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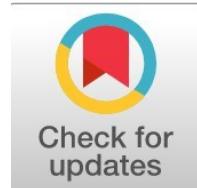
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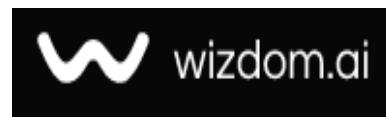
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Electronic Payment Systems Reduce Informal Cash Holdings and Strengthen Iraqi Economic Stability

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Abstract

General Background: Cash dominance and low financial inclusion constrain monetary control in developing economies. **Specific Background:** In Iraq, extensive cash circulation outside banks has weakened monetary policy during 2010–2024 despite expanding electronic payments. **Knowledge Gap:** Empirical evidence on how electronic payment adoption affects informal money supply and macroeconomic outcomes in Iraq remains limited. **Aims:** This study examines the relationship between electronic payment methods and cash outside the banking system and their macroeconomic effects. **Results:** Expanded electronic payments correlate inversely with informal cash, improving financial inclusion and monetary policy efficiency. **Novelty:** It provides a long-term Iraqi case analysis linking digital payments to informal money reduction. **Implications:** Strengthening payment infrastructure and supportive legislation can enhance monetary stability and economic growth.

Keywords : Electronic Payment Systems, Informal Money Supply, Financial Inclusion, Monetary Policy Effectiveness, Iraqi Banking Sector

Highlight :

- Electronic payment adoption shows inverse relationship with informal cash circulation in Iraq's banking system.
- Weak banking infrastructure and low public trust hinder digital payment expansion despite government initiatives.
- Financial inclusion remains insufficient with only 2.67 bank branches per 100,000 adults by 2024.

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Introduction

The informal cash economy is one of the most significant challenges facing developing economies. Iraq is one of them. Where the money supply contributes outside the banking system, financial oversight is weakened. This leads to increased tax evasion and limits the ability of monetary authorities to effectively manage monetary policy. With the rapid pace of technological advancement, electronic payment methods have become a strategic tool for reducing reliance on cash [1]. Achieving greater economic transparency and addressing inflation.

A. Research Problem

Most developing economies, including Iraq, suffer from the phenomenon of informal cash circulating outside the banking system. This poses a significant challenge to fiscal and monetary policies and weakens the effectiveness of economic control tools [2]. In Iraq, this phenomenon is exacerbated by weak financial inclusion, excessive reliance on cash transactions, and low confidence in the banking system, leading to disruptions in the flow of formal funds and negatively impacting growth and investment rates.

With technological advancements, electronic payment methods have emerged as potential solutions to reduce cash transactions outside the banking system. However, their effectiveness in the Iraqi context, and the challenges they face, remain questionable [3], [4]. This is the crux of the research problem :

To what extent has the promotion of electronic payment methods contributed to reducing the informal cash mass outside the banking system, and what impact has this had on the Iraqi economy during the period (2010–2024)?

B. Research Hypothesis

2.1 First hypothesis:

There is a statistically significant direct relationship between promoting electronic payment methods and reducing the size of the informal cash supply outside the banking system in Iraq.

2.2 Second hypothesis:

Increased use of electronic payments improves the efficiency of monetary policy by reducing the informal cash economy.

C. The importance of research

3.1 Scientific importance

This research contributes to filling a knowledge gap related to assessing the impact of electronic payment methods on the phenomenon of the informal cash economy, through a case study of Iraq, thus enhancing the economic and financial literature in this field [5], [6].

3.2 The importance of the process

The research provides recommendations to financial decision-makers in Iraq, such as the Central Bank and the Ministry of Finance, on ways to develop electronic payment tools and expand their use as a mechanism to reduce the amount of cash outside the formal system, thereby enhancing monetary stability and stimulating economic growth .

D. Research objective :

1. Analysis of the development of electronic payment methods in Iraq for the period (2010-2024)
2. Measuring the relationship between the use of electronic payment methods and the shrinking of the informal money supply [7].
3. Assessing the macroeconomic effects of this relationship on the Iraqi economy and addressing inflation .

E. Scope of the research

The spatial boundaries of the research are represented in the Iraqi economy through the study of the reality of monetary policy, while the temporal boundaries are for the period from (2010-2024).

Conceptual framework

A. Definition of Electronic Payment:

Electronic Payment is an integrated system of systems and programs provided by Dubai Government to ensure secure electronic payment transactions. This system works under a set of rules and regulations that maintains the confidentiality, security and protection of purchase procedures and guarantees the delivery of service. [8], [9] You are able to make payments electronically via major credit cards, dirham, Dubai Government cards and direct debit from your account..

