## [IJEFS] Editor Decision

2023-10-15 07:22 PM

Saparuddin Siregar, Nurlaila:

We have reached a decision regarding your submission to International Journal of Economics and Finance Studies, "BANK EFFICIENCY BEFORE, DURING AND AFTER COVID-19 : LESSON LEARNED FROM INDONESIA".

Our decision is: Revisions Required

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Reviewer A and B:

BANK EFFICIENCY BEFORE, DURING AND AFTER COVID-19 : LESSON LEARNED FROM INDONESIA

#### Abstract

- Add one sentence for the importance of the study at the start.
- There is no need to mention it in this section

The input variables used in this study are total funding and operational expenses, while the output variables include credit/lending, total assets, and total operating profit.

#### Introduction

• There is no need to mentioned detail about the methodologies of current study, so remove the below paragraph from this section.

The method employed in this research is the non-parametric Data Envelopment Analysis (DEA). The DEA method was chosen due to its ability to accommodate multiple input and output variables in measuring bank efficiency. It is also sensitive to the specific input-output variables used in the measurement, allowing management to identify which variables require attention to enhance bank efficiency. DEA has been widely used in the banking literature (Miller and Noulas, 1996; Berger and Mester, 2001).

- Define key terms.
- Relate key terms.
- Add some facts and figures to strengthen the study.
- Add structure to the study.

#### **Literature Review**

• Add some details about the methodology, data analysis technique, and findings of previous studies.

- Develop hypothesis.
- Add novelty to the study.
- Kindly add the graphical framework to better understand the study.

#### Methodology

- There need to add some details bout important elements of this section, which are mentioned below
- Add a table of descriptions of all variables (short form, description, unit, source, reference).
- Cite previous studies that used the same data analysis technique.

#### Results

- Why researcher mentioned hyphen sign after some values in the description of table 1?
- There needs some clarification for the share of *Rural Sharia Bank and Sharia Business Unit* because figure 2 and 3 does not highlight clear differentiate between them.
- Kindly use separate color for highlight both of variables.
- Need clarification, look like paragraph is missing,

#### ased on this countercyclical COVID-19 policy

- Why there exists some lines gap between the content?
- Please explain why researchers adopted such a methodology by just giving a collection of content without any empirical analysis.
- Kindly relate the findings to reality.

#### **General Comments**

- Follow APA-style in-text citations.
- It requires formatting the whole document tables and figures as well.

#### Recommendation: Revisions Required



#### revision file

**saparuddin siregar** <saparuddin.siregar@uinsu.ac.id> Kepada: editorial@sobiad.org Cc: baharom@inceif.org 17 November 2023 pukul 05.00

Dear Editorial Board International Journal of Economics and Finance Studies

I hope this letter finds you well. I am writing to provide an update on the status of my manuscript, BANK EFFICIENCY BEFORE, DURING AND AFTER COVID-19 : LESSON LEARNED FROM INDONESIA, which I submitted for consideration in International Journal of Economics and Finance Studies. I appreciate the feedback received from the reviewers and the opportunity to revise and improve my work.

However, I regret to inform you that I am currently facing challenges in submitting the revised manuscript due to the size limitations of the files. The revision file exceeds the maximum file size allowed by the submission system.

I have attempted to compress the files and explore alternative methods to reduce the size, but unfortunately, these efforts have not been successful in meeting the submission requirements. I understand the importance of adhering to the guidelines and apologize for any inconvenience this may cause.

I am writing to seek your guidance on how best to proceed in this situation. I am open to any suggestions or alternative methods for submitting the revised manuscript. If there are specific instructions or a preferred format for submitting large files, please let me know so that I can make the necessary adjustments.

I appreciate your understanding and assistance in resolving this matter promptly. Thank you for your time and consideration.

