

Evaluating Banking Performance by Using the CAMELS Evaluation System in Iraqi Banks

Naeem Sabah Jearah, Aqeel Abdul-Hussein Odeh, Qasim Mohammed Dehash, Zainab Hussein Ibrahim

Article Info

Article History

Received:
August 03, 2020

Accepted:
October 05, 2020

Keywords

Profitability, Liquidity,
Allocative Efficiency,
Structural Efficiency

DOI:

10.5281/zenodo.4067348

Abstract

The research aims to clarify the concept of efficiency and its types, as efficiency is considered one of the most important indicators to indicate the performance of banks, that is, it is a fundamental requirement for governments and an important element in evaluating the exploitation of resources.

*The economic efficiency (EE) * is determined according to its technical components (TE) on the one hand and price (AE) * on the other hand, and to distinguish the bank as a regular production institution or as a financial institution, the method of approach to production was discussed, and the approach by mediation to describe the path of the bank, in addition to other administrative factors And non-administrative affecting the efficiency of banks. Banks differed among themselves by using the appropriate method to measure efficiency, and there are several ways to improve efficiency have been touched upon. Thus, the most important point worth stopping by is to study the factors that directly affect banking efficiency.*

The weakness of security, political and economic stability in Iraq was one of the most important reasons for weakening the role of the banking sector, despite the fact that the banks enjoyed stability during the past few years, but they still lacked proper planning and oversight, and were considered the most important hypotheses of research. Therefore, one of the most important research recommendations is to resort to Banking merger and cooperation between banks to strengthen the financial position towards depositors and borrowers, meet the needs of investors and thus gain the confidence of the authorities and customers, and restructure the banking sector by increasing the size of banks and expanding the activities that they carry out.

1. Introduction

The importance of the banking sector lies through the role it plays in economic development and other sectors, especially production and service. Its role is to provide financing loans to many small and medium enterprises, which leads to strengthening the national economy, as the mechanism of work in the banking sector is to collect savings and funds of individuals and institutions and employing them in investment trends that aim to achieve profit. Therefore, the efficiency of the performance of this sector must be verified in order to be qualified to exploit the best resources and produce an optimal size of results.

The importance of monitoring and evaluating the performance of the banking sector appears in identifying the required changes and determining priorities to enhance the competitive position among banks and to know the strengths and weaknesses, in addition to resorting to banking merger to achieve high efficiency, attract more customers and achieve a high level of profits. On the other hand, this sector has witnessed great development as a result of the increasing use of communication and information technology, and thus banks have been forced to keep pace with the developments taking place, especially in the financial and administrative field. The development in methods of measuring banking efficiency showed the importance of positive performance in the banking industry, and this is evidenced by the development and improvement of many indicators and techniques to measure this efficiency, and that banking efficiency greatly affects financial performance, provided time, effort, and the level of daily routine work is available and thus costs are reduced And the costs for workers, and that there is a great need to overcome the obstacles that prevent the use of electronic banking services in light of the reliance of large numbers of customers on traditional methods of withdrawal and deposit as well as other services. And that the banking efficiency in Iraq is almost non-existent compared to the countries of the world, as a result of the conditions in the country, which lead to security and economic instability and financial mismanagement, which leads to setting obstacles to banking reform processes.

During recent years, the Camels index has been used to assess the stability of banks based on several indicators, and the index showed that the Iraqi banking system during 2017 enjoyed stability despite the fluctuations

witnessed by the components of banking stability, which is positive, especially Since the Iraqi economy witnessed a relatively improvement due to the high oil prices, which are the main source of Iraqi state revenue.

Research Problem

The global banking sector witnessed a major shift in its path as a result of the efficiency achieved, which led to an increase in the capabilities of competition between efficient banks, and the exit of inefficient banks from the financial market, which leads to a financial crisis that may affect the economy as a whole. The most important factors attracting clients, as well as the role of Iraqi banks, which lacks efficiency when compared to international banks, and that leads to the marginalization of the role that the banking sector plays in the economy. The research problem can be summarized by the following questions:

- What is the concept of efficiency and how to measure it?
- What are the most important factors affecting the efficiency of banks, and how to improve efficiency?
- What is the reality of the banking sector, and what is the mechanism used to measure banking stability in Iraq?

Research Hypotheses

1. During recent years, Iraqi banks have become highly capable to improve their business as a result of stability, but they lack proper planning, which leads to weak confidence.
2. Determining the factors affecting the efficiency of banks by providing an appropriate environment and using expertise and competencies to manage this sector.
3. Weak security, political and economic stability in Iraq leads to weakening the role of the banking sector in the country, as well as the absence of government oversight.

Research Significance

The significance of the research appears in terms of banking efficiency that depends greatly on keeping pace with developments in technological use and the policy followed in dealing with customers and the various services provided, as well as the optimal use of resources to achieve the highest percentage of outputs, as well as the diversity of measurement methods and the different use of methods between Banks, although there are methods that are unrealistic in their use, which requires careful planning to achieve the desired goals.

Research Objectives

The importance of the research lies in highlighting the most important achievement of banking efficiency in promoting economic development, identifying the best methods of measurement and the most appropriate to reality, as well as knowing the obstacles facing Iraqi banks, and affecting their compatibility with the world's banks, as well as highlighting the importance of monitoring the banking sector for the return of the cycle In society and increasing individuals' trust in banks.