B. Electronic payment methods:

Through prepaid cards: A commercial bank or financial institution issues a credit, payment and cash withdrawal tool which allows the holder to purchase on credit from the issuer and to obtain cash by borrowing from the issuer or from others with the guarantee of the issuer allowing the holder to obtain special services. The prepaid card is a basic card, which works on the idea of you depositing a certain amount in the prepaid credit card account, and every time you make a purchase using the prepaid card, money is deducted from the credit balance available in it [10]. The available balance on a prepaid credit card after purchase is zero. It must be loaded (preloaded) from the cardholder's account as required by law..

- Prepaid card features : Using prepaid credit cards is safer than carrying actual cash because the balance you put on prepaid credit cards is usually not too much; therefore, if you fall for online fraud or lose it while traveling after using the card, you will lose only a little. As I mentioned, you will not be charged interest for purchases made using a prepaid credit card. That's because the bank is not lending you money. (That is a standard credit card). You are simply using the money that you have sent to the card balance. You get pretty much all the same benefits as a real credit card, including purchase insurance, travel insurance, hotel bookings, booking transfers, emergency help, the ability to pay electronically, withdrawal cash from ATMs, and all types of purchases you want to make when you buy with a prepaid credit card. That's because both the credit card company (MasterCard, for example) and the bank make money [11], [12]. For any purchases you make, the seller pays them a commission for providing payment facilitation with a prepaid credit card. When you buy with the full amount that you have deposited into your prepaid credit card account, your spending is under your control, which means that there are no financing charges nor interest and you will not be subject to debt accumulation.

C. Types of prepaid cards: There are several types of payment cards issued by banks, except The most common of these cards are:

1. ATM Debit Card
2. Credit card Credit Card
3. Debit Card
4. Through websites or accounts : This is a service for transferring money online from one party to another, and it is mainly used for e-commerce and secure online purchases . Some of the most important of these websites include: [website name missing]. PayPal

This site works as a way to pay, deposit and receive money [13]. Since this feature was launched, a whole new field has opened up for transferring money from one person to another via the Internet with the help of an intermediary sold to a buyer. Many Arab States do not have it but it is globally widespread [14].

1. via bank transfers
2. Through money transfer companies

D. Classifying payment methods according to the forms of e-commerce: Electronic payment methods in this The model is as follows:

1. Financial and electronic transfer networks
2. Bank credit
3. electronic checks

E. Criteria adopted in choosing payment methods: There are several criteria adopted in choosing a payment method There are several types of e-commerce, and the most important ones are:

1. Nature of the electronic exchange process
2. Settlement or clearing method
3. Methods for protecting the electronic payment process and verifying the payer's identity.
4. Risks associated with electronic payment processes, forgery, and fraud

F. Advantages of electronic payment methods:

1. Using electronic money can offer more convenience and comfort to make payments as well as secure. It gives the cardholder a chance to get free credit for a certain time instead of carrying paper money and suffering from theft or loss, it also helps him to complete his transactions instantly just by mentioning the card number.
2. A letter of credit issues by the bank to the seller in the favor of buyer. It is the strongest guarantee for the seller's rights. It contributes for increasing the sales of product. Burden of following up customer debts is removed by it. As long as burden will sustain on the bank as well as issuing companies [15].
3. Online credit card payment is the most common kind of payment linked with e-commerce. E-commerce, which refers to any online business transaction, faces difficulties in the transfer of funds. So, there is a rising trend to employ software specifically designed to safeguard electronic means of payment and develop customer confidence like the Secure program. Electronics Transactions.

G. Disadvantages of electronic payment:

1. For its holder: increased spending beyond the financial capacity and failure of the cardholder to pay on time, which puts its holder on the blacklist.
2. For the merchant: The mere occurrence of some violations on his part or his failure to comply with the conditions makes the bank cancel dealings with him and put his name on the blacklist, which means that the merchant will suffer great difficulties in his business activity.
3. Regarding its source : The most significant risk facing its issuers is the extent to which cardholders repay their outstanding debts, as well as the issuing bank bearing the costs of losing them

The reality of electronic payment in Iraq

Iraq is witnessing developments in electronic payment mechanisms in this field. The process of localizing the salaries of employees and retirees, totaling approximately (8) million, has been completed using electronic payment cards. Several government and private banks are participating in this process and have distributed thousands of electronic cards to their customers. However, electronic

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payment cards differ entirely from credit cards. The latter are loans with a limit based on each customer's income, and the customer can use them even if they have no money in their bank account. Electronic payment cards, on the other hand, are linked to the customer's bank account and are not limited to a monthly amount. Customers can withdraw their money from ATMs and electronic payment devices available at banks and shops. We are experiencing difficulties in Iraq. Due to a lack of trust in this new mechanism, most employees and retirees withdraw funds in one go when their salaries are increased on those cards, as well as the high commission that is deducted from the customer's account for each financial transaction, which exceeds its counterpart in neighboring countries, as well as the lack of expansion in the use of withdrawal and payment devices in public places and shops, and the preference for cash.

