

ANALYSIS OF THE EFFECT OF FINANCIAL TECHNOLOGY ON BANKING PROFITABILITY WHICH IS LISTED ON INDONESIA STOCK EXCHANGE

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ABSTRACT

The business concept has changed from conventional to digital to win the competition including in the financial industry through Financial Technology (fintech). The banking industry is one of the financial institutions affected by the presence of a fintech company. This study aims to analyze differences in the performance of banking profitability as measured using Return on Assets, Net Interest Margin and Operational Expenses and, Operating Income of Banks listed on the Indonesia Stock Exchange before and after the cooperation with fintech companies. The results showed no difference in bank profitability before and after collaboration with fintech companies

Keywords: Fintech, Banking, Profitability

INTRODUCTION

Revolution 4.0 has an impact on various aspects, especially the business world. To face increasingly fierce business competition and keep abreast of technological developments, business people make changes to business concepts from offline to digital or, in other words, there is a change in business operations that are transformed into digital models. One of the affected sectors is the financial sector, namely the presence of financial technology. Fintech as a digital technology innovation for financial services to processes or products related to the provision of financial services (Financial Stability Board, 2017). Based on Bank Indonesia Regulation No.19 / 12 / PBI / 2017 regarding the implementation of Financial Technology, considering that the development of technology and information systems continues to produce various innovations, especially those related to technology to meet various community needs including access to financial services and transaction processing. Fintech is developing along with the growth of internet users in Indonesia. Based on data from the Association of Indonesian Internet Service Providers (APJII) the number of internet users in Indonesia in 2018 increased by 97% compared to 2017.

The very rapid development of Fintech is seen from the development of Fintech in various sectors ranging from Start-Up payments, lending (Peer to Peer Lending), financial planning (personal finance), Retail Investment, Crowdfunding and, others. The Fintech concept is adapting technological developments with financials in the banking industry so that it is expected to facilitate a more practical, modern financial transaction process that includes digital-based financial services that are currently developing in Indonesia, namely payment channel systems, digital banking, online digital insurance, peer to peer lending (P2P Lending) and crowdfunding. Based on data from the FSA can be seen one of them is the increase in the number of accumulated loans in the P2P lending fintech sector based on Information Technology Lending and Borrowing Institutions as of September 2019 experienced an increase of 166.5% compared to the same period in 2018 and for the complete data as shown in Table 1. follows:

Table 1. Statistics of Providing Fintech P2P Lending (Information Technology-Based Lending and Borrowing Institutions)

No	Description		% Δ Sept 2019 (ytd)
1.	Total accumulation Rekening Lender (By Entity)		
	a. Jawa (Lendr outside Jawa)	462,854	198.17%
	b. Luar Jawa (Lender inside Jawa)	92,386	83.74%
	c. Luar Negeri (Lender from abroad)	3,526	76.65%
	d. Agregat (Total)	558,766	169.28%
2.	Total Accumulation Rekening Borrower (By Entity)		
	a. Jawa (Borrower dari Jawa)	11,941,287	225.85%
	b. Luar Jawa (Borrower dari Luar Jawa)	2,418,631	248.10%
	c. Agregat (Total)	14,359,918	229.40%
3.	Total accumulation Transaksi Lender (By Account)		
	a. Jawa	26,407,489	359.71%
	b. Outside Jawa	1,168,648	134.12%
	c. Inside Negeri	14,382,805	464.52%
	d. Agregat (Total)	41,958,942	377.28%
4.	Total Accumulation Transaction Borrower (By Account)		
	a. Jawa	44,397,513	264.82%
	b. Luar Jawa	8,763,727	305.42%
	c. Agregat (Total)	53,161,240	270.94%
5.	Accumulation Total Loan (Rp)		
	a. Jawa (Borrower from Jawa)	Rp 51,833,435,730,907.10	164.22%
	b. Luar Jawa (Borrower from outside Jawa)	Rp 8,573,877,996,917.98	181.24%
	d. Agregat (Total)	Rp 60,407,313,727,825.10	166.51%
7	Loan Quality		
	TKB 90	97.11%	-1.46%
	TWP 90	2.89%	98.73%
8	Outstanding Loan		
	Outstanding Loan	Rp 10,180,493,678,857	101.83%
9	Characteristic Loan		
	Minimum Loan (Rp)	Rp 1,155	-27.36%
	Average Minimum Loan(Rp)	Rp 17,868,347	0.64%
	Aaverage value of loans extended	Rp 88,902,739	35.09%
10	Aset		
	Konvensional	2,583,291,760,200	67.01%
	Syariah	66,985,624,421	2778.01%
	Total	2,650,277,384,621	71.08%