SECTION ONE

BANKING EFFICIENCY AND METHODS OF MEASURING IT

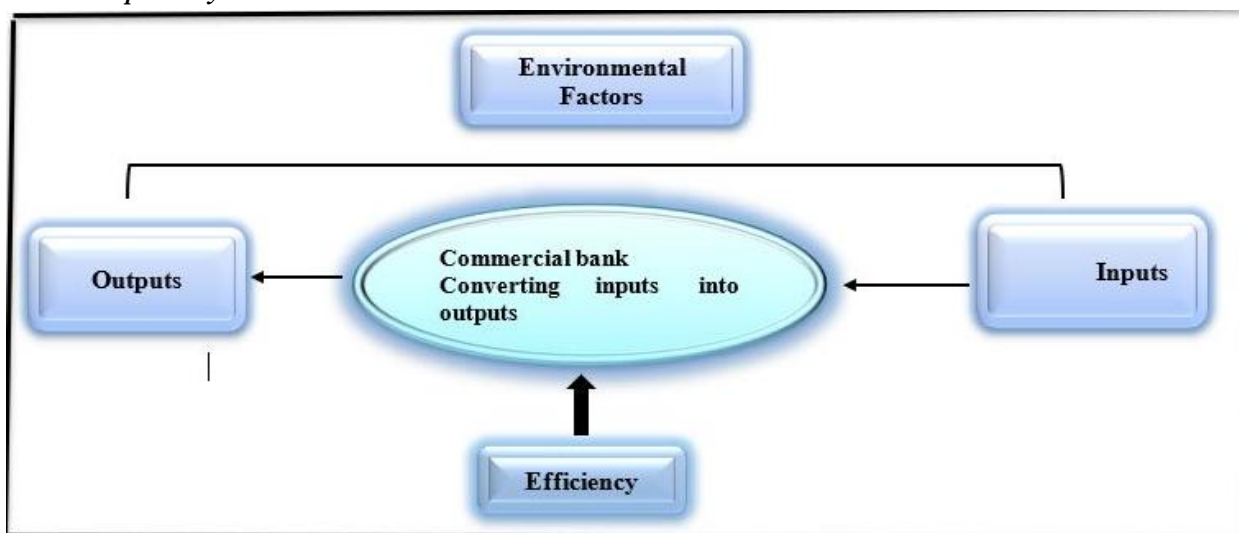
Efficiency Concepts

Efficiency can be defined in general as a 'compatibility between technical efficiency and economic efficiency, that is, studying risks and adopting appropriate pricing in light of modern technologies' (Abd Mullah, 2011,3). As for banking efficiency, it is defined as the relationship between the bank's inputs and outputs, and the banking institution is called efficient in the event that the economic resources available to it are directed towards stimulating the largest amount of returns and the least percentage of waste. This means controlling the financial and human capabilities on the one hand, and achieving the optimum variety of products Finance on the other hand (Al-Hebel, 2013,40).

The following figure shows that the bank uses the various financial and human resources and performs some operations on it to convert them into services and activities that provide individuals as outputs.

Fig.1
Efficiency Analysis scheme

Source: Prepared by the author.



Banking Efficiency Types

Banking competence includes several types:

1. **Technical Efficiency:** It is intended to achieve the highest rate of output with a certain level of input, or it is the bank's ability to achieve the highest results in light of the available resources.
2. **Scale Efficiency:** It means the field that helps the economic institution to return to the optimum size, and the volumetric efficiency is calculated through the law (Jawad, 2013,27).

$$\text{Volumetric efficiency} = \text{total model} / \text{model efficiency}$$

As the economic unit operates at constant, increasing or decreasing yields, and thus the optimum size of the economic unit is known (Salami, 4: 2014). And production appeared at a lower rate, which means diminishing returns and vice versa.

3. **Allocative Efficiency:** It is intended to use the elements of production in a correct proportion to produce a certain level of output. It is also defined as the bank's ability to use inputs or outputs in optimal proportions taking into account price levels, so it is also called price efficiency (Coelli, 1998: 135).
4. **Structural Efficiency:** It is a measure of the extent to which the banking industry continues to develop and improve its performance by relying on its best financial institutions, and the structural efficiency is measured by calculating the weighted rate or the weighted average of the technical efficiency of the financial institutions that make up the banking industry (Muhammad, 2014: 476).

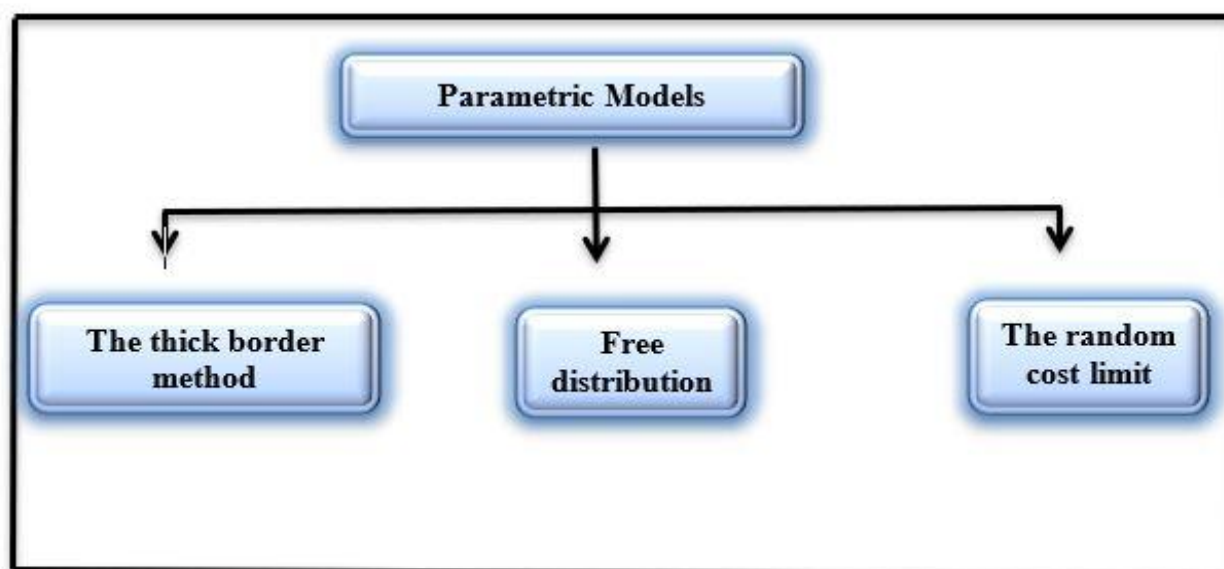
SECTION TWO

QUANTITATIVE METHODS FOR MEASURING BANKING EFFICIENCY AND THE DIFFICULTIES FACED

There are two quantitative methods for measuring the efficiency of banks:

1. **Parametric Models.** Figure (2) below illustrates these models.

Figure (2)
Parametric Models



Source: Researchers' adaptation

- The Random Cost Limit Method

This method adopts regression techniques to estimate the total cost function as a dependent variable for a set of independent variables, including levels of output and input prices, and the expected total cost constitutes the random boundary that represents the best application (Bukhari, 2011: 142). Thus, the bank whose current cost is equal to the expected cost. It is the best efficiency. The bank is considered inefficient in the event that the actual costs are greater than expected, and that the difference between the current and expected cost is called the "random disturbance limit" and includes errors resulting from efficiency and are distributed in a near-normal distribution, and random errors of regression are normally distributed (Square, 99: 2011).

