The Determinants of Efficiency, Profitability and Stock Returns for Smaller Banks Listed on the Indonesia Stock Exchange

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Abstract: While running a business and its operations, banks are required to run efficiently. Running banks efficiently will be able to provide for a maximum amount of profit. Profits earned by banks provide an added value for banks, especially for shareholders that see an increase in their share prices. This research was conducted on 18 banks included in the BUKU II Go Public Bank group in Indonesia. The study was conducted using secondary data dating from January, 2014 to December, 2018. In order to analyze the factors that influence firm's profitability and stock returns, this data was processed using panel data regression analysis. The results show that significant factors in the efficiency intermediation approach were the number of variations in electronic banking and the number of ATMs. Factors that affect profitability are total assets, Non-Performing Loans (NPL), the Capital Adequacy Ratio (CAR), the Net Interest Margin (NIM), and the number of employees. The factors that affect stock returns are Good Corporate Governance (GCG) and the number of variations or types of electronic banking offered by a bank.

INTRODUCTION

Background: In light of the development of regional and global dynamics and in order to support Indonesia's economic growth in an optimal and sustainable manner, it is necessary to increase the levels of resilience, competitiveness and efficiency in the national banking industry. This condition was considered by Bank Indonesia when it issued Bank Indonesia Regulation No.14/26/PBI/2012 concerning business activities and office networks based on bank core capital. Article 1 paragraph 4 states that commercial banks are based on business activities, hereafter referred to as BUKU and are

groups of Banks based on Business Activities that are adjusted based on their levels of core capital. In Article 3 of the provision, bank groupings in Indonesia are regulated based on their levels of core capital and BUKU II bank groups are those banks with a core capital ranging from at least Rp. 1,000,000,000,000.00 (one trillion Rupiahs) up to <Rp. 5,000,000,000,000,000.00 (five trillion Rupiah).

Assets for the BUKU II Go Public bank continued to show positive growth from 2015-2018. In 2016, the BUKU II Go Public bank's assets grew by 11.67% and in 2017 and 2018, they grew by 9.35 and 6.62%, respectively. The amount of lending provided by the

Table 1: Summary of 2018 Financial Ratios of 18 BUKU II Banks Go Public

Bank names	CAR (%)	NPL gross (%)	ROA (%)	ROE (%)	BOPO (%)	LDR (%)
Bank of India	39.46	4.9	0.24	0.94	3.84	97.65
Bank of MNC	16.27	5.72	0.74	5.43	4.1	93.51
Bank Ganesha	31.85	4.25	0.16	0.51	5.39	97.57
Bank Maspion	21.28	2.14	1.54	6.35	4.75	87.25
Bank Ina Perdana	55.03	2.43	0.50	0.97	4.55	93.06
Bank Capital	18.66	2.95	0.9	8.46	4.2	92.11
Bank National Nobu	23.27	0.97	0.42	3.39	4.62	94.77
Bank Jtrust	14.03	1.26	-2.25	-29.13	2.28	116.32
Bank Bumi Artha	25.52	1.51	1.77	6.81	4.45	81.43
Bank Victoria	16.73	3.48	0.33	3.41	1.82	100.24
Bank Mestika Dharma	34.58	2.33	2.96	9.01	6.41	68.09
Bank BRI Agro	28.34	2.86	1.54	5.8	3.5	82.99
Bank QNB	26.5	2.49	0.12	0.42	1.73	99.43
Bank Artha Graha	19.8	5.99	0.27	1.43	5.39	97.12
Bank Woori	23.04	1.72	2.59	13.01	5.04	70.39
Bank Sinarmas	17.6	4.74	0.25	1.12	7.61	97.62
Bank BTPN	40.92	1.39	12.37	30.82	32.42	62.36
Bank BRI Syariah	29.72	6.73	0.43	2.49	5.36	95.32

Indonesian Banking Statistics Financial Services Authority)

BUKU II Go Public bank during the period from 2015-2018 showed positive growth. In 2016, the amount of credit provided by the BUKU II Go Public bank grew by 8.13% and in 2017, it experienced a decline in this rate, growing only 1.09%. In 2018, the BUKU II Go Public bank was able to increase its growth of lending to 8.81%. Positive growth also occurred in the collection of third-party funds made by BUKU II Go Public banks during the period from 2015-2018. In 2016, third-party fundraising grew by 9.60% and then in 2017, the growth of third-party funds fell to 7. 20%. In 2018, the growth of third-party funds decreased to a rate of 2.64%.

The impact of loans and third-party funds raised is related to the amount of income and costs to the bank. For BUKU II Go Public banks, the average operating income from 2015-2018 grew by 7.97% while operating costs only grew by 6.40%. Furthermore, in terms of the development of assets, loans and third-party funds that occur at the BUKU II Go Public bank, the operating income and operating expenses at the BUKU II Go Public bank have had a level of growth that is not in line with the development of loans and third-party funds during a certain time period. In 2017, BUKU II Go Public Bank's third-party fundraising was able to grow by 7.20% but its operating expenses in 2017 showed a decrease of -2.30%. Likewise, lending in 2017 was still able to grow by 1.09% but the operating income decreased by -0.29%. In 2018, third-party fundraising grew by only 2.64% while the operating expenses for BUKU II banks grew by 6.56%.