Source: OJK

The application of Financial Technology to improve the efficiency of operational activities and the quality of bank services to its customers because the use of financial technology is in line with the growing needs of the community for online-based financial services. With the presence of fintech p2p lending makes the credit process faster and this can become a banking threat from the use of fintech can ultimately impact bank profitability. For this reason, banks are not only expected particle make developments in the technology sector alone but also increase credit portfolios. Based on the results of research from Irma (2018) states that financial technology collaboration with Islamic financial institutions, especially Islamic banking will facilitate and bring business players, especially MSMEs, to access financial service products offered by banks so that this business model in addition to making it easier for business people also makes it easier for MSMEs in get financial access, increase financial inclusion and improve the performance of Islamic banks, while according to Muchlis (2018) collaboration of Islamic banking with the provision of financial technology services, the public will more easily access Islamic banking service to create customer convenience to increase Third Party Funds and bank financing which will also increase profitability. For this reason, starting in 2018, there will be some banks that are starting to work with fintech companies in the form of shadow investors, where banks offer loans through fintech companies to investors. Sources of funding were obtained from investors registered in fintech companies.

Profitability is a ratio of financial performance that is very important for the banking industry because it can reflect the success of banks in obtaining profits. The higher the profitability of banks, the better the bank's performance. Profitability ratios consist of Return On Assets (ROA), Operating Expenses Against Operating Income (BOPO) and Net Interest Margin (NIM)

Tabel 2. Profitability Bank In Indonesia period 2014-2018

Ratio	2015	2016	2017	2018
ROA	2,32%	2,45%	2,15%	2,41%
BOPO	81,49%	82,22%	78,64%	77,86%
NIM	5,39%	5,63%	5,32%	5,14%

Sources: OJK, 2019

Based on table 2 it can be seen that Return on Assets (ROA) in 2017 has decreased from the previous year but in 2018 it has increased again to 2.41%, which means the ability of banks to earn profits has increased, for Operational Expenses and Operational Income (BOPO) of banks has decreased from 2016 which means the bank can reduce operating expenses and maximize revenue. Whereas Net Interest Margin (NIM) has decreased from 2016 to 2018, this can be interpreted that the ability of banks to decline is due to the lack of banks producing interest income. Based on the above background, the authors are interested in knowing the analysis of the influence of Financial Technology on Banking Profitability listed on the IDX, is there a difference in bank profitability before and after working with a financial technology company.

LITERATURE REVIEW

Financial Technology according to Bank Indonesia Regulation No.19 / 12 / PBI / 2017 regarding the implementation of Technology states that financial technology is the use of technology in the financial system that produces products, services, fund technology or new business models and can have an impact on monetary stability, financial system stability funds or efficiency, smoothness, security and, reliability of payment systems. According to the Financial Services Authority Regulation Number, 77 / POJK.01 / 2016 concerning Information Technology-based money lending and borrowing services is the organization of financial services to bring together lenders with loan recipients in the context of entering into loan and loan agreements in the rupiah directly through an electronic system using a network Internet. Indonesian Financial Services Authority Regulation number 13 / POJK.02 / 2018 concerning digital financial innovation in the financial services sector is the activity of renewing business processes, business models and, financial instruments that provide added value to the financial services sector by involving the digital ecosystem.

Types of Financial Technology

Digital-based financial services according to Susanne et al (2016) consists of:

1. Payment Channel System
An electronic service that functions to replace banknotes and demand deposits as a means of payment
2. Digital Banking
It is a banking service that utilizes digital technology to meet the needs of its customers
3. P2P Lending
P2P Lending is a financial service that utilizes digital technology to bring together those who need loans and those who are willing to provide loans
4. Online / Digital Insurance
Insurance service for customers by utilizing digital technology by offering premium comparison services (digital consultants) and agency services (digital marketers) of insurance through websites or mobile applications
5. Crowdfunding
It a fundraising activity through the website or other digital technology for investment and social purposes.

