

Impact of Tax Implementation on Fintech P2P Loans in Indonesia

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ABSTRACT

This research paper aims to examine the impact of tax implementation on the number of P2P loan recipients and the amount of P2P loan disbursement in fintech industry of Indonesia. This empirical study is based on the number of accounts and loan data acquired from one of Indonesia's government agencies – the Financial Services Authority (OJK) from February 2022 to April 2022 and June 2022 to August 2022 that are analyzed using various tests such as Skewness-Kurtosis Test, the variance ratio test, and t-test. The results show that tax implementation does not significantly affect the number of P2P loan recipients and the amount of P2P loan disbursement. This is because fintech offers greater benefits than traditional banks, such as convenience, time-saving, more access to financial products, and better security measures.

Keywords: tax, fintech, loan, P2P

ABSTRAK

Penelitian ini bertujuan untuk mengkaji dampak penerapan pajak terhadap jumlah penerima pinjaman P2P dan jumlah penyaluran pinjaman P2P di industri fintech di Indonesia. Studi empiris ini berdasarkan data jumlah rekening dan pinjaman yang diperoleh dari salah satu lembaga pemerintah Indonesia – Otoritas Jasa Keuangan (OJK) dari Februari 2022 hingga April 2022 dan Juni 2022 hingga Agustus 2022 yang dianalisis menggunakan berbagai pengujian seperti uji Skewness-Kurtosis, uji rasio varians, dan uji t. Hasil penelitian menunjukkan bahwa penerapan pajak tidak berpengaruh signifikan terhadap jumlah penerima pinjaman P2P dan jumlah penyaluran pinjaman P2P. Hal ini dikarenakan fintech menawarkan manfaat yang lebih besar dibandingkan bank tradisional, seperti kenyamanan, penghematan waktu, lebih banyak akses ke produk keuangan, dan langkah keamanan yang lebih baik.

Kata kunci: pajak, *fintech*, pinjaman, P2P

Introduction

The industrial revolution is one of the biggest changes in the field of technology that will transform other fields (Putriani & Hudaidah, 2021). As of today, Indonesia is entering the era of revolution 4.0, which is an era where there are strategic and drastic changes in terms of production patterns that integrate all resources so that there will be a connection between technology, communication, and big data that will produce smart products and smart services (Sumartono & Huda, 2020). This revolution has expanded to the financial service sector, creating a new business model based on financial services provided through innovative and modern technology called financial technology (fintech). Fintech is a technology-based financial innovation that works harmoniously in a system of different objects (Taujanskaitė & Kuizinaitė, 2022). The views of several other researchers stated that fintech is a term that refers to the use of information technology (IT), such as cloud computing, big data, blockchain, and artificial intelligence (A.I.), as well as various software and algorithm to provide services to

fulfill demands related to financial services and to create a big impact on the financial market dan financial institutions (Shin & Choi 2019; Shahzad et al. 2022; Wang et al., 2022). Unlike traditional financial services, fintech is based on digital technology that optimizes the allocation of financial resources and increases the financial coverage and inclusiveness for micro markets (Wang et al., 2022).

Fintech is implemented to help organizations, financial institutions, and experienced users carry out monetary functions, methods, and lifestyles by using computer and smartphone application software (Singh & Sharma, 2022). Fintech is also an engine to build sustainability in developing countries (Anifa et al., 2022). Based on research by Luo et al. (2022), the results show that fintech boosted a much more efficient innovation - growth in entrepreneurial innovation and an increase in revenue are the two main results of the fintech revolution in China. According to *Bank Indonesia* (BI), in Indonesia, fintech plays an important role in boosting the overall success of *Strategi Nasional Keuangan Inklusif* (SNKI) and in payment systems, such as providing a market for businessmen, a tool for payment transactions, helping make investments more efficient, mitigate risks from conventional payment systems, and help those who need savings, loans, and capital investment.

