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The impact of financial inclusion in cash credit, a study in the Iraqi banking sector for the period (2010-2021)

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***Abstract* :** The research aims to demonstrate the impact of financial inclusion in cash credit to the Iraqi banking sector for the period 2010-2021, and the extent of the banking sector's ability to grant credit to finance productive projects, to achieve sustainable economic development, through the delivery of financial services to financially excluded groups, and their use of financial products through channels official, To reduce poverty, employ the labor force, improve the level of per capita income, achieve economic growth, and increase the growth rates of the gross domestic product, through the analysis of the research variables, as the research followed the deductive approach of the theoretical side and the analytical approach And the standard for the practical side using the statistical program (Eviews10) for the period 2010-2021, and the study reached a set of conclusions, the most important of which are: low levels of financial inclusion in Iraq as a result of weak indicators of access to financial and banking services, Despite the efforts of the Central Bank of Iraq to urge banks to move towards electronic banking, the study recommended the intensification and dissemination of electronic payment methods and the application of more modern systems in Iraqi banks.

Keywords: financial inclusion, cash credit, Iraqi banking sector.

Introduction: Financial inclusion is one of the most important modern financial products, and newly developed and innovative banking services, as it has become a major axis in financial and monetary institutions and central banks in the world, and countries have begun to race towards implementing financial inclusion through the access of financial and banking services to all segments of society With reasonable prices and a low cost, to avoid individuals resorting to informal means that are not subject to supervision with their high costs, it is also a basic pillar for the work and stability of banks by investing bank deposits from small savers and re-granting them to companies and individuals And government institutions in the form of loans, as the banking sector works by including financially marginalized individuals with cash credit service as well as small and medium enterprises to improve the level of per capita income, eliminate unemployment and poverty, and achieve economic growth, in return credit is the only banking business capable of achieving high rates of profits, with Achieving sustainable financial efficiency through financial inclusion.

The first topic: research methodology and some previous studies

1: Research methodology

1:1 Research Importance:

The importance of the research lies in the need of the banking sector to deliver financial and banking services to the largest number of the population, especially the financially disadvantaged groups, as financial inclusion helps to improve the financial conditions of those groups through the provision of small and medium loans, as well as the provision of other financial services such as insurance, money transfer and banking. Electronic and electronic payment services and others.

1:2 Research problem:

The problem of the research was the criteria and ways of applying financial inclusion, as most developing countries, including Iraq, did not reach the required level in applying financial inclusion, due to the presence of many obstacles and challenges that prevent this, which led to the weakness of financial services provided by the banking sector, and the most important of these challenges(Laws and legislation, number of bank branches, population density, decline in electronic payment service represented by automated teller machines (ATM) and points of sale (POS), as well as credit risks to which the bank is exposed, which is represented by the inability of borrowers to pay, all of which affect the generalization of services Banking and non-expansion of financial inclusion, and can be put forward This problem through the main question: (Is there an effect of financial inclusion in the cash credit for the period 2010-2021)?

1:3. research hypotheses:

Based on the research problem, the main hypothesis was formulated through which solutions and treatments can be found for the research problem, and this hypothesis is "There is no significant effect of financial inclusion in the cash credit of the Iraqi banking sector for the period 2010-2021".

1:4 Research Objectives:

A. Explaining the concept of financial inclusion and what challenges it faces, how to achieve it and work to expand it.
B. Presenting indicators of financial inclusion and comparing them with neighboring countries during the research period.
C. Presentation of the volume of cash credit granted by the banking sector during the research period.
D. Examining the impact of financial inclusion on the monetary credit of the Iraqi banking sector for the period 2010-2021.

1:5 Research community and sample:

The research sample and society consisted of the "Iraqi banking sector", which includes government sector banks and private sector banks (commercial and Islamic).

1:6. search variables:

The research variables were represented by the independent variable financial inclusion through its indicators (the number of bank branches, the number of automated teller machines, the number of points of sale, and the number of credit cards), and the dependent variable is cash credit.

2: Some previous studies:

A. Study (Alagh & Emeka, 2014)

Impact of Cashless Banking on Banks' Profitability(Evidence from Nigeria)"

It aimed at the impact of non-monetary financial services on the profitability of banks in Nigeria, and multiple regression analysis was used to analyze the data, and descriptive statistical methods. The study concluded that the transition from the cash economy To the cashless economy, it has a significant impact on enhancing financial inclusion through the development of payment systems, which are characterized by efficiency, diversity, flexibility and security, which helps in attracting a larger number of new customers to be their financial dealings with the banking sector, and then provide effective channels of communication between banks and customers, and raise the liquidity ratios of banks, and enhance their financial performance, as the study recommended the provision of appropriate information and communication technology, Preparing the infrastructure and administrative for banks, and educating the public on the importance of using banking products and financial services.

B. Haddah Boutbeina Study 2018

Dimensions of financial inclusion and their role in achieving competitive advantage (a survey of the opinions of a sample of Algerian commercial bank customers).

