

# The Illusion of Financial Stability between Different Concepts and Measurement Methodology: An Applied Study on the Banking Sector in Iraq

**Maha Mezher Mohsin Al-Rubaye<sup>a</sup>**, <sup>a</sup>AL-Mustansiriyah University/ College of Economics and Administration/ Department of Finance and Banking Sciences, Email: [maha\\_alrbaay@uomustansiriyah.edu.iq](mailto:maha_alrbaay@uomustansiriyah.edu.iq)

Financial stability in the banking sector is the way in which various banking risks are dealt with and are ways of avoiding them. The concept of financial stability remains restricted with the indications of those risks and the methods used in managing them. The present study focuses on a new concept which assumes that financial stability does not necessarily mean that banks, the banking system, or the financial sector as a whole are not exposed to risks. It may be in a state of stagnation and not stability, but financial stability is a special case of balance between the basic goals of achieving profits and effective contribution to economic and social development, without prejudice to the work of the mechanisms related to reducing banking risks. An important part of the indicators used reflects stagnation and not stability as the financial stability in the Iraqi banking sector does not reflect a state of stability. It rather denotes a state of apparent stagnation; the banking sector abandons its real role in the effective contribution to development.

**Key words:** *Illusion of financial stability, financial stagnation, financial stability.*

## Introduction

The concept of financial stability in the banking sector is not limited to how to deal with various banking risks and how to avoid them, nor is it limited to the mechanism by which financial crises can be overcome when they occur, but real financial stability is what leads to creating a solid base of procedures and scenarios to deal with all expected threats and opportunities. It also necessarily leads to enabling the financial sector to absorb these crises,

reduce the likelihood of their occurrence, and reduce repercussions and negative impacts to the main components of the local financial sector as well as other commercial sectors. The real financial stability leads to qualify the financial sector to take its real role in making a qualitative leap in building the material pillars of society and encouraging the development process through its ability to attract national savings and distribute them efficiently to productive investment opportunities and various commercial sectors, in a way that contributes effectively to increasing total output to achieve high and sustainable growth rates. This requires a great deal of transparency, corporate governance of financial markets, achieving performance discipline in financial markets, linking macro-economic indicators and banking safety indicators to ensure that payment systems, settlement, and clearing are able to continue in carrying out their function efficiently at a time of crisis.

### **The Problem of the Present Study**

Financial stability does not mean that banks, the banking system, or the financial sector as a whole are not exposed to risks as they may be in a recession and not in stability. But, financial stability is a special case of balance between the basic goals of achieving profits and effective contribution to commercial and social development by directing financial resources to investment opportunities efficiently for continuing to make payments efficiently without prejudice to the work of mechanisms related to reducing bank risks.

### **The Hypotheses**

1. Stability in the financial sector in Iraq denotes a state of stagnation, not stability.
2. The approved measurement tools as main indicators or sub-variables do not really reflect the financial and banking sector in Iraq as the banking sector does not really contribute to building the economy.

### **The Significance of the Present Study**

The value of the present study stems from the focus on a fundamental point, which is the reformulation of concepts related to financial stability as this has an important impact on two aspects:

First, Financial stability in the banking sector is fragile and unreal. It can collapse at any moment if the evaluation continues according to the traditional tools used in measurement and evaluation in light of the major imbalance in the work of the banking and financial sector.

Second, Rearranging the role of the banking sector in development and reconstruction through its social and commercial responsibility.

### **The Duration of the Present Study**

The duration of the present study includes the period from 2013-2018 as this period is full of commercial, social, political, and international changes causing a direct and indirect negative impact on the stability of the financial sector, especially the banking sector.

### **The Framework**

The present study includes three sections. The general framework of the financial sector in Iraq is discussed in section one. Financial stability and related concepts are presented in section two. The applied side of the study, conclusions, and recommendations are presented in section three.

### **Section One: The General Framework of the Financial Sector in Iraq**

#### ***First: The Basic Components of the Financial Sector In Iraq***

The financial sector in Iraq consists of three main components: Financial institutions, financial markets, and infrastructure. Below is a brief presentation of the components of the financial sector.

**1. Financial Institutions:** They are the banking and non-banking financial institutions.

#### **A. Banking Financial Institutions**

They include banks or the banking sector, insurance companies, and securities companies, with an emphasis on the important role that banks play in the national economy as they are "the basis for financial markets to do their work, and without them, these markets cannot transfer money from individuals who have surplus money, to others". They have investment opportunities, (Al-Rifai, 2002: 45). Commercial banks often provide short-term financial resources and working capital for short-term deposits. Commercial banks do not provide funds for various investments as a result of complex administrative procedures in granting credit as well as restrictions imposed by laws relating to the work of banks on specific areas of investment.

## **B. Non-banking financial institutions**

They are the financial institutions that contribute to providing capital, investment and development requirements without practicing comprehensive banking operations. They include (Hovajimian, 1994: 61):

- ❖ Development financing institutions.
- ❖ Contractual savings institutions.
- ❖ Rental companies.
- ❖ Risk capital firms.
- ❖ Investment funds.

## **Financial Markets**

Although financial markets are important tools in the developed economies to continue the process of cash flow in the economy, in the Iraqi economy, they play a marginal role. Financial markets include stock, bonds, capital, and securities markets. Capital markets are among the main channels to finance the establishment of projects and the expansion of investments through first and secondary parts (European Central Bank, 35). Whereas, securities markets are among the "financial markets" in which short-term debt instruments are traded in which the maturity period is less than a year (The United Nations, 1989: 107). These markets provide a way to finance the government deficit without inflation, which is also a source of financial resources for commercial banks and other institutions. Below are the main components of securities markets in Iraq (Al-Rifai, 2003: 43):

- A. The Securities Commission: It is a governmental institution regulating and monitoring the trading activity in securities by issuing instructions and rules and monitoring disclosure in joint-stock companies and brokerage firms in securities.
- B. The Iraq Stock Market: It is a regular market that has economic market characteristics aiming to regulate and control the circulation of issued securities between sellers and buyers in accordance with the rules and instructions of joint stock companies listed on the financial market.
- C. The deposit centre in the Iraq Stock Market.
- D. Stock brokerage firms.
- E. The Clearing and Financial Settlement Bank.

## **Infrastructure**

It includes a set of legal and regulatory frameworks, payment and settlement systems, and clearing and accounting systems. As Iraqi banks work out a set of laws, regulations, procedures, and instructions beside an integrated system of payments.

