

Analysis of differences in Banking Profitability Ratios before and after adoption of Internet Banking to bank listed on the Indonesian Stock Exchange (IDX)

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ABSTRACT

The research aims to find out how the level of internet banking adoption and Return On Assets (ROA), Return On Equity (ROE), & BOPO on banks listed on the Indonesia Stock Exchange, as well as to analyze differences in Return On Assets (ROA), Return On Equity (ROE), & BOPO before and after implementing internet banking. The research method used in this study is included in quantitative research. The renewability in this study is that there is still no previous research that discusses the differences in banking performance before and after using e-banking in terms of ROA, ROE, & BOPO. Based on the analysis of the results of research and discussion presented earlier, it can be concluded that the provision of internet banking services have a significant influence on the financial performance of banks as measured by ROA, ROE, & BOPO listed in Indonesia Stock Exchange.

Key words : Adoption Internet Banking; ROA; ROE

1.INTRODUCTION

Bank is the financial institution that has a very important role and has an influence on the economy in Indonesia[1]. The definition of a bank according to[2] is a wealth business entity primarily in the form of financial assets and also profit-oriented and social, the creator and distributor of currency (banknotes and coins) which is the sole authority of the central bank (Bank Indonesia), a fund collector and credit distributor, as payment traffic in completing payment of commercial or financial transactions from the payer to the recipient, and plays an important role in stabilizing currency values, exchange rates, and keeping commodity goods prices to be relatively stable. Whereas according to Law No. 10 of 1998 the definition of a bank is a business entity that collects public funds in the form of deposits and also distributes to the public in the form of loans or in other forms that aim to improve the lives of many people.

Internet banking practice will clearly change the bank's strategy in carrying out its activities. At least there are new factors that can influence the study of a bank to open a new branch or add an ATM. Mobile banking allows customers to make payments online^[3]. In addition, with e-banking, banks can increase service speed and reached in banking activities. Implementation of mobile banking greatly influenced by the development of information technology, in fact on the one hand it makes the banking transaction easier, but on the other hand it also makes it more risk. With this reality, safety factors must be the most important factor to be considered. In fact, maybe this security factor can be one of the excellent features that can be highlighted by the bank.

Currently internet banking is the center of attention where customers can make banking transactions (non-cash) at any time from anywhere easily so that only by accessing the internet. Supported also by the fact that currently wireless (wireless) technology is on the rise. The internet can be accessed with laptops, notebooks, PDAs or cellphones in the Wi-Fi area. Also many users of SMS (Short Messages Services) make SMS-Banking also in demand. Information technology that is able to eliminate geographical and time boundaries is also global or international. For banks themselves, service through internet banking can reduce operating costs because it saves costs incurred for transactions with customers if they do not use i-Banking^[4].

This research is very interesting to do, because for banks, e-banking is a strategy to compete. It is expected to achieve efficiency and effectiveness by cutting distribution and marketing channels and various financing so that profits can increase. By achieving efficiency and effectiveness it will affect the performance of the bank itself. If the performance is good then the achievement will also be good.

According to^[5], the definition of e-banking adoption in Indonesia is one of the adoptions of technology that is in the early stages with promising development potential. This is reinforced by the increase in internet usage which is supported by the cheaper internet rates. To find out internet

banking adoption, it is done by using secondary data obtained from the banking annual reports listed on the Indonesia Stock Exchange that have used internet banking. Table 1 shows a list of banks that have used internet banking.

Table 1: List of Banks Using Internet Banking in Indonesia

No	Bank	Have Internet Banking For 3 Period	Do not Have Internet Banking For 3 Period
1	Bank ICB Bumiputera Tbk (MNC Bank)	V	
2	Bank Mayapada Tbk	V	
3	Bank Central Asia Tbk	V	
4.	Bank Bukopin Tbk	V	
5.	Bank Negara Indonesia Tbk	V	
6.	Bank Danamon Tbk	V	
7.	Bank Mandiri Tbk	V	
8.	Bank Victoria Tbk	V	
9.	Bank CIMB Niaga Tbk	V	
10.	Bank Tabungan Pensiunan Nasional Tbk	V	
11	Bank Permata Tbk	V	
12	Bank Sinarmas Tbk	V	
13	Bank Mega Tbk	V	
14	Bank OCBC NISP Tbk	V	
15	Bank Pan Indonesia Tbk	V	
16	Bank Tabungan Nasional		V (2016)
17	Bank Rakyat Indonesia		V (2016)
18	Bank Windu Kentjana Internasional		V (2015)
19	Bank Jabar Banten (BJB)		V (2015)
20	Bank Artha Graha Internasional		V (2016)
21	Bank QNB Indonesia		V (2016)
22	Bank Nusantara Parahyangan		V (2015)
23	Bank		V (2016)