The study aimed to identify the role of financial inclusion in achieving competitive advantage by conducting an exploratory search for the opinions of a sample of clients of Algerian commercial banks and showing the relationship between its dimensions represented by (customers' access to financial services, clients' use of financial services, quality of services provided to clients), And the competitive advantage, and the research sample was represented by the customers of the Algerian commercial banks, which numbered 20 banks, and the research relied on the analytical approach, as the questionnaire was adopted as a main tool in collecting data and information on the (377) sample members, and it reached The research indicates that there is a discrepancy in the impact of the dimensions of financial inclusion on the competitive advantage of commercial banks, and that the quality of financial services dimension comes first in terms of importance and impact on the competitive advantage of banks, as it explains (69%) of the total impact on the competitive advantage, which This indicates the interest of these banks in the quality of their banking services, The study also recommended supervising awareness workshops for young people to deal with various banking financial services, and conducting awareness-raising courses on the importance of financial inclusion and its three dimensions and its impact on achieving competitive advantage, as well as granting financial and moral incentives from the state to encourage effective participation in activating financial inclusion.

C. Al-Khazraji and Al-Araji Study 2020:

"Economic Measurement of the Impact of Financial Inclusion on Banking Stability in Iraq"

The study aims to demonstrate the impact of financial inclusion indicators on banking stability, as well as the positives and benefits that the banking system will obtain through enhancing financial inclusion. The study included 32 private in the Iraqi banking sector, and the study was based on the inductive approach to test the hypothesis and achieve the goal of the study by using standard methods appropriate to the nature of the data, and I concluded that the banking stability in the current period is directly affected with the banking stability of the previous period, In the sense that the high degree of banking stability with a particular bank in a certain period will enhance stability in the subsequent period, and recommended the interest of banks and decision-makers, especially the Central Bank of Iraq, in raising awareness and financial education for the various groups of society and introducing them to financial services through educational seminars.

The second topic: the theoretical framework for financial inclusion and monetary credit

1: Financial Inclusion

The term financial inclusion appeared for the first time in the world in 1993 in a study presented by Leyshon & Thrift on financial services in the southeast of England, in which he touched on the impact of closing a bank on the actual access of the residents of the region to financial services, and in Nineties of the last century, Studies continued related to the difficulties faced by some groups of society to access banking financial services, and in 1999 the term financial inclusion was used for the first time widely to describe the determinants of individuals' access to financial services (Abdullah et al., 2016: 15), and attention turned towards financial inclusion after the financial crisis world at the end of 2007, As financial institutions sought to achieve financial inclusion through policies and measures taken by monetary authorities in many countries of the world, which aim to enhance and facilitate access to financial services to all segments of society and enable them to use all financial products and services and provide them with low costs (Sorour and Hegazy, 9: 2017).

1:1 concept of financial inclusion

Many economic schools, international banks, and financial institutions have dealt with the concept of financial inclusion, because of its importance in achieving economic well-being and financial stability on the one hand, and the delivery of banking financial services to all members of society, especially financially marginalized groups, on the other hand Specialists in the phenomenon of financial inclusion, and the concept of financial inclusion is the means that aims to generalize financial products and banking services at reasonable costs to the largest number of societies and institutions, especially the low-income segments of society (Union of Arab Banks, 24: 2015), and the concept of financial inclusion is financial services the introduction From a formal institution characterized by a legal character and includes widely disparate organizational entities (CGAP, 2011, p. 30), and (Cherif, 2016:26) sees financial inclusion as a process that includes the inclusion and consolidation of groups called financially marginalized or with low incomes that It is not allowed to participate in the operations of the banking system The Group of Twenty (G20) and the Global Alliance for Financial Inclusion (AFI) defined it as the measures taken by regulatory bodies and financial institutions to enhance the access and use of all segments of society, including marginalized groups, to affordable financial services and products that are commensurate with their needs, and to provide them in a fair and transparent manner at reasonable costs (Abdul Allah et al., 16:2016).

1:2 The importance of financial inclusion

The importance of enhancing financial inclusion and access to financial services is reflected positively on the political and economic environment, as well as on the banking sector alike, by mitigating the risk levels of financial institutions and the financial system, and the importance of financial inclusion can be identified through the following main axes: (Tabinah, 8: 2018) (Nagham Hussain, 31:2018)

A. Promoting economic development efforts: as there is a direct relationship between the level of economic growth and the levels of financial inclusion, and the depth of the spread and use of financial services is linked to the levels of social justice, in addition to the positive impact on the financial markets, and the expansion of the spread of financial services also contributes to the transfer of more small enterprises and medium, as well as individuals from the informal sector to the formal sector.

B. Enhancing the stability of the financial system: Financial inclusion helps to improve financial conditions and raise the standard of living of the poor. Financial inclusion can also improve the efficiency of the financial and banking intermediation process between deposits and credit, in addition to increasing the share of the formal financial sector at the expense of the informal sector to support the effectiveness of Monetary policy.

