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The impact of Fintech lending on Commercial banks and Rural Banks

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Abstract
Financial technology has shaped the financial industry specifically the online borrowings and lending platform. This study aims to examine the impact of Fintech lending on the banks' performance. To conduct our study, secondary data of peer-to-peer lending and banks were collected from the Financial Services Authority of Indonesia (OJK), consisting of 115 Fintech lending, 1554 rural banks, and 113 commercial banks. Regression Analysis was employed to elaborate on the relationship between variables. The analysis indicates a strong relationship between Fintech lending and rural banks but with a moderate relationship compared to commercial banks. It can be concluded that the penetration of Fintech lending correlates with banks' performance. This study also helps Banks to understand the threat and the opportunity in the market, to find new strategies to be more competitive in the lending market such as application of technology in its service or corporation with Fintech companies

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In Indonesia, Fintech Lending, known as Peer-to-Peer lending, is one of the fastest-growing financial service platforms. Fintech lending has been growing rapidly in Indonesia in recent years. According to the Financial Services Authority of Indonesia (OJK) in May 2019, the growth of the number of lenders in Fintech Lending in Indonesia grew by around 603% and the number of borrowers was around 581%. This explosive growth of Fintech lending changed the financial sector from traditional lending to Fintech lending. Nowadays, Fintech Lending is becoming a new alternative way to provide customer service loan facilities. This development of financial technology and financial innovation is phenomenal that the banking industry has to challenge and have to adapt to industry 4.0.

The rapid growth of shadow banking institutions is potentially concerned about the regulations in the banking sector (Anagnostopoulos, 2018) While the extension of nonbank lending may augment some regulatory concerns which may threaten the existence of traditional Banks. These non-bank lenders such as Fintech lending platforms seem to dominate and underserve the traditional bank's facilities since they use advanced technology to access soft information about creditworthiness. It may provide a significant value to consumers, small business owners, and the platform itself to have access to the recorded transaction history (credit history). Fintech takes advantage of using big data which is reliable and accurate that could give a quick analysis to evaluate customer credit history before loan approval (Phan et al. 2019). This growth of the Fintech may concern all the entity that similarly provides consumer loan and business loan service including traditional bank, credit union, and microfinance firm. The Fintech lending provides loan facilities which allow individual and organizations to lend or to borrow money on the platform. Ozili (2018) mentioned that small business lending, which has been the specialty of local relationship lenders, has been moving further from their customers over time, due in part to remote banking technologies. Also, Havrylchyk et al. (2017) found that Fintech lenders developed in the region where a lower density branch network exists. Furthermore, Jagtiani and Lemieux (2018) found that the development of technologies in the last decade has permitted more prominent competition in small business lending, where expanding shares of local small business loans have progressively been originated by traditional lenders that do not have a local presence. Geographically, it shows that the unavailability of a bank branch or access to the bank for a customer living in a remote place with a lack of financial service allows them to use Fintech. Hunter (1991) stated that technology improved industry-wide scale economies, which Humphrey et al. (1997) explained that larger banks were more likely to supplant individuals with technology than were smaller ones when constrained to restructure their costs. Wheelock (1999) examined both productivity and effectiveness at banks and found declining specialized proficiency.

Previous studies have reported that both increased regulatory burdens and technological improvements have contributed to the decline of traditional banks' market share (Buchak et al. 2018). A regulatory concern may drive customers from using traditional banks to Fintech lending service which is less expensive and easy to access. The conditions and requirements during the loan application process posed by Fintech lending platforms also seem easier and do not require many documents through the borrowing or lending process. Generally, Fintech is considered a threat to traditional financial firms because of the disruptive change it has brought in this sector. On the other hand, it also may provide great opportunities for traditional banks to gain a competitive advantage over competitors. Dorfleitner et al. (2016) found that the existence of online innovation may have played a vital role in the decrease of traditional banks for the last decade. Previous studies found that Fintech firms have gained equivalent to a quarter of shadow bank loans.