The developments that took place at the BUKU II Go Public bank require a more in-depth analysis which would look at how operational management affected the revenues and operating costs of the positions held 2014-2018 for each of the banks in the BUKU II bank group. The diversity of performance results of the banks in the BUKU II group cannot be separated from the results of the business and operational processes carried out by each bank. While running a business and its operations, banks are required to be able to run themselves efficiently. Efficiently-run banks will be able to provide a maximum level of profits. Profits earned by banks provide an added value for banks, especially for shareholders that see an increase in their share prices.

For this reason, it is necessary to analyze the internal and external factors that influence profitability and stock returns. This research looks to analyze efficiency as well as the factors that influence the profitability and stock returns for banks in BUKU II Go Public group. This is done for the sake of finding practical banking applications and practices that will create and guarantee the sustainability of banking in Indonesia.

Until June, 2019, there were 59 banks in the BUKU 2 bank categories. Based on data obtained from the Indonesia Stock Exchange, there are 18 banks in the BUKU 2 category that are classified as either public companies or going public and having a variable core capital from Rp.1 trillion to under of Rp.5 trillion. The task is to conduct an analysis of the determinants for efficiency intermediation and to provide a production approach analysis for the BUKU 2 bank group, especially for BUKU 2 Go Public banks. The following is a summary of the financial ratios for the 18 banks in Table 1.

The ratio of the financial performance of BUKU II Go Public banks has a fairly diverse distribution, as shown in Table 1. The capital adequacy ratio, represented by CAR, measures the average minimum supply obligation at 26.81% with the highest CAR held by Bank Ina Perdana and amounting to 55.03%. The best credit or financing quality management ratio whose valuation is represented by NPLs or NPFs for BUKU II banks averaged 3.38% and the lowest NPLs or NPFs were owned by Nationalnobu Bank at 0.97%. The bank

performance measure for obtaining profit or profitability is represented by ROA, ROE and NIM or NI and the average of these for BUKU II banks is 1.38, 3.96 and 5.97%, respectively. The highest ROA, ROE and NIM or NI ratios are owned by BTPN Syariah Bank and are 12.37, 30.82 and 32.42%, respectively. Financial ratios that measure the ability of banks to manage their operational costs and operating income, is represented by BOPO and the average of this for BUKU II banks is 90.40% with the lowest value being owned by BTPN Syariah Bank. The assessment of the banking intermediation ratio in terms of third-party fundraising and lending or financing is represented by LDR or FDR, and the average BUKU II bank had a measure of this at 85.15% with the highest value held by Woori Bank.

Problem formulation: Efficiency is the result of efforts that need to be done by banks in carrying out their activities. The more efficient a bank is the more its profits are expected to increase. For banks, if their profits increase, then they will be able to increase their added value for the bank and this can be used to provide additional capital to support an increase in lending or financing. For customers, a greater amount of efficiency in the banking system will have an impact in terms of lower interest rates or margins charged, so that, more people will be able to get credit or financing facilities.

Research objectives: The developments that took place at the BUKU II Go Public bank which were demanded of banks in general but especially the banks at BUKU II, were required in order to manage existing inputs so as to produce maximum outputs and in order to optimize the existing inputs for the outputs produced. This then raises some questions about how to manage efficiently, namely, what factors affect the rates of efficiency, profitability, and stock returns for banks in the BUKU II Go Public group? The research objective is to analyze the factors that influence profitability and stock returns and are significant for generating revenue optimization and can support the sustainability of earnings. The specific purpose of this study is to analyze the factors that affect profitability and stock returns for banks in the BUKU II group Go Public in Indonesia and to see if they are getting better.

Literature review: According to Farrell the efficiency of a company consists of two components, namely technical efficiency and allocative efficiency. Technical efficiency reflects the ability of the company to produce output with a number of available inputs. Whereas allocative efficiency reflects the company's ability to optimize the use of its inputs with its price structure and production technology. These two measures are then combined into economic efficiency. A company can be said to be economically efficient if the company can minimize production costs to produce certain outputs with a level of technology that is generally used and prevailing market prices.

The parametric approach makes measurements using stochastic econometrics and seeks to eliminate interference from the effects of inefficiency. There are three econometric parametric approaches, namely: Stochastic Frontier Approach (SFA); Thick Frontier Approach (TFA) and Distribution-free Approach (DFA). Meanwhile, the nonparametric approach with a linear program (Nonparametric Linear Programming Approach) performs nonparametric measurements using an approach that is not stochastic and tends to "combine" disturbances and inefficiencies. It builds on the findings and observations of the population and evaluates the relative efficiency of the units being observed. This approach is known as Data Envelopment Analysis (DEA). DEA is a mathematical programming technique that measures the level of efficiency of a Decision-Making Unit (UPK) or decision-making unit relative to a similar UPK when all of these units are on or below the frontier's efficient "curve".