A. The concept of the informal money supply:

The concept of the money supply: also known as the money supply, it refers to the quantity of money available in a specific period of time, which is determined by the central bank. It is also known as the quantity of money provided by all available means of payment.

The monetary authority directly influences the size of the money supply through the use of several tools, most notably changing the required reserve ratio, open market policy, and the discount rate.

B. Components of the money supply : The money supply is divided into the following monetary aggregates :

1. Monetary Base B : Monetary Base B comprises the funds circulating in the economy that are outside the banking system, including banknotes (Civil Money, or CP) and coins (DP) , as well as bank reserves. The monetary base is characterized by... Completely liquid and ready to use at any time B-CBDPCP
2. The narrow definition of monetary supply : M1 It consists of the monetary base B plus current demand deposits .
3. Broadly defined monetary supply : M2 It includes the narrow money supply (M1) plus time deposits , which is called domestic liquidity.
4. Critical supply in the broadest sense M3 Which consists of the broad money supply (M2) plus non-current deposits outside commercial banks, such as savings banks, insurance companies and insurance policies . (Rahal, 2022, 119).
5. Cash leakage: Cash leakage refers to the amount of money that individuals keep outside the banking system when they obtain loans and keep them in the form of liquid cash and do not deposit anything with the bank. In this case, cash leakage occurs outside the banking system (Basha and Zakaria, 1989).

The term "money leakage" refers to the gap between the amount of money printed and circulated by the central bank and the actual amount of money in the economy. Money leakage is undesirable in the economy, as it leads to higher inflation and monetary instability

C. The concept of the official money supply:

The official money supply is the official money supply issued by the central bank. Most often, the broad money supply (M2) is the official money supply.

D. The concept of the informal money supply:

The informal money supply refers to the money supply consisting of the sum of paper and metal money and cash deposits that are traded in the informal economy, in addition to electronic money used in transactions outside the formal framework.

Results and Discussion

The importance of separating the official money supply from the unofficial money supply

A. The evolution of the size of the official money supply and the informal money supply

Monetary authorities separate the official money supply from the unofficial money supply for the purpose of statistics and economic analysis, since the difference between the two supplies is very important and necessary for analyzing and evaluating fiscal and monetary policies and assessing the financial system as a whole .

The table below shows the evolution of the size of the official and unofficial money supply .

Table No. (1) Development of the size of the official money supply and the unofficial money supply in Iraq (2010-2024) (billion dinars)

Exported mass	Currency in the banking system	Currency outside the banking system	years
51,753	27,421	24,332	2010
62,474	9,704	52,770	2011
63,736	11,730	52,006	2012
73,831	13,848	59,983	2013

72,692	18,036	54,656	2014
65,435	17,160	48,275	2015
70,733	17,349	53,384	2016
71,162	18,279	52,883	2017
77,829	17,561	60,268	2018
86,771	16,670	70,101	2019
103,353	16,553	86,800	2020
119,944	19,942	100,002	2021
146,399	64,374	82,025	2022
160,318	65,697	94,621	2023
152,860	59,460	93,400	2024

Source: Central Bank of Iraq / Annual Monetary Policy Statistics and Reports

The informal money supply from 2010-2024 , calculated as parallel income based on the ratio of the parallel economy to the gross domestic product. This ratio is sourced from: (Quri 2018, page 49).

From 2017-2022, the informal money supply was calculated on the basis of 50% of GDP .

From the previous table, we note that there is a close relationship between the growth of the money supply and the growth of the informal money supply, as the rapid growth of the formal money supply can lead to increased inflation and decreased confidence of individuals in the formal financial system, resulting in an increase in demand for informal money. This can lead to an increase in the size of the money supply circulating in the parallel market .

