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Introduction

The policy of the Central Bank of Iraq (CBI) is characterized by adopting a variety set of measures aimed at supporting the stability of the value of the national currency. These measures are based on the continuous regulation of monetary policy with the aim of achieving monetary and financial stability in the country by managing money supply in a controlled manner and pursuit to reduce fluctuations of the Iraqi dinar exchange rate, with a positive impact on the general level of prices. These ongoing steps seek to enhance confidence in the economy and achieve a stable financial and monetary environment for citizens and businesses alike.

Financial Stability Report 2022 reflects CBI's commitment to achieve financial and economic progress by improving financial infrastructure, promoting financial inclusion, and digital transformation, that contributes to building confidence in the financial sector and enhancing its sustainability in Iraq. The report shows development and growth in Iraqi banking sector on all aspects, reflecting efforts to enhance monetary, financial and economic stability in the country. Providing accurate information and data about the Iraqi financial sector helps decision makers and investors in various economic sectors to make appropriate decisions. CBI issues several periodic reports related to economic and financial developments taking place in the country, which indicates its commitment to provide the necessary information to support decision-making processes. Financial stability plays an essential role in achieving economic development. Therefore, CBI has dedicated a special and periodic issue that addresses the issue of financial stability in the Republic of Iraq that reflects the focus on enhancing financial stability as an essential part of its strategy to achieve sustainable and stable economic growth in the country.

Financial stability report aims to study the stability of the financial system and convey a comprehensive vision of the financial and banking situation in the Republic of Iraq. It provides a comprehensive summary of CBI activities to support financial stability, develop the financial infrastructure, and enhance the components of economic growth in a transparent manner. The report contains several chapters covering a range of topics related to financial and economic stability in the country. This report represents an important tool for analysis and evaluation, as it provides an overview on the financial and banking system conditions and helps to understand fiscal and monetary policy trends and the challenges facing the country in this context.

God grants success...

**Ali M. Ismaiel
Governor
Central Bank of Iraq**

Summary

CBI has taken a set of measures to maintain the integrity of the banking and non-banking financial system, stabilize Iraqi dinar exchange rate, maintain the strength of the domestic currency, enhance financial inclusion, and adopt electronic payment mechanisms to facilitate and accelerate the settlement of financial transactions at the level of public institutions and private sector, which aims to reduce cash transactions. These measures contributed significantly to achieve financial stability, which had a positive impact on economic stability and enhanced the development path. These efforts also reflect the CBI's directives towards achieving strong financial stability, which enriched the process of formulating monetary policies and pushed its efforts towards achieving sustainable financial stability.

Iraq Under Some International Indicators

Global Developments

The increased geopolitical tensions, such as the outbreak of the Russian-Ukrainian war, led to disruption of global economy growth, recording a decline of its growth rate by (3.4%) in 2022 compared to the previous year's growth rate of (6.1%), which negatively affected cross-border investments, asset prices, payment systems, and the ability of banks to lending, which increased financial stability risks. While the Middle East and Central Asia countries achieved faster growth, driven by China's recovery from the pandemic and strong demand from India, which recorded a growth rate of (5.3%) in 2022 against (4.6%) for the previous year. In light of the current economic and political conditions, the US Federal Reserve and European Union banks worked to raise interest rates with the aim of reducing high inflation rates, because of the reflection of energy price fluctuations that led to high levels of inflation and a negative impact on national economies. Particularly, to meet the basic needs of household sector. As the impact of Covid-19 pandemic subsided and economic activity returned, oil prices recorded an increase of (100.1) US\$ /barrel, with an increase of (43.2%) in 2022 compared to the previous year as the average price of an oil barrel reached (69.9) US\$ /barrel, with feasible increase in Global demand and supply for oil by (2.9%) and (5.3%).

On the other hand, inflationary developments were reflected on an increase of systemic risks of the banking sector, which in turn generated mistrust in this sector, so in 2022 the Federal Reserve Bank decided to raise the interest rate on bonds to varied degrees to influence the size of the monetary mass. The short-term interest rate on bonds reached (4.7%) in 2022 compared to (0.4%) in 2021, while the long

and medium-term interest rates reached (3.8%) and (4.0%) against (1.5%) and (1.3%) in 2021. Iraq witnessed an improvement in some global indicators for 2021 and 2022, including “Transparency and Anti-Corruption Index”, as it ranked (14) in the Arab world and (157) globally, with a score of (23) out of (180) countries due to the state’s remarkable progress in strengthening the regulatory and legislative system. Iraq also witnessed an improvement in “Human Development Index”, as its ranking rose from (132) out of (187) countries included in the report of 2011 to (121) out of (191) countries included in the report of 2022 with a score of (0.686).

Developments of Banking Sector in Iraq

An increase in total assets of the banking sector was recorded to reach IQD (198.6) trillion in 2022, compared to IQD (159.4) trillion in 2021, which represents a growth of (24.6%). Stats-owned banks (SOBs) still occupy the largest share of total assets of the banking sector, as they increased by (81.3%) in 2022 to reach IQD (161.5) trillion.

In addition, total capital of the banking sector increased to IQD (17.87) trillion in 2022, with a slight growth rate of (0.19%). Total deposits of the Iraqi banking sector also increased from IQD (96.07) trillion in 2021 to IQD (129) trillion in 2022, with a growth rate of (34.28%), due to a significant increase of total current deposits, which reached IQD (102.2) trillion with a growth rate of (45.5%) in 2022. Total overall credit of the banking sector has been significantly influenced by the CBI’s initiatives to finance various private sector activities. An increase of total overall credit was recorded; from IQD (80.6) trillion in 2021 to IQD (90.5) trillion in 2022, with a growth of (12.4%) during this period. The largest increase occurred in total cash credit, as it rose from IQD (52.97) trillion in 2021 to IQD (60.57) trillion in 2022, achieving a growth of (14.34%). It indicates CBI’s role in supporting and stimulating banking finance for various private sector activities.

Total overall credit extended to public and private sectors relative to total overall credit of the banking sector reached (48.01%) and (51.99%), respectively, in 2022.

The non-banking financial sector has achieved a remarkable progress in a number of its institutions in Iraq, as Iraqi Stock Exchange indices rose. In 2022, the market index (ISX60) reached (585) points compared to (569) points in 2021. Out of a total of (103) companies registered at the market, (93) Iraqi joint stock companies participated in trading. As (564) billion shares were traded, with a value of IQD (521) billion; and they recorded a decrease of (35.8%) in 2022. The number of executed contracts increased from (114,467) contracts in 2021 to (135,597) contracts in 2022, with a growth rate of (18.45%). This growth in trading contracts indicates the important role that the Iraqi stock market plays in supporting economic activity in the country.

Financial Soundness Indicators

Financial soundness indicators (FSIs) are considered one of the most important measures to monitor the financial situation of the banking sector, as they contribute to analyze weaknesses in the financial systems and provide an estimate of the stability of the sector in Iraq. These indicators indicate the stability of the banking sector, despite the decrease of capital adequacy ratio to (34.1%) in 2022 compared to the previous year (52.1%), but this decrease does not pose a risk to the banking sector since it still exceeds the ratio specified by CBI of (12.5%) under Basel standards.

Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) indicators had risen in 2022. Liquidity Coverage Ratio (LCR) reached its peak in Q1 2022 of (261%), which exceeds the minimum requirement of (100%); it shows the ability of banks to deal with risks associated with liquidity. (NSFR) ratio rose in Q4 2022 of (207%), which indicates that banks have available financing that exceeds their requirements that allows them to finance their assets according to the available sources of funds.

On the other hand, “asset quality indicator” recorded a remarkable improvement, as the ratio of overdue debts to cash credit decreased from (8.81%) in 2021 to (7.19%) in 2022. Also, the ratio of overdue debts to total assets decreased from (2.93%) to (2.19%) during the same period. These ratios reflect the volume of banking sector assets, as well as their decline compared to capital.

Household Sector Indebtedness

Household sector is characterized by a low level of indebtedness, which reduces the risk of financial crises. Indicators such as the ratio of household sector debts to GDP show that the increase of GDP was greater than the increase of credit provided to the sector, indicating stability and balance of the sector, which shows a synergy between economic growth and debt.

Ratio of credit provided to household sector to individuals' income reflects the gradual increase of support for individuals' income through monetary policy. Regarding sustainable financing, the rate of credit provided to household sector had witnessed a relative decline, which indicate that the sector depends on credit provided by private sector.

Aggregate Index of Financial Stability

Aggregate index of financial stability in Iraq recorded an increase to reach (0.398) in 2022 compared to the previous year, which reached (0.339). This rise indicates

relative stability in the country's financial situation. Some stability indicators recorded an improvement, as banking sector index increased from (0.168) to (0.205) between 2021 and 2022, capital market index witnessed an increase from (0.016) to (0.069) in 2022, and macroeconomic and global indices were affected by changes of inflation and growth.

Macro Stress Tests

The results of the macro stress tests for the Iraqi economy are analyzed according to the expectations of several scenarios as a result of negative shocks of real GDP growth rate, global oil prices, government spending, and internal public debt. Also, to its reflection on the ratio of private sector's non-performing loans to total cash credit provided to private sector.

If GDP growth rate declined, ratio of non-performing loans increases as the severity of the negative shock increases. The decline of global oil prices also leads to an increase of this ratio. In addition, negative shocks in government spending and the growth rate of internal public debt led to an increase of the ratio of private sector non-performing loans compared to total cash credit.

In general, test analysis shows how these factors affect the sustainability and stability of the Iraqi economy, and how these shocks can lead to changes in non-performing loan ratio, and in turn, they can affect private sector and public economy.

Developments of Financial Infrastructure

Developments of financial infrastructure play an essential role in improving financial operations via electronic systems. This structure includes technical & programming elements and networks that support payments, financial transfers, electronic banking, e-commerce, and modern financial activities. CBI contributed to enhance cybersecurity by adopting modern protection systems and develop the technical and human capabilities of the banking sector. It also encouraged international cooperation to combat cyber threats in order to protect data, information, and ensure the continuity of digital services, privacy, and confidentiality.

Payment systems were also improved by launching an electronic platform for letters of guarantee and developing an Anti-Money Laundering (AML) system to monitor financial movements and detect suspicious movements. A quick payment system was also created to facilitate instant transfers between banks. The gross settlement system was developed, and the Arab Regional Payment System (BUNA) platform is operated, as CBI's efforts to develop this structure aim to improve the efficiency of financial systems and enhance cybersecurity in order to support financial institutions and enhance financial stability in the country.

Financial Inclusion

CBI contributed significantly to enhance financial inclusion through initiatives, such as “Mashreq” Project for women’s economic empowerment, by developing financial inclusion indicators based on gender and circulating them to banks and financial service providers. These initiatives aim to improve financial inclusion in a sustainable manner, develop banking sector, and increase financial services available to individuals and companies. Through its various projects, CBI contributed to increase number of bank accounts, electronic wallets, and electronic cards. Due to its initiatives to support large, medium & small enterprises (SMEs) and the inclusion of salaries in the banking system, economic development was enhanced, and job opportunities were provided, which led to an increase of financial inclusion index. There has been a significant increase in the number of ATMs, payment devices, and points of sale POS in Iraq, which contributed to facilitate financial services and electronic payments. Value of aggregate index of financial inclusion also rose clearly, which reflects the success of the CBI’s strategies in stimulating financial inclusion and increasing the use of electronic payment.

1- Iraq Under Some International Indicators and Repercussions of Global Developments

1- Iraq Under Some International Indicators and Repercussions of Global Developments

1-1 Iraq Under Some International Indicators

Many international organizations, including Transparency International Organization and the World Bank (WB) are preparing the most critical indicators that have a significant impact to convey an image on the nature of each country's regulatory frameworks, laws and legislations. As well as the nature of institutional work to arrange for each country to successfully develop those indicators, as they have direct and indirect impact on the economy and, in turn, on the financial stability in those countries. CBI is keen to support transparency in dealing with facts in its field of work and to inform the public about conditions governing the nature of the Iraqi economy. As well as those conditions that affect, in one way or another, financial and monetary indicators, including financial stability indicators.

Among most important indicators are the following:

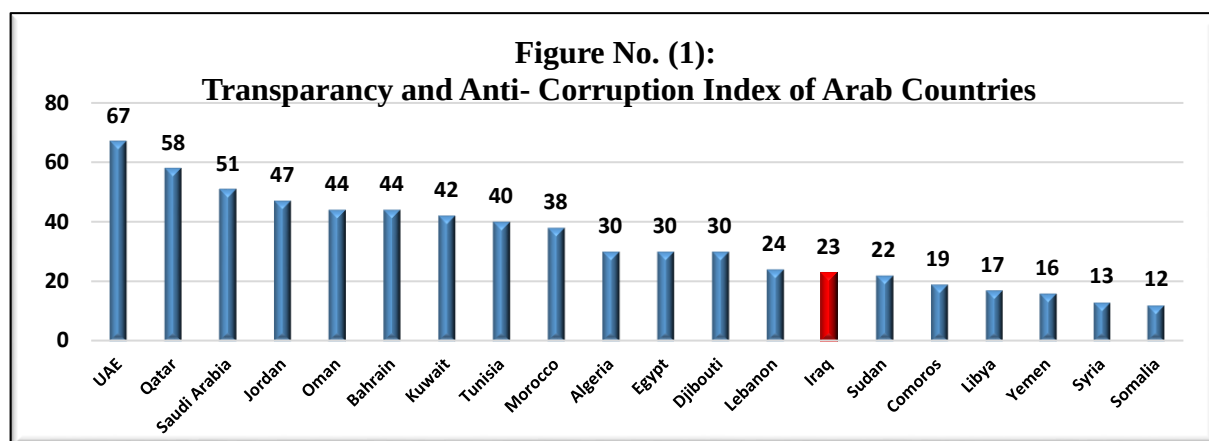
1-1-1- Management Indicators

1-1-1-1-Transparency and Anti-Corruption Index

The index represents report on states and ranks them according to their degree of corruption, as it is considered a composite indicator based on relevant data to corruption. The anti-corruption index ranks 180 states and regions through perceived levels of public sector corruption, based on 13 assessments and surveys of CEO in the field of business process; it uses a measure of starting from (0) for (the most corrupt) to (100) for (the most honest). The significance of this index implies its importance to determine the scores and ranks held by states based on specialized surveys from different institutions independent of the level of public sector corruption, which means the abuse of public office for personal interests.¹

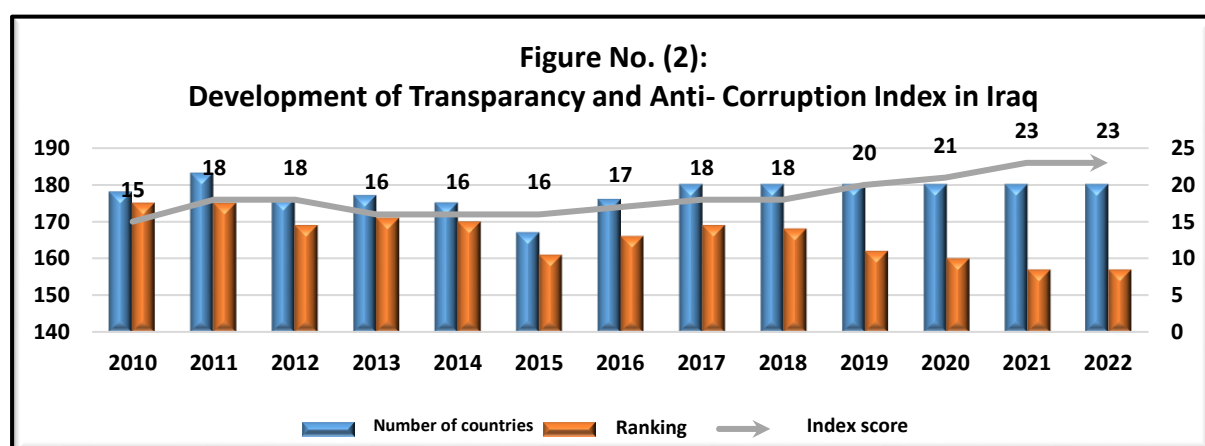
At the global level in 2022, Denmark and Finland topped the list with (90) Scores. At the Arab level, the UAE and Qatar were the top performers at the regional level, with (27) & (40) scores globally; (67) and (58) scores, respectively. Followed by Saudi Arabia at third rank (3) on Arabic level and (54) globally with (51) scores, while Iraq ranked 14th (on Arabic level) and 157th (globally) with 23 scores, as shown in figure No. (1).

¹ International Transparency Organization, Indicator of Corrupt Perceptions 2020 (Berlin, Germany), Jan. 2022.



Source: International Transparency Organization Report, Indicator of Corrupt Perceptions 2020
<https://www.transparency.org>

Since issuance of Transparency and Anti-Corruption Index report in 2010, Iraq has achieved its best ranking in 2021 and 2022; it ranked 157th globally out of 180 countries with (23) Scores. The remarkable progress was due to state's strengthening regulatory and legislative system, ensured openness and transparency of contracting process (sales and purchases), defending democracy, and supporting the existence of a civil judiciary. As it ranked worst globally; 175th out of 178 countries with (15) Scores in 2010, as shown in figure No. (2). The transparency report points out that increasing the supervision role on government's performance, increasing the activity & effectiveness of civil society organizations in supervising and accountability of governments, the absolute independence of official anti-corruption bodies and their capacity to detect corruption and accounting for corruptors, as well as stabilized security situations as solutions to improve the anti-corruption index.



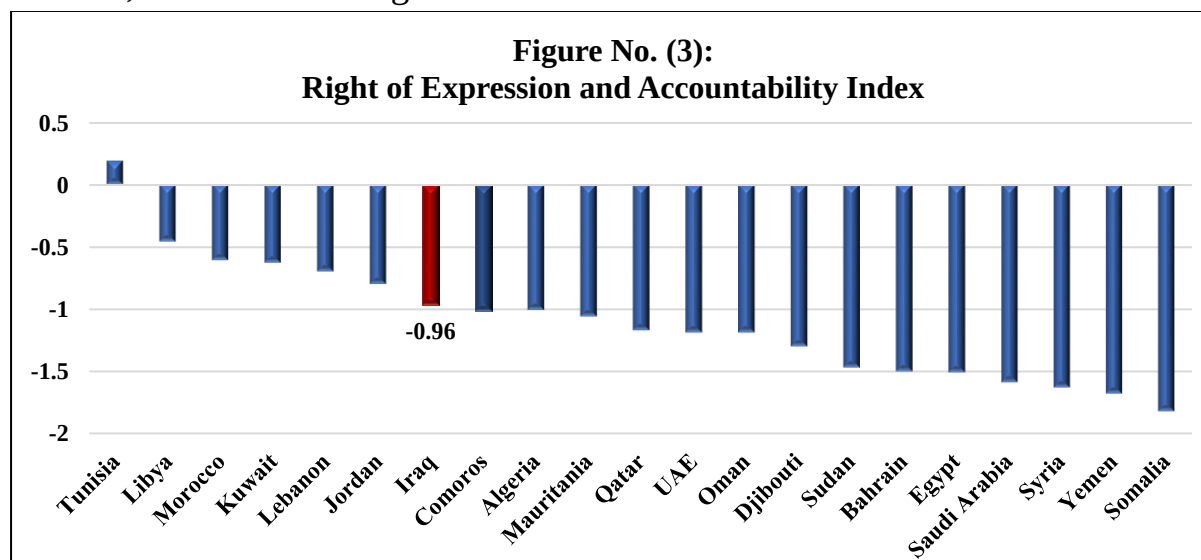
Source: prepared based on data of International Transparency Organization report, indicator of corrupt perceptions 2022. <https://www.transparency.org> .

1-1-1-2 Global Governance Index ¹

Six indices compiled with broad dimensions had been included to calculate country's governance index and measure good governance in a certain country. The governance dimensions are represented as the following:

1-1-1-2-1 Right of Expression and Accountability Index

This index gives an image of the ability of state's citizens to participate in the choice of their government, as well as freedom of expression, freedom of associations' formation and free media globally. According to the index's estimates for 2022, Norway topped with (1.75) scores, followed by Finland and New Zealand with (1.62) scores for each. These scores indicating the those states are characterized with strong freedom of expression and accountability. On the Arabic level, Libya, Morocco, and Lebanon are among the best regarding right of expression and accountability index with (0.19), (-0.46), (-0.61) and (-0.63) scores, as shown in figure No. (3). While Iraq ranked 107th globally out of 214 countries and regions, and 7th on Arabian region with (-0.96) scores, which is a good score compared to other Arab countries. WB recommends legal protection on freedom of expression and taking action to create an integrated system that starts from the development of awareness that emphasizes protection and legal regulation of rights and freedoms as an institutional product, so that citizens feel that the democratic system is a system of practice and daily behaviour , social, cultural, economic and legal .

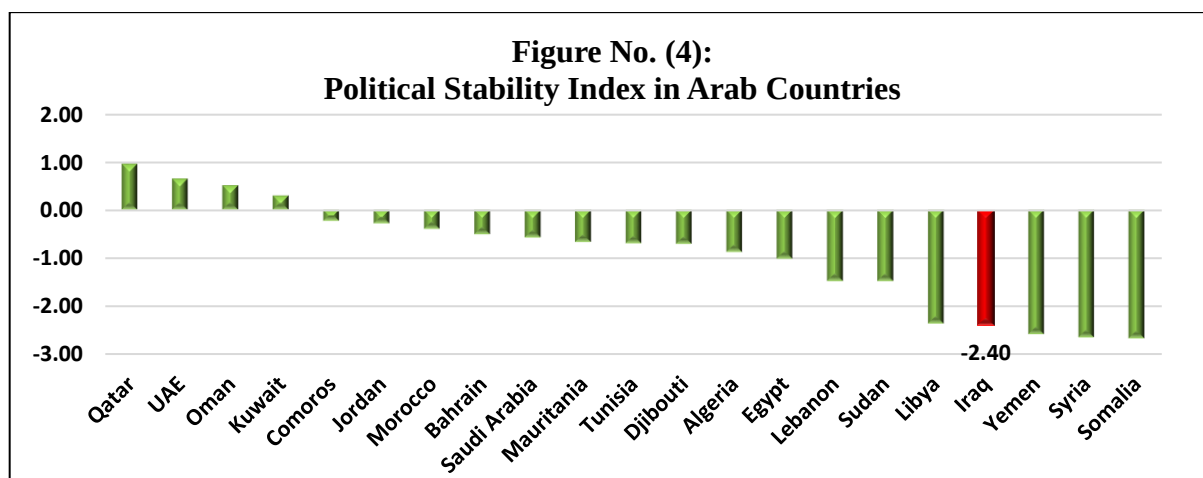


Source: worldbank.org.

¹ The governance rating ranges from (-2.5) to reflect weak governance performance to (2.5) to reflect strong governance performance, for more see: govindicators.org.

1-1-1-2-2-Political Stability Index

This index outlines perceptions of potential instability or politically motivated violence, as well as political system's stability factors in confronting internal and external threats. Globally, Iceland topped countries with (1.88) scores, followed by Solomon Islands and Liechtenstein with (1.67) and (1.64) scores, respectively. Qatar and the UAE ranked (36) & (73) globally, while they were first and second at the Arabic level with (0.96) and (0.65) scores, respectively. Whereas Oman ranked third at the Arabic level and (85) globally with (0.51) scores, as shown in figure No. (4). Iraq ranked 209th globally out of 214 countries, and 18th at the Arabic level with (-2.40) scores, which is the weakest degree at Arabic and globally . WB recommends the need for political stability, development of sectors such as electricity, health, education, agriculture, industry, etc., enhance citizens' confidence in the political system performance, giving greater role to expressing of opinion in the media and social media, as otherwise will undoubtedly have a negative impact on financial stability in Iraq and the banking sector in particular.

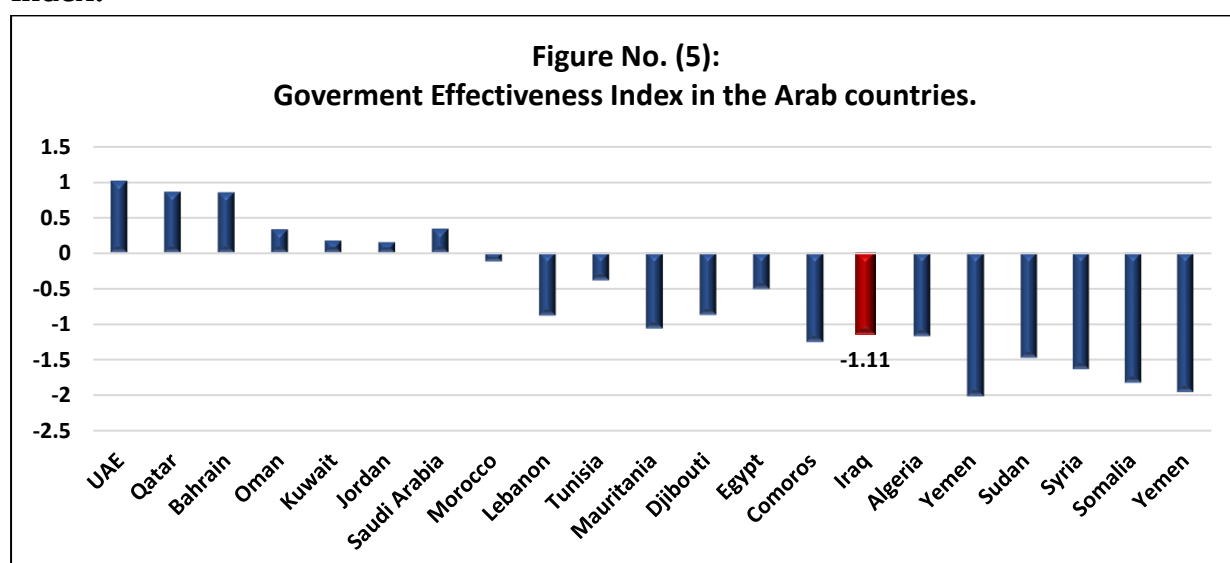


Source: worldbank.org.

1-1-1-2-3- Government Effectiveness Index

The index uses several criteria, including quality of public services, quality of civil services and their degree of independence from political pressures, quality of policy formulation and implementation, and credibility of Government's commitment to such policies. According to the 2022 report, Singapore topped the global ranking with (2.29) scores, followed by Switzerland and Denmark with (2.03) and (2.00) scores, respectively; meaning that these countries have a

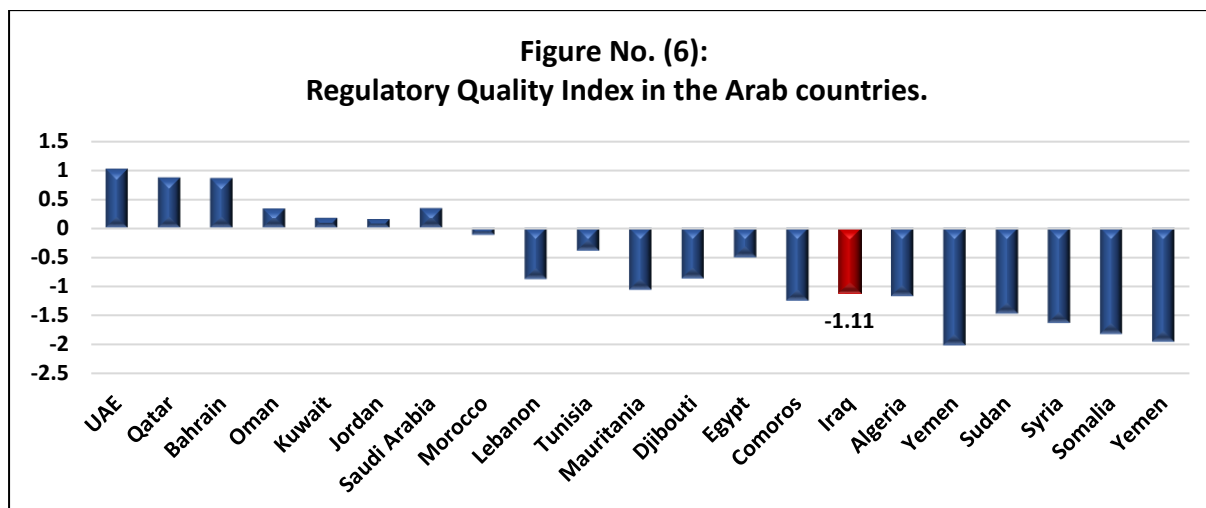
strong government performance. UAE ranked (22) globally and first at the Arabic level with (1.40) scores, followed by both Qatar and Bahrain as they ranked (37) and (55) globally with (1.11) & (0.72) scores, respectively, as shown in figure No. (5) . Iraq occupied late ranks, as it was ranked (188) out of (209) world states, while it ranked (15) at the Arabic level with (-1.34) scores, meaning that the effectiveness of the Iraqi Government is weak. WB recommends supporting Government's capacity to achieve the required objectives regarding key services to improve health services, the level of state school education, equitable distribution of electricity and services between regions, improve roads, sustain country's infrastructure, and address unemployment to raise the value of index.



Source: worldbank.org.

1-1-1-2-4 Regulatory Quality Index

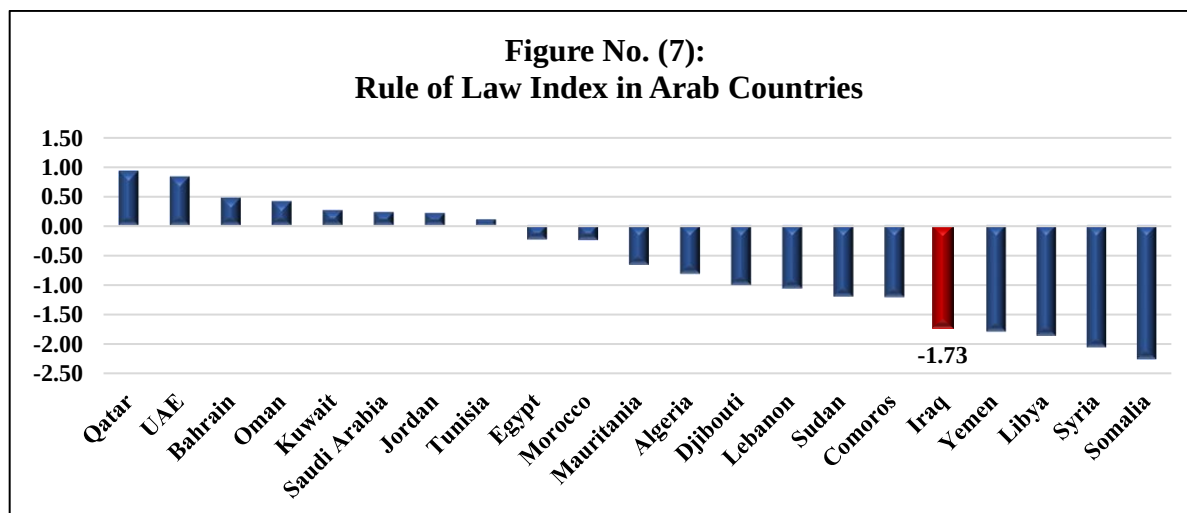
The index reflects Government's ability to formulate and implement sound policies and regulations that allow for the development and enhancement of private sector. Singapore topped the world ranking according to 2022 report with a score of (2.23), followed by Luxembourg with (1.92) and Finland with (1.90), meaning that the quality index of regulation is strong in those countries. As for Arab countries, UAE ranked (46) globally and first at the Arabic level (1.01), followed by Qatar, Bahrain and Saudi Arabia, as they ranked (48), (50), and (76) globally with a score of (0.86), (0.86), and (0.34), respectively, as shown in figure No. (6). While Iraq ranked (182) globally and (14) at the Arabic level with a score of (-1.11), which is a low score indicating that Iraq needs to develop administrative regulations and laws that enhance private sector's role.



Source: worldbank.org.

1-1-1-2-5 Rule of Law Index

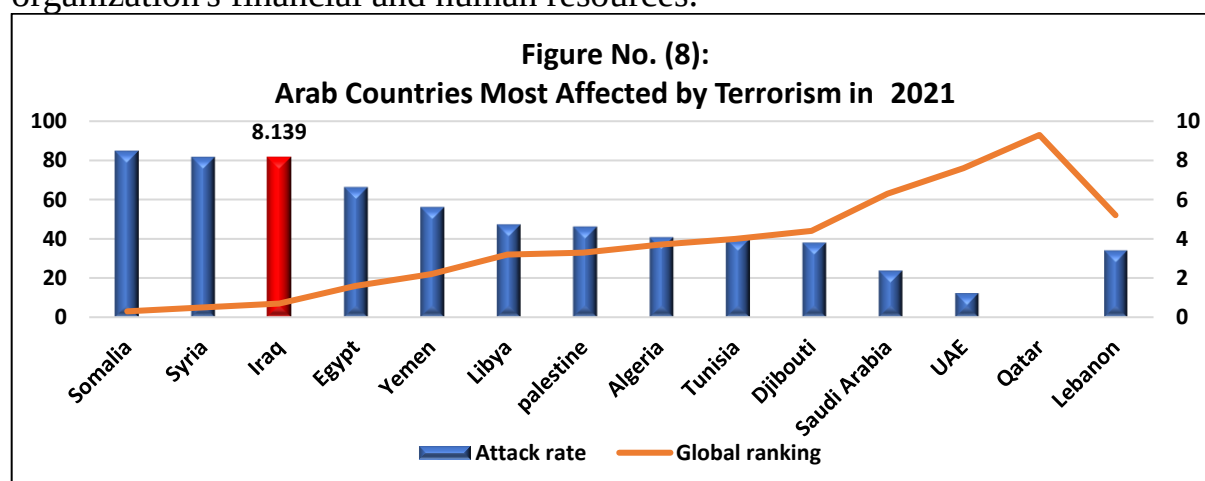
This Index expresses people's confidence and adherence to norms of society, as well as the efficiency, effectiveness, and confidence of society in legal and judicial systems (Police, Courts, Level of Crime and Violence). Finland topped in the 2022 world ranking with (2.06) scores, followed by Norway, Denmark, and Singapore (1.95), (1.94), and (1.86), respectively. Meaning that these countries have the force of rule of law. As for Arab countries, Qatar came first at the Arab level and (40) globally with a score of (0.93), followed by both UAE and Bahrain as they ranked (48) and (69) globally with a score of (0.83) and (0.47), respectively, as shown in figure No. (7). Globally, Iraq ranked (202) out of (214) and (17) at the Arabic level with a score of (-1.73), which requires greater enhancement to adhere to this index.



Source: worldbank.org.

1-1-1-2-6 Global Terrorism Index

The index measures direct and indirect impact of terrorism, including its effects on lost lives, injuries, damage of properties, and subsequent psychological effects. Arab states are classified according to the impact of terrorism from 0 (no impact) to 10 (highest impact). The 2022 report showed that Arab countries, which were the most affected by terrorist attacks, are Somalia, Syria, Iraq, Egypt, Yemen, Libya, Palestine and Algeria. While the least affected countries are Qatar, UAE and Saudi Arabia, as shown in figure No. (8). Iraq ranked third with (8.1) scores despite a decline in terrorism-related deaths, as they decreased from (1,054) in 2018 to (564) in 2019, as well as a decrease in terrorist operations that reached (1,131) in 2018 to (495) in 2019. However, Iraq still ranked third globally with high impact. Iraq also ranked seventh at list of most affected countries by terrorism, globally, with 833 terrorist attacks in 2021, with an increase of 33% compared to 2020. These attacks resulted in (524) deaths; Iraq is constantly worked to ensure the decline of terrorism by intensify security operations, increasing focus on intelligence efforts, and reducing the terrorist organization's financial and human resources.



Source: Report of Global Terrorism Index issued by Institute for Economics and Peace (IEP).
<https://arabic.cnn.com/middle-east/article/2023/03/15/terrorism-index-2023-infographic> .

1-1-1-3 Human Development Index¹

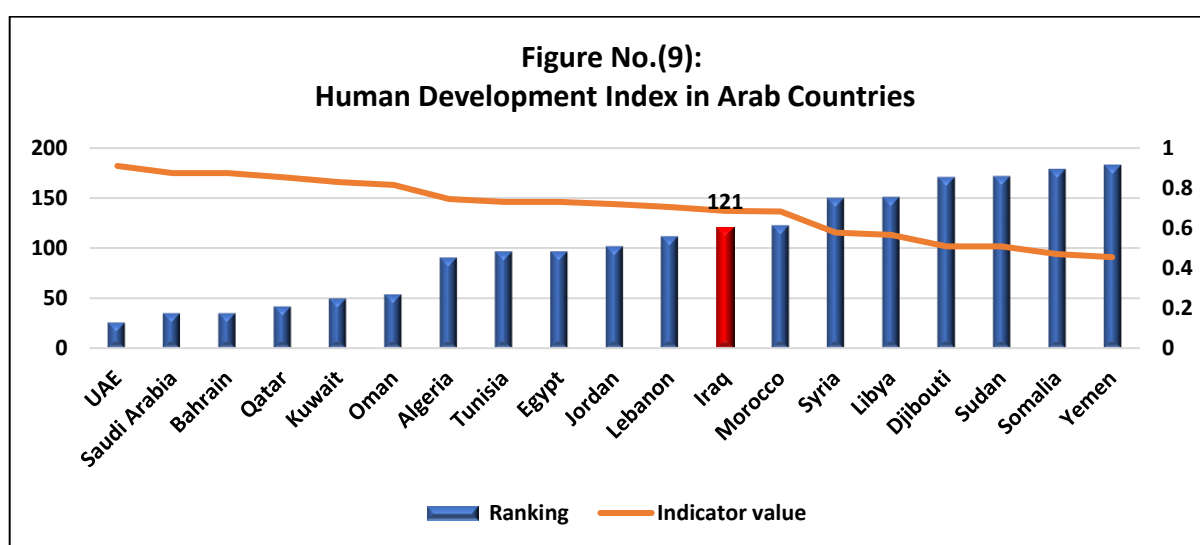
This index is a comparative measure of country's achievements in terms of health, education, and income, according to three data: average expected life at birth, average of expected years of study, and per capita purchasing power. The index is ranging from one to zero and divided into four levels:

- Too high human development (0.800) and more.
- High human development (0.700-0.799).

¹ UNDP Human Development Report 2020, the Next Frontier Human Development and the Anthropocene2020, New York-USA.2020.

- Medium human development (0.550-0.699).
- Low human development below (0.550).

Iraq witnessed signs of improving its ranking in (UNDP) report from 132 out of 187 states included in the report in 2011 to 121 out of 191 states in 2022 with an index value of (0.686) scores, as shown in figure No. (9). This improvement remains modest, which is a cause for attention and development as it is an investment in human capital, if it improves and will move the country to high levels at all aspects. Iraq has been identified as of medium human development category.



Source: <https://www.undp.org/ar/arab-states>.

1-2 Developments and Global Crisis

Since the end of the second decade of the twenty-first century, the world economy witnessed multiple crises that have affected the world's economies starting with the COVID-19 crisis that spread around the world at the end of 2019, leading to slow down of growth in those economies to involve in a cycle of deep economic recession that continued until the end of 2020. This crisis was followed by the outbreak of the Russian-Ukrainian War in 2021, as the two countries were the major suppliers of grain and energy to many countries, specifically to Europe and China. This war reflects negatively on world trade, leading to high level of global inflation.

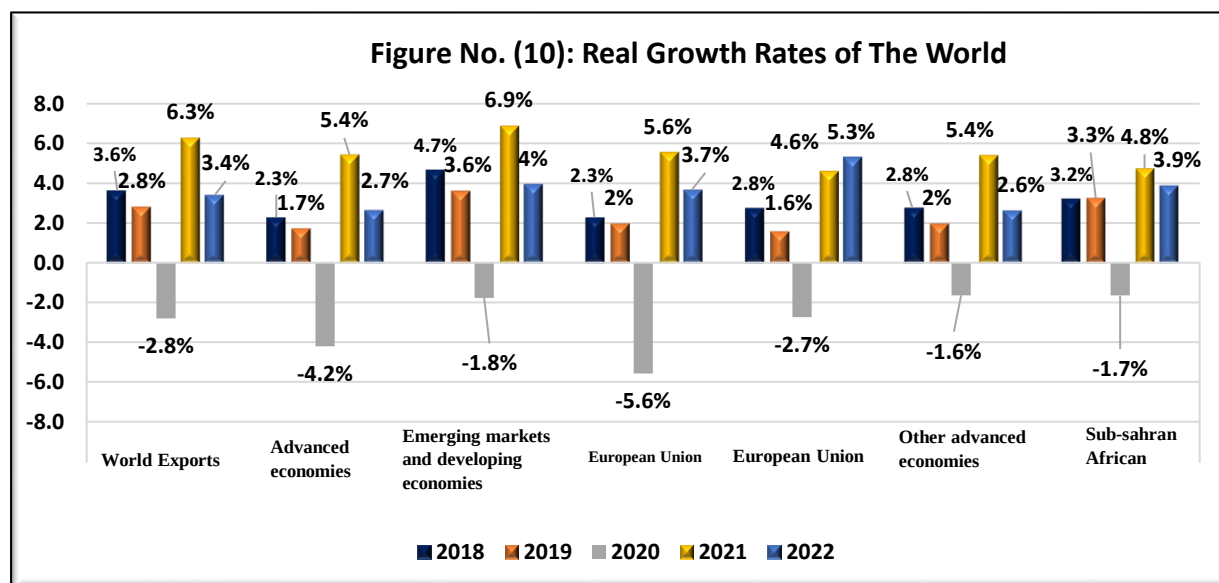
These crisis have strained economic and political relations between many major countries, especially between Russia, on one hand, and United States and the European countries, on the other hand, which have imposed sanctions on Russia

that have led to a decline of its exports of natural gas and crude oil, which was reflected in form of a rise in global energy prices. European countries tended to look for substitute suppliers for Russia, in addition to another compulsory path, which is to accelerate the transition to renewable energy.

High global inflation has led the US Federal Bank and EU banks to take action to raise interest rates with the aim of reducing inflation rates and attracting surplus funds to reduce the volume of the monetary mass, after the United States Government's increased indebtedness, as it withdrew its investments from different countries. The matter that led to a decline at the growth rate of global economy, which has a negative impact on global stability in many ways, that highlights the reversal of energy fluctuations that have negatively increased inflation levels on national economies, particularly in meeting the basic needs of household sector. As well as high indebtedness of the world's economies and its impact on the sustainability of their economic growth and the impact of divestment on the ability of global economies to achieve sustainable economic development.

1-2-1 Fluctuations of Global Economic Growth Rates

The world economy experienced a decline in its growth rate of (3.4%) in 2022 compared to (6.0%) in 2021, at current economic and political conditions. Advanced economies and the European Union recorded growth rates of (2.7%) and (3.7%), respectively, in 2022 compared to (5.4%) and (5.6%), respectively, for the previous years. Emerging & developing markets, and South Africa recorded a decline of growth rates, for the same time, to (4.0%) and (3.9%), respectively, compared to (6.9%) and (4.8%), respectively, as a result of higher global inflation and changes in U.S. interest rates. Growing geopolitical tensions such as Russian-Ukrainian war and Brexit in 2020 led to disrupting the growth of global economy, harm cross-border investments, asset's prices, payment systems and banks' ability to lend, thereby increasing risks of financial stability. Middle East and Central Asia countries achieved faster growth driven by China's recovery from COVID-19 pandemic and strong demand by India, which recorded a growth rate of (5.3%) in 2022 against its growth of (4.6%) for the previous year, as shown in figure No. (10).

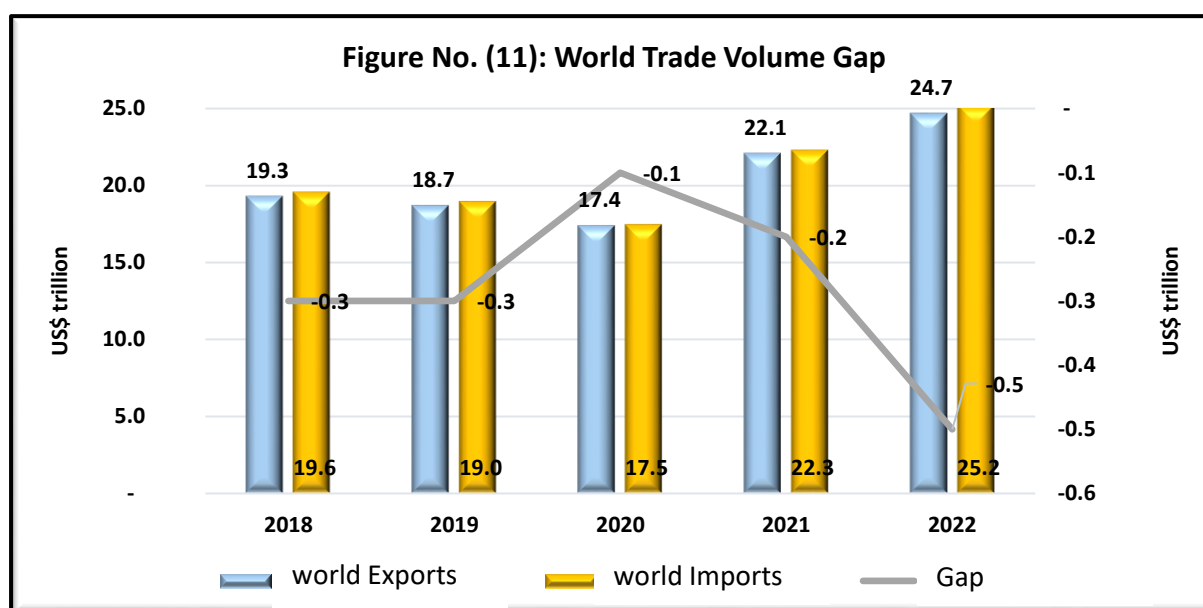


Source: IMF, Global Economic Outlook Database.

1-2-2 Transitions of World Trade (Exports and Imports)

The volume of trade is affected by many economic, political, social and environmental factors. According to World Trade Organization (WTO) data, world exports for 2020 recorded a decline of (7.3%) compared to 2019, as a result of the trade embargo imposed on countries. World imports also declined by (7.9%) from 2019, as the gap between exports and imports reached US\$ (-0.1) trillion. In 2021, world's exports of goods and services recorded a growth of (27%) compared to the previous year as a result of the recovery phase, the decline of the pandemic, and the openness of world's nations. Whereas world imports recorded a growth of (27.4%) with a gap of US\$ (-0.2) trillion between exports and imports. It is noted from figure No. (11) that the gap between exports and imports widened in 2022 to US\$ (-0.5) trillion as a result of substantially higher oil prices and increased economic activity level.

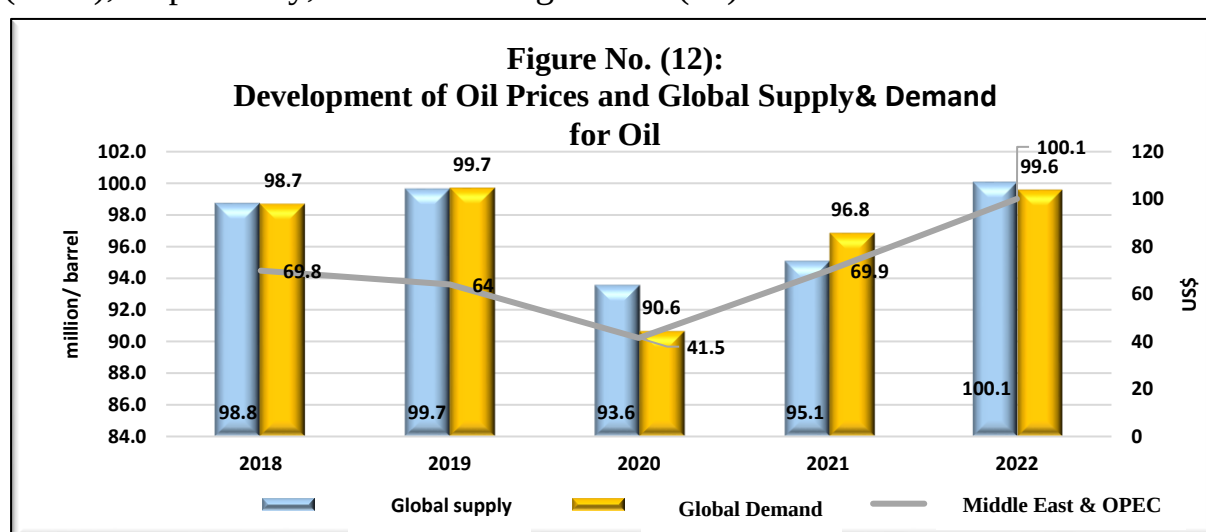
Specifically in the Middle East and Central Asia regions, the rise of economic activity was accompanied by an increase of inflation, which reached about (8.7%) in 2022. World Trade Organization (WTO) economists' expectations included that global trade will lose momentum for 2023, it marked a decrease of its growth rates as a result of rising food and energy prices due to the above-mentioned crises. As well as the increased interest rates by central banks aiming at taming inflation rates, which could lead to lower demand for goods and further erosion of global trade growth.



Source: IMF Data.

1-2-3 Fluctuations of Global Oil Prices

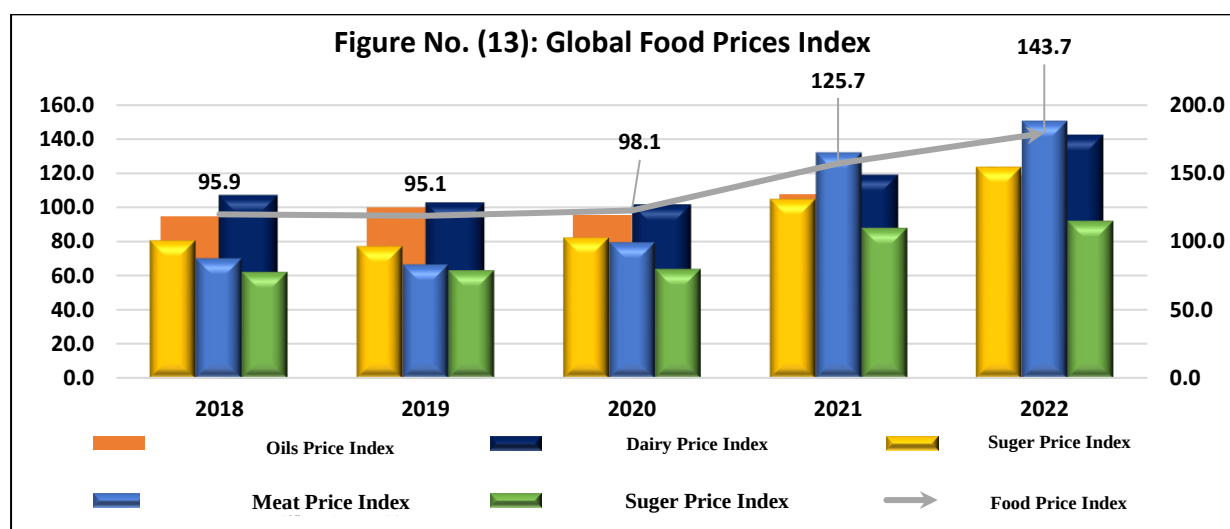
In 2020, global oil prices recorded a decrease of (35%) from its rates in 2019, which was US\$ 64 per barrel, as a result of lower demand that caused global oil supply to decrease by (-39.2%) & (-6.1%), respectively, for the same period after the decline of the pandemic's impact and the return of economic activity. It led, in turn, to raise oil prices average in 2022 to reach US\$ (100.1) per barrel, with an increase rate of (43.2%) over 2021, in which a barrel oil price rate reached US\$ (69.9) per barrel, with higher global oil demand and supply of (2.9%) and (5.3%), respectively, as shown in figure No. (12).



Source: OPEC- Economic Management & Oil Industry Report.

1-2-4 Differences of Global Food Prices

The Global Food Price Index achieved record levels with a growth rate of (28.1%) and (13.8%) for the years 2021 and 2022, respectively, because of the Russian-Ukrainian war. As Ukraine is considered one of the most important producers of grains and food, providing one third of the global production of grains. It is clear from figure No. (13) that the indices constituting “the Global Food Price Index” have all increased compared to the years (2021-2022). Oils price index recorded the highest point to reach (187.8) points, followed by each of the indices the prices of grains, food and dairy by (154.7), (143.7) and (142.4) points, respectively. While price indices of sugar and meat recorded the lowest points, reaching (114.5) and (118.8) points, respectively, in 2022. Thus, global demand for food commodities increased after the world countries tended to search for new food suppliers, as World Food Index in 2022 increased by (14.3%).