According to Kasmir (2012:196), Profitability Ratios can be made using comparisons between various components in the financial statements, especially the balance sheet and income statement. According to Henry (2015: 226), Profitability Ratio is a ratio used to measure a company's ability to generate profits from its normal business activities. Based on the above definition, the Profitability Ratio can be used to measure the company's ability to benefit from every activity carried out both inside and outside the company.

According to Kasmir (2012:198), the benefits of the Profitability Ratio are to:

1. Knowing the size of the level of profits obtained by the company in one period.
2. Knowing the company's previous year's profit position with the current year.
3. Knowing the development of profits from time to time.
4. Knowing the amount of net profit after tax with its capital.
5. Knowing the productivity of all company funds used both loan capital and own capital

Types of Profitability Ratios

Each type of profitability ratios can be used to assess and measure the company's financial position in a certain period. The more types of ratios used, the more perfect the results will be achieved. Under Bank Indonesia Circular Number 13/30 / DPNP regarding the guidelines for calculating financial ratios, there are 4 types of profitability ratios, as follows:

1. Net Interest Margin (NIM)

This ratio is used to measure the ability of bank management to manage productive assets to generate net interest income. The Net Interest Margin (NIM) can be formulated as follows:

$$\text{NIM} = \frac{\text{Net Interest Income} - \text{Interest Expenses}}{\text{Average Interest Earning Assets}} \times 100\%$$

Table 3. Bank Soundness Predicate based on NIM

No	Ratio NIM	Description
1.	3% < NIM	Excellent
2.	2% < NIM ≤ 3%	Good
3.	1,5% < NIM ≤ 2%	Fair
4.	1% < NIM ≤ 1,5%	Bad
5.	NIM < 1%	Poor

Source: BI

Return on Assets (ROA)

The ratio shows the ratio between earnings (before tax) with the total assets of the bank, this ratio shows the level of efficiency of asset management carried out by the bank concerned. The Return on Assets (ROA) can be formulated as follows:

$$\text{ROA} = (\text{Profit Before Tax}) / (\text{Total Assets}) \times 100\%$$

According to Kasmir (2012: 201), Return On Assets (ROA) is a ratio that shows the results (return) on the number of assets used in the company. Besides, ROA provides a better measure of company profitability because it shows the effectiveness of management in using assets to earn revenue. Bank Indonesia Circular Letter No.13 / 24 / DPNP dated 25 October 2011 a standard for Return on Assets (ROA) ratio of 1.5% was obtained. The higher return on assets (ROA) of a company reflects the low use of assets to generate profits. The following is the Return on Asset (ROA) Component Matrix Criteria.

Table 4. Return on Asset (ROA) Criteria Matrix

Rasio	Peringkat	Keterangan
ROA > 1,5%	1	Excellence
1,25% < ROA ≤ 1,5%	2	Sehat
0,5% < ROA ≤ 1,25%	3	Cukup Sehat
0 < ROA ≤ 0,5%	4	Tidak Sehat
ROA ≤ 0%	5	Sangat Tidak Sehat

Source: SE BI No. 13/1/PBI/2011

Several factors that affect Return on Assets (ROA) in a bank according to experts, as follows: Kasmir (2012: 203), explaining that what affects Return on Assets (ROA) is the return on investment or what is referred to as Return on Assets (ROA) is influenced by net profit margins and total asset turnover because if Return on Assets (ROA) low due to low- profit margins caused by low net profit margins caused by low total asset turnover.

According to Hasibuan (2012: 99), states that the factors that influence the increase in Return on Assets (ROA) are as follows:

1. Increased operating results on lending interest.
2. Results from the stock agio.

The factors that influence the decline in the value of Return on Assets (ROA) are as follows:

1. High non-performing loans (NPL).
2. Increased bank operating expenses.
3. The allocation of funds raised has not been fully optimized to generate profits.
4. Increased allowance for impairment losses on loans (CKPN).
5. Declining interest income on the asset side

Operating Expenses Operating Income (BOPO)

The ratio of operating costs is the comparison between costs operational and operating income. Operational cost ratio to measure the level of efficiency and ability of banks in carrying out its operations.