B. Reasons for the increase in the informal money supply

Several factors contribute to the increase in the informal money supply :

1. Lack of confidence in the formal banking system: Lack of confidence in the formal banking system increases the volume of informal cash, as individuals and businesses may prefer to store cash informally .
2. Legal and tax measures: Some countries can encourage individuals and businesses to use informal cash by imposing strict legal and tax measures on funds transferred to the formal banking system .
3. Desire to evade taxes: Some individuals and companies use informal cash as a means of tax evasion. This leads to an increase in the volume of informal cash flows .
4. Illicit economic activities : Illicit economic activities, such as the sale and trafficking of drugs and weapons, may use informal cash as a means of money laundering, leading to an increase in the volume of large sums of informal cash .
5. Unstable economic conditions: Economic, political and social crises can increase the size of the informal money supply as individuals look for ways to make money in difficult times. (Abdul Muttalib Jabr , 2015, pp. 522-525).

C. The informal sector in Iraq : Key developments :

Iraqi economy is characterized by After 2010, there was a growing phenomenon of the informal sector, which includes many hidden economic activities that generate huge incomes that are often not included in official estimates and the banking system and are not subject to taxes.

The limited studies conducted in this field confirm the enormous size of the informal sector in Iraq. Some believe that the total volume of informal sector activities in Iraq could range from 40 % to 60 % of the GDP, and that the total amount of money circulating within this sector is approximately 80%. One trillion Iraqi dinars of total national income.

The size of the informal sector in Iraq reached approximately (60) billion dollars, equivalent to 50 % of the gross domestic product in 2017. (2024), and the continued expansion of the size of the parallel economy has become a real threat to both fiscal and monetary policy in Iraq .

The informal sector phenomenon is multidimensional and multi-causal . One of its main causes is the rapid shift from a closed economy to an open market economy after 2004. This shift impacted value systems and social behavior, giving rise to new forms of economic activity previously nonexistent in Iraq . These activities led to the creation of new avenues for earning a living, most of which were informal and unregulated, while formal, organized economic activities did not expand to the required extent. , Economic analysis and knowledge is an important and necessary perspective for policymakers and the government in their management of economic and social affairs, especially since the aforementioned sector holds a significant monetary mass of slightly more than (80) billion dollars, or (50) percent of the volume of money circulating in the economy. Figures like these indicate one result, which is that the parallel activity in Iraq is no longer just an informal sector, but a complete parallel economy that enjoys all the rules of the market, value formation, and capital accumulation .

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The lack of modernity in the tax system and its inability to cope with economic and social developments, on the one hand, and the high rates of tax evasion and money laundering in light of weak penalties, have led to resorting to practicing hidden activities at various levels .

In order to recover the cash mass from informal circulation and deposit it in banks for the purpose of using it to confront the economic crisis, increase the volume of financial liquidity, and confront the collapse of oil prices in the global market , in parallel with the reports of the Central Bank of Iraq , which revealed the volume of money circulating outside banks, estimated at about (80) billion Iraqi dinars , while other reports agree in confirming that the real amount actually exceeds (100) billion dinars .

D. Future prospects for electronic payment and settlement in Iraq to attract the informal sector:

In which we will present in some detail the procedures that would attract the phenomenon of the informal sector in Iraq , and especially the informal cash circulating outside the banking system :

The problem of the money supply circulating in the informal market is considered one of the most important problems hindering the development of the national economy, in addition to the country's urgent need for these funds after the collapse of oil prices and the scarcity of the country's revenues. Therefore, it is seen that in order to recover a large part of those funds, the following procedures should be followed:

In order to reduce or mitigate the phenomenon of the informal sector in Iraq , the following effective measures should be taken:

1. Legislation and amendment of laws and financial penalties.
2. Combating the phenomenon of money laundering and monitoring its movement.
3. Reforming the tax system and keeping it in line with global developments.
4. Stricter penalties for tax evasion.
5. Encouraging the depositing of funds by reforming the banking system and increasing the interest rate in order to encourage investment.
6. Working to increase financial awareness in society by promoting electronic payment methods .