In this new era of technology and digitalization, millennials seem to be inseparable with technology, as part of their daily life connected with technology including mobile phone, internet, and other electronic gadgets and therefore may be more comfortable when dealing with online lenders than traditional banks. The access to usage of technology and unlimited internet may play an essential role in the growth of Fintech lending in Indonesia. Since internet users in Indonesia have increased in the last 5 years, an estimated 64,6 % of the total Indonesian population have access internet in their daily life which is equivalent to 171 Million individuals (data end of 2019). Meanwhile, there is a significant rise in the Fintech lending platform. According to the Financial Services Authority of Indonesia (OJK) on 31 Mai 2019, currently, there are estimated around 113 Fintech lending

platforms recorded to have been given authorization and legalization by the Indonesian government. As a result, Fintech lending provides a quick and easy service to the customers which may make them trust the offer and all the lending process is entirely online, which reduces the operation cost for both lenders and borrowers.

Generally, Fintech lenders operate in small-scale loans, consumers, small businesses, and real estate (Jagtiani and John 2018). This penetration of Fintech lending to the market in Indonesia may replace the traditional bank's function which could affect the market share and the profitability of traditional banks. Also, financial innovation has disrupted the financial environment that brought out several changes to the banking industry. Although the growth of many shadow banks, whether non-Fintech lending or Fintech lending, many traditional banks in Indonesia still resist the competition in the lending market. Fichman, et al. (2014) proved that Banks have historically been the most resistant business and suspicious of disruption by technology. This indicates a need to understand the various perceptions of Fintech lending that exists among Fintech innovation. Fintech shapes the banking sector to digitalization that may force traditional banks to move forward. On the other hand, traditional banks offer various services to satisfy the customers' needs and to maintain its profitability as well. Moreover, banks provide unsecured loans, based on the borrower's creditworthiness instead of any sort of collateral, it's often referred to as personal loan and secured loan within collateral such as house, land, car, and so on. By contrast, Fintech lending provides consumers a loan and small scale loans to businesses as traditional banks do. Algesheimer, et al. (2012) cited that the primary purpose of Fintech lending is debt consolidation and credit card refinancing. Nonetheless, the interest rate with traditional banks is slightly lower whereas Fintech shadow banks are substantially higher.

Previous studies focused on Fintech have narrowly investigated the impact of the Fintech development (In Lee, Yong Jae Shin, 2018); regulatory concern (Buchak et al. 2018); asymmetric information (Yan, Yu, and Zhao 2015); interest rate (Santoso 2019); post-acquisition performance of the acquirer firms (Dranev, Frolova, and Ochirova 2019); loan mortgage (Gerardi et al., 2010). To our best understanding, the focus of our study has not gained enough attention. In this study, we explore the impact of Fintech lending platform penetration on the traditional bank's performance in the banking industry in Indonesia. Both Fintech lending and traditional banks provide service facilities to access unsecured loans within various loan usage purposes. We will look at the relationship between the various measures of traditional banks (commercial banks and rural banks) and the growth of Fintech lending. Then, we compare the results with the small scale loan made by the Fintech lending and the traditional lending channel made by banks.

1. Literature review

2.1 Financial Technology for Online Direct Lending

The emergence of Fintech lending in the financial sector eliminated the intermediation of other financial entities. Fintech lending also has an advantage because it has the ability that matches up the lenders to the borrowers during loan application. Fintech Lending platforms are currently considered as a newcomer in the lending industry (Carignani and Gemmo, 2007). Yet, a Fintech lending platform operates without the presence of a financial institution, except in the management of the platform, which, among other things, matches creditors with debtors under better conditions than those offered by traditional loans (De Buysere et al., 2012). This shows that borrowing money online is much easier for customers to answer their demand because; Carignani and Gemmo (2007) mentioned that the main advantage of Fintech lending eliminated the intermediation of traditional financial institutions and reducing the borrowing costs.

Many research has studied financial technology lending and its impact on the market share, For example, Buchak et al. (2018) discovered that the market share of shadow banks* in starting residential mortgages was multiplied from 2007 to 2015. They reviewed some literature affirming that a large market share in residential mortgage growth would cause trustworthy borrowers to become less creditworthy borrowers.

