)	(0,0698)	(0,0522)	(0,296)
log_Pop			-0,116	0,135	-2,723
			(0,188)	(0,179)	(5,265)
log_KPC				-0,00418**	-0,00344*
				(0,00127)	(0,00209)
2.ProvID					0,916*
					(0,552)
3.ProvID					5,063
					(7,287)
4.ProvID					3,764
					(6,049)
5.ProvID					-4,660
					(5,850)
6.ProvID					4,621

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

					(6,617)
Quarterly					0,0463
					(0,0780)
2.ProvID#Quarterly					-0,0153
					(0,0169)
3.ProvID#Quarterly					0,00325
					(0,0130)
4.ProvID#Quarterly					-0,0343
					(0,0497)
5.ProvID#Quarterly					-0,0217
					(0,0133)
6.ProvID#Quarterly					-0,0344
					(0,0466)
Constant	9,714***	10,01***	9,969***	10,60***	19,15
	(0,728)	(0,523)	(0,555)	(0,707)	(13,61)
Observations	60	60	60	60	60
R-squared	0,815	0,824	0,827	0,848	0,873
Number of ProvID	6	6	6	6	6
Robust standard errors in parentheses					
***** p<0,01; ** p<0,05; * p<0,1**					

Source: Processed by Author

The author carried out five-panel data regressions with a fixed effect approach to observe the variable of interest dynamics by adding control variables individually for a robustness test. After adding control variables one by one, the author wants to know whether the obtained results are consistent. Other than that, the fixed effect approach was chosen to overcome the unobserved time-invariant variable bias in the study period. The three unobserved time-invariant variables that become the author's concern are a person's perception of COVID and vaccines, the level of discipline and risk preference of each individual for COVID circumstances in their respective regions, as well as the characteristics of the region amidst a pandemic, where the author believes these things affect GRDP, but the data cannot be obtained. The author also includes region-specific time trends considering the short research period and data in the quarterly form. Furthermore, there is an anticipated linear trend for the outcome variables to have their respective trends from time to time in each province so that they can control exogenous increases that variables in models cannot explain. In addition, the author also used a robust clustered standard error to minimize heteroscedasticity and serial correlation issues.

The summary of the results of the analysis with the fixed effect panel data regression approach can show that the research variable of interest, P2P, the number of loans channeled to each province, shows consistent results, is positively associated with and significantly influences GRDP at alpha 1% from the first to fifth regressions. The authors use the fifth regression results as the final result of this study with a coefficient of 0.0754%, which means that every 1% increase in P2P lending will increase GRDP by 0.0754%. The final model in the fifth regression produces an r-squared of 87%,

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

which means this model can elucidate as much as 87% of the variation that affects GRDP. The KUM variable, which is MSME credit provided by banks, also shows a positive and significant association up to the fifth regression. This positive result indicates that MSME credit significantly affects GRDP, even though there are significant fluctuations. The KPC variable (Positive Covid Case) has a negative association and significantly affects GRDP, where an increase in Covid cases by 1% will reduce GRDP by -0.0034%. The effect of consumer credit, which was previously positive, turns negative when the KPC variable is included and becomes significant when the time trend variable for each province is included. During the Covid period, a 1% increase in bank consumer credit would reduce GRDP by -0.39%. Working Capital Loans (KMK), Investment Loans (KI), MSME loans (KUM), Government Consumption (KP), labor (PB), and Population (Pop) did not significantly affect GRDP in the fifth regression in the study period.