This approach was first introduced by Charnes, Cooper and Rhodes in 1978. Since, then the application of this approach has increasingly developed. Linear programming is very dependent on the population sampled, so it tends to be far from specification errors. Furthermore, the performance of one UPK is very relative to other UPKs, especially those that cause inefficiency. This approach can also see how a UPK can improve its own financial performance so that it becomes efficient. The advantage of using DEA is that this approach does not require explicit specifications of the shape of the function and only requires a little structure to form its efficiency frontier. Weaknesses that may arise are "self identifier" and "near self identifier".

Efficiency measurements using the frontier approach have been used for over 40 years. The main methods that use linear programming and econometrics methods are: Data Envelopment Analysis and Stokastic Frontier. This measurement of modern efficiency was first pioneered by Farrell in collaboration with Debreu and Koopmans by defining a simple measure to measure the efficiency of a company that could account for large inputs. The efficiency intended by Farrell consists of technical efficiency (technical efficiency) which reflects the ability of a company to maximize output with certain inputs and allocative efficiency which reflects the ability of a company that utilizes inputs optimally with a predetermined price level . These two efficiency measures are then combined to produce economic (total) efficiency.

MATERIALS AND METHODS

Based on the Financial Services Authority Circular Letter Number 14/SEOJK.03/2017 Concerning the Rating of Commercial Banks, conventional commercial banks

are required to conduct a rating of bank Soundness using a risk-based bank rating. The assessment must include a risk profile, Good Corporate Governance (GCG), profitability and capital. Naceur[1] examined the determinants of profitability in the banking industry in Tunisia and divided them into two main categories, namely internal determinants (liquidity, capital adequacy and management costs) and external determinants (ownership, company size and economic conditions). The findings of Naceur's study indicate that having efficient cost management is one of the most significant things one can do to obtain a high level of bank profitability. Economic conditions are macro indicators and inflation has a positive effect on profitability while if interest rates are high, then bank profitability is low.

In accordance with the objectives of this study, an analysis of the internal and external factors that affect the efficiency, profitability and stock returns of the 18 banks in the BUKU II Go Public Bank group for the period from 2014 to 2018 was conducted. This was done in order to find out what internal and external factors influence efficiency, profitability and stock returns. The internal factors examined in this study are divided into two, namely, financial and non-financial aspects, consisting of: Internal factors, financial aspects, namely:

- The total amount of assets owned
- The non-performing loan, non-performing financing ratio or non-performing loan or financing ratio
- The capital adequacy ratio or the minimum capital adequacy ratio
- The loan to deposit ratio or the ratio of loans or financing disbursed compared to third-party funds that have been collected
- The ratio of net interest margin, the net rewards or the ratio between interest income or margin or profit sharing and average earning assets

Internal factors, non-financial aspects, namely:
- The value of good corporate governance, namely, the value of the results of the implementation of good corporate governance when a self-assessment is conducted
- The number of types or variations of electronic banking offered
- The total office network including the head office, regional offices, branch offices, sub-branch offices, and cash offices
- The number of automated teller machines or ATMs owned
- The number of employees including permanent employees and contract employees
- The number of management employees including commissioners and directors

- External factors, namely
- The growth in the money supply
- The inflation rate ratio
- The exchange rate growth
- Economic growth

The statistical technique used in relationship analyses is panel data analysis. According to Widarjono[2], the use of panel data in an observation has several advantages. First, the panel data which is a combination of two-time series data and a cross section is able to provide more data such that it will produce a greater degree of freedom. Second, combining the information from the time series data and cross sections can overcome problems that arise when there are omitted-variable problems. To find out the internal and external factors that influence the efficiency scale, a panel data regression analysis is used. Panel data regression analysis was chosen because it is in accordance with the objectives and characteristics of the data used. Panel data regression is a combination of cross section data and time series data and the same cross section units are measured at different times. In other words, panel data is data from some of the same individuals that are observed during a certain period of time. If we have a time period T ($t = 1, 2, ..., T$) and N, the number of individuals ($i = 1, 2, ..., N$), then with panel data we will have a total observation unit of NT. The results of the panel data regression analysis are divided into two parts, namely, one for the efficiency of the intermediary approach and one for the efficiency of production approach. The panel data regression model for analyzing the effect of internal and external factors on the profitability and stock returns is as follows:

$$EFF_{it} = \alpha + b1M1_{it} + b2INF_{it} + b3KURS_{it} + b4PERT\_EKO_{it} + b5ASET_{it} + b6NPL_{it} + b7CAR_{it} + b8LDR_{it} + b9NIM_{it} + b10GCG_{it} + b11EBG_{it} + b12KTR_{it} + b13ATM_{it} + b14PGW_{it} + b15PRS_{it} + e_{it}$$

$$ROA_{it} = \alpha + b1M1_{it} + b2INF_{it} + b3KURS_{it} + b4PERT\_EKO_{it} + b5ASET_{it} + b6NPL_{it} + b7CAR_{it} + b8LDR_{it} + b9NIM_{it} + b10GCG_{it} + b11EBG_{it} + b12KTR_{it} + b13ATM_{it} + b14PGW_{it} + b15PRS_{it} + e_{it}$$

$$RSH_{it} = \alpha + b1M1_{it} + b2INF_{it} + b3KURS_{it} + b4PERT\_EKO_{it} + b5ASET_{it} + b6NPL_{it} + b7CAR_{it} + b8LDR_{it} + b9NIM_{it} + b10GCG_{it} + b11EBG_{it} + b12KTR_{it} + b13ATM_{it} + b14PGW_{it} + b15PRS_{it} + e_{it}$$