	Nationalnobu		
24	Bank Mestika Dharma		V (2017)
25	Bank Ina Perdana		V (2017)
26	Bank J Trust Indonesia		V (2016)
27	Bank Mitra Niaga		V

Source : Indonesia Stock Exchange (IDX), 2019

Bank performance is important because it is a reflection of the bank's ability to manage its capital and asset aspects in earning profits, and the implications of bank functions as an intermediary where bank liquidity is measured based on loans channeled to the public compared to funds provided by third parties^[6]. Measurement of bank performance is certainly not an easy thing. The performance of a bank is influenced by several factors, including the existence of rumors or issues as well as differences in perceptions of each investor towards the performance of banking companies that have gone public so that the market law applies^[1]. If investors estimate the performance of the company in question will improve in the future, then many investors will make purchases of the company's shares and then the company's stock price will rise and vice versa^[7].

To measure financial profitability ratios is done by using Return On Assets (ROA), Return on Equity (ROE) and Operational Income Operating Expenses (BOPO). ROA is calculated by comparing earnings (before tax) with Total Assets owned by banks in a certain period multiplied by 100%, then the results are in the form of percent. The greater the ROA in banking, the greater the level of profit achieved by the bank and the better the bank's position in terms of asset use. Based on data obtained from the annual report released by each bank, the following are included in the development of Return on Assets (ROA) of several banks that have adopted internet banking. The third factor in this study is the operational ratio known as the BOPO ratio. BOPO ratio shows the comparison between operating costs and bank operating income. The BOPO ratio measures the level of efficiency and the ability of banks to carry out their operational activities.

The research conducted by^[8] states this is also important in the adoption of online banking. Banking institutions should focus on this issue by increasing by providing much more improved services which consumer can enjoy by visiting the bank branches like loan services. This is also supported by research conducted by^[9] stating that The results showed that four factors are significant in the adoption of internet banking in Sudan. However, training and user trust were insignificant in determining its adoption.

Moreover, the level of adoption of internet banking significantly affected private bank performance.

But this is different from the research conducted by^[10] which states that there is no difference in performance because Indonesian banks are in a period of crisis that affect the financial performance of the bank concerned in the study period. Based on the description, the authors are interested in conducting research on *"Analysis of the Difference of Banking Profitability Ratios Before and After Adoption of Internet Banking to Banks Listed on the Indonesia Stock Exchange (IDX)"*

2.LITERATURE REVIEW

2.1 Bank Performance

According to^[11], performance or performance is an illustration of the level of achievement of the program activities or policies in order to realize the goals, objectives, vision and mission of the organization as outlined through the strategic planning of an organization. Performance is the result of work in the quality and quantity achieved by the company in accordance with the responsibilities given.

Financial performance is an illustration of the achievement of the financial condition of a company that is displayed in the form of financial statements released every year. Understanding of financial performance according to^[12], namely the results or achievements that have been achieved by company management in carrying out its functions to manage company assets effectively in a certain period of time.

From some of the meanings above, it can be concluded that financial performance is the company's ability to generate profits by using resources that are owned and used to determine the success of the company. One analysis of financial performance of banks in this study was measured using ratios Return on Assets (ROA), Return On Equity (ROE), & BOPO

2.2 Internet Banking

Internet banking or abbreviated as E-Banking is a facility provided by a bank to facilitate its customers in conducting transactions through electronic and interactive communication tools. Ebanking includes a system that allows customers of financial institutions, both individuals and companies, to access accounts, business transactions, or obtain information about financial products and services through public or special networks, including the internet.

Meanwhile, internet banking is the use of internet technology as a medium for conducting transactions related to banking transactions. This activity uses the internet

network as an intermediary or liaison between bank customers and the bank. In addition, the form of transactions carried out is virtual or without the need for a face-to-face process between the customer and the officer of the bank concerned.