C. Enhancing the ability of individuals to integrate and contribute to building their societies: Studies indicate that improving the ability of individuals to use the financial system will enhance their ability to start their own business and invest in small and medium enterprises, as well as improve their ability to manage their financial risks associated with financial changes.

D. Automating the financial system: Increasing reliance on electronic financial services, especially with regard to payments, will benefit both the sender and the receiver, and the financial institutions that provide these services, so that payments (salaries, money transfers, subsidies, credit) arrive more quickly, At a lower cost, it also benefits the financial system in improving its ability to follow up and monitor the movement of funds to reduce levels of financial crimes, as well as operations related to money laundering and terrorist financing.

1:3: Financial Inclusion Goals

Central banks and banking policies seek to achieve a number of goals through the expansion of financial inclusion, so financial inclusion can only be achieved with the support of the banking sector through the provision of financial and banking services on the one hand, and the financial culture of the individual on the other hand, and the goals can be stated through the following (Helms, 2006:5) and (Al-Shammari, 30:2017)

A. Access to financial services to all segments of society, their knowledge of the importance of these services, how they obtain them, and the extent to which they benefit.

B. Work to improve the living conditions of individuals, especially those with limited income and the poor, and reduce poverty levels and improve the level of per capita income through financing investment projects and creating economic development opportunities that improve their economic and social conditions.

C. It aims at facilitating access to financing sources represented by bank credit, and supporting companies and small projects that can expand their work and achieve acceptable investment.

D. Encouraging individuals to save their surplus money, which is called (small deposits), and invest them, in return for obtaining interest that works to develop these deposits for individual savers.

E. Financial inclusion aims to achieve financial stability for the banking sector through the growth of bank deposits, achieving a sufficient amount of liquidity, and enabling it to control it and invest it in banking operations such as loans and other credit facilities.

F. Achieving economic growth and reducing unemployment and inflation through establishing free labor projects and activating the private sector.

1:4 Requirements for achieving financial inclusion

Achieving financial inclusion requires the concerted efforts of the financial and monetary policies as well as the banking sector to remove the obstacles that prevent this, although the Central Bank of Iraq has taken care of this aspect and made it its first priority, However, Iraq is one of the lagging countries in terms of technological development and financial digital transformation, as a result of the population density that is increasing in greater proportions than financial services, and the failure to keep pace with global banking systems and the banking system leaving them, In addition to the weakness of financial services and their high cost, and if the financial and monetary authority wants to achieve financial inclusion, it should only work seriously and strive towards developing the financial sector in general and the banking sector in particular, and perhaps the most important requirements for achieving financial inclusion are the following (Vapulus, 2018:2) with The researchers' opinion:

A. Studying the banking sector in a good and renewed manner, to find out the feasibility of the existing banking service, and its suitability with the target groups in financial inclusion.

B. Studying the requirements and needs of individuals for banking services in order to achieve them on the ground.

C. Working to provide new services that cover all the banking needs of all members of society.

D. Following up the customer and their satisfaction with the available banking services, and providing all the information they need about their bank accounts.

E. Providing advisory services to clients and assisting them in choosing the most appropriate service for them in managing their money in a way that guarantees them sound results.

F. Activate the role of monitoring in all its forms, which will gain the customer's confidence in the services provided to them.

G. Reformulating some regulations and legislation that prevent achieving financial inclusion.

H. Introducing the technological system to the banking sector, and working to get rid of the traditional systems used in banks.

I. Activating and supporting the private sector, by providing cash credit to medium and small companies and financing investments to reduce unemployment and poverty rates, and raise the level of income.

1:5 Indicators of financial inclusion

1:5:1 Number of Bank Branches: The indicator of the number of bank branches is one of the important indicators in measuring and determining the level of financial inclusion in the country, as it depends on the number of bank branches spread throughout the country, In order to deliver financial services to all groups, as the indicator is measured by the number of branches relative to the area of the country, as well as by the number of bank branches per (100) thousand adults, and the ratio was determined that the global average of the number of bank branches per (100) thousand people is 10 branches or one branch for each 8 thousand people (World Bank, 69: 2019), This can be known through the following equation: (Ofosu, 2017:74)

Banking density = population / number of bank branches

1:5:2 Automatic Teller Machines (ATM): It is a device that operates automatically to serve customers without the intervention of the human element within pre-prepared programs that provide many banking services for the benefit of the customer throughout the day by means of a plastic card for ATMs that bears the information of the beneficiary and is issued by the bank (Abdullah and Al Trad, 221: 2006), and the ATM index can be measured through the following equation: (GPFI, 2014: 4)

Number of ATMs per 100,000 adults = Number of ATMs / Population of adults * 100,000

1:5:3 Points of Sale (POS): It is defined as special devices connected to the bank's network and placed at the disposal of the shop owner. These devices verify the adequacy of the card holder's balance to fulfill his purchases, and then issue a receipt to complete the payment process, and a deduction is made from the card owner (the customer).) and adding it to the store owner's account (Al-Busaidi, 78: 2010), and it can be calculated through the following equation:

Number of points of sale per 100,000 adults = number of POS / number of adult population * 100,000