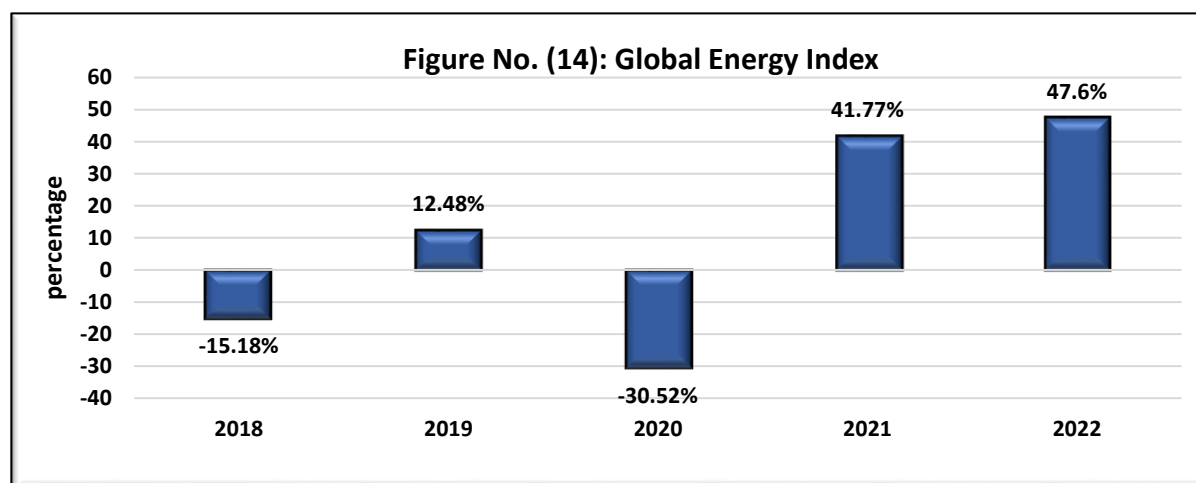


Source: Food and Agriculture Organization of the United Nations.

1-2-5 Disturbances of World Energy Index¹

In 2020, global energy index declined by (-30.5%) due to the decline of global demand because of (Covid-19) affect, but it recorded an increase of (41.77%) in 2021. Also, the Russian-Ukrainian crisis led to a rise of energy index to reach (47.6%) in 2022 as a result of shifts to search for energy sources in different countries in light of Russian sanctions and high shipping costs, as shown in figure No. (14).

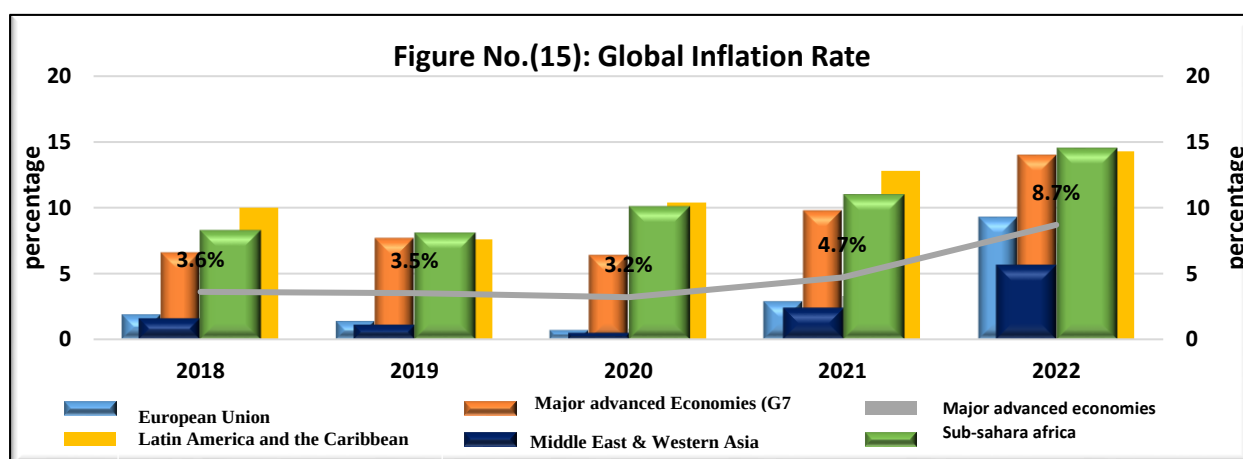
¹ This index is considered a mirror to show the most important large and medium economic sectors across a group of markets and in different countries by combining several factors to show the value of these indicators. The weights of calculating this indicator were distributed in the United States of America (62.4%), United Kingdom (11.88%) and Canada (11.78%) and the rest was distributed between France, Australia and other countries by (5.52%, 2.49%, 5.92%), respectively.



Source: Global Energy Index (MSCI), 2023 www.msci.com.

1-2-6 Persistent Changes of Inflation Rate

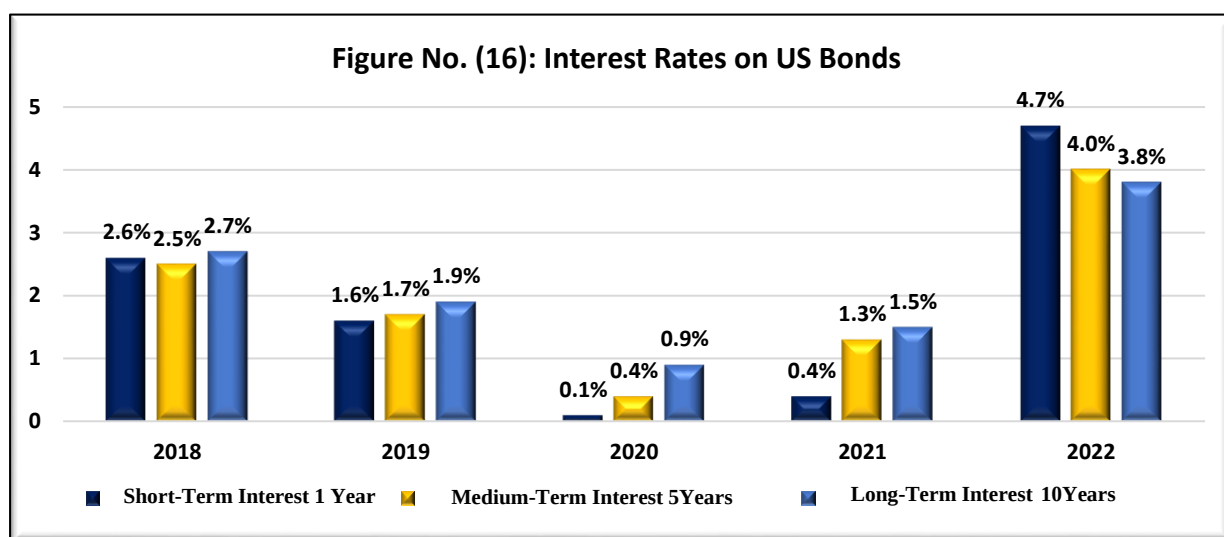
In 2021, global inflation was a major concern for economies; hence, the reliance on interest rates was considered as a key tool to address the problem of inflation, as high interest rates can help calm the economy and reduce inflationary pressures, with the adoption of a gradual approach of small increases. This approach would give companies and consumers time to adapt to the new reality of higher rates; reducing the risk of a sudden shock to the economy and avoiding the risk of making damage to economic growth and entering the recession phase. It is noted from figure No. (15) the increase of global inflation rate in 2022, recording a rate of (8.7%) compared to 2021, in which it recorded (4.7%) because of its increase in the European Union countries to (9.3%) compared to (2.9%). It recorded in Latin America and the Caribbean (14%) against (9.8%) in 2020. As well as its increase in the major advanced economies (G7), the Middle East, Africa, and other advanced economies at varied rates of (7.3%), (14.3%), (5.6%), and (14.5%), respectively, against (3.3%), (12.8%), (2.4%), and (11.0%) for the same period, pushing central banks towards a more tightened policy in an attempt to reduce inflation rates.



Source: IMF Database.

1-2-7 Interest Rates on US Bonds

Inflationary developments were reflected on the increase of systemic risks for the banking sector, which in turn generated mistrust in this sector. Thus, in 2022, the Federal Reserve Bank raised the interest rate on bonds with varied degrees to affect the monetary mass volume. Short-term interest rate on bonds reached about (4.7%) against (0.4%) in 2021, while long- and medium-term interest rates reached (3.8%) and (4.0%), respectively, against (1.5%) and (1.3%), respectively in 2021, as shown in figure No. (16). Followed by some countries, including the European Union and some Asian and Arab countries, in raising overnight interest rates and interest rates on deposits to reduce inflation. However, these measures generated an increase of global indebtedness, especially the indebtedness of US government, as cost of borrowing increased, leading to a decline of investment rates in some regions of the world. The matter that increased the risk of re-stagflation crisis in 1978, as these measures reflected negatively on global financial stability.



Source: Raven Tiv Financial Market and Infrastructure Data.

2- Developments of Financial Sector in Iraq

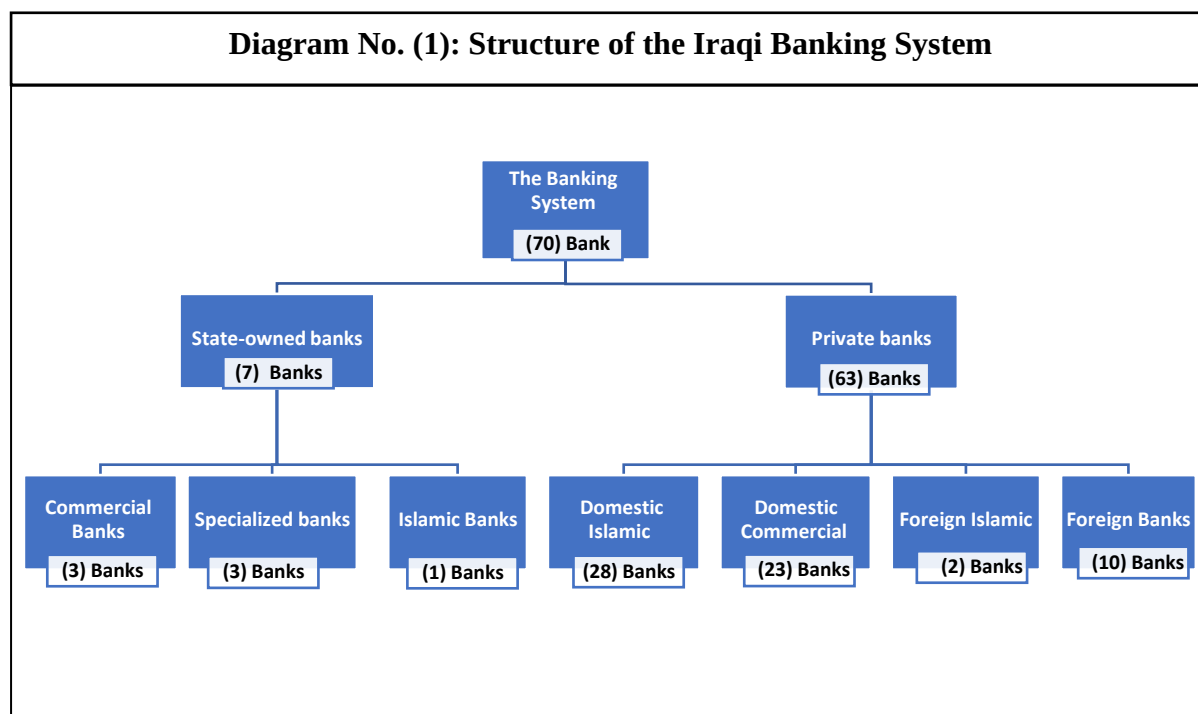
2- Developments of Banking Sector in Iraq

2-1 Developments of the Banking Sector in Iraq

The structure of the banking system was updated in 2022 after several important changes. In this regard, (2) private domestic commercial banks, in addition to (3) foreign banks, are branches of Lebanese banks investing in Iraq, were liquidated. These changes occurred because of the financial crisis faced by the Lebanese economy, which led to the withdrawal of Lebanese bank's branches from some countries. Thus, the number of banks operating in Iraq was reduced from 74 to 70 banks. In addition, the bank of Jordanian entered the banking sector in Iraq. Banks in Iraq can be classified according to their type and activities as follows:

First: State-Owned Banks (SOBs): It includes (3) commercial banks, namely: Al-Rashid, Al-Rafidain, and Trade Bank of Iraq. In addition to (3) specialized banks (the Cooperative Agricultural Bank, the Industrial Bank, and the Real-Estate Bank), and one Islamic SOB (Al-Nahrain Islamic Bank).

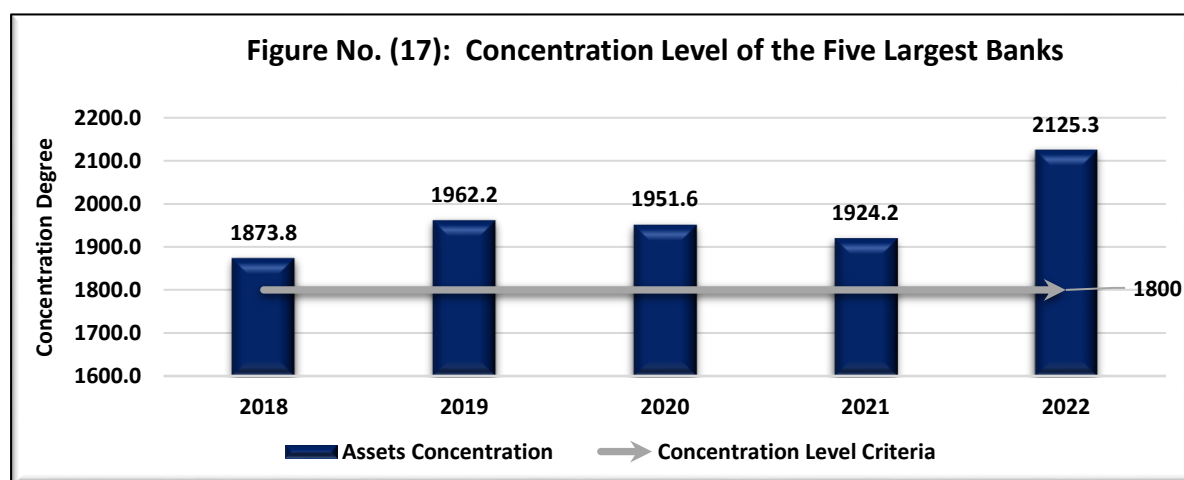
Second: Private Banks: they reached to (63) banks; as they are divided into (23) domestic commercial banks, (10) foreign commercial banks, (28) domestic Islamic banks, and (2) foreign Islamic banks.



Source: Central Bank of Iraq/ Statistics and Research Dept.- Division of Monetary and Financial Statistics.

2-1-1 Banking Sector Assets:

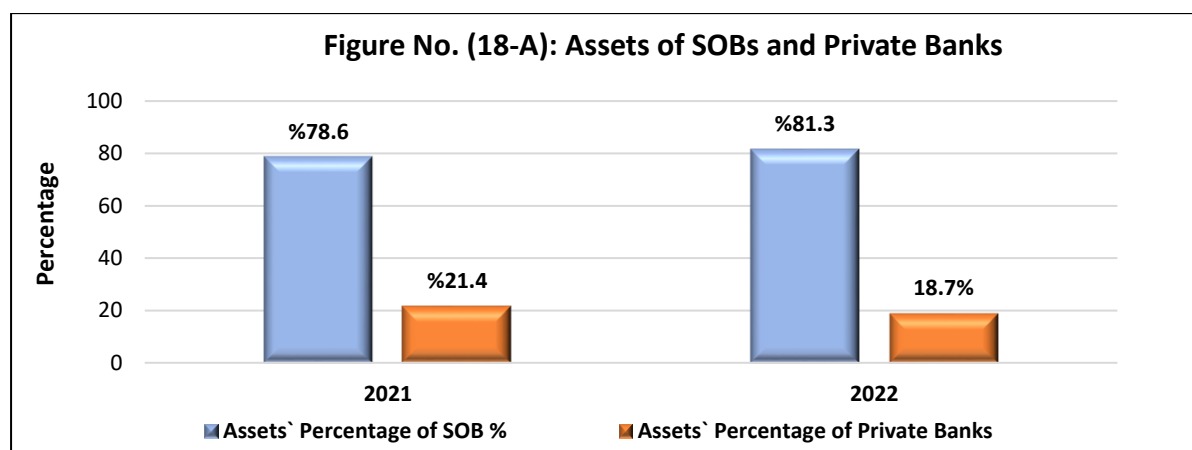
SOBs dominate the activity of the banking sector in Iraq, as their percentage of the total of banking sector's assets increased from (78.60%) in 2021 to (81.34%) in 2022. The banking sector has witnessed growth of total assets, reaching IQD (198.66) trillion in 2022, compared to IQD (159.42) trillion for the previous year. The growth rate was increased from (15.1%) to (24.6%) during the period (2021-2022). The (Herfindahl-Hirschman)¹ index shows, through figure No. (17), an increase of the level of asset's concentration for five largest banks, which are SOBs, from (1920) degrees in 2021 to (2125.3) degrees in 2022; exceeding the identified standard of (1800). The high level of concentration of the banking sector shows that assets are accumulated with a small number of large banks. Consequently, there are fewer small or medium-sized banks participating in the market and competing for resources and clients. One of the factors that led to increased concentration in the banking sector is the shrinking number of banking institutions, as a result of liquidation operations, or withdrawal from the market. As well as customers and investors preference for SOBs that have greater financial strength than their private sector counterparts.



Source: Central Bank of Iraq/ Statistics and Research Dept.- Division of Monetary and Financial Statistics.

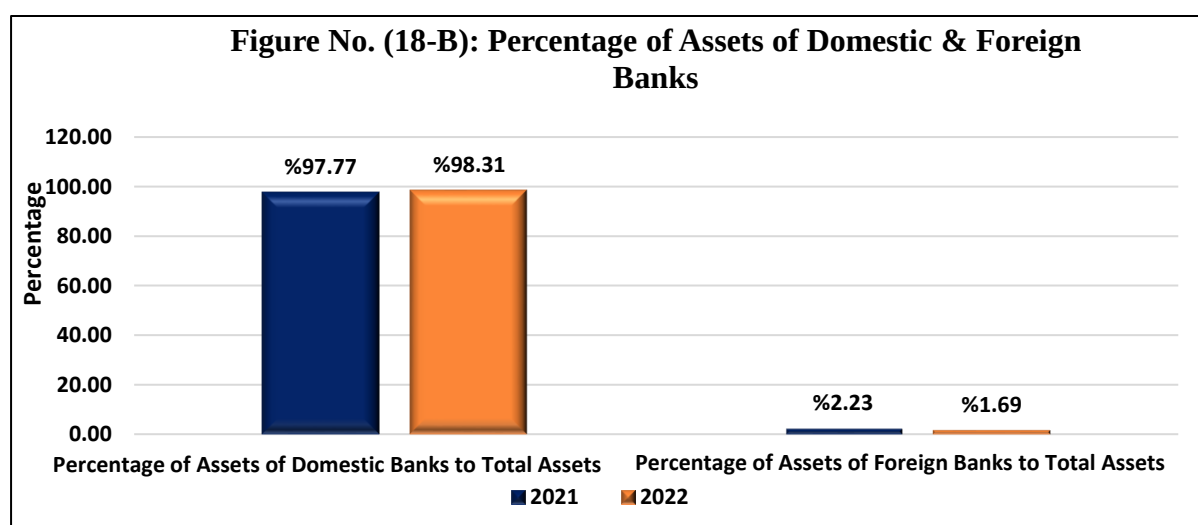
Figure No. (18-A) shows that the percentage of total assets of SOBs increased from (78.6%) in 2021 to (81.3%) in 2022, with a value of IQD (161.52) trillion. In contrast, the percentage of private banks' assets decreased from (21.4%) in 2021 to (18.7%) in 2022, with a value of IQD (37.05) trillion.

¹ The Herfindahl-Hirschman value ranges between (0-10000). If the value is less than (1000), it indicates no concentration, and if the value is between (1000-1800), it indicates moderate concentrations. While, if the value is greater than (1800), it indicates high concentrations. The index is measured according to the following formula ($HHI = \sum si^2$), where (si) represents the relative importance of the variable.



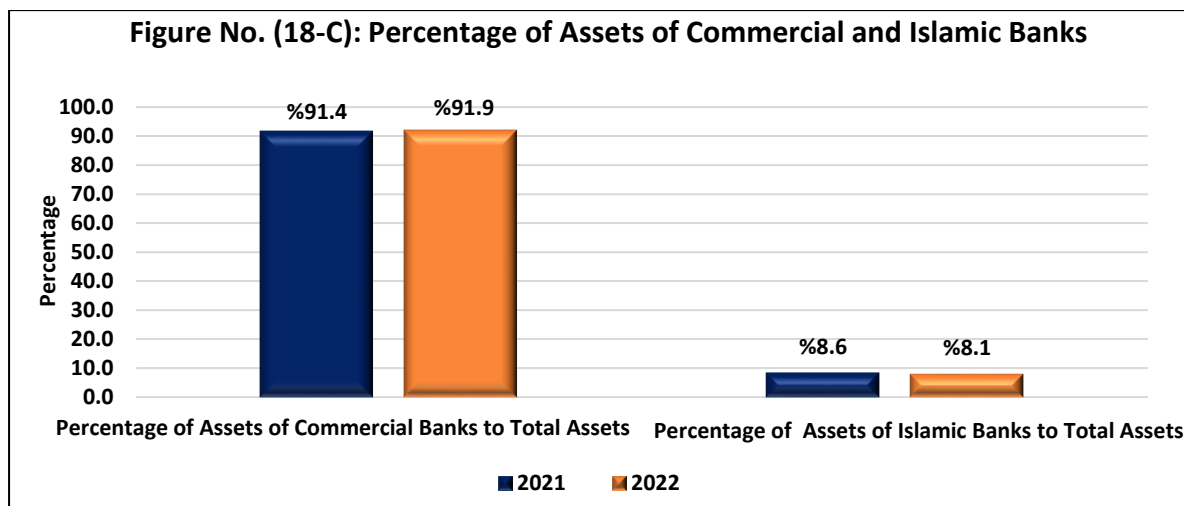
Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

The percentage of Domestic banks' assets also increased to (98.31%), with an amount of IQD (195.21) trillion in 2022 compared to the previous year, at a percentage of (97.77%), with an amount of IQD (156.02) trillion. While the percentage of total assets of foreign banks decreased from (2.23%), with an amount of IQD (3.56) trillion in 2021 to (1.69%), with an amount of IQD (3.36) trillion in 2022, as shown in figure No. (18-B).



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

While, the percentage of commercial banks' assets increased in 2021 from (91.4%) to (92.4%) in 2022, reaching IQD (183.5) trillion in 2022, compared to the percentage of Islamic banks' assets that decreased from (8.57%) in 2021 to (7.45%) in 2022, as it reached IQD (15.02) trillion at the end of 2022, as shown in figure No. (18-C).



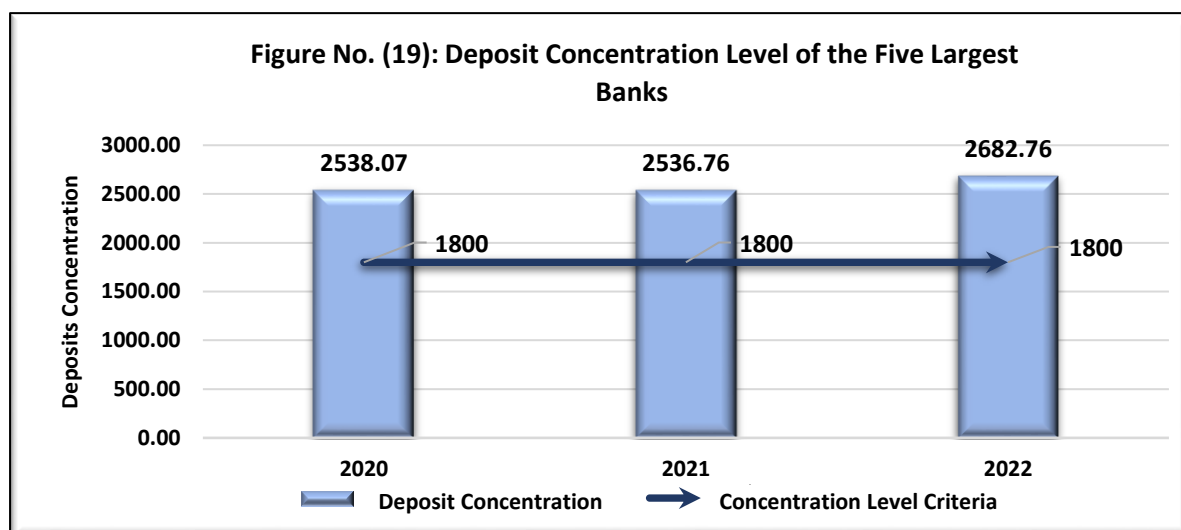
Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

2-1-2 Banking Sector Deposits

The volume of banking sector's deposits increased from IQD (96.07) trillion in 2021 to IQD (129) trillion in 2022, as growth rate for 2022 reached about (34.28%) compared to the previous year, which was (13.12%). This increase is due to a significant increase of total current deposits by IQD (102.25) trillion and a growth rate of (45.50%) in 2022 compared to the previous year. As for saving deposits, they increased with slight growth rate of (7.76%), while fixed deposits decreased by (1.61%) in 2022 compared to the previous year. This significant growth in the volume of deposits reflects the increased confidence of customers and investors in the banking sector because of economic stability factors, in addition to the improvement of banking services and returns on deposits.

It was noted from figure No. (19) that the level of deposit concentration for the five largest banks increased from (2536.76) degrees in 2021 to (2682.76) degrees in 2022, according to the Herfindahl-Hirschman index. Thus, this level exceeds the concentration standard of (1800) points, which reflects an increase in the concentration of deposits in these banks, reflecting public's confidence in large SOBs. The increased concentration in these banks does not constitute a real danger, since it is believed that these banks will be able to meet their obligations in the event of increased withdrawals of deposits by depositors.

It is important to indicate that high concentration of deposits could point out greater competitive challenges for private banks, while customers may find less choices and diversity of banking services. The matter that requires efforts to boost competition in the banking sector, and enhance the availability of banking services for all groups.

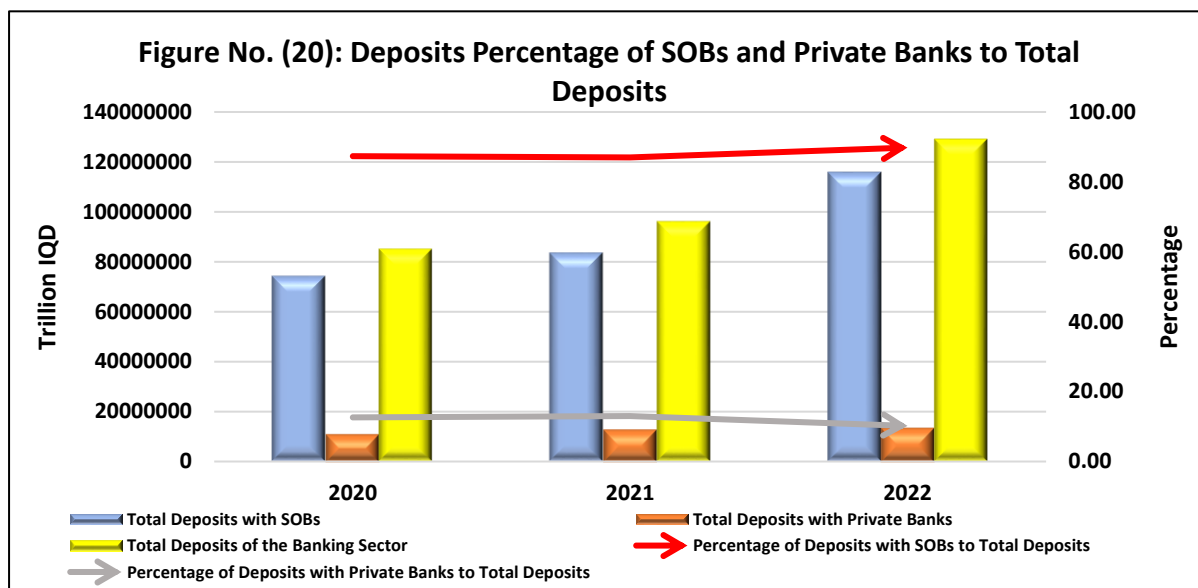


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

It was noted that total deposits of SOBs increased from IQD (83.57) trillion in 2021 to IQD (115.85) trillion in 2022, with a growth rate of (38.62%). This rise was due to an increase in the volume of current deposits by IQD (92.99) trillion, with a growth rate of (52.19%) in 2022. Savings deposits also increased by IQD (14.64) trillion, with a growth rate of (9.23%). It is worth noting that total fixed deposits decreased to IQD (8.21) trillion in 2022.

As for private banks, an increase was recorded in total deposits by IQD (13.14) trillion, with a growth rate of (5.2%) in 2022 compared to the previous year, which amounted IQD (12.49) trillion. Current deposits constitute the largest percentage of total deposits with a value of IQD (9.17) trillion, while total fixed and saving deposits reached IQD (1.94) trillion and IQD (2.01) trillion, respectively, in 2022.

This increase reflects confidence in SOBs and private banks, as the resulting increase of total deposits with SOBs compared to private banks reflects the high confidence of public in SOBs. It is also worth noting that most of the banks' deposits in Iraq are subject to the guarantee of Iraqi Company to Deposit Insurance. Accordingly, that increased individuals' confidence to deposit their funds with banks. The geographical spread of SOBs' branches across governorates of Iraq plays an important role in increasing public's confidence, as they are able to access those banks easily. The share of SOBs of total number of branches is (44.29%) in 2022, while the prevalence of private banks is (55.7%) for the same year. This indicates that SOBs and private banks have strong and widespread presence in various regions of Iraq.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

It is noted that total deposits in the public sector have witnessed a significant increase, as they grew to IQD (74.10) trillion in 2022 with a growth rate of (40.28%) compared to 2021, as it reached to IQD (52.82) trillion. Total deposits of the public sector reached (57.45%) of total deposits with the banking sector in 2022, compared to (54.99%) for the previous year. Also total deposits with the central government increased from IQD (27.98) trillion in 2021 to IQD (43) trillion in 2022. As well as the increase is achieved for the public institutions from IQD (24.84) trillion for the previous year to IQD (31.10) trillion in 2022.

While private sector's deposits recorded an increase of IQD (54.97) trillion in 2022, with a growth rate of (27.13%) compared to the previous year. The private sector's share of total banking sector deposits decreased from (45.01%) in 2021 to (42.59%) in 2022 because of the increase of total public sector's deposits. Total deposits within Iraqi banking sector are in a good position, and do not pose a significant risk, which indicates confidence of depositors in banks because of their guarantees and stability.

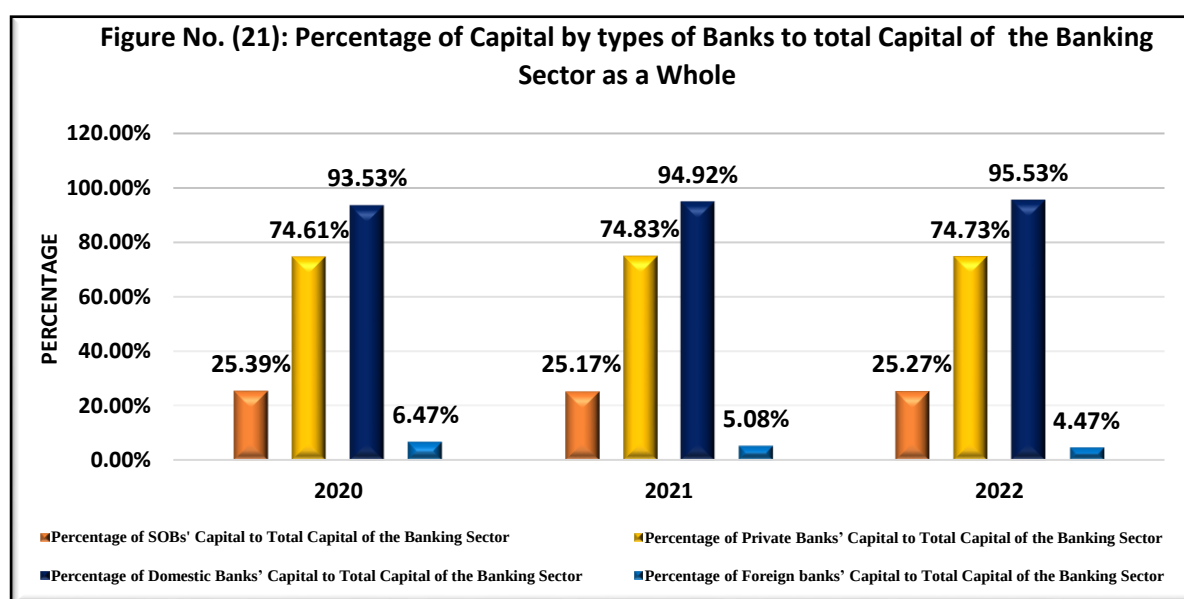
2-1-3 Banking Sector Capital

Total capital of the Iraqi banking sector increased to IQD (17.87) trillion in 2022, with a growth rate of (0.19%) compared to the previous year, which reached to IQD (17.84) trillion. It could be found that SOBs have increased their total capital to reach IQD (4.51) trillion with a growth rate of (0.6%) in 2022 compared to 2021, which reached IQD (4.49) trillion. The capital

percentage of SOBs increased as part of total banking sector's capital from (25.17%) to (25.27%) during the period (2021- 2022). This increase was due to the increase of the capital of Al-Rafidain, Industrial, and Agricultural banks by IQD (238) billion, IQD (354.4) billion, and IQD (130.07) billion, respectively, in 2022. As for private banks, total capital increased to IQD (13.36) trillion in 2022 with a growth rate of (0.04%) compared to the previous year, which recorded IQD (13.35) trillion. There is a slight decrease in the capital percentage of private banks as part of total banking sector's capital from (74.83%) to (74.73%) during the period (2021-2022).

In general, capital of the Iraqi banking sector is stable; however, there are changes in capital between domestic and foreign banks in the banking sector. In domestic banks, total capital increased from IQD (16.93) trillion in 2021 to IQD (17.07) trillion in 2022, with a growth rate of (0.83%). The percentage of domestic banks' capital as part of total banking sector's capital increased from (94.92%) for the previous year to (95.53%) in 2022.

While foreign banks witnessed a decrease of total capital from IQD (907.2) billion in 2021 to IQD (799.8) billion in 2022. The percentage of foreign banks' capital as part of total banking sector's capital decreased from (5.08%) for the previous year to (4.47%) in 2022. This decrease is likely due to the voluntary liquidation of Lebanese banks, and their exit from banking activity in Iraq. Figure No. (21) shows the percentage of capital to total capital of the banking sector by type of bank.



Source: Central Bank of Iraq / Statistical Bulletin for (2020-2022).

2-1-4 Banking Credit

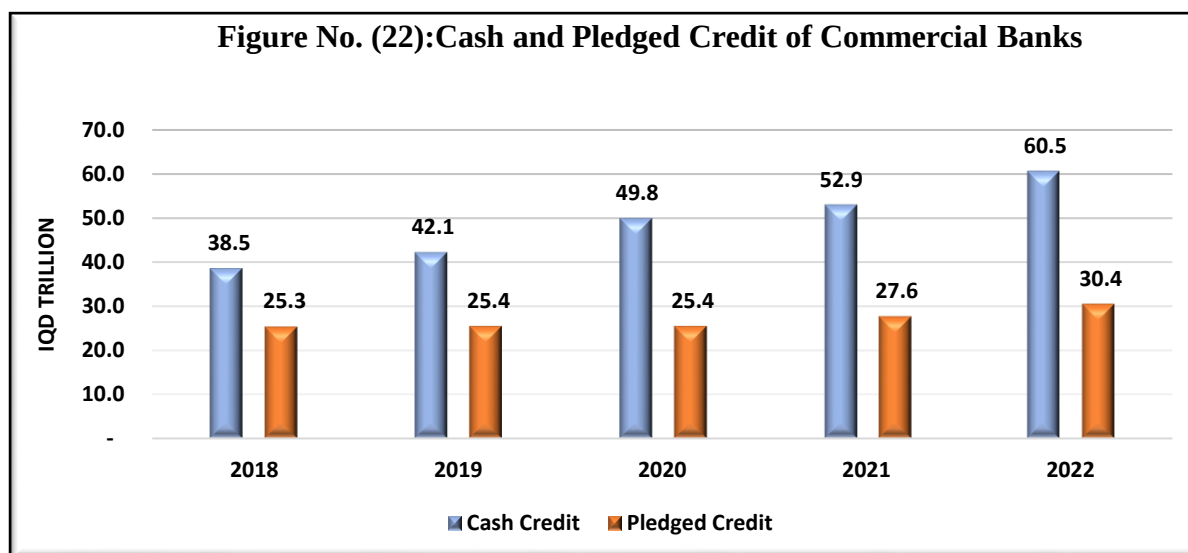
2-1-4-1 Development of Banking Credit

In recent years, total credit has recorded a growth because of the increase of initiatives launched by the CBI to finance various sectors. Total credit to banking sector increased from IQD (80.62) trillion in 2021 to IQD (90.5) trillion with a growth of (12.4%) in 2022. The largest percentage of increased total credit was resulted from the rise of total cash credit from IQD (52.97) trillion in 2021 to IQD (60.57) trillion with a growth rate of (14.34%) in 2022. The percentage was greater than the increase of total pledged credit, which rose from IQD (27.64) trillion in 2021 to IQD (30.38) trillion with a growth rate of (9.91%) in 2022. In contrast, the relative importance of total cash credit to total credit increased from (65.7%) in 2021 to (66.6%) in 2022, compared to total pledged credit, whose percentage to total credit decreased from (34.29%) in 2021 to (33.41%) in 2022, as shown in table No. (1).

Table No. (1): Cash and Pledged Credit of Commercial Banks for the Period (2018-2022) (IQD trillion, Growth Rate, Percentage)								
year	Total Credit	Total Credit Growth Rate	Cash Credit	Growth Rate %	Relative Importance%	Pledge Credit	Growth Rate %	Relative Importance%
2018	63.82	-2.7	38.48	1.4	60.3	25.33	-8.4	39.7
2019	67.32	5.5	42.05	9.3	62.5	25.26	-0.3	37.5
2020	75.26	11.8	49.81	18.5	66.2	25.45	0.7	33.8
2021	80.61	7.1	52.97	6.4	65.7	27.64	8.6	34.3
2022	90.96	12.8	60.57	14.36	66.6	30.38	9.93	33.41

Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

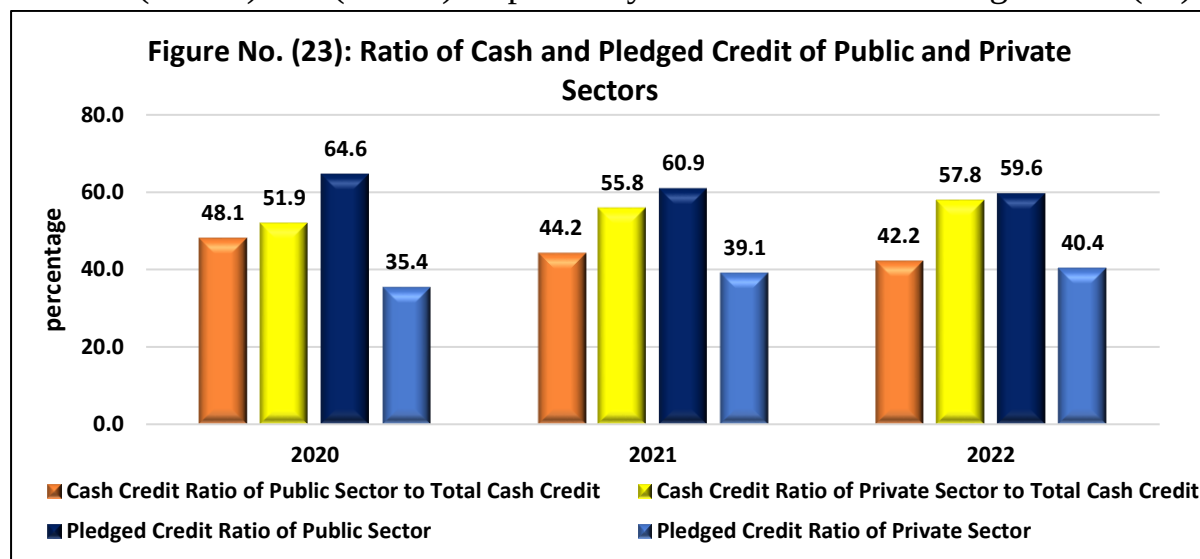
As for total credit at the public and private sector level, it recorded an increase of IQD (43.66) trillion and IQD (47.29) trillion during 2022, compared to the previous year with a value of IQD (40.23) trillion, and IQD (40.38) trillion, respectively. Total credit extended to public and private sectors, relative to total credit of the banking sector, reached (48.01%) and (51.99%), respectively, in 2022.



Source: Data from Table No. (1).

It is noted that total extended cash credit to the public and private sectors was larger than the volume of pledged credit extended for both sectors. The volume of cash credit extended to the public sector increased from IQD (23.39) trillion in 2021 to IQD (25.55) trillion with a growth rate of (9.26%) in 2022, while its rate to total cash credit recorded (42.19%) for the same year. It was due to the increase of total cash credit extended to the central government from IQD (19.22) trillion to IQD (21.98) trillion, with a growth rate of (14.36%) during the period (2021-2022). The volume of cash credit to public institutions also decreased from IQD (4.16) trillion in 2021 to IQD (3.57) trillion in 2022, compared to total cash credit extended to private sector, which increased from IQD (29.57) trillion in 2021 to IQD (35.01) trillion, with a growth rate of (18.4%) in 2022. The gap appears to continue in growing between cash credit rate extended to public sector and cash credit rate extended to private sector, which is considered as a good indicator that shows a decrease of the effect of public sector crowding out the private sector in obtaining cash credit. As for extended to the public sector, it increased from IQD (16.84) trillion in 2021 to reach IQD (18.11) trillion in 2022 with a growth rate of (7.54%). It was due to the increase of pledged credit volume extended to public institutions from IQD (11.69) trillion to IQD (13.03) trillion with a growth rate of (11.43%) during the period (2021-2022). Pledged credit also recorded an increase in private sector by IQD (12.27) trillion, with a growth rate of (13.64%) in 2022, compared to the previous year, as it recorded IQD (10.80) trillion. Whereas

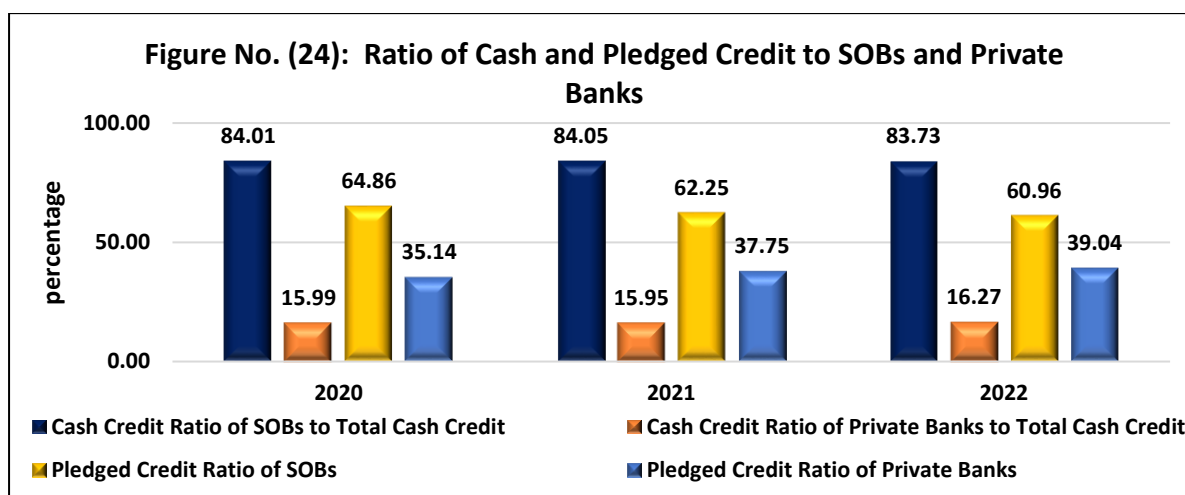
pledged credit extended to the public and private sectors to total pledged credit reached (59.6%) and (40.4%) respectively in 2022 as shown in figure No. (23).



Source: Central Bank of Iraq / Statistics and Research Dept. - Annual Bulletin for (2020-2022).

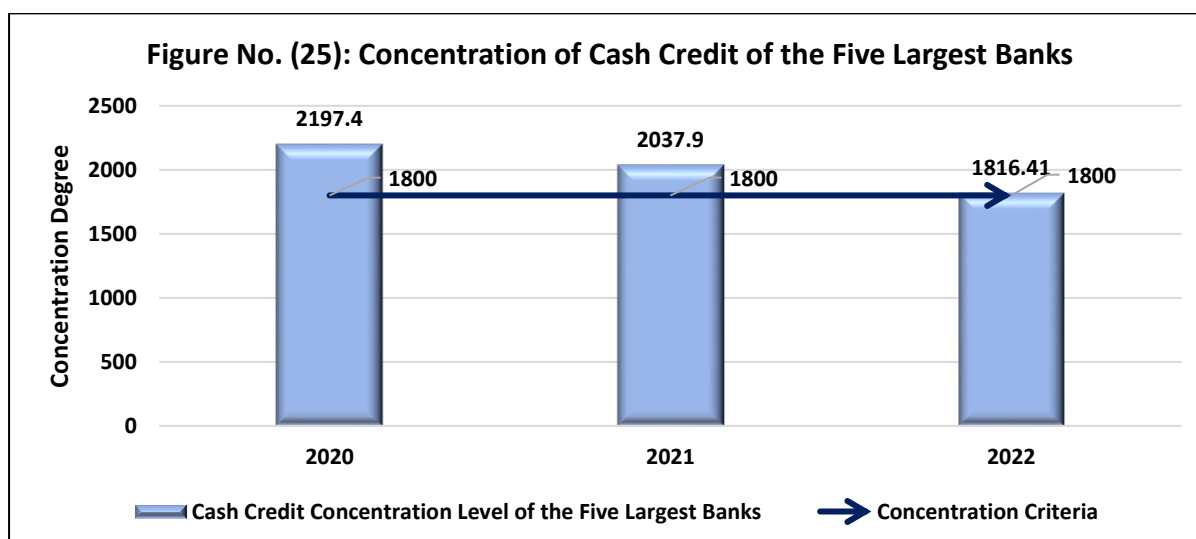
2-1-4-2 Concentrations of Banking Credit

SOBs still own the largest Percentage of total cash and pledged credit provided by the banking sector, because these banks have a very large total balance of deposits that enable them to practice their banking activity through granting credit. In addition to the high volume of deposits that kept within these banks due to public's confidence because their deposits are fully guaranteed by the government. Thus, total cash credit increased from IQD (44.52) trillion in 2021 to IQD (50.72) trillion, with a growth rate of (13.92%) in 2022. The total cash credit of these banks increased from IQD (44.52) trillion for 2021 to IQD (50.72) trillion, with a growth rate of (13.92%) in 2022. While its rate to total cash credit for the banking sector as a whole decreased by (83.73%) for the same year compared to the previous year that recorded (84.05%). As well as total pledged credit increased from IQD (17.20) trillion in 2021 to IQD (18.52) trillion with a growth rate of (7.65%) in 2022. While its rate to total pledged credit decreased from (62.25%) to (60.96%) for the period (2021-2022). As for private banks, total cash credit increased from IQD (8.44) trillion in 2021 to IQD (9.85) trillion with a growth rate of (16.65%) in 2022. While the volume of pledged credit extended by these banks increased by an amount of IQD (11.86) trillion, with a growth rate of (13.68%) in 2022, compared to the previous year, which amounted IQD (10.43) trillion. Accordingly, its rate increased to total pledged credit from (37.75%) to (39.04%) during the period (2021-2022), as shown in figure No. (24).



Source: Central Bank of Iraq / Statistics and Research Dept. - Annual Bulletin for (2020-2022).

It is noted that the concentration of cash credit provided by the largest five SOBs decreased slightly from (84.05%) in 2021 to (83.73%) in 2022. As credit concentration degree for the largest five banks recorded a decrease of (1816.41) degrees in 2022 compared to the previous year, which reached (2037.9) degrees. The concentration of credit with SOBs reveals their influence on the control of the banking sector, which is a natural result of the network of its branches that spread across Iraq, the ease of access to its services, and its clear developmental role in increasing the credit it provides compared to private banks, as shown in figure No. (25).

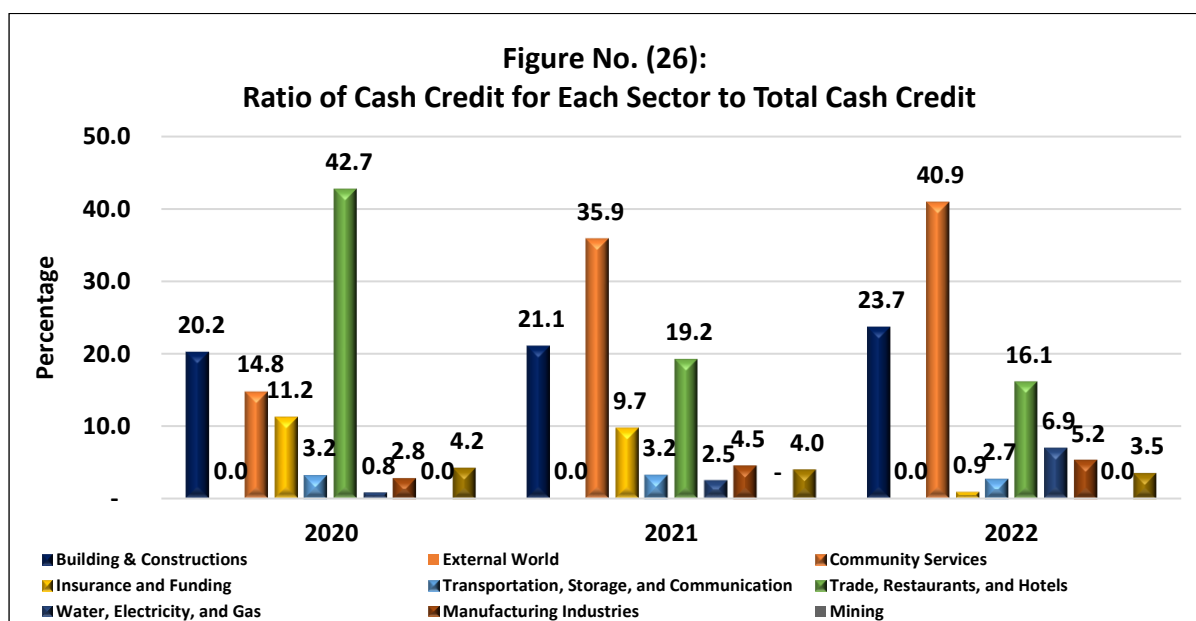


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics

2-1-4-3 Sectoral Distribution of Cash Credit

The sector of community services recorded an increase of extended total cash credit by IQD (24.77) trillion with a growth rate of (30.41%) in 2022, compared to the previous year, which amounted IQD (18.99) trillion. This

sector accounted for the largest percentage of total cash credit, as it increased from (35.87%) to (40.9%) during the period (2021-2022). The percentage of non-performing debts decreased to total cash credit provided to the same sector, due to an increase in allocations for non-performing loans from (2.7%) in 2021 to (1.12%) in 2022. The percentage of overdue debts to total overdue debts of services sector decreased from (11.01%) in 2021 to (6.34%) in 2022, which means that there is a decrease of risks on the banking system. Followed in second place by the construction & building sector, in which total cash credit increased from IQD (11.155) trillion in 2021 to IQD (14.34) trillion, with a growth rate of (28.59%) in 2022. The percentage of cash credit was increased from (21.1%) to (23.68%) for the period (2021-2022). In addition to a decrease of total cash credit provided to the (trade, restaurants, and hotels) sectors by IQD (9.75) trillion, as its percentage to total cash credit reached (16.11%) in 2022 compared to the previous year, which amounted IQD (10.18) trillion reaching (19.22%). While other sectors such as (manufacturing industry), (agriculture & hunting), and other sectors, they received lower percentages of total extended credit, which indicates that Iraqi banks rely heavily on granting commercial loans, and (building & construction) loans due to collateral that these sectors can provide compared to other sectors. On the other hand, the nature of real economic activity that these activities dominate (community services), (building & construction), (restaurants, hotels, and trade), and the limited nature of other activities (industrial, agricultural, etc.) contributed to the formation of the sectoral distribution map of banking credit.

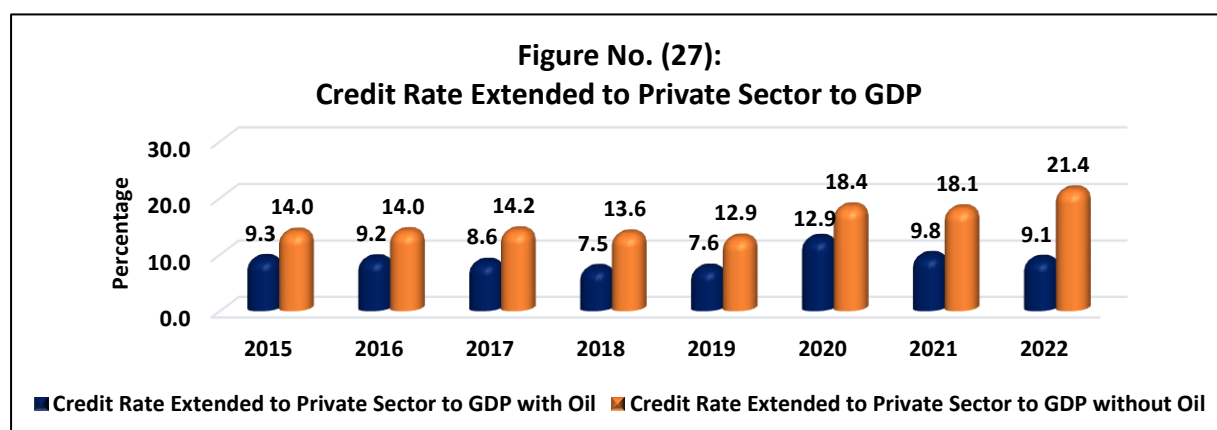


Source: Central Bank of Iraq / Statistics and Research Dept. - Annual Bulletin for (2020-2022).