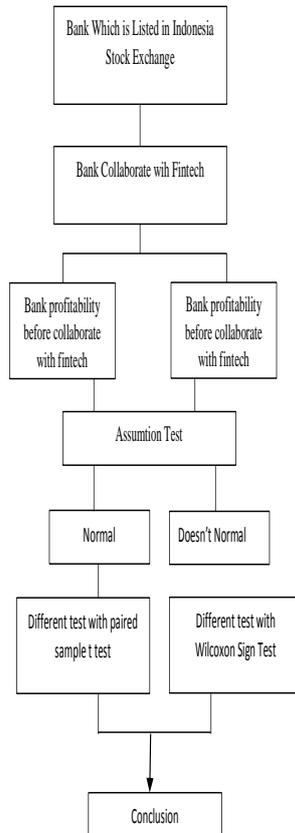
$$\text{BOPO} = \frac{\text{Operational Expense}}{\text{Operational Income}} \times 100\%$$

Table 5. Bank Soundness Predicate based on BOPO

No	Ratio BOPO	Description
1.	BOPO ≤ 94%	Excellent
2.	94% < NIM ≤ 95%	Good
3.	95% < NIM ≤ 96%	Fair
4.	96% < NIM ≤ 97%	Bad
5.	BOPO > 94%	Poor

Source: BI

Research Framework



RESEARCH METHODOLOGY

The study uses a descriptive analysis method because this research was conducted to get a clear picture of a problem, then analyze it to get a conclusion. This is done by researching and processing primary data and then analyzed to get conclusions by the objectives of the study. Population determined are all banks listed on the Indonesia Stock Exchange (IDX) which amounted to 43 banks and the number of banks cooperating with fintech were 9 banks. Techniques and methods used by the author in collecting data to conduct research are the Study of Literature and Documentation Studies

Data analysis technique

Normality test

The Normality test is carried out to test whether, in the regression model, confounding or residual variables have a normal distribution (Ghozali, 2018: 161). There are two ways to detect residual values with normal distribution or not, namely by graphical analysis and statistical tests.

a. Graph Analysis

The normality test in this study uses graphs generated from normal plots. Ghozali (2018: 161) states that the normal plot graph method is more reliable in the normality test with graph analysis. To find out whether the residual value is normally distributed or not, that is to see the results of the normal probability plot. The normal distribution will form a diagonal straight line, so if the residual data distribution is normal then the line that represents the actual data will follow or be close to the diagonal line. In this study, the Q-Q plots method will be used. According to Handoyo et al (2017: 24), Q-Q plots are graphical methods that can be used to see the normality of data.

b. Statistic analysis

The Normality test in this study used the K-S test. The K-S test was chosen because it was more suitable for the number of samples that the researchers tested. The basis for decision making in the K-S normality test is as follows:

- If the Significance value (Sig.) Is greater than 0.005, the research data is normally distributed.
- Conversely, if the Significance value (Sig.) It smaller than 0.005, the research data is not normally distributed.

Paired Sample T-Test

Paired Sample T-Test is a type of test conducted on two pairs of samples. Paired samples are samples with the same subject but experience two different treatments and measurements (Santoso in Suganda, 2018: 113). The requirements for this type of test are:

- a. Data is normally distributed

- b. The two data groups are dependent (interconnected/paired)
 - c. The type of data used is numeric and categorical (two groups)
- This test aims to test two paired samples, whether the average is the same or significantly different. Because the data are paired, a lot of data from the two samples must be the same. Test steps for Paired Sample T-Test:

1. Determine the Hypothesis
 - Hypothesis Model Sample T-Test 1
 - H₀: $\mu_1 = \mu_2$ There is no difference in profitability before and after the Bank collaborates with Fintech
 - H_a: $\mu_1 \neq \mu_2$ There are differences in profitability before and after collaborating with Fintech
 - Model T-Test Sample Hypothesis 2
2. Determine the profitability picture of each sample, before working together and after working with Fintech
3. Determine assessment criteria:
 - t table < -t count < t table: H₀ Accepted
 - t count < -t table or t count > t table: H₀ Rejected
 - Based on Probability:
 - Sig (p) > α (0.05): H₀ is accepted
 - Sig (p) < α (0.05): H₀ is rejected

