Impact of tax regulation on the development of financial technology in Indonesia

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ABSTRACT

Purpose — The objective of this study is to assess the influence of recently enacted tax legislation in May 2022 on the advancement of fintech in Indonesia.

Method — The present study utilizes a quantitative approach to gather empirical data and conduct hypothesis testing. The population under investigation in this study consists of the total count of lender accounts across 34 provinces in Indonesia, classified according to quarterly periods. The methodology employed in this study involved selecting samples from 33 provinces. Data collection spanned from the second quarter to the fourth quarter of the 2021-2022 period, resulting in a total of 192 observations. The process of hypothesis testing was carried out using multiple regression analysis.

Result — The research findings suggest that implementing fintech taxes significantly impacts the number of lender accounts in the following year. This implies that introducing taxes on fintech has a substantial influence on the lending sector, potentially leading to changes in the availability of accounts for borrowers and lenders in the year following the tax adoption.

Contribution — The contribution of this study based on its novelty is that it provides unique insights into the consequences of the recently enacted fintech taxes, which took effect on May 1, 2022. Before this research, no other investigations had explored this specific topic, making this study the first of its kind to shed light on the implications of the regulatory changes within the fintech industry.

Keywords: financial technology, tax, P2P, loans

INTRODUCTION

The advent of Industry 5.0 has brought about substantial changes in numerous facets of contemporary society (Rizal et al., 2019). The advent of mobile devices has revolutionized economic transactions, enabling them to be undertaken remotely without the need for face-to-face contacts. This transition is a result of the rapid development of information technology, which has simplified many processes. An illustration of this technical progression can be observed in the emergence of internet-based financial services, commonly referred to as financial technology (Gomber et al., 2017). The emergence of financial technology (fintech) has introduced a novel participant in the financial sector, resulting in notable impacts on both the economy and governmental regulatory frameworks. The realm of financial technology encompasses several manifestations, such as non-cash payment systems, peer-to-peer (P2P) lending, and currency exchange, as highlighted by Kusyeni et al. (2022).

Indonesia is considered to be a country with significant potential for the development of fintech. Based on data provided by the Association of Indonesian Internet Service Providers (APJII), there has been a 6.78% surge in the number of individuals utilizing the internet, with the user base expanding from 196.7 million to 210.03 million individuals during the period spanning 2021 to 2022. The provided data suggests that the level of internet penetration in Indonesia has reached 77.02%. The exponential expansion of the internet has precipitated a surge in innovation within the field of financial technology (fintech), resulting in the development of many applications that cater to financial services such as payments, savings, and other related functions (Stefanny &
The rapid expansion of fintech in Indonesia can be attributed to its ability to provide convenient and efficient access to a wide range of services (Safitri, 2020).

Presently, the field of financial technology (fintech) is seeing a notable expansion inside Indonesian culture (Ma et al., 2021). According to the Financial Services Authority (OJK), the data reveals that the fintech peer-to-peer (P2P) lending sector has allocated a total of Rp13.78 trillion in loan disbursements as of January 2022. The observed quantity showed a growth of 46.9% in relation to the corresponding timeframe of the preceding year, during which the total value of fintech loans reached Rp9.38 trillion in January 2021. As of January 20, 2023, a total of 102 organizations have obtained licenses from the OJK and are duly registered as fintech loan providers. The potential for rapid expansion contributes to an increase in prospective tax income. According to Putri et al. (2021), the scope of the tax object as defined in the Income Tax Law includes individuals who acquire extra economic capacity, whether domestically or internationally, for the purpose of consumption or augmenting their own wealth, irrespective of the specific designation or manifestation.

The government formally enacted legislation pertaining to income tax and value-added tax for all fintech providers on May 1, 2022. Regulation PMK 69/2022 has been enacted with the objective of establishing legal certainty and administrative convenience in relation to the imposition of Income Tax and Value-added Tax on fintech services. This regulation seeks to ensure that tax duties pertaining to fintech transactions are effectively addressed. The aforementioned laws offer comprehensive instructions pertaining to fintech service providers functioning as entities responsible for the collection of Article 23 or Article 26 revenue Tax on interest revenue acquired by lenders. According to Article 23 of the Income Tax legislation, domestic taxpayers and permanent establishments are subject to a 15% tax rate on their gross interest income. According to Article 26 of the Income Tax regulations, individuals who are not permanent establishments and are classified as foreign taxpayers are liable to pay a tax rate of 20% on their total gross income.