Jagtiani and Lemieux (2018) illustrated that the share of small business lending in the Fintech companies increased in the area of loan where banks' presence are fewer. Literature unveils that Fintech lending penetrated in the less represented areas where there are no bank branches that offer credit facilities, as result, Fintech lending capacity will have an increasing potential. It is mentioned that the number of bank branches has decreased because there were too many Fintech lending operations scattered in various strategic areas

where those banks may consider to operate as Fintech lending provides loans for both business (business loan) and individual (consumer loan). Other studies found a similar statement, Jagtiani and Lemieux (2018) asserted that, based on consumer lending data from LendingClub in the U.S case, Fintech lending has moreover entered into the non-strategic regions, such as region with inadequately banking services (proxied by a smaller number of bank branches per capita). It shows that Fintech has the ability to facilitate their services, especially in remote villages. Thus, Fintech lending competes with banks for market shares.

De Reuver (2017) also suggests that digital platforms have the advantage of being 'editable' and 'reprogrammable' which could make them more aware of incorporating complementary modules from third-party developers so as to expand its usefulness. Other literature points out this statement that technologies can often lead to the abrupt loss of market dominance and in extreme cases even in total replacement in such markets (Christensen et al., 2015).

Yan, Yu, and Zhao (2015) state in their studies that the progress of technology in online lending reduces the asymmetric information due to the existence of big data collected automatically in systems. The two parties (lenders/borrowers) are easily connected to each other by scanning the available data on the system. The transaction process will be more efficient and effective due to the excess of information, whereas traditional banks may not have the ability to do the analytical skills to use this new form of data. Also, Srethapramote et al. (2015) strengthen this statement that Fintech lending reduces the risk related to asymmetric information in the lending process. Increasing the demand for individual and start-up businesses and decreasing the regulatory barrier to facilitate loan access have ascribed the success of Fintech lending. Since information asymmetry is the major barrier for the lender to cut back default risk, some studies have focused on a way to mitigate information asymmetry between borrowers and lenders during the lending process (Freedman et al. 2011). In contrast, however, information asymmetry problems may be more severe within Fintech lending than in traditional markets since most of the individual lenders in Fintech Lending lack monetary expertise, and also the lending experience takes place in an exceedingly pseudonymous online environment (Ba, 2010). The author points out in the literature that both online and traditional ways still face asymmetric information due to the wrong data entry and illiteracy of other parties.

Prystav (2016) reviewed the prevailing literature on the subject of Fintech lending, specializing in whether the type of technologies utilized by Fintech firms can reduce information frictions in lending. She posits that access to or price of credit might be improved by better capturing soft information contained in proximity information and better profiling of loan applicants. Contrary, however, Pope and Sydnor (2011) stated that high asymmetric information in Fintech lending is riskier.

2.2 Fintech lending and traditional Banks performance

Many papers have studied financial technology. For instance, Greenwood and Scharfstein (2013); Philippon (2016). Fintech lending has been shaping and bringing new air into the banking industry which affects the incumbent companies such as traditional banks. Piskorski and Seru (2017) found that there is a positive impact of Fintech lending on traditional banks in the lending market. They highlighted some factors which are related to this statement, such as banks regulatory concern. Associated with the regulatory burden, Buchak et al. (2018) found evidence that traditional banks have faced regulatory restrictions and have consequently reduced mortgage lending that shadow banks are not subjected to these restrictions. This shows that Fintech lending is not subjected to this change, which is an advantage for the Fintech lending platform to be more dominant and more competitive in the market. This restriction to the traditional banks may increase the supply and demand of the Fintech lending platform.

Romanova and Kudinska (2016) found that traditional banks have started losing part of their market share. Nevertheless, banks have various offers for customer satisfaction. Buchak et al. (2017) discover that banks have a somewhat lower funding cost providing higher quality products than shadow banks. However, they still lose market share because of their increased regulatory burden. The development of Fintech has a significant impact on banks as many bank's products are information-based and therefore can be purchased from different financial service providers nowadays. In addition, Philippon et al. (2016) reviewed that banks will have to

engage in further cost-cutting since they continue to be shockingly costly, which partly also explains the penetration by new entrants.