DISCUSSION RESULT

There are 44 banks listed on the Indonesia Stock Exchange, but 9 banks that cooperating with financial technology companies:

Table 6. List of banks listed on the Indonesia Stock Exchange in collaboration with Financial Technology Companies

No	Nama Bank	Kode	BUKU	Fintech
1	PT. Bank Central Asia	BBCA	4	Akseleran
2	PT. Bank Negara Indonesia	BBNI	4	Akseleran
3	PT. Bank Rakyat Indonesia	BBRI	4	Investree
4	PT. Bank Danamon Indonesia	BDMN	4	Akseleran
5	PT. Bank Mandiri	BMRI	4	Akseleran Amartha
6	PT. Bank Permata	BNLI	3	Akseleran Amartha
7	PT. Bank Sinarmas	BSIM	2	Modalku
8	PT. Bank CIMB Niaga	BNGA	4	Akseleran
9	PT. Bank Woori Saudara Indonesia	SDRA	2	Investree

Source: Processed Data

Bank Indonesia is one of the regulatory bodies that regulate banking. One of the Bank Indonesia Regulations (PBI) Number 14/26 / PBI / 2012 dated December 27, 2012, concerning business activities and Office Networks Based on Core Capital The Bank states that based on owned core capital, Banks are grouped into 4 business groups (Commercial Banks Group Business - BUKU) as follows:

1. BUKU 1, Banks with core capital of less than Rp. 1 trillion
2. BUKU 2, Banks with core capital of Rp. 1 Trillion up to less than Rp. 5 Trillion
3. BUKU 3, Banks with core capital of Rp.5 trillion to less than Rp.30 Trillion
4. BUKU 4, Banks with core capital of more than IDR 30 trillion

Banks in the BUKU 4 category in the data of banks cooperating with fintech mentioned above namely Bank Rakyat Indonesia (Persero) Tbk are among the largest state-owned banks in Indonesia. BRI was established on December 16, 1895, starting its role as a public company on August 1, 1992, with a proportion of the Government's shares of 46.75% and 43.25% of public shares. As of March 2019, Bank BRI has a tier 1 core capital of around 174.5 trillion. As of December 2019, tier 1 core capital was around 187 trillion. Bank Negara Indonesia is one of the oldest banks in Indonesia established in 1946. The tier 1 core capital of BNI Bank as of March 2019 was around 139.35 trillion. As of December 2019, its tier 1 core capital was around 111.67 trillion. Besides being spread in various regions in Indonesia, BNI also has branches in the United States, United Kingdom, Hong Kong, Singapore, and Japan. Bank Mandiri was the result of a merger of 4 large banks in 1999. This bank is one of the largest and most spread BUKU banks in Indonesia with tier 1 core capital of around 167.2 trillion rupiahs as of March 2019. As of December 2019, tier 1 core capital was around 179.16 trillion. Bank Central Asia is one of the largest private banks in Indonesia. Established in 1957, as of March 2019 BCA has a tier 1 core capital of around 148.7 trillion rupiahs. In addition to having branches throughout Indonesia, BCA also has a subsidiary in Hong Kong. CIMB Niaga is the second Private Bank which is included in the BUKU 4 category. It was recorded that at least as of March 2019, CIMB Niaga's tier 1 core capital was around 38.2 trillion rupiahs. As of December 2019, core tier 1 capital was around 40.2 trillion. In 1987 CIMB Niaga became the first bank in Indonesia to provide ATM facilities for its customers. In 1991 it became the first bank in Indonesia to provide online banking services and in 2013 became the first bank in Asia to launch a bank account on a handphone or a handphone account. For Bank Danamon, After a successful merger, between Danamon bank and BNP Bank, Danamon bank officially entered Book 4 bank. The tier-1 capital of this bank was recorded at 32.18 trillion as of December 2019. Permata Bank was included in BUKU 3 with tier capital- 1 Rp. 21.79 Trillion. Bangkok Bank Public Company Limited acquired shares of PT Bank Permata Tbk worth

