Analysis of Banking Industry Efficiency Level: A Study of LQ-45 Company in Indonesian Stock Exchange (IDX)

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Abstract. The banking sector is the backbone of a country's economy. The Indonesian banking sector's operational continuity will depend on each banking institution's ability to maintain high competitiveness. Financial ratios can be a measuring tool to see how far efficiency goals can be achieved. This study focused on financial sectors, particularly commercial banks listed on the Indonesian Stock Exchange (IDX) and indexed in LQ-45. This study uses a quantitative descriptive approach based on data from companies' financial statements for the period 2013-2019. The analysis of the efficiency level resulted in the average value of NPM and ROE, which decreased significantly from 2013 to 2016 and 2017, which shows little variability (relatively homogeneous) in that period. The global crisis's impact on the development of the banking industry is quite pronounced, marked by the lower average ROA score as evidence of commitment to return investors or shareholders for ownership of company assets, which is only around 2 percent.

Keywords: efficiency level, financial ratios, ROA.

Introduction

The industrial revolution has been one of the greatest changes in society's history, shaking the world, and developing new techniques. This phenomenon had a major influence not only on technological and industrial developments but also on the spiritual development of humans in Europe. The consequence of this phenomenon is an increase in Europe's demographics, an increase in the standard of living of people, and an increase in the impact of certain industrialized countries on the world (Dubovskyi, 2018: 1-2). This economic improvement is inseparable from the existing banking sector. Since the introduction of financial reforms, financial institutions' capacity to transfer domestic savings, improve efficiency between banks, and strengthen economic growth has been largely removed from foreign entry restrictions, interest rates, and exchange rates (Adjei-Frimpong et al., 2014: 69).

The banking sector is the backbone of a country's economy. Commercial banks transform and distribute uncertainty associated with an event through default risk intermediation, which involves offering claims to savers protected from losses to some extent. It has an important role as an intermediary institution between parties who have excess funds and those deficit funds which borrow funds from the bank (FBRSF, 2001; Gondwe, 2004: 67). In this case, the bank functions as an intermediary that goes hand in hand with the bank's trust from the two funding functions above to increase efficiency and optimize the use of these funds. To mobilize public funds more effectively, it is necessary to carry out a series of deregulation of the banking sector. The World Bank Group released a report in 2017 as stated in Good Regulatory Practices (GRP) aimed to increasing effectiveness, transparency, accountability, and dialogue, in particular, to help

developing countries respond to these new challenges, namely: (1) Promoting regulatory simplification; (2) Decreasing regulatory risks and strengthening predictability; (3) Strengthening institutions for reform; (4) Carrying transparency and engagement; (5) Improving GRP benchmarking; and (6) Prioritization and programming (WBG, 2017). Besides, information and communication technology is an integral part of this program, which is used to refine these products.

Banking sectors must anticipate the increase in digital transactions in the information era with existing service capabilities. The application of cloud computing is also very much needed in the banking sector. In general, the cloud is divided into four categories based on infrastructure viz. private clouds, public clouds, community clouds, and hybrid clouds. Private clouds can be built and managed by an enterprise IT organization or a cloud computing service provider. Private clouds are made to provide security and quality of service as well as full control over data on the exclusive use of one client (Furht, 2010: 7), while hybrid cloud is a composite of two or more cloud infrastructures that are related by a portability mechanism and data inter-cloud applications (Husain and Budiyantara, 2020: 53). The banking server capabilities can use the private cloud category. This can help financial institutions to take advantage of the security features of each cloud provider choose.

One of the functions or products of the bank is the credit facility. The tendency of granting of credit funds according to the sectors of the economy is considered, and the diversity of loans issued according to maturities are analyzed (Syniuta, 2018: 1-13). The increasing prevalence and dependence of organizations on information technology, conditions of business competition, and increasingly tighter audit services cannot be separated from the pressure to use the information technology base which is increasingly needed, especially in developed and developing countries, such as in Asia and Indonesia (Wignaraja, 2003: 10; Husain, 2017: 132). The Indonesian banking sector's operational continuity will depend on the ability of each banking institution to maintain high competitiveness. This competitiveness can be reflected in the level of operational efficiency and the bank's ability to deal with any disturbances that arise, both internally and externally. External challenges are becoming increasingly real, especially with the ASEAN Economic Community (MEA) enactment in 2015 (Muljawan, et al., 2014).

Allocative efficiency reflects the company's ability to optimize the use of inputs with a price structure and technology. This terminology develops the concept of "efficiency in exchange." Pareto efficiency says that production input is used efficiently if the input is no longer possible to increase a business without causing at least the condition of another business to become worse. In other words, if the input is allocated to produce output that consumers cannot use or want, this means that the input is not used efficiently (Rusydiana et al., 2019: 52). Measurement of the level of efficiency is based on accounting concepts that can be measured by several corporate financial ratios. Efficiency can be classified based on the company's total assets, both based on operating income and net income, efficiency based on the owner's own capital, and efficiency based on operating income and net income. The profit of a company in microfinance is also largely determined by the difference between total revenue and total cost, both directly and indirectly to the company (Hady, 2020: 11).