E. The Iraqi Banking System

(Establishment and Realities) The number of commercial banks operating in Iraq at the end of (2024) reached (74) banks, distributed as follows: (7) government banks, including (3) specialized banks and one Islamic bank, while the number of private banks reached (67) banks, including (28) local Islamic banks and one foreign bank, distributed between (2) Islamic banks and (12) commercial banks. Thus, private banks occupied the largest share in terms of the number of banks, as their percentage reached (25) local commercial banks and (14) banks (90.5%) compared to government banks, which constituted a percentage of (9.5%). In terms of classifying banks according to their types, commercial banks constituted a percentage of (54), Islamic banks (41.8%), and specialized banks (4%) of the total number of banks operating in Iraq. (Financial Stability Report 2024 : 50) The value of assets in the banking sector in 2024 reached 159.5 trillion Iraqi dinars, of which private banks accounted for 21.4%. Deposits in the banking sector in 2021 amounted to 96 trillion Iraqi dinars, with private sector deposits constituting 45% of total bank deposits for that year. Regarding bank capital, it reached 17.8 trillion Iraqi dinars, with private banks holding 74.83% of the capital in 2024. This is attributed to the higher number of private banks compared to government banks, as well as the private banks' compliance with the Central Bank's instructions to raise their capital to 250 billion dinars. (Financial Stability Report , 50: 2024).

F. Analysis of financial inclusion indicators in Iraq for the period (2010-2024)

6.1 Indicators of access to financial services : (5) indicators are used for access to The service is :

Banking density, which represents the number of adult population (thousands of people) / number of bank branches .

1. Banking penetration, which represents the number of bank branches per 100,000 adult population .
2. Number of bank branches per (1000) km of area .
3. Number of ATMs per 100,000 adult population .
4. Number of ATMs per (1000) km of area .

The data on banking density and banking penetration in Iraq are shown in Table (1) and Figure (1). Despite the Central Bank of Iraq's encouragement of banks to open branches throughout the country, the number of bank branches remains below the required level. The number of branches, which stood at 912 in 2010, decreased to 891 in 2020 before rising to 905 in 2021. This increase was reflected in a rise in the banking density index, which reached 45.51 in 2021, up from 45.06 in 2020. This represents a significant increase from 35,000 people per branch in 2010. The high banking density index indicates a decline in the value of this financial inclusion indicator and reflects the difficulty in accessing banking services. The compound annual growth rate of this index was approximately 1.9% for the period 2010-2021. This was accompanied by a decrease in the banking penetration index, which reached (2.19) in 2021 after being (2.80) in 2010. This decrease in the number of bank branches reflects the high population growth that Iraq is experiencing, which is likely to absorb any real increase in the number of bank branches that are opened and achieve a compound annual growth rate . A negative amount of (2 %) for the same period.

Table (2) Banking Spread and Banking Density in Iraq for the period (2010-2024)

Banking Spread (4) (**(1/2	Banking density (3) (*2/1	Number of branches of Iraqi (2) banks	Population number is 1000 (1) people	years
28.07	3.56	912	32.489	2010
27.87	3.59	929	33.338	2011
28.77	3.48	984	34.208	2012
29.69	3.37	1042	35.096	2013
28.72	3.48	1034	36.005	2014
32.84	3.04	1213	36.933	2015
22.65	4.42	858	37.883	2016
22.70	4.41	843	37.140	2017
22.64	4.42	865	38,200	2018
22.60	4.43	888	39,300	2019
22.19	4.51	891	40.150	2020
21.97	4.55	905	41.190	2021
3.67	27.2	876	44.074	2022
2.59	38.5	843	45.074	2023
2.67	38.7	840	45.407	2024

Source: Researchers relying on

- Central Bank of Iraq, Department of Statistics and Research, Statistical Bulletin 2010-2024 .

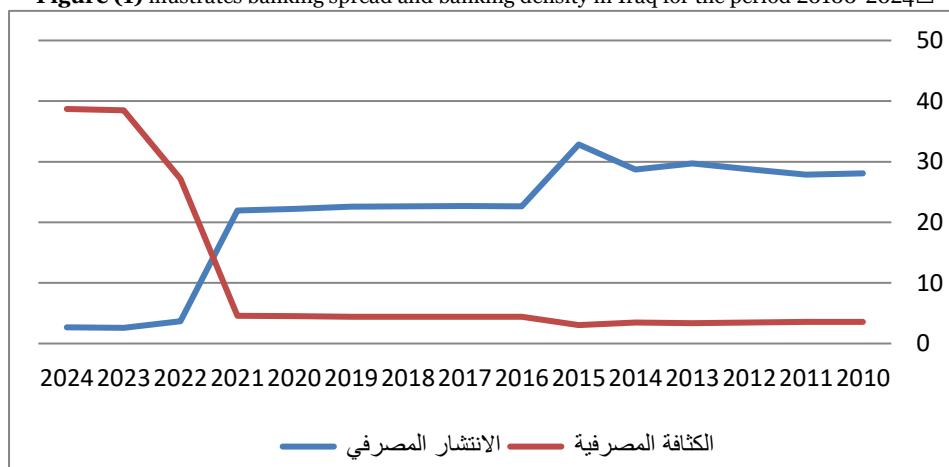
Central Bank of Iraq, Payments Department .