From the previous summary analysis, several things can be explored further, especially between loan variables, which consist of various types of bank credit and P2P lending credit to GRDP in this study period. The first thing that can be seen is that P2P as a variable of interest shows a number that is always positive and significant to GRDP, where the first regression results show a coefficient of 0.0535%, the results of the second regression show a coefficient of 0.0507%, the third regression shows 0.0558%. The fourth regression shows a coefficient of 0.0611%, and the fifth regression shows a coefficient of 0.0754%. As mentioned, the Authors conducted five regressions to perform a robustness test to see whether the results obtained remained consistent with adding a control variable. The author used the fifth regression results as the final result of this study with a coefficient of 0.0754%, which means that every 1% increase in P2P lending will increase GRDP by 0.0754%. The impact is relatively small on GRDP, but this is still understandable, considering that P2P lending and banking loan comparison is still very different.

Even though the impact of P2P lending on GRDP is relatively small, it must be understood that P2P lending provides credit for people who have not been served by traditional financial institutions, in this case, banks (Oh & Rosenkranz, 2022). In other words, P2P lending plays a significant role in increasing financial inclusion because it has succeeded in providing financial access services to those categorized as underbanked and unbanked. Those classified as underbanked and unbanked can borrow from P2P lending because P2P lending companies use different metrics from banks in assessing borrower profiles. Besides that, the process is fast and easy, and there is no collateral needed to borrow, which is another reason why people borrow through P2P lending. However, as explained earlier, this causes people to pay loans at higher interest rates. Empirical proof of this requires further case studies by looking at whom loans are given and what types of loans are provided by P2P lending, for which data is not yet available.

The positive impact of P2P lending credit findings is also in line with several previous studies, such as research from INDEF (INDEF, 2019) on the effects of P2P lending on the national economy. Research from Garcia-Escribano & Han (Garcia-Escribano & Han, 2015) and Ho & Saadaoui (2022), focusing on bank credit at the country level to the economic upturn, also found a positive effect of credit on economic growth. In theory, an increase in credit through the P2P lending channel will increase the velocity of money transactions, which indicates an increase in consumption and

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

investment that encourages people's economic activities and business sector productivity as long as the loan can be repaid. Increased consumption and investment will lead to increased economic growth.

Because this research is in the COVID-19 period, it is essential to observe the impact of COVID-19 on economic growth in the region. Based on the model built, it can be seen that the KPC variable (Positive Covid Cases) has a negative and significant effect on GRDP, where an increase in Covid cases by 1% will reduce GRDP by -0.0034%. The impact of Covid-19 on the economy can be explained in two ways. The first concern is that workers infected with Covid-19 will reduce production capacity. Atkeson (2020) states that if 10% of the population is infected with COVID-19, the economy will face a shortage of human resources to do productive things. Second, implementing Large Scale Social Restriction (PPKM) is needed to prevent the spread of Covid-19 to save human lives. However, a trade-off must be paid, namely, reduced demand for goods and services from the people in general. A public demand drop indicates a decrease in people's purchasing power, causing many companies to break the production process. Moreover, based on a survey conducted by the workforce ministry, as many as 88 percent of companies were affected by COVID-19, which caused unavoidable mass layoffs (PHK). As such, this will ultimately increase unemployment and poverty due to disrupted production chains (Suryahadi et al., 2020).

Subsequently, the impact of COVID-19 on credit markets can be explained by increasing credit risk, which is caused by the increased potential for default and information asymmetry, both in the form of adverse selection and moral hazard during the COVID-19 period. The increased potential for default, adverse selection, and moral hazard is due to declining people's purchasing power. As such, this makes lenders not know the actual condition of borrowers amidst a pandemic, and it is feared that borrowers will not be able to repay loans and interest, making credit institutions more selective in selecting borrowers, including P2P lending companies. As explained in the previous sub-chapter, the number of loans disbursed through P2P lending decreased in Q1 – Q3 2020, while TWP90 in this industry increased. Q1 - Q3 2020 was the worst pandemic phase in Indonesia due to the absence of vaccines, and PPKM is still very tight.