2-1-4-4 Analysis of Credit to GDP Gap

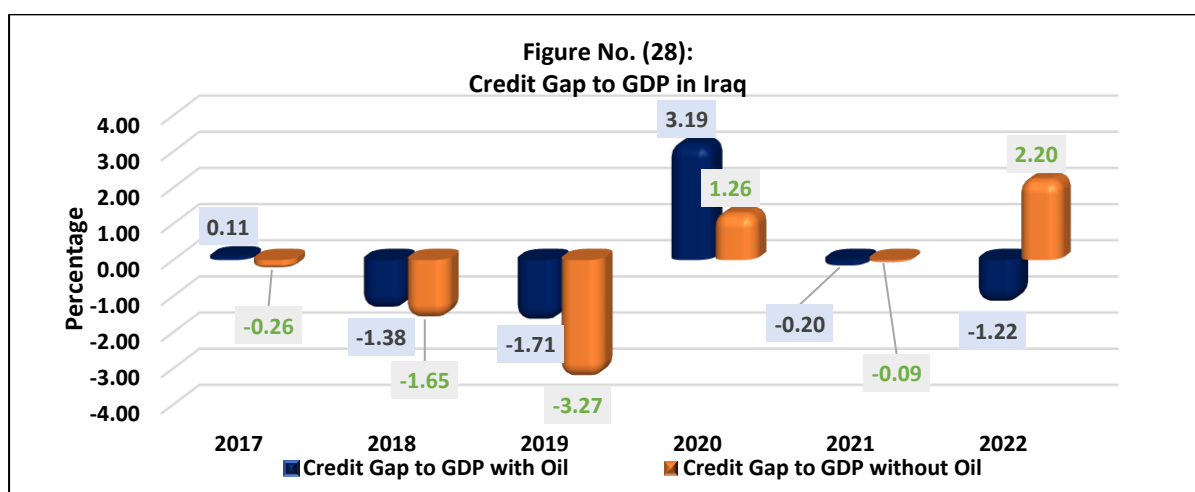
The gap is measured between credit rate to GDP and its long-term trend to counter cyclical fluctuations. The credit-to-GDP gap is a strong indicator for measuring weaknesses within the banking sector. A positive sign of gap indicates an acceleration of growth rate across its historical trend, which requires building buffers (from Reserve capital), in order to protect the banking system from potential risks. Therefore, an increase of gap's value higher than the maximum value, which is (10), explains the increase of total credit at a rate greater than the growth rate of GDP, which leads to an increase of degree of risks resulting from the credit gap exceeding the specified value. The degree of risks of this gap increases in the event of excessive granting of credit without study to economic sector's need for it, which requires building larger amount of additional capital reserves to face the expected losses that financial system may be exposed to in order to remain able to continue performing its basic functions.

It is noted that the Percentage of banking depth measured by GDP with oil decreased from (9.8%) to (9.1%) with oil GDP during the period (2021-2022), as a result of increased GDP due to the rise of global oil prices with a growth rate of (27.08%) for the current year. The percentage of banking depth to non-oil GDP increased from (18.09%) in 2021 to (21.4%) in 2022, as non-oil GDP remained at its level without change, with a negative growth rate of (-0.01%) in 2022. The decrease of banking depth percentage represents a negative indicator of the extent of banking sector's contribution to fund real activity. However, the positive aspect is its effect in reducing risks volume resulting from the possibility of accelerating the growth rate of banking credit in Iraq, as shown in figure No. (27).



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

The Hodrick-Prescott (HP) Filter method proposed by the BCBS Committee was used to calculate the credit¹ to GDP Gap in Iraq. The results shown in figure No. (28) indicate that this gap is within the minimum limit, as it showed a negative gap when adopting GDP data with oil at a rate of (-1.22%) due to the increase of GDP in Iraq as a result of the rise of global oil prices. In addition to the emergence of a positive gap when GDP data without oil is adopted at a rate of (2.20%), for increasing the credit provided to private sector by (18.39%) during 2022. It indicates that banking credit can be increased without affecting stability within the Iraqi financial system, taking into account the required standards and foundations² when granting credit to different economic sectors.



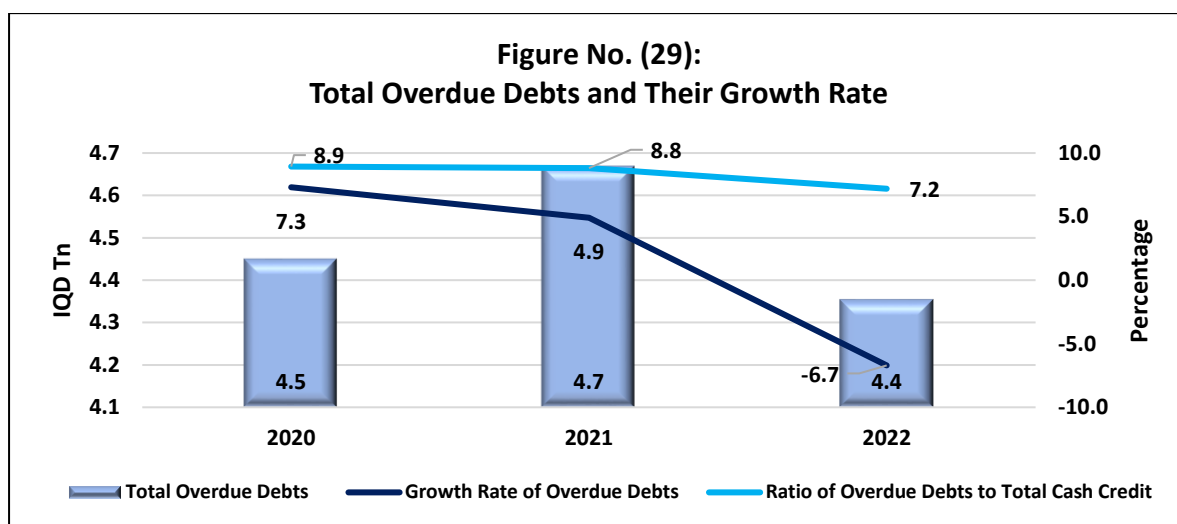
Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Division of Monetary and Financial Stability.

2-1-4-5 Overdue Debts

Total overdue debts recorded a decrease from IQD (4.35) trillion, with a negative growth rate of (-6.7%) in 2022 compared to the previous year, which amounted IQD (4.66) trillion. It reflects a low percentage of commitment to repay due loans for 2022, and a declined percentage of overdue debts to total cash credit to (7.2%) in 2022 compared to the previous year, at a rate of (8.8%). In addition to declined risks that are facing the banking sector, especially those resulting from the activity of private sector, whose overdue debts constitute the largest percentage compared to the public sector, as shown in figure No. (29).

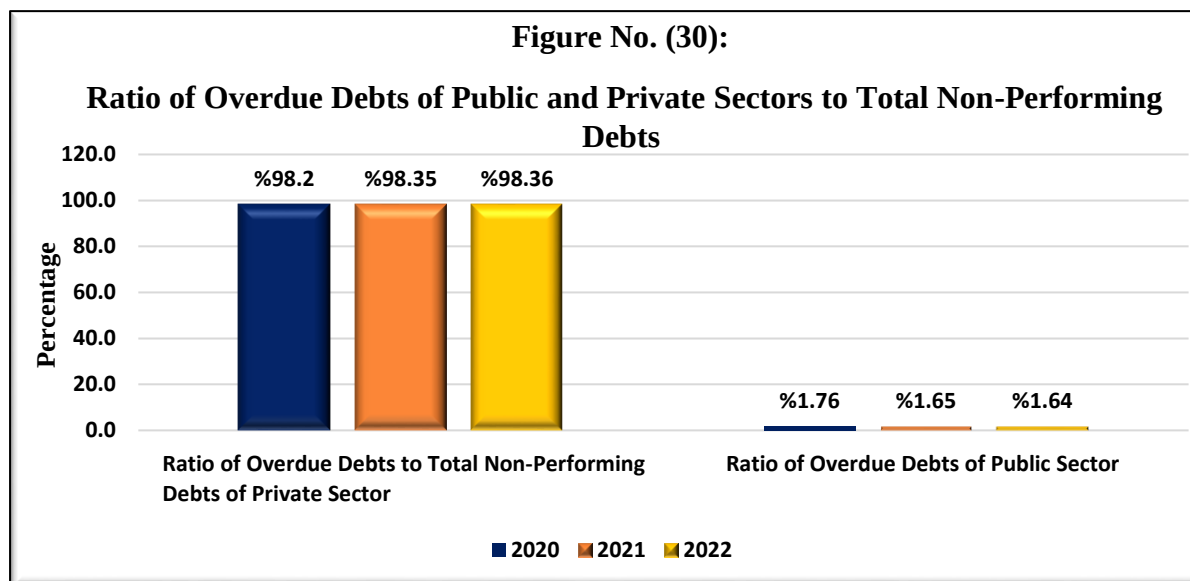
1 Includes credit extended to private sector only.

2 For example, the 5Cs include Character, Capacity, Capital, Collateral, and Conditions.



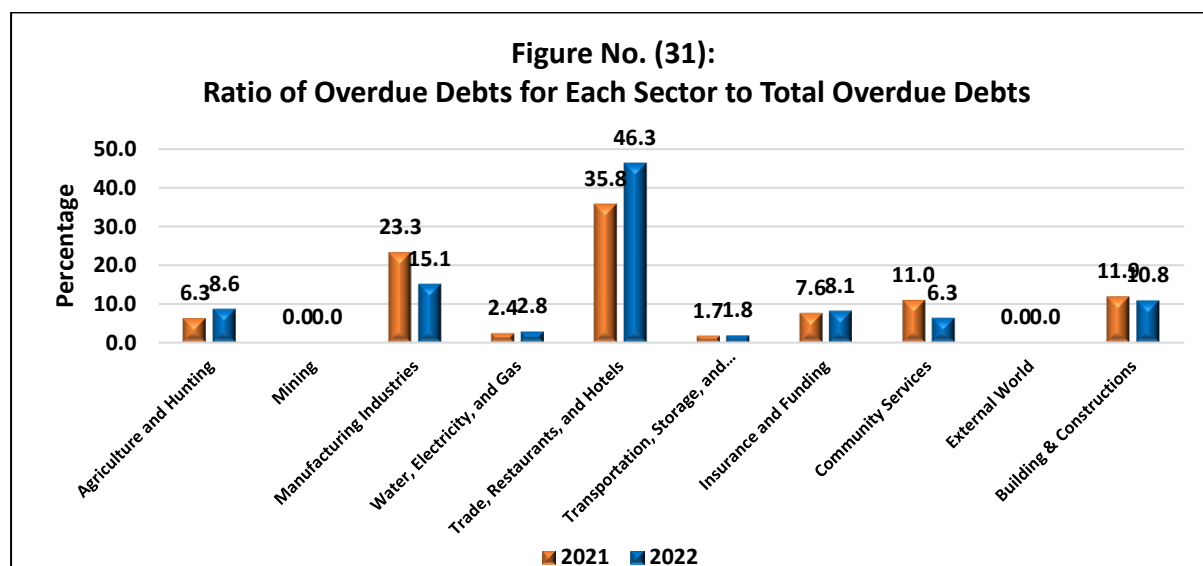
Source: Central Bank of Iraq / Statistics and Research Dept. - Annual Bulletin for (2020-2022).

It is noted from figure No. (30) that the private sector continues to hold the largest percentage of overdue debts compared to the public sector. Total overdue debts of private banks decreased from IQD (4.59) trillion 2021 to IQD (4.28) trillion, with a negative growth rate of (-6.7%) in 2022. The percentage of overdue debts to total non-performing debts recorded a slight increase of (98.4%) compared to the previous year, which reached (98.3%). The matter that requires more attention by supervisory authorities to the issue of credit provided to private sector. In addition to a decrease of overdue debts` percentage to total cash credit provided for private sector by private banks reaching (14.55%) in 2022 compared to the previous year that amounted (22.23%). As well as there was a decrease of this percentage for this sector to total cash credit extended by SOBs from (12.84%) to (11.33%) during the period (2021-2022), which reflects that SOBs are more efficient in collecting their overdue debts and that private banks follow the same trend in collecting their overdue debts. Success of this approach requires a good study of customer`s credit worthiness, while developing a solid plan to collect their overdue debts.



Source: Central Bank of Iraq / Statistics and Research Dept. - Annual Bulletin for (2020-2022).

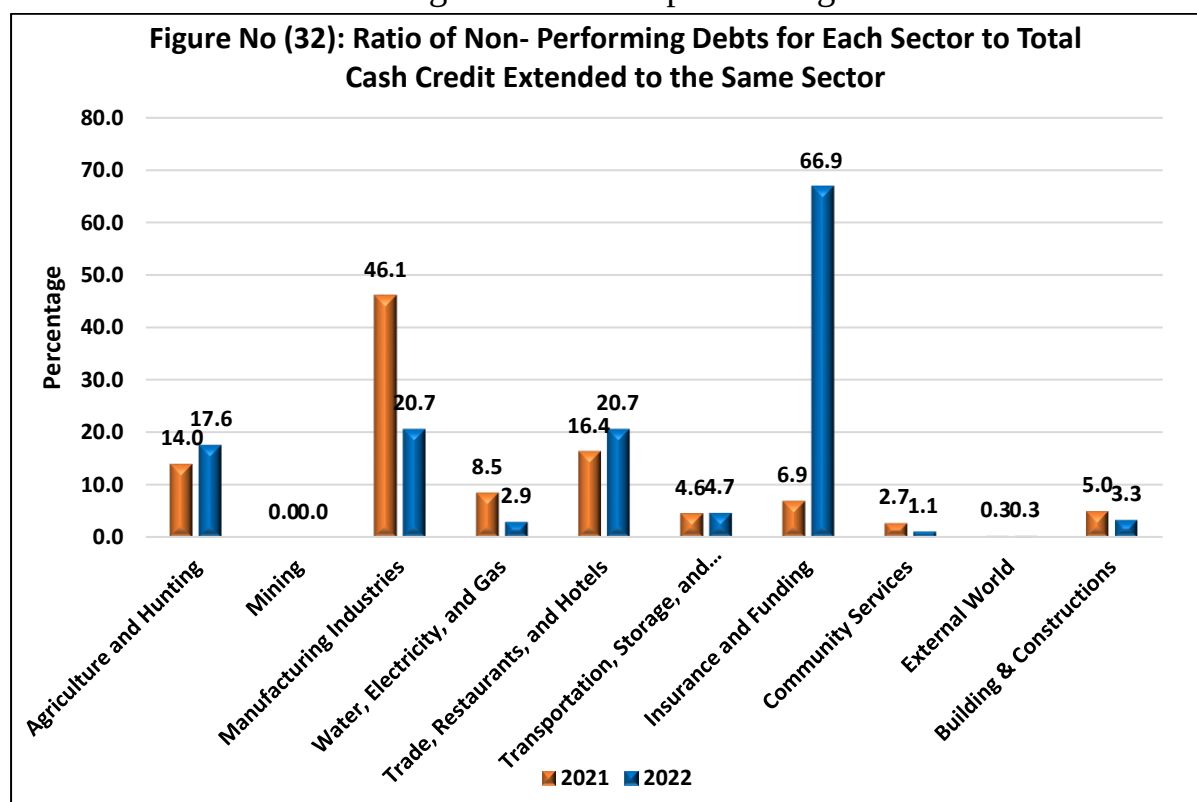
Figure No. (31) shows total overdue debts at the level of economic sectors, as (trade, restaurants, and hotels) sector recorded an increase of total overdue debts by IQD (2.01) trillion, with a growth rate of (20.8%) in 2022 compared to the previous year, which reached IQD (1.67) trillion. There was an increase of overdue debts percentage of this sector to total overdue debts from (35.8%) to (46.3%) for the period (2021-2022). which is very high compared to other economic sectors.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

Likewise, the Percentage of overdue debts to cash credit extended to this sector increased from (16.4%) in 2021 to (20.7%) in 2022. It was followed by the

manufacturing sector, in which the percentage decreased from (23.3%) in 2021 to (15.1%) in 2022. In addition to a decrease in the ratio of overdue debts to the cash credit extended to the same sector from (46.1%) to (20.7%) during the period (2021-2022). The construction sector occupied third place in the percentage of overdue debts to the total overdue debts, and the decrease in this percentage reached (10.8%) compared to the previous year, which amounted to (11.9%). Whereas the percentage of overdue debts in the rest of the sectors was decreased, if it compared to the percentage of overdue debts to the cash credit extended to them, which was high in the finance and insurance sector (66.8%), while the agricultural sector recorded (17.6%) in 2022, as shown in figure no. (32), accordingly, the percentages reflect the total non-performing in the economic sectors and the high rates of non-performing risks.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

2-2 Iraq Stock Exchange

Iraq Stock Exchange is considered one of the independent financial institutions that works to organize the trading of shares of joint-stock companies and government bonds within the market. By analyzing the data included in the Iraq Stock Exchange report for 2022, it could be noted that there is an increase of some annual indicators. As it could be observed that the market index (ISX60)

increased to (585) points in the last session of 2022, with a total of (236) trading sessions compared to the previous year, which recorded (569) points during last session of 2021, throughout organizing (226) trading sessions.

There were (92) Iraqi joint stock companies participated in stock trading out of (103) companies registered in the market. Three joint stock companies were suspended based on the decisions of the Iraq Securities Commission, compared to the number of companies traded for the previous year, which amounted (80) companies out of (105) listed ones.

Traded shares recorded a decrease by (564) billion shares with a value of IQD (521) billion, with a decline rate of (35.8%) in 2022 lower than in 2021 by total of (930) billion traded shares, with a value of IQD (812) billion. The number of executed contracts increased from (114,467) contracts in 2021 to (135,597) contracts, with an increase of (18.45%) as a growth rate. This increase of executed contracts indicates the role that Iraq stock market plays in supporting economic activity within the country.

2-2-1 Ratio of Sectoral Distribution of Companies, Shares, Traded Value, and Executed Contracts

Banking sector was the largest contributing sector to Iraq Stock Exchange, as the number of traded companies reached (36) companies out of (43) companies. The ratio of traded shares to total traded shares of the market decreased from (95.9%) to (92.8%) during the period (2021-2022). As well as there was a decreased ratio of traded value from (82%) in 2021 to (66.9%) in 2022. Followed by a decreased ratio of executed transactions to (28%) in 2022, compared to the previous year by (35.7%). As for industrial sector, the ratio of traded shares increased from (2.7%) to (3.4%) for the period (2021-2022), while ratio of trading value to total traded value of the market decreased to (9%) in 2022. Whereas the rest of the sectors, ratio of traded shares of (communications, services, financial and agricultural investment, hotels & tourism) sectors decreased by (1.6%), (0.8%), (0.1%), (0.7%), and (0.2%), respectively, in 2022. While the ratio of the traded value of these sectors reached (13.1%), (3.1%), (0.02%), (4.5%), and (3.2%), respectively, for the same year as shown in table No. (2). It could be noted that the results of the table below show that the banking sector had the largest ratio in the Iraqi Stock Exchange, as a result of its important role in activating, and supporting the economic process in the future, reflecting the weak activity of rest of sectors in the national economy.

Table No. (2): Ratio of Sectoral Distribution of Companies, Shares, Traded Value, and Executed Contracts for the Period (2021-2022)

2021				2022		
Sectors	Ratio of Traded Shares to Total Shares (%)	Ratio of Traded Value to Total Value (%)	Ratio of Executed Contracts to Total Contracts (%)	Ratio of Traded Shares to Total Shares (%)	Ratio of Traded Value to Total Value (%)	Ratio of Executed Contracts to Total Contracts (%)
Banks	95.90	82	35.70	92.8	66.9	28
Communications	0.4	3.70	9.40	1.6	13.1	11.9
Industry	2.7	10.30	31	3.4	9	32.8
Hotels & Tourism	0.05	0.84	3.10	0.2	3.2	5.7
Services	0.54	1.70	13.20	0.8	3.1	11.3
Agriculture	0.1	1.4	7	0.7	4.5	9.8
Financial	0.25	0.07	0.26	0.1	0.02	0.1
Insurance	0.02	0.02	0.14	0.4	0.2	0.4

Source: Annual Report of Iraq Stock Exchange for 2022.

2-2-2 Financial Depth of Iraq Stock Exchange ¹

This index measures the demand and supply for liquid tradable assets such as shares or forward contracts, whenever demand increased for them, the deeper or more liquidated the market is.

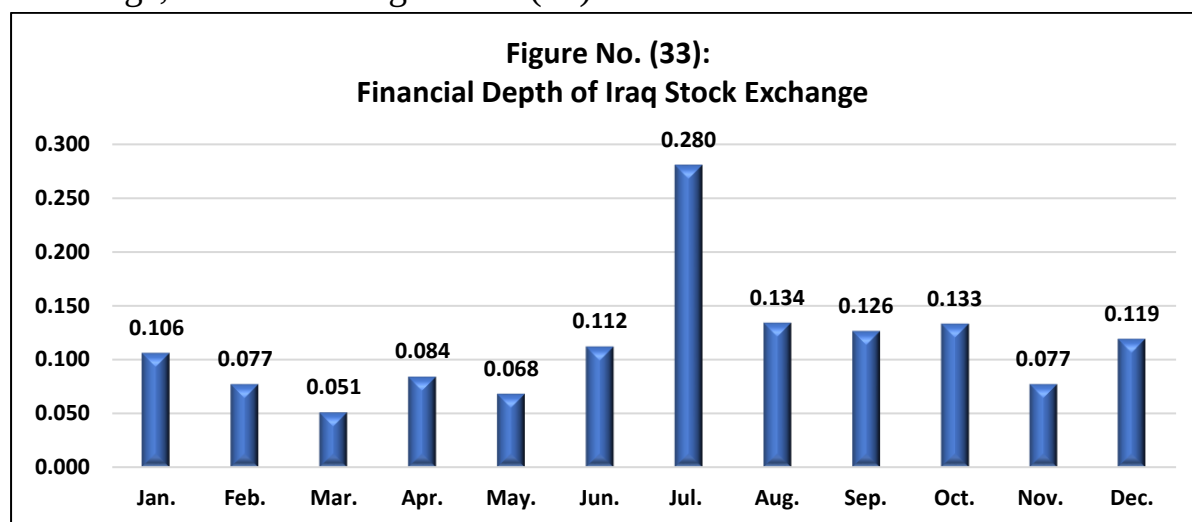
This indicator is used to identify the general liquidity of securities, as well as determine the extent of the impact of a single large deal on market movement, which is more important for individual investors, and institutional investors for sectors.

The results of Hugh-Hipple Financial Depth and Resilience Index (HHR) indicate that the market witnessed fluctuations, reaching the highest value of the index (0.280) in July. This increase occurred as a result of a decrease in the turnover rate (0.46). While the lowest value of the index was (0.051) in March

¹ Through the Hugh-Hipple (HHR) index, it is possible to know the depth and flexibility of the stock market, as low values of this index indicate an increase in the depth and flexibility of the market. While high values indicate a decrease in the depth and flexibility of the market. It can be calculated through the following equation:

$$HHR = \frac{\text{Highest price} - \text{Lowest price}}{\text{Trading value/market value}}$$

due to the increase in the turnover rate to (1.19). As for the rest of months of the year, they witnessed a decrease in the value of the index, as its value ranged between (0.134-0.068), which is between zero and the one. It indicates the high depth of the market and its resilience, as the market goes through a recovery stage, which was reflected on the increase of its activity, the growth in stock trading, and the high demand of investors and traders to enter Iraq Stock Exchange, as shown in figure No. (33) shows.



Source: Annual Report of Iraq Stock Exchange for 2022.

2-2-3 Trading at the Formal Market

Several changes occurred on the formal market indicators, including an increase of the number of executed contracts by (3.44%), recording (111,549) contracts in 2022, compared to the previous year, which reached (107,840) contracts. They distributed among sectors, including the banking sector with a decrease of (-16%), followed by hotels & tourism (-23%), and industry (-1.5%). While the percentage of agriculture, services, and communications sectors increased by (60.7%), (4.3%), and (51.4%), respectively. As for the Insurance sector, the percentage of executed contracts increased by (460%).

The value of trades decreased by (-54.8%), as total value of trades in 2022 reached to IQD (308,808) million compared to the previous year IQD (683,335.4) million. This decrease was concentrated in the banking sector, as it decreased by (-71.7%), followed by the industrial sector (-54%), while the communications, insurance, services, hotels & tourism, and agriculture sectors increased by (129.1%), (1200%), (18.9%), (66.2%), and (108%), respectively. The rise and decline are not limited to the previous two indicators, as traded shares also decreased by (-67.2%) during the same year compared to the previous year. The growth rate of the banking, industrial, and services sectors

declined by (-70%), (-45.3%), and (-4.7%), as the largest share was for the banking sector. While the other sectors witnessed an increase in the percentage of traded shares in insurance sector by (1737.6%), communication sector recorded (147.4%), and hotels and tourism recorded (0.8%), respectively. It appears in table No. (3), that the insurance sector had the highest growth rate among other sectors in Iraq Stock Exchange.

Table No. (3): Number of Shares, Executed Contacts, and Value of Traded Shares through the Formal Market for (2021-2022)

Sectors	Number of Executed Contracts			Trading Value (IQD million)			Number of Traded Shares (million shares)		
	2021	2022	Growth Rate (%)	2021	2022	Growth Rate (%)	2021	2022	Growth Rate (%)
Banking Sector	39078	32805	-16.1	545,583.4	154,655.8	-71.7	748,921.5	225,965.9	-69.8
Communications sector	10689	16178	51.4	29,752.6	68,177.6	129	3,548.5	8,778.1	147.4
Insurance Sector	65	364	460	73	949.5	1200.7	124.8	2,291.5	1736.1
Services Sector	13299	13872	4.3	12,253.4	14,566.5	18.9	3,853.8	3,673.3	-4.7
Industry Sector	33009	32529	-1.5	77,736	35,790.6	-54	24,344.1	13,325.9	-45.3
Hotel & Tourism Sector	3575	2748	-23.1	6,859.9	11,398.5	66.2	511.7	515.9	0.8
Agriculture Sector	8125	13053	60.7	11,077.4	23,044.1	108	1,137.6	2,303.4	102.5
Total	107840	111549	3.4	688,335.7	308,582.6	-54.8	782,441.9	256,853.9	-67.2
Number of Sessions	226	236	4.4	226	236	4.4	226	236	4.4

Source: Annual Report of Iraq Stock Exchange for 2021, 2022.

As for net foreign investment within formal market, it decreased to IQD (3.78) million in 2022, while it was IQD (420.1) million in 2021. Hotel & tourism sector had the largest share, with a net investment reaching IQD (4,201.9) million, while communication sector was in second place with IQD (180) million. Investment within banking, services, and industry sectors were decreased as shown in the table No. (4).

Sectors	Table No. (4): Value of Foreigners' Trading at the Formal Market for (2021-2022) (IQD million)					
	2021			2022		
	Foreigners' buy	Foreigners' sell	Net foreign investment	Foreigners' buy	Foreigners' sell	Net foreign investment
Banking Sector	32284.8	34345.6	-2060.8	16,130.5	16,645.1	-515
Communications Sector	5799.3	7214.8	-1415.6	8,976.2	8796.6	180
Insurance Sector	0.209	0.268	-0.059	0.00	0,112	-0.112
Services Sector	1934.9	506.1	1428.8	6.4	2,066.4	-2060
Industry Sector	8401.3	6744.2	1657.1	296.8	5,778.4	-5482
Hotel & Tourism Sector	1037.2	236.9	800.3	4,377.3	175.3	4202
Agriculture Sector	21.2	10.8	10.5	0.00	106.7	-106.7
Total	49478.9	49058.8	420.1	29,787.2	33,568.6	3781.5

Source: Annual Report of Iraq Stock Exchange for 2021-2022.

2-2-4 Trading at the Secondary Market

There was a decrease in the number of sectors contributing to the secondary market, the number of shares increased by (76.4%), with a total amount of (261,363.1) million shares in 2022 compared to the previous year, which recorded (148,155) million shares. While trading value increased by (53.2%), as total increased from IQD (129,362.5) million in 2021, to IQD (198,244) million in 2022. The executed contracts increased by (39.1%) with an increase of (9,219) contracts for the same year compared to the previous year (6,627) contracts, the increase resulted from growth of trading rates within Iraq Stock Exchange. The banking, industry, and insurance sectors witnessed the largest increase of growth rate of executed contracts at (28.3%), (1405%), and (101%), respectively. Investment sector decreased by (-84.3%). As for growth value of trades for the number of executed contracts of the same sectors, the largest increase rate was for the supply sector by (70.7%), followed by banking sector by (57.7%). While the increase of the number of traded shares was for the banking and insurance sectors, in addition to the industrial sector by (80.3%), (166.2%), (126.8%), respectively. While the growth rate of the industrial sector decreased by (-96.4%), as shown in table No. (5).

Table No.(5):
Number Of Shares, Contracts, Deals, and Value of Traded Shares
at the Secondary Market for (2021-2022) (IQD Million, Percentage)

Sectors	Number of Traded shares (Million shares)			Trading value (Million dinars)			Number of Executed Contracts		
	2021	2022	Growth Rate	2021	2022	Growth Rate	2021	2022	Growth Rate
Banking Sector	1778	2,282	28.3	120,990.4	190,864.6	57.7	143,889.8	259,459.9	80.3
Communications Sector	83	-	-	53.3	-	-	22.5	-	-
Insurance Sector	97	195	101	69.7	118.8	70.7	81.9	218.0	166.2
Investment Sector	300	47	84.3-	560	44	92.2-	2,310.5	82.4	96.4-
Services Sector	1804	-	-	1716.8	-	-	1157.9	-	-
Industry Sector	2565	6,169	140.5	5972.6	6939.8	16.2	692.5	1570.9	126.8
Hotel & Tourism Sector	-	526	-	-	277.2	-	-	32.0	-
Total	6627	9219	39.1	129362.8	198,244.3	53.2	148155.2	261363.2	76.4
Number of Sessions	222	236	-	222	236	-	222	236	-

Source: Annual Report of Iraq Stock Exchange for 2021, 2022.

2-2-5 Trading of Government Bonds (Binaa Bonds)

1. The first issuance of bonds – (Binaa Bonds) were issued in two categories as follows:

- A bond denomination of IQD (500,000) with an annual interest rate of (6%) paid every six months for a period of two years.
- A bond denomination of IQD (1,000,000) with an annual interest rate of (7%) paid every six months for a period of four years.

The issuance date is calculated by the nominal value of the above categories since the date of its sale to the public on 12/10/2021. The above issuance was sold at a value of IQD (1) trillion through licensed Iraqi banks. Ministry of Finance and CBI were obligated to trade those bonds through buying and selling at Iraq Stock Exchange.

2. The second issuance of bonds (Binaa Bonds) with the same procedures and categories as the first issuance and on the same date. They are traded through the electronic trading system at the market via the bond-trading platform according to the following:

- Trading is according to bond's category.

- The percentage of change in bond's price is (5%), up and down, based on (the price calculated for the bond on that day during the issuance period), and the timing of trading on the bonds, as shown in the table below:

Figure No. (6): Traded Bonds for 2022 - Binna/ with a Denomination of IQD (1000000)				
Value	Number of Bonds	Price	Denomination symbol	Number & Date of Contract
1,030,000	1	1030000	CB10	2022-6-20
1,035,000	1	1035000	CB10	2022-6-20
1,040,000	1	1040000	CB10	2022-6-21
1,030,000	1	1030000	CB10	2022-6-22
4,135,000	4	4135000		SUM

Source: Annual Report of Iraq Stock Exchange 2022.

2-3 Non-Banking Financial Sector in Iraq

The role of non-banking financial sector is reflected through supporting economies that experience financial shocks, since they provide multiple alternatives to convert economy's savings into capital investment, especially on the long term. Hence, they act as backup facilities if the primary form of intermediation fails. Accordingly, the non-banking finance represents a valuable alternative to banking finance for many companies and households that cannot obtain funding from the banking system. As this sector's participation in financial intermediation contributed to enhance competition across the financial system, as well as improve the efficiency and increase the ability to share risks. In addition to that, some of these institutions are subject to CBI's supervision, which imposed instructions and controls on them in order to regulate their work activity. Some institutions were not subjected to CBI's supervision, such as insurance, Iraqi Housing Fund, Social Security Fund, pension funds, and others.

2-3-1 Small and Medium Enterprises Finance Company (SMEs) ¹

It is an institution for financing small and medium enterprises, which acts as a financial intermediary to manage and direct funds that are obtained from sponsors of lending program to "Iraqi Company for financing SMEs represented by international or governmental organizations. Those funds are

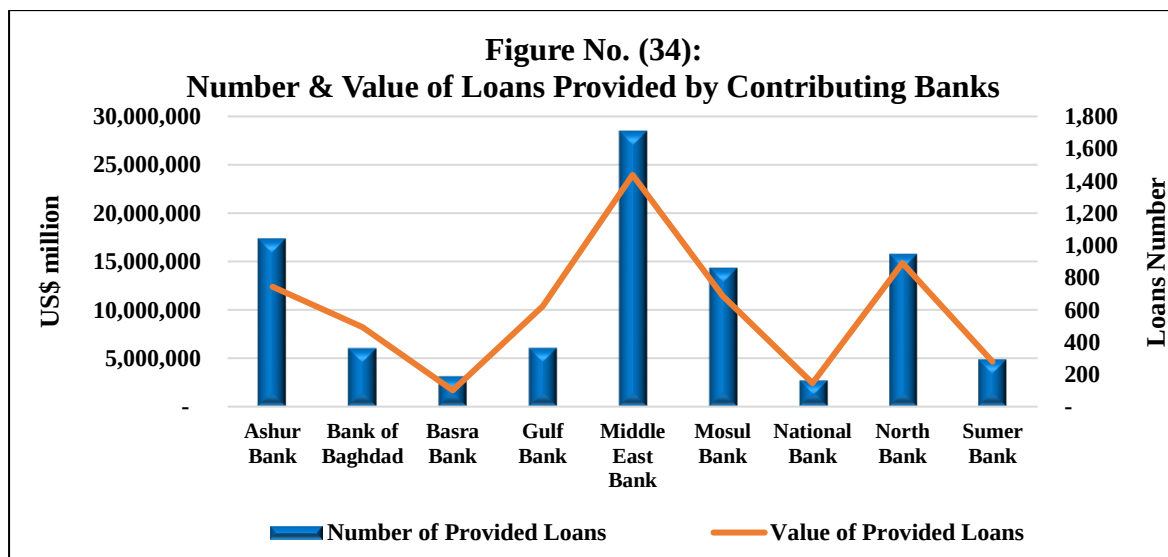
¹ The company was established with the CBI's approval based on the registration certificate issued by Ministry of Commerce/ Companies Registration Dept. on 5/18/2019 for the purpose of financing small and medium enterprises. Trading value/market value

allocated for the small and medium enterprise through lending program of the Iraqi company. This company also has a financing role for banks contributing to company's program through providing loans to beneficiaries (SME owners) with the aim of developing the economic situation in Iraq.

The capital of Iraqi Company for financing SMEs in 2009 amounted IQD (270) million, then it gradually increased to reach IQD (16.46) billion in 2021 with the participation of (9) private banks.

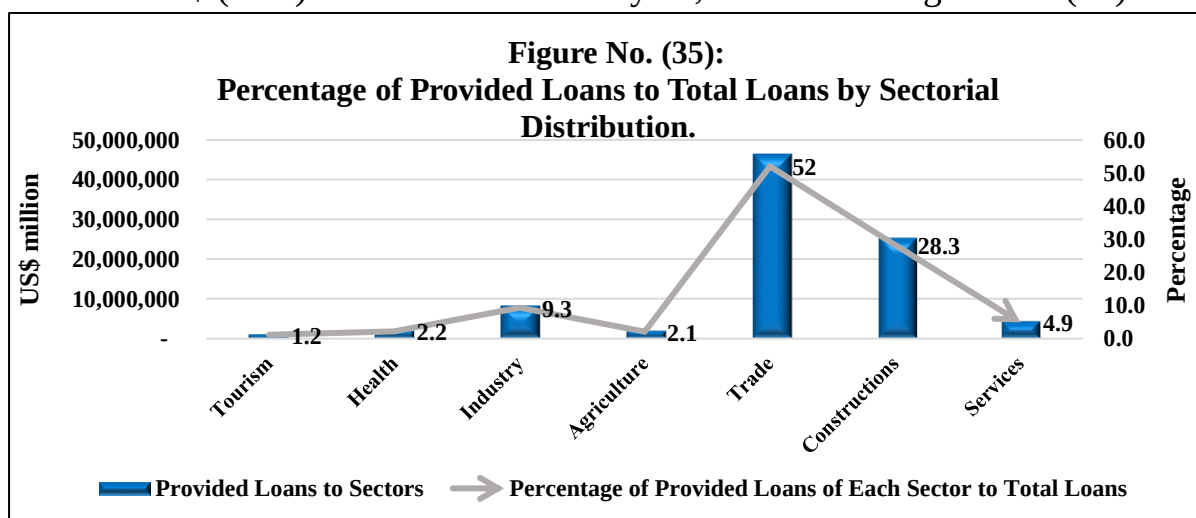
The volume of aggregate loan portfolio registered and, provided by Iraqi Company for financing SMEs increased by US\$ (90) million in 2021 compared to the previous year, which reached to US\$ (89.6) million. The contribution of the participating banks recorded US\$ (19.5) million. Total number of provided loans increased from (5831) loans in 2020 to (5932) loans distributed across governorates of Iraq, as the Iraqi Company for Financing SMEs intends to manage grant programs provided by joint-stock banks. Total loans provided by the Middle East Bank increased from (1691) loans in 2020 with a value of US\$ (23.8) million to (1,709) loans with a value of US\$ (23.95) million. It represents the largest percentage of contribution to finance SMEs, as the percentage of provided loans to total loans of banks contributing to financing reached (26.6%) in 2021.

While the second place was for North Bank, that provided (948) loans with the value of US\$ (14.8) million, as the percentage of provided loans to total loans reached (16.5%). Followed by Ashur Bank, as total number of provided loans by this bank increased from (961) loans with the value of US\$ (12) million to (1,044) loans that recorded US\$ (12.37) million, as the percentage of provided loans to total was (13.8%) in 2021. The remaining percentage of loans was distributed on contributing banks as shown in the figure No. (34).



Source: Iraqi Company for Financing Small and Medium Enterprises/ Annual Report for 2021.

Total loans provided by joint-stock banks recorded an increase from US\$ (8.9) million in 2020 to US\$ (9) million, with an increase rate of (0.37%) in 2021. Number of provided loans also increased from (5831) loans to (5932) loans, with an increase rate of (1.01%) for the period (2020-2021) with a financing volume of US\$ (18) million for 2021. The volume of provided loans according to sectoral distribution amounted US\$ (89.26) million dollars, as the largest percentage of loans provided by Iraqi Company for Financing Small and Medium Enterprises was for trade sector recording US\$ (46.42) million. This sector's percentage to total loans provided to sectors as a whole amounted (52%) in 2021. Followed by construction sector with a percentage of (28.3%) with total loans' value of US\$ (25.27) million. While the industrial sector ranked as a third in the percentage of provided loans, amounted (9.3%) with a value of US\$ (8.29) million for the same year, as shown in figure No. (35).



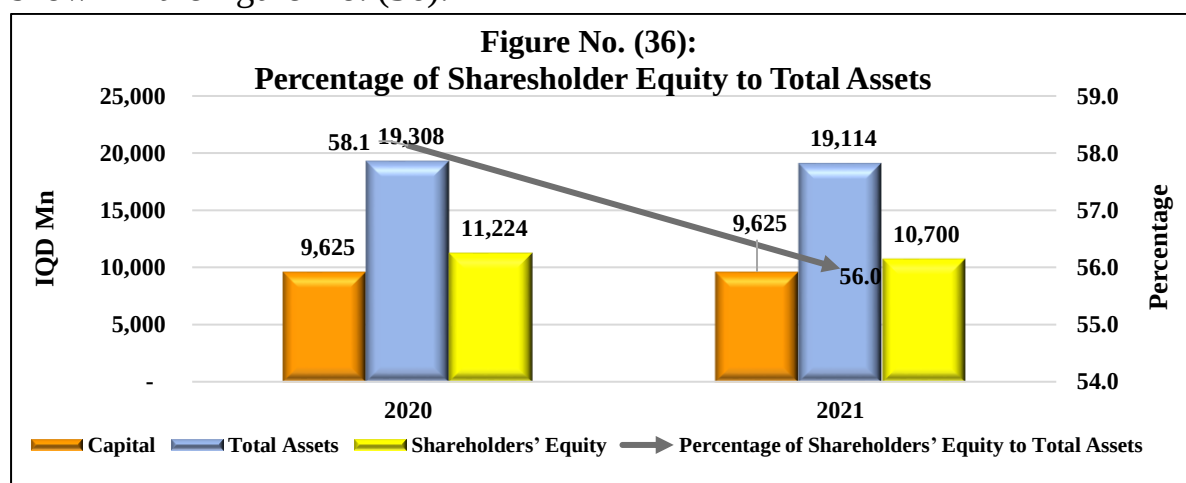
Source: Iraqi Company for Financing Small and Medium Enterprises/ Annual Report for 2021.

2-3-2 Limited Company of Banking Guarantees¹

The company aims mainly to encourage private banks to grant loans guaranteed by the Iraqi Company for Financing SMEs, to increase activity of small and medium enterprises, by providing guarantees for these loans at a rate of 75% of the value of extended loans by the participating banks. The limits of these loans are from US\$ (5) to US\$ (250) thousand, or its equivalent in IQD. The loan's period is five years as a maximum limit, while its minimum limit is one year.

2-3-2-1 Percentage of Shareholders' Equity to Total Assets

Capital of the Limited Company of Banking Guarantees amounted IQD (9.6) billion in 2021. The number of shareholders is (15) Iraqi private banks forming a percentage of (99.61%), with a financial intermediation company that recorded (0.24%), in addition to (15) individual shareholders with (0.15%). The company's total capital remained unchanged. Whereas total shareholders' equity decreased from IQD (11.2) million in 2020 to IQD (10.7) million with a growth rate of (-4.7%) in 2021. As well as there was a decrease in the percentage of shareholders' equity to total assets from (58.1%) to (56%) during the period (2020-2021). In addition to that total asset decreased from IQD (19.3) million in 2020 to IQD (19.11) million, with a growth rate of (-1.0%) in 2021, as shown in the figure No. (36).



Source: Banking Guarantee Company Limited Annual Report for 2021.

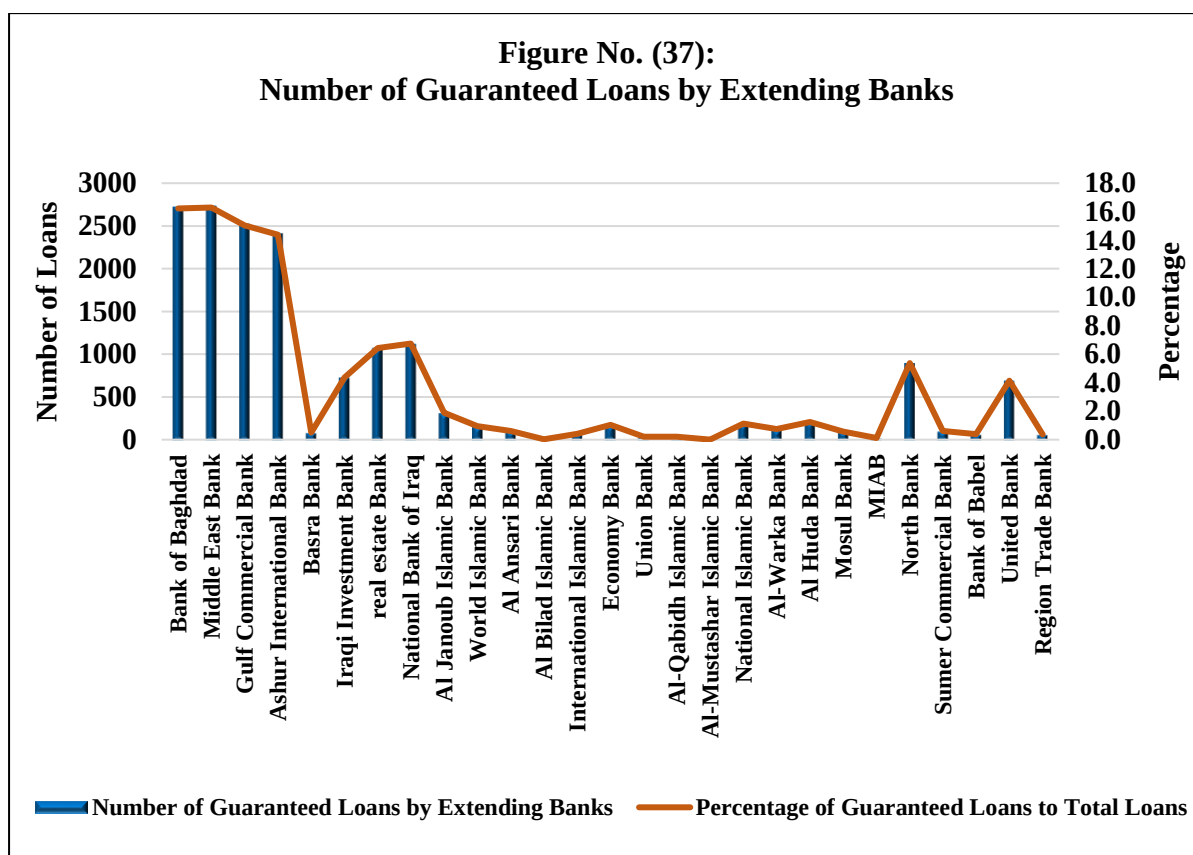
¹ The company was established in March 2006, as a limited liability company and began its activities in 2007. Then, the General Commission approved its transformation into a private joint stock company and increased its capital, in addition to that, new shareholders were entered with CBI's approval on 7/5/2009, and the approval of Ministry of Trade/ Registrar of Companies Dept. on 11/9/2009, in accordance with the provisions of Companies Law No. (21) of 1997.

2-3-2-2 Revenues and Reserves

Total reserves increased to IQD (372) million in 2021, with a growth rate of (6.29%) in 2021 compared to the previous year that amounted IQD (350) million. The commissions' revenues of loan guarantee decreased from IQD (335) million in 2020 to IQD (333) million, with a growth rate of (0.59%) in 2021. It is noted that total investment revenues increased to IQD (699) million with a growth rate of (6.6%) in 2021, compared to the previous year that amounted IQD (656) million. The increase was due to the rise of revenues generated from investment of company's capital in the form of deposits with participating banks, which are used for financing to achieve the main goal. As the main goal is represented by facilitating the mission of medium and small enterprises' owners to obtain loans for financing private sector projects to create new job opportunities that contribute to increase country's economic growth.

2-3-2-3 Total Loans and Number of Guaranteed Loans by Provided Banks

Total number of loans (guaranteed, non-guaranteed, canceled and rejected) was decreased to (463) loans, with a growth of (-1.5%) in 2021, compared to the previous year that recorded (470) loans. Total number of guaranteed loans decreased from (448) to (324) guaranteed loans during the period (2020-2021). The decrease of this percentage to total loans recorded (70%) in 2021 compared to the previous year that recorded (95.3%), which represent guaranteed loans for which a commission has been received. Middle East Bank accounted for the largest percentage of the number of guaranteed loans to total guaranteed loans by (16.3%) recording (2723) loans. Followed by Bank of Baghdad, recording (16.2%), the Gulf Bank recording (15%), and Ashur International Bank, recording (14.4%) in 2021. Total guaranteed loans in 2021 amounted (16,714) loans, as shown in the figure No. (37) below.



Source: Banking Guarantee Company Limited Annual Report for 2021.

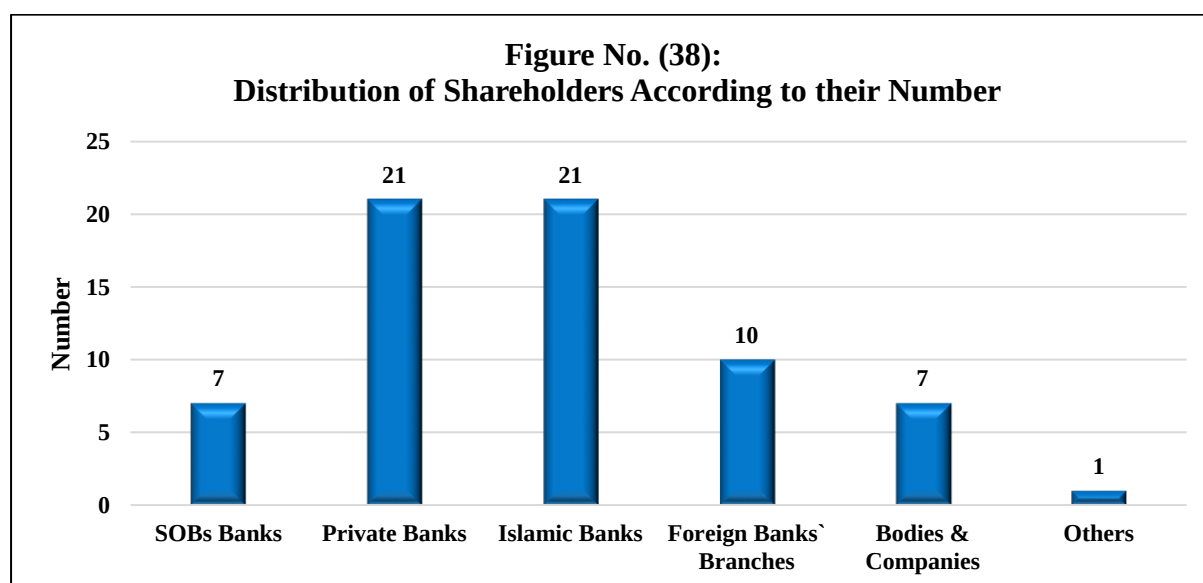
Whereas at the level of economic sectors, trade sector received the largest number of loans with a total of (1680) loans. Followed in second place by the industrial sector with total of (437) loans. While services sector recorded (410) loans, health sector (118) loans, tourism sector (90) loans, agriculture sector (72) loans, and the housing sector (26) loans in 2021.

2-3-3 Iraqi Company for Deposit Insurance

The Iraqi Company for Deposit Insurance is one of the important institutions supporting banking and financial sector. It was established in light of the issuance of the Banking Deposit Insurance Regulation No. (3) for the year (2016) in order to provide protection for depositors and banks through enhancing confidence in the banking sector. As well as it works on addressing the phenomenon of hoarding funds with public depositors. The company's capital has been determined at no less than IQD (100) billion, whereas the Iraqi banking sector must obligatorily contribute to company's capital. The capital consists of (100) billion shares with a value of IQD (1) per share.

2-3-3-1 Distribution of Shareholders by Number and Volume

Number of participating banks in the company's capital reached (61) banks, they distributed as follows: (7) state- owned banks, (54) domestic banks, or foreign branches, or domestic banks whose capital is contributed by foreign banks. While the volume of bodies and companies reached (7), in addition to a number of other shareholders. Also, the volume of private sector's contribution recorded (51%) of the company's capital, while the public sector's contribution reached (49%), as shown in figure No. (38).



Source: Iraqi Company for Deposit Insurance. <https://www.icdi.iq/>.

2-3-3-2 Volume of Paid Compensation According to the Volume of the Deposit

The company covers approximately (80%) of total small deposits of the Iraqi banking system, with the limit of IQD (25) million and the less, which the company covers by (100%). While the amount of compensation decreases as the amount of the deposit increases. Accordingly, the percentage of deposit compensation for IQD (50-100) million reached (20%), whereas the compensation percentage for IQD (500) million deposit amounted (5%), as shown in table No. (7).

Table No. (7): Deposit Amount and Compensation Percentages	
Deposit Amount	Compensation Percentage
From IQD 1 up to 25 million	100%
up to 50 million 250000001	30%
up to 100 million 500000001	20%
up to 250 million 1000000001	10%
From 2500000001 up to 500 million	5%
From 5000000001 up to 1 billion	4%

Source: Iraqi Company for Deposit Insurance. <https://www.icdi.iq/>.

2-3-3-3 Compensation Amounts in Some International Countries

The amounts and percentages of deposit compensation vary according to the type and volume of the banking sector, as well as the size of the guaranteed deposit. The countries experiences, as shown in table No. (8), reveal that the highest compensation amount was for the United States of America at US\$100,000. Followed by Malaysia with US\$80,000, while compensation in Jordan amounted JOD50,000 approximately. Whereas for Turkey and Bahrain, the compensation was in the form of a percentage of the deposit, which amounted (75%). Thus, the establishment of Iraqi company for deposit insurance is to increase the confidence in the banking sector and stimulate the hoarded money in order to direct them towards investment to achieve financial stability and accelerate economic growth in the country.