Moreover, cost reduction is one of the main concerns for individuals, businesses, and start-ups in the lending market. Customers prefer to utilize services that provide them less expensive, for example, Mild, Waitz, and Wöckl (2015) claimed that the costs are reduced in Fintech Lending by eliminating expensive bank overheads, reducing transaction time (Liu et al. 2020). Furthermore, by cutting banks out of the lending process, successful borrowers typically pay a lower rate of interest than they ought to have paid on a bank's loan. However, Borrowers and depositors can generate more savings in using online lending.

Fintech lending utilizes soft information to help lenders assess borrowers' risk more accurately and precisely. Collier and Hampshire (2010) stated that borrowers' soft information provides significant signals for lenders to evaluate borrowers' trustworthiness, which helps to assess borrowers' default risk and set rate of interest. Therefore, the success of the utilization of soft information, as well as social collaterals, are often thought to be key differences between Fintech Lending firms and the traditional financial institutions (e.g., banks). While traditional banking has used hard credit information to minimize information asymmetry and collaterals which have been used as an instrument to reduce adverse default (Bester 1985). Hard credit information can be accurately quantified and credibly transmitted, whereas soft credit information cannot. The Fintech lending platform takes advantage of soft information while hard information for traditional banks. As Liu et al. (2020) mentioned that online platform social collateral and soft information are useful elements to screen unsecured loans. Traditional banks use physical collateral and hard skills to assess loan approval. In traditional banking lending, customers may not pose collateral (land, house, car, etc.) to assure the loan repayment that may drive them to switch to Fintech Lending.

Lee and Shin (2018) illustrated that Fintech is the technical process that results from the development and establishment of new financial software that could affect the whole traditional system. The financial services sector is considered to be stuck in its traditional ways and seems resistant to the changes. According to Fichman et al., (2014) historically speaking, the banking industry has been one of the most resistant business sectors and suspicious of disruption by technology. As a consequence, today's banks still show a lack of innovation to either their stable market position or due to complex government regulations. Some traditional banks have responded fiercely; by making an effort in requiring the same regulatory challenges imposed to start-ups, as some critics argue that antagonism from emergent, banks is likely at risk of losing 4.7 trillion dollars for the incumbent institutions (Economist, 2015). Also, Banks will have to answer this margin compression as banks' passivity could result in an equivalent of 20% of incomes being at risk by 2025 (McKinsey 2015).

This study performs a detailed analysis of Fintech lending and banks' performance to examine the changes that Fintech has brought into the banking industry. The development of financial technology should decrease asymmetric information as it can create a more transparent system. Nevertheless, some users, especially in Indonesia are still worried and afraid to use online lending platforms. Also, Fintech lending appears to be riskier and has a higher interest rate for smaller loans than traditional banks do (W. Santoso et al., 2019). In that spirit, our paper shows that Fintech lending faces asymmetric information issues with higher interest rates. However, consumers are still willing to use more expensive service, it may be related to the suitable services offered by the platform

Together these studies provide an important insight into the growth of financial technology lending in Indonesia. The focus is on Fintech lending service loans to customers by offering unsecured loans (personal loan, business loan, customer loan). However, traditional banks have been serving small scale loans as well in this industry for many decades. As a result, the development of financial innovation may threaten traditional banks. It could be an opportunity for both though to collaborate or set up a partnership. So far, there has been no clear evidence that Fintech lending penetration affected the performance of traditional banks in terms of small scale loans. This study aims to focus on comparing Fintech lending and traditional lending in the context of small-scale loans.

2. Methodology

3.1 Data and Variables

The source of data of the Fintech lending and banks were collected from the (OJK) Financial Services Authority of the Indonesian government which regulates and supervises the financial services sector. Monthly data over the period of August 2017-October 2019 were used. In addition, data on banking were accessible on the official website of the Financial Services Authority of Indonesia. As there are various types of banks in Indonesia, data of commercial banks consist of 115 banks, and 1554 rural banks were employed to conduct the regression analysis.