- The Free Distribution Method

This method is applied when data and data are available for multiple years, and it assumes that inefficiency is stable over time, and that random errors are mediated over the same period, and since random disturbance consists of two components, namely inefficiency and random line, then the average random disorder for a group of years is considered an inefficiency measure for the same period. Thus, the inefficiency for each bank can be estimated by measuring the difference between the remaining average of the cost function estimation, and the cost-limit efficiency of the bank (Al-Anizi, 2015: 115).

- The Thick Border Method

This method assumes that "the deviations of the current cost from the expected are due to random errors related to the efficiency of managing the resources," as it tends to evaluate the efficiency of banks according to the degree of decrease in average cost to total assets. This method divides the banks into four groups, the division is made on the basis of the total cost, and thus the banks that are located in the last part of the groups represent a low average cost and thus assume that they are more efficient, and deviations and errors are due to random error only (Al-Hibel, 2011: 50).

2. Non-Parametric Models

Analyzing DEA

This method is based on the linear programming technique to measure the relative efficiency of a group of enterprises known as decision-making units (DMUS), and that the reason for naming took the result of the form that the competency limits take, as the administrative units to be studied are distributed in such a way that the efficient units are at the top, making a complex trend in the direction of a point. The principal envelops the less

efficient units, thus inefficiency is measured by the distance between them and the efficiency curve (Al-Mansouri, 2014: 86).

Among the most important advantages of this model:

1. There is no need to formulate any function before starting the efficiency measurement, just as there is no need to include hypotheses about the form of the relationship between inputs and outputs, and the most efficient institutions are taken into consideration when forming the boundary efficiency curve.
2. Makes efficient units as reference units for inefficient ones, to proceed in the same manner in the combination of inputs, and this feature is not available in any other model.
3. The ability to uncover hidden relationships and thus find out the sources of lack or weakness of competence (Abd Mullah, 2011: 4).

As for the most important conditions to be observed when using DEA:

It is preferred that the sample used is from banks operating in the same banking environment

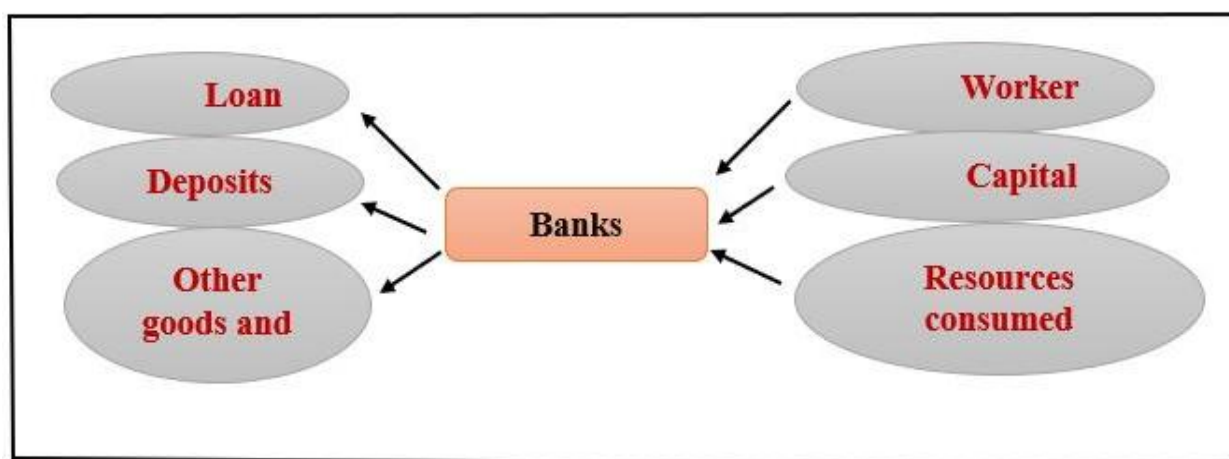
1. Choosing the appropriate inputs and outputs that have importance in the level and degree of efficiency of each bank.
2. Providing all data for the inputs and outputs for all banks included in the form.
3. That the sample of banks included in the model is greater than the sum of the inputs and outputs used, multiplied by the number (3).
4. The relationship between inputs and outputs must be direct.

This model is a powerful tool for production and service institutions and it has been used in all different economic sectors (Miraj, 2011: 5), but at the same time it does not allow any errors in the data, although in reality the data is subject to measurement errors and thus this method is unrealistic (Rice, Fatima Zahra: 2009 63).

That is, this method does not distinguish between inefficiency and random errors, as all errors and deviations are due to inefficiency, regardless of whether their source is the ineffectiveness of operations or independent external influences represented by management, in addition to the other problem which is that this model ignores prices through Focus on measuring technological competence.

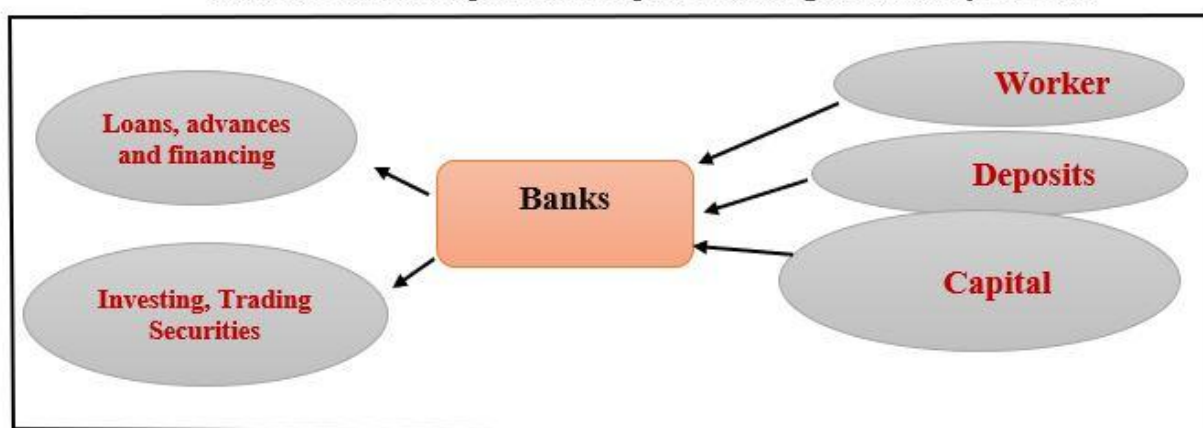
Also, one of the most important problems facing the model is the distinction between inputs and outputs, and it is mainly focused on deposits, because they are once classified as outputs and this method is known as "production or value-added" and the bank's function is limited according to this method to providing services to clients in lending and deposit. Basically, customer accounts are substituted for the number of these accounts by the size of deposits, and consequently deposits and loans are classified as outputs, while the inputs are represented by labor, capital and fixed assets.