Ministry of Planning - Central Agency for Statistics and Research .

(*) Banking density = Population (1000 people) / Number of branches

(**) Banking penetration = Number of branches / Population (100,000 people)

Figure (1) illustrates banking spread and banking density in Iraq for the period 2010-2024 □



Source: Prepared by the researchers based on the data in Table No. (1) and columns (3, 4)

Regarding ATMs , the number of machines reached 457 in 2010, rising to 1,566 in 2021, up from 1,087 in 2020. The penetration rate of these machines was 2.3% in 2010, increasing to 4.66% in 2021, as illustrated in Table 2 and Figure 2, representing a compound

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annual growth rate of 102% for the period 2010-2021. These figures and indicators reflect low levels of financial inclusion indicators, a key measure of financial inclusion in Iraq, both in absolute and relative terms, despite the opening of numerous private banks and the various initiatives launched by the Central Bank of Iraq. It is noteworthy that these machines are primarily located in malls, shopping centers, some government offices, and bank branches offering loans, with no widespread availability in public areas, particularly commercial ones. The low percentage can be attributed to the public's lack of financial awareness of their importance, as well as the high cost of protecting these machines from theft or vandalism in those areas. It is worth noting that the number of these machines is significantly lower compared to other Arab countries. Iraq ranks low on this indicator, having the lowest percentage of ATMs among the countries compared. Therefore, to increase financial inclusion in Iraq, and in line with the goals of the Central Bank of Iraq, the number of these machines should be increased to provide better services to the public. This will help increase the number of individuals entering the financial system, as illustrated in Table (2) and Figure (2).

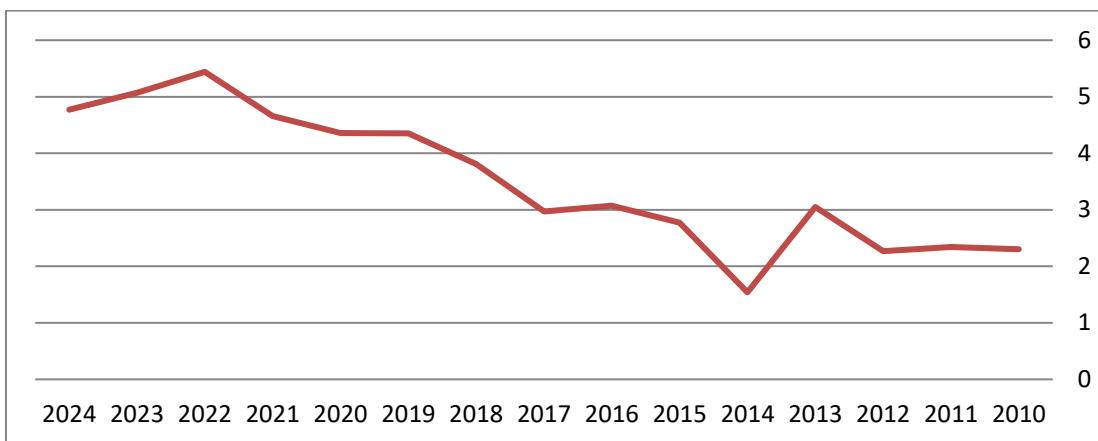
Table (3) shows the banking spread of the number of automated teller machines (ATMs) for the period (2010-2024)

The percentage (3) (% ^{1/2}	Number of ATMs per 1000 square kilometers	Number of adults (15 years and over) is (one million (2	Number of branches per 1000 km ²	ATM (number (1	Years
2.30	2.3	19.829	2.09	457	2010
2.34	1.07	19.929	2.14	467	2011
2.27	1.07	20.569	2.28	467	2012
3.05	1.49	21.227	2.39	647	2013
1.54	0.77	21.926	2.77	337	2014
2.77	1.33	22.082	2.79	580	2015
3.07	1.52	22.654	2.45	660	2016
2.97	1.51	22.110	1.92	656	2017
3.81	1.99	22.696	1.97	865	2018
4.35	2.33	23,294	2.03	1014	2019
4.36	3.06	24.5	2.03	1340	2020
4.66	3.56	25.5	2.06	1566	2021
5.44	3.80	26.0	2.07	1700	2022
5.07	4.10	26.7	2.08	1850	2023
4.77	4.40	27.3	2.10	2000	2024
%102.6	%3.7		%0.12-		Total growth %

Source: Researchers relying on

- a) Central Bank of Iraq, Department of Statistics and Research, Statistical Bulletin 2010-2024 .
- b) Central Bank of Iraq, Payments Department .