Based on Bank Indonesia circular letter No.6 / 18 / DPNP concerning the implementation of risk management in bank service activities through the internet (internet banking); understanding of internet banking is one of the banking services that allows customers to obtain information, communicate and conduct banking transactions through the internet network. With the increase in the number of internet users in Indonesia every year, it greatly affects the number of internet banking users. The increasing number of internet users in Indonesia will increase the interest of the public as well as to conduct transactions through internet banking.

Based on the literature review or a combination of several theories and previous studies which have been described previously and clearly described, the following framework (figure 2) is obtained:

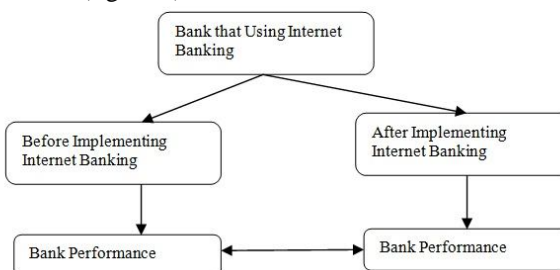


Figure 2: Conceptual Framework

Source : Researcher, 2019

3.METHOD

3.1 Research Characteristics

The research method used in this study is included in quantitative and comparative research. According to^[13], quantitative research methods are studies that are not too concerned with the depth of data, quantitative research does not refer to how deep the data is, the most important thing is to record as much data as possible from the existing population, so that we find the results we are looking for.

In a study of the Analysis of the Difference of Banking Profitability Ratios Before and After Adoption of Internet Banking Listed on the Indonesia Stock Exchange (IDX), researchers used quantitative methods and comparative studies. This is so that researchers can compare differences using e-banking adoption with those who do not use e-banking adoption in terms of aspects of the performance of banking companies, in this case ROA, ROE, & BOPO.

3.2 Population & Sampling

According to^[13], the population is the whole data in one scope of research that is of concern to researchers based on a predetermined time. The population used in this study are all banking companies that have been listed on the Indonesia Stock Exchange (IDX). The selection of the banking industry is based on the fact that the banking sector is one of the state financial institutions so that the level of performance efficiency is truly monitored by Bank Indonesia.

According to^[13] the sample is a small part of the number of couplings that have been previously set. In this study, samples were taken using purposive sampling technique, which is a sample technique where sample selection is based on certain criteria set by previous researchers. Sampling in this study is the banking industry that uses internet banking and has been listed on the Indonesia Stock Exchange (IDX) using population restrictions as follows:

1. Bank registered at Bank Indonesia
2. Banks listed on the Indonesia Stock Exchange (IDX)

Table 2: The Sampling's Criteria

No	Information	Total
1	Bank listed on the Indonesia Stock Exchange period 2018	31
2	Banks that do not have complete financial report data before and after internet banking adoption on the Indonesia Stock Exchange	(11)
3	Banks are not using internet banking services through the period 2017	(5)
4	Banks that have used internet banking services	15

Source : Indonesia Stock Exchange, 2019

3.3 Technical Data Analysis

According to^[13] descriptive statistical analysis is a branch of statistics that studies the techniques of collecting and presenting data to the public with simple techniques that are easily understood by the general public. The descriptive statistics consist of:

1. Average score (mean). The mean is the middle value of a study
2. Standard Deviation. Is a standard deviation part used to determine the spread of a variable
3. Maximum Variant The maximum is the highest value of data processing
4. Minimum. The minimum is the lowest value of data processing

3.3.1 Normality test

To detect the normality of data can be done by testing one sample kolmogorov-smirnov test. The one sample Kolmogorov-Smirnov statistical test was chosen because it is more sensitive to detect data normality compared to testing using graphs. The purpose of this test is to find out whether the sample used is normally distributed or not.

The sample is normally distributed if the Asymptotic sig> level of confidence used in the test, in this case is 95% or = 5%. Conversely it is said to be abnormal if the Asymptotic sig> level of confidence. The null hypothesis (H0) states that data from each research variable in the period before and after the application of internet banking is normally distributed. Determination of the normality of data is determined by means, if the results of its significance are greater than the specified level of significance (≥ 0.05) then H0 is accepted, the data is normally distributed. Conversely if the significance of the test is smaller than the significance value (< 0.05) H0 is rejected then the data is abnormally distributed.