Figure (3)
Relation between Inputs and Outputs Following Productivity Method



Source: Researchers' adaptation

Figure (4)
Relation between Inputs and Outputs Following Productivity Method



Source: Researchers' adaptation

DIFFICULTIES IN MEASURING BANKING EFFICIENCY

There are several difficulties facing measuring banking efficiency as follows:

1. Difficulty in determining the inputs and outputs: The problem arises through the difficulty of determining what the bank produces accurately, since what is produced by non-banking institutions is clearly and easily identified, that is, everything that the founder sells is considered outputs (Jady, 2013: 3).
2. Difficulty in determining the minimum ratio of inputs to outputs: Difficulties arise in determining the ratio of inputs to outputs, as there are no specific laws for bank operations, it is not possible to infer about the best banking performance, so economists instead conclude a best practice by observing the ratio of inputs / The outputs are in actual banks, and thus it is not possible to rely on efficient banks by relying on the highest output per dollar of inputs, because the output ratio is determined according to other factors such as prices and mergers (Al-Habeel, 2013: 40-41).
3. The multiplicity of banking efficiency measures: there is a multiplicity and diversity in the tools and methods of measuring banking competence through the development of applied studies, as there are two entrances to that diversity, the entrance to the economic analysis tools that were numerous to express indicators of efficiency and economies of scale (Qureshi, 2006: 94). The production or production function was used as a tool to measure economies of scale and profit to derive banking efficiency. The second input is to adopt the cost function to measure efficiency indicators.

FACTORS AFFECTING THE EFFICIENCY OF BANKS

The factors that affect the efficiency of the banks are divided into internal and external factors as follows:

Internal factors: These are the policies that the bank follows, whether financial or administrative, which depend on the degree of competition between banks and the size of economic activity, and that these factors are related to liquidity, the size of assets, return on investment and property rights.

External factors: are the factors related to the policies imposed on banks, such as the legislation imposed by the state and the central bank, represented by interest rates and the size of monetary reserves. The most important external factors affecting banks can be explained in the following (Zainab, Fadela, 14-16: 2016):

- 1) **Profitability:** Banks finance their investments from the money of others from the private funds of the bank in an effort to maximize the wealth of owners from the return on investment or on property rights. Interest rates are the most important factors affecting the profitability of banks, as the profitability of banks increases when interest rates are higher. Loans are high and low on deposits, meaning an increase in profit margin, in addition to that competition is one of the factors affecting profitability.
- 2) **Degree of risk:** The purpose of risk management is to reduce the possibility of losses, so the risks must be studied, the possibilities set and the results of the maximum expected risk assessed, and thus risk management should not affect the bank's efficiency.
- 3) **Administrative factors:** The policy followed by some banks is wrong, which is the favoritism policy in the ranks and salaries, which leads to a decrease in the efficiency of the banking system, as well as

lowering the morale of the employees. And the interest of workers in their work, this will lead to poor efficiency and performance in the bank.

- 4) **Degree of competition**: it means high quality in the production of services at the lowest cost, and thus controlling the market and preventing new competitors from entering the market.
- 5) **Governmental regulations and legislation**: Governmental regulations and legislation control banks through fiscal and monetary policy, in order to preserve depositors' money, control the money supply, provide credit to various sectors at a low interest rate, collect revenues through taxes, as well as achieve other economic goals.

There are other non-administrative factors that affect the efficiency of banks:

A. Information technology: The information and communications technology allowed the bank to communicate with customers in an unspecified quantity and type, which added to the relationship between the "bank-customer" ease and comfort for both parties. Among the advantages that the information technology added to the bank are the following:

- Communicating with clients internationally, thus enhancing competitiveness.
- Improving production, increasing the creation of added value.
- Effective speed of operations, which improves service delivery.
- Rashad in establishing windows and agencies.
- Speed in classifying loan application files.
- Constant contact with customers, and thus a good awareness of the other party.
- Focus team effort on high-value operations.

B. The economics of diversification: Studies show that the cost of producing two products under one administration's roof is less expensive than producing each product under the supervision of two separate departments. He has more income if he proposes multiple services to the customer, and the diversity in the sources of income leads to reducing the risk, and the existence of diversification economies is due to several reasons:

- Considerable volume of fixed costs: When there is surplus capacity, fixed or semi-fixed costs, data processing, agencies and branches built, these costs can be allocated to a wide range of products.
- Information economy: the information available about clients, whether in terms of loans, deposits and other services, can be used again to reduce the costs of non-payment of the loan, and to estimate the products or services desired by the customer.
- Reducing the risk: Diversification in the bank's uses can reduce the risk of lowering the risk of the bank portfolio and interest rate risk, as banks may want to bear operational costs or interest rate costs in exchange for reducing the risk at the entries.
- Reducing costs for the customer: The costs for the customer can be reduced when he places demand deposits, savings accounts, and loans at the same time, as it is easier for the bank because there are multiple operations on one account at the same time.

C. The product life cycle: At the beginning of the emergence of any banking technology, the demand for it is low due to its alienation from the market, which forces the bank to conduct extensive advertising campaigns to introduce the technology, its advantages, how to use it, and the most important offers presented to customers, and thus technology enters the second phase, which is the phase of recognition. Clients receive technology and its advantages, so the demand for it increases, and thus technology reaches maturity, i.e. in the stage of prosperity, which leads to increased competition, and if the technology does not meet the desires and aspirations, it may witness deterioration, and the reason for this is the emergence of more efficient services, inefficiency. Service providers: defects in the distribution systems (Al-Sumaiday, Yousif, 2005: 245).

METHODS FOR IMPROVING EFFICIENCY

First: Characteristics that must be considered in improving efficiency (Madi, 1999: 79-79)

1. The process of improving efficiency is a permanent and not temporary process, as the stability of efficiency or the achievement of the goals set for efficiency does not mean stopping improvement or development, while the bank achieves the desired goals, there are other banks that work permanently to exceed those rates, work cannot be done. It's a one-time competition, so competition is unforgiving.
2. The process of improving efficiency should not be merely aspirations or intentions. Rather, it must be specific programs that have their goals and their technical, human and financial components.
3. The efficiency improvement program must be comprehensive for all departments and units as well as external parties including customers, suppliers and government agencies.

4. The means and methods of improving efficiency are infinite, the phenomenon of change in efficiency is a complex phenomenon and this is due to many technical and human factors, for example the contribution of research centers, government laws and management methods all of this works, directly or indirectly, to improve efficiency.