For the past few years, fintech has shown rapid growth in the world of technology. According to a report from United Overseas Bank (UOB), the number of fintech firms in Indonesia has grown each year. Figure 1 shows that there were 583 fintech firms in 2018. This number then increases by 18.52% to 691 firms. In 2020, fintech firms increased by 9.55% from the previous year to 757 firms. Within a time-frame of 5 years, from 2018-2022, the highest growth rate was between 2020 and 2021, in which the number of fintech firms experienced a growth of 24.70% or up to 187 firms from 757 firms to 944 firms. This trend continued until 2022 when fintech firms increased by 5.19% or up to 993 firms.

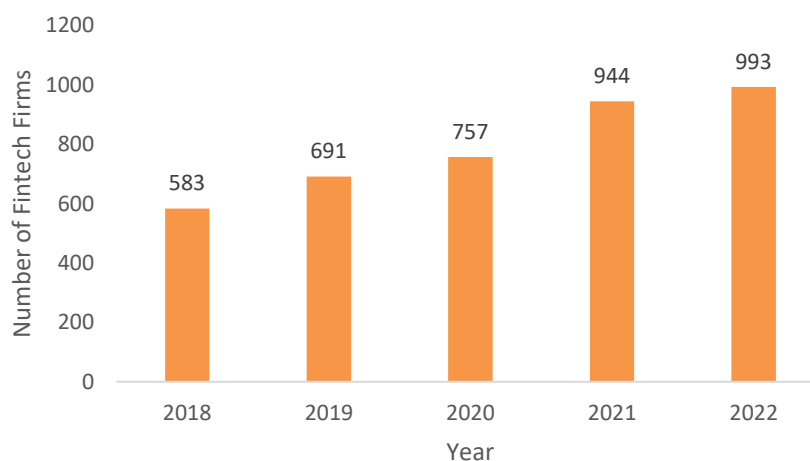


Figure 1. Number of Operating Fintech Firms in Indonesia (2018-2022)

[Source: United Overseas Bank (UOB), 2023]

Aside from the growth of fintech firms, UOB also noted that there is also an increase in funding activities by fintech firms in Indonesia. Based on Figure 2, in 2019, the total funding activity was \$197,120,000. This amount of funding increased by 48.02% to \$291,780,000 in

2019. However, in 2020, the funding amount experienced a drastic decrease of 3.30% or \$9,630,000 to \$282,150,000. Nonetheless, the amount of funding extraordinarily increased from 2020 to 2021. The funding increased by 364.29% from \$282,150,000 to \$1,310,000,000. This exceptional increase is caused by the COVID-19 pandemic, in which a majority of the people of Indonesia lost their jobs, suffered pay cuts, and bought a lot online due to frequent lockdowns. Some households with limited income also shift to microloan services to purchase their daily needs. Indonesian retail investments also explore online investment portals, which serve P2P loans with high returns, mutual funds, government obligations, and shares to increase their wealth (UOB, 2021). This funding activity then increased by 8.40% to \$1,420,000,000 at the end of 2022.