The main problem that attracts this research is how the banking industry's level of efficiency carries out the function of distribution of funding facilities to all industrial sectors without exception. With almost all banking industries promoting digital-based service

products, the result is whether the efficiency level can continue to be achieved or it is actually decreasing. Measuring banking performance through efficiency will show the relative performance between banks, which is analyzed. The use of financial ratios can be a measuring tool to see how far these goals can be achieved with the concept of applying accounting, especially since the implementation of IFRS as a whole in companies whose shares are listed on the IDX in 2013. This study focused on financial sectors, particularly commercial banks listed on the Indonesian Stock Exchange (IDX) and indexed in LQ-45.

Theoretical Framework and Research Models

Efficiency is one of the parameters of performance besides economy and effectiveness. This parameter has multidimensional aspects in the form of a size and standard, both internal and external standards (Sutawijaya and Lestari, 2009: 50-51). In the banking sector, the measurement of efficiency is also one of the things indispensable to determine the performance of the banking system, including: (1) the banking industry plays a very crucial role in economic development and social welfare; (2) Banking institutions face the challenges of globalization and an era of increasingly sharp international competition. Competition does not only occur between domestic banks but between domestic banks and foreign banks. This condition causes less efficient domestic banks to be eliminated from the market competition, and (3) Concepts and information on research results become important input for various parties related to the banking industry.

Interest Rate Parity Theory (IRP Theory) is a theory known in international finance that analyzes the relationship between exchange rates and changes in interest rates (Hady, 2020: 144-145). Management can take advantage of this output to improve bank performance, and while investors can use this information to make investment decisions (Hajer and Anis, 2016: 881). The banking industry will pay close attention to changes in interest rates because it is the main income source. Financial ratios are tools in this study as a measurement of the level of efficiency in the banking sector, including:

1. *Return On Assets* (ROA)

The ROA proxies are related to the function of the general effectiveness of management in range profits with total assets. This ratio is calculating as follows (Gitman and Zutter, 2015: 81):

$$ROA = \frac{\overleftarrow{Net\ Income}}{\overleftarrow{Total\ Asset}}$$

2. *Net Profit Margin* (NPM)

The NPM proxies are related to the function of the percentage of each sales remaining after all costs and expenses, including interest, taxes, and preferred stock dividends, have been deducted. This ratio is calculating as follows (Gitman and Zutter, 2015: 81-82).

$$NPM = \frac{EACS}{Sales}$$

Note: EACS= Earnings available for common stockholders

3. *Return On Equity* (ROE)

The ROE proxies are actually the same as using net income, and only the comparison is Equity. This equality applies if and only if the company does not use debt. The Allies did use debt, so equity was generally less than total assets. This ratio is calculating as follows (Brigham and Houston, 2016: 120):

$$ROE = \frac{\overleftarrow{Net\ Income}}{\overleftarrow{Common\ Equity}}$$

Methodology

This study uses a quantitative descriptive approach based on data from the financial statements of companies whose shares are indexed LQ-45 for the period 2013-2019 in the banking industry category. The research stages were carried out as follows:

1. Looking for data in the form of financial information from www.idx.co.id and the respective companies' websites whose shares are indexed on LQ-45.
2. Calculating and analyzing each financial ratio indicator, each of ROA, NPM, and ROE.
3. Make conclusions from the results of data analysis.

Table 1. Research Sample

Ticker Code	IPO Date	Issuer Name
BBCA	May, 31th 2000	PT Bank Central Asia Tbk
BBNI	November, 25th 1996	PT Bank Negara Indonesia (Persero) Tbk
BBRI	November, 10th 2003	PT Bank Rakyat Indonesia (Persero) Tbk
BBTN	December, 17th 2009	PT Bank Tabungan Negara (Persero) Tbk
BMRI	July, 14th 2003	PT Bank Mandiri (Persero) Tbk
BTPS	May, 08th 2018	PT Bank Tabungan Pensiun Nasional Syariah Tbk
Source: (IDX, 2020)		

The ticker code is BTPS was not included in the efficiency level analysis in this study because it was just IPO on May 08th, 2018, so don't cover the study period.

Results and Discussion

Efficiency assessment results with proxy Return On Assets (ROA) in five banking companies

Table 2. Analysis of the Efficiency with ROA proxies of Five Companies of Banking Industry indexed by LQ-45

	Period of							Mean Score (χ)	Efficiency Level
	2013	2014	2015	2016	2017	2018	2019		
BBCA	0.0299	0.0287	0.0303	0.0305	0.0311	0.0313	0.0311	0.0304	High
BBNI	0.0234	0.0260	0.0180	0.0189	0.0194	0.0187	0.0182	0.0204	Moderated
BBRI	0.0341	0.0302	0.0289	0.0261	0.0258	0.0250	0.0243	0.0278	High