Second. Efficiency Improvement Strategies

1. Stability of outputs while reducing inputs: This means reducing the number of untapped inputs, whose abandonment does not have any impact on the volume of achieved outputs, for example the proportion of employment within banks.
2. Increasing outputs with constant inputs: This means directing all administrative, supervisory and control methods to move resources better and prevent losses or reduce their percentage to a minimum. This becomes clear when administrative systems or any change in senior management are introduced in the industrial and service establishments, and the sector. Banking as a service sector, there is a significant impact of the new administration on efficiency and quality by improving the technical and human aspects.
3. Increasing outputs and increasing inputs: Provided that the percentage increase in output is greater than the input, and that depends on expansion and spending, provided that there is a greater compensation for spending, for example when a new system is introduced, it is expected that the inputs will increase with the increase of the capital, so if the bank does not guarantee that If the expected return from the output is more than the input, the efficiency decreases.
4. Reducing outputs and reducing inputs: provided that the reduction of inputs is greater than the reduction of outputs, and this is done by reducing the volume of activity or exiting some activities in which the bank has no competitive advantage and focusing on activities in which the bank achieves better productive efficiency.
5. 5- Increasing the output while reducing the inputs: This method is considered the best strategy as the greatest productivity is achieved with the least amount of inputs, an example of this is the introduction of mechanical technology to replace the human element (Mansouri, Shawwar, 92-93: 2010).

THE IRAQI BANKING SECTOR CHALLENGES AND PROPOSALS

Iraqi Banking Sector Reality



**Figure No. (5)
The Structure of the Iraqi Banking System**

The reality of the Iraqi banking sector and how to advance it:

1. Based on the financial data and indicators issued by the Central Bank of Iraq in 2018, the Iraqi banking sector suffers from weak activity, low liquidity and deposits, revenues and profitability in some banks, especially in private banks, in large proportions compared to previous years, as well as falling stock prices In the Iraqi market for securities due to the economic and financial crisis and the economic recession that the country suffered from.
2. The total deposits with private banks amounted to 14% of the total deposits in the Iraqi banking sector, meaning that the proportion of government banks is 86%, knowing that the number of government banks is (7) while the number of private banks is (69), and the reason for this is due to concentrate government deposits and accounts in government banks.
3. Private banks invest 78% of the capital of the Iraqi banking sector, but it only gets 22% of the sector's assets and 13% of the profits.
4. Bad debts, which cannot be collected, amounted to (1) trillion dinars, which do not constitute 15% of the total bank financing granted, and banks encounter major obstacles in their collection due to judicial, legal and tribal reasons.

5. Not activating the decisions of the Council of Ministers and the Economic Affairs Committee of the Council of Ministers regarding government support for private banks that were issued during the previous years.
6. The inability of private banks to employ excess liquidity in loans and financing for projects in light of bad credit at 15% of the credit portfolio (Naseer, 2020, <http://alsabaah.iq>).
7. The Iraqi banking sector is small and marginal, and its contribution to the national product does not exceed (1.5%), and if the financial sector is added to it, its percentage increases to (1.75%).
8. Most banks maintain high capital adequacy that exceeds the standard ratios of Basel controls (8%) and Central Bank instructions (12%), which reflects the nature of investments, and the preference for investment in low-risk instruments, including treasury transfers, short-term deposits with the central bank, As for the other side of the policy, the reservation in granting bank credit because of the risks to which it is exposed, and thus depriving the national economy of bank credit on the one hand and preventing banks from practicing an activity that brings them profits on the other hand.
9. There is a great discrepancy between the interest rate of the creditor and the debtor, as the interest rates on the creditor range between 1-6%, depending on the different currencies and the maturity period, while the interest on loans and bank facilities ranges between 10-15%, and there is no doubt that the interest rates The high level does not encourage borrowing, which requires addressing if the sector wants to be effective and supportive of its development in the country.
10. The small number of units (branches) according to the number of inhabitants (Mahmoud, 2015, www.m.ahewar.org).
11. The entry of non-bank financial institutions and companies in the field of banking services, so that they compete with the main banks in providing services.
12. There is a great need to raise the capabilities and efficiency of human resources in Iraqi banks in a way that enables them to make optimal use of modern information systems in the banking sector.

The most important reforms required:

1. Liberalizing interest rates and not interfering in the process of allocating credit facilities, leaving the entire matter to the banks in accordance with the applicable banking standards and moving away from the policy of financial restraint.
2. Granting greater independence to the central bank by preventing government interference in its mechanism of operation, as well as stimulating and stimulating the performance of the Iraqi financial market.
3. Increasing competition between banks by opening the way to new banks, whether local or foreign, and developing legislations and laws that limit monopoly.
4. Adopting the preventive control approach by using the best methods necessary to achieve the safety and security of banking assets, and increasing the ability to predict banking crises before they arise, such as adhering to the capital adequacy standard, the ratio of liquidity and reserves, as well as establishing risk management centers and developing a deposit insurance system as in The United States and Britain.
5. Relying on informatics and instant communication, processing data with the required speed, and exploiting the best opportunities in order to enter global markets for competition.
6. The restructuring and rehabilitation of banks by encouraging merger between banks in order to provide diversified and highly efficient services.
7. The creation and development of the stock market (Abdel-Reda, 2012, www.m.ahewar.org).

USING THE CAMELS MODEL IN THE IRAQI BANKING SECTOR

CAMELS System: It is an evaluation system through which it is possible to measure the financial and administrative performance and determine the financial viability of banks through the use of ratios, indicators, policies and institutional procedures. A, management quality (M, profitability E, liquidity L, sensitivity to risk S).

The mechanism of the evaluation system (CAMELS) is by conducting an evaluation in a numerical manner for each bank to be evaluated based on the six criteria, as each element has a rating of (1-5), the first classification is the strongest, and the fifth classification is the weakest and then points are collected until The final classification is reached (Al-Taie, Ali, 2019: 3-4).