89.12 percent in December 2019. Bank Woori Saudara is in the BUKU II position with a total tier 1 capital of Rp. 4.6 Trillion until December 2019. Bank Woori Indonesia (SDRA) is a joint venture bank that is majority-owned by Woori Bank, Korea. BWI has a variety of corporate banking products and services (corporate banking), including exports, imports, deposits, loans, remittances, and treasury. A merger of Brothers and Banks Woori, improve capital structure, expand business networks, and improve business competitiveness. Bank Sinar Mas, which is a bank owned by the Sinar Mas conglomerate, is in BUKU II with a tier-1 capital of Rp.4.72 trillion.

Fintech companies in Indonesia began to develop since 2017 and several fintech companies collaborated with banks starting in 2018 namely Akseleran which is a startup engaged in fintech that combines Peer to Peer Lending (P2P) systems with crowdfunding or fundraising. Acceleration has succeeded in connecting startups, early-stage businesses, and SMEs that need capital to either start or expand their business with those who have funds to invest in these businesses in the form of loans or equity or shares in cooperation with Bank Mandiri, BCA, Permata, CIMB Niaga, BNI, Danamon. For virtual accounts and escrow accounts. The company Fintech Investree Investree is an online marketplace peer-to-peer lending (P2PL) service platform engaged in financial technology. This platform was developed by PT. Investree Radhika Jaya cooperates with Bank BRI. In 2018 BRI began channeling funding via Investree worth Rp 50 billion in addition to BRI also cooperating with Bank Woori Saudara, Fintech Amarta Company cooperated for channel links with Bank Mandiri and Bank Permata while Modalku was the start-up fintech which is engaged in peer to peer lending in collaboration with Bank Sinar Mas.

A description of the Bank's profitability before cooperating with a Financial Technology company consisting of Return On Assets (ROA), Net Interest Margin (NIM), and Operating Expenses compared to Operating Income (BOPO).

Table 7. Return on Assets (RoA) Bank Before and After Collaboration with Fintech Companies

Bank	ROA	ROA	Perubahan	
	Sebelum (%)	Sesudah (%)		
BBCA	3.9	4	0.1	3%
BBNI	2.7	2.4	-0.3	-11%
BBRI	3.69	3.5	-0.19	-5%
BMRI	2.72	3.03	0.31	11%
BDNM	3.1	3	-0.1	-3%
BNGA	1.7	1.99	0.29	17%
BNLI	0.6	1.3	0.7	117%
BSIM	1.26	0.23	-1.03	-82%
SDRA	2.37	1.88	-0.49	-21%
Rata-Rata	2.45	2.37	-0.08	3%
MIN	0.6	0.23	-1.03	-82%
MAX	3.9	4	0.7	117%

Source: Data Processed

Based on the data in table 5, the highest RoA Bank before cooperating with fintech is BCA Bank which is 3.9% and according to SE BI No.13 / 1 / PBI / 2011 is categorized very well and the lowest RoA Bank before cooperating with fintech is 0, 6%, namely Bank Permata so if based on the provisions of SE BI No. 13/1 / PBI / 2011 is quite good. Whereas the highest RoA Bank after cooperating with Fintech is BCA Bank which is 4% and the lowest ROA Bank after cooperating with Fintech is Sinar Mas Bank which is 0.23% and based on SE BI No. 13/1 / PBI / 2011 can be categorized as not good. The difference in RoA in various banks is one of the reasons is the ability of funding of each bank is different and is also influenced by the efficiency of the network and the ability to collect cheap funds from the public. The strategy to increase RoA is to reduce the cost of funds and increase the realization of quality loans. Besides, banks will also increase fee-based income and control non-performing loans (Non-Performing Loans). To maintain the profitability ratio, several banks can improve their retail and corporate businesses. For the corporate sector, also, banks can increase fee-based income.