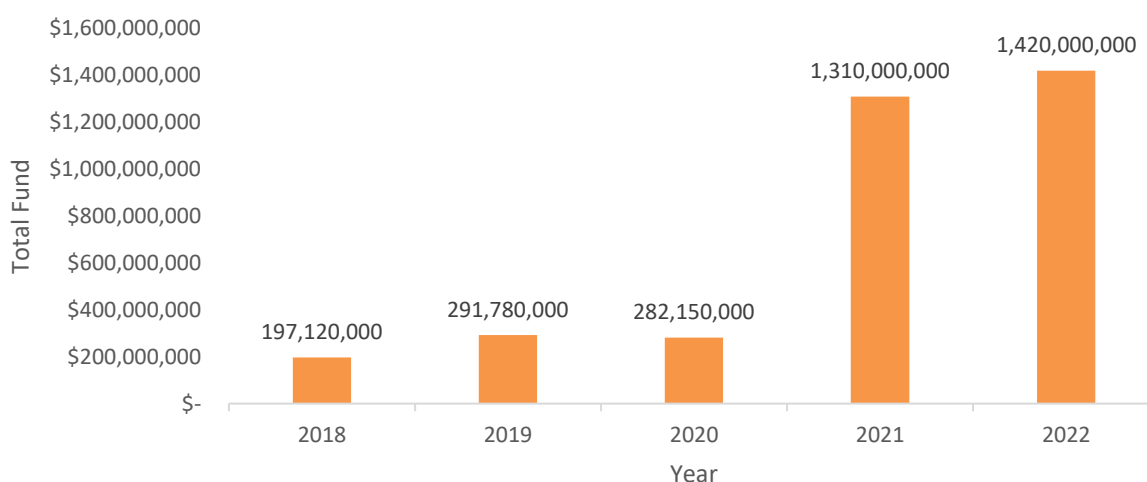


Figure 2. Fintech Funding Activity in Indonesia (2018-2022)
 [Source: United Overseas Bank (UOB), 2023]

One of the fintech service products is peer-to-peer lending (P2P), a financial solution where borrowers and lenders are directly connected without going through other intermediary financial institutions. Connections between borrowers and lenders can be made online through websites and fintech P2P online trading platforms. In developing countries such as Indonesia, P2P lending has a faster lending market because developing countries have a lower penetration of financial products caused by the lack of banking habits and geographical challenges (Kohardinata et al., 2020).

On May 1, 2022, the Ministry of Finance of Indonesia decided to implement value-added tax (PPN) and income tax (PPH) to P2P fintech platforms (Hariani, 2022). In P2P systems, lenders will gain revenue in the form of interest on the loan paid by the borrower. Interest income is subjected to income tax article 23 if the recipient is a resident taxpayer of Indonesia and has a permanent establishment of 15% of the gross interest. On the other hand, interest income is subjected to income tax article 26 if the recipient is a foreign taxpayer other than a permanent establishment of 20% of the gross interest (Amara, 2022). In addition, lenders identified as taxable entrepreneurs are required to collect, submit, and report value-added tax payable on the provision of taxable services. The Director of Counseling, Services and Public Relations of the Directorate General of Taxes, Neilmaldrin Noor, said that value-added tax is imposed on provisioning services, payment services, lending, and borrowing

services and is calculated by imposing a tax rate of 11%. Therefore, this study aims to find empirical evidence as to whether there is a significant change in the number of P2P loan recipients and the amount of P2P loan disbursement after the implementation of the tax in various provinces in Indonesia in May 2022. This research paper aims to examine the impact of tax implementation on the number of P2P loan recipients and the amount of P2P loan disbursement in fintech industry of Indonesia.

Peer-to-peer lending, commonly known as P2P, is the process of borrowing and lending money by borrowers and lenders through online platforms without needing an official, traditional financial institution as an intermediary (Wei et al., 2018). In other words, P2P lending involves people with extra money (lenders), people who need money (borrowers), and a platform (online channel). For the borrowers, online P2P lending is the process of receiving a loan without a traditional formal institution. It might also be a possibility of receiving better conditions than in traditional banks. For the lenders, on the other hand, it can be seen as an investment model where the investment risk is linked to the credit rating of the loans funded to the borrowers (Yunus, 2019). Since P2P lending platforms do not require a mediator, such as traditional banks, P2P lending can be considered a form of direct financing (Song et al., 2018).

The first P2P lending platform was established in 2005 by Zopa – a British company. Since then, P2P lending platforms have grown and developed in many different countries, such as the United States, the European Union, and Asia is one of the rapidly developing areas (Chulawate & Kiattisin, 2023; Yunus, 2019). According to Yang et al. (2020), several general steps exist in participating in online P2P lending. These steps include:

1. Borrowers and lenders need to register on online P2P lending platforms. Borrowers must provide certificates for credit checking, such as identity data, income and work certificates, and credit reports.
2. After registering, the P2P lending platform will examine whether the borrower can meet the required standards for borrowing.
3. If the borrower is eligible to borrow, the loan applications will be announced.
4. Lenders can check the borrower's credit through the online P2P lending platform and offer loans if the credit has been confirmed.
5. If the borrower receives the money, the borrower ought to repay both the principal and the interest, which are requirements in the loan contract created between the borrower and the lender.