3.3.2 Paired Sample T - Test Test (Difference Test in Two Paired Samples)

Paired Sample T - Test is used to determine whether there are differences in the average between two samples (two groups) in pairs or relationships. Test paired sample T - Test is part of parametric statistics whose research data must be normally distributed which we have previously tested on the normality test.

If the significance of the probability value (p-value) is smaller than alpha 0.05 then there is a significant difference between before and after an action. If the significance of the probability value (p-value) is greater than alpha 0.05 then there is a significant difference between before and after an action.

4. STATISTICAL RESULT

4.1 Descriptive Statistics Of Return On Assets (ROA)

Return on Assets (ROA) is calculated by comparing the profit (before taxes) by Total Assets owned by the bank in a given period, multiplied by 100%, then the results are in terms of percent. The greater the ROA in banking, the greater the level of profit achieved by the bank, the better the position of the bank in terms of asset utilization.

Table 3: ROA Banking 3 Years Before the use of E-banking and three years after the use of E-banking

NO	BANK	ADOPTION			ADOPTION			
		H-3	H-2	H-1	INTERNET BANKING	H+1	H+2	H+3
1	Bank ICB Bumiputera Tbk	0,57	0,09	0,18	0	0,24	-0,22	0,09
2	Bank Mayapada Tbk	1,27	0,9	1,22	0	2,07	2,41	2,53
3	Bank Central Asia Tbk	3,8	3,3	3,4	0	3,4	3,5	3,5
4	Bank Bukopin Tbk	1,73	1,91	2,09	0	1,85	1,63	1,66
5	Bank Negara Indonesia Tbk	2,5	1,6	1,9	0	0,9	1,1	1,7
6	Bank Danamon Tbk	3,1	1,9	2,4	0	2,4	1,5	2,8
7	Bank Mandiri Tbk	3,1	0,5	2,4	0	2,3	2,5	3
8	Bank Victoria Tbk	2,65	2,17	1,97	0	1,97	0,8	0,65
9	Bank CIMB Niaga Tbk	2,09	2,49	1,1	0	2,1	2,75	2,85
10	Bank Tabungan Pensiunan Nasional Tbk	6,14	4,48	3,4	0	4	4,4	4,7
11	Bank Permata Tbk	2,3	1,2	1,2	0	1,9	1,7	1,4
12	Bank Sinarmas Tbk	0,34	0,93	1,44	0	1,07	1,74	1,71
13	Bank Mega Tbk	2,33	1,98	1,77	0	2,45	2,29	2,74
14	Bank OCBC NISP Tbk	1,31	1,54	1,79	0	1,09	1,91	1,79
15	Bank Pan Indonesia Tbk	1,75	1,75	1,87	0	2,02	1,96	2,23
	Maximum	6,14	4,48	3,40	0	4,00	4,40	4,70
	Minimum	0,34	0,09	0,18	0	0,24	(0,22)	0,09
	Mean	2,33	1,78	1,78	0	1,98	1,99	2,22
	Standar Deviasi	1,41	1,09	0,84	0	0,94	1,09	1,14

Source: SPSS, 2019

In the 3 years prior to internet banking adoption, maximum ROA was experienced by Bank Tabungan Pembangunan Nasional (BTPN). Based on the annual report, the National Pension Savings Bank (BTPN) experienced a net income increase compared to the previous year. The minimum ROA was experienced by Bank ICB Bumiputera. This was caused by ICB Bumiputera Bank experiencing a greater increase in assets compared to the previous year. At 3 years before internet banking adoption, the average ROA was 2.33, there were 8 banks that were above the average ROA and there were 7 banks that were below the average ROA.

In 2 years prior to internet banking adoption, the maximum ROA was experienced by Bank Tabungan Pembangunan Nasional (BTPN). Based on the annual report, the National Pension Savings Bank (BTPN) experienced an increase in net income and a decrease in total assets compared to the previous year. The minimum ROA was experienced by ICB Bumiputera Bank. This was caused by Bank ICB Bumiputera experiencing a decrease in net income while assets increased. At 2 years before internet banking adoption, the average ROA was 1.78, there were 8 banks that were above the average ROA and there were 7 banks that were below the average ROA.