Table 8. Bank's Net Interest Margin (NIM) before and after collaboration with Fintech companies

Bank	NIM		Perubahan	
	Sebelum (%)	Sesudah (%)		
BBCA	6.2	6.2	0	0
BBNI	5.5	4.9	-0.6	-11%
BBRI	7.93	6.98	-0.95	-12%
BMRI	5.63	5.46	-0.17	-3%
BDNM	9.3	8.3	-1	-11%
BNGA	5.6	5.31	-0.29	-5%
BNLI	4	4.4	0.4	10%
BSIM	6.46	7.43	0.97	15%
SDRA	4.86	3.4	-1.46	-30%
Rata-Rata	6.16	5.82	-0.34	-5%
MIN	4	3.4	-1.46	-30%
MAX	9.3	8.3	0.97	15%

Source: Data Processed

The highest NIM of the Bank before cooperating with fintech is BDNM, which is 9.3%, which means that according to the Bank Indonesia SE in the very healthy category and the lowest NIM is BNLI of 4%, which means in the very healthy category. The highest NIM of the Bank after cooperating with fintech is BDNM of 8.3% and the lowest NIM is SDRA of 3.4% so that the Bank's overall NIM listed on the Indonesia Stock Exchange before and after cooperating with fintech in the very healthy category is NIM greater than 3%. The declining banking NIM is caused by a faster and higher funding rate increase compared to a slower and lower lending rate increase. On the other hand, competition in obtaining Third Party Funds (DPK) is increasingly tight which forces banks to compete to attract customers so that they can deposit their funds in banks. The reason for the low NIM is net interest income (NII), which grows slower than earning assets. The bank must also be able to manage the Cost of Fund so that if CoF decreases it can increase NIM.

Table 9. Operational Expenses Bank Operating Income that is listed on the Indonesia Stock Exchange before and after cooperating with Fintech Company

Bank	BOPO		Perubahan	
	Sebelum (%)	Sesudah (%)		
BBCA	58.6	59.1	0.5	1%
BBNI	71	73.2	2.2	3%
BBRI	69.14	70.1	0.96	1%
BMRI	71.78	67.44	-4.34	-6%
BDNM	72.1	82.7	10.6	15%
BNGA	83.48	82.44	-1.04	-1%
BNLI	94.8	87	-7.8	-8%
BSIM	88.94	99.1	10.16	11%
SDRA	73.05	75.75	2.7	4%
Rata-Rata	97.56	99.55	1.99	3%
MIN	58.6	59.1	-7.8	-8%
MAX	94.8	99.1	10.6	15%

Sources: Data Processed

BOPO ratio is one of the ratios that indicate the level of efficiency of the Bank. The lowest BOPO of a Bank listed on the IDX before cooperating with fintech is BBCA, which is 58.6%. The lower the BOPO means the more efficient the bank's performance is in controlling its operating expenses, with the efficiency of the load the greater the bank's profits. The highest BOPO is BNLI of 94.8%. After cooperating with fintech, the lowest BOPO is still BBCA, which is 59.1% and the highest BOPO is BSIM, which is 99.1%. The possible increase in the BOPO ratio is caused by an increase in reserves due to the increase in non-performing loans (NPLs). BOPO benchmarks for Commercial Banks BUKU 1 Business Group is a maximum of 85%, BUKU II around 78-80%, BUKU III around 70-75% and Book IV is 65-60%. Benchmarks are the average bank BOPO by the group. The BUKU is a grouping of banks based on core capital. One factor that made bank BOPO ratios decline as banks began to lead to digitalization until efficiency improved. Besides, banks began to reduce reserve costs because credit quality improved so operational costs dropped.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 VAR00002	2.4489	9	1.09576	.36525
VAR00003	2.3700	9	1.16599	.38866

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 VAR00002 & VAR00003	9	.901	.001

From the table, it can be seen that the sample Return on Assets used before and after the bank collaborates with fintech is 9 samples. The relationship between members of the pair or correlation is 0.901. Significant rate or sig is 0.001. Seen from the sig Return on Assets before and after the bank cooperates with fintech that is 0.001 < 0.05, it means that there is a relationship of Return on Assets before and after the bank cooperates with fintech.