Where:

EFFit = The efficiency value for a certain period of time ROAit=The value of the ratio of return on assets for a certain period of time

RSHit = The value of the return on a certain period of stock

M1it = The percentage of growth in the money supply

INFit = The percentage of inflation for a certain period

KURSit = The percentage change in the exchange rate of the rupiah against the US dollar for a certain period of time

PERT_ The percentage of Indonesia's economic

EKOi = growth during a certain period of time

ASETit = BUKU II Go Public bank's total assets for a certain period of time

NPLit = The percentage of NPL or NPF for BUKU II Go Public bank for a certain period of time

CARit = The CAR percentage of the BUKU II Go Public banks for a certain period of time

LDRit = The percentage of LDR or FDR of BUKU II Go Public banks for a certain period of time

NIMit = The percentage of NIM or NI of BUKU II Go Public banks for a certain period of time

GCGit = The bank soundness-good corporate governance for a certain period of time

EBGit = The number of types of electronic banking offered by BUKU II Go Public banks for a certain period of time

KTRit = The number of office networks owned by BUKU II banks going public for a certain period of time

ATMit = The number of ATM machines owned by BUKU II Go Public banks for a certain period of time

PGWit = The number of BUKU II Go Public bank employees for a certain period of time

PRSit = The number of bank management employees for BUKU II Go Public banks for a certain period of time

α = The Konstanta

b = The regression coefficient of each

(1, .., 17) independent variable

e = The error term

t = Time

i = BUKU II Go Public bank

This research was conducted from June to December 2019 on 18 banks in the BUKU 2 categories in Indonesia that had been listed or decided to go public. The study was conducted in Jakarta using secondary data for a range of years from 2014-2018. As for the object of the research, it is the 18 banks in BUKU 2 in Indonesia that had been listed or decided to go public.

RESULTS AND DISCUSSION

The determinant factor in the efficiency intermediation approach: The results of the analysis using the fixed effect model, in Table 2 show that there are two variables that have a significant effect on the real level of 10% for efficiency with an intermediation approach, namely, the number of types or variations of electronic banking owned, with a coefficient of 0.021156, and the number of ATMs owned by banks, with a coefficient of -0,000876. The accuracy of the model generated by the fixed effect model for the efficiency analysis with an intermediation approach is 73.38% (Table 2). Based on the tests conducted, it was found that the best model for analyzing the internal and external factors that influence efficiency with an intermediation approach is the fixed effect model with the following functions:

$$\begin{aligned} EFF(Intermediasi)it = & -6.144211 + 0.038358M1it + \\ & 0.058173INFit + 0.026156KURSit + \\ & 1.217564PERT\_EKOit - 1.04E - \\ & 09ASETit - 0.002440NPLit - 0.000172 \\ & CARit + 0.002025LDRit + 0.005542NIMit \\ & + 0.032943GCGit + 0.021156EBGit - \\ & 0.000946KTRit - 0.000876ATMit + \\ & 0.000042PGWit + 0.001989MJMit + eit \end{aligned}$$

The determinant factor in profitability: The results of the analysis with the common effect model, seen in Table 3, show that there are five variables that have a significant effect on the 5% significance level of profitability, namely, the total assets with a coefficient of 1.05E-07; Non-Performing Loans (NPL) or Non-Performing Financing (NPF) with a coefficient of -0.592025; the Capital Adequacy Ratio (CAR) with a coefficient of 0.053174; the Net Interest Margin (NIM) or net rewards with a coefficient of 0.554814 and the number of employees with a coefficient of -0.000639. The accuracy of the model generated by the common effect model was 83.22%. Based on the tests conducted, it was found that the best model for analyzing the internal and external factors that influence efficiency with an intermediation approach is the common effect model with the following functions:

$$\begin{aligned} ROAit = & -172.0270 + 0.923746M1it + \\ & 1.624314INFit + 0.701679KURSit + 29.59984PERT\_ \\ & EKOit + 1.05E - 07ASETit - 0.592025NPLit + \\ & 0.053174CARit + 0.013831LDRit + 0.554814NIMit + \\ & 0.236574GCGit - 0.120845EBGit + 0.002325KTRit + \\ & 0.002138ATMit - 0.000639PGWit - 0.013390MJMit + eit \end{aligned}$$

The determinant factor in stock returns: The results of the analysis with the fixed effect model, seen in Table 4,