P2P lending is one of the most successful types of crowdfunding. Lenz (2016) defines crowdfunding as any type of web-based collection of small funds from online platforms. Crowdfunding can be commercial, where funders can expect a financial return, or non-commercial, where funds are based on donations. P2P lending platforms can help borrowers find lenders more quickly because the Internet provides a lower search cost. According to Song et al. (2018), in China, P2P platforms are relatively inclusive because low-income individuals and small businesses (often rejected by formal banks) would find it easier to access loans from P2P lending platforms.

Several factors can heavily influence P2P lending for sustainable fintech innovation. Chulawate & Kiattisin (2023) conducted research on the factors that will affect the use of a

P2P lending platform from the perspective of lenders in Thailand. The results of their study show that risk is an essential aspect to be heavily considered when borrowing money. These include interest rates, inflation, laws, regulations, and financial and credit status. All these factors negatively correlate with the lenders' decision-making regarding P2P lending. In addition, lenders also consider the borrowers' demographic characteristics, financial and socioeconomic status as well as educational background. These factors positively correlate with the decision-making of P2P lending. Similarly, a study about the factors that encourage SMEs (Small and Medium-sized Enterprises) to use P2P lending platforms to obtain loans by Rosavina et al. (2019) showed that interest rate, process cost, loan amount, loan flexibility, and loan process are the major factors that influence SMEs to borrow loans from P2P lending platforms.

Hypothesis Development

Tax is an inevitable aspect of all societies. Every economic and social sector is subjected to tax. For instance, the telecommunication sector is faced with implementing general taxes such as income tax (Katz & Jung, 2023). Consumers who purchase goods from stores are also subjected to value-added tax (VAT) or goods and services tax (GST). In developing fiscal policies, such as determining the size of tax to be imposed on goods and services, governments must heavily consider the trade-off between generating revenue and its negative impact on the sector's growth and performance.

One type of good that is heavily subjected to tax is demerit goods. These demerit goods include tobacco smoke and alcoholic drinks. Increasing taxes on tobacco smoke is one of the most cost-effective measures to reduce the consumption of tobacco. Tobacco taxation can impact its selling price, which in turn will affect its affordability and demand quantity. A study by Nazar et al. (2021) found that cigarette prices and taxes are effective measures for controlling cigarette consumption. Similar results are obtained from a study by Immurana et al. (2021), where their research results show that higher tobacco prices can deter and reduce smoking activities. However, in a different study by Mukherjee & Ekanayake (2018), results show that tobacco taxes and smoking participation are slightly negatively correlated but not significant. This slight negative correlation, yet insignificant, signifies that it will take a huge amount of tax to be imposed on cigarettes to strongly affect smoking activities. The researchers further stated that the slight increase in tax is rather futile because cigarette companies will make up for the increase in tax by giving discounts and other means of promotions.

Aside from tobacco smoke, alcohol is also highly subjected to tax. Alcohol consumption, from beer to wine, has been part of human life. However, it has been widely known that alcohol consumption generates external costs for society. These external costs are usually associated with medical, productivity, and crime (Hummel, 2018). For example, results from a study by Seid et al. (2015) showed that women are at a higher risk of harm from other people's drinking. Furthermore, their results also showed that younger people frequently cause injuries to older people. Since alcohol consumption produces external costs to society, alcoholic drinks are taxed to compensate for these negative social costs. Results from a study by (Fogarty, 2009) showed that higher taxes imposed on alcoholic drinks would result in lower

harmful consumption. Furthermore, heavy drinkers of alcohol will decrease their consumption as a consequence of an increase in prices. Because of this, increasing the price of alcoholic drinks by imposing taxes is an effective policy to reduce the external costs produced by alcohol consumption. Moreover, since the demand for alcoholic drinks is proven to be inelastic, higher taxes will result in higher tax revenue for the government. This tax revenue can be paid to cover external costs caused by alcohol consumption.