Table No. (8): Amounts and Percentages of Compensation in Some Countries		
No.	Country	Compensation Amounts
1	USA	\$100000
2	Malaysia	2500000000 MYR 80000 (Eighty Thousand US\$)
3	Turkey	75% of Deposit Amount
4	Bahrain	Equivalent to 75% of Deposit Amount
5	Jordan	JOD 50000
6	Britain	75% of Deposit Amount (20000 British Pounds)

Source: Iraqi Company for Deposit Insurance. <https://www.icdi.iq/>.

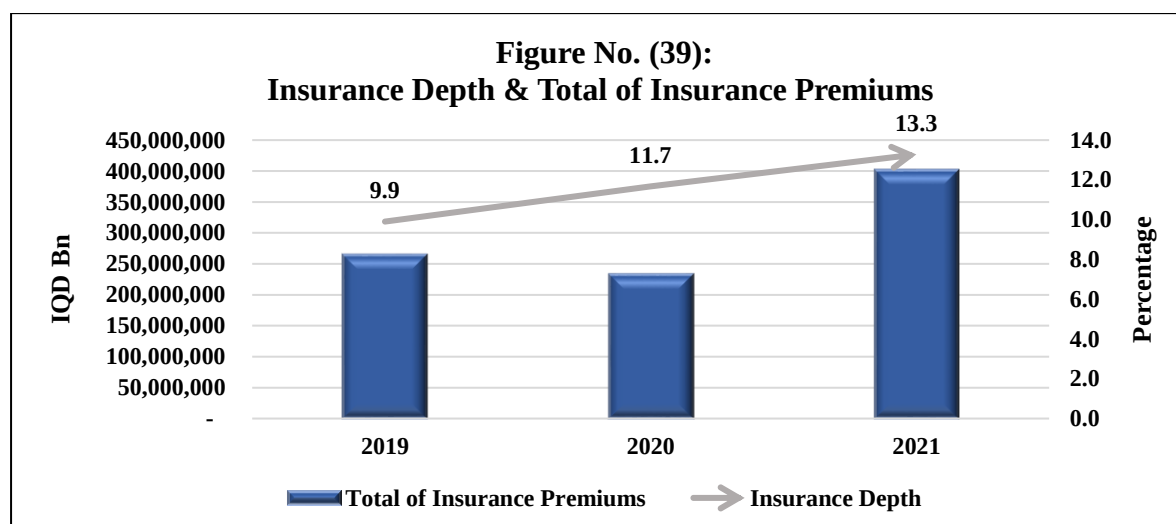
2-3-4 Insurance Sector in Iraq

Insurance sector is one of the important sectors that contribute to achieve financial and economic stability, since it provides protection for public and private properties. Insurance companies bear the costs resulting from unexpected accidents and reduce material damage and losses, as they provide financial protection for individuals and companies alike, in addition to the role of insurance industry in reducing the material losses, which help to stabilize and reduce economic fluctuations.

Number of licensed insurance and reinsurance companies in Iraq reached (37) companies, while number of insurance intermediation companies reached (22) companies. In addition, number of companies of licensed insurance agents of reached (11) companies. The Insurance Diwan emphasized the importance of combating money laundering in the field of the insurance industry based on the provisions of Article (35)/ Chapter Three - Law of Regulating Insurance Business No. (10) of 2005. As well as based on the provisions of Clause (Second) of Article (26) of Law on Anti-Money laundering and countering the Financing Terrorism No. (39) of 2015. As insurance companies and other financial institutions were exposed to exploitation by money launderers through passing illegal financial transactions via various commercial and financial businesses undertaken by these institutions. Despite the decrease of the process of money laundering in insurance sector compared to financial institutions, however, it can be used as a direct target for money laundering in different ways and methods. Below are some indices through which the size of insurance companies in Iraq can be measured.

2-3-4-1 Insurance Depth of Insurance Sector

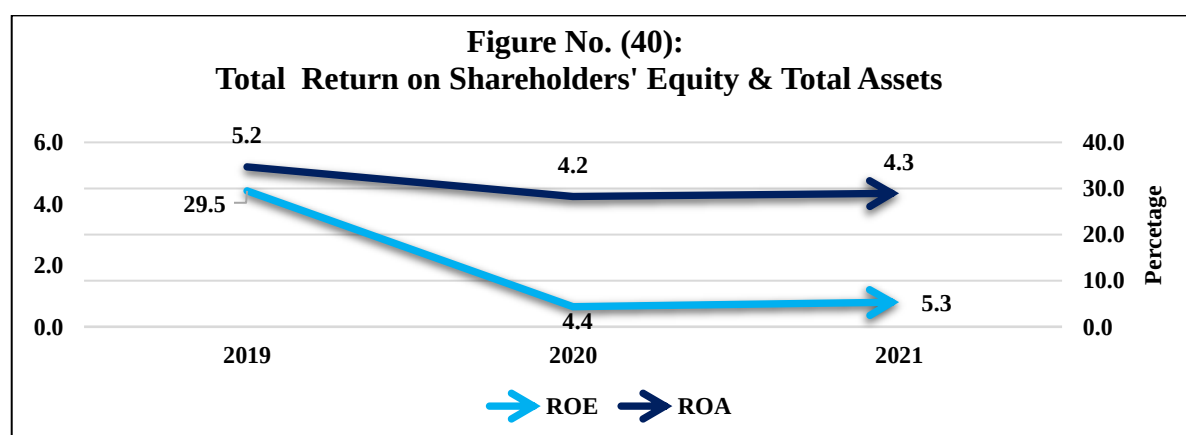
Depth of insurance is measured by dividing total insurance premiums to GDP at current prices, as the percentage of total insurance premiums subscribed to GDP recorded an increase of (13.3%) in 2021 compared to the previous year, which had a growth rate of (11.7%). This growth was due to the increase of total subscribed premiums for insurance companies that recorded IQD (400) billion in 2021, while the value of the previous year was IQD (232) billion with a growth rate of (72.51%), as shown in figure No. (39).



Source: Insurance Diwan/ Report of Insurance Sector in Iraq for 2020-2021.

2-3-4-2 Profitability Indicators in Insurance Sector

This index measures percentage of insurance companies' total return to total assets and the percentage of return to shareholders' equity. The percentage of return to total assets increased by (4.3%) in 2021 compared to the previous year that recorded (4.2%). The percentage of return on shareholders' equity of insurance companies also increased from (4.4%) during 2020 to (5.3%) in 2021. This increase was due to the growth of total assets with insurance companies by IQD (889.39) billion in 2021, compared to the previous year that amounted IQD (758.61) billion with a growth rate of (17.2%). As well as total return increased from IQD (32.15) billion in 2020 to IQD (38.58) billion in 2021 due to the rise of net investments for insurance companies with a value of IQD (408.74) billion compared to the previous year that amounted IQD (379.89) billion, as shown in figure No. (40).

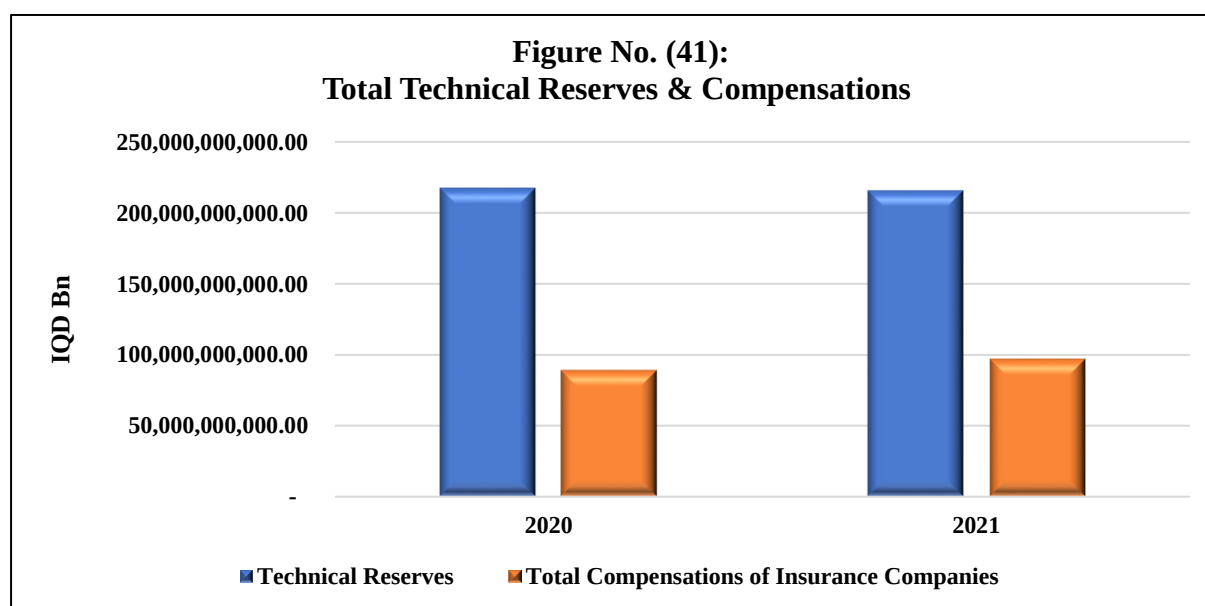


Source: Insurance Diwan/ Report of Insurance Sector in Iraq for 2020-2021.

2-3-4-3 Total Compensation and Technical Reserves

Technical reserves of insurance companies are defined as the amounts, which are reserved to strengthen the company's financial position, or to confront losses that are not certain to occur, that constitute a burden on profits, or they are considered as financial assets in the form of reserves to cover risks. Those are considered as obligations on insurance companies that are specialized in life and money insurance ¹.

While compensations are claims on insurance companies that must be paid to individuals and institutions to compensate them for losses occurred on their properties resulting from accidents. The figure No. (41) shows an increase of total compensations paid by Iraqi insurance companies to IQD (96.59) billion in 2021, whereas it recorded IQD (88.57) billion in 2020. While total technical reserves for personal insurance decreased from IQD (217.2) billion in 2020 to (215.4) billion in 2021, with a negative growth of (0.82%).



Source: Insurance Diwan/ Report of Insurance Sector in Iraq for 2020-2021.

¹ The Unified Guide of the Statistics' Concepts and Terminology in the Gulf Cooperation Council, prepared by the Unified Guide Committee, 2003, United Nations ESCWA, <https://www.unescwa.org/>.

3- Financial Soundness Indictors

3. Financial Soundness Indicators in Iraq

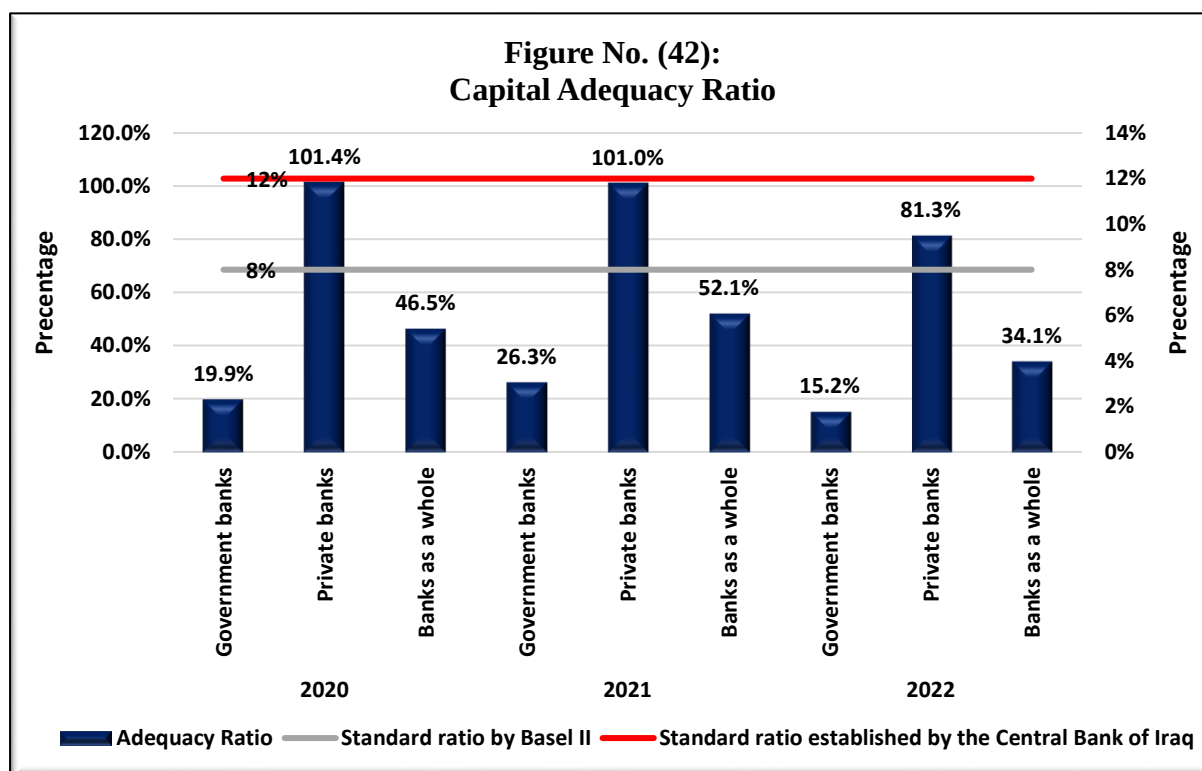
3-1 Capital Adequacy Ratio Index

Capital adequacy index is one of the most important indices of financial soundness indicators that aims to achieve financial stability at banking sector level, enhance financial solvency of banks and their ability to withstand the absorption of shocks and losses, which reflects positively on the soundness and solidity of the financial position of the banking sector. The Central Bank of Iraq (CBI) has paid attention to increase banks' capital in order to strengthen their financial position, as one of the main lines of defense to overcome potential risks. In addition to CBI's adoption of international standards such as (Basel II standards) ¹, which is set at a ratio of (8%) to measure the adequacy of the capital determined according to market and operational risks. As well as, CBI has set a standard ratio of (12%) for capital adequacy.

Capital adequacy ratio of the banking sector decreased from (52.1%) in 2021 to (34.1%), with a decline rate of approximately (34.5%) in 2022. This decrease is due to the increase in the value of risk-weighted assets because of the increase in both: total cash credit by (14.4%) and total assets by (24.6%), which increased at a rate higher than the increase of total capital. However, capital adequacy ratio in 2022 is still higher than the standard ratio identified according to Basel II and this bank, which is a reassuring ratio. It reflects the efficiency of the banking sector and its ability to address unexpected risks and problems that it may be exposed to as a result of capital components; most of which are from the first tranche of capital, consisting of core capital and supporting capital. Thus, banks maintain a high level of financial solvency.

As for the capital adequacy ratio of state-owned banks (SOBs), it also decreased from (26.3%) in 2021 to (15.2%) in 2022, which is a low at rate of approximately (42.2%), as shown in Figure No. (42). At the same time, it was noted that there was a slight increase of SOBs' capital from IQD (4.34) trillion to IQD (4.51) trillion. The increase was due to the increase of: Al-Rafidain Bank's capital at a rate of (5.3%), the Agricultural Cooperative Bank's capital at a rate of (8.3%), and the Industrial Bank's capital at a rate of (1.4%). As it reflects the efficiency and ability of SOBs in facing potential risks, as this ratio is greater than the standard ratio identified by Basel II and CBI.

¹ work is underway by CBI to apply Basel III standards on all banks.



Source: Central Bank of Iraq/ Statistics and Research Dept. - Division of Monetary and Financial Statistics.

Capital adequacy ratio for private banks decreased from (101%) in 2021 to (81.3%) in 2022, which is a low rate of approximately (19.5%) because of the stability of their capital at approximately IQD (13.4) trillion in 2022 and the increase in risk-weighted assets. It was due to the increase in cash credit provided by private banks at a rate of (16.6%), as well as an increase in the volume of private banks' assets at a rate of (8.7%). Despite that, capital adequacy ratio still reflects a significant decrease in the risks faced by banks operating in Iraq. Moreover, this ratio is very high and exceeds the ratio set by Basel II standards, as well as the standard ratio identified by the CBI. It was observed that there is an increase in the capital adequacy ratio of private banks compared to SOBs due to the increased number of private banks to (63) banks Compared to SOBs, which are (7) banks. In addition to the increase in the capital of private banks, since the minimum is IQD (250) billion for each bank in response to the CBI's instructions.

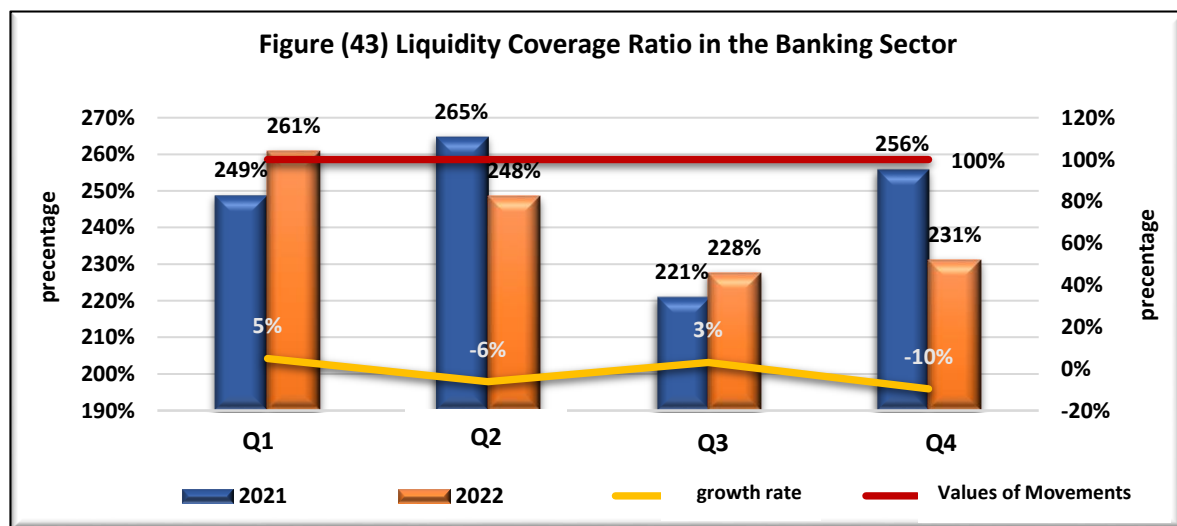
3-2 Liquidity Indices

Bank's possession of an appropriate level of liquidity remains a major challenge for bank's management because it faces a trade-off between profitability and liquidity. In the event of low liquidity levels, a bank is exposed to high financial risks that may lead to its failure. Therefore, Basel III

introduced a new framework for regulating and monitoring banking liquidity. It focused on high-quality capital (regular stocks), as the new liquidity standard consists of liquidity coverage ratio (LCR), which requires banks to maintain a sufficient amount of high-quality liquid assets to enable them to face stressful situations for a period of no less than (30) days. As well as Net Stable Funding Ratio (NSFR), which is a structural control tool in measuring the level of liquidity, as follows:

3-2-1 Liquidity Coverage Ratio (LCR) ¹

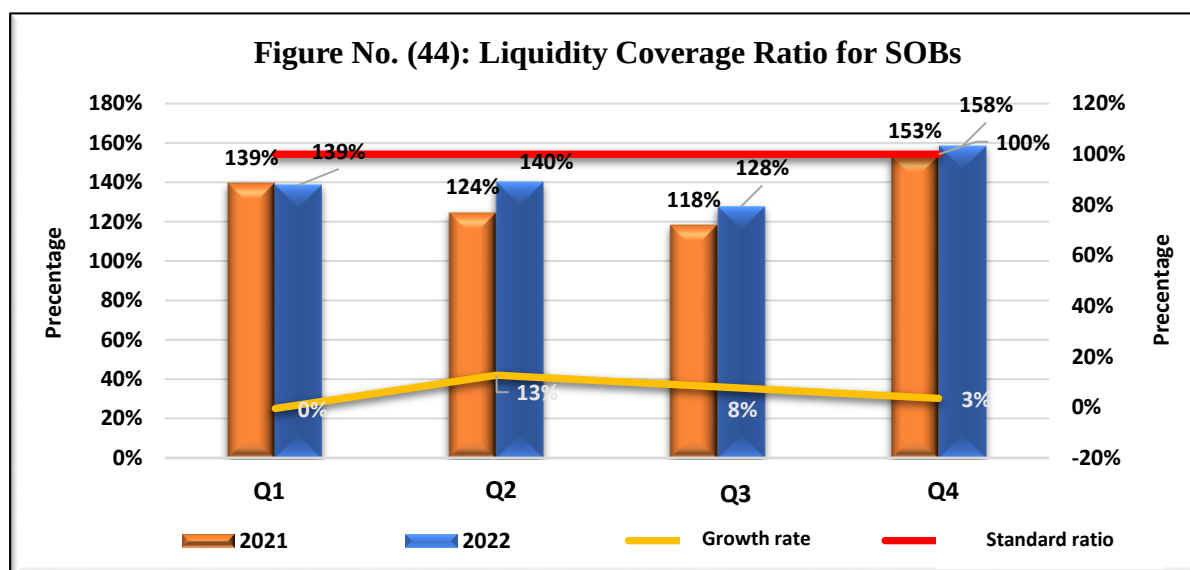
CBI began to apply LCR since 2017 at a rate of (80%); the ratio gradually reached (100%) in 2019. Banks operating in Iraq achieved a high rate of LCR, as the monthly average of this ratio did not fall below the minimum limit set during the year 2022. LCR recorded its highest ratio in Q1 2022 that reached (261%), while the lowest ratio was in Q3 2022 that reached (228%) - which is much higher than the minimum ratio of (100%). Banks have succeeded in applying LCR on the entire banking sector. These ratios reflect the ability of banks to liquidate high-quality liquid assets to face risks resulting from sudden withdrawals, as well as measuring the ability of banks to fulfill their obligations within (30) days. Figure No. (43) shows the quarterly average of LCR for banks operating in Iraq and the growth rate between the quarterly ratio for (2021-2022).



Source: Central Bank of Iraq / Banking Supervision Dept.

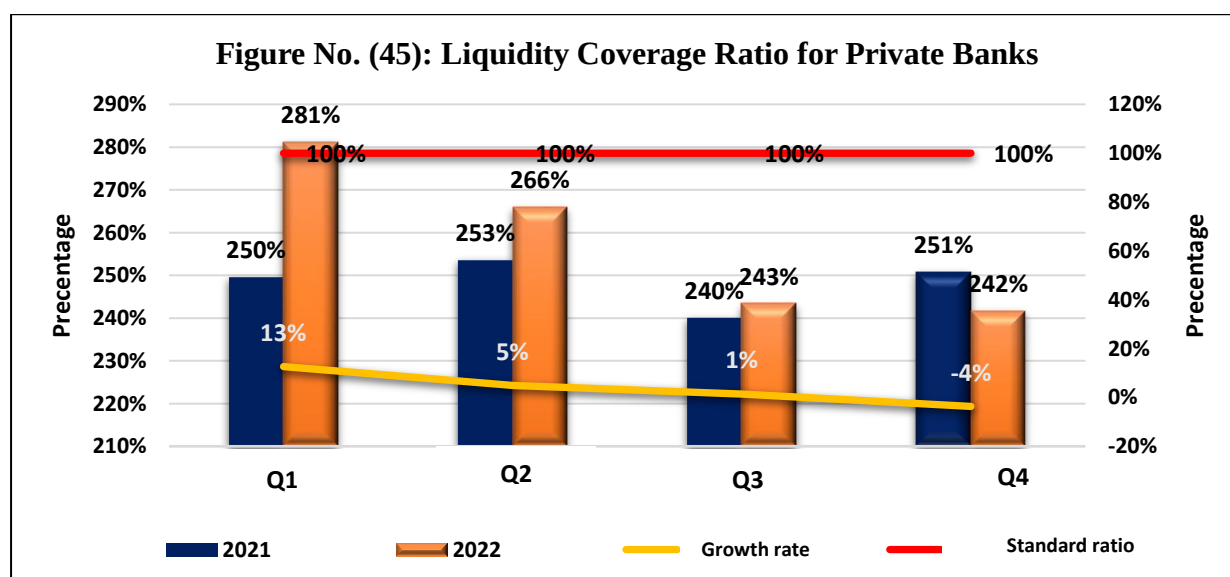
¹ LCR and NSFR ratios are calculated using the geometric mean, while they were previously calculated using the simple mean work is underway by CBI to apply Basel III standards on all banks.

It is possible to classify LCRs by type of banks (SOBs & private banks). We can find that the LCR for SOBs did not decrease in 2022 below the minimum limit identified by CBI, as the highest ratio in Q4 2022 reached (158%) and the lowest ratio reached (128%) in Q3 2022, as shown in figure No. (44), as growth recorded a positive rate for all quarters of the year.



Source: Central Bank of Iraq / Banking Supervision Dept.

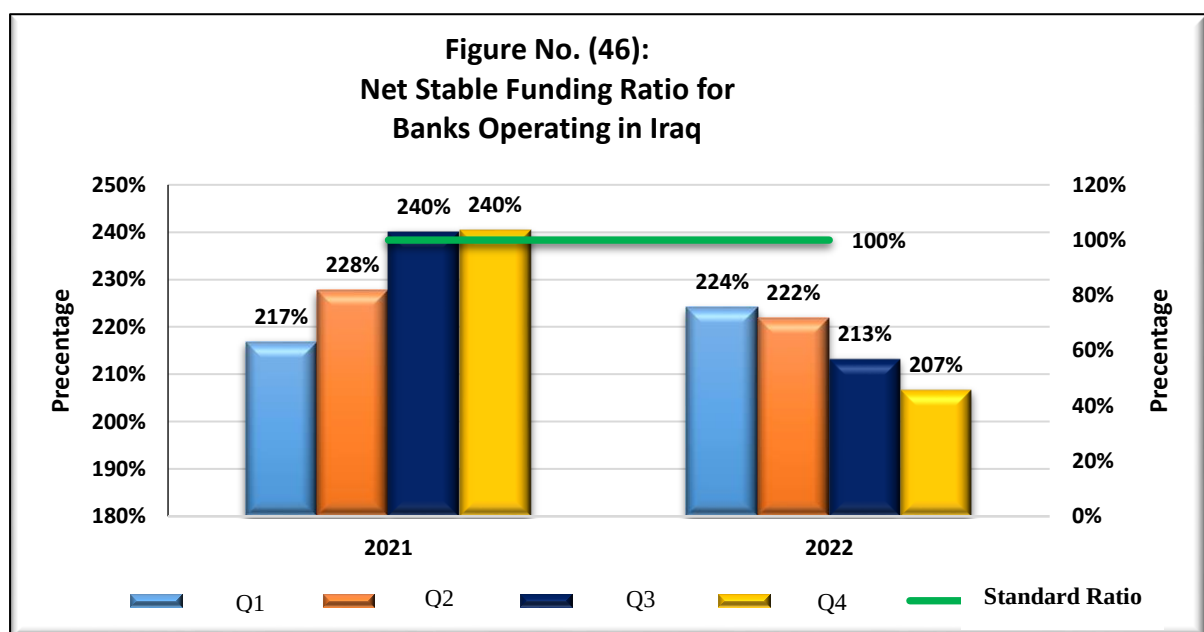
As for LCR for private banks in 2022, its value ranged between the highest ratio of (281%) in Q1 2022 and the ratio of (242%) which was recorded during Q4 2022, while growth rate fluctuated during quarters of (2021-2022) to achieve positive rates or negative ones, as shown in figure No. (45).



Source: Central Bank of Iraq / Banking Supervision Dept.

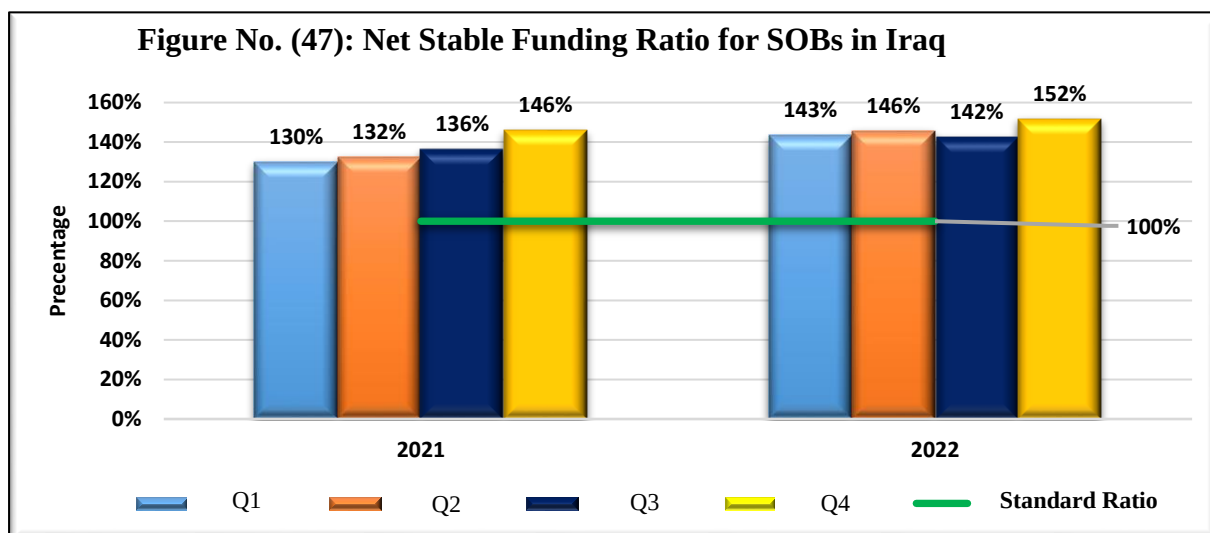
3-2-2 Net Stable Funding Ratio (NSFR)

This ratio reflects bank's ability to provide the necessary liquidity to meet its obligations on the medium and long terms, as Basel Committee set this ratio at no less than (100%), which represents bank's sources of funding (liabilities) relative to the uses of these sources (assets). NSFR for the banking sector in Iraq achieved high ratios during all quarters of 2022 and reached (224%), (222%), (213%), (207%), respectively, for each quarter. They are considered as high ratios compared to those set by (Basel III). It indicates that banks have available funding greater than the required funding; meaning that banks can finance assets side according to what the sources of funds make available on the liabilities side. Figure No. (46) shows NSFR available for quarters of the years (2021-2022).



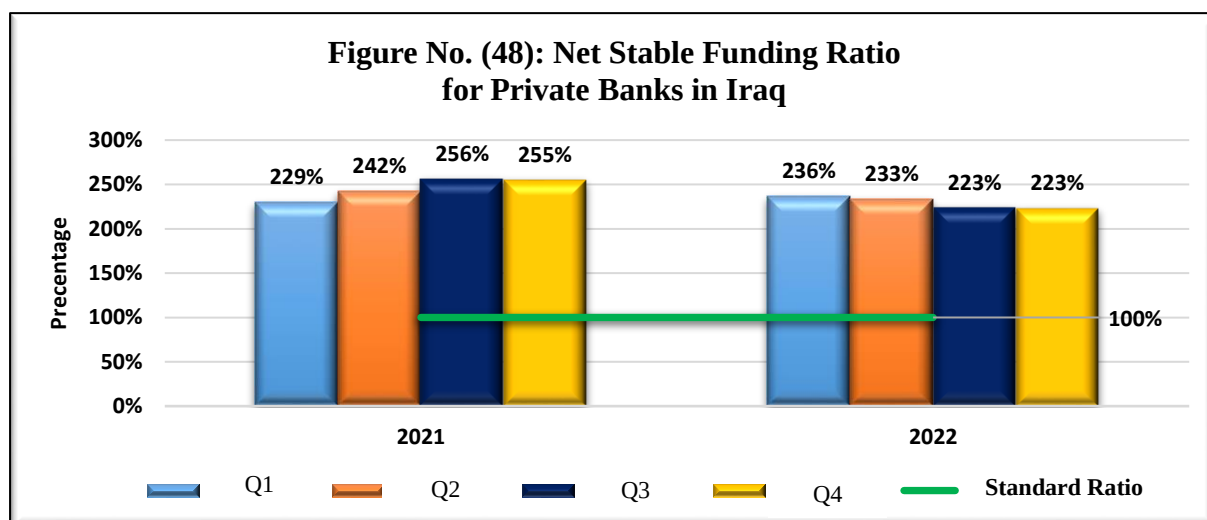
Source: Central Bank of Iraq / Banking Supervision Dept.

As for the classification of NSFR available by type of banks (SOBs & private banks), LCR for SOBs did not decrease in 2022 at the minimum ratio identified by CBI; it reached the highest ratio in Q4 2022 of (152%) and the lowest ratio of (142%) in Q3 2022. Figure No. (47) shows the developments of NSFR available to SOBs for the quarters of the years (2021-2022).



Source: Central Bank of Iraq / Banking Supervision Dept.

As for NSFR available to private banks in 2022, its value ranged between its highest ratio of (236%) recorded in Q1 2022 and its lowest ratio of (223%) recorded during Q3 & Q4 2022. Figure No. (48) shows the development of NSFR available in private banks for the quarters of the years (2021-2022).



Source: Central Bank of Iraq / Banking Supervision Dept.

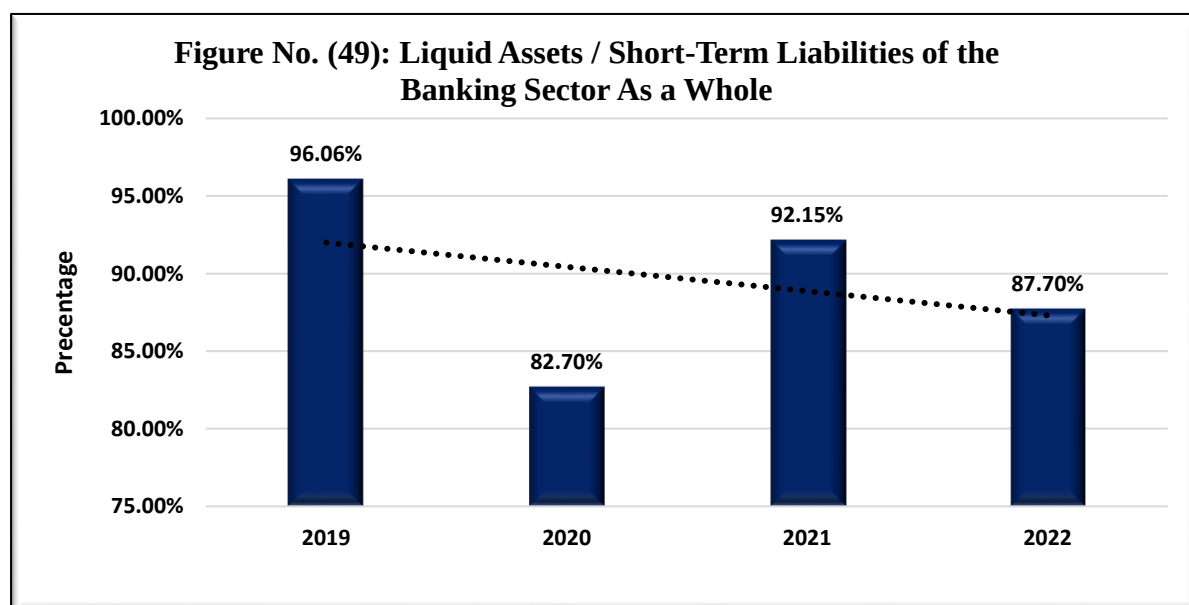
Liquidity indices can be measured according to four indices, in addition to the previous two indices, which are: liquid assets to short-term liabilities, liquid assets to total deposits, liquid assets to total assets, as well as cash credit to deposits. By calculating the ratios of these indices, it is possible to determine whether the banking system has a high liquidity ratio that gives a shield and buffer against crises resulting from withdrawals to which it may be exposed. Therefore, the degree of risk is as low as possible, and can be avoided by using

the liquid assets available, even if it affects the profitability goal for banks. In addition, banks could expand extending banking credit, according to the following:

3-2-3 Liquid Assets/ Short-Term Liabilities ¹

Ratio of liquid assets index to short-term liabilities for the banking sector decreased in general, reaching (87.70%) in 2022 compared to its ratio of (92.15%) in 2021.

This decrease came as a result of the increase of the value of demand deposits (current and of current nature) from IQD (70.27) trillion in 2021 to IQD (102.1) trillion in 2022, with a growth rate of (45.39%); which is higher than the growth rate of liquid assets that rose at a rate of (38.37%) for the same period. Even though liquid assets have begun to cover short-term liabilities by (87.70%); it enhances financial stability, because the ratio is considered high and reflects the great financial strength of the banking sector, whether SOBs or private banks, despite its decrease from the specified ratio. The recent ratio of liquid assets to short-term liabilities confirms that banks maintain high liquidity in case of facing urgent depositors' withdrawals and providing loans. Thus, it reflects positively on financial stability while, at the same time, hedging and not resorting to central bank to request liquidity. Figure No. (49) shows liquid assets and short-term liabilities ratio for the years (2019-2022).

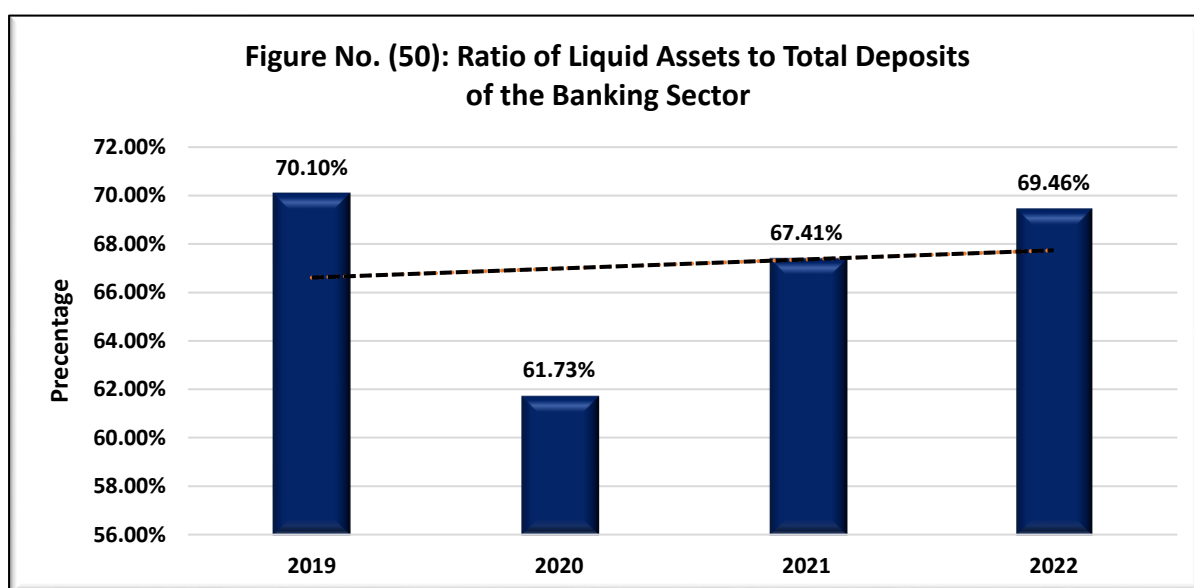


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

¹ Short-term liabilities include (current deposits and deposits of current nature).

3-2-4 Liquid Assets/ Total Deposits

This index expresses the amount of liquid assets held by a bank, including (balances with the central bank, cash on hand, and other liquid balances), and the extent of its investment in extending loans of various types. The banking system in general recorded a percentage of (69.46%) in 2022, which is higher than the percentage of (67.41%) recorded in 2021. As shown in Figure No. (50), the banking system is unlikely to be exposed to liquidity risks on the short term, but maintaining this high ratio reflects negatively on the yield and profitability of banks. The goal of liquidity will conflict with the goal of profitability because these liquid funds are not used in investments that generate high financial yields for the bank; therefore, its decrease reflects a clear trend towards using loanable funds. The increase of the ratio was a result of deposits decrease at a growth rate of (34.28%) compared to the growth rate of liquid assets of (38.37%), but we find that the volume of deposits reached IQD (129) trillion, which indicates that the banking sector is hedging more at the expense of yield and profitability.

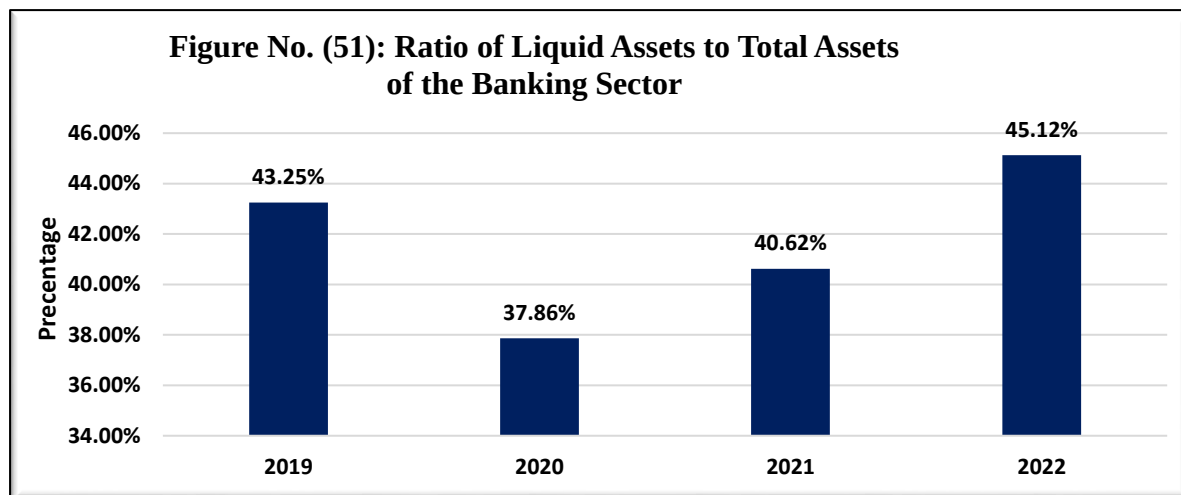


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

3-2-5 Liquid Assets/ Total Assets

This ratio shows the extent to which a bank maintains completely liquid assets to meet depositors' withdrawals relative to total assets with the banking system in general. This ratio increased from (40.58%) in 2021 to (45.12%) in 2022. This increase of the index occurred because of the increased volume of liquid

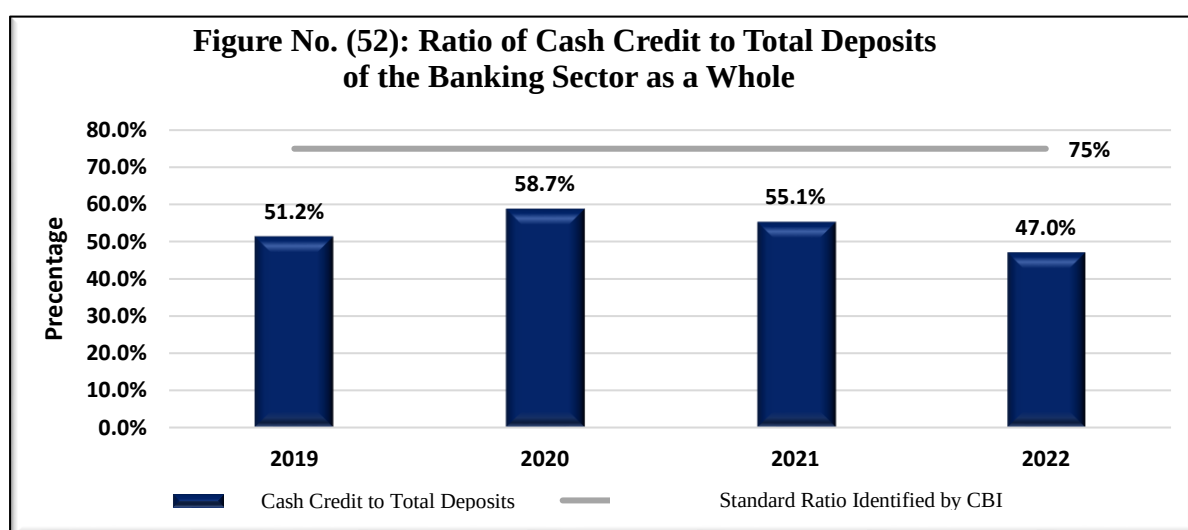
assets at a rate of (38.37%), compared to growth rate of total assets of (24.43%) in 2022, as shown in figure No. (51). The increase of this ratio reflects the banking sector's precautionary tendency towards sudden withdrawals that depositors may make.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

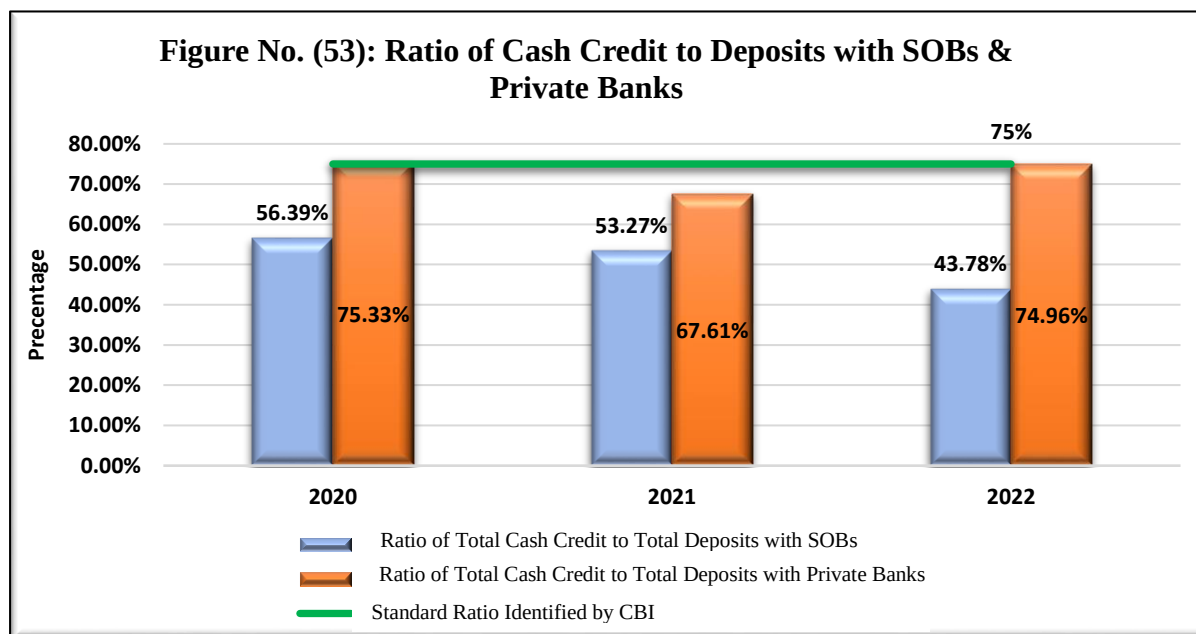
3-2-6 Cash Credit/ Total Deposits

The ratio of cash credit to deposits with the banking sector recorded a decline of (14.8%) to reach (47%) in 2022 against (55.1%) in 2021. This decrease falls within the standard ratio identified by CBI, which must not exceed (75%) as shown in figure No. (52). Thus, it reflects the ability of banks to utilize available funds; derived from deposits to meet the demand for credit.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

As for cash credit to total deposits with SOBs, the ratio reached (43.78%) in 2022, which is low at a rate of (-17.82%), than that of (53.27%) in 2021 because of high deposits growth with SOBs at a rate of (38.6%), that is higher than growth rate of credit provided by SOBs of (13.9%). The increase of growth rate of deposits is greater than the growth rate of credit because of the increase of total deposits for each of the central government, public institutions, and private sector at a rate of (53.6%), (25.2%), (26.94%), respectively in 2022, as shown in figure No. (53).



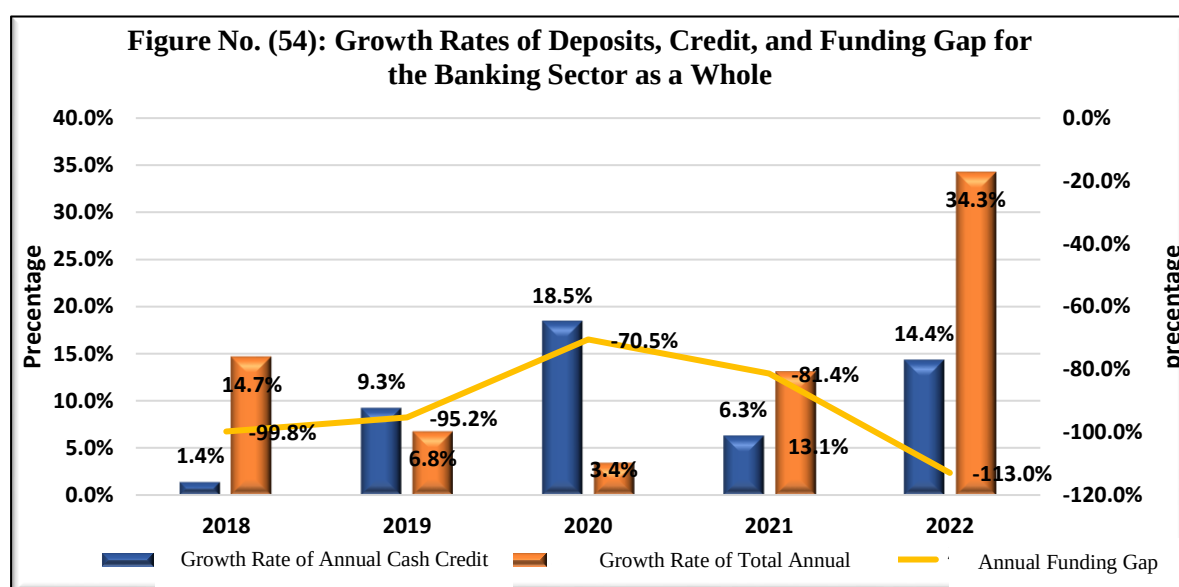
Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

As for private banks, the ratio was approximately (74.96%) in 2022, which is higher than that of (67.6%) in 2021, as a result of the increase of credit provided by private banks at a rate of (16.7%) higher than the growth rate of deposits with private banks, which amounted to (5.2%). Therefore, the high rate of deposit growth is less than the rate of credit growth for private banks. Private Banks are ahead of SOBs in investing their deposits. We find that SOBs maintain more liquidity than planned and utilize a low level of deposits, as the public sector's deposits (the central government & public institutions) constitute (63%) of total deposits.

3-2-7 Funding Gap

It means the funds allocated to extend cash credit derived from deposits. This gap has widened in 2022 to reach a rate of (-113%) after it was (-81.4%) in 2021 due to high rate of deposit growth at a rate greater than growth rate of

cash credit. In 2022, the growth rate of cash credit reached (14.4%) compared to 2021. Followed by an increase of total deposits by IQD (129) trillion with a growth rate of (34.3%) in 2022 compared to 2021, in which the volume of deposits reached IQD (96) trillion, which led to an increase of the gap. Despite that, it remains high and covered by much more than its value by deposits, creating a balanced growth between the demand for loans and attracting new deposits, which means there is a wise management of assets and liabilities that will result in a reduction of risks facing banking sector. High gap means that risks related to confidence in the banking sector are low, as figure No. (54) shows the relationship among growth rates of cash credit, deposits, and the annual funding gap.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

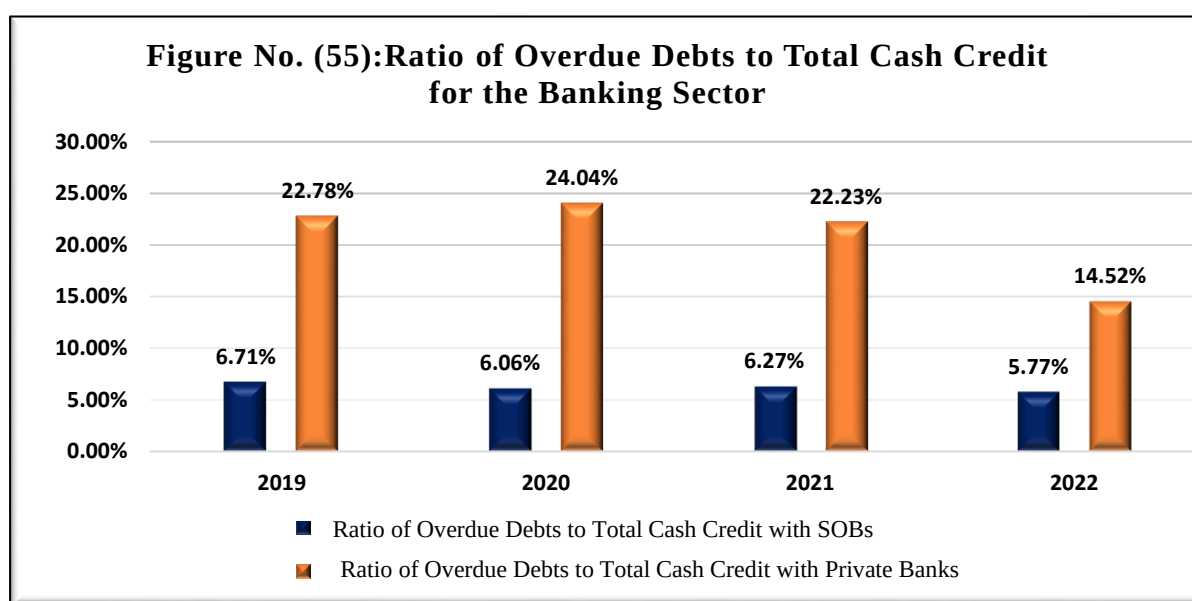
3-3 Assets Quality Indices

The quality and type of assets constitute the cornerstone of the level of credibility of capital ratios because most of financial insolvency risks of financial institutions are often caused by the quality of assets or difficulties in liquidating them when needed.