Table 2: Results of fixed effect model efficiency intermediation approach

Variables	Coefficient	SE	t-statistic	Prob.
Asset	-1.04E-09	2.38E-09	-0.439638	0.6620
Non performing loan	-0.002440	0.002865	-0.851910	0.3981
Capital adequacy ratio	-0.000172	0.001001	-0.171490	0.8645
Loan to deposit ratio	0.002025	0.000665	3.044151	0.3600
Net internet margin	0.005542	0.010434	0.531121	0.5976
Good corporate governance	0.032943	0.025945	1.269731	0.2097
Number of e-banking	0.021156	0.011767	1.797870	0.0779*
Total office network	-0.000946	0.000664	-1.423769	0.1064
Number of ATM	-0.000876	0.000461	-1.901734	0.0626*
Number of employee	4.16E-05	3.23E-05	1.286354	0.2039
Number of management	0.001989	0.006038	0.329374	0.7432
Growth money supply	0.038358	0.047301	0.810935	0.4210
Inflation rate	0.058173	0.071929	0.808756	0.4223
Exchange rate growth	0.026156	0.032940	0.794034	0.4173
Ecnomic growth	1.217564	1.489477	0.817444	0.4173
C	-6.144211	8.455733	-0.726632	0.4706

$R^2 = 0.733761$; Mean depender var = 0.941794; Adjusted $R^2 = 0.573013$; SD dependent var = 0.065648; SE of regression = 0.042897; Akaike info criterion = -3.176622; Sum squared resid = 0.097530; Schwarz criterian = -2.234838; Log likelihood; 169.5948; Hannan-Qyinn criter = -2.797598; Prob (f-statistic); 0.000001; (**) = Nilai signifikansi pada level α = 5% (0.05), (*) = Nilai signifikansi pada level α = 5% (0.01)

Table 3: Results of common effect model profitability

Variables	Coefficient	SE	t-statistic	Prob.
Aset	1.05E-07	3.7E-08	2.832116	0.0060**
Non performing loan	-0.592025	0.076957	-7.692980	0.0000**
Capital adequacy ratio	0.053174	0.021500	2.473261	0.0158**
Loan to deposit ratio	0.013831	0.011000	1.257321	0.2128
Net internet margin	0.554814	0.123581	4.489466	0.0000**
Good corporate governance	0.236574	0.423248	0.558950	0.5780
Number E-banking	-0.120845	0.201641	0.599309	0.5509
Total office network	0.002325	0.006026	0.385756	0.7008
Number of ATM	0.002138	0.003481	0.614260	0.5410
Number of employee	-0.000639	0.000323	-1.979417	0.517**
Number of management	-0.013390	0.104013	-0.128733	0.8979
Growth in money supply	0.923746	1.353556	0.682458	0.4972
Inflation rate	1.624314	2.042947	0.795084	0.4293
Exchange rate growth	0.701679	0.944516	0.742898	0.4600
Ecnomic growth	29.59984	42.98033	0.688683	0.4933
C	-172.0270	243.2649	-0.707159	0.4818

$R^2 = 0.832150$; Mean dependent var = 0.806279; Adjusted $R^2 = 0.796182$; SD dependent var = 2.990533; SE of regression = 1.350112; Akike info criterion = 3.604492; Sum squared resid = 127.5961; Schwarz criterian = 4.06115; Log likelihood = -1.38.9932; Hannan-Quinn criter = 3.788262; F-statistic = 23.13594; Duraban-Watson stat = 2.040910; Prrof (F-statistic) = 0.000000; (**) = Significant level α = 5% (0.05); (**) = Significant level α = 5% (0.1)

Table 4: Results of fixed effect stock return

Variables	Coefficient	SE	t-statistic	Prob.
Aset	-1.2IE-06	6.00E-0.6	-0.202358	0.8404
Non Performing loan	-5.153044	7.416636	-0.694795	0.4903
Capital Adequacy Ratio	2.099306	2.605292	0.805785	0.4241
Loan to Deposit Ratio	-0.543754	1.721643	-0.263558	0.7932
Net Interest margin	14.90013	26.29134	0.566560	0.5735
Good corporate governance	-163.2619	70.98450	-2.2999666	0.0256**
Number E-Banking	75.39541	29.73876	2.535258	0.0143**
Total office network	-0.788466	1.673272	-0.471212	0.6395
Number of ATM	0.779893	1.181787	0.659927	0.5123
Number of Employee	-0.030802	0.081426	-0.378283	0.7068
Number of management	-17.15754	15.42811	-1.112096	0.2713
Growth in money supply	86.87394	119.6529	0.726050	0.4711
Inflation rate	135.7872	182.0908	0.745711	0.4593
Exchange rate growth	56.90690	83.31776	0.683010	0.4977
Economic growth	2453.525	3765.844	0.651521	0.5176
C	-1.3801.00	21373.91	-0.645694	0.5214

$R^2 = 0.384871$; Mean dependent var = 22.32321; Adjusted $R^2 = -0.001092$; SD dependent var = 107.8569; SE of regression = 107.9157; Akike info criterian = 12.48730; Sum squared resid = 593636.1; Schwarz criterian = 13.44227; Log likelihood = -491.4667; Hannan-Quinn criter = 12.87119; F- statistic = 0.997172; Durbin-Watson stat = 2.468199; Prob (F-statistic) = 0.49377; (**) = Significant at level α = 5% (0.05); (**) = Significant at level α = 10% (0.1)

show that there are two variables that have a significant effect on stock returns, namely, the self-assessment value of Good Corporate Governance (GCG) with a coefficient of -163.2619 and the number of variations of electronic banking that are owned with a coefficient of 75.39541 at a 5% real level. The accuracy of the model produced by the fixed effect model for the efficiency analysis with an intermediation approach is 38.49%. Based on the two tests conducted, it was found that the best model for analyzing the internal and external factors that affect efficiency with the intermediation approach is the fixed effect model with the following functions:

$$RSHit = -3801.00 + 86.87394M1it + 135.7872INFit + 56.90690KURSit + 2453.525PERT\_EKOit - 1.21E-06ASETit - 5.153044NPLit + 2.099306CARit - 0.453754LDRit + 14.90013NIMit - 163.2619GCGit + 75.39541EBGit - 0.788466KTRit + 0.779893ATMit - 0.030802PGWit - 17.15754MJMit + eit$$