It is possible to notice that none of these elements can operate independently. The financial system is designed to work as one unit. Each element of the system affects and is affected by the changes that occur in the other elements of the system. The occurrence of any defect in the work of any element of the system or the occurrence of a weakness in the performance of one of these elements is an essential source of instability of the entire financial system. Hence, the efficiency of the financial system is achieved through the ability of the system to deal with crises or problems. The efficiency of the components may increase the efficiency of the system in solving the problems autonomously before moving to the other elements of the system and then to other economic sectors.

### ***Second: The Impact of the Structure of the Financial Sector on Achieving Stability***

Many researchers agree that "the developed financial sector according to the approved international standards, which at the same time depends on quality standards in performance, plays a great role in achieving optimization in the distribution of local savings on investment fields in various economic sectors, especially the ones produced, in a way that contributes to Achieving acceptable and sustainable economic growth rates, which will inevitably lead to an acceptable state of financial stability whose impact will affect economic stability and, at the same time, enhance the ability of the national economy to respond to external crises" (Barrio & Drachmann, 2009). The developed financial community has an active role in providing safer opportunities for employing local savings, which reduces the chances of being affected by external imbalances resulting from the growing domestic resource gap and helps cover the risks of exchange rate fluctuations and interest in a way that supports economic stability.

For the financial sector to play its required role in achieving financial stability, it should have high levels of financial depth and the ability to deal efficiently with financial assets. It also requires that the financial sector be characterised by a true institutional entity operating under a clear legal and regulatory framework consistent with relevant local and global laws. This framework includes effective and sustainable rules and procedures for oversight and supervision that work to raise the ability of the financial system to absorb shocks and reduce the risk accumulation in the most fluctuations vulnerable sub-sectors.

However, it is worth noting that the high levels of financial depth, the sound performance of the financial institutions, the strength of their position and the high levels of profitability in them would enhance the fields of investment and thus increase the rates of economic growth, which is an important element of economic stability. There is a strong correlation between financial stability and economic stability, as the achievement of either of them will increase the opportunities for the other to be achieved. The presence of good monetary and financial policies contributes to raising the efficiency of financial institutions and increases their efficiency in allocation of financial resources (Schinasi, 2004).

The financial sector has three main characteristics that distinguish it from other sectors, making it vulnerable to economic and financial shocks and fluctuations (Arab Monetary Fund, Al-Shazly: 2014):

1. The ease and speed of failure and infection spread among the institutions that make up the financial sector, which may put the entire system at risk, once a disturbance in one of its components occurs.
2. The financial sector is linked to the real sector through a number of channels that convey the impact of financial shocks to the real sector.
3. The possibility of exposure of dealers in this market to the risks of asymmetry of information, which may cause great losses to them as a result of making an investment decision in light of unrealistic and sometimes misleading information.

## **Section Two: Financial Stability and Related Concepts**

When discussing financial stability, researchers always give the concept of financial instability a great deal of interest to create a clearer view of the concept of stability.

### ***First: The Concept of Financial Instability***

Stable financial system increases the efficiency of financial mediation. It directs and employs resources in a sound and fair manner between activities and economic sectors. It raises the effectiveness and efficiency of monetary policies. Therefore, the lack of financial stability is a costly process that may lead to the emergence of financial crises and slow down the economic and financial performance,(Abdulrahman, 2011). Therefore, it may be useful to refer to the state of financial instability first to arrive at the concept of financial stability, as long as the term financial stability is not agreed upon between specialists and the relevant institutions. It is appropriate to address instability from different points of view, as follows:

### **1. The Impact on the Substance of the Financial Sector as an Intermediary**

Since the basic function of the financial sector is to be a financial intermediary through which financial resources flow from capital owners to their applicants to take advantage of possible investment opportunities (Mishkin, 2009), it is natural that the inability of the system to perform its role or function fully and efficiently inevitably leads to financial instability.

### **2. The Ability to Resist Crises**

According to the role that the financial system plays in supporting various economic sectors through its basic function in granting credit and facilitating payment services, the instability is when a financial crisis occurs, during which the financial sector witnesses a major collapse that prevents it from performing payment and settlement services with the required efficiency and the necessary speed of directing credit for productive and effective investment opportunities (Davis, 2002).

### **3. The Impact on the Overall Economy**

The effects of financial instability are classified into two categories; the direct effects on financial institutions and the indirect effects on economic institutions. Therefore, the impact is on the overall variables in the economy, such as inflation, economic growth, and investment. Ferguson asserts that three factors lead to financial instability (Ferguson, 2002):

- A. The deviation of the prices of a group of important financial assets from their real prices in the market, or they decrease more than the expected levels for them.
- B. Distortions in the performance of markets, which make it impossible to obtain credit, or the high cost of obtaining it, whether from domestic or foreign sources.
- C. The sudden deviation and changing of its behaviour, in a manner that exceeds or is less than the absorptive capacity of the economy.

### ***Second: The Concept of Financial Stability***

Generally, financial stability denotes the situation in which there are no threats affecting the performance of the macroeconomics and the performance of the financial sector and other sectors (Chant, 2003: 4).

Particularly, financial stability is the state of balance in which the financial system is able to perform its basic functions; allocating economic resources, balancing risks and settling payments. And continuing to perform these functions appropriately even with some shocks, crises or situations that require major structural changes. Essentially, financial stability is a situation where there are no factors leading to sudden unjustified fluctuations in the prices of financial assets or affecting the ability of financial institutions to meet the contractual obligations (Crockett, 1997).

In addition to the aforementioned concepts of financial instability, it is possible to extract concepts of financial stability through the following views:

### **1. Financial Stability Resulting from the Stability of the System Components**

Financial stability is the achievement of stability in all components of the financial system, starting with the stability of financial markets and related activities (Bloufi, 2009: 110). It is confirmed through the strength and smoothness of all components of the financial system, away from tensions that weaken the functioning of the apparatus and do not reflect negatively on the economy.

### **2. Financial Stability Resulting from Financial Intermediation**

In this sense, financial stability is "the situation in which the institutions of the financial system have a great deal of confidence in their ability to continue to perform the tasks entrusted to them without the need for external assistance. Dealers in the main markets in this system conduct their transactions confidently. Prices reflect the real value of the products. In this system, there is a relative stability of these prices in the short term. The other factors in the economy remain the same, (Crockett, 2008). But, this definition only reflects the state of stability based on financial intermediation. It ignores the role that payment and political systems play.