Rural Bank or BPR (Bank Perkreditan Rakyat): data of all Rural Banks that exist in Indonesia were used. According to Otoritas Jasa Keuangan (OJK) report in 2019, there are 1554 rural banks operating in Indonesia. The rural banks are chosen as a population because it provides similar service loans like Fintech lending platforms. We believe that using BPR as the population of this study will provide a significant value

Table 1. Descriptive Statistic

Variables	***Mean***	***Median***	***Max.***	***Min.***	***Std. Dev.***
Dependent Variable					
Market share	1.89E-08	4.80E-09	1.18E-07	1.10E-09	3.46E-08
Independent Variable					
Growth of Borrowing	23.813	21.555	88.910	-26.170	20.869
Growth of Lending	16.917	15.205	82.590	-22.790	16.053
Control Variable					
Commercial Bank					
Return on Assets	2.479	2.480	2.600	2.360	0.058
Net Interest Margin	5.056	5.080	5.330	4.810	0.160
Loan Deposit Ratio	92.605	93.750	96.190	88.680	2.323
SIZE	15.865	15.875	15.940	15.780	0.050
Rural Bank (BPR)					
Return On Asset	2.475	2.485	2.810	2.260	0.135
Return On Equity	22.007	21.985	25.230	19.980	1.263
Loan Deposit Ratio	77.016	76.915	80.430	74.490	1.294
SIZE	11.795	11.790	11.900	11.710	0.052

Note: Significant level, * p < 0.05. ** p < 0.01. *** p < 0.001

According to table1, the mean of the dependent variable market share is 1.89E-08, the maximum is 1.18E-07, the minimum 1.10E-09, and the standard deviation is 3.46E-08. This result indicates that the market share has a relatively low value. While the mean of the independent variable which is Growth of borrowing is 23.813, the maximum is 88.910, the minimum is -26.170, and the standard deviation is 20.869; and for the Growth of lending, the mean is 16.917, the maximum is 82.590, the minimum is – 22.790, and the standard deviation is 16.053. The mean of the growth of borrowing and the growth of lending indicates that Fintech firms in Indonesia have had enormous growth over the period of 2017-2019. It shows that Fintech lending companies have stable growth in the industry.

Besides, this study focuses on commercial banks and rural banks (BPR) as control variables where each of these variables has its own value and own components. As result in table 1, commercial banks and rural banks consist of 4 elements as control variables where net interest margin (NIM) and return on equity (ROE) differentiates them from each other. Firstly we will see the value of each variable on the commercial bank, the mean return on asset (ROA) is 2.479, the maximum is 2.600, the minimum is 2.360, and the standard deviation is 0.058. The mean net interest margin (NIM) is 5.056, the maximum is 5.330, the minimum is 4.810, and the standard deviation is equal to 0.160. The mean loan deposit ratio (LDR) is 92.605, the maximum is 96.190, the minimum is 88.680, and the standard deviation is 2.323. The mean commercial bank size is 15.865, the maximum 15.940, the minimum is 15.780 and the standard deviation is 0.050.

Unlike, the value of each variable construct the rural bank where the mean return on asset (ROA) is 2.475, maximum is 2.810, the minimum is 2.260, and the standard deviation is 0.135. The mean return on equity (ROE) is 22.007, the maximum is 25.230, the minimum is 19.980 and the standard deviation is equal to 1.1263. The mean of the loan deposit ratio (LDR) is 77.016, the maximum is 90.430, the minimum is 74.490, and the standard deviation is 1.294. The mean of rural bank size is 11.795, maximum 11.900, the minimum is 11.710 and the standard deviation is 0.052. This data in table 1 indicates that rural

banks have greater performance than the commercial banks, although the total asset of commercial banks is bigger. It shows that the value of mean, maximum, minimum, and standard deviation of rural banks compared to commercial banks is greater.