1:5:4 Electronic cards: It is defined as a plastic banking tool that was used as an alternative to cash and credit, and gives its holder the right to obtain credit facilities from the bank issuing this card (Al-Shammari and Abdullat, 47: 2008). The most important types of electronic cards and defined as A plastic card that banks give to the customer, and it is used by the bank's customer for purchase purposes, then the payment will be later, while allowing him to postpone the payment of the credit amount for a certain period in exchange for interest, These cards arose in response to the growing demands of consumers for the purpose of benefiting from advanced electronic payment systems, which provide them with speed, ease of use, and protection of their money (Hussein and Al-Haidari, 107: 2021), and its types (Visa Card, Master Card) and the number of credit cards can be calculated through the following equation :

Number of credit cards per 100,000 = number of credit cards / adult population * 100,000

2. Cash Credit

Banks in general, whether governmental, private or Islamic, provide financial services to all members of society, government institutions and companies, and the most important banking service they provide is cash credit, and the bank is also the most important source of revenue and financial returns, as banks receive bank deposits from various Entities and converting it into cash credit granted to finance economic projects in the form of loans

2:1 Concept of cash credit

Cash credit is the main focus of the bank's work, and the banking service corresponding to the service of accepting deposits, meaning that the bank's lending to its customers is that it puts amounts previously deposited with it, The bank transferred those amounts from idle money to money that generates financial revenues (Al-Subk, 7: 2011), and is defined as the process of transferring money from the lender to the borrower. John & Terhemba, 2016: 190), It is also defined as an agreement between the lender and the borrower according to which the lender provides an amount of money to the borrower during a specific agreed-upon period of time in exchange for a certain interest, and the borrower undertakes to recover the amount with interest during the agreed period (Aql, 188: 2006), He also defined it as the credit facilities granted by the bank to its customers, according to an agreement between the two parties, which is done by the bank lending customers an amount of money during a certain period and with a certain interest to finance their needs, Credit is based on two main elements: duration and trust (Fatihah, 7: 2015). Cash credit is considered the most dangerous investment because it contains multiple risks that may lead to the collapse of the bank. On the other hand, it is considered the most profitable investment for the bank, through which the bulk of the bank's profits can be achieved, in addition to being the role of the bank to carry out the banking financial intermediation process (Al-Zubaidi, 17: 2002).

2:2 The importance of cash credit

Cash credit is of great importance in supporting the economic sector of the country, through its ability to finance productive projects and provide the necessary funds for all investment activities through banks as the main source for playing the role of financial mediation between depositors and borrowers and granting financial facilities to all economic sectors and activities, and the importance of cash credit can be stated Through the following: (Al-Ghalibi, 16: 2016)

A. It is considered the most important source of financing for economic activity and private projects.

B. When banks grant loans on a large scale for all activities, such as commercial and economic, which constitutes a great incentive to aggregate demand, which leads to a significant increase in consumer and investment demand.

C. It is a means of exchanging and transferring funds between individuals, institutions and companies.

D. Investing idle funds and investing them in operational operations in the form of loans granted to all sectors.

E. It is considered one of the most important investments through which banks achieve profits due to the high volume of returns achieved from it.

2:3 Factors affecting the granting of cash credit

The credit policy of banks is an essential part of the financial policy of the country, as it helps to develop the national economy through financing public and private projects, and also helps to maximize the profitability of banks, so banks must maintain the monetary credit policy and support borrowers to finance positive projects and move towards productive loans, The monetary credit policy fluctuates according to the aspirations of the credit policy adopted by the Central Bank, and this can be known through the factors affecting the monetary credit as follows: (Al-Shama'a, 1992: 236)

A. Economic activity: It represents identifying the needs of individuals by matching the cash flow with the flow of goods and services, as economic developments have an important and effective role in drawing up the monetary credit policy.

B. Capital: There is a legal relationship between the volume of credit granted and the capital of the bank, as the capital and the legal reserve of the bank are considered the safety valve for bank deposits, in addition to that they represent the ability of the bank to bear the credit risks that the bank is exposed to when granting loans.

C. Cash reserve: It represents a group of funds in the form of cash liquidity kept by the bank, whether it is in the bank itself, with other banks, or with the central bank, With an increase in the cash reserve, the bank's ability to create deposits decreases, and thus affects the credit granting process.

D. Monetary policy: It is the policy imposed by the Central Bank that leads to credit reduction in order to preserve its monetary reserves for the purpose of addressing the state of economic inflation, In the event of recession, a flexible and lenient policy is followed for granting loans and easing lending conditions to increase its volume and restore economic balance.

E. Competition between banks: Competition between banks and other financial institutions is an important factor in drawing up credit policy, due to the emergence of globalization, financial liberalization, integration of financial markets, and the use of information and communication technology and modern financial products.

F. Skills of the staff in charge of the lending process: It is their responsibility to analyze the customer's situation and identify their needs, The more experience and skill they have, the more they are able to make the credit process a success in a sound and accurate manner.