### **3. Financial Stability Resulting from a Function of the Financial System**

Some researchers assert that financial stability is achieved when the financial sector is able to absorb shocks, maintaining its basic role, allocating savings and directing them to real investment opportunities, and making payments in the economy efficiently (Padoa, 2002). This reflects the trend of analysing the concept of stability in light of the basic functions of the financial system; employment of available financial resources and provision of an efficient payment system capable of settling transactions easily. These functions are the main ingredient of the financial intermediation process. Any disturbance in these functions is negatively reflected on economic activities in general and not on the financial system alone.

### **4. Financial Stability Resulting from Market Stability**

According to this perspective, financial stability can be inferred through the functioning of markets. If markets operate properly according to the principles of full competition, financial institutions operate without difficulty. The stable financial system is flexible and adaptive to fluctuations in the price of assets resulting from conditions of supply and demand, (William & Roberto, 2010: 1). On the other hand, financial instability can be inferred when financial markets are dysfunctional or when institutions become very tense, which is negatively reflected onto business organisations as a result of preventing capital from flowing into new investments.

In light of the aforementioned concepts, it is possible to state that the financial system is stable if it has the following capabilities (IMF, Shinasi 2005: 2):

- A. The efficient distribution of economic resources according to geographic regions, savings and investment, lending and borrowing, creating and distributing liquidity, pricing of assets, and finally, accumulating wealth.
- B. Evaluating, pricing, identifying, and managing financial risks.
- C The continuing ability to perform basic functions even with exposure to external shocks.

In the present study, the concept of financial stability is defined as the positive and dynamic change of the various indicators denoting the performance of the banking sector and the strengthening of variables supporting stability to suit the desired objectives of the banking sector. At the same time, it involves limiting or minimising the negative effects of different variables as a result of the work of the system. As for measurement purposes, the adopted definition is that which indicates that financial stability denotes the situation in which the financial sector is able to hedge against internal and external crises, and direct financial resources to investment opportunities efficiently. It should also continue to make payments efficiently and in time without prejudice to the work of the mechanisms related to reducing the risks associated with the process of granting credit and liquidity or market and operational risks taking into account the proportionality of growth in the values of financial assets with the growth in the real economy and the growth of productive and sustainable employment (Arab Monetary Fund, Ahmed Shafiq Chadli, 2014).

### ***Third: The Concept of Financial Stagnation***

Financial stagnation implies within the framework of a general concept that the organisation preserves an untapped resource. Financial stagnation is the surplus through which the organisation seeks to invest the high current value opportunities (Wang, 2014: 52). In the banking sector, financial stagnation refers to the ability of banks to preserve the surplus liquidity. The surplus liquidity is the difference between the percentage of the bank's surplus liquidity preservation and the acceptable amount of surplus liquidity. It may also be viewed as the surplus liquidity from the minimum use which is classified into three categories (Lewis, 2013: 7):

1. The available financial resources.
2. Expected surplus that may be achieved through external sources.
3. The surplus that results from performing loans.

On the other hand, some researchers state that financial stagnation reflects the additional available resources. A distinction can be made between three levels of financial stagnation. The first level is based on the ease and speed of recovering stagnant resources. The second

level is the distinction between intended and imposed stagnation. The third level is the stagnation that can be absorbed in the bank's activities. There are many effects of financial stagnation.

### **1 .The Positive Effect of Financial Stagnation**

The importance of financial stagnation is emphasised here for the work of the organisation, especially banks, as an essential element in strategic planning, as some researchers emphasise "the need for the organisation to have a planned surplus to meet anticipated threats and invest unexpected opportunities" (Yasir, 2015: 1026). Financial stagnation is an important factor in the risk management system that managers of banks or financial institutions use to reduce uncertainty. High levels of financial stagnation lead to enhance the motivations of managers to gain new opportunities through the investment of existing capabilities, as well as the development of their ability to move freely (Patzelt, 2008: 466).

### **2. The Negative Impact of Financial Stagnation**

The cost of funds deposited with respect to banks may be high to the degree that may lead to a loss or lead to the bankruptcy or collapse of the bank. Wasting the alternative opportunity is represented by not investing the deposited funds and achieving rewarding returns for the organisation.

### ***Fourth: Indicators of Measuring Financial Stagnation***

For the purpose of identifying the tools of measuring financial stagnation, researchers provide some guidance that helps in how to measure financial stagnation despite the challenges of distinguishing between stagnation and liquidity. It is emphasised that the size of financial stagnation reflects the difference between the cash held by the bank and the average cash held by the sector level. Lewis, 2013: 9 and Tom, 2016: 12, focus on measuring the financial stagnation through the division of current assets to current liabilities. The present study adopts three indicators of financial stagnation related to its three aspects (EhrhardtBrigham, 2011: 89). In return, the three aspects of financial stagnation are related to three important indicators (Al-Amiri, 2013), as follows:

#### **1. The Liquidity Indicator**

This indicator is used to measure the bank's ability to pay off its short-term financial liabilities; the size of the financial solvency that it owns. This indicator can be calculated as follows:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liability.}}$$

## 2. The Indebtedness Indicator

This indicator denotes the ability of investors to pay off their debts when they are due, regardless of whether they are long or short-term loans. The indicator can be calculated as follows:

$$\text{Debt ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

## 3. The Profitability Indicator

This indicator measures the ability of investors to generate profits by conducting various operations. It is the most appropriate indicator used by banks to judge the ability of banks to achieve profits through carrying out various activities. This indicator is calculated as follows:

$$\text{ROA} = \text{NI} / \text{TA} \times 100\%$$

**ROA = Return On Asset**

**NI = Net Income**

**TA = Total Asset.**

## Section Three: The Practical Side

### *First: Defining Indicators for Measuring Financial Stability*

To measure financial stability in the banking sector, the recommended method by the Central Bank of Iraq is adopted. Table (1) shows the sub-indicators denoting the mentioned financial ratios, and the variables denoting them