3-3-1 Overdue Debts/ Total Cash Credit

Overdue debts of Iraqi banks recorded IQD (4.4) trillion in 2022 with a lower rate of (-6.7%) compared to 2021, which reached IQD (4.7) trillion that led to a decrease of overdue debts to cash credit ratio from (8.81%) in 2021 to (7.19%)

in 2022. This has a positive impact on the financial stability index in Iraq, as the percentage of overdue debts is one of the variables included in its calculation. Overdue debts for 2022 were distributed to IQD (2.92) trillion for SOBs with a growth rate of (5.77%) of their total cash credit, which is a low rate compared to that of (6.27%) in 2021. This is a good index supports the stability of the financial sector. As for private banks, their overdue debts were IQD (1.43) trillion in 2022, with a rate of (14.52%) of their cash credit, which was lower than that of 2021, in which it reached (22.2%), as in figure No. (55). It indicates that Private Banks may be more exposed to the risk of non-payment compared to SOBs. However, in light of CBI's efforts to reduce risks that may affect the banking system, this rate has decreased significantly.

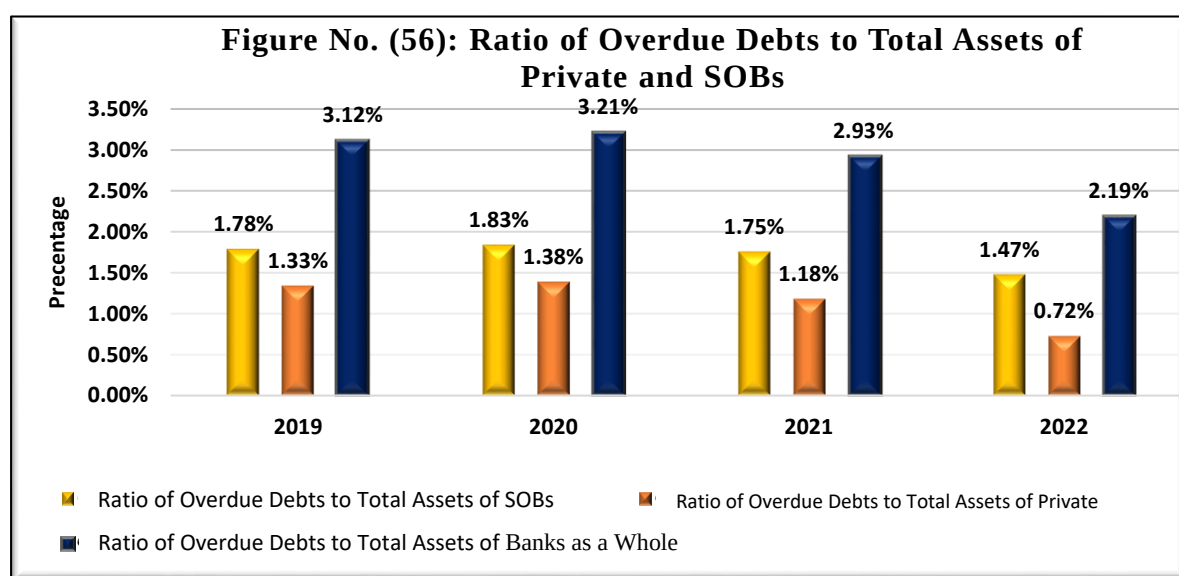


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

3-3-2 Overdue Debts/ Total Assets

Ratio of overdue debts to total assets with the banking system decreased in general during 2022, reaching (2.19%) after it was (2.93%) in 2021. Therefore, this ratio reflects huge banking sector's assets in 2022; as its decrease is due to an increase of total assets at a rate of (24.43%). As well as a decrease of non-performing loans rate by (-6.70%) for the same period, as the volume of overdue debts decreased from IQD (4.7) trillion in 2021 to IQD (4.4) trillion in 2022. Also, the increase of total assets from IQD (159.5) trillion in 2021 to IQD (198.5) trillion in 2022, which reflects a good and sound position of banks operating in Iraq in terms of the volume of assets in 2022. International

literature and experiences indicate that when this ratio exceeds (10%), it portends an expected banking crisis. Yet, in Iraq this ratio is still within acceptable standards. Its reduction reflects good performance of banks, as the ratio of SOBs' overdue debts to total assets decreased from (1.75%) in 2021 to (1.47%) in 2022. Also, growth rate of SOBs' overdue debts decreased by (4.8%), which is less than assets' increase rate of (28.7%). While private banks recorded a decrease of their overdue debts to total assets ratio by (0.72%) in 2022 compared to 2021 as a result of its overdue debts decline at a rate of (-23.8%) and the increased growth of its assets at a rate of (8.6%) in 2022, which shows a downward trend of private banks' overdue debts. Figure No. (56) shows the aforementioned ratios.

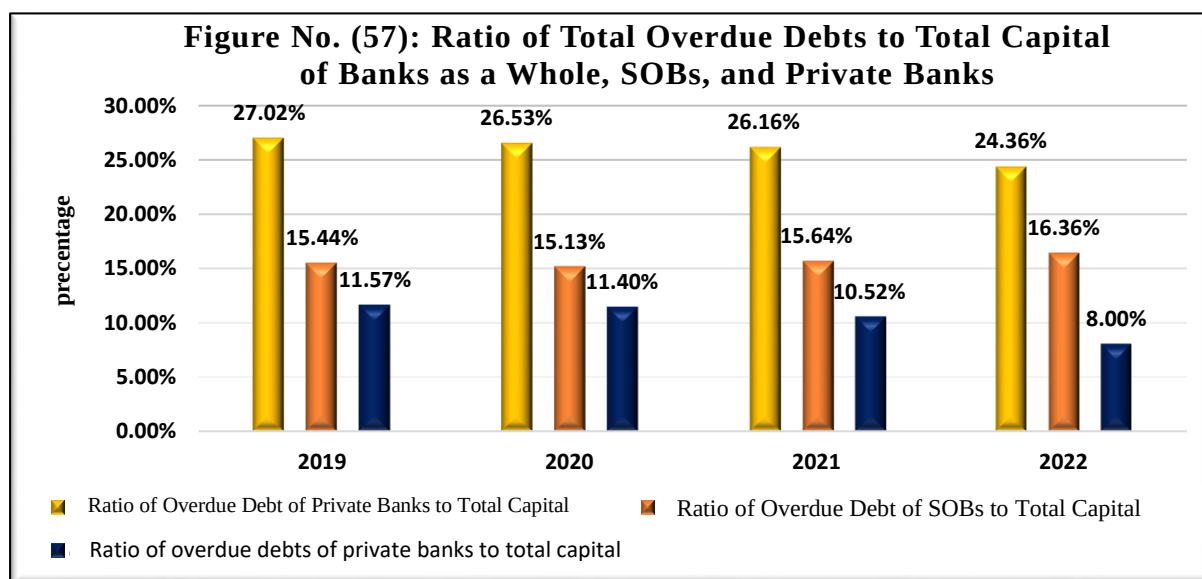


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

3-3-3 Overdue Debts/ Capital

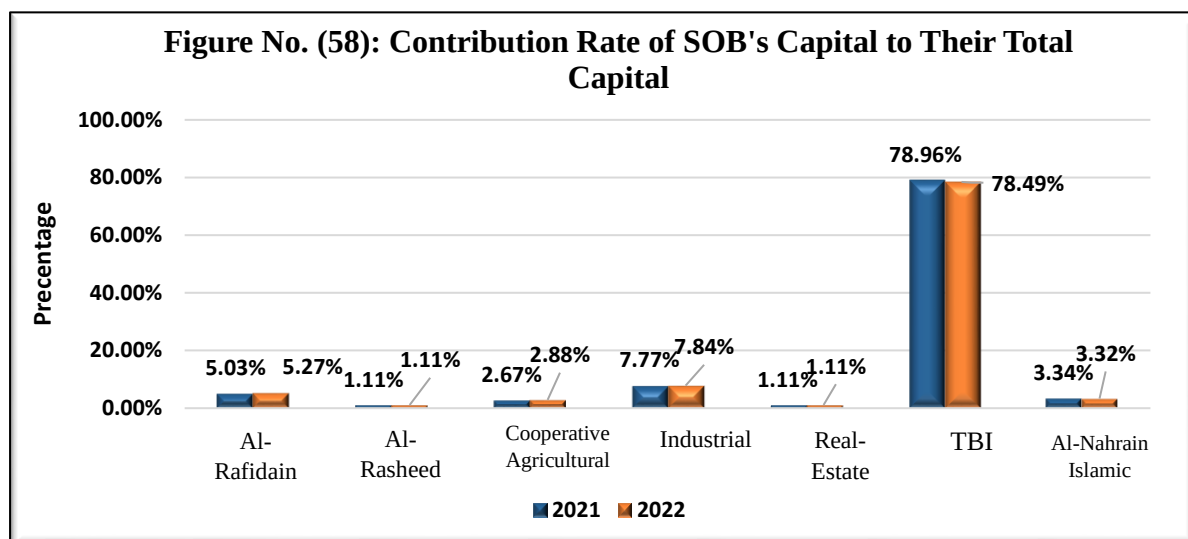
The high ratio of overdue debts to capital gives a clear indication of the seriousness of the financial situation of banking institutions and, thus it affects the financial stability index in Iraq. This case was evident among SOBs because of the large volume of their loans and the small size of their capital but worsening this ratio in the budgets of banks gives an indication that there are undoubted financial risks. The matter that requires giving this issue a high level of importance to avoid any possible default that may occur in the future. The ratio of overdue debts to the overall capital of the banking sector decreased slightly in 2022 to (24.36%) compared to (26.16%) in 2021. This decrease is due to the increase of total capital of the banking sector at a rate of (0.19%) in

2022 and the decrease of total overdue debts by (6.70%). Figure No. (57) shows the contribution rate of overdue debts of SOBs and private banks to total capital of the banking sector as a whole; it reached (16.36%) in 2022 for SOBs and (8 %) for private banks, as a result of decreased capital of SOBs` compared to that of private banks.



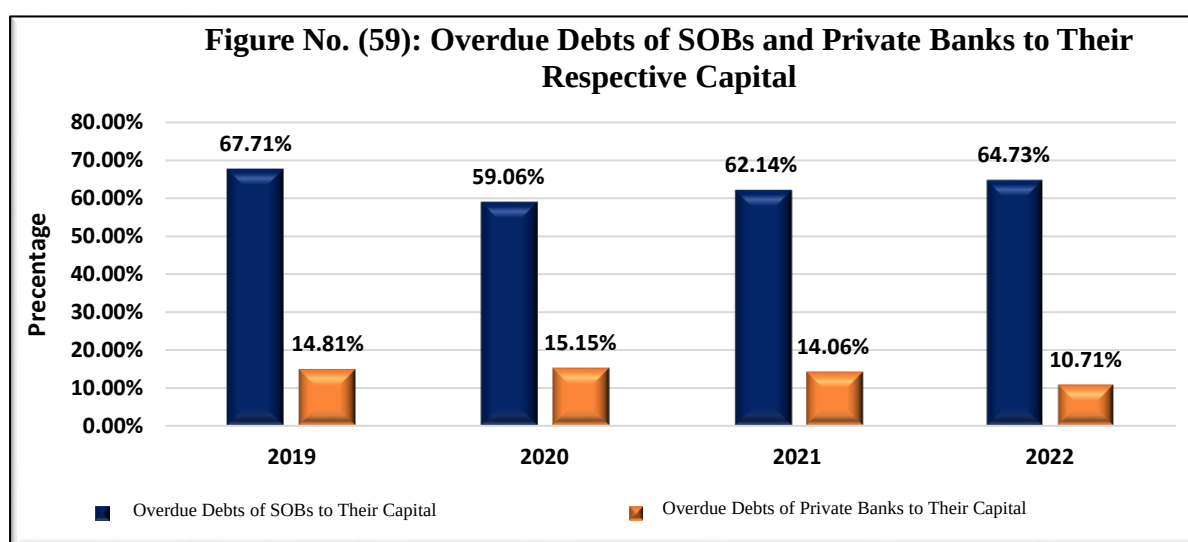
Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

As for the ratio of overdue debts for both SOBs and private banks to total capital, it reached (62.14%) and (64.73%), respectively, for SOBs in 2021 and 2022, which is a high percentage. The capital volume of most of SOBs has been increased and as shown in figure No. (58), such as Al- Rafidain Bank, Cooperative Agricultural Bank, and Industrial Bank. The capital of Al-Rafidain Bank increased by (5.3%) to reach IQD (238) billion, and the capital of Cooperative Agricultural Bank increased by (8%) raising its capital from IQD (120) billion in 2021 to IQD (130) billion in 2022. Industrial Bank also raised its capital from IQD (349) billion in 2021 to IQD (354) billion in 2022 at a rate of (1.54%) in implementation of the capital increase requirements imposed by CBI to a minimum of IQD (250) billion. With keeping the share of the largest shareholder of SOB`s capital in favor of the Iraqi Trade Bank at a rate of (78.49%), while the shareholder of less than the share of each of Al-Rasheed and Real-Estate Banks at a rate of (1.11%) for each. However, it does not constitute a risk to the banking system as the Iraqi Ministry of Finance guarantees these banks, yet, it does not prevent finding appropriate means to reduce this ratio to hedge against potential risks.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

As for private banks, the ratio of their non-performing debts to their total capital reached (14.06%) and (10.71%) for 2021 and 2022, respectively, as shown in figure No. (59).



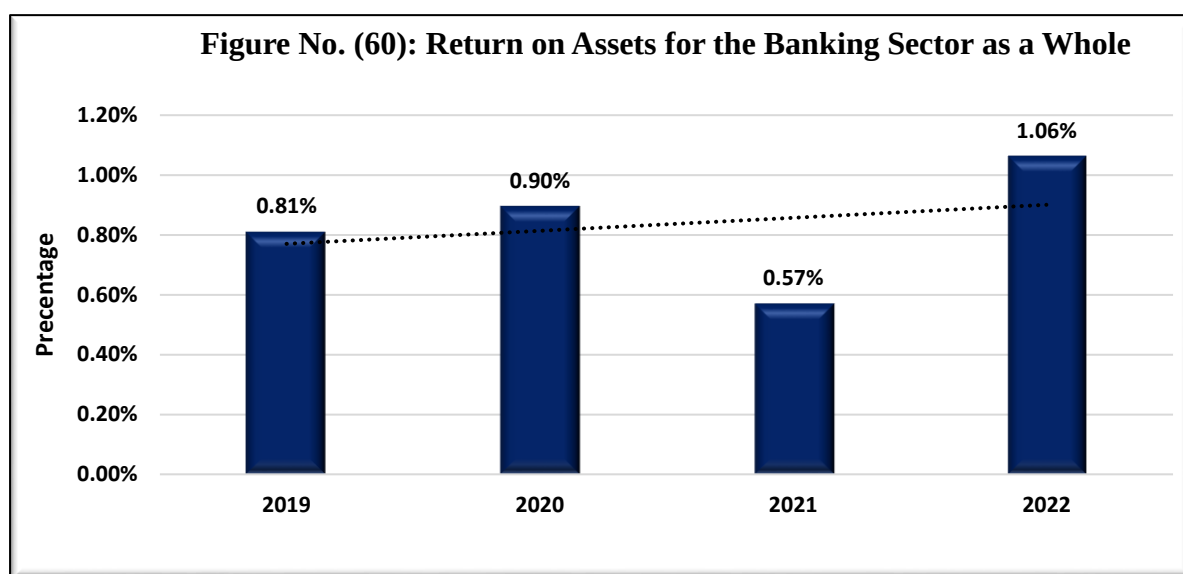
Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

3-4 Profitability Indices

3-4-1 Return on Assets

The rate of return on assets increased from (0.57%) in 2021 to (1.07%) in 2022 regarding banks in general, as this increase was due to the increase of return growth that reached (131.4%) compared to total assets growth rate of (24.5%). In addition to the increase of banks' profits, as net interest-bearing income

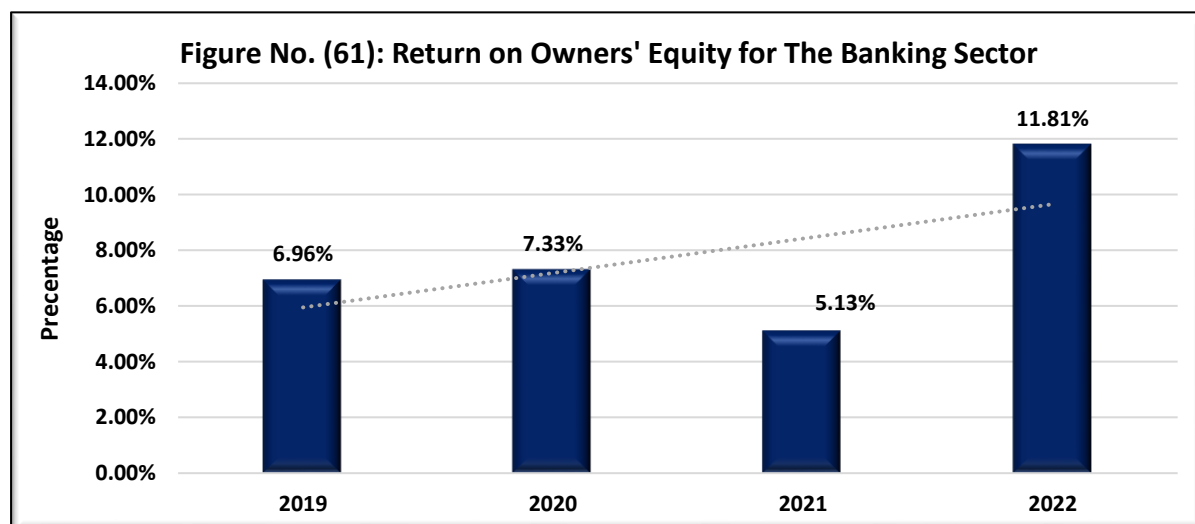
increased from IQD (1.37) trillion in 2021 to IQD (1.81) trillion in 2022, with a positive growth rate of (32.53%). Non-interest-bearing income also increased from IQD (1.34) trillion in 2021 to IQD (2) trillion in 2022 with a rate of (50.48%). The largest part of this increase is due to the increase of assets' value in foreign currency because of the devaluation impact of the Iraqi currency against the US dollar on 19/12/2020 from IQD (1182) to IQD (1450) per US dollar. Figure No. (60) shows the ratio of return to assets.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

3-4-2 Return on Owners' Equity

The ratio of return on owners' equity increased from (5.13%) in 2021 to (11.81%) in 2022 for all banks, as this ratio reflects the rate of return obtained by investors who own capital in the financial institution, the efficiency of the institution, and the extent of its success in generating profits from each unit of owners' equity. The main reasons for the increase of this ratio are the increase in return growth at a rate of (130.7%) and the increase of capital ratio at a rate of (0.19%), for the same period, as shown in figure No. (61).



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

3-5 Risks Map of Financial Soundness Indicators

Risks map is one of the tools used to alert on hidden threats and weaknesses that financial and banking system may face, the impact of which is reflected on financial stability. It is also a tool for monitoring financial system vulnerabilities as there are many systems used to monitor financial systems and diagnose weak points after the global financial crisis in 2008. By using risks map, one can diagnoses any the used indices in need of more attention and follow-up, and then conduct additional tests such as (stress tests) that can further help to identify weak points of the indices used in the test. The risks map can also be used to illustrate how financial shocks can affect financial stability and, by turn, the real economy. By assessing different stages of financial shocks, it is possible to clarify how a shock affects markets, institutions, financial infrastructure, and the real economy to have a clear image of the seriousness of consequences resulting from these imbalances¹.

The Arab Monetary Fund AMF also stressed the importance of risks map tool and considered it as one of the important tools to identify and monitor weakness and strengths in the banking sector by displaying them in the form of a risks map².

1 David Farelius, Heat Map for Analyzing the Consequences of Financial Shocks, Economic Commentaries, No. 6, 2013, p1

2 Rami Youssef Obaid, Study of the Experiences of Early Warning Systems at Central Banks and Arab Monetary Institutions, Arab Monetary Fund, 2019, p. 8.

Colors are used on risks map to reflect the situation that the under-study index is going through as the following:

- A. The **green color** indicates the absence of any weak points; therefore, the under-study index is in a positive state and is not a source of concern.
- B. The **orange color** will have the index between the first case (a positive case) and the second (a source of concern), which requires the decision maker to follow up this index in order to avoid the opportunity to reach the red color.
- C. The **red color** reflects weaknesses that lead to the possibility of a crisis in the banking system.

Box No. (1): Steps for Preparing Risks Map of Financial Soundness Indicators**1) Indicator Selection:**

The indices were chosen by reviewing international reports and scientific studies, taking into account the nature of the Iraqi financial system. On that basis, indices were chosen through which weaknesses of financial sector in Iraq could be diagnosed, that may reflect negatively on all economic sectors, which are financial soundness indicators. Financial stability is one of the priorities of central banks' goals, because of its importance to strengthen financial positions of banks operating in Iraq. The primary goal of financial stability report is to diagnose and analyze risks that financial system stability of Iraq may be exposed to. Risks map came to be a supplement index of risks' indices that the financial system may be exposed to¹. Many studies and financial stability reports rely on financial soundness indicators in preparing the risks map, thus, the same indices can be measured within the annual financial stability report in Iraq.

2) Indicator Scoring:

The indices are monitored quarterly, colors given to each index according to the quarterly results, and its position of the standard score for that index. The risks map depends on the standard values for each index that is included in the map. If the index exceeds the standard value, it will be in the red color, and if it is the opposite, it will be in the green color.

The risks of each index are calculated by normalizing the data for each financial index used in calculating the risks map by adopting the following equation¹.

$$Z_{i,t} = (X - \min) / (\max - \min)$$

$Z_{i,t}$: Standard scores for financial index i in period t .

X : Views of the financial index.

$\min$: The minimum value.

$\max$: The maximum value

Results are compared with the standard scores of risks map (0,1).

Capital adequacy is considered as one of the most important indices that are used to identify bank's solvency and its ability to withstand potential losses or insolvency. As capital increases, the probability of financial distress decreases and the degree of its financial solvency increases accordingly, and vice versa. Liquidity in general also expresses the presence of cash assets at the fund or assets that can be converted into cash easily with low costs to meet bank's obligations, but they do not have the opportunity to grant sound credit, or cash credit.

Profitability index is one of high importance indices in measuring the extent to which banking institutions achieve profits or losses, which depends primarily on the increase or decline of their investments and the contraction of their financial investments during that period in Iraq. And on the political conditions and security events that the country is witnessing, in addition to what emerges from the budget situation whether it is a deficit or a surplus, which depends on oil prices and the huge effects and repercussions that result from all of those factors. They are reflected in one way or another on the results of all economic sectors' activity, especially financial institutions, in general and banking ones in particular.

As for assets' quality, in which ratios of (overdue debts/ total assets) and (overdue debts/ total credit) are included in its calculation, it measures the amount of overdue debts held by the banking system, and the increase in its value indicates high risks that banks suffer from and low financial soundness. As overdue debts affect bank's lending portfolio and, by turn, the position of cash flows and net income, as well as the degree of financial insolvency therein.

1 CBI/ Financial Stability Report 2016, 2017, p. A.

2 Li Lian Ong, at el, HEAT! A Bank Health Assessment Tool, Working Paper, International Monetary Fund, 2013, P.P5-6.

3-5-1 Analysis of Risk Map of Financial Soundness Indicators

Risks map of the basic financial soundness indicators is analyzed and measured to determine the nature of the financial and banking sector, the extent of its stability, and vulnerability to financial and economic crises. These indicators serve as an early warning tool to identify weaknesses and strengths of the banking sector; it is considered one of the direct supervisory means. The main indicators are classified as follows:

1. Capital Adequacy Indicators.
2. Profitability Indicators.
3. Asset`s Quality Indicators.
4. Liquidity Indicators.

It is noted through the risks map of financial soundness indicators that the green color is the most prevalent on the map, which indicates the stability of most financial soundness indicators, which will be reflected on banking stability and then financial stability in Iraq. As capital adequacy indicator in 2022 recorded low risk rates, so that the green color will be the most widespread during 2022, meaning that the capital adequacy of the banking sector is very good and exceeds the standard ratio of (12%) identified by CBI. Profitability indicators have stabilized in 2022, as the risks of return ratio on assets have increased on all quarters of 2022 and on return on owners' equity on Q3 & Q4 2022. This is shown by the contrast of colors over the course of the period. According to this indicator, the path of the volume of profits achieved by banks operating in Iraq is observed. As for the indicators of liquidity quality, it witnessed more stability in ratio of liquid assets to total assets and ratio of liquid assets to short-term liabilities with a decrease of risks during (2021-2022). Accordingly, the green color is dominant on the map, meaning that ratios of liquidity quality are higher than the ratio identified by CBI of (30%). Asset quality indicators also witnessed a difference in color gradation, as non-pe-rforming loans to total assets witnessed a decrease of risks during (2021-2022). That is what the orange color indicates, so that risks ratio decreases during 2022 to take the green color throughout 2022, which is a lower rate compared to 2021, as the ratio of overdue debts to total cash credit in Q4 2022 decreased to (9.52%) compared to 2021, in which the ratio reached (7.19%). While ratio of overdue debts to total cash credit was more stable during 2022 compared to previous years during which the degree of risks was high. Risks gradually decreased so that the green color became the most prevalent, as shown in table No. (9).

Table No. (9): Risks Map for Financial Soundness Indicators (FSI)

Index		Adequacy	Profitability		Liquidity Quality		Assets Quality	
		Capital Adequacy	Revenue/Assets%	Revenue/Ownership Equity%	Liquid Assets/ Total Assets %	Liquid Assets/ Short Term Liabilities %	Non-Performing Loans/Total Assets	Non-Performing Loans/Total Cash Credit
2016	Q1	0.066	0.329	0.030	0.987	0.944	0.000	0.269
	Q2	0.080	0.295	0.206	1.000	1.000	0.021	0.328
	Q3	0.000	0.262	0.361	1.000	0.964	0.030	0.364
	Q4	0.705	0.152	0.840	0.986	0.960	0.022	0.317
2017	Q1	0.621	0.304	0.110	0.138	0.161	0.030	0.353
	Q2	0.579	0.270	0.231	0.088	0.145	0.035	0.356
	Q3	0.611	0.198	0.379	0.092	0.151	0.159	0.286
	Q4	0.599	0.198	0.379	0.520	0.155	0.504	0.744
2018	Q1	0.615	0.283	0.061	0.474	0.155	0.568	0.817
	Q2	0.611	0.224	0.226	0.429	0.148	0.606	0.917
	Q3	0.954	0.143	0.295	0.371	0.094	0.934	0.907
	Q4	0.949	0.143	0.296	0.327	0.082	0.935	0.907
2019	Q1	1.000	0.312	0.027	0.361	0.110	1.000	1.000
	Q2	0.928	0.219	0.147	0.468	0.100	0.694	0.632
	Q3	0.729	0.101	0.401	0.339	0.068	0.602	0.422
	Q4	0.722	0.034	0.558	0.225	0.056	0.637	0.564
2020	Q1	0.740	0.262	0.048	0.157	0.056	0.939	0.353
	Q2	0.832	0.190	0.182	0.180	0.059	0.954	0.360
	Q3	0.712	0.122	0.303	0.000	0.003	0.637	0.362
	Q4	0.564	0.000	0.592	0.032	0.000	0.671	0.520
2021	Q1	0.671	0.287	0.000	0.068	0.016	0.744	0.405
	Q2	0.713	0.181	0.228	0.111	0.031	0.667	0.352
	Q3	0.716	0.004	0.023	0.133	0.041	0.629	0.317
	Q4	0.690	0.127	0.377	0.126	0.040	0.552	0.282
2022	Q1	0.633	0.831	0.655	0.201	0.062	0.472	0.182
	Q2	0.482	0.831	0.697	0.234	0.058	0.407	0.082
	Q3	0.257	1.000	1.000	0.213	0.037	0.376	0.039
	Q4	0.283	0.916	0.916	0.292	0.021	0.281	0.000

Source: Central Bank of Iraq / Statistics and Research Dept.

4- Household Sector Indebtedness

4- Household Sector Indebtedness

Credit provided to household sector is considered an important tool to promote economic growth. Household sector acts as a main engine of economy, as it contributes to increase spending and consumption, which supports investment and stimulates economic growth in general. Central banks and other financial bodies follow multiple indices to measure the volume of credit extended to household sector, such as total housing loans and consumer loans. These indices are used to analyze the volume of debt, variations in lending, and determine the extent of their impact on economic growth and financial stability.

When there is a decline of extended credit to household sector, central banks can take action to stimulate lending by lowering interest rates or providing loan facilities. On the other hand, if there is a surplus of credit, measures can be taken to control and reduce it to maintain the stability of economy and avoid the occurrence of credit bubbles.

Attention to monitor and analyze the volume of credit provided to the household sector is considered an important part of the monetary and financial policy strategy to enhance economic and financial stability and achieve sustainable growth. In addition, other factors must also be taken into account when monitoring and analyzing the volume of credit provided to household sector. For example, debt rates and repayment obligations must be taken into consideration, as well as unemployment rates and household disposable income. If debt rates and repayment obligations rise, financial risks and economic tensions can increase. In this case, multiple measures must be taken to enhance financial awareness, motivate individuals to manage their debts sustainably, and provide financial support programs and repayment facilities.

On the other hand, if there is an increase in unemployment rates or a decline in household disposable income, there may be a need to increase credit to household sector to boost spending and stimulate economic activity. In this case, central banks and financial authorities can take measures to facilitate loans and provide incentives for spending and investment. Therefore, monitoring and analyzing the volume of credit provided to household sector requires a comprehensive view of economic, financial, and social conditions.

Achieving the ideal balance of credit appropriate volume provided to household sector enhances stability and economic growth in a sustainable manner. From this standpoint, CBI stressed the importance of measuring household sector's indebtedness as it is a tool through which monetary and credit policy can be set

by determining volume of debt with household sector and using international indices that are consistent with debt information available in Iraq. Measures are taken in order to encourage banks to increase credit provided to household sector if indices confirm a decline of household debts or, adopt a conservative policy in the event of increase that requires caution.

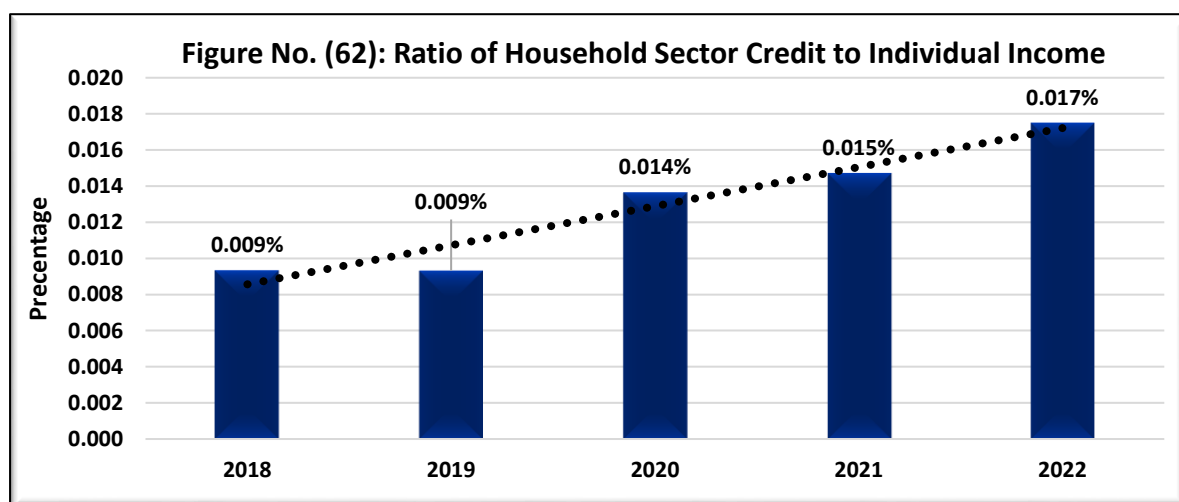
4-1. Ratio of Household Sector Credit to Individual Income¹

Ratio of household sector credit to individuals' income is an important index used to measure volume of accumulated debt of individuals and the extent of their debt relative to their personal income. This index indicates the percentage of debts volume that individuals own compared to their annual personal income. It also reflects the level of personal debts and individuals' repayment obligations; it is considered an index of the extent of individuals' ability to meet their financial obligations. A high ratio of household sector credit to individuals' income is considered a sign of increased financial risks that can lead to poor ability to repay and exacerbate debts. However, it must be considered that optimal ratios of household sector credit to individual income can vary from one economy to another.

Household sector is considered one of the most important sectors that contribute to moving the wheel of growth within the economy. Therefore, the available income of this sector represents the purchasing power within the real sector, through which market forces of supply and demand are moved. Therefore, this index works to measure the ability of individuals to pay loans they owe, as figure No. (62) illustrates that the ratio of the household sector's indebtedness to their income did not exceed the (1), meaning that it is very low despite its slight increase from (0.015%) in 2021 to (0.017%) in 2022. While we find that the percentage of credit provided to household sector has risen to (15.2%) for the same period, which reflects the direction of monetary policy to enhance available income of this sector in a gradual manner compared to the developments taking place in economic activity. Actually, the indebtedness of household sector in Iraq does not greatly affect the level of economic stability.

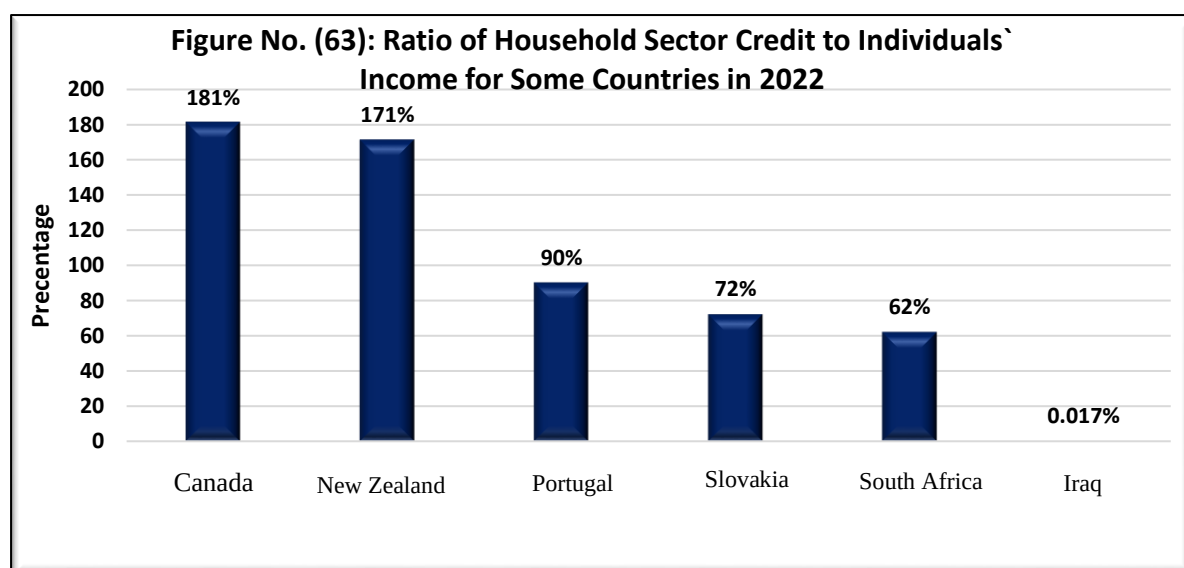
¹To learn more about methods for measuring household sector indebtedness, see CBI/ Financial Stability Report 2020, Issue No. 11, p. 91.

Moreover, it doesn't post a real risk to financial stability or lead to a financial crisis if they were relatively high, which is a positive index in terms of household sector indebtedness risks. However, attention must remain to regularly monitor and assess the debts volume and household sector indebtedness, even if it does not significantly affect economic stability, as it helps in early detection of any sudden changes or increases in the level of debts and taking necessary measures in case of need.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.
- Ministry of Planning, Statistical Bulletin 2021, 2022.

When comparing Iraq with some selected countries, we find that it ranks lagging behind at ratio of family sector credit to individuals' income, as shown in figure No. (63).



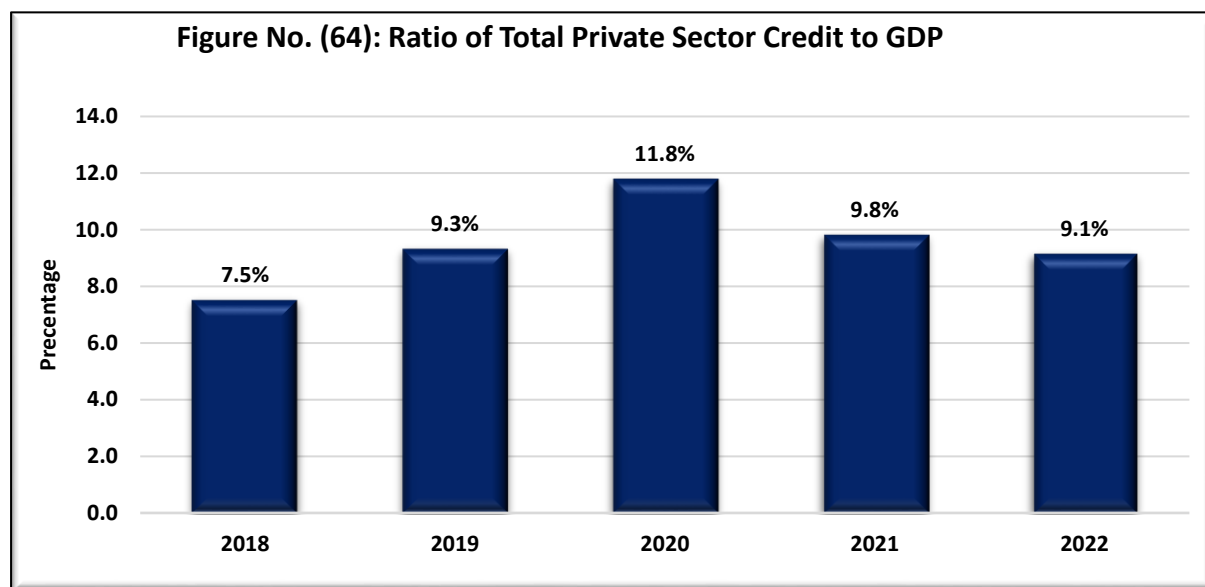
Source: TRADING ECONOM <https://tradingeconomics.com/country-list/households-debt-to-income>.

4-2 Ratio of Private Sector Credit to GDP in Iraq

Ratio of credit extended to the private sector to GDP is considered as an important index used to measure the volume of credit extended to companies and private businesses in relation to volume of overall economy. This index shows the amount of credit used by companies to finance their activities and investments compared to country's total economic production. Ratio of credit extended to private sector to GDP varies from one economy to another and may be affected by several economic, financial, and political factors. In some economies, this ratio may be relatively high, indicating that companies rely heavily on external financing and credit to develop their activities and expand their businesses. In other cases, this ratio may be low, reflecting companies' greater reliance on self-financing or other sources of financing.

It is important to monitor the ratio of credit extended to private sector to GDP to ensure sustainability of economic growth and stability of financial system. A high ratio may indicate the possibility of a large debt burden on companies and high financial risks, while a low ratio may mean weak investment and economic growth. Studies have shown that if the ratio of credit extended to private sector to GDP reaches (80%-100%), it leads to major fluctuations in the economic cycle and may affect financial stability¹. In addition, household credit is considered part of credit extended to private sector, so it became necessary to measure its volume. Figure No. (64) shows the ratio of credit extended to private sector to GDP in Iraq, which confirms that there is a very slight decrease in this percentage from (9.8%) in 2021 to (9.1%) in 2022; meaning that in terms of financial stability, there are no high risks for credit extended to private sector on financial stability.

¹Ratna Sahay and others, Rethinking Financial Deepening: Stability and Growth in Emerging Markets, I M F, 2015.



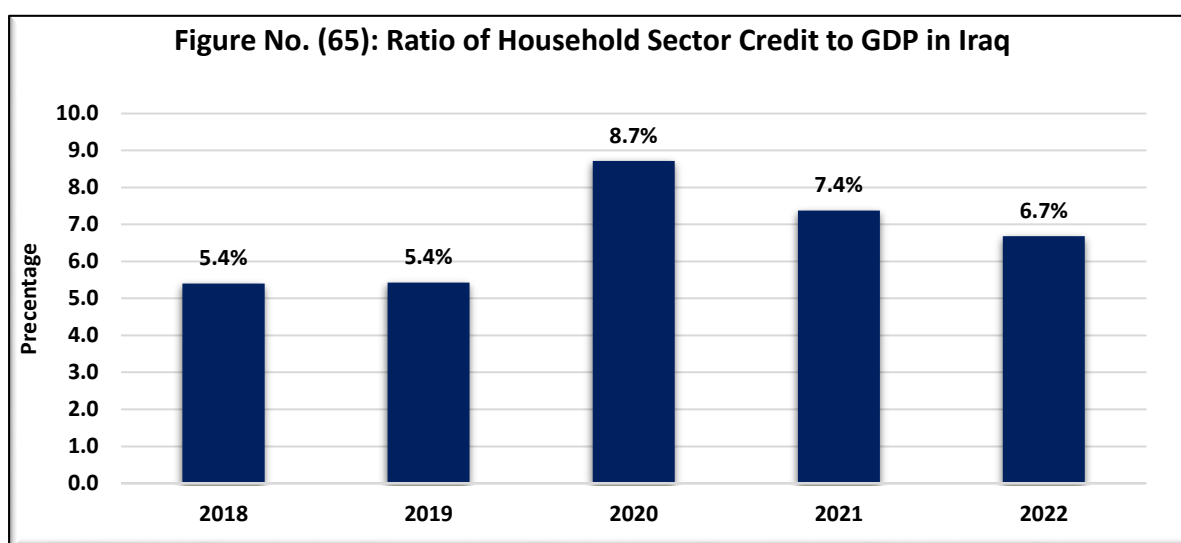
Source: Central Bank of Iraq / Statistical Website.

4-3. Ratio of Household Sector Credit to GDP in Iraq

Ratio of household sector credit to GDP reflects the volume of credit provided to individuals in relation to the volume of the country's overall economy. This index gives an idea of the amount of debt incurred by individuals and the extent of their dependence on external financing.

Ratio of household sector's credit to GDP varies from one country to another and is affected by many economic and social factors. In some economies, this ratio may be high, reflecting individuals' heavy reliance on credit to meet their financial and consumption needs. In some other cases, the ratio may be low, indicating that individuals rely more on their personal resources and disposable income. Monitoring the ratio of household sector credit to GDP is important to understand the level of debt accumulation for individuals and assess the extent of their debts. A high ratio may mean the possibility of increased financial risks for individuals and higher rates of repayment and interests. Conversely, a low ratio may reflect financial sustainability and stability for individuals. It is also important to keep in mind that there are variations of ratio between countries and within countries themselves. Individuals and domestic financial and economic authorities must monitor the ratio of household sector credit to GDP and analyze it periodically to identify any changes and take the necessary measures to ensure its sustainability and stability. If it exceeds (65%) of GDP, it could lead to a banking crisis, while it is weak, If the percentage is less than

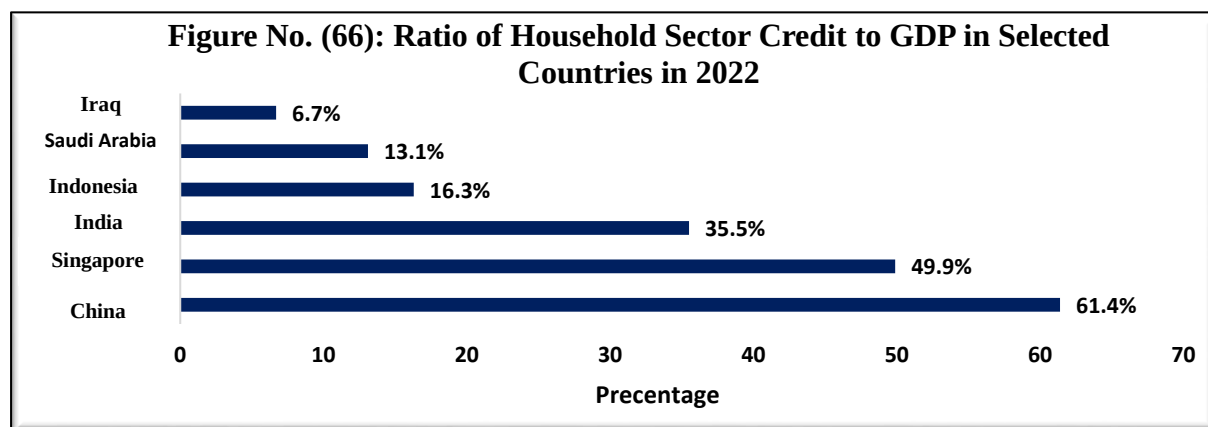
(10%)¹. Figure No. (65) shows the ratio of credit extended to household sector to (GDP) in Iraq; it is noted that the ratio of household sector's indebtedness to GDP decreased from (7.4%) in 2021 to (6.7%) in 2022 due to the increase of GDP by (27%), which is greater than the percentage of increase of credit extended to household sector of (15%). It shows that the GDP in Iraq is driven by non-banking sector, which is mostly by the petroleum sector. We find that the index percentage is less than (10%), which confirms the decrease in credit extended to household sector in Iraq, and banks can expand providing loans to this sector without affecting financial stability.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

In general, the credit extended to household sector in Iraq is weak when compared with some countries. Figure No. (66) shows that, with the ratio of credit extended to household sector to (GDP), Iraq ranks last among the comparison countries. Credit extended to household sector can increase without worry about affecting financial stability, taking into account the conditions and standards for granting credit.

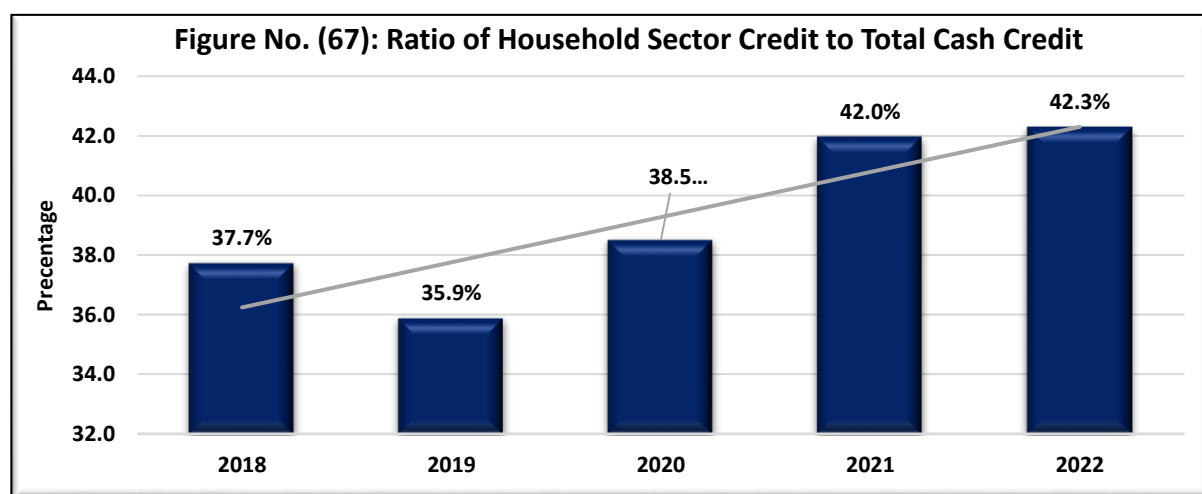
1 Arab Monetary Fund, Financial Stability Report in Arab Countries, 2019, p. 150.



Source: TRADING ECONOMY: <https://tradingeconomics.com/country-list/households-debt-to-gdp?continent=asia>

4-4 Ratio of Household Sector Credit to Total Cash Credit

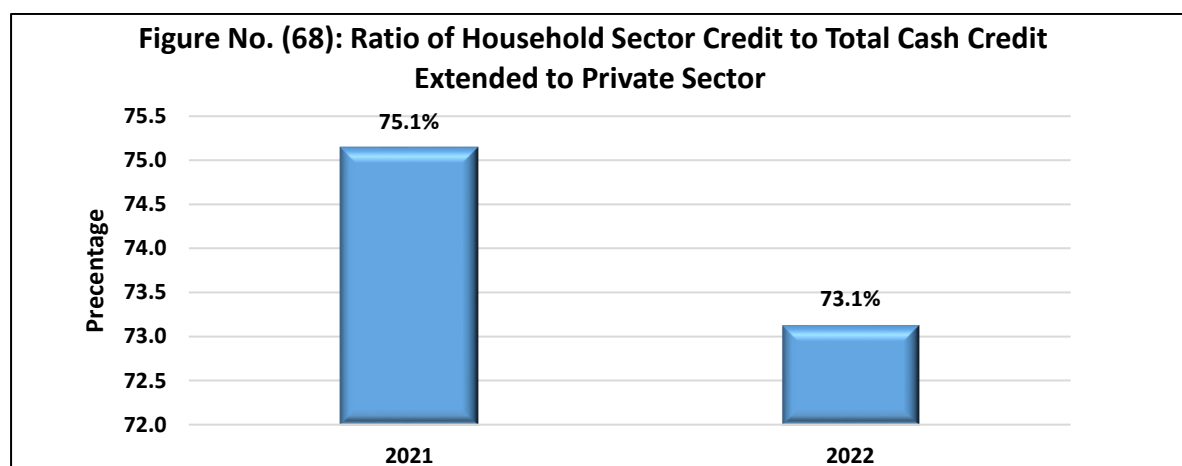
Household sector credit to total cash credit index reflects the amount of credit provided to households and individuals in relation to total cash credit granted in the economy. This index contributes to understanding the amount of credit available to families and their level of debt. This index can vary greatly between countries and even within the same country, as it is affected by factors such as financial, monetary, cultural, and economic policies. It is measured by calculating credit facilities granted to household sector relative to total cash credit, whether provided to private or public sector. This index shows the volume of credit provided to household sector out of total cash credit. Figure No. (67) shows that ratio of credit granted to household sector to total cash credit increased from (42%) in 2021 to (42.3%) in 2022, at an increasing pace, but at low rates.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

4-5 Ratio of Household Sector Credit to Total Cash Credit of Private Sector

Credit provided to household sector represents an important part of credit provided to private sector, as this index reflects the volume of credit provided to families and individuals in relation to total cash credit granted to companies and private businesses. This index also helps in estimating the extent of financing balance between the two sectors and study its impact on economic growth and stability of the financial system. Figure No. (68) shows that ratio of credit provided to household sector to cash credit provided to private sector decreased from (75.1%) in 2021 to (73.1%) in 2022. This decrease is due to positive growth of private cash credit, which is greater than the growth of total household credit. As growth of cash credit provided to private sector reached (18.4%), while there was a smaller growth of total household credit at a rate of (15.2%) during (2021-2022). This increase is due to the growth of credit provided to the private sector by CBI's initiatives, in addition to its initiative to grant IQD (15) million to low-income individuals, as well as loans granted by banks from their own resources.

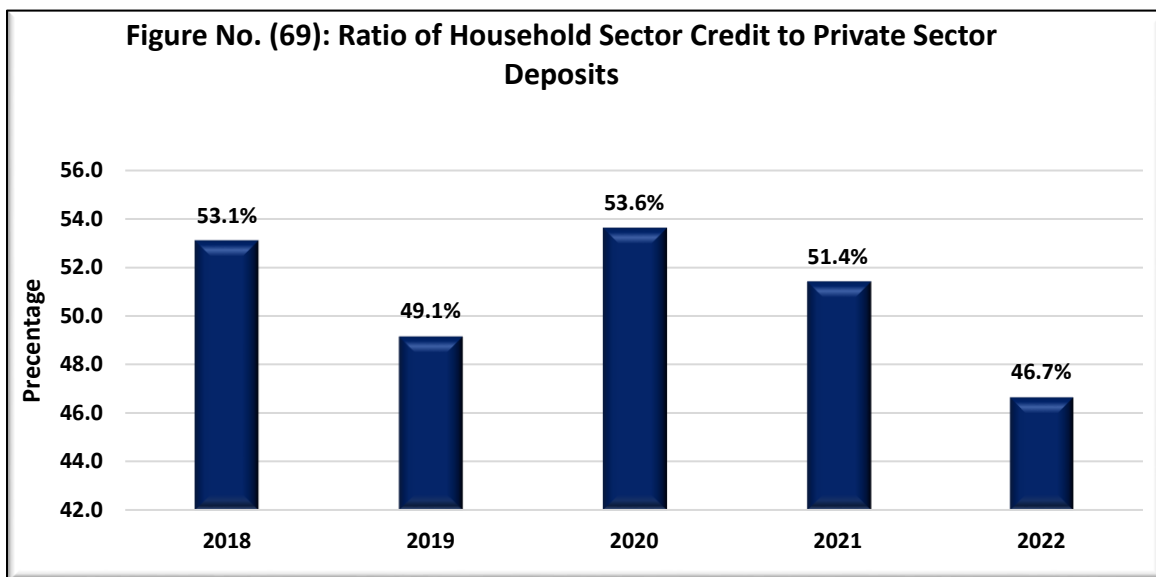


Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics.