3: The relationship between financial inclusion and monetary credit

Financial inclusion improves the efficiency of the banking sector and reduces informal financial operations, and through it the monetary policy is drawn up for the banking sector, where financial savings are accumulated in a large way and directed towards investments, as some studies indicate that small loan losses constitute less systemic risk than the losses resulting from loans This means that financial inclusion in terms of granting credit for small loans leads to greater financial stability for the banking sector (Regional Action Team, 2015: 4-5), and the increase in the number of banking branches and their expansion over the largest geographical area leads to easier access for individuals to banking services, and the abundance of banking dealings, Which reflects positively on the increase in the activity of banks in terms of granting loans and other credit facilities, and thus increasing the revenue generated from them (Khariush and Al-Abadi, 3: 2004), and it also seeks financial inclusion through the banking services it provides through electronic payment services represented by (ATM) and (POS) and electronic cards to enhance the confidence of customers when dealing with them With banking financial intermediation institutions, it also enhances the competitive advantage between banking institutions, which makes them work to diversify their products and pay attention to their quality to retain existing customers, while attracting the largest number of individuals and their entry into the banking sector to obtain services that are only available in the official sector, Where the increase in bank deposits through small savers and individuals helps to increase the credit facilities granted by the bank to individuals, organizations and companies (Al-Haddad and Al-Bakl, 170: 2022).

The third topic: the practical framework

1. Analyzing and measuring the impact of financial inclusion indicators on cash credit for the Iraqi banking sector for the period (2010-2021).

1:1 Analysis of financial inclusion indicators for the Iraqi banking sector for the period (2010-2021)

Financial inclusion indicators are an important tool in measuring and developing the level of financial inclusion in the country, as it depends on the number of bank branches spread across the country for every 100,000 adults. 8 thousand people (World Bank, 69: 2019), It also depends on the electronic payment tools represented by [ATMs, POS points of sale, and electronic cards, as it is one of the indicators of access to banking services, and Table (1) shows the numbers of these indicators during the research period:

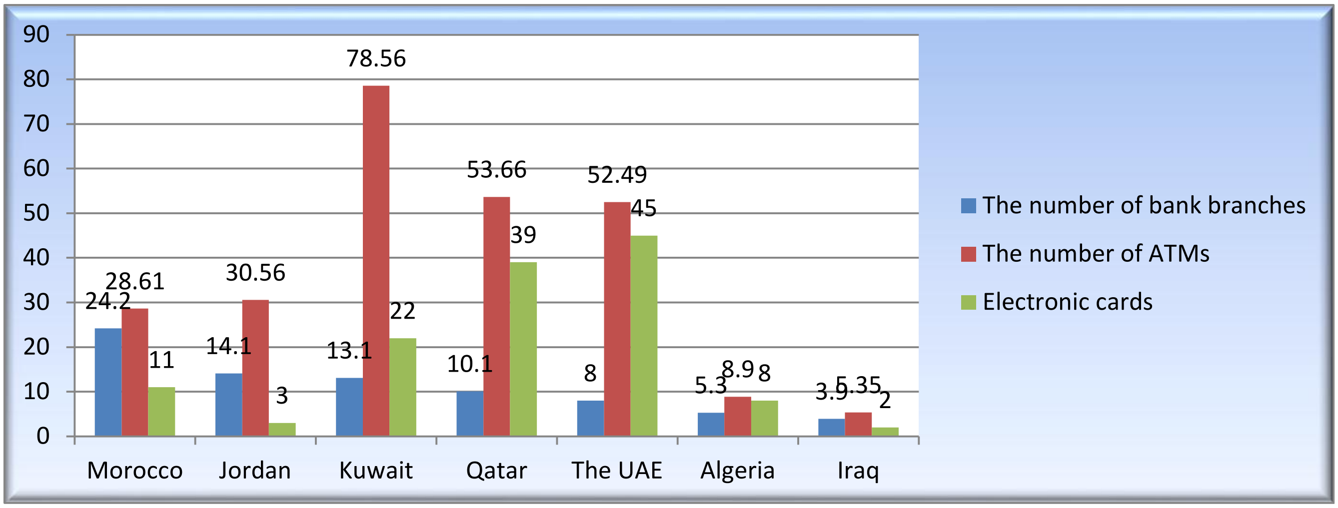
Table No. (1)

The number of bank branches, ATMs, POS points of sale, and electronic cards for the Iraqi banking sector for the period (2010-2021)

the year	Population (million people) (1)	Number of adults over 15 years old (million	Number of bank branches (3)	Number of ATM (4)	Number of POS points per thousand (5)	Number of electronic cards (6)	Bank density 1/3	The number of adults per one ATM (in thousands) 2/4	The number of adults per single POS 2/5	The number of credit cards per 100,000
2010	32489	19289	860	385	30	6340	35	50	643	32.8
2011	33338	19929	888	467	50	7212	35	42	398	36.1
2012	34207	20569	982	467	50	8030	35	44	411	39.0
2013	35095	21227	1002	647	30	8883	34	32	707	41.8
2014	36004	21926	938	337	30	10858	37	65	730	49.5
2015	36933	22082	821	580	30	17002	43	38	736	76.9
2016	37883	22654	858	660	30	16401	43	34	755	72.3
2017	37140	22974	834	668	45	15158	44	34	510	65.9
2018	38200	23012	857	878	50	22067	44	26	460	95.8
2019	39300	23294	881	1021	55	38883	44	22	423	166.9
2020	40150	23902	884	1278	68	46469	45	18	351	194.4
2021	41190	24522	901	1565	83	50927	45	15	295	207.6

Source: Prepared by the two researchers based on the data contained in the financial stability report of the Central Bank of Iraq and the statistical bulletins for the period 2010-2021.