Sincerely,

Saparuddin Siregar

Bank Efficiency revised 16 Nov 23.docx 2918K

# OUR RESPONSES TO THE REVIEWERS' CONSTRUCTIVE SUGGESTIONS/COMMENTS

No.	Comments/suggestions	Our responses
	Abstract:	
1.	Add one sentence for	We have revised it as suggested. Many thanks for the constructive
	the importance of the	suggestions. The revised sentences are as follows:
	study at the start.	
		The COVID-19 pandemic has had a profound and far-reaching impact on the
		global banking industry, characterized primarily by a marked increase in non-
		performing loans, which, in turn, has diminished banks' profitability. In response to this challenge, the Financial Services Authority has implemented
		a set of stimulus measures designed to uphold operational efficiency within the
		banking sector. It is imperative to conduct a comprehensive examination of the
		ramifications stemming from these stimulus measures, as issued by the
		Financial Services Authority (OJK), on the banking sector.
2.	There is no need to	We have deleted the sentence
	mention it in this	
	section:	
	"The input variables	
	used in this study are	
	total funding and	
	operational expenses,	
	while the output	
	variables include credit/lending, total	
	assets, and total	
	operating profit."	
	Introduction:	
1.	There is no need to	We moved this paraghraph into Literature review section
	mentioned detail about	
	the methodologies of	
	current study, so	
	remove the below	
	paragraph from this	
	section.	
	"The method employed	
	in this research is the	
	non-parametric Data Envelopment Analysis	
	(DEA). The DEA	
	method was chosen due	
	to its ability to	
	accommodate multiple	
	input and output	
	variables in measuring	
	bank efficiency. It is also	
	sensitive to the specific	
	input-output variables	

	used in the measurement, allowing management to identify which variables require attention to enhance bank efficiency. DEA has been widely used in the banking literature (Miller and Noulas, 1996; Berger and Mester, 2001)."	
2.	<ul> <li>Define key terms.</li> <li>Relate key terms.</li> </ul>	We have defined key terms and incorporated them into page 3. Banking is an intermediary institution that gathers funds from the public and channels them back to the public (Fernandes et al., 2018). The efficiency of banking as an intermediary institution is measured by comparing the input variables (Funding and operational expenses) with the output variables (credit or lending, Asset, and Operating Income). Funding represents the funds gathered by the banking sector, which includes total Savings, Deposits, and Current Accounts, while Operating Expenses encompass total interest expenses and general and administrative costs. General and Administrative costs comprise labor expenses as well as office and marketing expenses (Blankson et al., 2022). The larger the funds accumulated by the bank, the greater the bank's ability to disburse them in the form of credit and earn operating Income in the form of interest income from borrowers who use the funds (Blankson et al., 2022;Gržeta et al., 2023). With the receipt of interest income, the bank can pay interest expenses to depositors as well as cover labor and office expenses as operational income. The surplus between operating income and operational expenses generates net income, which, in turn, increases the bank's assets. In the midst of the COVID-19 pandemic, the most significant threat to the banking sector is the decline in credit quality, which leads to an increase in non-performing loans. The rise in non-performing loans not only reduces interest income but also necessitates the formation of provisions for credit loss. Banking regulators have a vested interest in ensuring the resilience of the banking sector during the COVID-19 pandemic (Le et al., 2022) (Polyzos et al., 2021). In Indonesia, banking regulators have issued a series of deregulations aimed at providing stimulus to the banking sector, enabling it to withstand the challenges (Susilowati & Purnama, 2022). One crucial stimulus from the Indonesian Banking Authority is Regulation Number 11/POJK.03/2020 on