On 1 year prior to internet banking adoption, the maximum ROA was experienced by Bank BTPN and Bank Central Asia (BCA). Based on the annual report, the Bank BTPN and Bank Central Asia (BCA) experienced an increase in net income followed by an increase in total assets compared to the previous year. The minimum ROA was

experienced by ICB Bumiputera Bank. This was caused by ICB Bumiputera Bank experiencing a decrease in net income while assets did not experience an increase. At 1 year before internet banking adoption, the average ROA was 1.78, there were 8 banks that were above the average ROA and there were 7 banks that were below the average ROA.

The average ROA before using Internet Banking experienced a downward trend because the banking companies held their profits to be optimized when adopting Internet Banking. This is evidenced by the decline in ROA in almost all banks. For example at the Bank BTPN which experienced a significant decrease in ROA.

In 1 year after the adoption of internet banking, the maximum ROA was experienced by Bank BTPN. Based on the annual report, the Bank BTPN experienced an increase in asset resources owned and BTPN could utilize these assets as maximally as possible. The minimum ROA was experienced by ICB Bumiputera Bank. This was caused by Bank ICB Bumiputera experiencing a decrease in net income and total assets. At 1 year after internet banking adoption, the average ROA is 1.98, there are 6 banks that are above the average ROA and there are 9 banks that are below the average ROA.

In 2 years after the adoption of internet banking, the maximum ROA was experienced by Bank BTPN. Based on the annual report, the Bank BTPN experienced increased asset resources owned and BTPN was able to maximize the company's assets. The minimum ROA was experienced by ICB Bumiputera Bank. This was due to the fact that Bank ICB Bumiputera was unable to utilize the company's assets to the maximum, so its net profit decreased to a minus position. At 2 years after internet banking adoption, the average ROA is 1.99, there are 6 banks that are above the average ROA and there are 9 banks that are below the average ROA.

In 3 years after the adoption of internet banking, the maximum ROA was experienced by Bank BTPN. Based on the annual report, the Bank BTPN was able to utilize the company's assets to the maximum so that the annual net profit always increased. The minimum ROA was experienced by Bank ICB Bumiputera even though it experienced an increase in net income compared to the previous year but could not boost ROA growth. At 3 years after internet banking adoption, the average ROA is 2.22, there are 8 banks that are above the average ROA and there are 7 banks that are below the average ROA.

The average ROA after using internet banking shows an increase because the total assets during the year of the application of internet banking are greater because of investment in internet banking. However, ICB Bumiputera

Bank experienced a significant decrease in ROA until its value of -0.22 in 2012 because Bank ICB Bumiputera was experiencing a transition period before its shares were acquired by MNC group in 2014 as well as Bank Bukopin, Bank Victoria and the First Bank have not shown good performance after the application of internet banking.

4.2 Descriptive Statistics Of Return On Equity (ROE)

Table 4: ROE Banking Three Years Before the use of E-Banking and Three Years After the use of E-Banking

NO	BANK	H-3	H-2	H-1	ADOPTION INTERNET BANKING	H+1	H+2	H+3
1	Bank ICB Bumiputera Tbk	1,44	1,62	1,17		1,33	1,81	1,73
2	Bank Mayapada Tbk	1,24	1,12	1,11		1,61	1,97	1,27
3	Bank Central Asia Tbk	1,93	1,32	1,33		1,32	1,31	1,39
4	Bank Bukopin Tbk	1,19	1,31	1,04		1,02	0,86	1,20
5	Bank Negara Indonesia Tbk	1,48	1,20	1,08		1,06	1,11	1,77
6	Bank Danamon Tbk	1,09	1,15	1,08		1,37	1,14	1,59
7	Bank Mandiri Tbk	1,15	1,02	1,09		1,06	1,25	1,07
8	Bank Victoria Tbk	1,05	1,66	1,36		1,46	1,85	1,07
9	Bank CIMB Niaga Tbk	1,35	1,25	1,05		1,13	1,49	1,22
10	Bank Tabungan Pensiunan Nasional Tbk	1,19	1,02	1,28		1,15	1,16	1,65
11	Bank Permata Tbk	1,15	1,40	1,14		1,08	1,17	1,72
12	Bank Sinarmas Tbk	1,02	1,14	0,98		1,20	1,49	1,04
13	Bank Mega Tbk	1,21	1,51	1,01		1,14	1,06	1,14
14	Bank OCBC NISP Tbk	1,36	1,11	1,16		1,22	1,05	1,09
15	Bank Pan Indonesia Tbk	1,04	1,13	1,30		1,60	1,19	1,22
	Maximum	1,93	1,66	1,36		1,61	1,97	1,77
	Minimum	1,02	1,02	0,98		1,02	0,86	1,04
	Mean	1,26	1,26	1,14		1,25	1,33	1,34
	Standar Deviasi	0,23	0,20	1,12		1,19	0,33	0,27