It is noted from table (1) that the number of banking services varied during the research period. The number of banking branches in 2010 reached (860) bank branches, with a banking density of one branch for every (35) thousand people. one for every (45) thousand inhabitants, With (901) bank branches, and this is due to the lack of bank branches and the growth of population density by a greater percentage than bank branches, while the year 2013 recorded the highest number of bank branches, reaching (1002) bank branches, with a banking density of (34) thousand adults per one bank branch, which is The lowest intensity recorded by the banking sector during the years of research, While the year 2015 recorded the lowest number of bank branches, reaching (821) branches, with one branch for every (43) thousand people, and this is due to the closure of some banks in the western region, Mosul and Diyala due to terrorist operations, As for the level of electronic payment services represented by automated teller machines (ATMs), their number reached (385) in 2010, with one ATM for every (50) thousand adults. It is the highest number recorded by the banking sector for ATMs, with (15) thousand adults per one ATM, While at the level of POS points of sale, in 2010 it reached (30) thousand points of sale spread throughout the country with (398) adults for each single point of sale, while in 2021 the points of sale reached (83) thousand points of sale with (295) adults for each One point of sale, and electronic cards increased rapidly during that period, when in 2010 there were (6340) credit cards At a rate of (32.8) cards per 100,000 adults, it reached (50,927) credit cards in 2021, at a rate of (207.6) cards per 100,000 adults, and despite the increase in the deployment of electronic payment tools and the support of the Central Bank of Iraq to the banking sector in increasing electronic payment services, However, it did not reach the required level compared to neighboring Arab countries. Figure (2) shows the number of banking branches and electronic payment tools for Arab countries and Iraq for the year 2020:



Source: World Bank data: albankaldawli.org/indicator/FB.ATM.TOTL.P5?view=chart
The World Bank, https://data.worldbank.org , Retrieved, 2021:8-18

Figure No. (1)

The number of banking branches and electronic payment tools for Arab countries and Iraq for the year 2020

It is clear from Figure (2) that Iraq still ranks late in terms of the number of banking branches and electronic payment tools represented by ATM, POS and credit cards, as Morocco ranked first in the number of bank branches, which amounted to (24.2) per 100 thousand adults, followed by Jordan with (14.1). per 100,000 adults, And then Kuwait, Qatar, the Emirates and Algeria with the number of bank branches (13.1), (10.1), (8), (5.3) respectively, and finally Iraq came with a very low rate of (3.9) per 100 thousand adults, and in terms of electronic payment tools (ATM)) and the (POS), as Kuwait acquired the largest number among the Arab countries, at a rate of (78.56) ATMs per 100,000 adult, followed by Qatar and the UAE at a rate of (53.66), (52.49) respectively, then Jordan, Morocco and Algeria at a rate of (30.56), (28.61), (8.9) respectively, and then Iraq at a very low rate at a rate of (5.3) ATMs per 100,000 adults. As for electronic credit cards, the UAE ranked first with a rate of (45%) out of 100,000 adults who own a credit card, This was followed by Qatar and Kuwait (39), (22), respectively, then Morocco, Algeria and Jordan (11), (8), (3) respectively, and then Iraq, at a rate of (2) percent who own a credit card for every 100,000 adults, and this is what It negatively affects the process of enhancing financial inclusion in Iraq.

1:2 Analysis of monetary credit for the Iraqi banking sector for the period 2010-2021

The cash credit granted by banks is the most risky investment, in contrast, it is the most profitable investment for banks, and this indicator represents the extent of the bank's ability to employ the funds deposited with it by government and private institutions and individuals in the form of loans and credit facilities, As the higher the liquidity component indicates the weakness of this indicator, and vice versa, and given the importance of cash credit granted by the Iraqi banking sector, the stages of credit development during the research years have been clarified in Table (2) as follows:

schedule (2)

Cash Credit to the Iraqi Banking Sector for the Period 2010-2021 (in Millions)

the year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
cash credit	11721535	20334076	28438688	29952012	34123067	36752686	37180123	37952829	38486947	42052511	49817737	52971508

Source: Prepared by the two researchers based on the data of the Central Bank contained in the annual report of financial stability and statistical bulletins for the period 2010-2021.