	March 31, 2021. This National Economic Stimulus aimed to address the impact of COVID-19 by implementing credit restructuring measures to ease the burden on affected individuals, with a particular focus on Small and Medium Enterprises (SMEs) encountering credit difficulties.
• Add some facts and	We have added some facts and figures.
figures to strengthen the study.	Banks and regulators in Indonesia appear to have managed to get through the difficult times of the COVID-19 pandemic well. This success was made possible by efficiency support by banks and stimulus by the Financial Services Authority (Naiborhu & Ulfa, 2023). Figure 1 below shows the Total Lending, Total Funding, and Total Assets of banks in Indonesia that continue to increase during the period of June 2018 to December 2022. During the period from June 2018 to December 2022, Total Funding increased from 6,278,008 to 9,077,079. Similarly, Lending increased from IDR 7,549,819 to IDR 11,241,371. This increase in funding, which in turn drove the growth in lending, has contributed to the rise in the assets of banks in Indonesia from IDR 7,778,548 to IDR 11,295,623.
	Total Lending, Total Funding and Total Asset of Indonesian Bank Jun 18 - Dec 22
	10.000.000
	8.000.000
	8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
	4.000.000
	2.000.000
	Jun-18         Dec-19         Jun-20         Dec-20         Jun-21         Dec-21         Jun-22         Dec-22           Total Lending         7.59.819         7.96.011         8.146.364         8.424.319         3.246.843         9.592.366         10.275.967         10.220.275         11.241.971           Total Lending         6.2780.08         6.586.788         6.724.769         6.963.166         7.109.979         9.332.969         9.570.2777         10.280.747         10.480.694         11.295.623           Total Asset         7.778.548         8.200.039         8.312.279         9.332.969         9.570.2777         10.280.747         10.480.694         11.295.623
	Figure 1: Total Lending, Total Funding and Total Asset of Indonesian Bank Jun 18- Dec 22
• Add structure to the	Source: Indonesian Banking Statistics 2018, 2019, 2020, 2021, 2022
• Add structure to the study.	We have added the structure to the study at the end of the introduction.
	This study aims to analyze the level of banking efficiency in Indonesia before, during, and after the COVID-19 outbreak. Furthermore, the research will unveil the efficiency levels of various types of banks, including Conventional Banks, Islamic Banks, Sharia Business Units,

		and Sharia Rural Banks. Additionally, the study will explore the impact of countercyclical policies issued by the Financial Services Authority on banking efficiency. This study can provide insights into effective policy strategies and measures to enhance the resilience of the banking sector.
	Literature Review	
1.	• Add some details about the methodology, data analysis technique,	Data Envelopment Analysis (DEA) was introduced by (Charnes et al., 1978) based on the research by (Farrel, 1957). DEA is a non-parametric method that utilizes linear programming models to calculate the ratio of output to input for all Decision Making Units (DMUs) compared within the population. DEA method able to accommodate multiple input and output variables in measuring bank efficiency. It is also sensitive to the specific input-output variables used in the measurement, allowing management to identify which variables require attention to enhance bank efficiency. DEA has been widely used in the banking literature (Berger & Demirgüç-Kunt, 2021; Miller & Noulas, 1996; Weill, 2003).
		Barth et al. (2013) state that DEA has several advantages as a non- parametric method for evaluating efficiency compared to parametric methods, such as stochastic frontier analysis (SFA). DEA calculates the multiple input/output data of the sample banks, which do not suffer from functional form dependency. Functional form dependency is present in parametric methods, where one must assume a particular functional form and impose a certain structure on the shape of the efficient frontier. The accuracy of the results depends on the accuracy of the assumption. The second advantage of DEA is that it focuses on an individual unit (bank, firm, etc.) rather than the population average, which increases the accuracy of predicting individual efficiency. Another advantage is that individual units are compared to the best-practice frontier rather than the central tendency properties.
		DEA's primary strength as a non-parametric approach also presents a corresponding weakness since it cannot be used to estimate model parameters and is significantly influenced by the selection and quantity of input variables. Within the DEA framework, a bank achieving an efficiency score of 1 (100%) is positioned on the efficient frontier, indicating that its outputs cannot be expanded further without increasing its inputs (Řepková, 2015). On the other hand, a bank with an efficiency score below 100% is considered relatively inefficient, implying that it can maintain its current output level with fewer inputs. Each bank or decision-making unit (DMU) operates with a specific number of inputs (i) and outputs (o), suggesting that each DMU utilizes a particular amount of input to produce a specific output.

The aim of the Data Envelopment Analysis (DEA) method is to measure the relative efficiency level of a specific bank as a Decision Making Unit (DMU) compared to other banks within the sample. The efficiency scores for each bank are relative and dependent on the efficiency levels of other banks in the sample. There are two scale measurement approaches in DEA Frontier Efficiency, namely Constant Returns to Scale (CCR) and Variable Returns to Scale (VRS). CCR is one of the scale measurement methods in DEA that assumes the proportional and constant (fixed) use of resources among the decision-making units being evaluated for efficiency. In this case, the production scale employed by these units is assumed to remain constant. On the other hand, VRS is a type of scale measurement in DEA that considers the fact that decisionmaking units may have different efficiency levels when utilizing different production scales. In VRS, the production scale used by the units under evaluation is treated as a variable, meaning they can choose different scales in their operations. In other words, VRS allows these units to adjust their operational size to achieve maximum efficiency.