4-6 Ratio of Household Sector Credit to Private Sector Deposits

Index of household sector credit to private sector deposits ratio measures volume of credit granted to families and individuals in relation to volume of private sector deposits. This index reflects the extent to which households rely on external financing compared to savings deposited with private sector. It also shows the extent of banks' ability to cover debts extended to household sector through private sector's deposits only. Figure No. (69) shows that the ratio of household sector credit to private sector deposits reached (51.4%) during 2021, then it decreased to (46.7%) by end of 2022, which means that deposits cover

total credit provided to household sector. Accordingly, credit provided to the household sector can be increased, taking into account conditions, procedures, and guarantees that must be available when providing credit from banks.



Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Monetary and Financial Statistics

5- Measurement of Aggregate Index of Financial Stability

5 - Measurement of Aggregate Index of Financial Stability in Iraq

Through its exceptional measures, CBI seeks to protect individuals, the economy, and the financial system in Iraq from the effects of previous shocks to which the country was exposed. To achieve this goal, CBI implemented a group of various financing initiatives aimed at supporting the Iraqi economy in light of the great challenges it faces. The rise of oil prices and the increase of government revenues played a crucial role, as CBI was able to continue providing support to the economy through its initiative directed to specialized banks, as this initiative aims to finance vital sectors of the Iraqi economy, promote economic growth, and provide job opportunities.

Although the GDP indices in Iraq are affected by these policies, still there is a continuous need to take more measures to support the economy and achieve stability. In this context, Financial Stability Index comes as an important tool that measures financial stability level and provides early guidance for decision-makers to take appropriate preventive measures.

Central banks assess the soundness of the financial system by using a variety of quantitative and objective indices. This assessment aims to assess the strength & soundness of the financial system and identify any risks it may face. Central Banks promote transparency and disclosure principals by providing adequate information to the market and participants of the financial system through the publication of detailed reports and data on the status of the financial system and its important indices. These principles help to build trust and enhance concerned parties' understanding of the risks and challenges facing the financial system.

Accordingly, CBI through the Statistics and Research Dept./ Monetary and Financial Stability Division, is developing a comprehensive index of financial stability aiming to assess the stability of the financial system in a comprehensive manner, beyond the stability of the banking sector only. Development of this index depends on a variety of indices that include the banking system and the economic sector in general, capital market, World Economic Index, and the financial cycle. These sub-indices rely on a set of other sub-ratios that reflect various aspects of the financial system stability.

This multi-index approach allows CBI to get a comprehensive view of financial stability and identify areas that may need improvement or focus on them. By analyzing these multi- indices and related sub-ratios, CBI can assess public financial conditions and take the necessary measures to maintain the stability of financial system in Iraq.

5-1 Used Variables in Calculating Financial Stability Index ¹

Financial Stability Index consists of five main sub-indices, **taking into account adding the negative sign to variables that are inversely related to the Financial Stability Index before data normalization process**, as the following:

A - Banking Sector Indicator: It consists of 13 sub-indices after adding four new variables, including: capital adequacy ratio, ratio of non-performing debts to total debts, ratio of net non-performing debts after deducting provisions/ capital base, ratio of non-performing debts/ total cash credit, coverage rate (provisions/ non-performing debts), ratio of liquid assets/ liquid liabilities, ratio of liquid assets/ short-term liabilities, ratio of liquid assets/ total deposits, ratio of cash credit/ total deposits, ratio of return on assets, ratio of return on equity, ratio of total non-interest expenditure to total income, and ratio of interest spread to total income.

B- Macroeconomic index: It consists of 8 sub-indices after adding four new variables, including: GDP growth rate, ratio of current account deficit to GDP, oil breakeven price in Iraq, inflation rate, black market exchange rate, public debt to GDP, individuals indebtedness to GDP, and ratio of foreign reserves to GDP.

C- Capital Market Index: It consists of two sub-indices, namely: Iraq Stock Exchange Index and the ratio of the market value of shares to GDP.

D- World Economic Index: This new index was added due to its importance at the level of the financial stability index in Iraq, which consists of two sub-indices, namely: the World Economic Growth Index and the Global Inflation Index.

E- Financial Cycle Index: It consists of one index that measures credit gap, meaning the difference between the ratio of extended credit to the private sector to GDP and the trend of the long-term ratio using the Hodrick-Prescott filter.

¹ New indices were added to Aggregate Index of Financial Stability, as main indices became (5) and sub-indices (26).

Table No. (10): Used Variables in Composition of Financial Stability Index And the Relationship Among these Variables and the Financial Stability Index					
Axis	Variables	Sub-variables	Relationship Between the Variable and Financial Stability Index	Weighted Weight	Main Index Weight
Banking Sector Indicator	Capital Adequacy	Capital Adequacy Ratio	Direct Promotion	7.00 %	51%
	Asset Quality	Non-Performing Debts/ Total Debts	Inverse	3.00 %	
		Net Non-Performing Debt After Deducting Provisions /Capital Base	Inverse	3.00 %	
		Non-Performing debts/ Total Cash Credit	Inverse	3.00 %	
		Coverage Rate (Provisions/ Non-Performing Debts)	Direct Promotion	3.00 %	
	Liquidity	Liquid Assets/ Liabilities Ratio	Direct Promotion	4.00 %	
		Liquid Assets/ Short-Term Liabilities	Direct Promotion	4.00 %	
		Liquid Assets/ Total Deposits	Direct Promotion	4.00 %	
		Cash Credit/ Total Deposits	Direct Promotion	4.00 %	
	Profitability	Return on Assets Ratio (ROA)	Direct Promotion	4.00 %	
		Return on Equity (ROE)	Direct Promotion	4.00 %	
		Total Non-Interest Expenditure/ Total Income	Inverse	4.00 %	
		Interest Spread to Total Income	Direct Promotion	4.00 %	
Macroeconomic Index		GDP Growth Rate	Inverse	4.00 %	32%
		Ratio of Current Account Deficit /GDP	Inverse	4.00 %	
		Growth of Oil Breakeven Price in Iraq	Direct Promotion	4.00 %	
		Inflation	Inverse	4.00 %	
		Black Market Exchange Rate (Market)	Inverse	4.00 %	
		Public Debt to GDP	Inverse	4.00 %	
		Individuals` indebtedness to GDP	Inverse	4.00 %	
		Ratio of Foreign Reserves /GDP	Direct Promotion	4.00 %	
Capital Market Index		Iraq Stock Exchange Index	Direct Promotion	5.00 %	10%
		Market Value of Equities/GDP	Direct Promotion	5.00 %	
World Economic Index		Global Economic Growth	Direct Promotion	2.00 %	4%
		Global inflation	Inverse	2.00 %	
Financial Cycle Index		Credit-to-GDP Gap Without Oil	Inverse	3.00 %	3%
Total				100%	100%

Table No. (10) shows the used variables in the composition of financial stability index, the relationship among these variables, and the financial stability index, noting that the variables that have an inverse relationship will be given a negative sign before normalizing data.

A methodology was adopted to prepare the aggregate index of financial stability as mentioned in box No. (2).

Box No. (2): Steps to Measure Aggregate Index of Financial Stability in Iraq

The **aggregate index** is a composite index that is calculated according to the following steps:

1- Converting variable's data into standard values according to the experimental method:

(Empirical Normalization) by the following (equation 1):

$$d = \frac{x - \text{Min}}{\text{Max} - \text{Min}}$$

Whereas:

X = value of the variable at the current year.

Min= the lowest value of the variable during the calculation period.

Max = the largest value of the variable during the calculation period.

Value of the index ranges between (0 - 1). The closer the value to zero, indicating that banking stability is facing risks of a greater degree of stability. While as further the value from zero, indicating that the aggregate index is stable and the size of risks is less. The closer the value of the index to one, indicating a decrease of risks, then, leading to an increase of financial stability level.

2- Determining weights: Different weights have been determined for the variables of the indices mentioned in table No. (11), which is the experts' judgment of estimation. There are other ways to grant weights such as (2):

-Expert Judgment.

-Principal Components Analysis

-Factor Analysis

3- Collect the weighted standard values to obtain values of the sub-indices.

4- Calculate the Aggregate index of financial stability according to the following formula:

$$+ \sum_{j=1}^4 \omega_{jEI} \left[\frac{x_{jt} - \text{Min}_j}{\text{Max}_j - \text{Min}_j} \right] + \sum_{j=1}^2 \omega_{jCI} \left[\frac{x_{jt} - \text{Min}_j}{\text{Max}_j - \text{Min}_j} \right] + \omega_{jFI} \left[\frac{x_{jt} - \text{Min}_j}{\text{Max}_j - \text{Min}_j} \right] FSI = \sum_{j=1}^{10} \omega_{jBI} \left[\frac{x_{jt} - \text{Min}_j}{\text{Max}_j - \text{Min}_j} \right] + \omega_{jWI} \left[\frac{x_{jt} - \text{Min}_j}{\text{Max}_j - \text{Min}_j} \right]$$

FSI: Financial Stability Indicators

Whereas:

WJ: Weighted Weight

BI: Banking Sector Indicator.

EI: Aggregate Sector Index.

CI: Capital Market Index. FI: Financial Cycle Index. WE: World Economic Index t: the year in which it is calculated.

There are few methods to convert data into standardization values, as each method has its advantages and disadvantages, but using the above method is one of the best methods based on Rabi Mishra and others, for more see:

-Rabi Mishra, Puneet Verma, and Sanket Bose (2015), Operationalising Financial Inclusion Index as a Policy Lever: Uttar Pradesh (in India)- A Case Study, Journal of Mathematics and Statistical Science, Vol. 1, Issue 4, pp. 149-165.

OECD, (2008), Handbook on Constructing Composite Indices Methodology and User Guide, Organization for Economic Co-Operation and Development, pp31-33. Available at: www.oecd.org/publishing/corrigenda.

5-2 Standard Financial Stability Matrix

This new mechanism had been added, according to which we can classify each variable on a scale between (0) and (1) with a criterion consisting of five classifications (**unstable**), (**less stable**), (**stable**), (**more stable**) and (**very stable**) for each variable. This classification is adopted after **applying the stage of normalization approach and conversion to standard values**. Taking into account, the relationship between partial sub-variable and aggregate index of financial stability, whether it was a direct promotion or an inverse relationship. As for the variables with a direct promotion relationship with Financial Stability Index, the criterion (**unstable**) is determined at the threshold of (0), the criterion (**less stability**) at the threshold of (0.01-0.25), the criterion (**stable**) at the threshold of (0.26-0.50), and the criterion (**more stability**) at the threshold of (0.51-0.75). While the criterion (**very stable**) is determined at the threshold of (0.76-1) and vice versa if the relationship that link the partial sub-variable with financial stability index is an inverse relationship. As shown in table No. (11), different normalization methods will lead to different results for the aggregate index. Therefore, the choice of normalization forms our aggregate index.

Table No. (11): Standard Financial Stability Matrix						
Variables with an Inverse Relationship	Variables with a Direct Promotion Relationship					
		Very Stable	Higher Stability	Stable	Less Stable	Unstable
	Unstable	(0.76-1)	x	x	x	x
	Less Stable	x	(0.51-0.75)	x	x	x
	Stable	x	x	(0.26-0.50)	x	x
	Highest Stability	x	x	x	(0.01-0.25)	x
	Very Stable	x	x	x	x	(0)

Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Financial and Monetary Stability.

5-3 The Practical Aspect of Financial Stability Index in Iraq

5-3-1 Analysis of Aggregate Index of Financial Stability and Stability Map

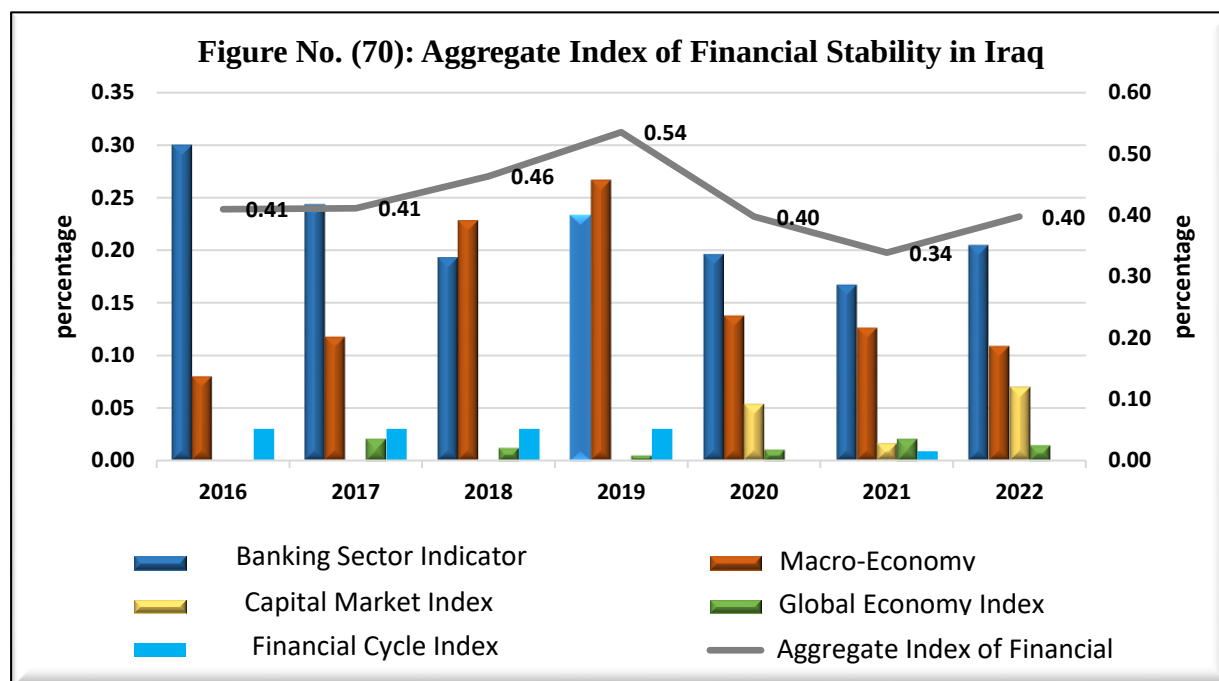
Financial stability level can be assessed through aggregate index of financial stability, which depends mainly on the components of the aggregate index and

its trends. As values of sub-aggregate indices of the aggregate index of financial stability in Iraq had increased over the period f (2016-2019), and then began to decline from (2020-2021). Then it rose during 2022 as shown in table No. (12), as it reflects the general orientation of CBI towards adopting and strengthening policies to achieve financial stability by applying requirements of Basel III and International Standard of Financial Reporting No. (9), as well as other CBI requirements for the banking sector in Iraq (domestic & foreign).

Table No. (12): Aggregate Index of Financial Stability and its component sub-Indices							
Indices \ Years	2016	2017	2018	2019	2020	2021	2022
Aggregate Index of Financial Stability	0.410	0.411	0.464	0.536	0.398	0.339	0.398
Banking Sector Indicator	0.300	0.244	0.193	0.234	0.196	0.168	0.205
Macroeconomic Index	0.080	0.118	0.228	0.267	0.138	0.126	0.109
Capital Market Index	0.000	0.000	0.000	0.000	0.053	0.016	0.069
World Economic Index	0.000	0.020	0.012	0.005	0.010	0.020	0.014
Financial Cycle Index	0.030	0.030	0.030	0.030	0.000	0.009	0.000

Source: Central Bank of Iraq / Statistics and Research Dept. - Division of Financial and Monetary Stability.

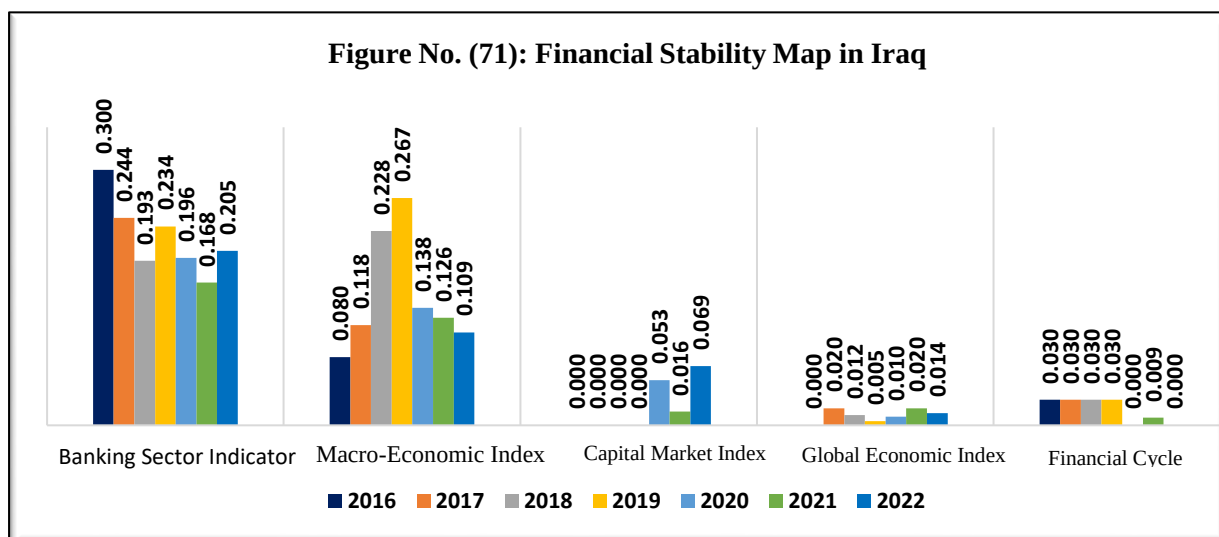
Considering the economic effects of the Corona pandemic, the Ukrainian-Russian war, and changes in global powers, CBI sought to reduce the impact of successive crises by increasing financing initiatives that support economic sectors and reduce non-performing Loans by extending the period of repayment of loan dues to beneficiaries. Also other measures in which precautionary policies were used at the micro and macro levels in the field of enhancing capital and liquidity according to international and domestic standards, in addition to the improvement of global oil prices during (2021-2022). These measures and conditions positively reflected on the aggregate index of financial stability, which witnessed an increase of (0.398) in 2022 compared to (0.339) at the end of 2021. It was also noted from the above table that the main sub-indices that make up the aggregate index of financial stability recorded an increase for both: Banking Sector Indicator and capital market index to reach (0.205) and (0.069). While macroeconomic index, world economic index and financial cycle index decreased to (0.109), (0.014) and (0.000), respectively, in 2022, as shown in table No. (12) and figure No. (70).



Source: Data of table No. (12)

5-3-2 Financial Stability Map

Financial stability map shows trend analysis of aggregated sub-indices based on data for each year, as aggregate index fluctuated over the period (2016-2022). Banking Sector Indicator and capital market index increased, while macroeconomic index, global economic index, and financial cycle index declined in 2022. The overall impact of change in these indices was the increase of financial stability index from (0.339) in 2021 to (0.398) in 2022, which reflects a relative stability of financial stability index in Iraq. Figure No. (71) shows that the increase of Banking Sector Indicator had an impact on the rise of financial stability index due to the growth of: (ratio of liquid assets/ liquid liabilities, return on profitability, and return on shareholders' equity). As these variables had an impact on the rise of banking stability index because of the increase of total assets, which was reflected on the profitability of banks. Noting, that their weighted weight constitutes (51%) of the total weighted weight of financial stability index, as it has the largest percentage of weighted weight due to two reasons: 1- high weighting weight ratio of Banking Sector Indicator compared to the rest of indices, 2- high number of sub-indices included in its composition. Quality of assets and profitability had the greatest impact on achieving banking stability and then financial stability in Iraq, which reflects strength and flexibility of Iraqi banking sector that witnessed good profitability and building good liquidity coverage ratios and rely on the main business of banks.



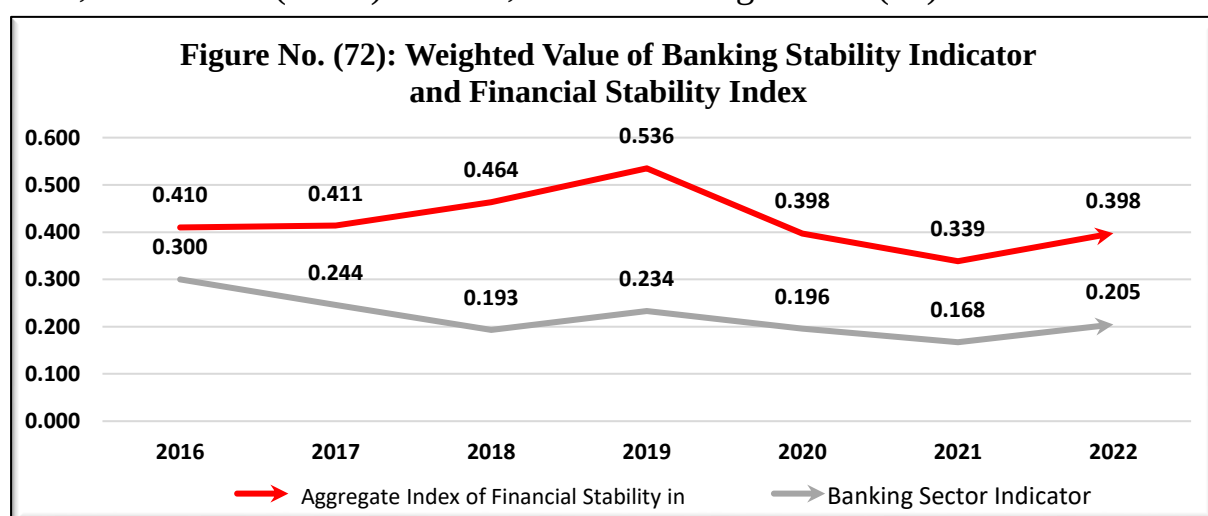
Source: Data of table No. (12).

5-4 Relationship Between Aggregate Index of Financial Stability and Its Component Sub-Indices

Aggregate index of financial stability consists of several sub-indices, all of which ultimately affect the value of the index, as the following

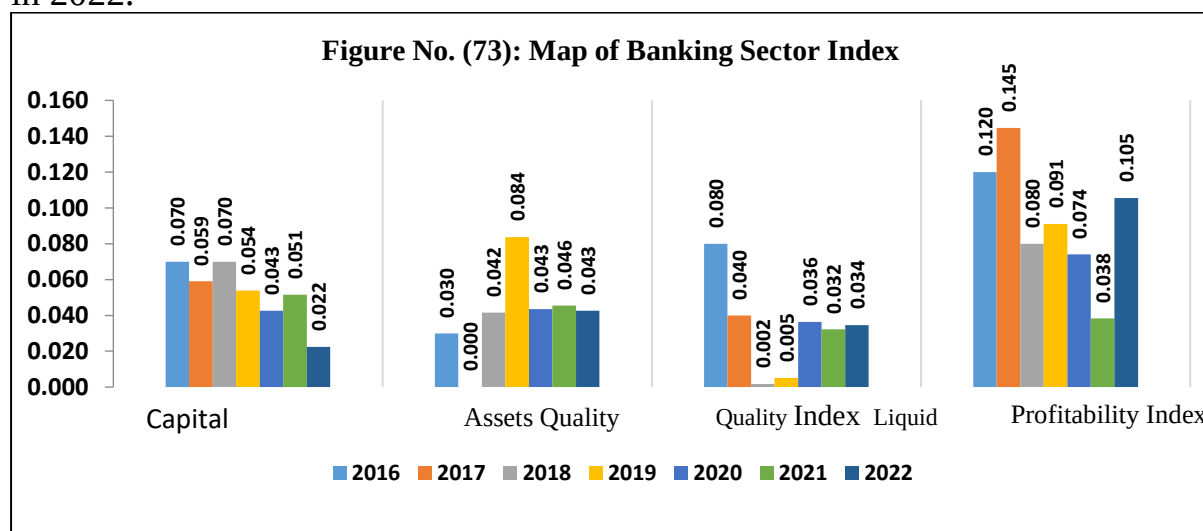
5-4-1 Banking Sector Indicator (BI)

It consists of four main components, namely (capital adequacy ratio, asset quality, liquidity, and profitability). Its calculation includes several secondary variables that positively or negatively affect financial stability in Iraq, as banking stability indicator witnessed fluctuations during the period (2016-2022). The weighted value of banking stability index increased to reach (0.205) during 2022, after it was (0.168) in 2021, as shown in figure No. (72).



Source: Data of table No. (12).

Figure No. (73) shows the decrease of weighted value of capital adequacy index in 2022 to reach an average of (0.022) from (0.051) in 2021. Also, it was noted from banking stability map that the weighted value of both: profitability and liquidity quality indices increased from (0.038) and (0.032) in 2021 to (0.105) and (0.034) in 2022, respectively. It was reflected on the rise of Banking Sector Indicator, while asset quality index decreased from (0.046) in 2021 to (0.043) in 2022. This decrease of asset quality and capital adequacy index did not affect financial stability index in Iraq, as it increased from (0.339) in 2021 to (0.398) in 2022.



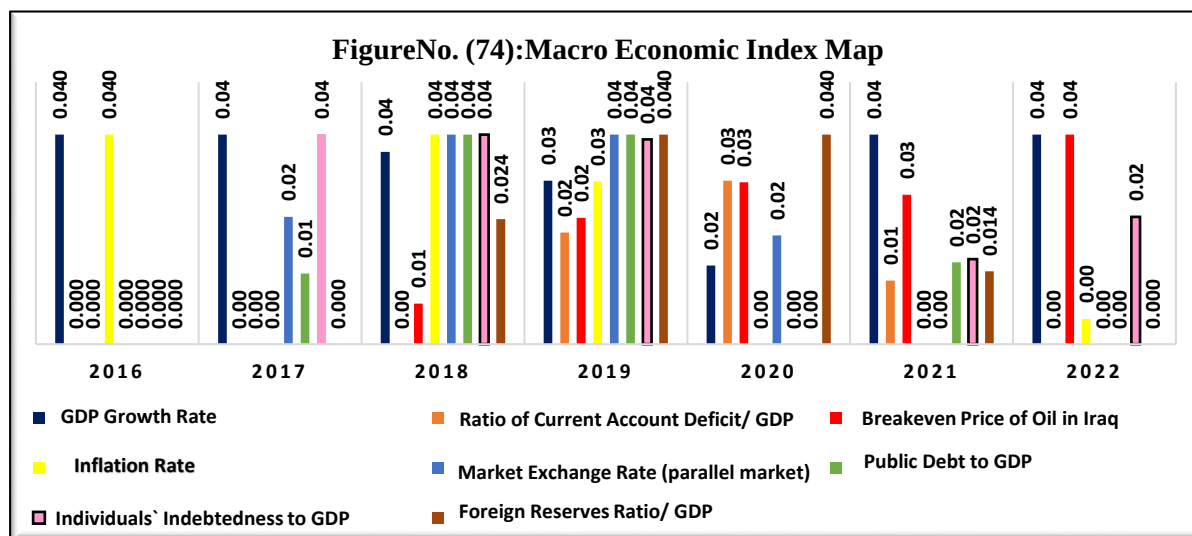
Source: Central Bank of Iraq / Statistics and Research Dept. - Estimates of Monetary and Financial Stability Division.

5-4-2 Macro-Economic Index

Macroeconomic index expresses a set of data that reflect economic conditions of the country, as it is used to assess the current and future condition of the domestic economy. The index measures the impact of macroeconomic variables on financial stability, as it directly affects financial stability index with a weighted weight of (32%) that consists of (8) sub-indices, after adding four new variables, namely: GDP growth rate, current account deficit to GDP ratio, breakeven price of oil in Iraq, inflation rate, black market exchange rate, public debt to GDP, individuals' indebtedness to GDP, and ratio of foreign reserves to GDP¹. The impact of: GDP growth rate, breakeven price of oil in Iraq, and ratio of foreign reserves to GDP is direct promotion relationship on financial stability. The rest of ratios are an inverse relationship. If the final result is positive, it leads to a rise of financial stability index and vice versa.

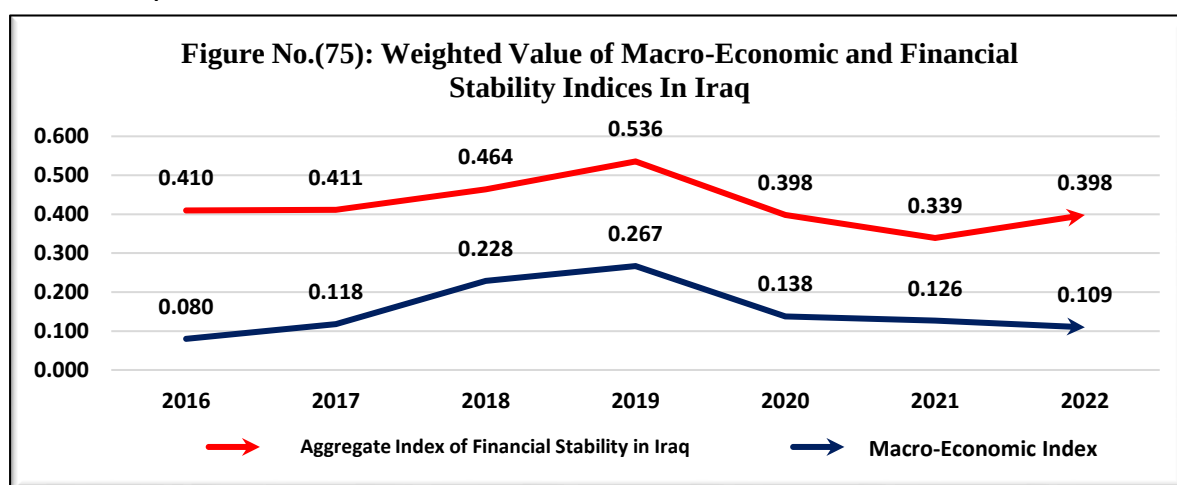
¹ For more information on the mechanism of each ratio's impact on financial stability indicators, see theoretical side.

It was noted from the macroeconomic stability map that GDP growth rate, breakeven price of oil in Iraq, inflation rate, and individuals' indebtedness to GDP had a positive impact on macroeconomic index, in turn, financial stability index in Iraq to record (0.040), (0.040), (0.005), and (0.024), respectively, in 2022. Ratio of current account deficit to GDP decreased to reach (0.000) and black-market exchange rate was stable by (0.000). While ratio of public debt to GDP and ratio of foreign reserves to GDP decreased to (0.000) and (0.000) during 2022, as shown in figure No. (74):



Source: Central Bank of Iraq / Statistics and Research Dept. - Estimates of Monetary and Financial Stability Division.

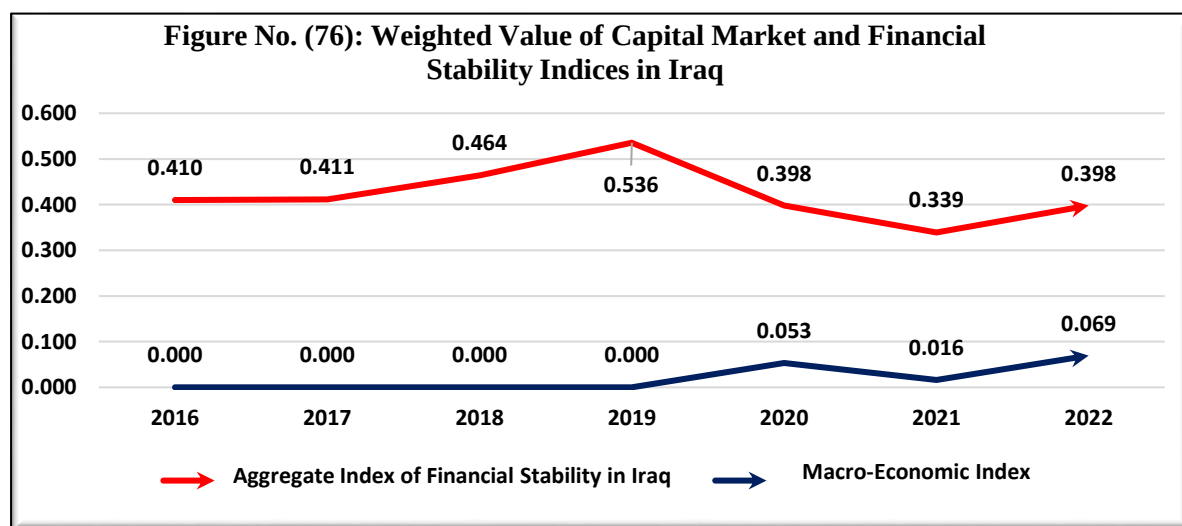
From figure No. (75), we find that the outcome of macroeconomic index was negative, as it decreased from (0.126) in 2021 to (0.109) in 2022, but it didn't reduce the impact of aggregate index of financial stability in Iraq during 2022 compared to 2021.



Source: Data of table No. (12).

5-4-3 Capital Market Index

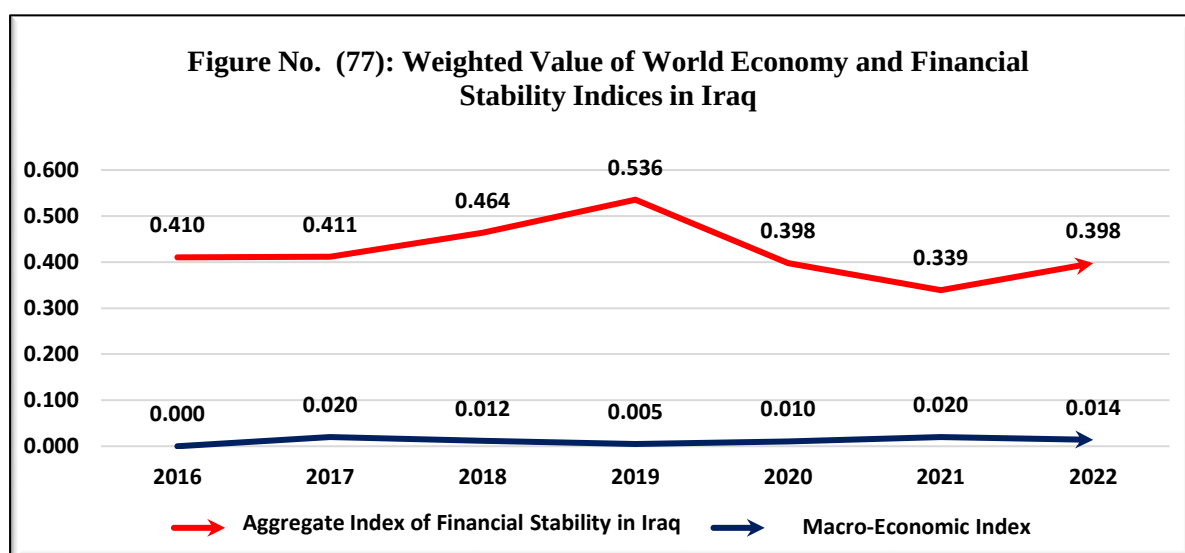
This index measures the impact of capital markets on financial stability using two indices: first- (Iraq Market Index for Financial Markets), which measures the performance of the market, second- (market value of equity/ GDP), as this percentage is considered one of the most important indices that are taken into account when calculating the aggregate index, because it affects financial stability in Iraq with a weighted weight that constitutes (10%) of total weighted weights of indices included in the calculation of financial stability in Iraq. These two indices are linked by a direct promotion relationship to financial stability index. Also the increase in the weighted value of this ratio's indices from (0.016) in 2021 to (0.069) in 2022 positively affected the financial stability index in Iraq during 2022, as shown in figure No. (76).



Source: Data of table No. (12).

5-4-4 Global Economic Index

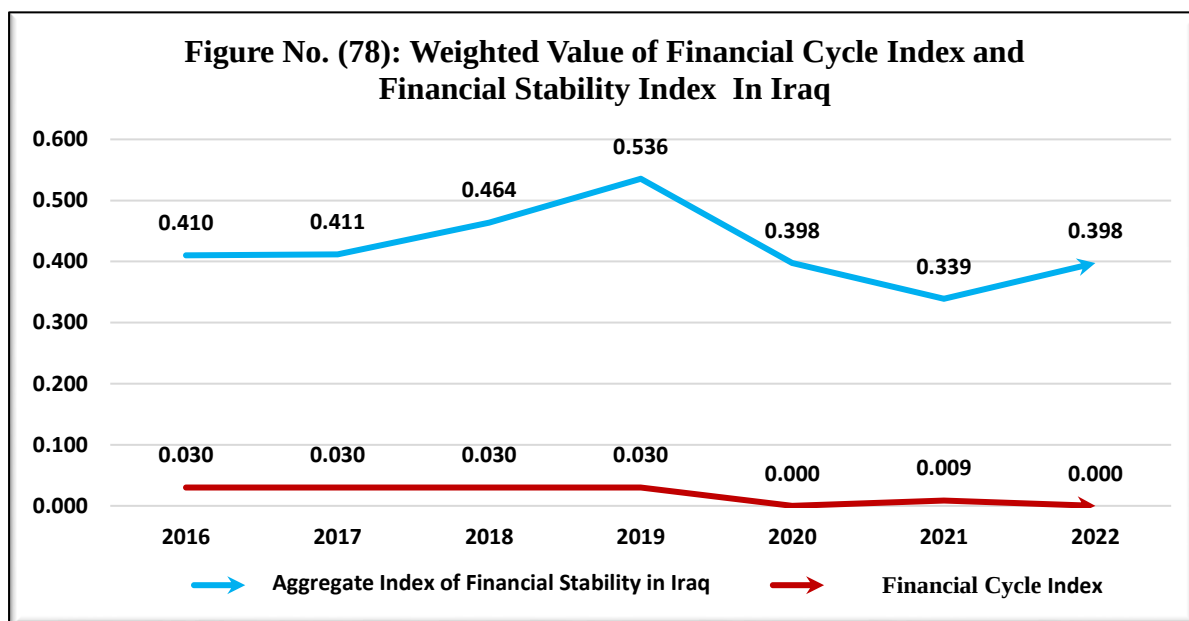
Considering global developments and the impact on some countries, especially Iraq, by occurred fluctuations, it is preferred to add this new index due to its importance at the level of Iraqi Financial Stability Index, which consists of two sub-indices namely: global economic growth index and global inflation index, with a weighted weight of (4%) of total weighted weight of financial stability. It was noted through Figure No. (77) that its value had decreased slightly from (0.020) in 2021 to (0.014) in 2022, but it did not significantly reflect on financial stability index.



Source: Data of table No. (12)

5-4-5 Financial Cycle Index

The index measures deviations at the level of credit provided to the private sector to GDP without oil from its direction, as it shows stages of expansion and contraction of financial sector in each period. The positive gap indicates the acceleration of growth rate of the credit provided to the private sector that may not correspond to GDP growth rate, at the same pace. While negative gap indicates the expansion of credit prices to a less than GDP growth rate, which usually occurs after financial crises. As when the gap expands, it reflects the state of financial instability. It was noted from figure No. (78) that the weighted value of the gap had declined since 2019, but that decline did not significantly affect financial stability because the weight of financial cycle within the financial stability index constitutes only (3%). Therefore, its impact is moderate compared to banking stability index or the macroeconomic stability index. The weighted value of financial cycle index recorded (0.000) during the year 2022. The average credit gap ratio in Iraq was (0.060) for the period (2015-2022), which indicates weak contribution of banking sector in Iraq in financing real activity despite the CBI's efforts to enhance financial inclusion to provide facilities for extending credit, as it launched initiatives accelerate the development process and sustain economic growth in Iraq. At the same time, it represents a decrease of risks' volume that was realized through the possibility of accelerating the growth rate of banking credit in Iraq.



Source: Data of table No. (12)

5-5 Standard Financial Stability Matrix and its Relationship with Aggregate Index of Financial Stability in Iraq

The index aims to assess risks of the Iraqi financial system, as it depends mainly on the components of the aggregate index and its trends, which can play a crucial role to ensure financial stability, as shown in table No. (13).

Table No. (13): Standard Financial Stability Matrix and its Relationship with Aggregate Index Financial Stability in Iraq

Axis	Variables	Sub-Variables	2016	2017	2018	2019	2020	2021	2022
Banking Sector Indicator (of Direct Promotion relationship)	Capital Adequacy	Capital Adequacy Ratio	1.00	0.84	1.00	0.77	0.61	0.74	0.32
	Asset Quality	Coverage Ratio (Provisions/Non-Performing Debts)	1.00	0.00	1.00	1.00	0.60	0.39	0.20
	Liquidity	Ratio of Liquid Assets/ Liquid liabilities	0.00	1.00	0.04	0.00	0.00	0.20	0.00
		Liquid Assets/Short-Term Liabilities	0.00	0.00	0.00	0.00	0.00	0.04	1.00
		Liquid Assets / Total Deposits	1.00	0.00	0.00	0.00	0.00	0.03	0.22
		Cash Credit / Total Deposits	1.00	0.00	0.00	0.13	0.91	0.53	0.82
	Profitabil ity	Return on Assets (ROA)	1.00	1.00	0.00	0.65	0.92	0.18	0.02
		Return on Equity (ROE)	1.00	1.00	0.00	0.63	0.93	0.27	0.03
		Interest Spread to Total Income	1.00	1.00	1.00	1.00	0.00	0.49	0.00
Macroeconomic Index (of Direct Promotion Relationship)		GDP Growth Rate	1.00	1.00	0.92	0.78	0.38	1.00	1.00
		Breakeven Price of Oil in Iraq	1.00	1.00	1.00	1.00	0.83	0.70	1.00
		Ratio of Foreign Reserves/GDP	0.00	0.00	0.60	1.00	1.00	0.35	0.20
Capital Market Index (of Direct Promotion Relationship)		Iraq Stock Exchange Index	0.00	0.00	0.00	0.00	0.06	0.32	0.44
		Market Value of Equities/GDP	0.00	0.00	0.00	0.00	1.00	0.00	1.00
World Economic Index (of Direct Promotion Relationship)		World Economic Growth	0.00	1.00	0.01	0.71	0.00	0.22	0.00
Banking Sector Indicator (of an Inverse Relationship)	Asset Quality	Non-performing Debt/ Total Debt	0.00	0.00	0.00	0.16	0.00	0.21	1.00
		Net Non-Performing Debt After Deducting Provisions/Capital Base	0.00	0.00	0.39	1.00	0.00	0.02	0.12
		Non-Performing Debt / Total Cash Credit	0.00	0.00	0.00	0.63	0.87	0.90	0.00
	Profitabil ity	Total Non-Interest Expenditures/ Total Income	0.00	0.62	1.00	0.00	0.00	0.02	0.00
Macroeconomic Index (of an Inverse Relationship)		Ratio of Current Account Deficit/ GDP	0.00	0.00	0.00	0.53	1.00	0.22	0.61
		Inflation Rate	0.00	0.57	0.27	1.00	0.00	0.00	0.00
		Black Market Exchange Rate	1.00	1.00	1.00	0.58	0.00	0.00	0.39
		Public Debt to GDP	0.00	0.34	1.00	1.00	0.00	0.39	1.00
		Individual`s Indebtedness to GDP	0.00	1.00	1.00	0.98	0.00	0.41	0.71
World Economic Index (of an Inverse Relationship)		Global Inflation	0.00	0.00	0.00	0.63	0.00	0.89	0.00
Financial Cycle Index (of an Inverse Relationship)		Credit-to-GDP Gap Without Oil	1.00	1.00	1.00	1.00	0.00	0.23	0.00

Source: Central Bank of Iraq / Statistics and Research Dept. – Division of Monetary and Financial Stability.

1. **Banking stability sub-index:** This index was weighted with a weight of (51%) from the aggregate index of financial stability in Iraq, but this index contributed by (51.5%) in 2022, as the banking sector index rose to (0.205) in 2022 compared to 2021, which reached (0.168). The reason for the increase in the banking index is due to the increase in several of its component subindices, such as the index (non-performing debts/total cash credit, the ratio of liquid assets/liquid liabilities, return on assets, and return on equity), but on the other hand, when analyzing the standard stability matrix of sub-indices that constitute the index, we see the ratio of liquid assets/ liquid liabilities, Interest spread to total income, non-performing debts/ total debts are in an unstable situation. Coverage ratio (provisions/ non-performing debts), liquid assets/ total deposits, and ratio of; return on assets, return on equity, foreign reserves to GDP is in a less stable situation. Capital adequacy index in a stable situation, while net non-performing debts after deducting provisions/capital base in a higher situation of stability. Total non-interest expenses/ total income, non-performing debts/ total cash credit, cash credit/ total deposits, and liquid assets/ short-term liabilities in a very stable situation.
2. **Macroeconomic Sub-Index:** This index was weighted by a weight of (32%) of the aggregate index of financial stability in Iraq, but this index contributed to (27.38%) in 2022, as the macroeconomic index decreased to (0.109) in 2022 compared to 2021, which amounted (0.126). The reason for the decline of macroeconomic sub-index is due to the decline in a number of its constituent sub-indices such as (ratio of: current account deficit/ GDP, public debt to GDP, and foreign reserves/ GDP). However, when analyzing the standard stability matrix of the sub-indices that constitute the index, we see that there are indices such as ratio of foreign reserves/ GDP and public debt to GDP that are classified in **an unstable** situation, and three indices that are classified in **a less stable** situation, namely: (ratio of foreign reserves/ GDP, current account deficit/ GDP, and individual's indebtedness to GDP). The index of black-market exchange rate (market) is in a **stable** situation and three indices are in a **very stable** situation, namely: (GDP growth rate, inflation rate, and breakeven price of oil in Iraq).
3. **Capital Market Index:** This index was weighted by a weight of (10%) of the aggregate index of financial stability in Iraq, as it had contributed by (17.3%) in 2022. Macroeconomic index rose to (0.069) in 2022 compared to 2021, which amounted (0.016). the reason for the increase of the index is due to the increase of its component sub-indices, namely: market value of equity/ GDP and Iraq Stock Exchange Index. However, when analyzing the standard stability matrix of sub-indices that constitute the index, we see an index that is classified in **a stable** situation "Iraq Stock Exchange Index", and an index that is classified in a **very stable** situation "market value of equity/ GDP".

4. **Global Economic Index:** This index was weighted by a weight of (4%) of the aggregate index of financial stability in Iraq, but this index contributed by (3.5%) in 2022, as the contribution of global Economic Index decreased to (0.014) in 2022 compared to 2021 that reached (0.020). The reason for the decline in global economic index is due to the decline of its component sub-indices, namely: (global inflation and global economic growth). Despite that, when analyzing the standard map of its component sub-indices, we see that the global inflation index is **very stable**, while the other index is **unstable**, which is (Global Economic Growth).
5. **Financial Cycle Index:** This index was weighted by a weight of (3%) of the aggregate index of financial stability in Iraq. It contributed by (0%) in 2022, as the contribution of financial cycle index decreased to (0.000) in 2022 compared to 2021 that amounted (0.009). The reason for the decline of financial cycle index is the high credit gap to GDP without oil on the long term, meaning that there is (a rise of cash credit to GDP without oil); which is a good index for the Iraqi economy. This is confirmed by standard stability analysis map with a **very stable** index criterion.

6- Macro Stress Testing

6- Macro-Stress Testing

The soundness of operations carried out by the banking sector and the soundness of its policies are among the most prominent factors that lead to the development and growth of the financial sector, maintaining its stability, and the possibility of achieving its goals of reaching a high level of economic growth and providing capital directed to the real sector. There are a group of factors that affect banking sector's performance and its effectiveness in mobilizing savings and providing credit to various economic sectors. Therefore, it is necessary to monitor the performance of the Iraqi banking system and identify the most prominent obstacles that are considered a source of threat that could hinder the process of growth and stability in the economic sectors, in general, and the financial & banking sector, in particular. Also identify the expected shocks that affect it negatively or positively in order to avoid the negatives, enhance the positives, and identify deficiencies of the studied variables in this chapter, that have a systemic impact on the banking sector in Iraq. In addition to expand banks' role and importance in the economy through their work as an intermediary between surplus and deficit units and their work as an engine for economic development, as proven by economic theories and practical experiences in various countries of the world. Therefore, attention to the soundness of the financial sector has become an urgent necessity to ensure the continued functioning of economic sectors, support, activate, and expanding them. Stress tests are considered one of risk management tools in the financial system, as conducting them is part of the off-site Supervision tools for banks.

The nature and degree of interrelation between real and financial sectors makes it necessary to study developments and changes in one or both sectors, know the extent of the impact of each one on the other sector. Since any risks or shocks to which the real sector is exposed may constitute sources of risk on the financial sector, and vice versa.

Therefore, forecasting the ability of the banking sector to absorb external shocks requires analyzing and monitoring developments in the real economy, by constructing appropriate scenarios. In this regard, a set of overall scenarios were assumed, which are divided into the baseline scenario, medium stress scenario, and severe stress scenario to assess the ability of the banking system (the main component of the Iraqi financial sector) to withstand these shocks

and continue to perform its basic functions without compromising depositors' rights.

6-1 What Does Stress Testing Mean?

Stress testing is a “what if” analysis that takes the situation in general but assumes fundamental changes to one or more variables to know their impact on other variables. It also represents a tool for measuring the soundness and resilience of a specific financial institution or the financial system in general under several Stress scenarios and events. It is a quantitative exercise of “what if?” concept to estimate: what will happen to capital, profits, and cash flow of individual financial institutions, or to the system if some risk materializes. The emergence of stress tests as a tool was not for the field of finance, but in technical sciences. In the broad sense, stress tests are a technique or method to measure the stability of an institution or system under various undesirable conditions in the field of finance. Stress tests are used to evaluate the investment portfolio of a particular institution or to measure the stability of a specific institution, which are called (Micro-Stress Tests). This method was used later to test the stability of a group of financial institutions together, or the financial system in general, which may affect the overall economy, which is called (Macro-Stress Testing) that will be used in this report.

6-2 Importance of Macro-Stress Testing

- A. Measure the banking system ability to withstand external shocks.
- B. Discover imbalances and weaknesses.
- C. Determine acceptable risk margins and required degrees of flexibility.
- D. Measure the degree of sensitivity of financial and banking sectors to variables of financial markets and macro-economic environment.
- E. Measure and estimate potential unexpected losses that may result from rare events that do not occur under normal circumstances.

6-3 Macro Scenarios

For using Macro-Stress Tests, three scenarios are usually assumed, as the following:

- A. **Baseline Scenario:** In this scenario, future values of variables included in the model are forecasted.
- B. **Medium Stress Scenario:** In this scenario, medium stress shock is determined for each variable.

C. Severe Stress Scenario: In this scenario, a shock that is more severe stress than the medium stress shock and is appropriate for each variable is determined.

Given the nature of the Iraqi economy, macro testing conditions depend on choosing some macroeconomic variables, which are the breakeven price of Iraqi oil due to its clear impact on all financial conditions in Iraq. Also, the increased finance provided by banking sector and economic growth rate, which reflects growth of all sectors that constitute GDP, and its impact on the credit provided by banking sector, especially non-performing loans. In addition to internal public debt index, which reflects volume of liabilities on the government and the extent of the impact of competition magnitude on the private sector, as well as the government-expenditure variable, which is considered one of the indicators that have a clear impact to the total consumption and total investment. Therefore, they affect the ability of projects and individuals to commit to their financial transactions with banks.

Stress Tests are performed according to the following steps:

- 1-Building a model according to the VAR Autoregressive Model Vector methodology and conducting the necessary tests to determine the validity of the model before the application process, ratio of (non-performing loans to private sector to total cash credit provided to private sector) was used to measure financial distress, due to data availability on a quarterly basis for a period that allows for stress testing to be conducted.
- 2-The model aims to estimate the relationship between the financial distress of banks and any shocks related to macroeconomic variables, especially the variables mentioned above, to measure its impact on the growth rate of non-performing loans to the private sector for a specified future period, as the model takes the following functional form:

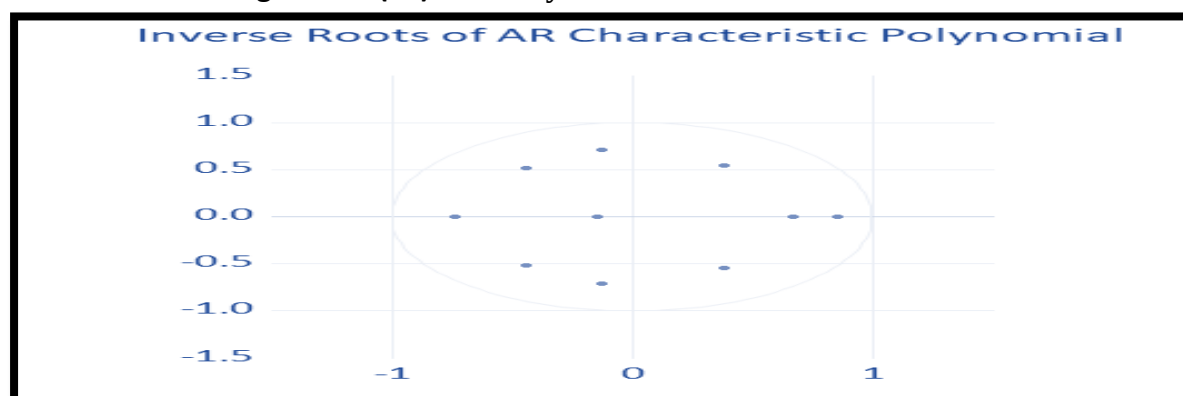
$$\text{GNPLS} = F(\text{GRGDP}, \text{GOILP}, \text{GTID}, \text{GEG})$$

Since:

- GNPLS: Growth rate of non-performing loans to the private sector to cash credit provided to the private sector.
- GRGDP: Real GDP growth rate.
- GOILP: Growth rate of breakeven price of Iraqi oil.
- GEG: Government expenditure growth rate.
- GTID: Growth rate of internal public debt.