CAMELS system elements

Capital Adequacy:

This indicator determines the robustness of financial institutions in facing the shocks that affect the balance sheet items of these institutions, and its importance in taking into account the most important financial risks facing financial institutions, such as the risks of exchange rates, credit and interest rates, and that for the

importance of this indicator, the Basel Committee for Banking Supervision has set the minimum Capital adequacy requirement, known as dividing core capital by risk-weighted assets both on and off the bank's balance sheet. Capital adequacy can be measured according to the law (Al-Taie, Ali, 5: 2019).

$$CAR = Tier1 + Tier2/RWA * 100\%$$

Where:

CAR =Capital Adequacy

Tier1 = Basic Capital

Tier2 = Supporting Capital

RWA = Risk Weighted Assets

Asset Quality

The classification of asset quality shows the size of financial and future risks related to lending, investment portfolio and off-budget activities, as well as the ability of management to identify, measure and control risks. The assessment of the quality of assets must take into account debt provisions and risks that affect the value of investments, such as operational risks and risks. The market and the strategy of compliance with the regulations, which can be measured according to the following law (Al-Taie, Ali, 2018, 5).

$$NPLL R = NPL/L * 100\%$$

Where:

NPLL R= Ratio of bad loans to total loans.

NPL = Bad Loans.

L = Loans

Management quality

In this component, emphasis is placed on the efficiency of the various administrative levels, as well as the extent of compliance with the laws and supervisory instructions, the extent of the integrity of the internal control systems and the commitment of their employees, as well as ensuring the bank's ability to plan and adapt to the emergency changes in the surrounding circumstances in order to maintain the safety of the bank and increase its ability to Growth, calculated according to the law (Al-Taie, Ali, 2018, 5).

$$LDR = L/D * 100\%$$

Where:

LDR: Forgotten Loans to Deposit.

L = Loans

D = Deposits

Profitability

It assesses the ability of the bank's revenues to face losses and supports the adequacy of capital and the time trend of revenues, and the comparison with similar institutions and the extent of reliance on interest rate-sensitive financing and the adequacy of provisions, the degree to which extraordinary items contribute, stock operations and the tax effects on net income. Revenues and comparing them to previous years, and some percentages are calculated, such as the rate of return on assets, the rate of return on shareholders' equity, etc. It is measured according to the law (Al-Taie, Ali, 6: 2019).

$$ROA = NI/TA$$

Where:

ROA: Return on Assets.

NI = Net Income.

TA = total assets.

Liquidity

When assessing liquidity, consideration must be given to the current level of liquidity, as well as the future need for liquidity, as well as the level of liquidity management at banks compared with the size and degree of complexity and size of risks, and in general, the bank's liquidity management must be able to maintain an adequate level of liquidity to meet obligations. The bank in a timely manner, when assessing liquidity, the components are examined represented in the ratio of short-term investments to total assets, the adequacy of liquidity sources, the ratio of financial, future and emergency needs, and the extent of the bank's commitment to the liquidity ratios decided by the monetary authority. Liquidity is defined as the ability to convert assets into cash, as quickly as possible, with minimal loss, and in order for an asset to be considered liquid, two conditions must be met, the first being convertibility into cash and the second reducing the loss to the least possible when converting into cash, and it is calculated according to the following rule (Al-Taie, Ali, 6: 2019):

$$CR = CA/CL * 100\%$$

Where:

CR: circulation ratio.

CA = Liquid Assets

CL = liquid liabilities

Sensitivity of Market Risk.

Reflecting changes in the interest rate, the exchange rate and the prices of securities that negatively affect the financial position of the bank, and in light of the developments in the banking sector, it is necessary to focus on the sensitivity of the structure of assets and liabilities and net profits to adverse changes in interest rates, exchange rates and stocks (Al-Khaqani, Abu Hoon, 9 - 10: 2018), and it can be said that assets that carry fixed interest rates are not affected by market risks, unlike assets with variable interest rates, and are calculated according to the law (Al-Taie, Ali, 7: 2019).

$$GAP = RSAs - RSLs$$

Where:

GAP: the gap

RSAs = Interest Sensitive Assets

RSLs = interest-sensitive liabilities

The cumulative index of banking stability in Iraq has been based on the best international practices in this field, relying on a set of financial ratios appropriate to the nature of the Iraqi banking system. Now some indicators are expected to have a positive relationship with the aggregate index (capital adequacy, profitability, liquidity, Administration). Whereas, the other indicators have an inverse relationship with the financial stability index (asset quality, sensitivity to market risks), these indicators reflect the extent of the integrity of the Iraqi banking system as well as analyzing the level of risks to which the banking system as a whole is exposed.

Table No. (1) Estimates of the Aggregate Index of Banking Stability in Iraq for the Period (2016-2017)

Indicator	Years	
	2016	2017
Aggregate Index	2016	2017
Capital adequacy	0,239	0,268
Asset quality	0,063	0,525
Profitability	0,278	0,854
Liquidity quality	0,822	0,737

For period (2016-2017).

Source: The Central Bank of Iraq / Monetary and Financial Stability Division / Financial Stability Report for 2017.

INDICATOR ANALYSIS

- Capital adequacy index: We note that the capital adequacy index reached (0.063) in 2016, while it reached (0,525) in 2017, meaning an increase in the standard value in 2017 by (833.3%) compared to

2016, which indicates on the very high financial strength of Iraqi banks, and very low risk rates, which affects the banking stability positively and effectively.

