

## Measuring the Impact of the Spread of Electronic Payment Methods on the Market Value of the Bank Using the ARDL Methodology Applied Research at the International Development Bank

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### Abstract

The research problem was represented in the problem of the weak use of banks for modern technologies represented by payment tools such as (electronic cards) and the weakness of strategies for disseminating them in a way that meets the needs and desires of customers in a way that can attract the largest number of customers. By adopting the descriptive statistical approach and using the statistical analysis program (Eviews 12) to test the research hypotheses, and the results of estimating the relationship between electronic payment methods represented by electronic cards and automated teller machines in the market value of the stock indicates the significance of the estimated relationship and that there is an effect of electronic payment methods on the market value of the stock.

**Keywords:** *Market Value, Electronic Cards, ARDL Methodology*

### Introduction

Payment is defined as Amortization of a debt or settlement of a liability (Abu Al-Ezz, 2003: 10), and he was also known as Transfer of funds, which means the obligation of the payer towards the beneficiary, meaning that the payer is one Party. The payment process you specify Origin Transfer of funds to the payee (last recipient) for money. (Kokkola, 2010: 25). Also known as: A dual action that requires the payee (the beneficiary) to accept the bid of the order to pay (the drawee). (Geva, 2019: 6)

term Wide Collecting between its folds All means paying off that used In which technology advanced to meet Such as: conversion electronic for money, Check electronic, bill of exchange electronic, paying off with cards e, Card credit and card Fulfillment, paying off with money electronic (valid and unique, 2007).

Check the importance of electronic payment methods for the citizen and banks And merchants: (Baheeh, 2013: 234). Electronic payment methods Customer benefit advantage of the discount you give companies The merchants and hotels who are dealing with her, This enables the customer to obtain goods and services at a low price, such as buying a specific commodity from a certain company or staying in a hotel a certain. Save time and effort for the customer, And

through business electronic can Customer can visit different stores at any time short and order A certain commodity through the house without going to the store.

ease Use by the holder, and it is sufficient that he does not use paper money with it, but rather keep it electronically. (Al-Shammari and Al-Abd Al-Lat, 2008: 73-74). Availability secret customer and credibility in Dealing where it is not necessary It has to write His name and documenting his address and account number in front of others, so transactions are protected from scammers. provide security for the citizen and protection from steal his money lost it or damaged it for not carrying for money on paper, As well as the speed of dealing and completion of transactions in a manner Fawry (Farida and Saleh, 2007: 9).

The holder can get credit free for periods specific and without payment Other expenses as well as without an appointment with the bank, The customer also gets money during Official holidays or in case of emergency. It is the strongest real guarantee for the merchant and avoids fraud Fund and contribute Also in increasing sales, given that a customer does not usually look at spending from through which like a no run the money paperwork. (Amin and Al-Retd, 2006: 206).

The customer's dues can be paid electronically, as it allows him to deal with many companies for the purpose of payment His dues are like bills Or fees and electronically (Al-Ta'i, 2013: 185). Achieving profitability as electronic payment methods contribute to achieving profit rates high and so About run way Current Deposit Funds for Cardholders Customer Accounts And also because of what impose it on the duck Qat of interest, fees and penalties. (Baheeh, 2013: 234).

### **Characteristics of electronic payment systems**

The most important characteristics that distinguish it has means electronic payments she: (Lefta, 2019: 36). International nature: That is to give an international character to payment systems, through The Internet, whose fringes are far apart, and disgraceful to the audience R The physical, as electronic payment methods respond to this feature and are payment methods for the purpose of settling remote transactions In terms of the entity that provides the electronic payment service: This entails the existence of a pre-existing banking system to allow dealing and paying this method, i.e. special devices are available to manage such an electronic process and also provide reliability to dealers by these means, and this is the role of banks, companies and others that make this offer. (Khadija, 2013: 41-42).

In terms of safety Technical: Payment is made through an open information space, so the risk of burglary and theft on loan numbers exists during payment email, And the danger is To pay by using The internet is above Other networks are considered a space that receives all countries with their different purposes and their intentions, as it is considered This feature Negative for electronic payment system. (Al-Jeddah and Khalaf, 2009: 235).

