

MALAYSIAN FULL-FLEDGE ISLAMIC BANKS PERFORMANCE: A COMPARATIVE ANALYSIS USING DATA ENVELOPMENT ANALYSIS (DEA)

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Abstract

This project aims to evaluate the operational efficiency of Malaysian full-fledged Islamic banks over a six-year period from 2018 to 2023, with special attention to performance before, during, and after the COVID-19 pandemic. The study focuses on four full-fledged Islamic banks which are Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, Bank Rakyat, and MBSB Bank Berhad, assessing their ability to utilize resources efficiently. It addresses the issue of banking performance fluctuations during economic disruptions like the COVID-19 crisis. The methodology includes Data Envelopment Analysis (DEA), specifically the CCR model, to measure technical efficiency. Data was collected from the banks' annual reports from 2018 to 2023 and analyzed using DEA Solver Learning software, version 8.0. Findings reveal that Bank Islam Malaysia Berhad and MBSB Bank Berhad consistently maintained full efficiency throughout the six years, demonstrating strong operational stability despite pandemic-related challenges. This project shows that Malaysian Islamic banks generally remained competitive and resilient, offering insights into the stability of Islamic banking. It also provides guidance for policymakers and bank management. The project successfully evaluated and ranked the efficiency of four major Islamic banks in Malaysia, laying a foundation for future research and improvement in Islamic banking operations, especially in response to global economic uncertainties.

Keywords: *Full-fledged Islamic banks, Data Envelopment Analysis, CCR Model, COVID-19 pandemic, bank efficiency*

1. Introduction

Islamic banking is an essential part of Malaysia's financial system, operating under Shariah principles that prohibit interest and promote ethical profit-sharing (Ikhwan & Riani, 2022). However, events like the COVID-19 pandemic have raised concerns about the stability and performance of financial institutions, particularly Islamic banks. This study aims to evaluate the efficiency of Malaysian full-fledged Islamic banks using Data Envelopment Analysis (DEA). Specifically, it assesses the performance of Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, Bank Rakyat, and MBSB Bank Berhad from 2018 to 2023, covering periods before, during, and after the pandemic. By focusing on operational efficiency, this research provides insights for bank management and policymakers to enhance competitiveness and resilience.

2. Methodology

This study uses the Data Envelopment Analysis (DEA) CCR model to evaluate the operational efficiency of Malaysian full-fledged Islamic banks. The process begins with the selection of four full-fledged Islamic banks which are Bank Islam Malaysia Berhad, Bank Muamalat Malaysia Berhad, Bank Rakyat, and MBSB Bank Berhad. Secondary data for each bank were collected from annual reports covering the years 2018 to 2023. The inputs chosen were total assets, labor cost, and third-party funds, while outputs included total financing and operating revenue. All variables were standardized before analysis. The data were then entered into DEA Solver Learning software (version 8.0), which calculated efficiency scores for each bank annually. The scores, ranging from 0 to 1,

reflect how efficiently each bank converted inputs into outputs. By grouping results into before, during, and after COVID-19 periods, the study provides a time-based comparison of bank performance (Liu et al., 2013).

3. Results / Findings

The findings of this study revealed that among the four full-fledged Islamic banks analyzed, Bank Islam Malaysia Berhad and MBSB Bank Berhad consistently achieved a perfect efficiency score of 1.000 across all six years, indicating full operational efficiency. Bank Rakyat maintained a high level of efficiency with a slight dip in 2019, scoring 0.9722, but performed at full efficiency in all other years. Bank Muamalat Malaysia Berhad showed lower efficiency in 2018 (0.9611) and 2020 (0.9663), but improved to full efficiency from 2021 to 2023. Overall, the average efficiency scores placed Bank Islam and MBSB Bank at the top, followed closely by Bank Rakyat, while Bank Muamalat ranked lowest among the four. The results also indicated that all input and output variables were strongly correlated, suggesting that efficient use of resources significantly contributed to output performance. Despite the challenges brought by the COVID-19 pandemic, the results demonstrated that Malaysian Islamic banks remained resilient and operationally stable during economic disruptions.

4. Novelty of Research

This research introduces a novel application of the DEA CCR model to evaluate the operational efficiency of Malaysian full-fledged Islamic banks across three distinct time periods which are before, during, and after the COVID-19 pandemic. While many past studies only looked at one time period or focused on conventional banks, this study looks at how Islamic banks performed during different economic conditions. By using real financial data such as total assets, labor costs, and third-party funds, the study gives a clear picture of how well each bank used its resources to generate income and financing. The use of DEA Solver Learning software helped analyze the data accurately and fairly. This study is also different because it only focuses on banks that were fully established in Malaysia, giving more specific insights. The results can help bank managers and policymakers improve how banks operate, especially when facing challenges like economic crises or pandemics.

5. Conclusion or Future Work

This study successfully applies DEA to assess the efficiency of Malaysian Islamic banks across different economic periods. Future work may include expanding the analysis to Islamic windows of conventional banks, incorporating more financial variables, or using alternative DEA models to improve accuracy and provide deeper insights into performance trends.

REFERENCE LIST

- Ikhwan, I., & Riani, R. (2022). The efficiency level of Indonesian banks in the Covid-19 pandemic era and its determinant. *Jurnal Ekonomi & Keuangan Islam*, 221-235. <https://journal.uui.ac.id/JEKI/article/view/22096>
- Liu, J. S., Lu, L. Y., Lu, W., & Lin, B. J. (2012). Data envelopment analysis 1978–2010: A citation-based literature survey. *Omega*, 41(1), 3–15. <https://doi.org/10.1016/j.omega.2010.12.006>