The type of tax used in this research includes value-added tax (PPN) and income tax (PPH) which is implemented on fintech P2P loans. To examine the effect of this implementation, the researcher decided to use the variables the number of P2P loan recipients and the amount of P2P loan disbursement because these are the two main aspects that are directly affected by the tax that will explain whether the implementation of tax will have a significant effect on fintech P2P loans in Indonesia. Tax policy formulation has always been one of every government's challenges. Nearly all goods and services are subjected to a certain tax rate to generate this tax revenue. One type of curve that shows the relationship between the tax imposed by the government and tax revenues collected is the Laffer Curve, presented by the economist Arthur Laffer (Wang et al., 2021), as shown in Figure 3. The Laffer effect has been discussed in the context of labor supply, whether a tax cut on wages would lead people to work more (Özçam, 2014). One common argument of the Laffer Curve is that if the tax rate is zero, tax revenues from the tax are also zero (as shown by the first phase of the graph). This means that the government will not generate revenue at all. However, if the tax rate is at an extreme rate of 100% (as shown by the last phase of the graph), the tax revenue is zero because workers will not be willing to pay any taxes – either they will lose their motivation to work or find ways to avoid paying taxes. Therefore, Laffer Curve's Theory states that it is most efficient and ideal for a government to set its tax rate somewhere between 0% and 100%.



Figure 3. Laffer Curve
[Source: Author's Compilation]

Tax revenues can have a significant impact on a country's economy. At the microeconomics level, tax revenues can affect people's daily lives by influencing their choices and decisions, such as savings and consumption. Whereas, at the macroeconomics level, tax revenues can affect a country's economic growth, investment models as well as allocation of resources (Wang et al., 2021). Wang et al. (2021) conducted research on the V4 (Visegrad) countries including Poland, the Czech Republic, Slovakia, and Hungary, to examine the optimal tax rate in these countries. The results of their study show that the Laffer Curve is valid for the V4 countries since the calculated optimal value of the tax rate was close to the tax rate of the V4 countries. Furthermore, there is a significance in the relationship between their GDP growth rate and the tax rate.

The Laffer Curve theory is specifically chosen and used in this research due to its ability to describe how increasing tax rates affect government revenue in the form of tax. An increase in tax would increase government revenue. However, if this tax increase is too big, government revenue will fall because consumers will not be willing to buy any goods or services to the extent that the demand for that specific good or service will fall. Unfortunately, to the best of the researcher's knowledge, no researcher has ever explained the impact of taxes on fintech on P2P loans. Therefore, the hypothesis formed for this research is as follows:

H1: there is a significant difference in the number of P2P loan recipients before and after tax implementation

H2: there is a significant difference in the amount of P2P loan disbursement before and after tax implementation

Materials and Methods

This study used t-test to examine the significance of tax implementation on fintech, where the data collected are spanned from February 2022 to April 2022 and from June 2022 to August 2022 from a total of 34 provinces for the variables P2P loan recipients and P2P loan disbursement. The number of P2P loan recipients and the amount of P2P loan disbursement for May 2022 have been removed because this is when tax is first implemented on fintech services in Indonesia.

The data used in this research is secondary data obtained from one of the Indonesian government agencies' official sites – the Financial Services Authority (OJK). Data obtained from the Financial Services Authority (OJK) are subjected to a natural logarithmic conversion (ln) before running some tests. This reduces the wide range of data and minimize the risk of outliers during test runs. The Skewness-Kurtosis normality test and the variance ratio test are used to test for normality and homogeneity, respectively, within the data. These tests are run using a statistical software program-STATA.

Results and Discussion

Research result

This research examines the impact of tax implementation on the number of P2P loan recipients and the amount of P2P loan disbursement. First, 97 observations obtained are treated with the Skewness-Kurtosis normality test. Based on the table 1, by looking at the Prob > chi2 value, it can be concluded that before and after the implementation of tax, the number of P2P loan recipients has a normal distribution since the values are greater than 0.05.

Table 1. Normality Test Results for Number of P2P Loan Recipients

Variable	Obs.	Pr (Skewness)	Pr (Kurtosis)	----- joint -----	
				adj chi2 (2)	Prob>chi2
Before	97	0.1155	0.2872	3.72	0.1560
After	97	0.0803	0.3857	3.92	0.1406

Source: Stata output, 2023

Based on the table 2, by looking at the Prob > chi2 value, it can be concluded that before and after tax implementation, the amount of P2P loan disbursement has a normal distribution since the values are greater than 0.05.