3.2 Empirical Models

The basic empirical model to be estimated is represented as follow:

$$Bank\ Perfomance = \propto + \beta_1\, GoL + \beta_2\ GoB + \beta_3\, ROA + \beta_4 NIM + \beta_5 LDR + \beta_6 SIZE + \beta_7 ROA + \beta_8 ROE + \beta_9 LDR + \beta_{10} SIZE + \varepsilon$$

Noted,

- *Growth of Lending* (GoL) is an increase of loans demanded in the Fintech firm for a certain period which individual, private sector or another entity does. To determine the growth of lending, subtract the Present Value (lending) by Past value, and divide by Past value then multiply for 100.
- *Growth of Borrowing* (GoB) is an increase in borrowing demand done by borrowers in the Fintech firm for a certain period of time. To measure the borrowing's growth, the Present Value (Borrowing) is subtracted by the past value, and divided by the Past Value, and multiplied by 100 to get the percentage.
- *Return on Assets* (ROA), an indication of a bank's profitability relative to its total assets
- *Return on Equity* (ROE) is a measurement of financial performance.
- *Net Interest Margin* (NIM) measures the differences between the interest income generated by banks and the amount of interest paid out to lenders, relative to the number of assets.
- *Loan deposit ratio* (LDR), to assess a bank's liquidity by comparing the bank's total loans to its total deposit for the same period of time (monthly, yearly)
- *SIZE* is the monthly total asset of banks

3.3 Regression Analysis

Table.2 Regression Analysis

Variable	***Coefficient***	***Std. Error***	***t-Statistic***	***Prob.***
C	1.10E-05	3.17E-06	3.475	0.003
Growth of Borrowing	-8.48E-11	1.39E-10	-0.609	0.551
Growth of Lending	1.50E-10	1.48E-10	1.015	0.326
Commercial bank				
Return On Asset	2.32E-07	5.24E-08	4.429	0.000***
Net Interest Margin	2.42E-08	3.46E-08	0.698	0.496
Loan Deposit Ratio	-4.27E-09	4.19E-09	-1.018	0.325
SIZE	-2.74E-07	3.01E-07	-0.911	0.376
Rural Bank				
Return On Asset	-1.05E-06	1.95E-07	-5.363	0.000***
Return On Equity	9.34E-08	2.29E-08	4.085	0.001**
Loan Deposit Ratio	1.85E-08	3.09E-09	5.969	0.000***
SIZE	-6.64E-07	2.42E-07	-2.748	0.014*
R-squared	0.946	Mean dependent var.		1.89E-08
Adjusted R-squared	0.910	S.D. dependent var.		3.46E-08
S.E. of regression	1.03E-08			
F-statistic	26.361			
Prob(F-statistic)	0.000***			

Note: Significant level, * p < 0.05. ** p < 0.01. *** p < 0.001.

3.3.1 Hypothesis test

H1: Borrowing's Growth positively affects the bank's performance

Based on the hypothesis test using regression analysis, the statistical result shows that the loan growth having no impact on the bank's performance (S.E = 1.39E-10; t-statistic=-0.609; P-value = 0.551), with the significance level <0.05. This explains that the growth of loans is statistically uncorrelated with the bank's performance (market share). It can be concluded that H1 is rejected

H2: Lending growth positively affects the bank's performance

Based on hypothesis testing with regression analysis, the statistical result shows that the lending growth has no impact on the bank's performance (S.E = 1.48E-10; t-statistic=1.015; P-value = 0.326), with a significance level <0.05. This explains that the growth of lending and bank performance (market share) is statistically non-significant, indicating that H2 is rejected

4. DISCUSSION AND FINDINGS

4. 1 Fintech lending and bank's market share

The result shows that loan growth has no effect on the bank's performance. Hypothesis H1 and H2 show that Fintech lending does not have an impact on a bank's market share. It can be interpreted that the market share taken by banks in Indonesia has been stable and shows a good performance. Control variables are then employed to strengthen the relationship between the independent and dependent variables.

The result of the hypothesis test shows that there is a negative impact on the growth of Fintech lending in terms of borrowing and lending to the market share of banks in Indonesia. However, the penetration and the rise of Fintech lending (Peer-to-Peer lending) in the lending market has increased enormously. Hence, this shows that banks in Indonesia have had a stable and good performance where they can adapt to the changes in financial innovation.

4.2 Fintech lending and Banks

Table 6 shows that in the commercial bank, the return on asset (ROA) is 0.000 which is lower than the significant value (0.000<α). This value presents a positively significant relationship between Fintech lending and commercial bank's profitability. Yet, the net interest margin has a value of (0.496>α), and the loan deposit ratio with a value of (0.325> α) and size where the value is (0.376>α) is statistically not significant. The result shows that the return on assets is associated with the growth of Fintech lending because Fintech lending positively influences the return on assets in commercial banks.