The number of factors that affect efficiency with the intermediation approach are two, namely, the greater the number of the types of electronic banking offered, the greater the amount of efficiency found for the bank in its operational processes. The opposite happens regarding the number of ATMs: the fewer the number of ATMs owned by banks, the more that the banks are efficient. The development of electronic banking is conducted by banks at present to assist customers in conducting their financial transactions. The financial transactions conducted by customers using electronic banking related to the savings that they have. The more that customers make financial transactions through electronic banking, the more the customer will add to their savings balance. Thus, the existing input in the form of third-party funds in this case, savings which are cheap funds for banks will increase. The cheapening of the inexpensive funds that come from savings is useful for banks so that they can increase the number of loans or financing that they channel. Inputs in the form of low-cost funds originating from savings enable banks to sell loans or financing with a cheaper amount of interest or margins, thus encouraging outputs in the form of a growth in financing or channeled credit. This condition will certainly lead to a greater level of efficiency, namely an increase in the amount of output in the form of credit or financing channeled by the amount of third-party funds that can be collected. On the other hand, the ability of banks to manage the cost of cheap funds which come from an increase in third-party funds originating from savings due to many customers using electronic banking will encourage an increase in the bank operating income. In addition, the various types of electronic banking offered by banks can encourage various customer segments to be served. The increase in

the number of customers that conduct financial transactions using electronic banking will lead to an increase in the operational income derived from the fees for each transaction made by the customers. The importance of electronic banking is shown in the results of research conducted by Salihu and Metin[3] who see effects in terms of product improvement, reliability and efficiency on customer satisfaction from electronic banking services. This study provides results that show that service and reliability are highly correlated but that the correlation between efficiency and satisfaction is weak. The regression analysis shows that while service and reliability have a positive effect on customer satisfaction, the effect of efficiency is negative.

Having an ATM is one way for banks to be able to meet the needs of customers in terms of their financial transactions, especially, cash withdrawals. Various other financial transactions can also be done at ATMs by customers. The ATMs owned by banks are recorded as fixed assets with additional costs incurred for the operation and maintenance of these ATMs. Some costs that must be borne by a bank when having its own ATM include purchasing costs (around USD 10,000-15,000), maintenance costs (including paper costs), security and cleaning costs, charging fees, rental fees, network fees and communication costs. The maintenance costs of an ATM that are incurred by a bank which on average is more than Rp. 15 million will be even more expensive if the machine is located in a shopping center or mall. The more ATMs a bank has the greater the burden a bank will have. In addition to the costs incurred from the bank's ATM ownership, the bank also receives income in the form of fees for example, interbank transfer fees which amount to around Rp. 6,500; cash withdrawal fees by other bank's ATM cards in the a mount of Rp. 3,000-4,000 and fees for checking one's balance using the ATM card for other banks which amounts to Rp. 1,000-2,000. At present, most of the transactions made by customers at ATMs are cash withdrawals which does not provide any income for the bank when the ATM card belongs to the comes from the bank in question. For this reason, one factor, the reduction in the number of a bank's ATMs, can provide for greater efficiency measures from the input side. Currently, several attempts have been made by banks to continue to serve the needs of customers to make financial transactions while still not owning or reducing their number of ATMs. This is done in collaboration with third parties which provide network services and rent ATMs at a cost of IDR 8-10 million per unit per month or in collaboration with other banks that already have ATMs. Banks that issue debit cards and have few or no ATMs can still serve the needs of their customers for making financial transactions by charging transaction fees that must be paid by customers. At present, several banks have switched to providing a Cash

Recycle Machine (CRM) ATM which is an ATM that can take cash deposits and provides for withdrawals. The development of electronic banking is currently down, reducing the number of customer transactions at ATMs. This is because most of the customers do their financial transactions themselves through their phone. Even so, banks have cooperated with various shops or stalls in order to provide Electronic Data Capture (EDC) machines to meet customer's' cash withdrawal needs. The investment and management cost of an EDC machine is far cheaper than the cost of an ATM which is around Rp. 500,000 -Rp. 1 million.