We note from table (2) the evolution of the stages of cash credit development during the research period. In 2010, cash credit amounted to (11,721,535) million, and it is increasing regardless of the events that took place in the past years, including terrorist operations, the closure of banks, and the drop in oil prices. The policy of the Central Bank continued to grant loans In order to maintain the monetary balance, finance productive projects and grant loans of all kinds, the year 2021 recorded a value of (52.971.508) million, which is the largest amount of cash credit recorded by the banking sector during the research period.

2: Measuring the impact of financial inclusion on cash credit for the period 2010-2021

This research shows the results of the test and the relationship and effect between the independent variables (the number of bank branches, the number of automated teller machines (ATM), the number of points of sale (POS), and the number of credit cards) on the cash credit of the Iraqi banking sector for the period 2010-2021.

2:1 standard search form

For the purpose of formulating research models, it is necessary to analyze the time series of the Iraqi banking sector, the research sample for the period (2010-2021), as the analysis of time series has a prominent and important role in providing information about the basic elements that characterize a particular phenomenon during certain periods of time, by following General evolution of time series It is possible to predict how it will develop in the future, so the standard models came in order to study the time series and predict the variables and factors that could affect the various fields and in order to achieve the objectives of the research and test its hypotheses, it is necessary to identify the research variables, in this study as the independent variables represent (the number of branches banking, number of ATMs, number of POS points of sale, number of credit cards) The research sample, either the dependent variable is represented by cash credit, and after determining the dependent and independent research variables, the following standard model can be adopted to conduct the standard analysis in a manner that is commensurate with the requirements of the current research:

$$Y_1 = c + \beta x_1 + \beta x_2 + \beta x_3 + \beta x_4 + \epsilon \quad \ldots (1)$$

whereas :

Y1 = cash credit

C: hard limit

X1: The number of bank branches, X2: The number of ATMs, X3: The number of POS points of sale, X4: The number of credit cards. ϵ is the random error limit.

2:2. Measuring the relationship between independent variables and cash credit

To finally measure the relationship between the independent variables represented by (the number of bank branches, the number of ATMs, the number of POS points of sale, and the number of credit cards) with the dependent variable represented by cash credit, the multiple linear regression equation was estimated using the least squares estimation method (OLS) as follows :

Table (3)

The relationship and hypothesis testing between the independent variables of financial inclusion and the dependent variable (cash credit)

Dependent Variable: Y2

Method: Least Squares

Date: 01/13/23 Time: 14:58

Sample: 2010 2021

Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13761352	35589788	0.386666	0.7105
X1	11904.08	40721.53	0.292329	0.7785
X2	11255.14	22329.08	0.504057	0.6297

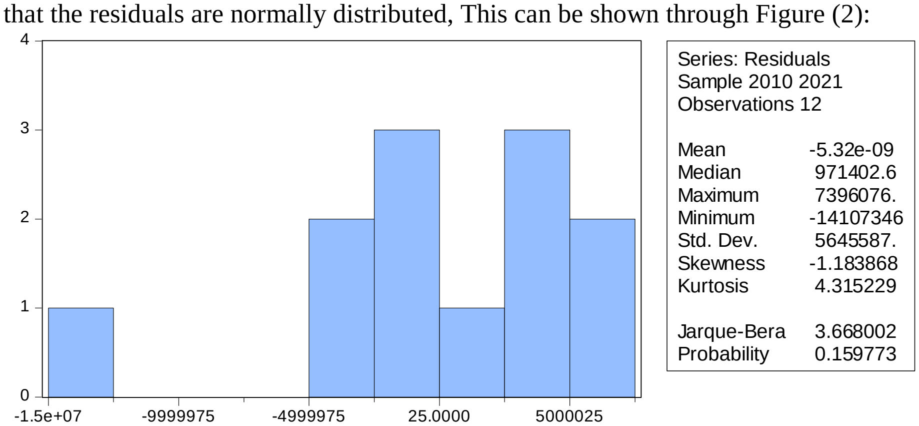
X3	-199.5755	243.8632	-0.818391	0.4401
X4	549.5357	495.0791	1.109996	0.3037

R-squared	0.757700	Mean dependent var	34982810
Adjusted R-squared	0.619243	S.D. dependent var	11469179
S.E. of regression	7077118.	Akaike info criterion	34.67697
Sum squared resid	3.51E+14	Schwarz criterion	34.87901
Log likelihood	-203.0618	Hannan-Quinn criter.	34.60216
F-statistic	5.472449	Durbin-Watson stat	0.987288
Prob(F-statistic)	0.025572		

Source: prepared by the researchers based on the Eviews10 statistical program

It is noted from Table (3) that all the independent variables were analyzed with the dependent variable (cash credit) at the same time, and the first objective of it is to know whether the model is significant with these variables, through the value of the (F) test, which is used to test the significance of the entire regression assuming the existence of a significant relationship between the dependent variable and the independent variables The calculated (F) value resulting from this test is compared with the tabular (F) with degrees of freedom (d) for the numerator and (n-d-1) for the denominator, at a certain level of significance. It is noted that the calculated (F) value amounted to (5.472449), which is a significant value because the value of ((P-Value, which amounted to (0.025572), which is less than 5%. We also note the value of (R-squared) Which was equal to (0.757700) and (Adjusted R- Square), which is the corrected coefficient of determination, whose value amounted to (0.619243), meaning that the regression model explains what amounted to (0.75%) of the changes that occurred in the approved variable (cash credit).