Table 2. Normality Test Results for Amount of P2P Loan Disbursement

Variable	Obs.	Pr (Skewness)	Pr (Kurtosis)	----- joint -----	
				adj chi2 (2)	Prob>chi2
Before	97	0.0353	0.8788	4.53	0.1038
After	97	0.0220	0.6559	5.32	0.0700

Source: Stata output, 2023

In this research, the variance ratio test is first treated for the number of P2P loan recipients. Based on the table 3, the 2*Pr (F > f) value found concludes that there is no significant difference between before and after tax implementation for the number of P2P loan recipients. In addition, the data is homogenous since 0.911 is greater than the critical value, 0.05.

Table 3. Variance Ratio Test Results for Number of P2P Loan Recipients

Variable	Obs	Mean	Std. Err.	Std. Dev.	[96% Conf. Interval]	
Before	97	11.40335	.1465162	1.443018	11.11252	11.69419
After	97	11.43283	.1448509	1.426616	11.1453	11.72036
Combined	194	11.41809	.1027538	1.431194	11.21543	11.62076
Ha: ratio !=1					f = 1.0231	
2*Pr(F > f) = 0.9111					degrees of freedom = 96, 96	

Source: Stata output, 2023

Next, the variance ratio test is for P2P loan disbursement. Based on the table 4, the 2*Pr (F > f) value concludes that there is no significant difference between before and after tax implementation for the amount P2P loan disbursement. In addition, the data is homogenous since 0.9517 is greater than the critical value, 0.05.

Table 4. Variance Ratio Test for Amount of P2P Loan Disbursement

Variable	Obs	Mean	Std. Err.	Std. Dev.	[96% Conf. Interval]	
Before	97	4.796499	.1352201	1.331764	4.52809	5.064909
After	97	4.797759	.1343844	1.323533	4.531008	5.06451
Combined	194	4.797129	.0950728	1.324211	4.609614	4.984644
Ha: ratio !=1					f = 1.0125	
$2*\Pr(F > f) = 0.9517$					degrees of freedom = 96, 96	

Finally, the t-test results for the number of P2P loan recipients show that there is no significant difference in the mean between before and after tax implementation since the value of $\Pr(|T| > |t|)$, 0.8864, is greater than 0.05 (Table 5).

Table 5. T-test Results for Number of P2P Loan Recipients

Variable	Obs	Mean	Std. Err.	Std. Dev.	[96% Conf. Interval]	
Before	97	11.40335	.1465162	1.443018	11.11252	11.69419
After	97	11.43283	.1448509	1.426616	11.1453	11.72036
Combined	194	11.41809	.1027538	1.431194	11.21543	11.62076
Ha: diff != 0					t = -0.1431	
$\Pr(T > t) = 0.8864$					degrees of freedom = 192	

Source: Stata output, 2023

Also, the t-test results for the amount of P2P loan recipients show that there is no significant difference in the mean between before and after tax implementation since the value of $\Pr(|T| > |t|)$, 0.9947, is greater than 0.05 (Table 6)

Table 6. T-test Results for Amount of P2P Loan Disbursement

Variable	Obs	Mean	Std. Err.	Std. Dev.	[96% Conf. Interval]	
Before	97	4.796499	.1352201	1.331764	4.52809	5.064909
After	97	4.797759	.1343844	1.323533	4.531008	5.06451
Combined	194	4.797129	.0950728	1.324211	4.609614	4.984644
Diff		-.001259	.1906401		-.377277	.3747583
Ha: diff != 0					t = -0.0066	
$\Pr(T > t) = 0.9947$					degrees of freedom = 192	