The formula for CCR can be written as (Bowlin, 1998):

$$\begin{aligned} \max h_{0}(u,v) &= \frac{\sum_{r=1}^{s} u_{r} y_{r0}}{\sum_{i=1}^{m} v_{i} x_{i0}} \\ subject \ to \ \frac{\sum_{r=1}^{s} u_{r} y_{rj}}{\sum_{i=1}^{m} v_{i} x_{ij}} \leq 1, j = 1, 2 \dots j_{0}, \dots, n, \\ u_{r} &\geq 0, r = 1, 2, \dots, s \\ v_{i} &\geq 0, i = 1, 2, \dots, m \end{aligned}$$

where u and v represent the assigned weights for each input and output. DEA assigns weights in such a way that no other DMU has higher efficiency. The DMU's objective function is the ratio of the overall weighted output to the total weighted input. Here,  $h_0$  is the technical efficiency of DMUo to be estimated,  $v_i$  and  $u_r$  are weights to be optimized,  $x_{ij}$  represents the amount of input of the i<sup>th</sup> type for the j<sup>th</sup> DMU,  $y_{rj}$  is the observed amount of output of the r<sup>th</sup> type for the j<sup>th</sup> DMU, i denotes the m different inputs, r indicates the s different outputs, and j indicates the n different DMUs.

The formula for VCR can be written as (Bowlin, 1998):

minimize: 
$$\theta - \epsilon \left[ \sum_{i=1}^{m} s_{\bar{i}} + \sum_{r=1}^{s} s_{r}^{+} \right]$$

	n
	subject to: $\theta x_{i0} - \sum_{j=1}^{n} x_{ij} \lambda_{j-} s_{\overline{i}}$ $y_{r0} = \sum_{j=1}^{n} y_{rj} \lambda_{j-} s_{r}^{+}$ $1 = \sum \lambda_{j}$
	$0 \le \lambda_j, s_i^-, s_r^+$ for $i = 1,, m; r = 1,, s; j = 1,, n$
	The CCR and VCR models differ in that the $\lambda$ is now restricted to summing to one. This removes the constraint in the CCR model that DMUs must be scale efficient. As a result, the VCR model allows variable returns to scale and measures only technical efficiency for each DMU. In other words, for a DMU to be considered CCR efficient, it must be both scale and technically efficient. However, for a DMU to be considered BCC efficient, it only needs to be technically efficient (Bowlin, 1998).
and findings of	Findings of previous studies
previous studies	Previous research has extensively examined the measurement of banking sector efficiency. For instance, a study conducted by (Jemric & Vujcic, 2002) analyzed bank efficiency in Croatia and found that bank size, ownership structure, years of establishment, and asset quality influenced the level of efficiency. Similarly, (Staikouras et al., 2008) highlighted cost efficiency in the banking sector across six Southeast European countries and identified variations in efficiency levels among these nations. Furthermore, (Yudistra, 2006) conducted research to measure the efficiency of Islamic banks worldwide and revealed that Islamic banks exhibited reasonable levels of inefficiency compared to conventional banks. To measure the efficiency of Sudanese Islamic banks, (Elrhman et al., 2003) utilized the Stochastic Frontier Approach (SFA). Mokhtar et al. (2008) analyzed the efficiency levels of Islamic banks in Malaysia, making comparisons with conventional banks through the use of the DEA method. Likewise, Shahid et al. (2010) and Abbas et al. (2016) pursued similar objectives, though their focus was on Pakistani Islamic banks.
	Following a similar approach to Mokhtar et al. (2008), Ahmad & Rahim Rahman, (2012) explored efficiency levels, albeit with a limited sample