Nevertheless, the implementation of these levies may impact the willingness of lenders to allocate their funds through peer-to-peer (P2P) financial technology (fintech) platforms (Suryono et al., 2019). The President and Director of DanaRupiah, a prominent P2P fintech platform, has noted a noticeable decrease in lender interest, particularly during the month of May. According to statistics provided by OJK, there was a month-to-month (mtm) decline of 1.51% in the cumulative number of lender accounts as of May 2022, resulting in a total of 888,209 accounts. This represents a decrease compared to the recorded value of 1.63% in April 2022. However, the cause behind this reduction is unverified, as it remains uncertain whether it is attributable to the enforcement of fintech tax regulations or a resultant economic slowdown following the Covid-19 pandemic.

Elevated tax rates have the potential to reduce the overall revenue generated due to increased expenditures. According to economic principles, it has been observed that an increase in prices can lead to a decline in consumer demand (Wandita, 2020). This idea can be applied effectively in the context of the P2P tax, as it may reduce the earnings of lenders and subsequently affect their willingness to provide financial resources via P2P platforms.

Haptari and Aribowo (2019) conducted a prior investigation into tax legislation in the fintech sector, with a specific focus on Peer-to-Peer lending. The research findings indicate that the P2P lending market lacks precise tax legislation related to subjects, objects, tax rates, and collection techniques. The expansion and scale of financial transactions in peer-to-peer lending have significant implications for tax revenue, the structure of the tax sector, and the overall growth of the tax sector. The study conducted by Mulyani and Efriadi (2021) explained the methodology used for calculating Fintech taxes before the enforcement of PMK 69/2022. The legal foundation used in this context was Law No. 36 of 2008, which imposed a 2% income tax rate. However, the recently implemented regulations have established a 15% tax rate on the total amount of interest earned. According to research conducted by Kepakisan and Melani (2022), the lack of precise technical regulations regarding taxation for P2P lending fintech companies creates difficulties for tax authorities in collecting taxes from the fintech sector. This includes the absence of
provisions related to subjects, objects, tax rates, and collection mechanisms, which can lead to tax evasion by P2P lending business owners.

This paper presents an analysis of the performance of the fintech industry following the introduction of targeted tax legislation for the sector. This study is notable for its investigation into the effects of newly implemented fintech taxes enacted on May 1, 2022. It fills a gap in the existing literature as the first inquiry on this specific topic, providing new insights into the results that arise from changes in regulations within the fintech industry.

The objective of this study is to assess the effects of recently enacted tax regulations in May 2022 on the advancement of fintech. This will be achieved by conducting a comparative analysis of loan disbursements and the number of lender accounts between 2021 and 2022. The research findings can serve as a valuable resource for regulators in evaluating the actions of lenders when allocating their funds, providing a foundation for making informed decisions regarding fintech tax policies. Additionally, P2P platforms have the ability to devise tactics aimed at sustaining lender interest as fund providers.

**METHOD**

The present study utilizes a quantitative approach to gather empirical data and conduct hypothesis testing. The tax year is considered the independent variable in this study, while the number of lender accounts is regarded as the dependent variable. The study additionally incorporates control variables such as regional gross domestic product at constant prices and third-party funding for the period spanning 2021 to 2022.

The population under investigation in this study consists of the total count of lender accounts across 34 provinces in Indonesia, classified according to quarterly periods. The dataset obtained over the timeframe of 2021-2022. The study used multiple linear regression analysis to examine the collected data. The research period spans from the second quarter to the fourth quarter, coinciding with the introduction of fintech tax legislation. The study used purposive sampling to select a sample of 33 provinces from the second to fourth quarters of the 2021-2022 timeframe, resulting in a total of 192 observations.

The present study utilizes secondary data sourced from statistical reports on fintech lending available on the official website of the Financial Services Authority (OJK). The statistical reports used comprise fintech lending statistical data for the month of May in 2021, representing the state of affairs before the enforcement of fintech tax regulations. Additionally, the reports encompass fintech lending statistical data for 2022, reflecting the altered fintech landscape after the implementation of fintech tax regulations.