In the 2 years prior to internet banking adoption, maximum ROE was experienced by Bank Central Asia. The minimum ROE was experienced by Bank Sinarmas. At 3 years before internet banking adoption, the average ROE was 1,26, there were 5 banks that were above the average ROE and there were 10 banks that were below the average ROE.

In 2 years prior to internet banking adoption, the maximum ROE was experienced by Bank Victoria. The minimum ROE was experienced by Bank Mandiri. At 2 years before internet banking adoption, the average ROE was 1,26, there were 6 banks that were above the average ROE and there were 9 banks that were below the average ROE.

On 1 year prior to internet banking adoption, the maximum ROE was experienced by the Bank Victoria. The minimum ROE was experienced by Bank Sinarmas. At 1 year before internet banking adoption, the average ROE was 1,14, there were 7 banks that were above the average ROE and there were 8 banks that were below the average ROE.

In 1 year after the adoption of internet banking, the maximum ROE was experienced by Bank Mayapada. The minimum ROE was experienced by Bank Bukopin. At 1 year

after internet banking adoption, the average ROE is 1.25, there are 6 banks that are above the average ROA and there are 9 banks that are below the average ROE.

In 2 years after the adoption of internet banking, the maximum ROE was experienced by the Bank Mayapada. The minimum ROE was experienced by Bank Bukopin. At 2 years after internet banking adoption, the average ROE is 1.33, there are 5 banks that are above the average ROE and there are 10 banks that are below the average ROE.

In 3 years after the adoption of internet banking, the maximum ROE was experienced by Bank Negara Indonesia. The minimum ROE was experienced by Bank Sinarmas. At 3 years after internet banking adoption, the average ROE is 1.34, there are 6 banks that are above the average ROE and there are 9 banks that are below the average ROE.

4.3 Descriptive Statistics Of Operational Income Operating Expenses (BOPO)

Table 5: BOPO Banking Three Years Before the use of E-banking and Three Years after the use of E-banking

NO	BANK	H-3	H-2	H-1	ADOPTION INTERNET BANKING	H+1	H+2	H+3
1	Bank ICB Bumiputera Tbk	0,47	0,48	0,69		0,50	0,48	0,50
2	Bank Mayapada Tbk	0,57	0,67	0,57		0,64	0,60	0,80
3	Bank Central Asia Tbk	0,49	0,50	0,54		0,75	0,62	0,83
4	Bank Bukopin Tbk	0,59	0,52	0,95		0,59	0,59	0,81
5	Bank Negara Indonesia Tbk	0,62	0,77	0,71		0,85	0,77	0,84
6	Bank Danamon Tbk	0,71	0,71	0,77		0,71	0,97	0,88
7	Bank Mandiri Tbk	0,74	0,63	0,70		0,68	0,62	0,67
8	Bank Victoria Tbk	0,79	0,80	0,82		0,72	0,78	0,54
9	Bank CIMB Niaga Tbk	0,70	0,84	0,76		0,70	0,86	0,65
10	Bank Tabungan Pensiunan Nasional Tbk	0,77	0,69	0,80		0,77	0,68	0,63
11	Bank Permata Tbk	0,72	0,74	0,78		0,78	0,76	0,59
12	Bank Sinarmas Tbk	0,55	0,83	0,79		0,46	0,71	0,78
13	Bank Mega Tbk	0,89	0,80	0,53		0,81	0,75	0,87
14	Bank OCBC NISP Tbk	0,78	0,55	0,84		0,83	0,70	0,85
15	Bank Pan Indonesia Tbk	0,49	0,91	0,80		0,76	0,71	0,84
	Maximum	0,89	0,91	0,95		0,85	0,97	0,88
	Minimum	0,47	0,48	0,53		0,46	0,48	0,50
	Mean	0,79	0,82	0,82		0,72	0,78	0,54

In the 3 years prior to internet banking adoption, maximum BOPO was experienced by Bank Central Asia. The maximum BOPO was experienced by Bank ICB Bumiputera. At 3 years before internet banking adoption, the average BOPO was 0,79, there were 5 banks that were above the average BOPO and there were 10 banks that were below the average BOPO.