of both Islamic and conventional commercial banks in Malaysia. Similarly, in the context of Indonesian Islamic banking, Octrina & Mariam (2021) also examined efficiency using the SFA method. Nevertheless, a study by (Rusydiana & As-Salafiyah, 2021) demonstrates that the majority of Islamic banks in Indonesia experienced an increase in efficiency during their research period, signifying progress in enhancing efficiency performance During the COVID-19 pandemic, research has also been conducted to understand its impact on banking performance. A study by (Abdulla & Ebrahim, 2022) revealed that banks in Gulf Cooperation Council (GCC) countries experienced a negative influence from the pandemic, but Islamic banks performed better than conventional banks. Research by Boubaker et al. (2023) found that the majority of Islamic banks experienced inefficiencies during the pandemic, but only a few required adjustments to maintain their efficiency levels. A study conducted in Indonesia by Hanafi & Rohman (2022) showed a decline in the financial performance of Islamic banks during the pandemic, yet they displayed resilience. Furthermore, research has been conducted to identify the impact of banking policies on bank performance. A study by Le et al. (2022) found that monetary policy expansion influenced the performance and risk of banks during the COVID-19 pandemic. Research conducted in Indonesia by Susilowati and Purnama (2022) demonstrated that countercyclical regulatory policies implemented by the Financial Services Authority (OJK) had an effect on the performance of banks with higher capital. Another study by Gržeta et al. (2023) concluded that larger banks tend to exhibit better performance compared to smaller banks due to their better-structured organizations and more diversified asset portfolios. These studies highlight the significance of understanding banking efficiency in confronting external challenges, such as global financial crises or pandemics. Efficiency becomes key in maintaining good performance and organizational resilience in uncertain situations. Facing the COVID-19 pandemic, Islamic banks also encountered unique challenges. Research by Abdulla & Ebrahim (2022) found that Islamic banks in GCC countries performed better than conventional banks during the pandemic. However, Islamic banks with government affiliations and larger sizes experienced a more significant impact from the pandemic. Another study by Boubaker et al. (2023) indicated that the majority of Islamic banks faced inefficiencies during the pandemic, but only a few required adjustments to maintain their efficiency levels.

		These research findings underscore the importance of monitoring and managing efficiency in the banking industry, especially in dealing with volatile situations such as a pandemic. Banking authorities and regulators play a crucial role in implementing policies that promote efficiency and strengthen banking resilience. Research by Nguyen et al. (2022) and Susilowati & Purnama (2022) revealed the impact of monetary and regulatory policies on bank performance during the pandemic. This underscores that well-crafted policies can influence bank efficiency and risk.
2.	Develop hypothesis.	$ \begin{array}{l} H_0: \mbox{ Each DMU operates at suboptimal economic scale } (\rho 1 \leq 1, \ \rho 2 \leq 1, \ \rho 3 \leq 1, \\ \rho 4 \leq 1). \\ H_1: \mbox{ At least one DMU operates at the optimal economic scale } (\rho 1 > 1 \ \mbox{ or } \rho 2 > \\ 1 \ \mbox{ or } \rho 3 > 1 \ \mbox{ or } \rho 4 > 1). \end{array} $
3.	• Add novelty to the study.	Novelty of this study: Overall, prior research literature underscores the importance of efficiency in evaluating banking performance. Previous research findings indicate that the COVID-19 pandemic has adversely affected the performance of banks in various parts of the world. Furthermore, countercyclical policies implemented by financial authorities have demonstrated their effectiveness in supporting the resilience of the banking sector during the pandemic. This study introduces a novel perspective by examining banking efficiency (Commercial Banks, Sharia Banks, Sharia Business Units and Sharia Rural Banks) during the post-COVID-19 recovery period and distinguishes its impact on Commercial Banks, Sharia Banks, Sharia Business Units, and Sharia Rural Banks. This research contributes to a deeper understanding of banking efficiency and the implications of countercyclical policies for each type of Bank. The findings of this study can be used by banking authorities to strengthen the banking sector and enhance efficiency in facing challenging circumstances.
4.	<ul> <li>Kindly add the graphical framework to better understand the study.</li> <li>Research Methods</li> </ul>	I've attempted to search for the graphical framework used in the DEA Analysis from the previous study, but I haven't found it yet. Could the reviewer assist me?
	There need to add some details about important elements of this section, which are mentioned below	