In the investment loan variable, it was recorded that investment credit had a negative and significant effect in the first to third regressions and became insignificant in the fourth and fifth regressions, where it was recorded in the fifth regression that the investment credit coefficient became -0.103. It should be noted that investment loans are medium or long-term loans given to businesses to procure capital goods, such as buildings and land for factories, or to expand and establish new projects. According to the Authors, the actual impact of investment credit can only be seen if analyzed over a much-extended period because investment credit contributes indirectly to the production process. After all, companies cannot use it to make products directly. Investment credit tends to produce negative results in the short period of this research and with the pandemic conditions. When demand decreases, companies make no sense to increase production by procuring capital goods or expanding by establishing new projects. Conversely, companies make production activities efficient by reducing the production of goods or laying off workers, as previously described. Authors believe that over a much-extended time, the effect of investment credit tends to produce positive results on economic growth.

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

As for the variable working capital loan, this variable is not significant either from the first regression to the fifth regression. Working capital is the provision of credit in financing the company's current assets, such as paying employee salaries, buying raw materials, or other costs related to the company's production process. In macroeconomic theory, working capital like this is crucial because it can increase productivity and affect economic growth. Many companies use it directly to help produce output, increasing production capacity and labor productivity. Like investment credit, which is productive credit, working capital credit is also a factor of production besides land and labor. However, when demand shocks occur during a pandemic, many people lower their consumption just in case. Many people also experienced decreased purchasing power, so this reduced demand. This decrease in demand forced many companies to lessen production and conduct layoffs, causing changes in the structure of the workforce and the purchasing power of society as a whole.

Another banking variable that is interesting to watch is consumer loans. Based on the fifth regression, it produces a coefficient of -0.393%, which means that a 1% increase in consumption credit will reduce GRDP by -0.393%. This negative result is none other due to the conditions of the Covid-19 pandemic. As previously explained, COVID-19 increases credit risk and is exacerbated by the large number of people affected by layoffs, which causes a decrease in people's purchasing power and demand. Under these circumstances, the potential for default increases because borrowers are unable to pay off loans and interest, which at the same time also makes credit institutions more selective in distributing loans. Therefore, this indicates that consumer credit is very closely related to the workforce and the COVID-19 situation, which has changed from positive to negative because, as previously explained, COVID-19 has also changed the structure of the workforce, which in turn has changed people's purchasing power.

In addition, based on the regression results above, loan to MSMEs (KUM) by banks still has a positive and significant effect from the first regression to the fifth regression, even though there are fluctuations in the significance result. The fluctuating significance does not escape the fact that during the pandemic, the MSME sector still supported economic growth in this study as long as the MSME could repay the loan. In this study, the fifth regression of the KUM variable produces a coefficient of 0.236% and is significant at an alpha of 5%, which means that every 1% increase in MSME credit can increase GRDP by 0.236%.

When analyzed further, almost 99% of business units in Indonesia are MSMEs, where in 2021, the number of MSME business actors reached 64.2 million units. It comprises micro businesses reaching 63.4 million business units, small businesses with 783.1 thousand units, medium companies with as many as 60.7 thousand business units, and finally, large business units, which are only 5.5 thousand or around 0.01% of the total business units in Indonesia. This data indicates that the MSME sector is a vital driver of the economy. From the results of this regression, we can also conclude that just one type of bank credit, namely MSME credit, is capable of producing a coefficient of 0.236%, which is far greater when compared to the total impact of P2P lending loans distributed, with a coefficient of 0.0754% of GRDP. Given the positive and significant results in the credit variable for MSMEs, it is crucial to strengthen MSMEs, one of which is by providing training and access to credit.

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

Furthermore, the labor variable (PB) produces a negative and significant coefficient in the second and third regressions. However, the PB variable became insignificant with a smaller coefficient when faced with COVID-19, as shown in the fourth and fifth regressions. The results of the third regression are significant and produce a coefficient of -0.211%, but then become insignificant with a coefficient of -0.0789% in the fifth regression. It indicates that most of the negative impact has shifted to the positive COVID case variable, which also has a negative and significant effect on GRDP with a magnitude of -0.00344%.