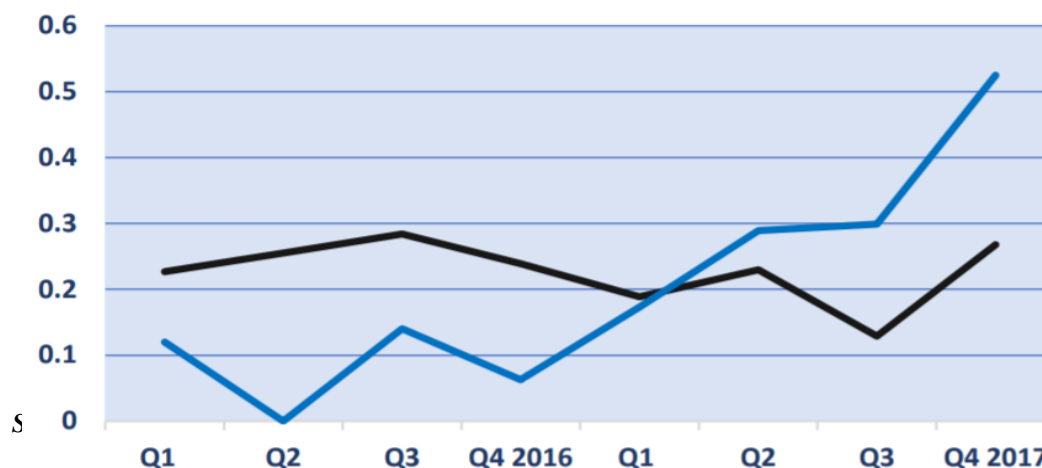
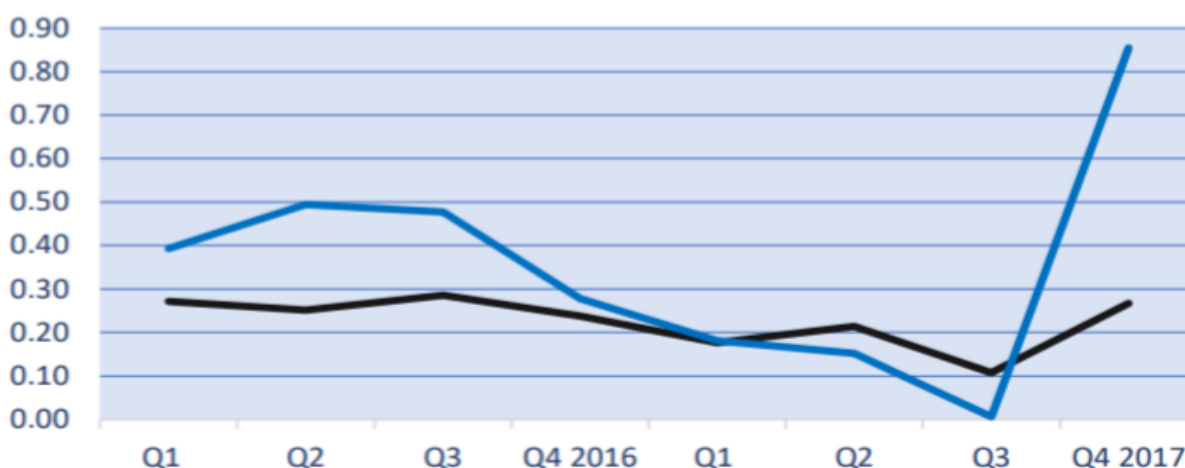


Figure No. (6)
The Standard Value of the Capital Adequacy Index and the Aggregate Index

Figure No. (6) shows that the capital adequacy index recorded the highest high rates during the last quarter of 2017 with a rate of (0.525), which is positive in the efficiency index compared to 2016, as it recorded a percentage of (0.06), and that this increase came as a result of establishing (0,525) 6 New Islamic banks, which led to the increase in capital.

- Asset quality index: According to Table No. (1), the standard value of the asset quality index has increased by a large amount, as it recorded in 2017 a value of (0.85), while in 2016 it amounted to (0.28). Due to an increase in the ratio of bad loans to both capital and total loans during 2017, and that this increase, although it is within the acceptable level, caused a decrease in the value of the composite index of banking stability.

Figure No. (7)
The standard value indicator for asset quality and the aggregate index



Source: Central Bank of Iraq / Department of Monetary and Financial Stability.

- Profitability index: Through Table (1), we note that the standard value of the profitability index decreased during the year 2017 compared to the previous year, and through figure (8), the index recorded a significant decrease during the first quarter of the year, but it witnessed increases until it reached In the last quarter to (0.73), the reason for the increase is due to the decrease in the volume of assets due to the decrease in the other assets paragraph, as a result of the government's settlement and revaluation of assets, and the positive effect of this increase on the aggregate index of banking stability.

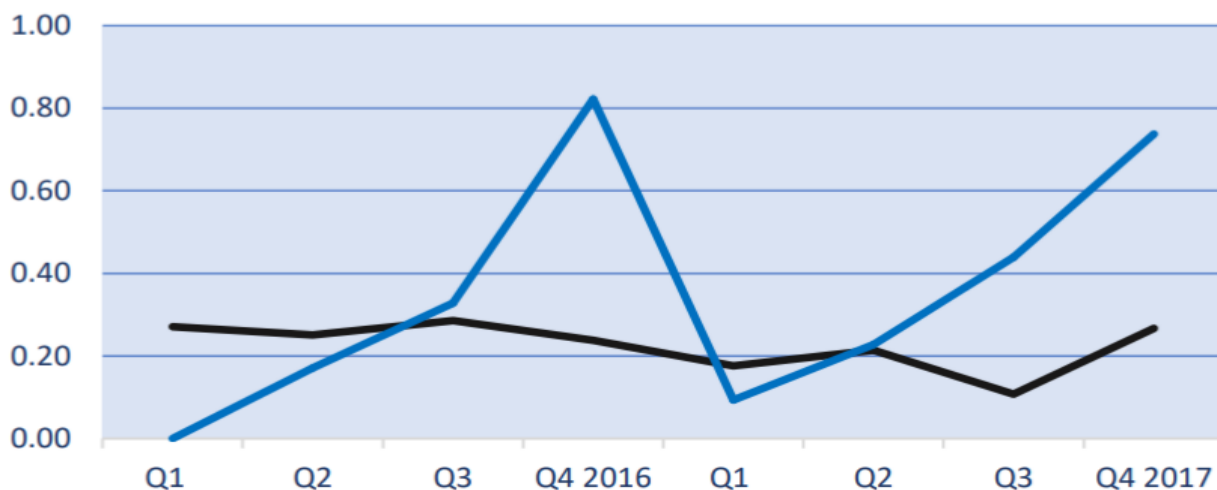


Figure No. (8)

The Standard Value of The Profitability Index and The Aggregate Index

Source: Central Bank of Iraq / Department of Monetary and Financial Stability.

- Liquidity index: The table shows that the value of the liquidity index tends to decrease during 2017 compared to 2016, and the reason is due to the decrease in liquid assets, and in a working way, the liquidity index did not significantly affect the aggregate index.

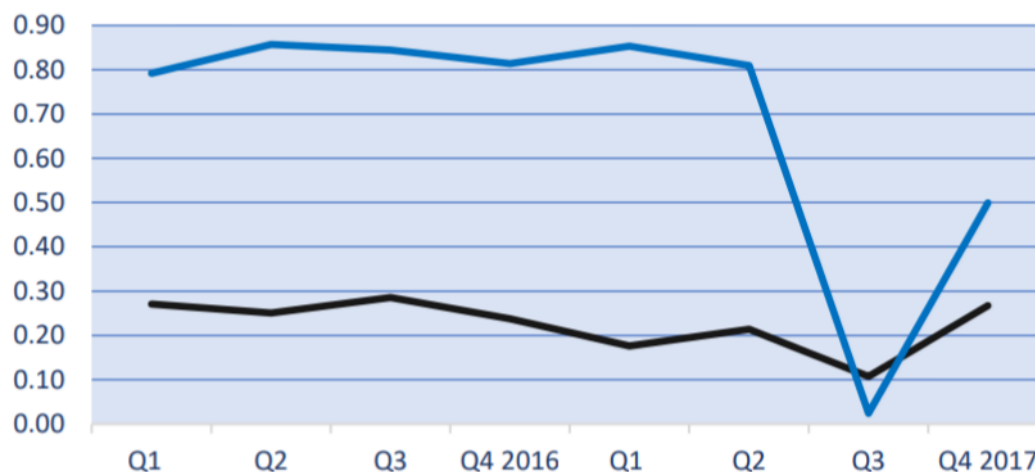


Figure No. (9)

The Standard Value of The Liquidity Index and The Aggregate Index

Source: Central Bank of Iraq / Monetary and Financial Stability Division.