Figure No. (3) Ratio of the number of ATMs to the number of population



Source: Prepared by the researchers based on the data in Table No. (2).

1. The payment system in Iraq is composed of the following components:

The updated Real-Time Gross Income System (RTGS) is 24/7 operational.

Electronic Clearing System (C-ACH)

- The Interbank Clearing System (IBCS)

Securities Depository System (CSD)

- The System of Trade (ST)

The Iraqi payment system for retailers (RPSI)

2. Real-Time Gross Paymentsystem (RTGS)

- This system was completed successfully in Baghdad on August 24th, 2006. It directs money transfers between the Central Bank's headquarters and its branches, as well as the processing of various payment methods (ACH, RPSI, CSD). The system now operates on a 24/7 basis since June 2nd, 2024.
- The Iraqi Central Bank has the system and is responsible for installing the software in associated institutions and providing instruction to bank employees. The Iraq Central Bank has several responsibilities, the most significant of which is to watch over bank accounts.
- In the first phase of the system's implementation, five different banks participated in the payment processing between each other. The Central Bank's strategy for expanding the system involved a series of planned increases. Now, it covers all banks and branches of foreign banks that are licensed to operate in Iraq.
- The system employs safety measures like the "Four Eyes" principle. All necessary licenses for operating are issued only by the Iraqi Central Bank.
- The total number of participating banks is 95. Additionally, the Ministry of Finance, the National Pensions Agency, outpatient clinics, branches of the banking system, and electronic payment companies all contribute.

3. Automated clearing and settlement system (C-ACH)

This system facilitates the automatic transmission of payment instructions between participating banks and their branches. The finalizing of the net is accomplished and transmitted via a real-time gross system for settlement. The system also facilitates the transmission of magnetic stripe electronic checks.

- The system was initiated on September 14th, 2006 at the primary branches of each participating bank (Rafidain Bank, Rashid Bank, Baghdad Bank, Islamic Bank, and Middle East Bank). Additionally, two additional branches of each participating bank were created.
- The staff of the Central Bank's branches in Basra, Erbil, Mosul and Sulaymaniyah were taught, and the system was implemented in all of the bank's branches in these areas to facilitate and support governor-to-Government transfer of funds.
- The electronic payment system was updated to eliminate fees by differentiating between electronic payment instructions (CTs) pertaining to the location of government agency salaries and other instructions.

The electronic clearing system was updated to facilitate the project (the automation of the transfer of government funds to agencies) and allows government agencies and card issuers to have access to their accounts at government banks for the purpose of tracking and reconciliation. E-authorization (electronic tokens) is employed for this purpose.

Alongside the Central Bank, the Bank of England, and the Treasury (all of which have an aggregate of 830 branches), 75 banks are involved in the system.

4. Interbank Clearing System (IBCS): This system is employed for internal transactions between state-owned banks that lack a fully developed financial system. The management of the bank can effectively, efficiently, and transparently surveying transfers. The system has a database of all transactions. Participating branches of banks can automatically transmit payment methods and magnetically-recorded checks via the system. The system was released on June 1st, 2016. At that point, there were 341 branches of four different banks. The system was updated to eliminate fees by differentiating electronic payroll instructions (CT) from other forms of payment..

5. Securities Depository System (CSD)

The system's construction began in 2015, it was intended to issue financial instruments through the Central Bank of Iraq and the Ministry of Finance. Its objective is to regulate liquidity and influence the short term interest rate, this is primarily done during periods of inflation and economic recession. This initiative is intended to promote price stability across the entire country and support the government's budget.

The system facilitates and organizes auctions of the issued securities (primary market).

It maintains the master register (ownership register), processes the interest of the loan and the principal amount at the time of maturity, and stores and aggregates all transactions.

Securities transactions between participating banks (the secondary market) are conducted through this system.

The central securities custody system is associated with the Real-Time Gross settlement (RTGS) system in order to ensure that financial transactions regarding bank accounts participating in the RTGS system are processed as close as possible to the time of settlement, as well as to pay interest and to repay the principal.

The primary securities custody system is connected to the Automated Clearing System to begin with, this system provides information regarding the position of collateral at the start of each clearing process, as well as the specifics of how it is executed during the clearing and settlement process.

The number of participating banks, including non-bank financial institutions (the National Pension Authority and outpatient clinics) is now 66.