The number of factors that affect profitability, measured by the Return on Assets (ROA) are four, namely, the total assets owned, Non-Performing Loans (NPL) or Non-Performing Financing (NPF), the Capital Adequacy Ratio (CAR), the Net Interest Margin (NIM) or net rewards and the number of employees. In addition, to providing income, credit or financing provided by banks to customers can also cause losses in the form of credit risk which is due to the inability of customers to meet their obligations. The greater the inability of customers to meet their obligations, the greater the ratio of Non-Performing Loans (NPL) or Non-Performing FInancing (NPF) will be. A high NPL ratio will have an impact by increasing the amount of loss reserves that must be held by banks. Regarding the reserves that must be established in accordance with the quality of the credit or financing provided, it is the case that the worse the quality of the loans, the greater the amount of reserves that will be needed, and vice versa. The greater the size of the reserve held by the bank, the more the operational costs or expenses of the bank will increase, so that, the bank's profit will decrease. The effect of NPL on profitability is also in accordance with the research conducted by Berger and De Young (1997), who conducted studied four hypotheses regarding the relationship between loan quality, cost efficiency and bank capital. The data shows that non-performing loans precede measured reductions in cost efficiency that the measured cost efficiency precedes a reduction in the amount of problem loans and a reduction in capital in small capital banks precedes an increase in the amount of problem loans. Therefore, cost efficiency can be an important indicator of problem loans and problem banks[4].

The impact of NPL on profitability was also studied by Haneef *et al*.[5] who conducted research on five banks in Pakistan. Their results revealed that there is no appropriate mechanism for risk management in the Pakistani banking sector. The study also concluded that the amount of problem loans increased due to a lack of risk management that threatened bank profitability. The influence of NPLs on bank performance has also been studied by Chimkono *et al*.[6] who researched banks in Malawi. Their results showed that the ratio of bad loans,

cost efficiency ratios, and average loan interest rates has a significant effect on bank performance in Malawi. The impact of the NPL on profitability is also consistent with research conducted by Abd Karim *et al*.[7] who conducted research on banks in Malaysia and Singapore. Their results showed that higher bad credit results in a reduction in cost efficiency. Likewise, a lower level of cost efficiency increases the amount of bad credit. Research conducted by Vithessonthi[8] on 82 publicly listed commercial banks in Japan during the period from 1993-2013 period gave different results, showing that credit growth and bad credit did not affect profitability. Overall, the findings show that while increasing the supply of bank loans increases the level of bad loans, this does not lead to a higher level of profitability.

The bank as a financial institution is always able to obtain income from lending or financing with low costs coming from third-party funds or demand deposits. In addition to obtaining income from lending or financing, banks also make other forms of investments such as purchasing securities issued by both governmental and non-governmental entities such as corporations, placements with other banks, or other forms of investment. These efforts are carried out in order to obtain income by optimizing third-party funds obtained from the public. The greater the amount of the bank's income that is obtained from credit or financing and other investments, the greater the amount of increase in the Net Interest Margin (NIM) that will be obtained and this shows that the profit or profitability of the bank is also getting bigger.

The results of the analysis show that the effect of assets on profitability is quite small. This is because bank assets in general consist of credit or financing, securities owned, loss reserves, fixed assets, productive assets and other assets. Each of these asset groups has different income levels with the largest income coming from lending or financing. The bank collects third-party funds and attempts to channel them into credit or financing. This is done because the income earned from credit or financing is greater than the amount earned by placing funds in other forms of assets. An increase in the assets owned by the bank will lead to an increase in the amount of credit or financing that is provided to customers which will increase bank revenues and profits.

While carrying out the functions of raising funds and channeling them into credit or financing, the bank needs employees or reliable human resources. The needs of employees or employees in banks are generally divided into two, namely, business and business support. Both of these need and support each other in order to improve the bank's performance. In order to grow amount of business and operations provided to customers, the bank requires an adequate number of employees. A greater number of employees will certainly provide a large additional

amount of labor costs, so this will reduce the amount of profits or benefits obtained. To be able to improve a bank's performance, its employees need to be given an attractive education, training and remuneration, all of which increases their productivity. As the number of employees increases, so, too will the burden or costs required for educating and training them. An analysis using the ratio of profits to the number of employees shows that banks that have a large amount of assets and a large number of employees will have a ratio of profits to the number of employees that is not large. The resulting correlation value between assets with a ratio of profit to number of employees is very low and is equal to 0.045. The results of the analysis with panel data regression with the chosen model which as a random effect, shows that the ratio of earnings to the number of employees has no effect on total assets ($p = 0.374$ and $R^2 = 0.91\%$). Likewise, the correlation between the number of employees with the ratio of profit to the number of employees is 0.044. Banks that have a large profit to employee ratio are banks that have a high ROA. This result is evidenced by the correlation value between ROA and the ratio of profits to the number of employees which reached 0.71. This proves that banks that are able to manage the number of employees they have in accordance with their business model will be able to obtain high profits.