CONCLUSIONS

1. Despite the importance of the process of evaluating banks, but they did not receive sufficient importance in Iraq, which leads to the marginalization of the role of banks in society.
2. Lack of preventive supervision on banks to overcome the obstacles that banks may face, as well as the monopoly of the banking field among a few banks, which leads to the absence of competition.
3. Financial, social and economic in Iraq, the efficiency is almost non-existent in Iraq, although the banking sector has enjoyed stability for several years, but it lacks proper planning and follow-up.
4. The CAMELS banking evaluation system is characterized by acceptability and success as a result of discovering through it the strengths and weaknesses of banks and thus identifying the most important obstacles.

- Through research, we note that in 2017, both the capital adequacy index and the asset quality index witnessed an increase as a result of the establishment of (6) new Islamic banks, in addition to the increase in the ratio of bad loans to capital and total loans.

RECOMMENDATIONS

- Working on developing the banking business, by adopting electronic work and advanced technology to increase the efficiency of banks, as well as the accuracy and speed of work.
- Carrying out extensive advertising and awareness campaigns to attract customers to deal with banks, as well as providing incentives for savings.
- The central bank's tendency to develop indicators of the CAMELS evaluation system and obligate all banks to implement it, because of its role and importance in determining the availability of liquidity and capital at the bank and thus determining the ability to compete.
- Resorting to banking mergers to gain the confidence of customers by increasing the volume of activities provided that will be highly efficient, and choosing the appropriate competencies to manage banks.
- Opening the door to investment for foreign banks in Iraq to improve the banking situation by agreeing to employ a certain percentage of specialists, as well as encouraging local banks to develop their reality to enter the field of competition with these banks.

References

- Abd Moulah, Walid (2011). Efficiency of Arab Banks, Journal of Development Bridge.
- Abdul Redha, Nabil Jaafar (2012). Proposed Policies to Attract Investment in Iraq, (www.m.ahewar.org).
- Al-Hibel, NihadNahedh (2011). Measuring Banking Efficiency Using the Random Cost Limit Model SFA, Journal of the Islamic University for Economic and Management Studies.
- Al-Khaqani, Nuri Abdul-Rasoul and Abu Houneh, Salah Amer (2018). The use of the Camels system in analyzing capital adequacy, profitability and liquidity, a sample of Iraqi banks / Al-Ghari Journal for Economic and Administrative Sciences, volume fifteen, issue (2).
- Al-Sumaida'i, Jasim and Youssef, Othman (2005). Banking Marketing, Quantitative and Analytical Strategic Roller, Amman / Jordan.
- Al-Taie, Muhammad Mahmoud and Ali, Hussam Abbas (2019), Evaluation of Commercial Banks according to the Camels Model in a Comparative Style / Al-Muthanna Journal of Administrative and Economic Sciences.
- Bukhari, Abdelhamid and Saha, Ali (2011). Financial liberalization and the efficiency of banking performance in Algeria / Collector of entries for the second international forum on the distinguished performance of organizations and governments / The growth of institutions and economies between achieving financial performance and the challenges of environmental performance / University of Ouargla, Algeria.
- Jady, Sherifa (2013). Measuring operational efficiency in banking institutions / a sample case study in banks operating in Algeria during the period (2006-2012) PhD thesis / Algeria.
- Jawad, Lamat Abbas (2013). Measuring the efficiency of the offices of the general inspectors using data encirclement analysis, Higher Diploma / University of Baghdad
- Madi, Muhammad Tawfiq (without a year). Production and Operations Management / Egypt.
- Mahmoud, Mowafak Hassan (2015). The Iraqi banking sector, its reality and how to advance it, (www.m.ahewar.org).
- Mansouri, Abdel Karim (2014). Measuring the relative efficiency and its determinants / Algeria.
- Mansouri, Abdul Karim and Chwar, Khairuddin (2010). Attempt to measure the efficiency of commercial banks using DEA / Algeria case study.
- Mirag, Hawari and Faisal, Shiad (2011). Measuring the efficiency of Islamic and conventional banks in Algeria / Algeria.
- Naseer, Samir (2020). Banking sector challenges, ([http: sabaah.iq](http://sabaah.iq)).
- Qureshi, Muhammad Al-Jumai (2006). Measuring economic efficiency in banking institutions / a theoretical and field study of Algerian banks during the period 1994-2003 / PhD thesis, University of Algiers.
- Rice, Hadda and Fatima Zahraa, Noy (2009). Measuring Banking Efficiency Using the Random Cost Model / Case Study of Algerian Banks 2004-2008, Journal of Al-Quds Open University for Research and Studies, Issue (26), Palestine.
- Salami, Somaya (2014). The Impact of Governance on the Operational Efficiency of Islamic Banks, A Case Study of Al-Baraka and Al-Salam Bankers.
- Square, Ali (2011). Measuring the banking efficiency of Algerian private banks in light of financial liberalization / University of Ouargla - Faculty of Economic, Business and Management Sciences / Algeria.
- The Central Bank of Iraq / Monetary and Financial Stability Division / Financial Stability Report for 2017.

Wissam Hussein Ali (2015). Measuring the efficiency of the Iraqi banking sector using the random border analysis model (2007-2011), Western Journal of Economic and Administrative Sciences, Anbar University / Iraq.

Zainab, Swaij Zahra and Fadela, Marah (2016). Measuring banking proficiency using SFA: Study of a sample of banks operating in Algeria for the period (2006-2012), MA thesis / Algeria.

Author Information

Prof. Dr. Naeem Sabah Jearah

University of Basrah, College of Administration and Economics

Qasim Mohammed Dehash

University of Basrah, College of Administration and Economics

Aqeel Abdul-Hussein Odeh

University of Thi-Qar, College of Administration and Economics

Zainab Hussein Ibrahim

University of Basrah, College of Administration and Economics