In 2 years prior to internet banking adoption, the maximum BOPO was experienced by Bank Victoria. The minimum BOPO was experienced by Bank Pan Indonesia. At 2 years before internet banking adoption, the average BOPO was 0,82, there were 6 banks that were above the average BOPO and there were 9 banks that were below the average BOPO.

On 1 year prior to internet banking adoption, the maximum BOPO was experienced by the Bank Victoria. The maximum BOPO was experienced by Bank Bukopin. At 1 year before internet banking adoption, the average BOPO was 0,82, there were 7 banks that were above the average BOPO.

In 1 year after the adoption of internet banking, the maximum BOPO was experienced by Bank Mayapada. The minimum BOPO was experienced by Bank Negara Indonesia. At 1 year after internet banking adoption, the average ROE is 0,72, there are 6 banks that are above the average BOPO.

In 2 years after the adoption of internet banking, the maximum BOPO was experienced by the Bank Danamon. The minimum BOPO was experienced by Bank Bukopin. At 2 years after internet banking adoption, the average BOPO is 0,78 there are 5 banks that are above the average BOPO.

In 3 years after the adoption of internet banking, the maximum BOPIO was experienced by Bank Danamon. The minimum ROE was experienced by Bank Sinarmas. At 3 years after internet banking adoption, the average ROE is 0,54, there are 6 banks that are above the average ROE.

4.4 Normality Test Before and After Adoption of Internet Banking

Before testing the hypotheses of the study, the data will be tested for normality^[14]. This normality test is used to determine whether the data were normally distributed or not. To determine the normal distribution of data used or not, the researchers used the Kolmogorov-Smirnov test. Normal determination whether or not the data is determined by the way, if the result of greater significance than the predetermined significance level ($\geq 0,05$) H_0 is accepted then the data is normally distributed. Conversely, if the test of significance is smaller than the significance value ($< 0,05$) H_0 is rejected then the data distribution is not normal.

Table 5: Normality Test Before Adoption of Internet Banking

		Before Adoption Internet Banking
N		15
Normal Parameters ^{a,b}	Mean	2,0840
	Std. Deviation	1,09353
Most Extreme Differences	Absolute	,257
	Positive	,257
	Negative	-,179
Kolmogorov-Smirnov Z		,994
Asymp. Sig. (2-tailed)		,276

Source : SPSS, 2019

From Table 5 it is known to have the results of the Kolmogorov Smirnov normality test of 0.994 and the significance level of 0.276. From the results above it can be concluded that the data has a normal distribution, because the level of significance of the variable is above the alpha standard of 0.05.

Table 6: Normality Test After Adoption of Internet Banking

		After Adoption Internet Banking
N		15
Normal Parameters ^{a,b}	Mean	1,9860
	Std. Deviation	1,08313
Most Extreme Differences	Absolute	,162
	Positive	,162
	Negative	-,130
Kolmogorov-Smirnov Z		,626
Asymp. Sig. (2-tailed)		,829

Source : SPSS, 2019

From Table 6 it is known to have the results of the Kolmogorov Smirnov normality test of 0.626 and the significance level of 0.829. From the results above it can be concluded that the data has a normal distribution, because the level of significance of the variable is above the alpha standard of 0.05.

4.5 T-Test Hypothesis Testing

According^[14], T test is used to determine how far the influence of the independent variables individually in the dependent variable explained by the assumption of other independent variables constant. Significance test is required to determine whether or not significant influence of each independent variable on the dependent variable. T test has stages, namely, formulating hypotheses, determining the level of significance, and making a hypothesis test decision.

Tabel 7: Uji T (*T-Test*)

	Paired Differences				T	Df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
PRE TEST - POST TEST	-,10133	,63253	,16332	-,45162	,24895	-,620	14	,002

Source : SPSS, 2019

From Table 7 it can be seen that the significance value is 0.002 which is smaller than 0.05. These results indicate that H_0 is rejected, which means experiencing a significant difference between before and after internet banking adoption.