The test is conducted according to three scenarios. The first represents the baseline scenario, through which the values of the variables included in the model are forecasted. The other two scenarios are the medium stress scenario, in which the value of the shock is estimated by the standard deviation of each variable and severe stress scenario, in which the shock is estimated by the volume of variance of the variable. Tests are conducted for each variable separately, assuming the other variables are constant. After conducting a stability test for the estimated VAR model, it turns out that it is statistically stable and suitable for performing the forecasting process, as shown in figure No. (79).

Figure No. (79): Stability of the Estimated VAR Model



Source: Central Bank of Iraq/ Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division by using (E-views) program.

Table No. (14) shows the assumed scenarios that reflect the shocks that the Iraqi economy may be exposed to, as there will be a shock regarding variables (whether an upward or downward direction, depending on the type of dependent variable and its relationship to the independent variable) with different rates according to the assumed scenarios. Table No. (14) shows the assumed scenarios that reflect shocks that the Iraqi economy may be exposed to, as there will be a decrease of all variables with different rates according to the assumed scenarios.

Table No. (14): Shock Scenarios Adopted in the Var Model				
Variables Scenarios	GRGDP Growth Rate of Real GDP	GOILP Growth Rate of Breakeven Iraqi Oil Price	GEG Government Expenditure Growth Rate	GTID Growth Rate of Internal Public Debt
Medium Stress Scenario	5.91	19.27	15.48	9.27
Severe Stress Scenario	11.83	38.53	30.96	18.53

Source: Central Bank of Iraq/ Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division

The scenarios were assumed according to the following methodology:

- **Medium Stress Scenario:** Estimated by calculating variable's growth rate of the baseline scenario, minus one standard deviation of the variable's growth rate series from Q1 to Q4 2023.
- **Severe Stress Scenario:** estimated by calculating variable's growth rate of the expected baseline scenario, minus two standard deviations the variable's growth rate series from t from Q1 to Q4 2023.

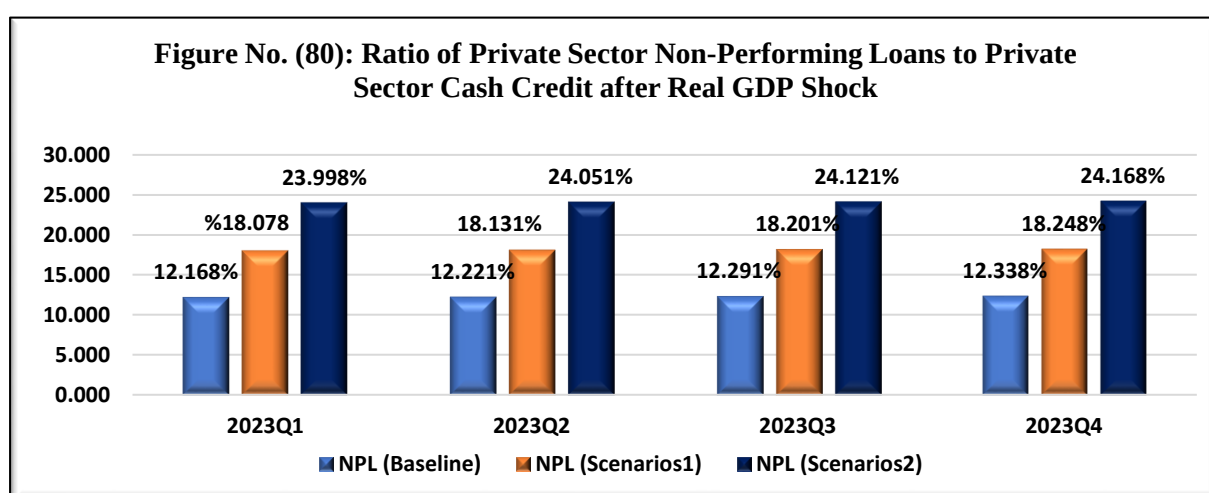
6-4 Impact of the Negative Shock on Real GDP Growth Rate on Ratio of Non-Performing Private Sector Loans to Total Cash Credit of Private Sector

Various economic developments took place in Iraq and the world after the occurrence of multiple crises, the most important of which was the Russian-Ukrainian crisis, where Russian oil was banned from Europe and the tendency to search for new sources of energy, which led to a rise of global oil prices. It was positively reflected on the increase of real GDP by (7%) in 2022, which in turn, led to a decrease of growth ratio of non-performing loans to private sector to total credit provided to private sector. As the increase of real GDP raise level of economic activity, which affects borrowers' incomes towards an increase. Thus, improve their ability to repay loans, and as a result, loan defaults decrease with declined rates. The model showed this relationship, which was statistically significant. Table No. (15) shows that the baseline scenario expectations showed a slight and fluctuating increase on ratio of non-performing loans to private sector to total cash credit provided to private sector from (12.168%) in Q1 to (12.221%), (12.291%) and (12.338%) in Q2, Q3, and Q4 2023, respectively. As a result of the negative shock on real GDP growth rate according to the prepared scenarios, ratio of non-performing loans increased from (12.068%) under baseline scenario to (18.078%) in medium-stress scenario and (23.998%) under severe stress scenario in Q1 2023. It also increased in Q2, Q3, and Q4 2023 under medium stress scenario to (18.131%), (18.201%), and (18.248%).

Table No. (15): Forecast Scenarios of Non-Performing Loans to Total Private Sector Cash Credit After Real GDP Shock					
Scenarios	Years	2023			
		Q1 %	Q2%	Q3%	Q4 %
Baseline Scenario		12.168	12.221	12.291	12.338
Medium Stress Scenario		18.078	18.131	18.201	18.248
Severe Stress Scenario		23.998	24.051	24.121	24.168

Source: Central Bank of Iraq/ Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

As for Severe Stress scenario, ratios doubled significantly and reached (23.998%), (24.051%), (24.121%), and (24.168%), respectively, for four quarters of 2023. As ratio of non-performing loans to cash credit provided to private sector increased due to negative shock on real GDP growth rate. The high impact of the decline of real GDP growth rate on ratio of non-performing loans to total credit provided to private sector confirms the strength of the relationship between them, which is evident through the increased banking depth ratio in the Iraqi economy. As ratio of credit provided to private sector to real GDP witnessed an increase from (9.2%) in 2016 to (16.76%) in 2022. As for private sector deposits which are divided by real GDP, they recorded an increase from (12%) to (25.84%) during the period (2016 - 2022). Figure No. (80) shows that a negative shock of real GDP growth rate will lead to an increase of non-performing loans ratio for medium stress scenario (NPL_1) and severe stress scenario (NPL_2) over the baseline scenario (NPL_0) with high rates, and for all quarters of 2023.



Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

6-5 Impact of a Negative Shock of Global Oil Prices on Ratio of Non-Performing Private Sector Loans to Cash Credit of Private Sector

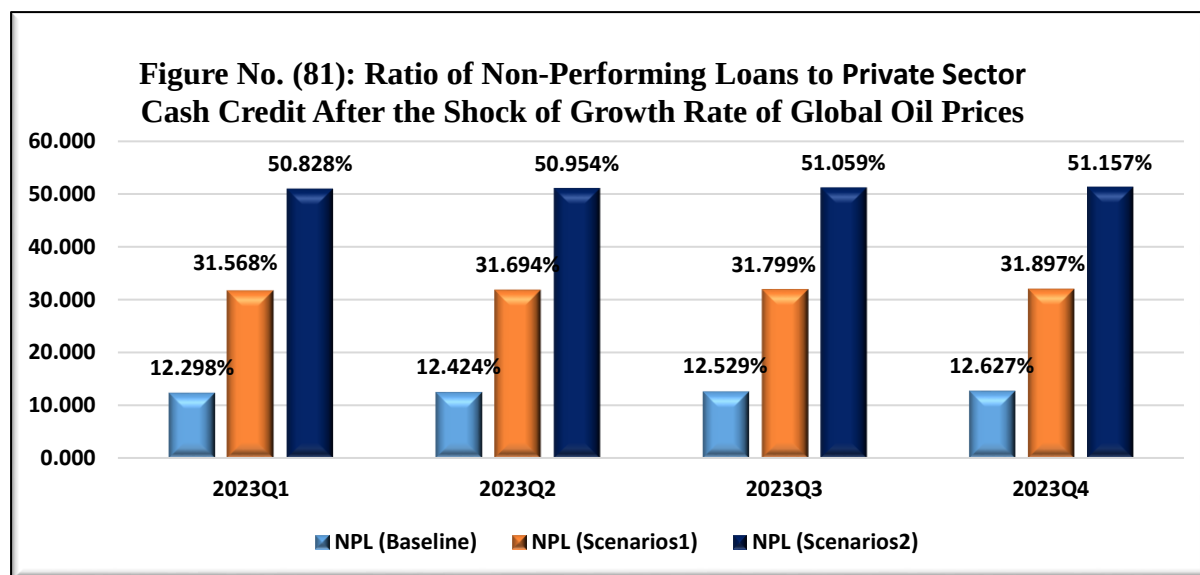
Table No. (16) shows the inverse relationship between oil price rate and ratio of non-performing loans to total credit provided to private sector in the Iraqi banking system, as results showed an inverse and statistically significant relationship between the two variables. It reflects the strong relationship between global oil prices and financial sector in Iraq during this period. Global oil prices can have a significant impact on per capita disposable income in Iraq, especially since most of government expenditures, which are formed by oil revenues to more than (95%) will be affected by international oil prices, which means a decrease of income and thus an increase of defaults on loan receivables. Also, government's ability to address the shock will be limited for a certain period, after which a crisis of difficulty in repaying current and investment expenditures will appear, as 2022 witnessed a significant increase in the volume of public expenditure by (17.21%) over 2021 due to the rise of oil prices because of the Russian-Ukrainian crisis. It was reflected positively on the volume of actual public revenues to rise by (48.23%) during 2022 compared to 2021, that led to a surplus of public budget reaching IQD (44.7) trillion during 2022 compared to 2021, when the surplus was about IQD (6.2) trillion.

Table No. (16): Forecast Scenarios of Non-Performing Loans Ratio after the shock of Global Oil				
Scenarios \ Years	2023			
	Q1 %	Q2 %	Q3%	Q4 %
Baseline Scenario	12.298	12.424	12.529	12.627
Medium Stress Scenario	31.568	31.694	31.799	31.897
Severe stress Scenario	50.828	50.954	51.059	51.157

Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

Baseline scenario forecasts showed an increase in the ratio of non-performing loans to total cash credit provided to private sector from (12.298%) in Q1 to (12.424%), (12.529%) and (12.627%) in Q2, Q3, and Q4 2023, respectively. As a result of the negative shock of global oil prices and according to the prepared scenarios, ratio of non-performing loans to total credit provided to private sector increased from (12.298%) under baseline scenario to (31.568%) under

medium stress scenario and (50.828%) under severe stress scenario in Q1 2023. The same Ratio also increased from (12.627%) to (31.897%) and (51.157%) under baseline, medium, and severe stress scenarios, respectively in Q4 2023, as shown in figure No. (81).



Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

The impact of the negative shock on global oil prices will lead to an increase OF ratio of non-performing loans under medium stress scenario (NPL_1) and severe stress scenario (NPL_2) than the baseline scenario (NPL_0) with high rates, and for all quarters of 2023.

6-6 Effect of a Negative Shock of Government Expenditure Growth Rate on Ratio of Non-Performing Loans to Cash Credit of Private Sector

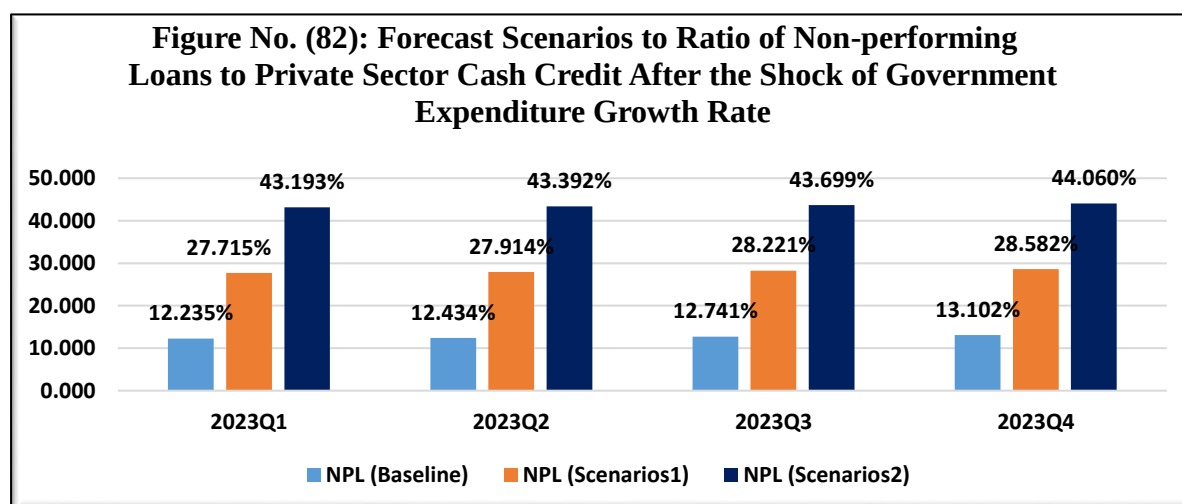
Results showed the impact of government expenditure growth rate on ratio of non-performing loans to total cash credit provided to private sector in Iraq. It is expected that the decline of government expenditure growth rate will lead to an increase of ratio of non-performing loans to total cash credit provided to private sector. This is what statistical tests of the relationship showed, which was inverse and significant, as the trend of this relationship may return to high level of vulnerability of government expenditure to economic and political crises in Iraq, especially current expenditure, as the government often maintains current expenditure level and provides alternative sources of financing in the event of a decrease of basic sources (oil revenues). Expectations of baseline scenario showed a fluctuation in the ratio of non-performing loans to total cash credit provided to private sector, as it increased from (12.235%) in Q1 to (13.102%) in Q4 2023.

As a result of the negative shock in government expenditure and according to the prepared scenarios, ratio of non-performing loans to total cash credit provided to private sector increased from (12.434%) under baseline scenario to (27.914%) under medium stress scenario and (43.193%) under severe stress scenario in Q2 2023, as well as the same ratio increased from (12.741%) to (28.221%) and (43.699%) under baseline, medium, and severe stress scenarios, respectively, in Q3 2022, as shown in table No. (17) and figure No. (82). In Q4 2023, Ratio of non-performing loans increased because of the negative shock in government expenditure from (13.102%) to (28.582%) and (44.060%) for baseline, medium stress, and severe stress scenarios, respectively. The impact of the negative shock on government expenditure will lead to increase ratio of non-performing loans under medium stress scenario (NPL_1) and severe stress scenario (NPL_2) over baseline scenario (NPL_0) for all quarters of 2023.

Table No. (17): Forecast Scenarios of Non-Performing Loans Ratio Because of the Negative Shock on Government Expenditure Growth Rate

Scenarios \ Years	2023			
	Q1 %	Q2 %	Q3 %	Q4 %
Baseline Scenario	12.298	12.434	12.741	13.102
Medium Stress Scenario	31.568	27.914	28.221	28.582
Severe Stress Scenario	43.193	43.392	43.699	44.060

Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.



Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

6-7 Impact of a Negative Shock of Internal Public Debt Growth Rate on Ratio of Non-Performing Loans to Cash Credit of Private Sector

Internal public debt expresses the volume of required money paid by the government as interest and principal of debt, as no returns are realized against these payments if expenditure is limited to current expenditure. On the other hand, if debts are directed towards investments, they provide opportunities to obtain returns from investment expenditures, as the volume of internal public debt in 2022 amounted IQD (69.5) trillion. The matter that affects the volume of economic activity in the future towards a decline, which consequently increases the volume of non-performing loans. Thus, from this point of view, it is noted that any increase of internal public debt leads to an increase of non-performing loans, as this variable is considered one of the variables that are directly proportional to the specified dependent variable. As we find that the impact of the negative shock (increase) in the growth rate of government public debt leads to an increase of ratio of non-performing loans to cash credit provided to private sector. The model showed this relationship, which was statistically significant. Table No. (18) shows that the baseline scenario expectations showed a slight increase on ratio of non-performing loans to private sector to total cash credit provided to private sector from (12.112%) in Q1 to (12.235%), (12.452%), and (12.657%) Q2, Q3, and Q4 2023, respectively. As a result of the negative shock on growth rate of internal public debt under the prepared scenarios, ratio of non-performing loans increased from (12.112%) under baseline scenario to (21.382%) under medium stress scenario and (30.642%) under severe stress scenario in Q1 2023, respectively. As well as the ratio increased in Q2 under baseline, medium, and severe stress scenarios by (12.235%), (21.505%), and (30.765%) in 2023.

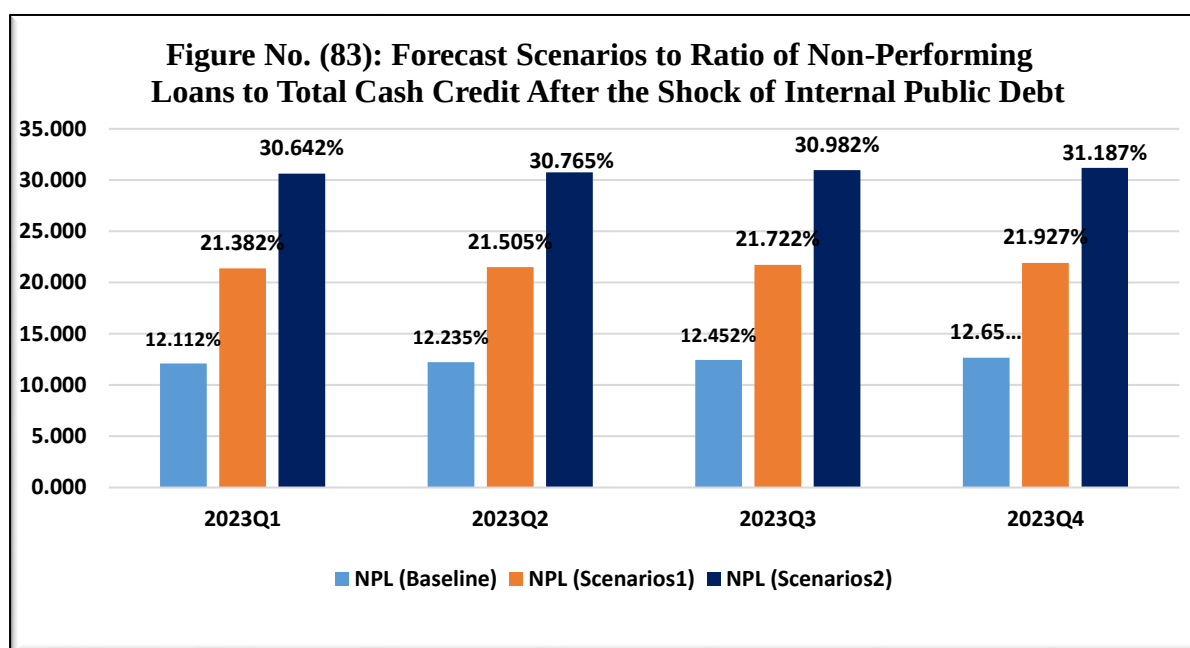
Table No. (18): Forecast Scenarios of Non-Performing Loans Ratio to Private Sector Cash Credit after the Shock of Internal Public Debt Growth Rate

Scenarios \ Years	2023			
	Q1 %	Q2 %	Q3%	Q4 %
Baseline Scenario	12.112	12.235	12.452	12.657
Medium Stress Scenario	21.382	21.505	21.722	21.927
Severe Stress Scenario	30.642	30.765	30.982	31.187

Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

As shown in figure No. (83), it was noted during Q3 that there was an increase from (12.452%) under baseline scenario to (21.722%) and (30.982%) under

medium and severe stress scenario. In Q4 2023, there was a significant increase over the baseline scenario (12.657%) for scenarios, as medium stress reached (21.927%) and severe stress reached (31.187%). the impact of the negative shock on internal public debt will lead to an increase of non-performing loan ratio under medium stress scenario (NPL_1) and severe stress scenario (NPL_2) over the baseline scenario (NPL_0) significantly, and for all quarters of 2023.



Source: Central Bank of Iraq / Statistics and Research Dept. – Estimates of Monetary and Financial Stability Division.

Therefore, scenarios show that if the economy is exposed to a long-term and continuous crisis that may lead to depletion of funding sources, and resort to other sources of funding that impose additional burdens on the economy, which may make the fiscal policy undirected and obstructing efforts to maintain financial stability, so it is necessary to build additional financial buffers to face crises when they occur. The matter that helps reduce the transmission of the effects of fiscal policy to financial stability, including rationalize public expenditure and enhance other domestic public revenue sources (customs duties). In addition to establishment of Sovereign Fund, creating an attractive environment for domestic and foreign investment, as well as stimulating non-oil sectors. Also considering the rapid technical and economic developments and joint cooperation with international organizations and countries in various economic, environmental, and technical fields.

7- Financial Infrastructure Development For 2022

7-Financial Infrastructure Developments

Financial infrastructure works to provide security, speed, and reliability of electronic financial transactions. It provides a secure and reliable environment for financial transactions via secure networks and encrypting financial data. It also contributes to achieve high-speed implementation and transferring funds instantly and effectively.

7-1 :Instructions and Controls Issued by CBI

7-1-1 Deposit Mechanism for the Purpose of Participating to Foreign Exchange Selling & Buying Window

A decision was made that allows banks wishing to participate at foreign exchange selling & buying window to purchase any amounts of foreign currency and deposit the amounts with this bank, in accounts used for external transfers only. Interest/ revenues on deposited balances will be paid according to the specified mechanism, based on a specified annual interest rate. In addition, the mechanism for enhancing banks' accounts abroad according to the previous classification had been cancelled. This decision comes within the framework of implementing the CBI's monetary policy objectives during the next phase.

7-1-2 Financial Products

Within the framework of CBI's policy to enhance Iraqi dinar value and regulate liquidity of the banking sector, it raised interest rates and revenues on investment financial products provided by CBI, aiming to attract investments from private banks operating in Iraq. In addition to opening investment windows for different periods ranging from (90 – 364) days in order to provide various investment options for private banks.

7-1-3 Electronic Payment Service Providers

CBI directed electronic payment services providers with a set of instructions regarding increasing the capital of electronic payment companies, if they wish to increase it, as they must deposit amounts of capital's increase in one of the licensed banks by CBI in a temporary account called (underwriting trusts). Then the bank deposits the amount of capital's increase with the CBI, and according to RTGS notification. A full release of the amount is obtained only

with CBI's approval and after submitting a detailed statement regarding the usages of amounts to be released.

7-1-4 Issuing Letters of Guarantee

Instructions have been prepared that are consistent with this bank's aspirations to organize the processes of issuing letters of guarantee in accordance with best practices and to ensure the preservation of the rights of all parties concerned with letters of guarantee, as follows:

A-Acceptable Guarantees (Cash guarantees, In-kind Guarantees)¹

- A bank must collect cash and in-kind guarantees according to amounts of letter of guarantee issued by it and by categories shown in table No. (19):

Table No. (19): Minimum Limit of Letters of Guarantee in Terms of Cash Insurances, Mortgages, and Commercial Securities				
Letters of Guarantee Issued for Iraqi Companies	Minimum Limit of Cash Insurances	Minimum Limit of Mortgages		Minimum Limit of Commercial Securities
IQD 1-150 million	15%	-		85%
IQD 151 million – 1 billion	15%	55%		30%
More than IQD 1 billion	15%	60%		25%
Letters of Guarantee Issued for Foreign Companies	Minimum Limit of Cash Insurances	Minimum Limit of Mortgages	Minimum Limit of Commercial Securities	Parent Company's Guarantee
IQD 1-150 million	15%	-	%85	100%
Over IQD 151 million	15%	%50	%35	100%

Source: Central Bank of Iraq / Banking Supervision Dept.

¹ Excluding letters of guarantee issued to (enter a tender), as the minimum limit for monetary insurance will be (15%) and for commercial securities guarantees (check or promissory note) will be (85%).

- The check must be obtained from a bank other than the bank that issued the letter of guarantee.
- Securities and shares of companies listed at Iraq Stock Exchange can be mortgaged, at or below the market price, according to bank's policy. Mortgaging shares of unlisted commercial companies is not considered an acceptable guarantee for issuing letters of guarantee.
- Regarding real-estate guarantees, it is required to attach the mortgage bond in addition to the property evaluation statement when uploading the letter through the electronic platform. In addition to the continuity of the mortgage when extending the letter, provided that members of the evaluation committee are determined according to instructions issued by CBI related to real-estate guarantees.
- Foreign back-to-back letters of guarantee are not accepted but from foreign banks with a credit rating no less than (-BBB) instead of (-B). Except for transactions of foreign banks' branches that are operating in Iraq with their parent banks, as the classification (C) is adopted.

B- Ceilings for Issuing Letters of Guarantee

- The ratio of letters of guarantee to capital and sound reserves is determined at (100%), separated from letter of credits within total pledged credit to capital and sound reserves at (200%) in order to prevent concentrations and distribute banking portfolio to all banks. The ratio is at (150%) for banks that do not practice providing letter of credits activity.
- Determining a maximum ceiling for the value of each letter of guarantee issued by banks by CAMEL classification, as shown in table No. (20), is to increase financial solvency of bank's ability to fulfill its obligations to the beneficiaries according to credit classification of risks (provided that the maximum limit of concentration of a single customer borrower does not exceed (10%) of bank's capital and sound reserves).

Table No. (20): Maximum Value of One Letter of Guarantee That a Bank is Allowed to Issue According to (CAMEL) Classification		
CAMEL Classification		Maximum Value of One Letter of Guarantee That a Bank is Allowed to Issue
Category	Rating	
1	A-B-C	No Maximum Limit (Within the Maximum Limit of Credit Concentrations)
2	A-B-C	No Maximum Limit (Within the Maximum Limit of Credit Concentrations)
3	A	Up To IQD 10 billion for One Letter of Guarantee
	B-C	Up To IQD 5 billion for One Letter of Guarantee
4	A-B-C	Up To IQD 500 million for One Letter of Guarantee
5	A-B-C	A Bank is not Allowed to Issue New Letters of Guarantee
Unclassified Bank		Up To IQD 2 billion for One Letter of Guarantee

Source: Central Bank of Iraq/ Banking Supervision Dept.

- Do not exceed ceilings specified according to bank's classification except in case of renewing previous letter of guarantee or (when issuing new letter of guarantee in exchange for cash insurances of (100%). As amounts are reserved with CBI within an account of trusts for reserved letters of guarantee to ensure that the bank does not use these trusts for other payments, or in return for an external letter of guarantee (back-to-back), as shown in table No. (21).

Table No. (21): Credit Ceiling, Types of Guarantees, and Action Taken		
Credit Ceiling	Type of Guarantee	Action taken
If a bank exceeds 100% of total letters of guarantee to capital reserves, or 150% for banks that do not practice the activity of issuing documentary credit.	It is allowed against obtaining 100% of cash insurance.	The entire letter of guarantee value is seized in a special account and is not released until the letter of guarantee is no longer needed.
If a bank exceeds allowed credit limit for one letter of guarantee, according to the (CAMEL) classification.	A bank is allowed to issue the letter amount against collecting cash insurance and in-kind guarantees, after covering the difference amount in accordance with the procedures mentioned aside.	The difference amount (the amount that exceeds the allowed credit limit) is seized with CBI within the account (trusts for seized letters of guarantee) No. (258).

Source: Central Bank of Iraq / Banking Supervision Dept.

C- Ratio of Cash Insurances Seized with CBI

Ratio of cash insurances seized with CBI is calculated according to the international classification system (CAMEL), as in table No. (22).

Table No. (22): Ratio of Insurances Reserve for Mandatory letters of Guarantee According to (CAMEL) Classification		
CAMEL Classification		Ratio of Insurances Reserve for Mandatory Letters of Guarantee
Category	Rating	
1	A-B-C	3%
2	A-B-C	3%
3	A-B-C	5%
4	A-B-C	7%
5	A-B-C	7%

Source: Central Bank of Iraq / Banking Supervision Dept.

D- Cash Spread for Issuing Letters of Guarantee

- Cash spread is not allowed to be recorded as a debt on the customer, but the bank must collect the minimum cash insurance of (15%) before issuing the letter of guarantee.

- The bank is not allowed to deduct the commission for renewing the letter of guarantee from the insurances, but banks must continue collecting the commission from the customer or record the commission amount as an obligation owed by the customer until the letter of guarantee is cancelled.
- The bank must make provisions for any letters of guarantee issued below the minimum cash spread of (15%).

E- Recording Claims on Letter of Guarantee:

Banks must record claims on the letter of guarantee within bank's financial position on the assets side and not outside balance sheet:

- If the payment is made to the beneficiary by the bank, the amount is deducted from the cash and recorded as "Paid Letters of Guarantee Debtors" in the name of the customer issuing the letters of guarantee after deducting the available insurances (allocations for non-performing debts must be calculated according to related instructions).
- If payment is not made to the beneficiary, the bank will disclose the letters of guarantee claimed by the beneficiary entities and record them in the account (not-paid claimed letters of guarantee).

D- Mechanism for Issuing Letters of Guarantee:

- Banks must issue letters of guarantee after opening a bank account in the name of the ordered customer. Therefore, the bank is not allowed to issue any letter of guarantee except through the bank account of the customer ordering the issuance of the letter of guarantee.
- Authority of issuing letters of guarantee is exclusive to bank's main center in Iraq through the concerned unit (Trade Finance Unit). Banks' branches are not allowed to issue letters of guarantee. Letters of guarantee are only allowed to be printed from banks' branches, (after recording and issuing them from the main center), to ensure that the process is duly recorded and to study credit aspects from risks department and obtain the necessary approvals based on the executive authorities in accordance with institutional governance instructions.

7-2- Developments of CBI's Infrastructure Systems

7-2-1 Development of Payment Systems

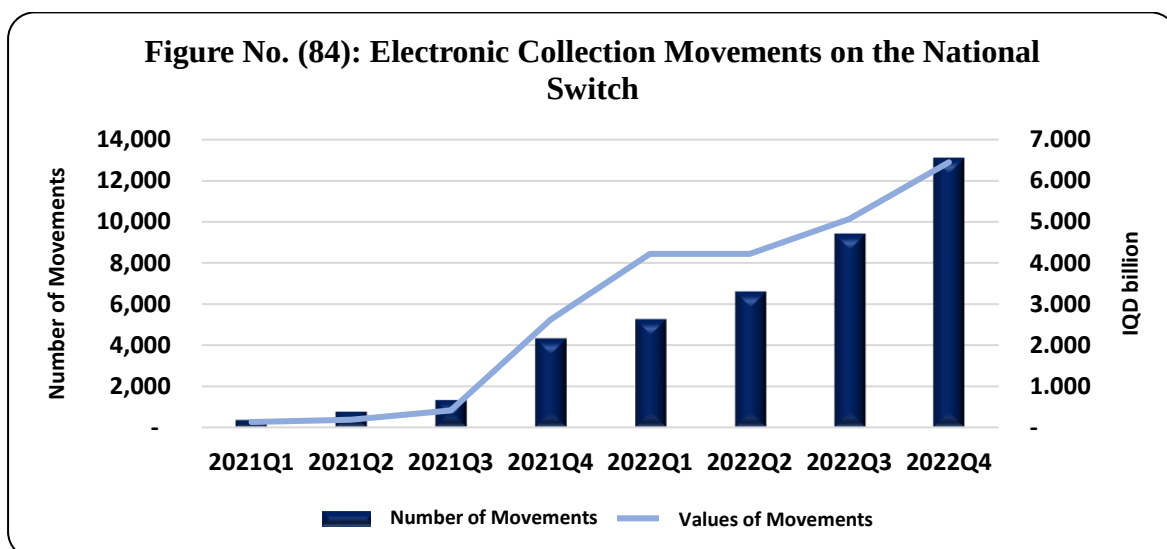
CBI seeks to modernize and develop payment systems in accordance with best international practices. The most prominent developments taking place in the Iraqi payments system can be summarized as follows:

7-2-2 Electronic Collection Project

Electronic collection aims to provide a service for displaying and paying bills electronically to all citizens through banks and electronic payment service providers licensed by CBI. As citizens can view their bills using a bill display platform provided by the licensed payment service provider for this matter. As well as paying those bills electronically through several tools (ATMs, POS, Internet, electronic wallets), whereby money is transferred from cards and electronic wallets to the bank holding the account of the billing department after making settlement at CBI. To perform all the above operations, companies are required to complete all technical and financial requirements in this regard, as benefits of this project include:

1. Speedy collection of outstanding bills payments electronically.
2. A secure and accurate way to collect bills.
3. Providing electronic payment tools for customers that enable them to pay all their bills electronically.
4. Avoid traveling and spending a long time for paying bills.
5. Reduce the risks of losing cash.

Figure No. (84) shows the number of financial movements over 2021 and 2022, as we find that there is a remarkable increase in the number of movements and their values. Through this analysis, we find that electronic collection in Iraq is witnessing a continuous growth in the number of movements. In addition, fluctuations of movements' amounts over years shows that they were due to technological development and increased awareness of electronic technologies in collection operations.



Source: Central Bank of Iraq / Information Technology and Payments Dept.

7-2-3 Establishment of Electronic Platform for Letters of Guarantee

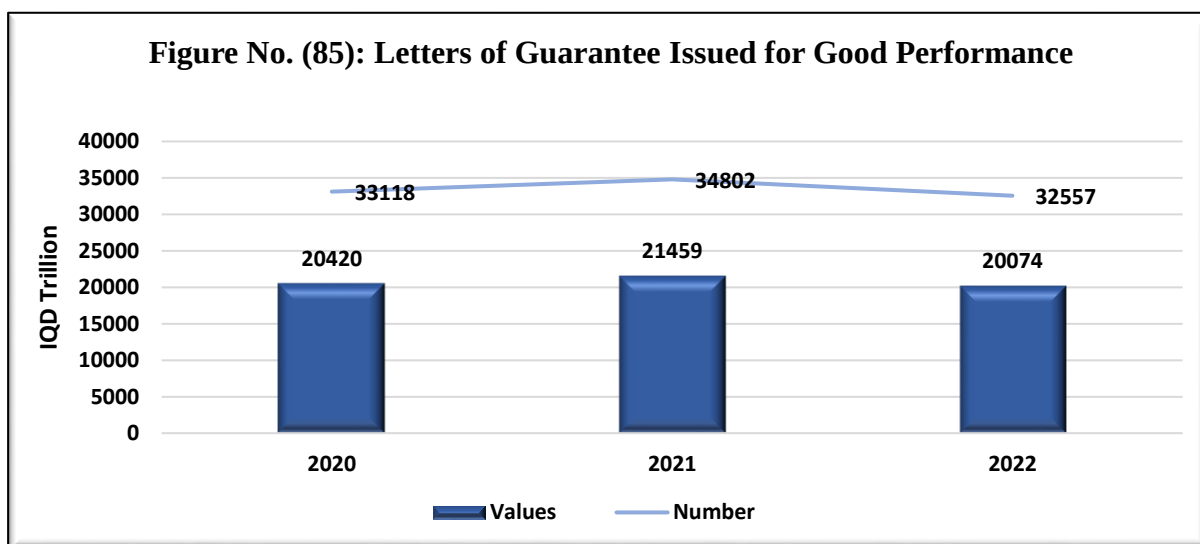
The electronic platform was established to record letters of guarantee issued by licensed banks for the benefit of public and private sectors on 18/10/2020, with the aim of organizing the mechanism for issuing and renewing letters of guarantee and not issuing them without financial cover to be collected from individuals and companies. It also aims to issue letters of guarantee according to ceilings granted to each bank based on the credit rating of the issuing banks¹. As CBI's initiative came to reduce fraud and forgery operations. Letters of guarantee are divided according to the purpose for which they are issued, as shown in the figures below:

1. Letters of Guarantee Issued for Good Performance

Letters of guarantee for good performance were prepared and issued continuously during 2022. Figure No. (85) shows that the number of letters of guarantee has witnessed a decline reaching (32557) letters, compared to the previous year in which it reached (34802) letters, and also compared to the year 2020 as they reached (33118) letters of guarantee. The value of these letters also decreased, as total value of letters reached about IQD (20074) billion in 2022, compared to the value of the previous year, which reached IQD (21459) billion. Also compared to 2020, as the value of the letters reached about IQD (20420) billion. These numbers indicate a decline in the number and value of

¹ For more information, see (First -5) of this chapter.

letters of guarantee during 2022 compared to previous years. A large number of letters of guarantee were canceled after completing and implementing obligations related to contractors (customers); which is a positive indicator of the seriousness in implementing obligations and contracts properly with decreased rates of delay in implementing projects. It may reflect a change in demand for guarantee services and business activities related to it during that period.



Source: Central Bank of Iraq / Banking Supervision Dept.

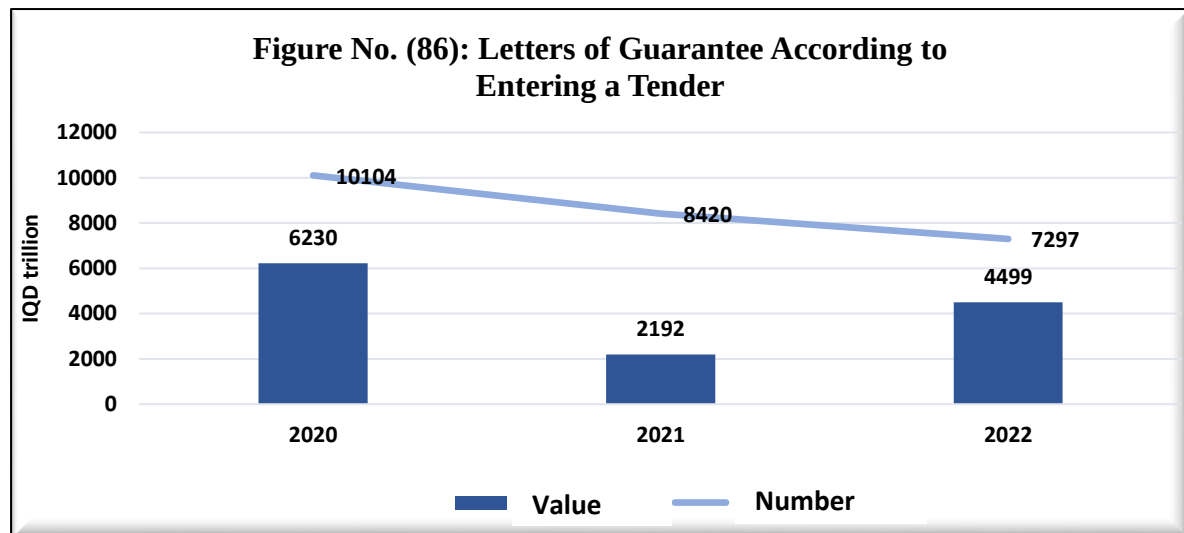
A- Letters of Guarantee for Entering a Tender

A decrease was recorded in the number of letters of guarantee issued to enter tenders during 2022, reaching (7297) letters of guarantee. As for financial values, total value of these letters amounted approximately IQD (4499) billion.

In 2021, number of letters of guarantee issued for entering tenders reached (8420) letters, with a total financial value of IQD (2192) billion.

In 2020, number of letters of guarantee issued for entering tenders reached (10104) letters, with a total value of IQD (6230) billion.

As fluctuations in the number and value of letters of guarantee issued to enter tenders over the aforementioned years, as shown in figure No. (86), are the result of changes in the activity of tender sector and economic conditions of the country.

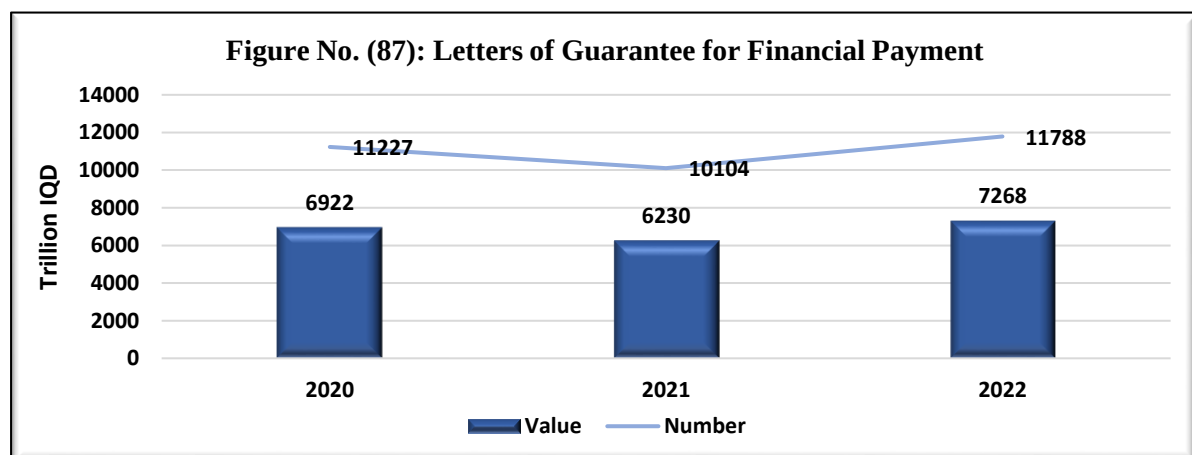


Source: Central Bank of Iraq / Banking Supervision Dept.

B- Letters of Guarantee Issued for Financial Payment

Letters of guarantee for financial payments were issued and prepared continuously during 2022. The number of letters of guarantee recorded an increase reaching (11788) letters, compared to the previous year, which reached (10104) letters. Also compared to 2020, as number of letters reached (11227) letters. As for the value of these letters, it also witnessed an increase, as total value of the letters in 2022 reached about IQD (7268) billion, compared to the value of the previous year that reached IQD (6230) billion. Also compared to 2020, as the value of letters reached about IQD (6922) billion.

Figure No. (87) also shows that this increase in the number and value of letters of guarantee issued for financial payments during 2022 represent an ongoing activity in this field.



Source: Central Bank of Iraq / Banking Supervision Dept.

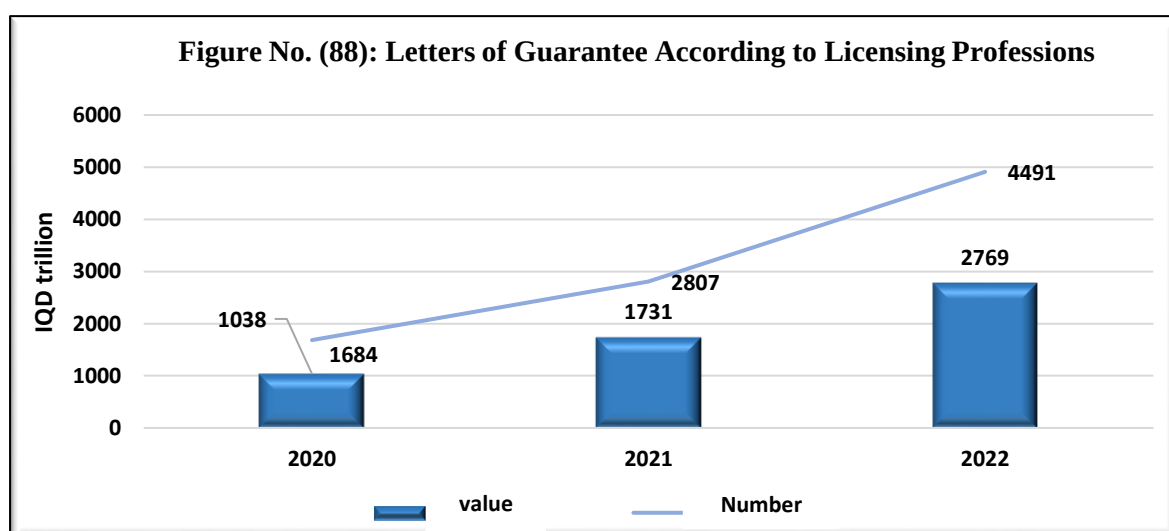
C- Letters of Guarantee Issued for Licensing Professions

An increase was recorded in the number of letters of guarantee issued for licensing professions during 2022, reaching (4491) letters of guarantee. As for financial values, total value of these letters amounted approximately IQD (2769) billion.

As for 2021, number of letters of guarantee for licensing professions reached (2807) letters, and their financial value amounted IQD (1731) billion.

In 2020, number of letters of guarantee issued for licensing professions decreased to (1684) letters, and their financial value amounted approximately IQD (1038) billion.

Figure No. (88) also shows this increase in the number and value of letters of guarantee issued for licensing professions during 2022 compared to previous years, which indicates increasing activity in this field.



Source: Central Bank of Iraq / Banking Supervision Dept.

Balances of letters of guarantee are constantly affected due to the active movement of issuance and cancellation operations of these letters, which indicate the seriousness and dedication in implementing projects guaranteed by letters of guarantee. The excess activity contributes to the implementation of projects in general, as profits from letters of guarantee are an essential source of revenues in the banking sector.

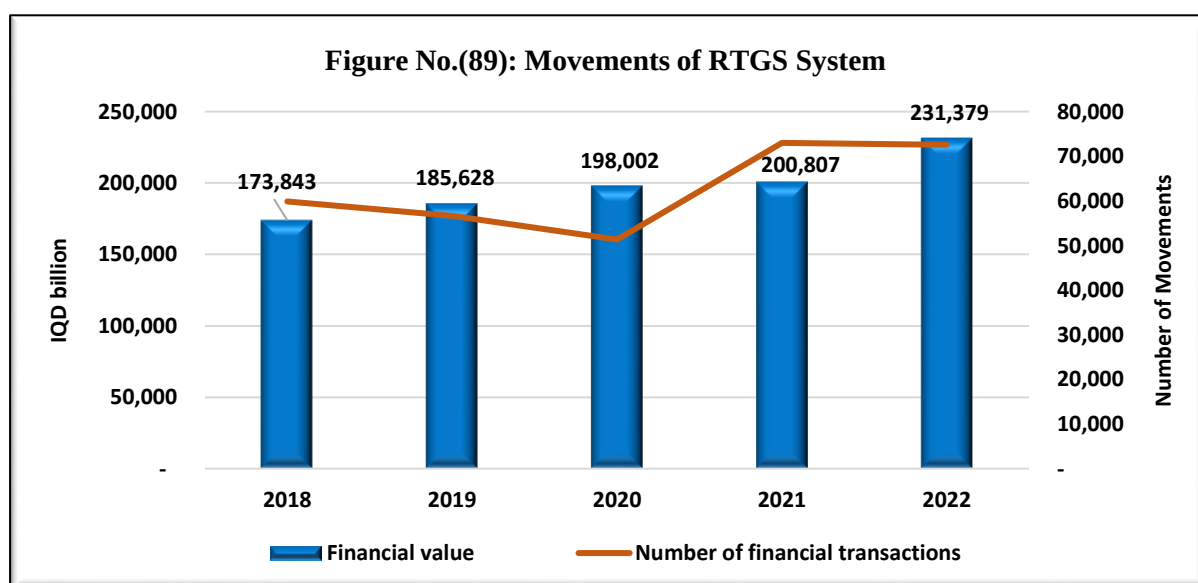
These numbers reflect active economic growth and an increased interest in implementing projects and ensure their implementation in a reliable manner.

Letters of guarantee enhance trust between the involved parties of the project and provide financial guarantee for its successful implementation. The continued activity helps to promote economic growth and improve the financial performance of the banking sector and the economy in general.

7-2-4 Development of Real-Time Gross Settlement System (RTGS)

A system in which financial payments are exchanged electronically among banks through a secure and efficient network and ensures actual and final settlement of payment orders exchanged between participants on an ongoing basis during actual work day. One of the advantages of this system is that it provides speed of transfers, final settlement of payments, and also reduces the risk of default in financial payments from one country to another. Figure No. (89) below shows the number of movements of this system with financial values during the years (2018-2022).

We notice an increase of financial values in addition to an increase in the number of financial movements in a volatile manner, as their number recorded a decrease during 2020 to reach (51337) movements, which are within the national switch only, with a financial value amounting to IQD (198002) billion as a result of COVID-19 pandemic. After the end of COVID-19 related lockdown, it recorded an increase reaching (72561) movements, compared to an increase in values reaching IQD (231379) billion during 2022.



Source: Central Bank of Iraq / Information Technology and Payments Dept.

7-2-5 Iraqi Retail Payment System Infrastructure (IRPSI)

The retail payment system represents a corridor for domestic movements made on cards between the issuer and the collector via the electronic payment service provider.

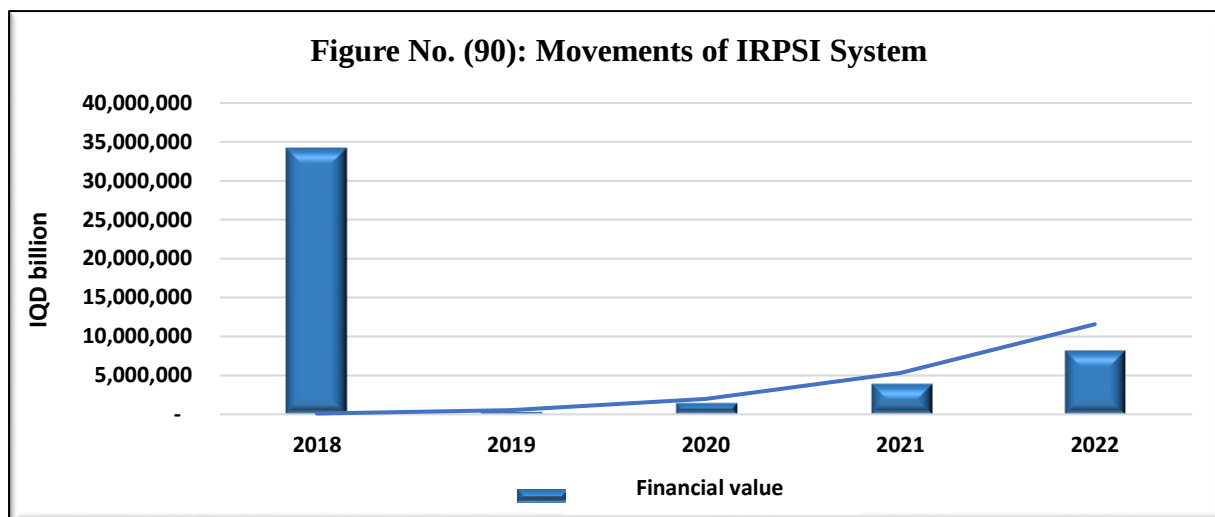
The bank is linked to the national switch through the electronic payment service provider (which represents the main processor of card movements), which in turn is directly linked to the national switch through a secured and protected network to exchange messages regarding card movements that include inquiries, purchases, and cash withdrawals.

Among the objectives of the Iraqi Retail Payment System Infrastructure:

- Provide a domestic internal network that connects all ATM machines and electronic payment cards.
- Determine commissions rates internally by CBI within the issued controls and instructions.
- Confine data on domestic financial transactions conducted on cards within one domestic, secured environment and prevent external access to this data.
- Ensure conducting money settlement operations for financial transactions that take place internally on cards within the RTGS system.
- Expand usage of electronic payment tools (cards, mobile phone, Internet).
- The spread of points of sale (POS) and ATMs throughout Iraq.
- A database for all financial transactions and easy access to them.
- Electronic supervision and monitoring of financial transactions.

We notice that there is a continuous increase in the number of financial movements from 2018 to 2022, as they reached (101775) financial movements in 2018 and reached (11568090) financial movements in 2022. It explains the high increase in the number of financial movements at a rate greater than their financial value, we also notice that the number of movements is increasing compared to previous years due to the growth of reliance on the system and increased usage.

As for the financial values, they recorded IQD (34189267) billion in 2018, while we find that the financial values reached IQD (8209444) trillion in 2022. Figure No. (90) below shows the number of movements and their financial values in dinars.