6. The system for trading was combined with the payment system in 2017. This system acquires securities from the Central Securities Depository (CSD). Its objective is to promote the secondary market and facilitate initial public offerings (IPOs). If necessary, thesecurities can be exchanged through a market that facilitates the exchange of different orders regarding the purchase or sale of securities.

7. The creation of the Iraqi payment infrastructure (IRPSI) is part of the country's efforts to modernize and develop its financial and banking services, these services are intended to follow international trends in the field of finances. The Iraq Central Bank sought to establish the infrastructure for a payment system dedicated to retail, this system would include the creation of national retail and mobile payment distributors in order to facilitate the electronic transfer of funds to points of sales and ATMs. The system provides cutting-edge payment processing services to Iraqi banks and cell phone network providers. The system became active in September of 2015..

Conclusions

1. Studies have demonstrated a negative association between the widespread use of electronic payment methods and the amount of informal cash in Iraq.
2. Electronic payment methods (cards, wallets, points of sale, transfers) have contributed to the gradual improvement of financial inclusion, but they are still below the required level compared to regional economies .
3. Weak trust in the banking system and poor banking coverage in remote areas are major obstacles to the spread of electronic payments .
4. It has been shown that the increasing reliance on electronic payment methods contributes to enhancing the effectiveness of monetary policy and reducing inflationary pressures .
5. The absence of an integrated national strategy for digital transformation slows down the positive impact of these tools on the macroeconomy .

Recommendations

1. Adopting a comprehensive national strategy for transitioning to electronic payments that is directly linked to monetary and fiscal policies .
2. Developing digital infrastructure and expanding payment services in underserved areas in remote regions.
3. Issuing government legislation to support electronic transactions and reduce reliance on paper money .
4. Enhancing confidence in the banking system by improving banking services, ensuring the protection of customer data, and raising the interest rate on deposits
5. Publishing financial awareness programs to inform individuals and institutions about the benefits of electronic payment and its role in economic stability

References

1. S. Elias, "The Future of Traditional Payment Methods in Light of the Existence of Modern Payment Methods," presented at the International Forum on Modernizing the Payment System in Algerian Banks: International Experiences, Algiers, Algeria, 2014.
2. B. D. T. Balhashemi, "Banking Reforms in Algeria," *Afaq Magazine*, no. 4, pp. 45-62, Sep. 2005.
3. F. Yabsi, "Electronic Payment Infrastructure Development in Algeria," presented at the Forum on Development of Modern Technology, organized by the Center for the Development of Modern Technology in cooperation with the Canadian Company for Direct Electronic Payment Stations, Algiers, Algeria, Dec. 14, 2005.
4. M. El-Zein Mansouri, "Modernizing the Payment System in Algerian Banks: A Presentation of International Experiences," presented at the International Banking Conference, Algiers, Algeria, 2014.
5. M. El-Zein Mansouri, "Payment Methods and Systems and Electronic Payment: Factors of Dissemination and Conditions for Success," presented at the Conference on Banking Modernization, Algiers, Algeria, 2014.
6. Algeria Payment Regulation Law, Article 06, "Regulation on Payment Instruments and Banking Transactions," Official Gazette of the Democratic and Popular Republic of Algeria, 2005.
7. I. Ben Jaber, "Statement on Commercial and Financial Modernization," presented by the President of the Chamber of Commerce and Industry in Algeria, Algiers, Algeria, 2007.
8. A. Boukrouh, "Economic Reforms and Financial Transactions," *Al-Fajr Newspaper*, Mar. 2012.
9. July Daily News Journal, no. 24, Aug. 13, 2019.
10. A. Boudlal, "The Informal Sector in the Algerian Labor Market: An Analytical and Evaluative Study for the Period (2000-2010)," *Arab Economic Research Journal*, no. 65, pp. 15-35, 2014.
11. B. Lautier, *L'economie Informelle Dans le Tiers Monde*. Paris, France: La Decouverte, pp. 41-51, 1994.
12. B. Lautier, "Modernization Des Moyens de Paiement," *BNA Repere*, vol. 2, no. 13, pp. 8-15, Feb. 2003.
13. Bank of Algeria, "Normes Interbancaires de Gestion Automatisée des Instruments de Paiement," Internal Document, Algiers, Algeria, Feb. 2005.
14. Bank of Algeria, "Interbank Standards for Automated Management of Payment Instruments," Internal Report, pp. 19-23, Algiers, Algeria, 2005.
15. Center for the Development of Modern Technology, "Electronic Payment Systems and Banking Modernization," Forum Report, Algiers, Algeria, 2005.