While the lending or financing provided by banks provides them with an income from the payment of obligations by customers, banks are also faced with a credit risk due to the inability of customers to meet their obligations. In addition to this credit risk, banks are also expected to face several other risks from the business and operational activities they carry out. For the risks that may arise, the bank must provide and have a sufficient amount of capital, known as the minimum capital requirement (KPMM) or the Capital Adequacy Ratio (CAR). The greater the amount of capital owned by the bank, the more the bank has the ability to extend credit or financing and perform other operational services. This will certainly have an impact on increasing bank revenues that come from credit or financing and other income and so it will be able to increase bank profits. The effect of CAR on profitability is in line with research conducted by Olalekan and Adeyinka[9] who studied banks in Nigeria. Findings from the primary data analysis reveal an insignificant relationship but secondary data analysis shows a positive and significant relationship between capital adequacy and bank profitability. This implies that for banks that take deposits in Nigeria, capital adequacy plays a key role in determining their profitability. It was also found that capitalization and profitability are indicators of bank risk management efficiency and that they provide a cushion against losses not covered by current income. Similar results were also produced by Abusharba et al.[10] who conducted research on Islamic banking in Indonesia in the period from 2009-2011. They found that profitability and liquidity were positively related to capital adequacy requirements. Meanwhile, the uncollected funds measured by Non-Performing Financing (NPF) are significant but negatively related to the capital adequacy ratio. The effect of capital adequacy on profitability was also studied by Ben Naceur and Young[11] who did research on banks in Tunisia in the period from 1980-2000. The results show that high net interest margins and profitability tend to be associated with banks that have a relatively high amount of capital as well as large overhead costs.

There are three factors that affect stock returns, namely, the total assets owned, the value of the self-assessment of good corporate governance and the number of electronic banking variations. Currently, banks are faced with a high level of competition in serving customer financial transactions. In the current industry 4.0 era, banking is also done in the form of developing information technology. Banks can create various distribution channels or delivery channels for customers to be able to conduct financial transactions by electronic banking.

Various types of electronic banking have been developed by banks, ranging from phone banking to digital banking. The development of electronic banking should create a greater amount of efficiency which will ultimately increase bank revenues and profits. In the end, for banks that have gone public, the benefits obtained will provide a fairly large dividend for shareholders. Banks that are able to develop a variety of electronic banking options at this time can also use it for promotional media. A positive response from customers who use electronic banking can improve the reputation of the bank which will indirectly also increase the bank's stock price.

Banks which act as intermediary institutions that collect funds and do lending or financing, need to do their activities well in order to gain the trust of the public. This includes investors or community members who are shareholders of the banks that have gone public. The main purpose of any company including a bank is to provide added value and increase the wealth of shareholders. Investors or shareholders have a desire that the bank can carry out its intermediation function properly and they also desire that the bank performs their activities by applying the principles of good corporate governance or good governance and risk management. The behavior of investors who are concerned about the implementation of good corporate governance in banking was studied in research conducted by Zulkafli and Samad[12] who found that countries in Asia have implemented corporate governance reforms in order to enhance the protection of the interests of shareholders and stakeholders. Such reforms have affected the business behavior of all

companies in the region because they allow for a greater amount of monitoring, especially by shareholders. This study analyzes the corporate governance of banking companies listed in nine Asian emerging markets. The results showed that there were differences in the monitoring mechanisms between banking companies and non-bank companies. It is important for banks to set out strategic objectives, a company ethos as well as clear principles for governance and risk management. It is also important to communicate these policies to all units in the bank. Banks that do not have strategic objectives will find it difficult to manage their activities because the use of resources will become unfocused. With the implementation of good corporate governance, banks will be able to conduct business in accordance with clearly defined values. In the end such companies should see an increase in value and also see, among other things, rising share prices.

Research on the influence of the implementation of good corporate governance on banking performance has been carried out by Akingunalo *et al*. who studied banks in Nigeria. Their result showed that corporate governance is needed to have an effective bank performance, especially during the post-consolidation period in Nigeria. The study recommends that for a better bank performance in Nigeria, banks must embrace the fiduciary elements of financial services which include transparency, accountability, fairness and high ethical standards and they must ensure that their top management officials are independent. This will promote corporate governance and lead to the full dependence of the bank clients on them. Similar results were also obtained in the research conducted by Mang'unyi [13] who explored the structure of ownership and corporate governance and its effect on the performance of banks in Kenya. The study revealed that there were no significant differences between the types of ownership and financial performance and between the structure of bank ownership and corporate governance practices. Further, results reveal that there are significant differences between corporate governance and bank financial performance. However, foreign-owned banks performed slightly better than domestically owned banks. This study recommends that corporate entities should promote corporate governance in order to send positive signals to potential investors. The importance of implementing good corporate governance has also been researched in terms of Lebanese banking during the period from 2006-2010 by El-Chaarani[14] . The results revealed a positive effect of the concentration of insider ownership on the returns of Lebanese banks which showed that the more shares that are held by insiders, the better the performance. The weakness of corporate governance in some Lebanese banks is compensated for

by a higher concentration of insider ownership. The importance of implementing good corporate governance has also been researched in Nigeria by Nworji *et al*.[5]. They investigated the problems, challenges and opportunities related to corporate governance and bank failures in Nigeria to see if there was a significant relationship between corporate governance and bank failures. The results show that corporate governance is necessary for the functioning of banks and that corporate governance can only prevent bank pressure if properly implemented.

CONCLUSION

The results of the research have been obtained obtained several factors that affect the efficiency, profitability and stock returns in the bank BOOK II Go Public. The factor that influences efficiency based on the intermediation approach is the number of variations or variations in electronic banking. Factors affecting profitability are total assets, Non Performing Loans (NPL), Capital Adequacy Ratio (CAR), Net Interest Margin (NIM) and number of employees. Factors affecting stock returns are Good corporate governance (GCG) and the number of variations or types of electronic banking they have.

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