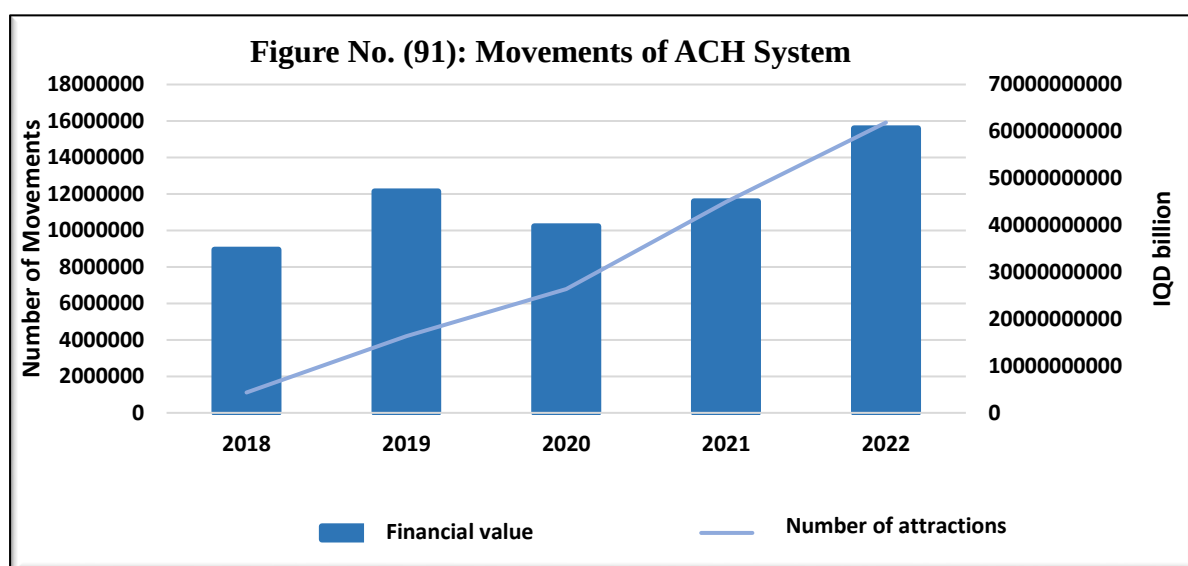
Source: Central Bank of Iraq / Information Technology and Payments Dept. the financial value

7-2-6 Automated Clearing House System (ACH)

It is an electronic system that enables participating banks and their branches to send and receive payment order files among them in an automated manner. It is linked to real-time gross settlement system RTGS, in terms of receiving the guarantee ceiling at the beginning of the sessions and then processing the payment orders and send the final net settlement. It also enables participants to exchange electronic instruments encoded in magnetic ink, as the copy of the instrument and its data is sent to the branch where it is drawn, and the original copy of the instrument is kept at the branch where it is deposited.

Figure No. (91) shows that the number of financial movements is parallel to the financial value, but at a slow rate in 2021 and increased to the highest level in 2022, reaching (2338) financial movements.

It is noted that the number of financial movements has increased continuously, as it reached (15916774) financial movements in 2022 compared to the previous year which amounted (11552783) financial movements. It is clear that financial movements are increasing rapidly in recent years, as they recorded an increase of (37.7%) in 2021 to 2022. There was also an increase in financial values, as they reached IQD (60654197144) billion in 2022, after the financial value was about IQD (45120233769) billion in 2021.

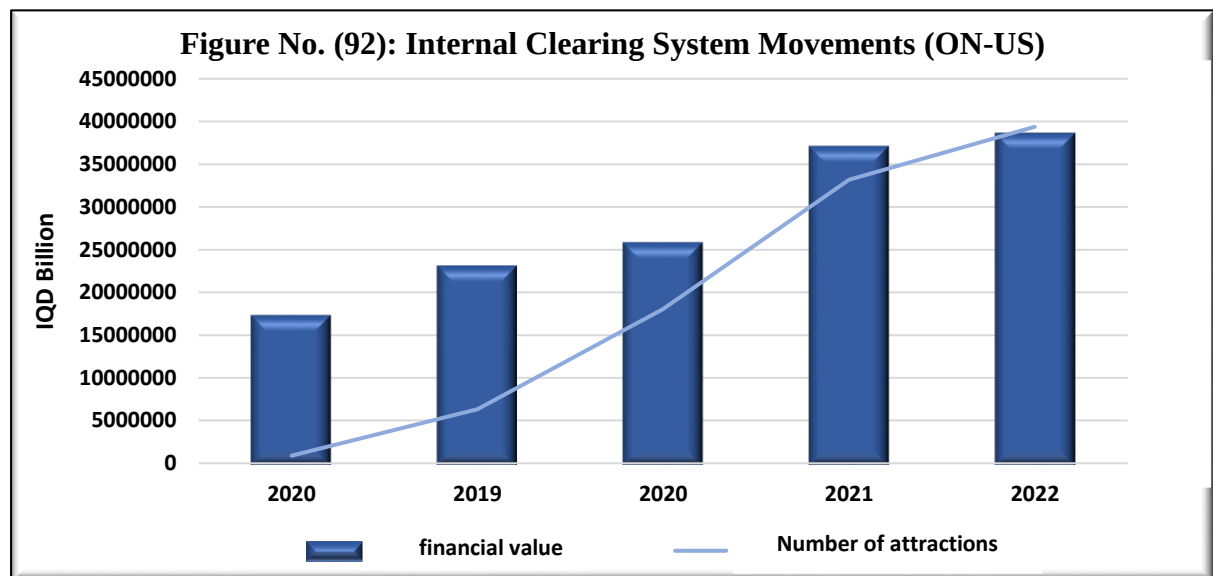


Source: Central Bank of Iraq / Information Technology and Payments Dept.

7-2-7 Internal Clearing System (ON-US)

Internal clearing operations are widely used to facilitate financial transfers among customers' accounts in the same bank. We notice in figure No. (92) a continuous increase of the number of financial movements from the first movement in 2020, which was (891739) financial movements until the third movement in 2022 that amounted (39390744) financial movement, which is a good indicator that pointed to an increase of financial activity.

Regarding the financial value, we notice that there is an increase starting from the value of the first movement, which amounted IQD (30252989955) in 2020 until the fifth movement in 2022, which amounted IQD (67946033657). It indicates an increase in the financial value of the transactions. Percentage of total movements recorded (0.91%) in the first movement and (40.26%) in the fifth movement, which reflects a relative increase of the number of movements. Percentage of the value of these movements recorded (12%) in the first movement and (27%) in the fifth movement. It indicates an increase in the value of the movements compared to the total.



Source: Central Bank of Iraq / Information Technology and Payments Dept.

7-3 Anti-Money Laundering and Countering Financing Terrorism Office (AML/CFT)

In accordance with the Anti-Money Laundering and Countering Financing Terrorism Law No. 39 of 2015, an office was established in the Central Bank of Iraq called the “Anti-Money Laundering and Countering the Financing of Terrorism Office” at the level of department headed by General Director; it enjoys a legal personality and financial & administrative independence. The office assumes the main task and the pivotal role in the system of countering money laundering and financing terrorism in Iraq, for being one of the elements of the system in Iraq.

The office works in cooperation with international organizations, counterpart units, and domestic authorities to achieve the best practices in countering money laundering and financing terrorism, maintaining the stability of the financial system in the Republic of Iraq, and protecting it from exploitation for the purposes of money laundering and terrorism financing. The office also works to achieve other strategic goals it seeks.

Among the basic tasks of the office is to receive and analyze reports and information. It also has the right to stop the implementation of suspicious operations and then refer them to the relevant judicial authorities.

The office prepares an annual report that includes its activities and performance. It also exchanges information with the government agencies and the public sector and cooperates and coordinates with them in the field of countering money laundering and financing terrorism. It also represents the Republic of Iraq in relevant international organizations and conferences. The office is considered the national center for collecting and analyzing information related to financial crimes linked with money laundering and financing terrorism.

AML/CFT office focuses on collecting and analyzing information to detect money laundering and terrorism financing activities and works to exchange related information with the relevant authorities to ensure effective cooperation in combating these crimes. The office also aims to enhance awareness and common understanding of the risks of money laundering and financing terrorism and provide strong framework for national and international cooperation in this regard.

The office contributed to the completion of the national assessment process of the risks of money laundering and financing terrorism in the Republic of Iraq during October 2022. Weak points and threats were identified at the national level and an action plan was developed to address them in accordance with the identified priorities. Procedures for joining the Egmont Group was also completed. Procedures of AML/CFT system have reflected the positive report that had been submitted to the group, which ensure the nomination of the Republic of Iraq to join as a full member of the group. Thus, the process of mutual evaluation and technical commitment began, which reflected the efforts of the Republic of Iraq and the procedures of AML/CFT system.

7-3-1 Controls and Instructions

- The AML/CFT Compliance Rules for Real-Estate Registry Departments had been issued based on the Anti-Money Laundering and Counter-Terrorism Financing Law No. (39) of 2015. In line with the requirements of the Financial Action Task Force (FATF), which aim to protect the real-estate sector from being used as a mean of money laundering and financing terrorism and prevent illegal money circulation through the purchase and sale of real estate, it takes into account the risks associated with this sector at both national and international levels.

- A guide has been prepared on AML/CFT procedures related to real-estate sector. This guide aims to identify indicators of suspicion of AML/CFT through real-estate purchase and sale operations, especially in cases of transactions involving large sums of money. The guide was prepared in cooperation with the Real-Estate Registration Dept. with the aim of increasing awareness among those working in this sector; it can be used as a tool to detect and report suspicious transactions.
- The due diligence controls of AML/CFT related to Companies Registration Dept. had been issued. It comes with the aim of protecting corporate sector from exploitation in AML/CFT operations and misleading the identity of the real beneficiary. These controls also aim to raise the level of awareness among employees of the Companies Registration Dept. and help them participate effectively with the competent and supervisory authorities. These controls are implemented in accordance with the Financial Action Task Force (FATF) standards and procedures, aiming to reform and amend laws regulating the Companies Registration Dept. in accordance with these standards.
- A form had been prepared to exchange information regarding suspicious transactions between the Central Organization for Standardization and Quality Control and AML/CFT Office. The form aims to facilitate reporting suspicious financial cases that may be discovered by the aforementioned agency during the performance of its monitoring and supervisory duties in the field of combating money laundering and terrorism financing. The form is used as a mean of exchanging necessary information between concerned parties, which contributes to enhance cooperation and coordination between them in combating these illegal phenomena.
- A form had been prepared to exchange information and investigate suspicious transactions between “Iraq Fund for Assets Recovery” and AML/CFT Office. The form aims to facilitate the exchange of information related to suspicious transactions, which contributes to strengthen efforts of investigative authorities in investigating financial crimes, recovering related funds and preventing their use in other illegal activities. The form is used to document and analyze information related to suspicious transactions and direct them to concerned authorities to take the necessary measures.

- Iraq has joined the Global Operational Network of Anti-Corruption Law Enforcement Authorities (GLOBE) network. This network operates under the auspices of the United Nations Office on Drugs and Crime (UNODC) and provides a platform to exchange information between law enforcement authorities around the world, aiming at combating corruption. The network provides knowledge, resources, and needed tools to track, investigate, and prosecute cases of cross-border corruption. Iraq's accession to this network allows for strengthening international cooperation in the field of combating corruption and enhance Iraq's capabilities to confront this crime.
- A guide to due diligence procedures for high-risk countries has been issued, in implementation of Recommendation No. (19/High-Risk Countries) issued by the Financial Action Task Force (FATF). The guide requires financial institutions to apply enhanced due diligence measures in relation to business relationships and operations with natural persons, legal persons and financial institutions from countries considered as high-risk countries. These measures must be effective and proportionate to the risks, as appropriate countermeasures must be taken when recommended by the FATF. The guide aims to provide best practices and procedures in combating money laundering and financing terrorism, complying with international requirements, protecting the national economy, and maintaining its international classification. The aforementioned guide is considered a reference for financial institutions when dealing with high-risk countries or clients belonging to those countries.
- Procedures for joining the Egmont Group were completed, and the required documents were sent to the MENAFATF Secretariat on 8/11/2022. This group aims to enhance communication and cooperation between financial investigation units around the world in the field of AML/CFT and other financial crimes. Benefits of joining the group include expand international cooperation and exchange of financial intelligence, enhance staff capabilities & skills through training and exchange of experiences, and enhance secure communication between participating units through the use of the Egmont secure network. Sponsoring countries' experts made an on-site visit to the Republic of Iraq and inspected the progress of work at the office and other concerned

parties of AML/CFT system. Meetings were held with reporting officers of financial institutions and the Office's divisions. A detailed report was presented including recommendations regarding Iraq's fulfillment of the requirements for joining the Egmont Group. It is expected that a vote will be taken on accepting Iraq's membership in the group during the next general meeting scheduled to be held at the beginning of next year, 2023.

7-3-2 Adopted Systems

The electronic reporting system (GOAML), an integrated software system developed by the United Nations Office in combating Drugs and Crime (UNODC), had been adopted. This system is mainly used by Financial Intelligence Units (FIUs), including AML/CFT Office for data collection, management, analysis, document management, workflow, and other statistical needs.

The GOAML system enables rapid information exchange between AML/CFT units and provides data analysis and collection capacity. It also receives processes and analyzes reports submitted by financial institutions and other entities in accordance with the requirements of domestic anti-money laundering laws & regulations and international standards. This system is considered one of the main tools for financial units to investigate money laundering & terrorism financing and other serious crimes.

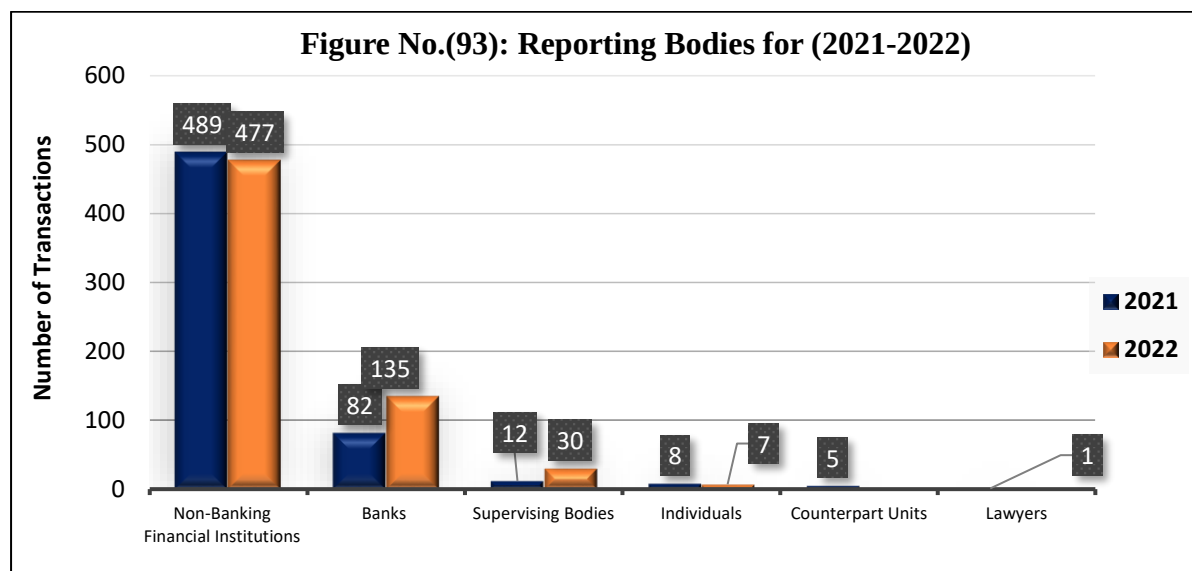
GOAML system is currently adopted by 60 financial intelligence units around the world. It is widely used to collect necessary information for investigations related to money laundering and terrorism financing.

7-3-3 Technical Activity for Reporting Suspicious Financial Transactions

Data shown in figure No. (93) indicates a decrease in number of reported suspicious financial transactions that the office received in 2022. Number of reports in 2022 was about 579 transactions, while numbers in 2021 were about 649 transactions.

This decrease in the number of reports can be considered a positive indicator pointing entities' commitment to Money Laundering and Terrorism Financing Law No. (39) of 2015 and the instructions issued pursuant to it, as well as applicable guidelines. This decrease is attributed to improved awareness and compliance with reporting entities. It reflects positively on the economic situation in the country and efforts to combat financial crimes.

This technical analysis indicates the importance of AML/CFT laws in protecting the financial system and the national economy. It emphasizes the importance of continuing awareness & training for reporting entities to enhance compliance with these laws and enhance the fight against financial crimes and the scourge of financial corruption.



Source: Central Bank of Iraq, AML/CFT Office.

8- Financial Inclusion

8. Financial inclusion

Financial inclusion is one of the main foundations of the work of central banks due to its extremely important impact on the domestic economy. It contributes to improve financial conditions, raise living standard of the poor, and reduce income disparity by providing financial services to the largest possible number of people at a low cost and enable them to start new businesses. In addition to its contribution to strengthen household and business sectors by promoting financial development that contributes to social and political stability by increasing the stability of the financial system. Financial inclusion can also improve the efficiency of the financial intermediation process between deposits and investments, and increase the share of the formal financial sector at the expense of the informal financial sector, which supports the effectiveness of monetary policy tools.

8-1 CBI's initiatives in Supporting Financial Inclusion

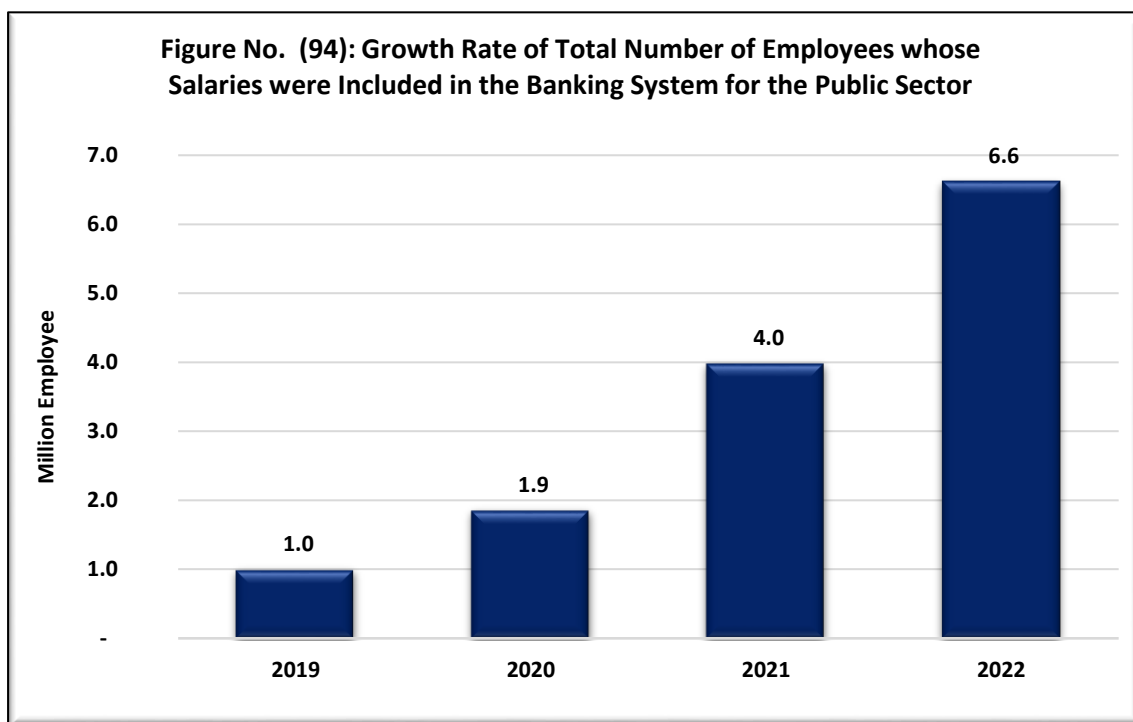
Based on CBI's developmental role to contribute to support economic growth and achieve monetary policy objectives, CBI worked to launch a group of initiatives within its unconventional monetary policy for the humanitarian and social conditions of the country. Among them was a group of initiatives represented by financing small and medium enterprises (SMEs) initiative, financing large projects initiative, and the initiative that was allocated to banks to purchase (ATM, POS) devices. The most recent of which was "health loans initiative". On the other hand, CBI had an important role in supporting climate through renewable energy initiative with the aim of purchasing electricity generation systems from renewable energy sources during 2022 for residential, commercial, agricultural sectors and investment projects. CBI also worked to enhance the role of specialized banks through the following:

- Financing each of: Agricultural, Industrial and Real-Estate Banks and the Housing Fund with an amount of IQD (3) trillion with a sovereign guarantee.
- Rescheduling the previous payments (from installment 14 to installment 24) that the CBI granted to Housing Fund on the basis of a maturity of (20) years, including a grace period of (18) months.
- Cancellation of interest on previous loans granted through Housing Fund and Real- Estate Bank; suffice with collecting a one-time administrative commission of (1%) for CBI's benefit on the remaining installments based on Board of Directors Resolution No. (114) of 2021.

- Postpone the payment of installments and interests on industrial and agricultural projects.
- Adopt a new lending mechanism according to a letter issued by the General Secretariat of the Council of Ministers to alleviate the burden of the citizen.

8-2 Inclusion of State-Employees' Salaries in the Banking System Project

This project contributes to strengthen the financial infrastructure of banks operating in Iraq and increase their role in internal financing; it can also provide opportunities for domestic banks to provide diverse and improved banking services to employees, by providing the appropriate infrastructure and necessary information technology to successfully implement this project. Figure No. (94) shows an increase of number of public sector's employees whose salaries were included in banks to (6.6) million employees during 2022 after it was (4) million employees in 2021. This increase in the number of employees whose salaries were included in banks contributed, in turn, to an increase of number of bank accounts that were created for employees, as well as increasing the number of electronic cards given to them. Also, it created competition among banks to provide the best financial services in order to attract employees, which contributed to enhance financial inclusion within the country.



Source: Central Bank of Iraq/ Information Technology and Payments Dept.

8-3 Financial Inclusion Indices

Financial inclusion indices are measured based on two basic indices: access and usage - each of which includes sub-indices as the following:

8-3-1 Financial Services Access Level Indices (ACCESS)

This index measures the spread of bank branches, ATMs, POS, payment & settlement systems, and mobile payment systems, as the availability of sound infrastructure for the financial sector is considered of great importance to enhance financial inclusion by improving the efficiency of financing and the access to financial and banking services to all segments of society as the following:

8-3-1-1 Banking Density and Spread Index

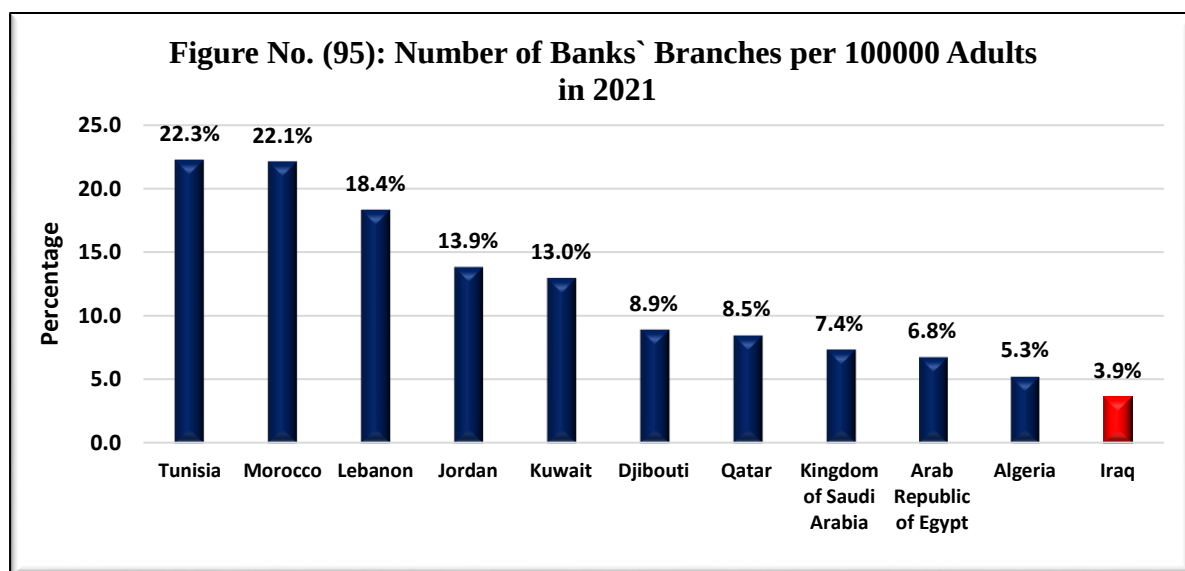
This indicator is regarded as one of the important metrics to measure and determine financial inclusion level in the country. This indicator depends mainly on the number of bank branches spread throughout the country, which seek to provide financial services to the public. Thus, the indicator measures the rate of banking spread within Iraq. In 2022, banking sector witnessed a decrease of number of banks branches, as they reached (876) compared to (904) branches in 2021. Despite this decrease, banking density indicator is still high reaching (27.25) thousand people per branch in 2022, after covering (25.72) thousand people per branch in 2021. On the other hand, there was a decrease in the banking spread indicator, as it reached (3.67%) in 2022, after it was (3.89%) in 2021. This decline is attributed to the withdrawal of some banks from Iraqi market, as table No. (23) shows that.

Table No. (23): Banking Spread and Density in Iraq				
Year	Number of Economically Active People (15-64) (Thousand Individual)	Number of Banks` Branches	Banking Density	Banking Spread
2018	22,696	864	26.27	3.81
2019	22,090	888	24.88	4.02
2020	22,668	891	25.44	3.93
2021	23,255	904	25.72	3.89
2022	23,870	876	27.25	3.67

Source: Central Bank of Iraq / Statistics and Research Dept. - Statistical Bulletin.

Ministry of Planning Website, <https://mop.gov.iq/news/view/details?id=508>

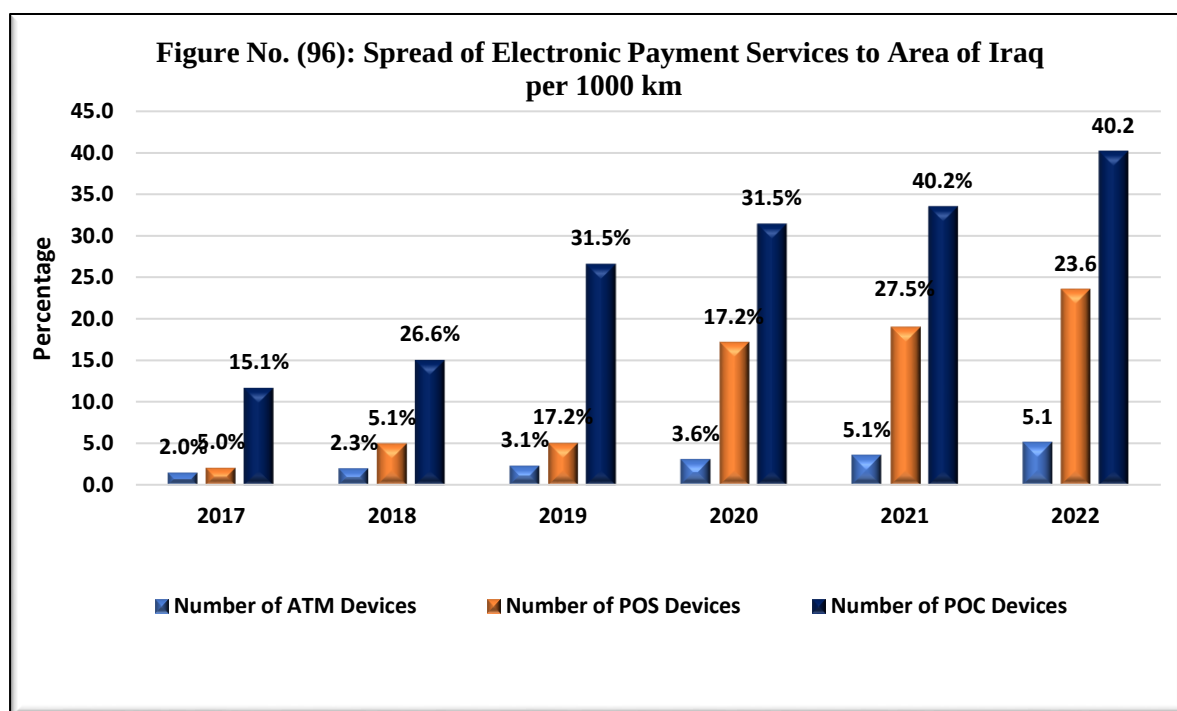
When comparing Iraq to some other Arab countries with regard to the spread of number of banks` branches, it appears that Iraq is in a great need of increasing the number of branches and their spread, as shown in Figure No. (95). It shows that the ratio of the number of banks` branches per 100,000 adults in Iraq amounted (3.9%), which is the lowest among comparative Arab countries in 2021.



Source: World Bank Data, <https://data.albankaldawli.org/indicator/FB.CBK.BRCH.P5>

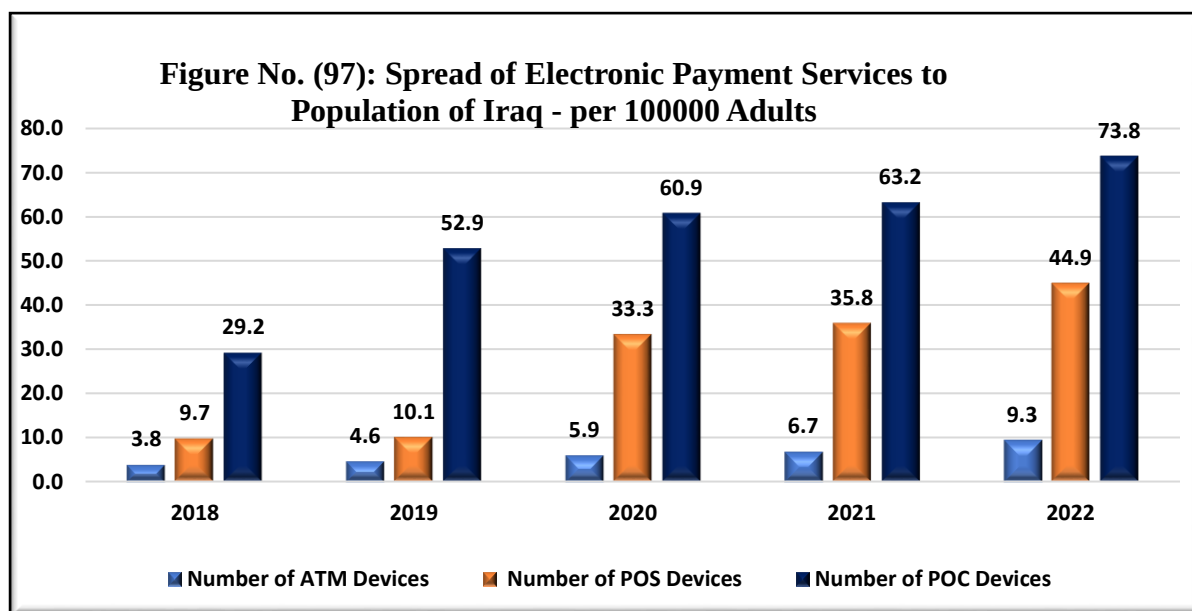
8-3-1-2 Spread of Electronic Payment Services

Electronic payment service is a fast and effective way to access financial and banking services, as it contributes to reduce costs. CBI is working to increase the spread of these services; it is considered as one of its main goals in order to improve electronic payment systems and facilitate electronic exchanges. This index is used to measure the level of spread of electronic payment services, to evaluate & analyze the availability and usage of these services in the country, as well as the level of financial awareness and education among the population. The banking sector is witnessing an increase in the spread of ATMs, (POS) devices, and cash withdrawal devices according to data presented in Figure No. (96). It shows that the ratio of the number of ATMs to the area of Iraq had increased from (3.6) in 2021 to (5.1) in 2022. As for POS devices, they increased from (19) in 2021 to (24.5) in 2022, while payment devices also recorded an increase from (33.5) in 2021 to (40.2) in 2022. It is expected that these rates will continue to rise in the future in accordance with CBI's directions to enhance these services within the framework of CBI's efforts to achieve its goals in developing electronic payment systems and facilitating electronic financial exchanges in the country. The increasing spread of these devices will contribute to strengthen financial infrastructure and enhance the use of electronic financial services by citizens and institutions in Iraq.



Source: Central Bank of Iraq / Statistics and Research Dept. - Statistical Bulletin.

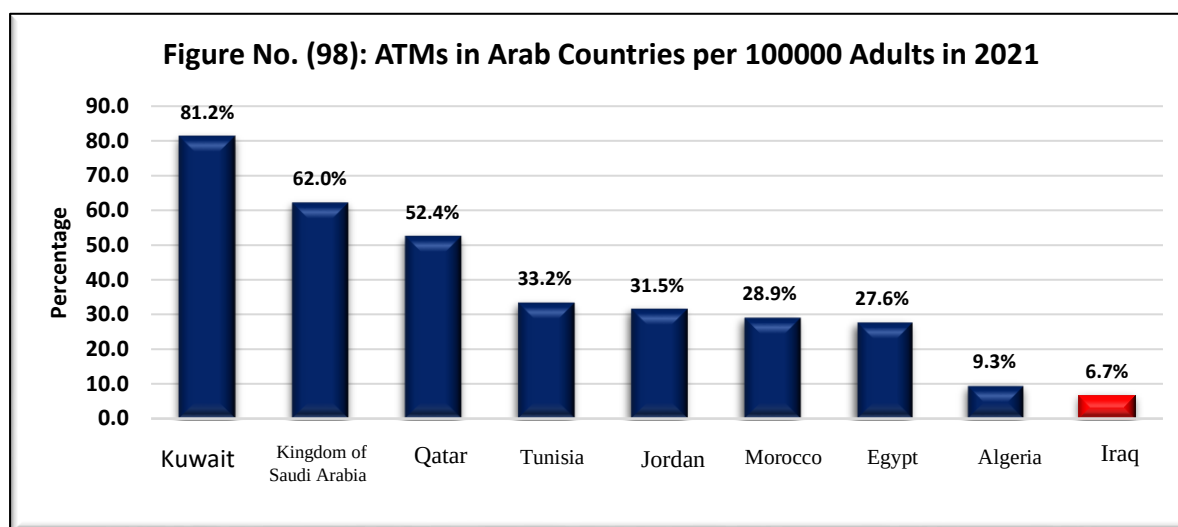
It is noted that the spread of electronic payment services in Iraq among population is still low because of the fact that most markets and shops still deal in cash with limited usage of electronic (POS) devices. It does not match the volume of internal commercial business, especially in middle-income neighborhoods and remote areas, as culture of electronic payment is not widely spread among segments of society. As for (ATM), their spread is limited to trade centers and shopping malls that enjoy a high degree of security protection, as well as some government agencies and bank branches. Numbers mentioned in Figure No. (97) indicate a slight increase in the usage of electronic payment services in Iraq in 2022. As number of ATM devices per 100,000 adults reached (9.3) devices in 2022 compared to (6.7) devices in 2021, while POC devices increased from (63.2) devices in 2021 to (73.8) devices in 2022. As for (POS) devices, they also increased to (44.9) devices in 2022 compared to (35.8) devices in 2021. To enhance the spread of electronic payment services in Iraq, banks and commercial companies must work to increase number of ATMs and POSs devices in public locations and remote areas. The government and related authorities must also take measures to enhance financial awareness and increase awareness & financial education for individuals and companies regarding benefits and uses of electronic banking services.



Source: Central Bank of Iraq / Statistics and Research Dept. - Statistical Bulletin.

According to Figure No. (98), it was noted that the spread of ATMs in Iraq is low compared to some other Arab countries, which required banks to increase

number of available ATMs in order to deliver their services to the public easily and at lowest costs. Thus, level of financial inclusion will increase, which is what CBI seeks.



Source: World Bank Data,

<https://data.albankaldawli.org/indicator/FB.ATM.TOTL.P5?view=chart>

8-3-2 Financial Services Usage Index

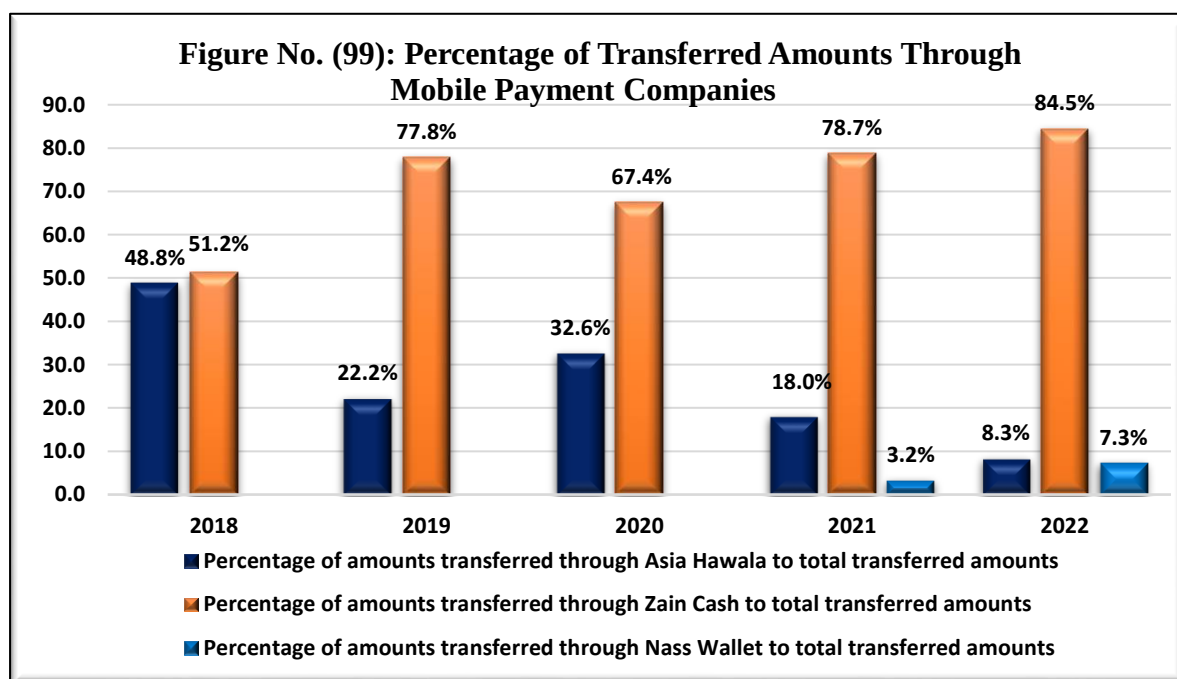
8-3-2-1 Spread of Mobile Payment Services

This index reflects the spread and usage of advanced payment technologies that rely on mobile phones. These technologies include digital payment applications and electronic wallets, which allow individuals to conduct financial transactions, send and receive money via their mobile phones, as this index is considered an important one for financial inclusion since it contributes to provide an easy and effective access to financial services for different population groups.

According to Figure No. (99) that shows the transferred amounts from mobile payment companies, it was noted that Zain Cash had control over financial transfer operations, as the percentage of transferred amounts through it, as part of total amounts transferred through mobile payment companies, increased from (77.8%) in 2019 to (84.5%) in 2022.

On the other hand, Asia Hawala Company's transfer percentage recorded a decrease from (22.2%) in 2019 to (8.3%) in 2022. As for Nass Wallet Company that began its work in 2020, the percentage of transferred amounts through it was low, due to modern activity, but it increased from (3.2%) in 2021 to (7.3%) in 2022. It was also noted that increased competition among companies contributed to financial development and enhanced the development of financial services

provided by companies. This competition prompts companies to improve their services and provide better offers to customers, which promotes economic development and financial inclusion.

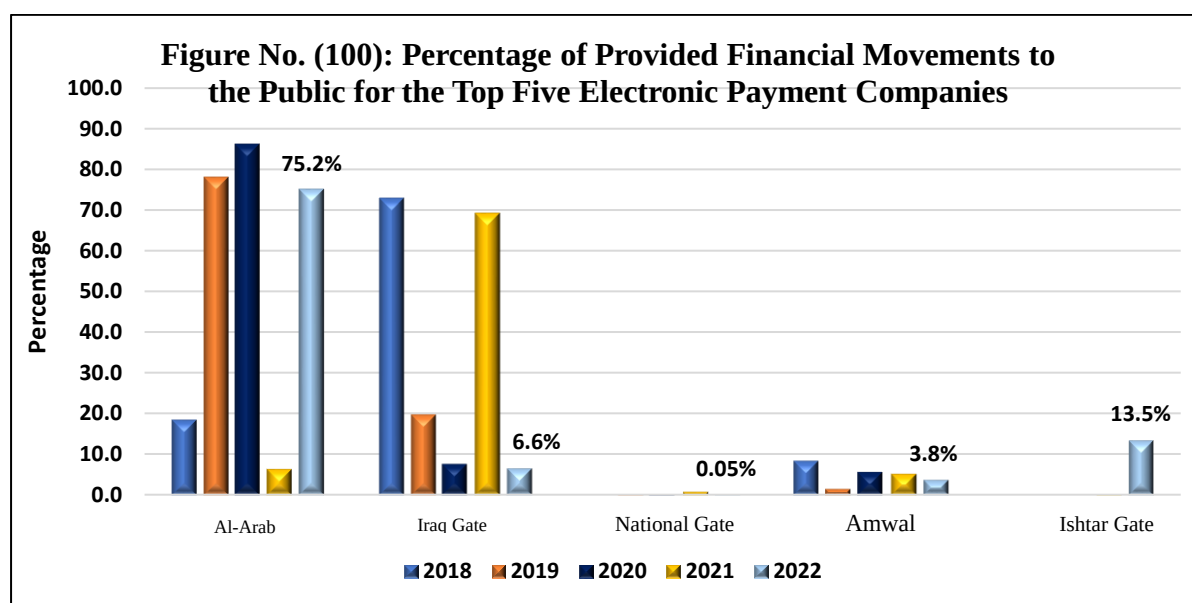


Source: Central Bank of Iraq / Information Technology and Payments Dept.

8-3-2-2 Contribution of Electronic Payment Companies (Processing, Issuing, and Collecting Companies) to Financial Inclusion

Financial companies play a vital role in promoting financial inclusion by providing basic financial services, including provide bank accounts for individuals and companies, facilitate financial transfers, provide electronic payment means, credit cards, loans, and insurance services. Providing these services enhances financial inclusion by enabling individuals and companies to access and effectively use financial services. In 2022, number of electronic payment companies increased to 14 companies compared to 11 companies in 2021. From Figure No. (100), it can be noted that Al-Arab Company topped electronic payment companies in terms of provided financial movements, whether in the form of issued, processed, or collected financial services. Its percentage reached (75.2%) of total movements of financial service providers in 2022. Followed by Ishtar Gate Company, which recorded a percentage of (13.5%), while Iraq Gate Company recorded a percentage of (6.6%). It indicates Al-Arab Company's control over the financial services market.

In 2021, Iraq Gate Company was the largest controlling company in financial services market with a percentage of (69.1%) of total service provider movements, while Al-Arab Company owned a percentage of (6.8%), which indicates the existence of competition among financial companies with the possibility of new competitors entering. As for other companies, their competition was weak within financial services market throughout the period (2018-2022). In general, these data show that competition among domestic financial companies in Iraq has increased, which enhances the development of financial sector and improvement of its provided services.



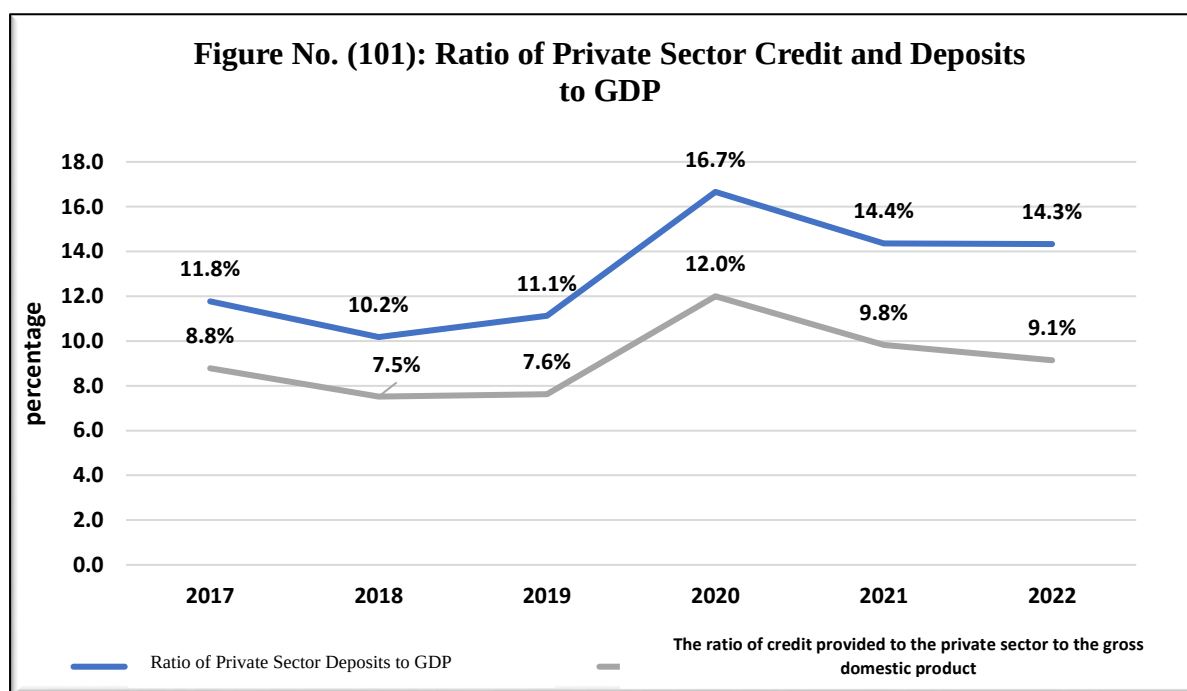
Source: Central Bank of Iraq / Information Technology and Payments Dept.

8-4 Bank Depth Index

This index measures the availability of financial services and its role in supporting economic growth and financing of businesses and projects; it is measured through two main variables:

- **Ratio of credit provided to private sector to GDP:** This variable reflects volume of credit provided by banks to private sector compared to the country's GDP, as the increase of this ratio indicates an increase of private sector's financing and credit availability.
- **Ratio of private sector deposits to GDP:** This variable expresses the volume of private sector deposits in the banking sector as a percentage of country's GDP. This variable reflects the level of saving and investment in the private sector and its ability to provide self-financing for its activities.

The two above ratios are used together to estimate the depth of banking sector in supporting economic activity and financing businesses, as the ability of banks to provide credit and accumulate deposits is affected by several factors such as central bank policies, banking regulation, and the level of economic development of the country. Numbers in Figure No. (101) show that the ratio of credit provided to private sector to GDP decreased from (9.8%) in 2021 to (9.1%) in 2022. This decrease is due to high percentage of GDP growth by (27.1%), which is higher than the increase of credit provided to private sector, which amounted (18.3%) during the same period. At the same time, private sector's deposits to GDP witnessed stability at a level of (14.3%) during the period (2021-2022). In general, this analysis indicates that despite the increase in general economic growth, growth of credit provided to private sector did not accelerate to the same extent as GDP increased, due to the characteristics of rentier countries, including Iraq. On the other hand, private sector deposits increased at a similar rate to economic growth, which indicates an increase in the general level of private sector's confidence to deposit its money with the banking system.

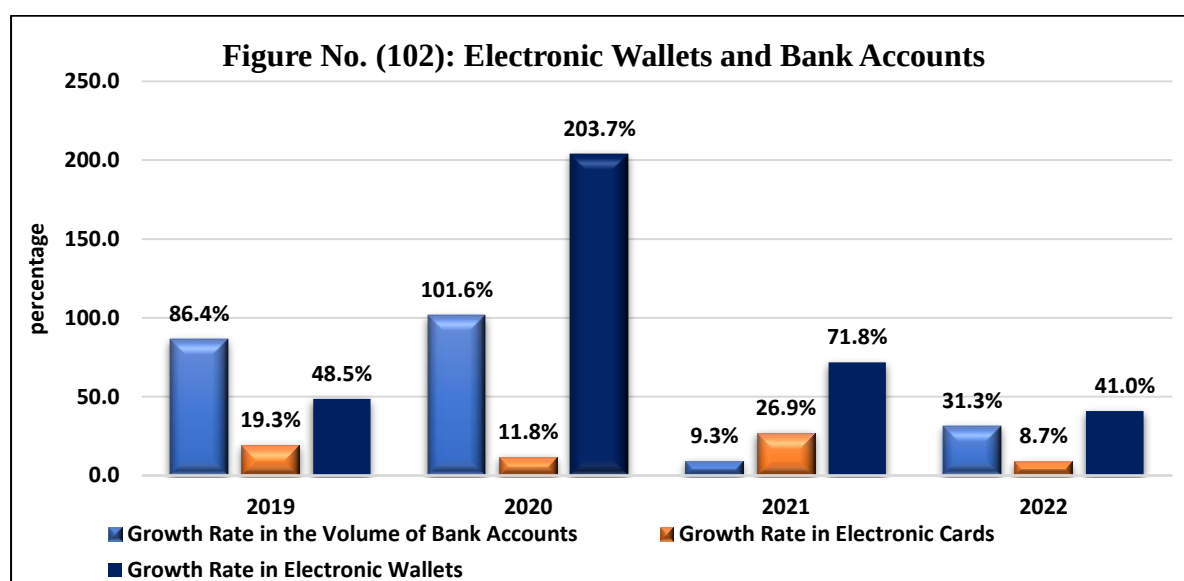


Source: Central Bank of Iraq / Statistics and Research Dept., Statistical Bulletin.

8-5 Electronic Cards, Bank Accounts and Electronic Wallets

Financial inclusion is promoted by providing comprehensive and fair access to financial services for all, regardless of their income or geographic location. Electronic cards, bank accounts, and electronic wallets play a crucial role in achieving financial inclusion by providing easy and secure financial means for managing funds. Electronic cards allow individuals to make payments and cash withdrawals easily and safely, whether through ATMs or online; they provide an easy way to handle and control funds.

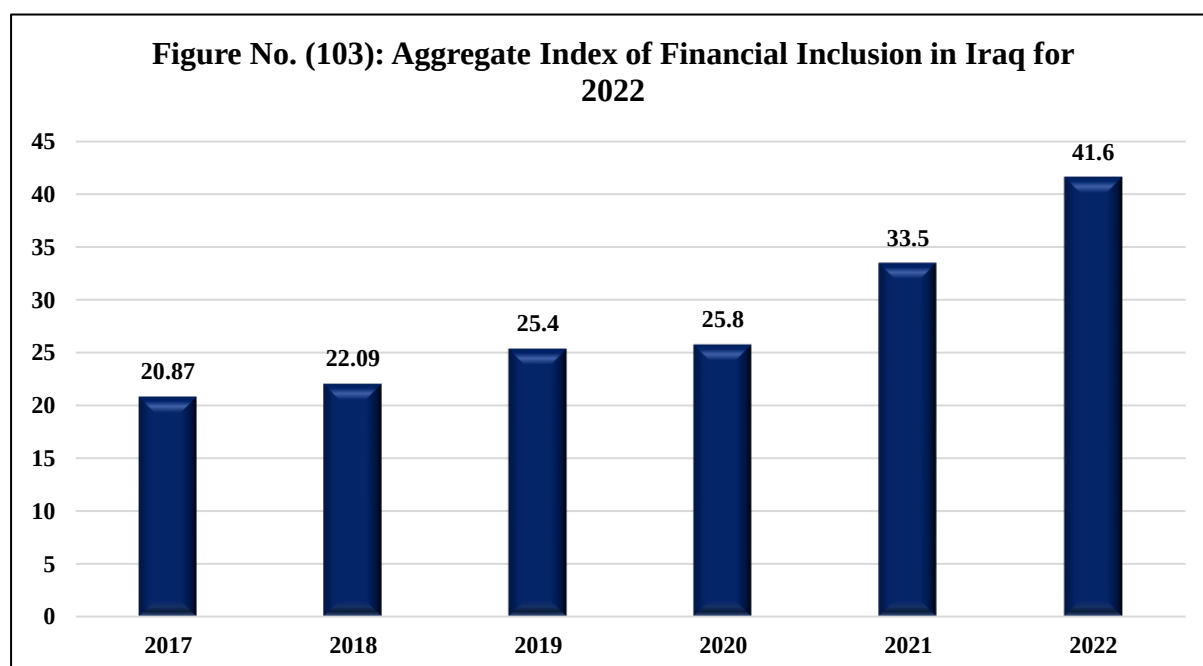
On the other hand, bank accounts are considered essential to achieve financial inclusion, as they enable individuals to open their bank accounts, deposit money, and make transfers and other financial transactions. Thanks to bank accounts, individuals can receive salaries and payments, save money, and access them safely and effectively. Electronic wallets provide an additional layer of security and protection for funds, as encryption and multiple authentication techniques are used to protect sensitive financial information and ensure its safety from hacking and fraud, which contribute to enhancing financial inclusion. According to figure No. (102) - which indicates an increase of number of bank accounts, electronic wallets, and electronic cards, meaning that there is an expansion of financial inclusion. Electronic wallets recorded a growth of (41%) in 2022 compared to 2021, with an increase of (8.7%) in number of electronic cards in 2022 compared to 2021. In addition to that there was also an increase in number of bank accounts by (31.3%) in 2022 compared to 2021.



Source: Central Bank of Iraq / Information Technology and Payments Dept.

8-6 Measurement of Aggregate Index of Financial Inclusion in Iraq ¹

The aggregate index of financial inclusion was adopted in Iraq to measure the extent of access and usage of financial services. The index consists of two main indices: access and usage, as it aims to measure progress at financial inclusion level and reflects the degree of success in enhancing financial inclusion and increasing individuals' confidence in dealing with formal financial sector. Results in Figure No. (103) indicate an increase in aggregate index of financial inclusion from (22.09) in 2018 to (41.66) in 2022. This increase reflects the success of the CBI's policies to encourage financial inclusion due to the increase of number of bank accounts as a result of the salaries' inclusion into the banking system policy. In addition to the increase of number of ATMs and POSs devices in the recent period. These developments contributed to enhance financial inclusion in Iraq.



Source: Central Bank of Iraq / Statistics and Research Dept. - Estimates of Monetary and Financial Stability Division.

¹ For more information, see “Annual Report for Financial Stability 2016”, calculating method of aggregate index of financial inclusion.



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