All variables in the rural banks have a positive effect on the penetration of Fintech lending where the return on the asset has a value equal to 0.000 < α, return on equity is 0.001 which is inferior to 0.05, loan deposit ratio is 0.000<α, and the size value is lower than 0.05. As the return on asset shows the bank's profitability, in other words, it is used to measure the efficiency and effectiveness of banks compared to its total asset, the return on equity shows how banks use investments to generate earnings growth, and the loan deposit ratio compared to bank's total loan to its total deposits. ROA, ROE, LDR are essential measurements of a bank's profitability. The regression analysis shows that rural banks are more vulnerable due to the penetration of Fintech lending in the market because rural banks have a smaller size.

This study finds that borrowing growth and lending growth in Fintech companies does not affect the bank's market share in Indonesia. Although previous studies found that banks have started to lose their market share. Fintech lending affects bank's profitability, where the value of return on assets on commercial banks is 0.000 and rural banks (return on asset=0.000; return on equity=0.001; loan deposit ratio=0.000; size=0.01). Table 6, shows that rural banks are more affected compared to commercial banks, leading to an improvement in profitability. Similar results were noticed, namely Serge Ky et al., (2019) who show that the effect of financial technology innovation on profitability is higher on rural banks than on commercial banks because commercial banks can adapt faster to the changes in the financial technology (Meyer 2017). These results may suggest that commercial banks are relatively able to adapt to the disruption of financial technology compared to rural banks due to their lack of limited resources and innovation in technological investment.

5. Conclusion

The aim of this study was to examine the impact of Fintech lending penetration on the bank performance (market share) using control variables in commercial banks and rural banks found all over Indonesia. In summary, the outcome of the present study is very useful in the financial sector of banks or Fintech companies. It is considered necessary to increase banks' competitive advantage during the digitalization era and industry 4.0. Competitiveness in the financial sector is getting stronger and harder due to the rise of many financial technologies embedded with innovative ideas. Banks are the most targeted for this disruptive change where Fintech takes advantage of the technology. This study may help them to strengthen their strategies in order to create a sustainable market.

The findings of the research identified that borrowing growth and lending growth negatively influence the bank's performance (market share). Fintech lending is not associated with the bank's performance (Bank's market share). Interestingly, this study finds a positive correlation between the independent variable which is the growth of lending and growth of lending, and the control variable (commercial banks and rural banks).

The study shows that the return on assets of commercial banks has a significant relationship with Fintech lending. Other remaining control variables have no significant relationship with the borrowing and lending growth such as net interest margin, loan deposit ratio, and total asset or size, which means that these variables are not concerned with this growth. The higher the growth of borrowing and lending in Fintech firms, the higher the effect the commercial bank's profitability (ROA) will be.

In addition, this study explained that the growth of Fintech lending has positive influences on the rural banks where all the proxies employed are related to the growth of Fintech in the market. Higher growth of Fintech lending will influence the rural bank's stability and profitability. Rural banks are more vulnerable compared to commercial banks due to their inability and lack of resources, given the fact that commercial banks in Indonesia are more dominant, more stable in terms of competitiveness and portion of the market.

Fintech lending has been playing an essential role in the Indonesian financial sector, particularly in the lending market by offering loans as banks do. The objective of this study was to investigate the impact of Fintech penetration on a bank's performance. In terms of borrowing and lending, some evidence was presented demonstrating that Fintech lending tends to have more influences compared to banks with smaller size. Rural banks in Indonesia have a goal to provide loan services to its customers. The fact that rural bank's activity and operation is focusing on small-scale loans. It is assumed that rural banks are affected by Fintech lending because they simply concentrate more on small scale loans which are different from commercial banks. As a result, Fintech lending has a big potential to possess a large portion of the market share in the nearest future because the number of Fintech lending companies in Indonesia is increasing day by day. Besides, banks are trying to fill the gap to be more competitive in the market whereby implementing technology along with their service. It has been discovered that commercial banks are still able to maintain their profits and performance to face the growth of Fintech lending.

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