The approach used is multiple linear regression. This methodology is employed to analyze the relationship between the independent factors and the dependent variable. Data processing in this study is conducted using Stata 17.0.

**Hypotheses development**

The law of demand explains the inverse relationship between the quantity of goods or services demanded by consumers at a specific price level. When the price of goods or services decreases, the quantity demanded increases. Conversely, when the price of goods or services rises, the demand for those goods or services decreases (Nusantara et al., 2022). This theory elucidates that as the price of a product rises, the real income of the buyer decreases. Buyers are compelled to reduce their purchases, especially when prices increase. This is expressed in the law of demand, which states that the lower the price of a product, the greater the demand for it, and the higher the price of a product, the lower the demand for it. If sellers do not raise prices, their income will decrease (Siregar et al., 2022).
This theory can be linked to sellers’ desire to maintain the same level of profit as production costs increase. Naturally, sellers do not want their income to decrease from their business (Sholicha & Oktafia, 2021). The same applies to lenders operating on P2P lending platforms. Taxes imposed in the fintech business, especially in P2P lending, increase the transaction costs of lending, leading to a decrease in the income received by lenders. Observing this phenomenon, lenders’ interest in disbursing funds may decline due to a reduction in income resulting from fintech tax regulations. To assess indications of changes in the fintech industry’s development, the author looks at the number of lender accounts.

The impact of tax legislation on the advancement of fintech is contingent upon the extent of policy implementation and tax rates enforced within a certain jurisdiction (Dewi Haptari & Aribowo, 2019). In the present scenario, the stringent enforcement of tax legislation and the imposition of elevated tax rates on fintech transactions possess the capacity to impede the expansion of the fintech sector. Tax-heavy rules can potentially reduce the motivation for fintech companies to make investments and engage in operations within this particular sector. The imposition of high tax rates has the potential to impose financial strain on fintech firms, thus diminishing their ability to compete effectively in the market. This, in turn, may impede their capacity for innovation and lead to a decline in investor interest.

Conversely, the prudent application of tax legislation, in accordance with the specific attributes of fintech enterprises, has the potential to establish a robust framework. Tax legislation should be designed thoughtfully to adequately account for the distinct characteristics of fintech, encompassing various business models and the specific attributes of digital payments (Mulyani & Efriadi, 2021). The implementation of tax legislation specifically designed for the fintech sector has the potential to bolster the trust and assurance of both participants inside the business and external investors. In the present setting, the implementation of suitable tax regulations has the potential to facilitate the expansion of fintech by establishing policies that foster innovation and encourage investment within this industry. This, in turn, can contribute to the attainment of sustainable economic growth.

H1: There is a significant effect between tax regulation and financial technology

\[ \text{Figure 1. Research framework} \]

\[ \text{Source: The authors (2023)} \]

**RESULT AND DISCUSSION**

**Descriptive statistical analysis**

Based on the findings presented in Table 1, it can be inferred that the descriptive statistics obtained from 192 observations indicate that the dependent variable, namely the number of lenders (NL), has a minimum value of 5.3083 and a maximum value of 16.6602. The mean value
of NL is 9.076854, which exceeds its standard deviation of 1.802418. This implies that the data exhibits little deviation, suggesting a reasonably uniform distribution of values.

<table>
<thead>
<tr>
<th>Variable</th>
<th>OBS</th>
<th>MEAN</th>
<th>STD. DEV.</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL</td>
<td>192</td>
<td>9.076854</td>
<td>1.802418</td>
<td>5.3083</td>
<td>16.6602</td>
</tr>
<tr>
<td>TY</td>
<td>192</td>
<td>0.5</td>
<td>0.5013072</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>NLR</td>
<td>192</td>
<td>12.83734</td>
<td>1.573607</td>
<td>10.1407</td>
<td>17.4984</td>
</tr>
<tr>
<td>GDP</td>
<td>192</td>
<td>10.63324</td>
<td>1.080029</td>
<td>8.8832</td>
<td>13.0382</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

The tax year (TY), serving as the independent variable, consists of 192 observations ranging from a minimum value of 0 to a maximum value of 1. The variable has a mean value of 0.5, slightly below its standard deviation of 0.5013072. This suggests the possibility of minor variations in the data due to the somewhat uneven distribution of values.