**Table 1:** Financial stability indicators and related variables

<b>Indicators</b>	
<b>Capital adequacy</b>	<b>Capital / risk weighted assets</b>
<b>Liquidity</b>	<b>Liquidity Coverage Ratio (LCR)</b>
	<b>The ratio of stable funding available is NSFR</b>
	<b>Liquid assets / short-term liabilities</b>
	<b>Liquid assets / total deposits</b>
	<b>Liquid assets / total assets</b>
	<b>Cash credit / deposits</b>
<b>Asset quality</b>	<b>Non-performing loans / cash credit</b>
	<b>Non-performing loans / credit</b>
	<b>Non-performing loans / total assets</b>
	<b>Non-performing loans / capital</b>
<b>Revenue and profitability</b>	<b>Return / Asset Ratio</b>
	<b>Return / equity ratio</b>
<b>Foreign exchange risk</b>	<b>Net assets in foreign currency / capital of banks</b>
	<b>Liabilities in foreign currency / total liabilities</b>
<b>Banking concentrations</b>	<b>deposits for Central government and public institutions / total deposits</b>
	<b>Loans for the central government and public institutions / total loans</b>

***Second: The Regulatory, Legal and Normative Indicators used in Monitoring Banks***

For the purpose of identifying the safety and durability of the financial position of the banking sector in Iraq, it is necessary to compare the values of the indicators calculated for the Iraqi banking sector with the legal and normative ratios established by the Central Bank of Iraq as follows (CBI, 2014) :

1. The minimum capital is (250) billion dinars for local banks; (50) million dollars, or the equivalent amount in Iraqi dinars.
2. The minimum capital adequacy ratio is not less than 12%, and this ratio reflects the basic capital to risk-weighted assets.
3. The ratio of loans to deposits is 70%. The ratio of non-performing loans to total loans, and the ratio of banking sector assets to GDP, is calculated according to the provisions of Article 16 of the Banking Law.
4. The ratio of total investment in stocks to capital and sound reserves is 20%.
5. The ratio of total credit granted to capital and sound reserves is 800%.
6. The ratio of total credit concentrations to capital and reserves is 400%, that is, four times the capital.

7. The legal cash reserve ratio is 15% on all bank deposits, whether these are government or private sector deposits, and are kept in full with the Central Bank.
8. The percentage of credit that can be provided to one customer does not exceed 10% of the bank's capital and sound reserves.
9. The percentage of credit that the bank can provide to the customer, its partners, and first degree relatives, is 15% of the capital and reserves.
10. The liquidity ratio is not less than 30%. It can be calculated as follows:  
Liquidity ratio = liquid assets / liquid liabilities x 100
11. The percentage of the provision for overdue debts is calculated according to the credit rating according to Instructions No. 4 of 2010 to facilitate the implementation of the Banking Law No. 4 of 2004.
12. The percentage of decrease in the value of investments is calculated between 2-5% of the investment amount.

### ***Third: The Mechanism of Measuring the Aggregate Index***

In order to determine whether the banking sector in Iraq is stable or stagnant, this requires building a composite index reflecting that situation. Relying on one or more indicators may give an unclear or inaccurate view of the real financial position of the banking system. The composite index is built using the percentages indicated in Table 1, as follows:

1. Defining the variables indicating financial stability indicators. Eleven variables are selected to denote the total activities in the banking sector, as shown in Table (2):
2. Converting the data of the variables to standard values according to the following formula: (Mishra, Verma, and Bose, 2015: 149)

$$Z = \frac{A - \text{Min}}{S.D}$$

In which:

Z = Index value.

A= The original value of the index.

Min= Minimum data value.

S.D = Standard deviation for the data.

The value of the index ranges between (0- ¥). The closer the value is to the zero, the greater the risks facing financial stability. Whereas, the further the value is from the zero, the less are the risks facing the aggregate index.

3. Identifying weights. Equal weights were defined (that is, all sub-variables are of equal importance) to the variables of the indicators mentioned in Table (11).
4. Collecting the weighted normative values to obtain the sub-index values.
5. Calculating the aggregate index of bank stability by calculating the average of the sub indices according to the following equation:

$$BSI = \frac{\sum Z_1 + \sum Z_2 + \sum Z_3 + \sum Z_4 + \sum Z_5 + \sum Z_6}{N} \text{ --- (2)}$$

In which:

BSI = Banking Stability Index.

Z<sub>1</sub>-Z<sub>6</sub> = Sub-Index Values

N = represents the number of variables and the number (11) variable.

#### ***Fourth: Measuring the Aggregate Index of Banking Stability in Iraq***

##### **1. Identifying the Basic Variables of the Financial Stability Indicators**

Table (2) shows the values of the main variables for the indicators of financial stability for the years 2013-2018. The amplitude of the variables is evidence of the impartiality of the measurement. The years 2013-2018 are full of changes, with the most important event being ISIS's control of more than three large Iraqi governorates.

**Table 2:** Sub-indicators of financial stability indicators in the banking sector

indicators	2013	2014	2015	2016	2017	2018
Total capital	19,497,210	19,732,212	20,080,809	20,510,356	19,053,291	20,348,117
Total assets	147,186,682	145,495,504	135,205,839	134,704,618	121,689,609	118,547,540
Total deposits	68,855,487	74,073,336	64,344,061	62,398,733	67,048,631	76,893,927
Liquid assets	137,766,184	151,285,563	145,255,200	142,577,873	139,877,821	132,589,973
Total loans	24,700,569	28,195,535	30,297,202	30,606,578	30,818,242	30,942,347
Non-performing loans	1.990581	2.355345	3.073596	3.340554	4.333334	4.838582
Short-term liabilities	23,574,328	25,755,358	26,444,157	26,616,637	27,809,664	27,901,804
Property rights	14,034,643	16,452,237	14,553,488	14,427,789	19,053,291	22,014,411
Total return	1,473,302	1,227,684	1,048,892	1,123,23	1,322,096	656,464
Foreign liabilities	1,642,248	1,568,645	951,158	895,180	874,005	1,257,700
Foreign assets	22,139,272	27,323,928	15,952,767	12,144,096	11,902,000	16,312,099

**Source:** Central Bank of Iraq, annual bulletins for the years 2013-2018

**2. Calculating The Percentages.** Percentages of the indicator's stability or stagnation are calculated due to the formula mentioned in table (1).