BBTN	0.0119	0.0079	0.0108	0.0122	0.0116	0.0092	0.0070	0.0101	Very Low
BMRI	0.0257	0.0242	0.0232	0.0141	0.0191	0.0215	0.0208	0.0212	Moderated
χ	0.0250	0.0234	0.0222	0.0204	0.0214	0.0211	0.0201	0.02198	-
Source: Processed Data (2020)									

Table 2 above shows the mean of the company's efficiency level with the highest ROA proxy during the period of 2013-2019 is BBCA, namely 3,04 percent, while the lowest ROA proxy is BBTN, namely 1.01 percent. This result shows that the inefficient level is under the average level of the observation data is only BBTN among the banking industry in LQ-45 shares. The industry average ROA has decreased from 2.5 percent in 2013 to 2.01 percent in 2019, which means that the sample companies' efficiency level tends to decline using ROA proxies.

Efficiency assessment results with proxy Net Profit Margin (NPM) in five banking companies

Table 3. Analysis of the Efficiency with NPM proxies of Five Companies of Banking Industry indexed by LQ-45

Ticker Code	Period of							Mean Score (χ)	Efficiency Level
	2013	2014	2015	2016	2017	2018	2019		
BBCA	0.4159	0.3772	0.3831	0.4092	0.4337	0.4554	0.3882	0.4090	High
BBNI	0.3424	0.3246	0.2477	0.2607	0.2858	0.2788	0.4049	0.3064	Moderated
BBRI	0.3591	0.3229	0.2974	0.2846	0.2823	0.6043	0.3857	0.3623	High
BBTN	0.1449	0.0834	0.1237	0.1528	0.1571	0.1229	0.1022	0.1267	Very Low
BMRI	0.3750	0.3297	0.2955	0.1910	0.2697	0.2830	0.3740	0.3026	Moderated
χ	0.3275	0.2876	0.2695	0.2597	0.2857	0.3489	0.3310	0.3014	-
Source: Processed Data (2020)									

Table 3 above shows the average level of efficiency of companies with the highest NPM proxy during the 2013-2019 period was BBCA, namely 40.90 percent, while the lowest proxy NPM was BBTN, namely 12.67 percent. These results indicate that the inefficiency level is below the average level of observational data, only BBTN between the banking industry in LQ-45 stocks. The industry average NPM decreased from 32.75 percent in 2013 to 25.97 percent in 2016. In 2017, it increased considerably until 2018 and 2019, which means that sample companies' efficiency tends to fluctuate using NPM proxies.

Efficiency assessment results with proxy Return On Equity (ROE) in five banking companies

Table 4. Analysis of the Efficiency with ROE proxies of Five Companies of Banking Industry indexed by LQ-45

Ticker Code	Period of							Mean Score (χ)	Efficiency Level
	2013	2014	2015	2016	2017	2018	2019		
BBCA	0.2229	0.2119	0.2012	0.1830	0.1775	0.1704	0.1640	0.1901	High
BBNI	0.1900	0.1775	0.1165	0.1278	0.1365	0.1367	0.1231	0.1440	Moderated
BBRI	0.2692	0.2482	0.2249	0.1786	0.1736	0.1945	0.1646	0.1826	High

BBTN	0.1352	0.0935	0.1335	0.1369	0.1398	0.1178	0.0088	0.1094	Low
BMRI	0.2121	0.1970	0.1770	0.0955	0.1261	0.1398	0.1315	0.1541	Moderated
χ	0.2059	0.1856	0.1706	0.1444	0.1507	0.1518	0.1184	0.1560	-
Source: Processed Data (2020)									

Table 4 above shows the average level of efficiency of companies with the highest ROE proxy during the 2013-2019 period was BBCA, namely 19.01 percent, while the lowest proxy ROE was BBTN, namely 10.94 percent. These results indicate that the inefficiency level is below the average level of observational data, only ROE between the banking industry in LQ-45 stocks. The industry average ROE decreased from 20.59 percent in 2013 to 14.44 percent in 2016. In 2017, it increased considerably until 2018 and then decreased to 11.84 percent in 2019, which means that the sample companies' efficiency level tends to decline using ROE proxies.

Conclusion

Measuring banking performance through the level of efficiency will show the analyzed relative performance between banks. The analysis of the level of efficiency with the approach Return On Assets (ROA), Net Profit Margin (NPM) and Return on Equity (ROE) in banking industry companies whose shares are indexed LQ-45, it can be concluded that the analysis of the efficiency level resulted in the average value of NPM and ROE, which decreased significantly from 2013 to 2016 and 2017, which shows little variability (relatively homogeneous) in that period. The global crisis's impact on the development of the banking industry is quite pronounced, marked by the lower average ROA value as evidence of commitment to return investors or shareholders for ownership of company assets, which is only around 2 percent, where only BBCA ticker-code is above 3 percent.

Company efficiency measures should be strengthened by continuous renewal and innovation of digital-based technology, aiming to reduce operating costs, implementation costs, and system maintenance. Improving the quality of human resources and improving the capital system can be pursued with support from Indonesia's Government.

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