The control variable, known as the number of loan recipients (NLR), encompasses 192 observations. The highest recorded value for NLR is 17.4984, while the minimum value is 10.1407. The variable has a mean value of 12.83734, with a standard deviation smaller than the mean, measuring 1.573607. The data presented displays a uniform distribution of values, resulting in minimal data deviation.

The control variable, Gross Domestic Product (GDP), comprises a dataset of 192 observations. The maximum value in this dataset is 13.0382, while the minimum value is 8.8832. The calculated mean value of the dataset is 10.63324, which is observed to be smaller than the standard deviation of 1.080029. This suggests that the values in the dataset are evenly distributed and exhibit a relatively low degree of departure from the mean.

The findings of the descriptive statistics indicate that the mean number of individuals receiving loans exceeds the count of individuals providing loans. This implies a potential scenario in which individuals have been approved for loans but have not yet received the funds, necessitating the need to secure lenders who can provide the funds for lending on the platform.

Normality test

<table>
<thead>
<tr>
<th>Variable</th>
<th>OBS</th>
<th>PR(SKEWNESS)</th>
<th>PR(KURTOSIS)</th>
<th>ADJ CHI2 (2)</th>
<th>PROB&gt;CHI2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Res</td>
<td>192</td>
<td>0.0784</td>
<td>0.3661</td>
<td>3.96</td>
<td>0.1380</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

According to Ghozali (2016), a dataset can be considered to follow a normal distribution when the significance value exceeds 0.05, and conversely. The results of the normality test are presented in Table 2, confirming a normal distribution. The suitability of the variables used can be inferred from the prob>chi2 value, which is 0.1380, surpassing the significance level of 0.05. Therefore, the normality test for the study model in question has been satisfied.

Multicollinearity test

To avoid issues related to multicollinearity, it is essential for all variables analyzed in this study model to have Variance Inflation Factor (VIF) values below 10, as recommended by Ghozali (2016). The results of the data processing, as presented in Table 3, indicate that all the examined variables have Variance Inflation Factors (VIF) values that are less than 10. This finding suggests that there is no significant correlation between the independent and control variables used in
this study, thus indicating that all variables successfully meet the multicollinearity criterion. Therefore, this research model is suitable for further examination.

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLR</td>
<td>4.62</td>
<td>0.216365</td>
</tr>
<tr>
<td>GDP</td>
<td>4.56</td>
<td>0.219332</td>
</tr>
<tr>
<td>TY</td>
<td>1.08</td>
<td>0.927167</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>3.42</td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

### Heteroscedasticity test

According to Ghozali (2016), data must have a significance value below 0.05 to be considered free from heteroscedasticity. The results of the heteroscedasticity test conducted in this research indicate a significance value of 0.0212, which is below the conventional threshold of 0.05. This observation suggests the presence of heteroscedasticity within the research model. However, the issue of heteroscedasticity can be addressed by using robust methodologies (Octiana et al., 2020).

<table>
<thead>
<tr>
<th>H0</th>
<th>Constant variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>chi2(1)</td>
<td>5.31</td>
</tr>
<tr>
<td>Prob &gt; chi2</td>
<td>0.0212</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

### F-test and coefficient of determination

<table>
<thead>
<tr>
<th>Number of Obs</th>
<th>192</th>
</tr>
</thead>
<tbody>
<tr>
<td>F(3, 191)</td>
<td>332.54</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>0.0000</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.8987</td>
</tr>
<tr>
<td>Root MSE</td>
<td>.57812</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

According to the findings presented in Table 5, the Prob>F value is 0.000, which is lower than the significance level of 5%. This indicates that the research model is statistically appropriate for explaining the dependent variable, namely the number of lenders. The coefficient of determination ($R^2$) for the present study model is 0.8987. This value indicates that the research model has an explanatory power of 89.87% with respect to the dependent variable.