Source: Stata output, 2023

Discussion

Based on the research results, the tax implementation on fintech services in Indonesia does not have a big impact on the number of P2P loan recipients and the amount of P2P loan disbursement. Therefore, the hypothesis stating that there is a significant difference in the number of P2P loan recipients and the amount of P2P loan disbursement is rejected. This is because the users' benefits outweigh the cost they must pay. Fintech services, in general, offer users a greater number of advantages over traditional financial services offered by banks. The advantages offered include convenience, speed, and flexibility. For instance, in traditional banking services, users must go to the nearest bank to borrow loans and make deposits. However, through modern fintech services, users can use mobile payment apps to make these transactions quickly and easily without going to banks. Users can save much more time

without going to the bank to process transactions. Since time is valuable for most users, they may be willing to pay these taxes if it means saving them time. This is supported by the results of a study by Shahzad et al. (2022), where it is said that the easier it is to use fintech, the higher the probability of users adopting it. Aside from these factors, factors that come from within the users' behaviors also contribute to the growth of these fintech companies. One of the user behaviors that might prompt them to use fintech services rather than traditional banking is trust. Results from a study by Shahzad et al. (2022) showed that trust has a positive correlation with users' attitudes toward fintech. This is because fintech companies use advanced security measures such as two-factor authentication and encryption to protect users' financial information. These advanced security measures will allow users to be free of any worries or anxieties.

Taxes are essential revenues for the government to regulate the macroeconomy, promote investment activities, and redistribute wealth and income in society in a fair manner (Nguyen, 2022). Many users also realize that paying taxes is an obligation as a citizen of a country. They have a clear understanding that paying taxes is used by the government to fund public services and the country's infrastructure, such as public roads, schools, and healthcare facilities, that will benefit everyone in the country. By paying these taxes, users create a sense of well-being in the country by helping to support these public services. This voluntary compliance comes from a taxpayer's willingness to support the government and a moral obligation to contribute to public goods provided by the government (Nguyen, 2022). Similarly, one of the results produced by a study by Ayuba & Ariffin (2016) showed that taxpayers are psychologically indebted to the benefits they have received and therefore are forced to pay them back. This voluntary tax compliance will help boost the economic growth of a country.

Moreover, fintech companies and regulators ensure tax compliance is as easy and convenient as possible for their users. Fintech companies are developing features to help their users to keep track of their tax obligations. In contrast, the regulators are working to create clear and consistent tax rules for fintech companies, which can help minimize confusion and make tax compliance simpler for their users. The tax rate imposed on fintech services by the government did not significantly affect people's behavior in using online P2P lending platforms. This means the government can raise taxes imposed on these services to generate more revenue. However, the government must take extra precautions to increase the tax rate imposed on these fintech services. If the government imposes tax above the optimum tax value, it can be detrimental to Indonesia's economy and the fintech industry. Users will no longer be interested in using these fintech services. Consequently, fintech companies might have to lay off some of their employees to cut costs and still be able to compete with other fintech companies. As proven by the Laffer Curve, if taxes are too high, fintech users will no longer be motivated to use fintech services because they will feel disadvantaged after their income is deducted by the huge amount of tax and left only with a small portion. Governments must determine the optimal tax rate for fintech services so that both the government can have higher revenues and fintech companies can still have their users using their financial services. To determine the optimal tax rate, the government must also consider other factors as to why users are willing to use fintech's financial services rather than traditional bank's services. If

users find fintech's financial services inelastic, the government can impose a high tax, just like demerit goods, to earn higher revenues.

Conclusion

The results of this study showed that the implementation of tax does not have a significant effect on the number of loan recipients and the amount of loan disbursement. In other words, users are still willing to use fintech's financial services regardless of being taxed. Realistically, this research is valuable for the government to further develop tax policies. Fintech companies can also develop unique features allowing users to continuously utilize their financial services. These features can include a friendly user interface that can improve the ease of use, flexible interaction between the borrowers and lenders, or provide valuable guides to navigate the online platform so that users will easily adapt to fintech services and be delighted to continuously make use of these services. The limited amount of data available becomes one of the limiting factors of this study. Furthermore, some provinces in Indonesia, such as North Kalimantan, are not included in this study due to the absence of data. For future research, the researcher suggests conducting research surveys and field observations on provinces included in this research to improve the reliability and validity of the results obtained. In addition, future research can also analyze whether tax implemented on fintech services in different countries affects the number of loan recipients and the amount of loan disbursement. This is because other countries have tax policies that are different from Indonesia, and their users may have different preferences and fondness.

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