**Table 3:** Percentage of indicators

Indicators	2013	2014	2015	2016	2017	2018
<b>Capital adequacy</b>						
<b>Capital / risk weighted assets</b>	<b>53%</b>	<b>68%</b>	<b>107%</b>	<b>128%</b>	<b>181%</b>	<b>285%</b>
<b>Liquidity</b>	<b>weight of each liquidity indicator = 0.25</b>					
<b>Liquid assets / short-term liabilities</b>	<b>155.3%</b>	<b>150.1%</b>	<b>115.6%</b>	<b>107.7%</b>	<b>119.7%</b>	<b>102.2%</b>
<b>Liquid assets / total deposits</b>	<b>53.2%</b>	<b>52.4%</b>	<b>47.9%</b>	<b>45.9%</b>	<b>44.7%</b>	<b>39.4%</b>
<b>Liquid assets / total assets</b>	<b>24.9%</b>	<b>26.7%</b>	<b>22k6%</b>	<b>21.2%</b>	<b>27.1%</b>	<b>26.8%</b>
<b>Cash credit / deposits</b>	<b>42.6%</b>	<b>45.9%</b>	<b>56.2%</b>	<b>59.6%</b>	<b>56.6%</b>	<b>50.0%</b>
<b>Asset quality</b>	<b>weight of each asset quality index = 0.333</b>					
<b>Non-performing loans / cash credit</b>	<b>6.6%</b>	<b>6.9%</b>	<b>8.3%</b>	<b>10.9%</b>	<b>11.4%</b>	<b>12.6%</b>
<b>Non-performing loans / total assets</b>	<b>1.35%</b>	<b>1.62%</b>	<b>2.27%</b>	<b>1.51%</b>	<b>3.90%</b>	<b>3.95%</b>
<b>Non-performing loans / capital</b>	<b>10.2%</b>	<b>11.9%</b>	<b>15.3%</b>	<b>16.5%</b>	<b>22.6%</b>	<b>23.6%</b>
<b>Revenue and profitability</b>	<b>weight of each profitability index = 0.5</b>					
<b>Return / Asset Ratio</b>	<b>1.01%</b>	<b>0.84%</b>	<b>0.77%</b>	<b>0.89%</b>	<b>1.08%</b>	<b>0.54%</b>
<b>Return / equity ratio</b>	<b>10.1%</b>	<b>7.31%</b>	<b>7.17%</b>	<b>7.78%</b>	<b>6.84%</b>	<b>2.98%</b>
<b>Foreign exchange risk</b>	<b>0.289</b>	<b>0.312</b>	<b>0.321</b>	<b>0.343</b>	<b>0.341</b>	<b>0.595</b>
<b>Banking concentrations</b>	<b>0.743</b>	<b>0.732</b>	<b>0.663</b>	<b>0.618</b>	<b>0.338</b>	<b>0.595</b>

**Source:** The data presented in Table (2)

### 3. Transforming the Data of the Variables into Index Values

Applying the previous formula, (1), giving equal index weights for all the variables, and applying the formula (2), the result is the achievement of the sub- indicators and the aggregate index from 2013- 2018.

**Table 4:** Sub-indices and aggregate index values

Indicators	2013	2014	2015	2016	2017	2018
Capital adequacy	0.395	0.437	0.381	0.463	0.437	0.650
Liquidity quality	0.398	0.533	0.633	0.814	0.232	0.109
Asset quality	1.823	1.837	1.366	1.278	1.177	1.315
Profitability	0.838	0.959	0.546	0.822	0.786	0.476
Foreign exchange risk	0.229	0.724	0.636	0.403	0.341	0.599
Banking concentrations	0.743	0.732	0.663	0.618	0.338	0.595
Aggregate indicator	0.212	0.213	0.132	0.239	0.301	0.340

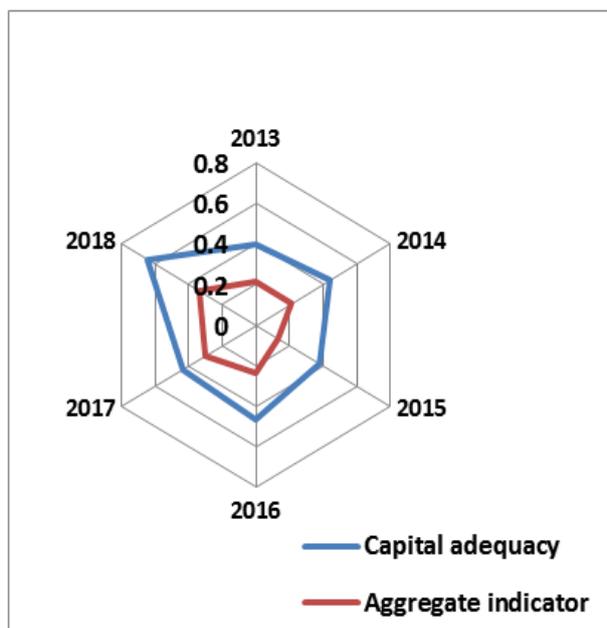
Source: Data in the table (3)

#### 4. Analysing the Results

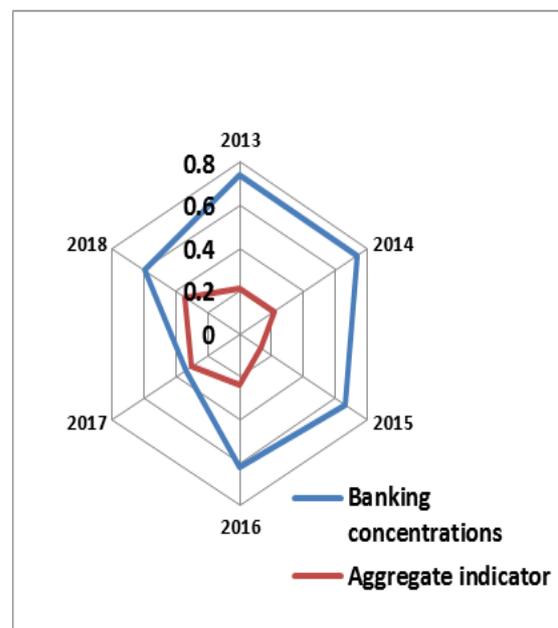
Table (4) shows the continuous rise in the aggregate index values over the years 2013-2018. This indicates a noticeable increase in the banking stability index. Thus, the banking system is not expected to suffer from crises in the short term.

Figures (1-4) show that the reason for the rise in the banking stability index is the rise in both the index, capital adequacy, foreign exchange risk, as well as the risk index of banking concentrations. The rise in both the capital adequacy index and banking concentrations index reflects a lower risk situation. Whereas, the high foreign exchange risk index reflects the high risk situation. It is also noted from Figure (3) that the banking stability index is inversely proportional to the asset quality index. This may indicate a state of stagnation, not stability.