Finally, the fifth regression of government consumption and population variables is insignificant. Although the government consumption variable is consistently positively associated with GRDP, there is a change in significance. Based on the regression result, the first and the second regression have a positive and significant effect with a coefficient of 0.0146% and 0.0126%, respectively. It becomes insignificant in the third regression to the fifth regression, with a coefficient of 0.0157% in the third regression, 0.0136% in the fourth regression, and 0.0163% in the fifth regression. If the government consumption cycle is stable and stagnant during a pandemic, there is the potential to be insignificant in influencing GRDP.

P2P Lending Challenges in Indonesia

The analysis explanation of P2P lending above shows the potential brought by P2P lending as an alternative to financing other than through banking; however, that does not mean that P2P lending has no challenges. According to Slesman et al. (2019), the process of developing financial services may result in much better resource allocation in the long run; however, if the financial system and political institutions are not mature enough to supervise financial services institutions, this will harm consumers and increase the risk of a financial crisis in the short term. Thus, it is imperative to strengthen P2P lending and to tackle their challenges.

The primary challenges faced by P2P lending include increasing financial literacy and inclusion, equity in loan distribution, information technology infrastructure, and culture. Based on this, it is essential to gradually strengthen information technology infrastructure, carry out equal distribution of loans, and simultaneously increase financial inclusion and literacy because financial inclusion without financial literacy is feared to be counterproductive. Regarding the issue of financial inclusion, the current challenge is how financial institutions, financial services, or even non-bank finance and the OJK can penetrate the unbanked and underbanked people and must simultaneously increase financial literacy. Financial literacy refers to a person's ability or skills in managing his finances. The ability to manage money and financial literacy are related to the wise use of money for meeting daily needs, investing, and saving activities. In addition, a study Sari & Falianty (Sari & Falianty, 2021) that analyzes financial inclusion and the financial structure of income inequality also reminds us of the importance of the Human Development Index (HDI) in supporting financial inclusion and reducing income inequality.

CONCLUSION

P2P lending in Indonesia has increased, starting from the number of registered, licensed, and funding in Indonesia. Even though banks and P2P lending companies distribute loans, the two have fundamental differences. This difference includes

Vol. 17, No. 1, 2024 p. 78-95
https://journal.trunojoyo.ac.id/pamator
ISSN: 2654-7856 (Online)
ISSN: 1829 -7935 (Print)

business activities, sources of loan funds, authority to grant restructuring, lenders, the person responsible for the risk of channeling loan funds, and who supervises. Apart from that, different aspects can also be found in interest rates, loan amounts, guarantees, parties involved, regulations, lending processes, and transaction costs. These things distinguish loans distributed by banks and P2P lending.

This study's results indicate a positive and significant impact of P2P lending on economic growth, where every 1% increase in lending through P2P lending can increase GRDP by 0.0754%. The positive effects of P2P lending distribution on regional economic growth must be maintained because P2P lending companies still face many challenges. Some challenges are P2P lending loans still concentrated in Java, access to P2P lending, low financial literacy, cultural factors, infrastructure, and many illegal online loans involving loan sharks.

This study was conducted during the pandemic and found that P2P lending consistently affected economic growth, such as GRDP. Therefore, efforts to strengthen the P2P lending industry but not make it challenging to provide loans are imperative to protect consumers and the industry. Because if this is neglected, the potential for a crisis in the P2P lending industry will increase.

Therefore, the efforts made so far to improve financial literacy must continue to be intensified by also paying attention to HDI aspects in each region to minimize the gap between inclusion and literacy. It requires the government's and all actors' active role in the P2P lending financial services industry. For example, all the actors can campaign for financial literacy education, provide training, and enforce the law so that people can avoid illegal loans, minimize risks, and know the purpose and benefits of credit through P2P lending and credit as a whole.

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Vol. 17, No. 1, 2024 p. 78-95
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