5.DISCUSSION

Based on the results of the tests that have been conducted, it is known that the adoption of internet banking services has a significant influence on the financial performance of banks listed on the Indonesia Stock Exchange. Regression results using 15 bank samples show the probability value of the two regression models has a value of less than 0.05. Influential internet banking on Return On Assets, Return On Equity, and BOPO is caused by banking operations that tend to manage funds rather than assets.

The results of the univariate analysis show some significant differences in the performance of banks that implement internet banking and those that do not. The size of banks that implement internet banking has assets that are significantly larger than non-internet banks. It can be said that to implement internet banking, banks must have large assets. In terms of profitability, banks with internet banking have better ROA, ROE, and BOPO than banks without internet banking so that it can be said that banks with internet banking have better profitability because the differences in ROA and ROE, BOPO are both insignificant[15].

In terms of operational efficiency, the personnel burden on banks with internet banking proved to be significantly lower than banks without internet banking. This indicates that the application of internet banking helps banks reduce labor costs. Unlike the expenses incurred for fixed assets, banks with internet banking actually incur greater costs related to fixed assets. Thus, it means that the application of internet banking requires additional fixed assets and costs in their operation.

Banks with internet banking are able to generate large non-traditional income, exceeding the non-traditional income generated by non-internet banks. Customers who want to enjoy internet banking facilities will be charged an additional fee, which is income for the bank. Credit risk faced by banks is also smaller in banks that adopt internet banking than those that do not. In terms of external financing, banks with internet banking require higher external financing and the differences between them prove significant. With external financing needed high, it can be said that the bank is able to develop with the capital that is now owned or in other words have low expected earnings against capital.

The results of the study on the effect of internet banking adoption with banking performance, revealed that there was a significant relationship between internet banking adoption and their performance. This influence may be felt in the long term by a bank that adopt internet banking. Large investment has caused several banks to adopt internet

banking. The level of security, long-term maintenance and the ability of banks to maintain internet banking are still experiencing problems[16]. The lack of maximum internet usage in Indonesia for banking transactions is still an obstacle to the development of internet banking services. With internet banking the bank is able to generate income in addition to greater interest. However, this income has not been able to cover the costs incurred for operating internet banking technology. Thus, the application of internet banking has a positive and not significant effect on bank profitability (ROA, ROE, & BOPO).

But there are still many shortcomings in the provision of internet banking from the majority of these banks, most of them only provide balance checking and transfer services with the weakness of the internet network. So that the use of internet banking services in most banks only plays a small role in the overall banking transactions. This led to the provision of internet banking.

The results of this study are in accordance with existing research and theory, research conducted by [17] show that banks with internet banking services have a positive impact on ROA, ROE, and BOPO. The same thing was shown by [8] in his research stating that banks those who provide internet banking services have better accounting efficiency ratios and profitability compared to not providing internet banking services. If the provision of internet banking services is done well, more and more investors will invest their capital. This study shows the same results in a study conducted by[6], his research showed results where the coefficient of the internet banking variable positive but not significant. The effect of the provision of internet banking services on bank profitability has not been maximized, this can be caused by various factors including large investments which have caused some banks to not yet adopt internet banking[18][19].

Comparison between operational expenses borne by the bank and operating income obtained by the bank can measure the ability of the bank's efficiency in obtaining profits. Bank operating expenses are borne through the interest given by the bank to the customer, while the bank's operating income is derived from the interest costs that the bank charges to the customer. From research conducted by [15][20][21], the results show that BOPO have a significant on internet banking

In addition, this study still contains some limitations, namely the testing period that is only 3 years old before using ebanking and 3 years after ebanking so do not get results that represent the use of ebanking, banks tested was in Indonesia where people tend to be conservative to banking

services, and more than half of the banks tested did not have internet banking.

6. CONCLUSION

Based on the analysis of the results of research and discussion presented earlier, it can be concluded that the provision of internet banking services have a significant influence on the financial performance of banks as measured by ROA, ROE, & BOPO listed in Indonesia Stock Exchange. It can be caused by various factors such as the level of security, long-term maintenance and the ability of banks to maintain internet banking. With the development of the use of internet banking in Indonesia for banking transactions, it is still a reference for the development of internet banking services. Internet banking with the bank is able to generate greater income than interest income before it is able to cover the costs incurred for the operation of Internet banking technology.

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