### T-test

The hypothesis is supported, as indicated in Table 6, which summarizes the results of the hypothesis test. According to the findings presented in Table 6, the results of the hypothesis testing demonstrate a significant effect between the tax year and the number of lenders ($P < 0.004, t = 2.92$). This outcome suggests that the relationship between tax regulation and financial technology is not negligible.
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Table 6. T-test

<table>
<thead>
<tr>
<th></th>
<th>COEFFICIENT</th>
<th>ROBUST STD. ERR.</th>
<th>T</th>
<th>P&gt;T</th>
<th>[95% CONF.]</th>
<th>INTERVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TY</td>
<td>.24647</td>
<td>.0844461</td>
<td>2.92</td>
<td>0.004</td>
<td>.0798864</td>
<td>.4130535</td>
</tr>
<tr>
<td>NLR</td>
<td>.864765</td>
<td>.0625763</td>
<td>13.82</td>
<td>0.000</td>
<td>.7413231</td>
<td>.9882069</td>
</tr>
<tr>
<td>GDP</td>
<td>.3637878</td>
<td>.0736583</td>
<td>4.94</td>
<td>0.000</td>
<td>.2184848</td>
<td>.5090909</td>
</tr>
<tr>
<td>Cons</td>
<td>-6.015903</td>
<td>.4815725</td>
<td>-12.49</td>
<td>0.000</td>
<td>-6.965883</td>
<td>-5.065923</td>
</tr>
</tbody>
</table>

Source: Processed data (2023)

Discussion

The test findings demonstrate a statistically significant and positive relationship between the tax year and the number of lenders. This suggests that there was an observable increase in the number of lenders in 2022, which corresponds to the year following the implementation of the fintech tax. The researcher posits that there exists a strong societal inclination towards the utilization of peer-to-peer (P2P) loans, particularly among business proprietors in search of financial support. The continued attractiveness of P2P loans to the general population, despite the recent fintech tax restrictions, can be attributed to the greater accessibility they provide in comparison to traditional bank loans. The considerable level of public interest in peer-to-peer (P2P) loans serves as a catalyst for lenders to augment the capital they offer, as seen by the rise in the quantity of lender accounts during the year 2022.

The findings of this study can be elucidated by employing the theoretical framework of inelastic demand elasticity. According to Rambe et al. (2021), this hypothesis posits that variations in the price of a product do not exert a substantial influence on its demand. Inelastic demand is observed when the quantity demanded of a product is relatively unresponsive to changes in its price, indicating that the necessity or essential nature of the commodity surpasses the impact of price fluctuations. The use of this notion can be observed in the proliferation of lenders following the enactment of fintech rules. Despite the additional financial burden imposed by fintech taxes, lenders persist in finding peer-to-peer (P2P) lending to be a lucrative venture, while consumers exhibit a strong inclination towards P2P loans owing to its convenient accessibility (Yuniarti & Ekowati, 2019).

The empirical findings indicate a statistically significant and positive relationship between the count of loan beneficiaries and the count of lenders. One plausible factor is the demand for readily available loans that have uncomplicated documentation prerequisites. The aforementioned necessity compels individuals to acquire loans from peer-to-peer (P2P) networks in order to swiftly and conveniently get finance, primarily for entrepreneurial endeavors. Consequently, peer-to-peer (P2P) platforms are experiencing a growing popularity among the general population, thereby enticing lenders to contribute their financial resources. In spite of the imposition of fintech taxes, the upward trajectory of loan receivers may lead to a heightened inclination among lenders to allocate their funds through peer-to-peer (P2P) platforms. Despite the introduction of fintech taxes in 2022, the need for loans through peer-to-peer (P2P) platforms may persist if there is sustained economic growth.
CONCLUSION

The findings of this study suggest that the introduction of fintech tax legislation in 2022 has resulted in an increase in the number of fintech lender accounts in Indonesia. The integration of financial technology (fintech) into people's daily lives is the primary driver for lenders to channel their capital through fintech platforms. The use of peer-to-peer (P2P) platforms, a subset of fintech services, provides increased access to loan assistance for individuals. The growth of Indonesia’s Gross Domestic Product (GDP) further enhances opportunities for lenders to obtain funds for allocation, ensuring that lenders do not decrease their inclination to allocate their capital through fintech platforms.

This study offers valuable insights for governments and tax authorities, indicating that thoughtful tax regulations can effectively steer the fintech sector toward its intended direction. Policymakers should explore ways to refine tax policies to strike a balance between fostering innovation and ensuring fair taxation. It is essential to assess the long-term sustainability and consequences of fintech tax regulations to understand their enduring impact on the industry and the broader economy.

REFERENCES