	• Add a table of descriptions of all	Table-1 Description of Variables				
	<ul> <li>variables (short form, description, unit, source, reference).</li> <li>Cite previous studies</li> </ul>	Variable Input Variable	Short Form	Description	Unit	Source reference
		Funding	X1	Total Amount of (Saving + Demand Deposit), Collected from Indonesian Banking Statistic	IDR	
	that used the same data analysis	Operational Expenses	X2	Total Operating Cost (Interest Expenses + Overhead Cost), Collected <u>From</u> Indonesian Banking Statistics	IDR	Elyasani and Mehdian (1990);
	technique.	Output Variable				Burger and
		Credit/Lending	Y1	Total loan. Collected From Indonesian Banking Statistics	IDR	Humphrey (1997); Rusydiana and As-
		Asset	Y2	Total Asset. Collected from Indonesia Banking Statistics	IDR	Salafiyah (2021)
		Operating Profit	Y <sub>3</sub>	Total Operating Income (interest Income + <u>fee based</u> income). Collected from Indonesia Banking Statistics	IDR	
	Results and Discussions					-
1.	• Why researcher mentioned hyphen sign after some values in the description of table 1?.	We have deleted the hyphen				
2.	There needs some clarification for the share of Rural Sharia Bank and Sharia Business Unit because figure 2 and 3 does not highlight clear differentiate between them.	We have deleted figures 2 and 3 and replaced them with table 4.				
3.	• Kindly use separate color for highlight both of variables.	We have deleted figures 2 and 3 and replaced them with table 4.				
	• Need clarification, look like paragraph is missing, according to the right analysis.					

4.	<ul> <li>Why there exists some lines gap between the content?</li> <li>Please explain why</li> </ul>	We have deleted the lines We have added some empirical analysis below:
	researchers adopted such a methodology by just giving a collection of content without any empirical analysis. • Kindly relate the findings to reality.	In December 2018, the Sharia Business Unit recorded inputs consisting of a total funding of Rp 114.222 billion and operating expenses amounting to Rp 9.588 billion. Based on these inputs, the Sharia Business Unit yielded outputs of credit/lending totaling Rp 117.895 billion, assets valued at Rp 160.636 billion, and achieved an operating Income of Rp 12.720 billion. The Sharia Rural Banks, with funding amounting to Rp 8.135 billion and operational expenses of Rp 1.063 billion, yielded outputs of credit totaling Rp 9.084 billion, assets amounting to Rp 12.362 billion, and an operating Income totaling Rp 1.303 billion.
		Despite the COVID-19 pandemic, the growth of assets for each bank in Indonesia has been consistently positive. In 2020, commercial banks' assets increased from 6% to 7%, Sharia banks' assets increased from 11% to 13%, and Sharia Unit Businesses' assets increased from 8% to 13%. However, Sharia Rural Banks experienced a decline in growth from 11% to 9%. These figures-2 demonstrate that the COVID-19 pandemic did not hinder the growth of bank assets in Indonesia.
		During the period from 2019 to 2022, total banking assets experienced positive growth. However, in 2020, during the peak of the Covid-19 pandemic, all banks experienced negative Net Profit growth. Net Profit is calculated as Total Operating Income minus Total Operating Expenses. In 2021, all banks corrected their growth trajectory, returning to positive growth. Unfortunately, Sharia unit businesses once again experienced negative Net Profit growth in 2022. It can be concluded that only in the year 2020, during the peak of the Covid-19 pandemic, did all banks experience a decline in accumulated profits. Figure-3 presents the percentage growth of net profit during the period from 2019 to 2022.



### [IJEFS] Editor Decision

**Editor** <editorial@sobiad.org> 7 Desember 2023 pukul 09.18 Kepada: Saparuddin Siregar <saparuddin.siregar@uinsu.ac.id>, Nurlaila <nurlaila@uinsu.ac.id>

Saparuddin Siregar, Nurlaila:

We have reached a decision regarding your submission to International Journal of Economics and Finance Studies, "BANK EFFICIENCY BEFORE, DURING AND AFTER COVID-19 : LESSON LEARNED FROM INDONESIA ".

Our decision is to: Accept Submission

International Journal of Economics and Finance Studies