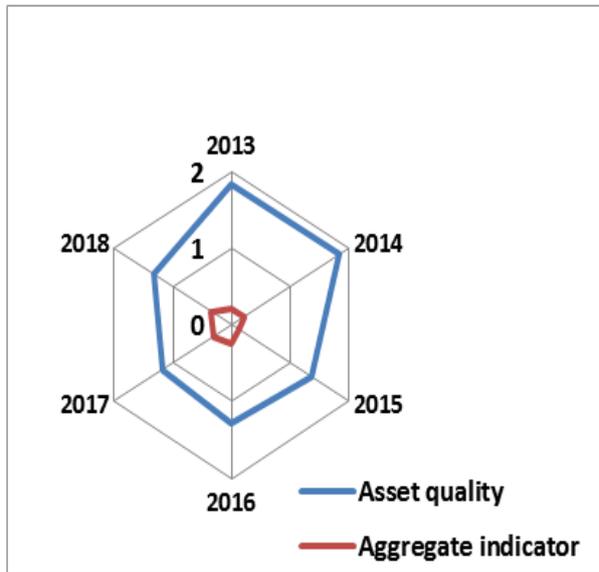
**Figure 1.** Effect of capital adequacy on the aggregate index



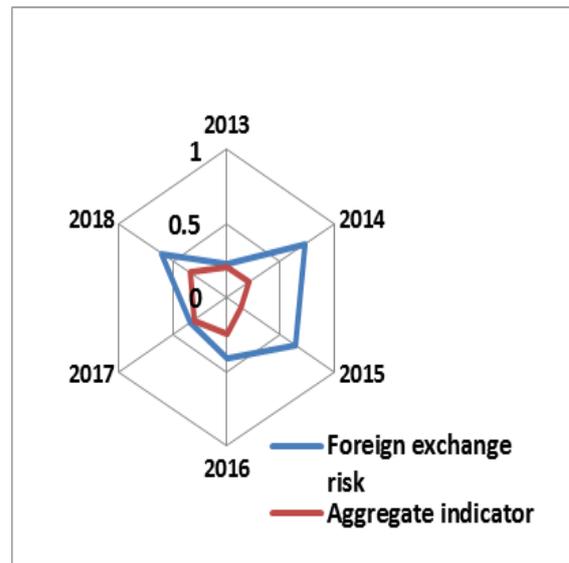
**Figure 2.** Effect of banking concentrations on the aggregate index



**Figure 3.** Effect of asset quality on the aggregate index



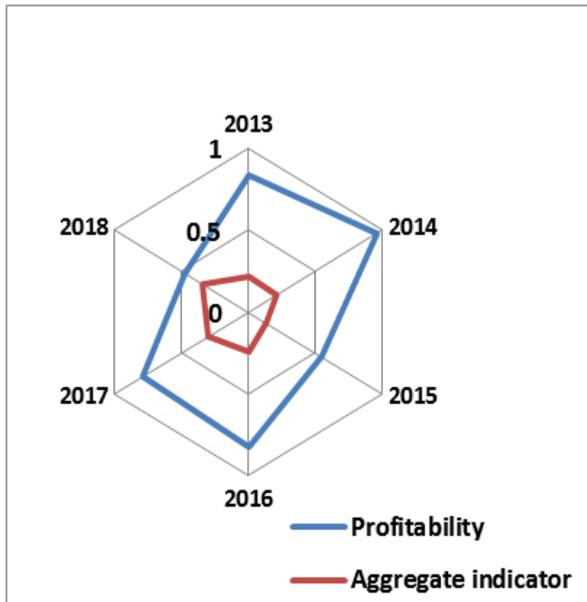
**Figure 4.** Effect of foreign exchange risk on the aggregate index



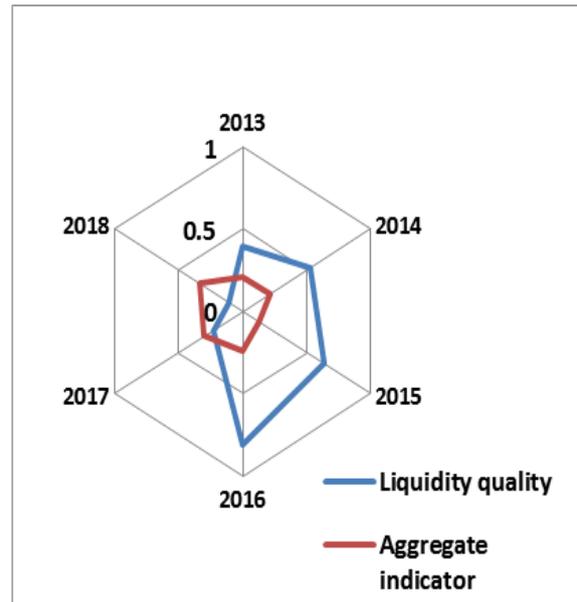
The management of assets and liabilities aims to maximise the degree of compatibility and correlation between the two variables (profitability and risk) which are two elements that are essential when making any decision in the bank. Every bank has a benefit function that reflects its preferences related to profitability and risk. Every compatibility between assets and liabilities generates a certain rate of profitability and exposes it to a certain level of risk. Therefore, there is a significant rise in the asset quality index, which indicates a clear and real fact that banks chose not to engage in risk at the expense of achieving profits, which is a default in the structure of the bank and the real purpose of its work.

On the other hand, the profitability and liquidity indices show a noticeable decrease, especially in the year 2018. This decrease is in a little part due to the low rates of its contribution in building the aggregate index. The low profitability indicates a decrease in banking activity and weak banks' contribution to supporting economic growth. The profitability index is one of the indicators of financial stagnation. The liquidity index reflects a state of instability. The reason for this is that the liquid assets only cover a small percentage of short-term liabilities that do not exceed 46%. Therefore, the liquidity with the banks may not be sufficient to face any potential financial crises.