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	.0789	.50760	.16920	-.31129	.46907	.5	8	.653

Based on the data in the table, that Sig (2 tailed) of 0.653 > 0.05 means that Ho is accepted, meaning there is no difference in Return on Assets before and after the bank works with a fintech company.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 VAR00002	6.1644	9	1.59959	.53320
VAR00003	5.8200	9	1.55489	.51830

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 VAR00002 & VAR00003	9	.886	.001

Seen from the sig Net Interest Margin before and after the bank cooperates with fintech that is $0.001 < 0.05$, it means that there is a relationship of Net Interest Margin before and after the bank cooperates with fintech

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	.344	.75334	.25111	-.23463	.92352	1.37	8	.207

Based on the data in the table, that Sig (2 tailed) of $0.207 > 0.05$ means that H_0 is rejected, meaning there is no difference in Net Interest Margin before and after the banks listed on the Indonesia Stock Exchange cooperate with fintech.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VAR00002	75.8767	9	11.14247	3.71416
	VAR00003	77.4256	9	11.85474	3.95158

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	VAR00002 & VAR00003	9	.866	.003

Seen from the Operational Expenses Operating Income before and after the bank cooperates with fintech that is $0.003 < 0.05$, it means that there is a relationship between Operational Expenses Operating Income before and after the bank cooperates with fintech

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	-1.54889	6.00055	2.00018	-6.16132	3.06354	-.774	8	.461

Based on the data in the table, that Sig (2 tailed) of $0.461 > 0.05$ means that H_0 is rejected, meaning there is no difference in Operating Expenses before and after banks listed on the Indonesia Stock Exchange cooperate with fintech.

Based on the results of the study it can be concluded that there is no difference in bank profitability measured using Return on Assets, Net Interest Margin and Operating Expenses Operating Income at banks listed on the Indonesia Stock Exchange. The results of this study are not in line with the research of Ridwan Muchlis (2018) who suggested that by collaborating with Fintech, the distribution of bank financing will be easier so that it can increase profitability. Banks may be still less able to generate net profits by utilizing the Bank's assets in collaboration with the Fintech Start-Up. But until the end of 2019 more banks and BPRs are working with banks, including at BUKU 3 bank, there is BNLI who at the end of November 2019 cooperates with PT FinAccel Digital Indonesia or Kredivo with a cooperation value of up to Rp 1 trillion. This value is claimed to be the largest channeling collaboration between fintech and banking. Financial technology companies (fintech) funding between customers, peer to peer lending, Is not a problem for banks, but the two financial closely collaborating. The existence of the Fintech (financial technology) payment system is now no longer considered a banking competitor, given that the bank has collaborated with Fintech and is mutually beneficial. If the bank does not collaborate with Fintech then its business can have an impact on its net interest margin.

At present the form of bank & fintech cooperation can be done with direct cooperation, banks acquire fintech and vice versa. the results of a Bank for International Settlement (BIS) study that mentioned five possible banking positions during rapid technological progress and digitalization. First, a better bank will emerge as a result of transformation so that it can provide digital services. Second, conventional banks do not transform and lag but new digital banks emerge. Third, distributed banks will emerge where banks carry out general processes, but specific things are done by digital companies or bank degradation. Banks only carry out general activities. While relations with customers, the relationship to further guidance is carried out by digitalized companies. Fourth, banks will be degraded, only certain services can be done by banks and special services will be provided by fintech. Banks only carry out general activities while the relationship to guidance will be carried out by companies that have been digitalized. Fifth, the role of bank intermediation will be completely lost because the public can already be in contact with these digitalized companies whose services are faster and cheaper, but the scenario will not happen if there is a collaboration between banking and fintech. With advances in technology can reduce the need for human resources (HR) so that inevitably have to close the branch office. Banks need to add skills and change mindsets to compete in the digital age. If seen from the number of unbanked people there are still many who can be touched by the existence of fintech, banks can utilize fintech-owned technology to reach wider society

CONCLUSION

Based on the discussion it can be concluded that there is no difference in the level of profitability measured using Return on Assets, Net Interest Margin and Operating Expenses, and Operating Income at banks listed on the Indonesia Stock Exchange before and after cooperating with financial technology companies. This is possible because the cooperation period is still short so that the difference cannot yet be seen, but collaboration between banks and fintech companies is very important when the rapid advancement of information technology as it is today because it can benefit both parties. Based on the results of this study, it is expected to be an input for other countries where the bank can collaborate with fintech which can be mutually beneficial for both parties while still taking into account risks or the precautionary principle.

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