And by calculating the residuals (ut) that measure the deviation of the estimated relationship for the series data that were studied, and whether they are normally distributed. We find that the probability value corresponding to the (Jarque-Bera) test amounted to (0.15977), which is greater than 5%, and therefore we accept the null hypothesis, which confirms that the residuals are normally distributed, This can be shown through Figure (2):



Source: prepared by the researchers based on the Eviews10 statistical program

Figure (3)

Plot the remainders for the independent variables

2:3 Measuring the correlation between the independent variables of financial inclusion and the dependent variable (cash credit)

To show the correlation between the independent variables (the number of bank branches, the number of ATMs, the number of POS points of sale, and the number of credit cards) with the dependent variable, cash credit, which was measured through the following table:

Table(4)

Correlations between the independent variables and the dependent variable (cash credit)

	Y	X1	X2	X3	X4
Y	1.000	-0.129	0.833	0.637	0.856
X1	-0.129	1.000	-0.119	0.002	-0.188
X2	0.833	-0.119	1.000	0.855	0.959
X3	0.637	0.002	0.855	1.000	0.820
X4	0.856	-0.188	0.959	0.820	1.000

Source: prepared by the researchers based on the Eviews10 statistical program

Table (4) indicates the correlations between the independent variables (the number of bank branches, the number of ATMs, the number of points of sale, the number of credit cards), and the dependent variable (cash credit), where we note that the highest correlation was between cash credit and the number of credit cards, as the value of The correlation is 0.856, followed by the second place between cash credit and the number of ATMs, with a value of 0.833, and then the points of sale, with a value of 0.637. The least correlation was between cash credit and the number of bank branches, with a value of (-0.129).

The fourth topic: conclusions and recommendations

1: Conclusions:

A. The study, upon standard analysis, found an answer to the research problem with the presence of a direct relationship between the main variable, financial inclusion through its tools (the number of ATMs, the number of points of sale, the number of credit cards), with the dependent variable cash credit, and the relationship was strong. Worth it(0.775535), in addition to the existence of an effect between these variables, as a result of the introduction of automated teller machines in most banks operating in the Iraqi banking sector, the spread of points of sale in different countries, and the increase in the number of credit cards granted to customers. As for the relationship between the number of bank branches, which is a tool Inclusion tools Financial and cash credit, the relationship between them is weak, as the value of the correlation reached (0.12880), due to the lack of interest of individuals in the new branches because they do not have a banking culture that makes the money hoarded outside the banking sector more than saved in it, which negatively affects cash credit.

B. When analyzing indicators of financial inclusion and comparing them with neighboring countries, it was found that Iraq occupies a late position in applying financial inclusion standards, and the decline in banking financial services, which was represented by the number of bank branches spread throughout the country, and the spread of automatic teller machines and points of sale at a wide level in the country, and grants Electronic credit cards.

C. The weakness of the infrastructure of the Iraqi banking sector, the decrease in the number of banking branches spread throughout the country, the centralization of banks in the center of cities, and the failure to open branches in remote and remote areas, which negatively affected the delivery of financial services to all members of society.

D.The high cost of banking services provided to all segments of society, starting with the interest rate on credit, which amounted to approximately (25%) on the principal of the loan, as well as insurance services, issuance of electronic cards, and opening a bank account, which negatively affects the promotion of financial inclusion and delivery of services banking for all segments of society.

E. Weak awareness of banking and general knowledge of banking culture among the public, especially in the outskirts of cities such as villages and rural areas, and the weakness of the role of banks in educating society through their employees about the concept of financial inclusion.

2: Recommendations:

A. Adopting a national strategy aimed at achieving financial inclusion by the state, through the Central Bank of Iraq, and opening banks for a week a year (Financial Inclusion Week) to open bank accounts for individuals who are outside the banking system at a nominal cost**.**

B. Paying attention to financial education and financial literacy as much as possible, and educating the public about banking services through social media and social software platforms via the Internet, through the Central Bank of Iraq.

C. Restoring the infrastructure of the banking sector, introducing advanced and technological systems, and working to build and develop the administrative staff and introduce them to financial inclusion through courses, seminars, conferences, how to deal with the individual, and how to convince him to enter the banking sector.

D. Opening new banking branches in the outskirts of cities, generalizing electronic payment services to banks, shops and malls, and working on the electronic exchange of cash through buying and selling via Master Card and Visa Card.
E.The need for the central bank to direct the banking sector to generalize financial services to all individuals in the event that they enter the banking system, by providing loans and credit facilities, especially the owners of productive projects and the poor, at low prices and easy installments, and reducing the cost of cash credit (interest). The bank should also follow up on productive projects and grant the loan. In the form of payments, as in housing loans, so that the loan is not used for consumer matters, but rather it must be a productive loan.

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