

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**APPLICATION OF TWO-STAGE DEA MODEL FOR
ASSESSING THE EFFICIENCY AND EFFECTIVENESS OF
BANKS IN MALAYSIA**

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

Commercial banks in Malaysia are also known as financial institution offers services including saving accounts, loans, bank overdrafts, certificates of deposit, and other services that are related to finances. Hence, commercial banks are vital to the economy of Malaysia because they generate capital, credit, and market liquidity. The efficient bank can maximize a task without wasting resources, time, money, energy or materials. In this banking industry, there is intense competition between companies, each aim to dominate the market, attract more customer, and boost earnings. If the banking system is inefficient, the bank will suffer in profitability which then leads to the lack of trust from customers. Therefore, this study will evaluate and measure the performance of several banks in Malaysia by using Data Envelopment Analysis (DEA) method. The first measurement of the efficiency of bank in Malaysia will be conducted by using Charles, Cooper and Rhodes (CCR model) where five banks achieved efficient score which are BIMB, Alliance bank, CIMB, Citibank and Bangkok Bank. The majority of recent research in the banking sector focused solely on operational efficiency. However, rarely focus on the operational effectiveness. Therefore, Two-Stage DEA approach has been further applied in this study since the banking industry's production process can be described as a two-stage process. In the two-stage process, total asset and labour cost will be the input in the first stage, meanwhile, the total deposit and interest income will be the output in the efficiency evaluation as well as be the inputs in the second stage. In the second stage which is meant for effectiveness evaluation, the output variables are net income and loan and advance. The total performance obtained from the Two-Stage DEA approach will then be compared with overall performance of another network DEA method namely as Network Slack-based Measure (NSBM) in which, interest income will be the intermediate variable. The comparison of the two models indicates that Bangkok Bank is consistent to be efficient and effective in 2022. This also indicates that Bangkok Bank is successful in utilizing the expenses at the lowest cost and producing the greatest income in the shortest amount of time. Bangkok Bank also can act as benchmark to other inefficient and ineffective banks.