**Figure 5.** Effect of profitability on the aggregate index



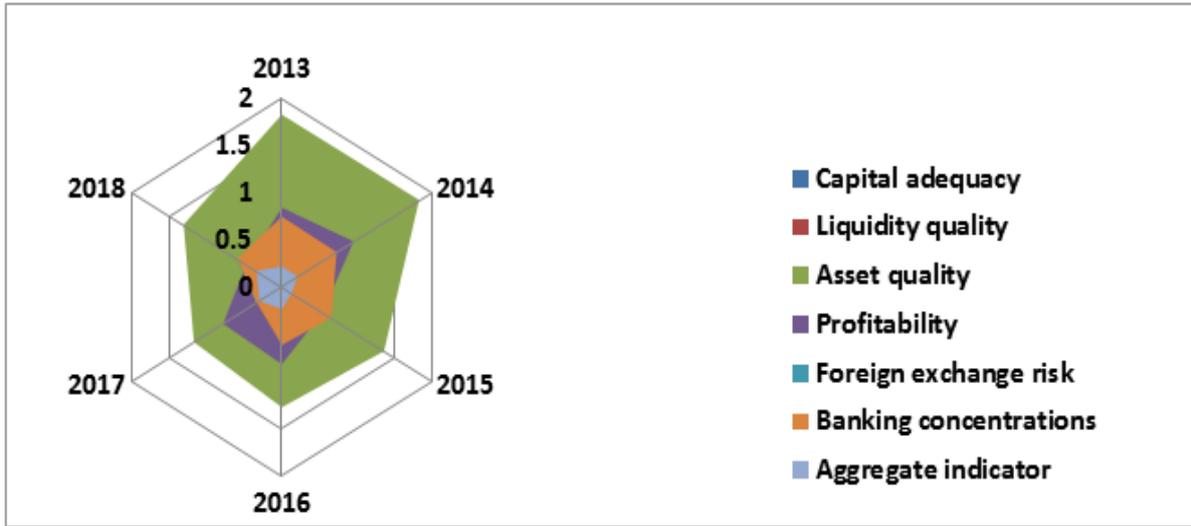
**Figure 6.** Effect of liquidity quality on the aggregate index



It is clear from the foregoing that the signs of financial stagnation are clear on the financial sector, as some indicators did not record any relationship with the aggregate index such as capital adequacy and banking concentrations, while the asset quality index had an inverse relationship with the financial stability index. This is especially so if we know that the quality of the assets constitute the cornerstone of the level of credibility of the capital rates, since most of the risks of financial insolvency in financial institutions often result from the quality of the assets, or the difficulties of converting them into liquidity when needed.

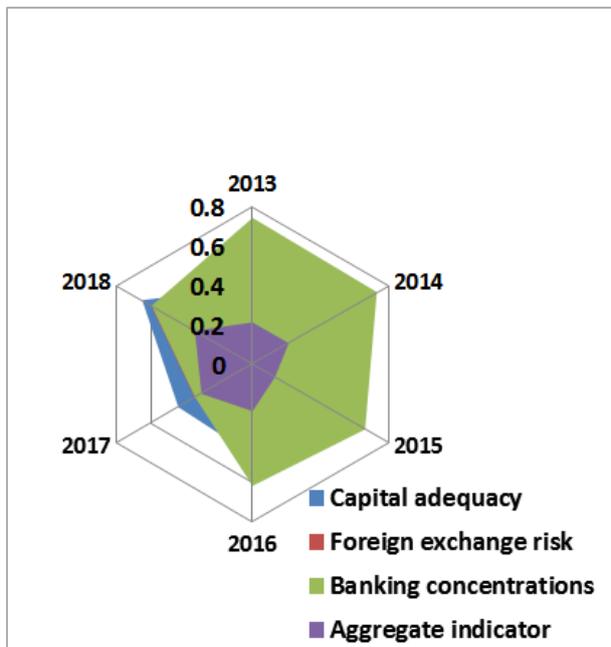
Figure (7) shows the status of financial stability indicators in the banking sector and their relationship to the aggregate index, as the effect of the asset quality index is shown, as we mentioned on the aggregate index values.

**Figure 7.** The relationship between stability indicators and the aggregate index



It is clear from Figure (8) and Figure (9) that the aggregate indicator of financial stability is greatly affected when separating stability indicators from recession indicators, and that the state of the banking system in Iraq is the closest to recession as opposed to stability, if we take into account the significant impact of financial recession indicators on the aggregate indicator.

**Figure 8.** Effect of stability indicators on the aggregate index



**Figure 9.** Effect of recession indicators on the aggregate index



## Conclusions and Recommendations

### *Conclusions*

1. The four liquidity indicators; liquid assets to short-term liabilities, liquid assets to total deposits, liquid assets to total assets and cash credit to deposits indicate that the banking system in Iraq has a high liquidity ratio that grants it protection from crises or unforeseen risks.
2. The capital adequacy of the banking sector is much greater than the legal rate of 12%. This is due to the fact that banks, especially private banks, do not grant credit. The result is high liquidity that exceeds the standard ratio of 30%,. This indicates that there are frozen financial resources without credit and safe investment opportunities.
3. The indicators related to the quality of the assets reflect the magnitude of the assets of the banking system. Although their rise may appear to be reflected in the durability and safety of the banking system, a lot of literature and many experiences indicate that the asset quality index exceeds the barrier of (10%) that may herald a banking crisis. Expected is, not a level of instability but rather a financial stagnation.
4. The continuous increase over the years 2013-2018 in the ratio of non-performing loans to assets gives a clear indication of the gravity of the situation in banking institutions and their impact in the financial stability indicator, which is apparent in government banks as a result of the large size of their loans and the machine of the size of their capital, so as to exacerbate that ratio in the banks' budgets may give an indication of the existence of a risk.
5. The return on assets index indicates a decrease in bank profits. The reason for this is the large increase in the assets of banks which leads to a decrease in the percentage of profits, and a decrease in net income due to lack of investments and reluctance to grant credit.
6. The decrease in the rate of return on the rights of owners over the years 2013-2018, which indicates a decrease in the profits of banks as a result of the decrease in returns for investors with capital, as it reflects the inefficiency of banks and their failure to generate profits from each unit of the owners' rights due to lower income value and higher asset value.
7. The financial stability map of the banking sector in Iraq indicates that the banking sector has a state of stability despite the fluctuations suffered by the components of banking stability during the period (2013-2018). This indicates that the banking system is not exposed to crises in the short term.
8. The rise in the financial stability index is a direct result of the rise in capital adequacy index, the banking concentrations index, the foreign exchange risk index and the asset quality index. The first and second indicators reflect a higher risk. Whereas, the rise of the other two indicators reflects a state of risk reaction.
- 9-. The rise in foreign exchange risk indicates a state of instability for the years 2014-2016 due to the decline in oil prices and the deterioration in the security situation, while the

relative decrease in foreign exchange risk reflects the relative improvement in the security situation and high oil prices.

### ***Second: Recommendations***

- 1- Urging the banks, especially those eligible, to expand the granting of credit, through two aspects. The first is to amend the legal legislations that guarantee bank investment in areas previously restricted by the Iraqi Banking Law of 2004, the most important of which is investment in the housing sector, and the adoption of new standards in the calculation of liquidity indicators.
- 2- The need for the bank to have approved policies and clear procedures to manage its liquidity and perform stress tests (by assuming certain scenarios related to a sudden rise in the bank's obligations and testing the bank's ability to meet its obligations. As the bank's possession of an appropriate level of liquidity remains the challenge, there is a great deal in front of the banks' administration, because it will face a trade-off between profitability and liquidity.
- 3- Classifying banks according to the criteria of social responsibility that reflect the extent of the bank's contribution to economic and social development at the level of the surrounding environment or its dealers or the country as a whole, and then adopting this classification in the various support operations provided by the central bank to other banks.
- 4- Directing the banks, performed by the central bank, to the sound management of liquidity, which takes into consideration the compatibility between the deadlines and uses of financing sources, and not relying on volatile and short-term financing sources to finance long-term assets.
- 5- Setting a mechanism adopted by the Central Bank to deal with non-performing loans, as required by the various supervisory authorities, to give this topic a contract, in terms of security, to avoid any potential failure in the future.
- 6- Reconsidering the financial stability indicators of the banking system in a manner that is commensurate with the activities, activities and the surrounding environment to reflect the reality of the current situation of the banking system taking into consideration the use of electronic payment systems in the settlement processes that were adopted by most banks in Iraq.

## REFERENCES

- Al-Amry, M (2013) "Modern Financial Management", first edition, Wael House for Publishing and Distribution, Amman, Jordan.
- Al-Shazly,A (2014) Arab Monetary Fund, The General Framework of Financial Stability and the Role of Central Banks in Achieving it.
- Chant, J. "Financial Stability As a Policy Goal," in Essays on Financial Stability, Bank of Canada Technical Report No. 95, Ottawa, September.
- Claudio B.& Mathias D(2009),“Towards an operational framework for financial stability: fuzzy measurement and its consequences ”,BIS Working Papers No 284 Monetary & Eco. Dept. June.
- Crochett, (2008) “Why is Financial Stability a Goal of Public Policy” Federal Reserve Bank of Kansas City, August, pp. 55-96. From Abayomi A. Alawode, & Mohammed Al Sadek, “What is Financial Stability?”, Bank of Bahrain Financial Stability Paper Series No. 1/March.
- Crockett, Andrew, “The Theory and Practice of Financial Stability,” GEI Newsletter Issue No. 6 (United Kingdom: Gonville and Caius College Cambridge), 11–12 July 1997
- Davis, Philip, “A Typology of Financial Instability”, Financial Stability Report2 (Vienna: Österreichische National bibliotheca), June 2002.
- Deutsche Bundes bank, “Report on the Stability of the German Financial System, “Monthly Report, Frankfurt, December. 2003.
- Ehrhardt , Michael .C & Brigham , Eugene . F , 2011 " *Financial Management: Theory and Practice* " Thirteen Edition , by South-Western, a part of Cengage Learning.
- Ferguson, R. “Should Financial Stability Be An Explicit Central Bank Objective?”, Federal Reserve Board, Washington, Sept. 2002.
- Garry J. Schinasi, “Defining Financial Stability ”,IMF Working Paper WP/04/187, October 2004.
- Ghaleb Awad Al-Rifa’i, Abdul Hafeez Bal-Arabi, “The Economics of Money and Banking, Part One, First Edition, Wael House for Publishing and Distribution, Amman, Jordan, 2002.
- Ghazi Shinasi (2005), Maintaining Financial Stability, Economic Issues, 36 IMF, September.



- Hovajimian A,(1994) “The Role of Financial Institutions in Facilitating Investment and Capital Flows,” Research of a symposium (Financial Policies and Arab Capital Markets), edited by: Saeed Al-Najjar, Arab Monetary Fund, Abu Dhabi.
- Lewis, Tony ,2013"A Review and Analysis of the Effects of Financial Slack on Firm Innovation" Dissertation, University of Wisconsin–Milwaukee.
- Mahdi B, (2009) Islamic banks and financial reporting (analytical and experimental) Discussion of a working paper issued by the International Monetary Fund, Center for Islamic Economic Research, King Abdulaziz University, Jeddah, No. 2.
- Mishkin, Frederick (2019) “Global Financial Instability: Framework, Events, Issues,” Journal of Economic Perspectives, Vol. 13, No.2,133-143.
- OECD, (2008), Handbook on Constructing Composite Indicators Methodology and User Guide, Organisation for Economic Co-Operation and Development.
- Padoa-Schioppa, T., “Central Banks and Financial Stability: Exploring a Land in Between”, paper presented on the Second ECB Central Banking Conference, Frankfurt am Main, 24-25 October 2002.
- Patzelt . H , Shepherd. D, Deeds .D , Bradley. S,2008" Financial slack and venture managers' decisions to seek a new alliance" Journal of Business Venturing 23 .
- Rabi Mishra, Puneet Verma, and Sanket Bose (2015), Operationalizing Financial Inclusion Index as a Policy Lever: Uttar Pradesh (in India)- A Case Study, Journal of Mathematics and Statistical Science,Vol.1, Issue 4, 133-145.
- Tom D. de Boer, 2016 "The influence of slack resources on the financial performance of ambidextrous firms", Thesis, Utrecht university.
- Wang, Jie ,2014 "Research on the Influence of Financial Slack on Investment Based on Empirical Analysis of China’s A-Share Listed Company in Manufacturing Industry "International Journal of Business Administration Vol. 5, No. 4, 101-120.
- William. R., Roberto.(2010). "Selected Indicators of Financial Stability" Journal of Fixed Income, vol. 13, No.5, 109-125.
- Yasir. F, Belal .B, Said. E , 2015 "The mediating role of the extensiveness of strategic planning on the relationship between slack resources and organisational performance" Management Decision, Vol. 53, No.2, 106-135.