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electronic check: It is an electronic image From the pictures of the check The paper contains a line (MICR) All encrypted information of the check holder Editor (FDIC, 2022: v1.2) This check is processed online or other data network, as well as the method of processing that is easy compared to a paper check and contains several advantages, including protection and security, including authentication, public key encryption and digital signatures. (The Investopedia Express

Podcast, Kagan, 2022) E-Wallet: It is a non-cash virtual package that replaces banknotes that allows its users to purchase goods and services online without the need to go to an ATM or a bank to withdraw cash. Kind is the speed of delivery and urging users to reduce their reliance on paper money. (Shingari&Chauhan, 2017:1). Electronic money transfer and data exchange:

Electronic funds transfer means the transfer of funds using electronic methods, i.e. transferring from one account to another electronically. It is a limited process, in other words, the electronic transfer of funds is the automation of one party to the transaction, namely the transferred payment. As for electronic data exchange, it is a comprehensive process through which all company accounts, payments and collections can be processed and settled, meaning that the full automation of the transaction, including the details and explanations of the transfer (Mohammed, 2014: 58). Electronic (bank) cards: There are several types from U.S For electronic cards: (Lefta, 2019: 38).

### **Credit card Credit Card (CC)**

The credit card is the most common type of card and the most popular in the payment and purchase process via world wide web; For ease of use, and get it, It is a plastic card issued by banks. Within the limits of certain amounts, it is used as a banking tool to meet obligations, widely accepted locally, and internationally for individuals, And merchants and banks as an alternative to money to pay values of goods, These are the services provided to card holders in return for his signature on a The value of his obligations arising from his purchase of the commodity or obtaining the service shall be received, provided that the merchant collects the value from the bank issuing the card through the bank that authorized him to accept the card as a means of payment..

### **instant debit card Debit Card (DC)**

And the it's like a credit card; But it is linked to an account. The card holder is deposited in one bank's so the balance on the debit card is the current balance in the current or savings account of the card holder associated with it, No amount can be withdrawn, Or make a value purchase greater than the amount deposited in the account, while the available balance in the credit card is a short-term loan granted to the customer who holds the card, i.e. he can withdraw, Paying bills with debt.

### **Prepaid cards: Stored Value Cards (SVC)**

It is a plastic card that contains an electronic tape that stores the balance of the card so values are paid. This card is in advance when purchased in different denominations as a denomination card \$100 and \$200, so some call them M . cards. Vault of value, it grants to people who do not have a checking or savings bank account.

Smart Cards: (Smart Cards (SM It is a credit card-sized card that contains an electronic microchip. Prove it, It can store hundreds of times more data than a credit card, Contains log related data with balances, Customer's personal information such as name, and address, issuing bank, R, Workplace, And the This card has the ability to store biological input storage on her (biometrics) such as a customer's personal characteristics such as a fingerprint, I scan my net eye, or fingerprint the sound.

## The second topic / the conceptual framework of market value

Or not: value concept: The philosophy or the science of values (value) or the theory of values comes back to the word Axios. The Greek axios, denotes what is (values) or (precious) or (new), and axiology is the science that investigates what is (values), (precious) and (new), and the philosophy related to it is the philosophy of values, the philosophy of values or the theory of values. or value (Qasim, 2016: 345). As for the scholars of the Arabic language and the jurists of the origins, the value they have is: "A man pays a man a garment, and he evaluates it for thirty dirhams, then says: Sell it, and whatever exceeds it is yours, and the values, and its origin is waw because it takes the place of the thing, and the value is the price of the thing according to the calendar" (Ibn Manzur, 1994). : 402) Value is considered the advantage that by its availability gives a value to something and makes it desirable by others, and value as a term in economics split into three precise meanings: (Al-Saeed and Samir, published research without a year) Value Added.

The value that customers represent (customer), or capital clients. The value represented by shareholder. secondly: value concepts for stocks: The term value is a common concept when trading common stock and is also considered one of the main things he cares about investors. There are several concepts of stock values, especially when evaluating them. Such as: face value (Par Value ): It is the value that is determined according to the general or specific laws of each company, and many countries specify in the laws of companies or financial markets a nominal value of the common stock (Al-Shabib, 2012: 240), for example in Iraq, Companies Law No. (21) of 1997 set the amended nominal value. One ordinary share has one (1) dinar, and it may not be issued with less or more than that upon incorporation or upon increasing the capital. The nominal value is used to determine the profit distributed to shareholders. There are some legislations in developed countries that allow it to be issued without a nominal value, as it is determined according to its sale in the stock exchange. (Al-Shammari et al. 2017: 149).

Book value (Book Value ): It is the accounting value of the share that is recorded in the company's accounting books. It represents the right of ownership after excluding the preferred shares, as it is the company's obligations. Nominal in the case of forming reserves and realizing profits, and it may be less when losses are realized at the beginning of the company's activity (Al-Shammari and others, 2017: 149).<sup>(1)</sup> The book value is affected by the stock price significantly, as there is often a direct relationship between the book value of the stock and the stock price in the market, that is, the increase in the book value of the stock is related to the increase in the stock price, and on the contrary, the decrease in the book value of the stock is linked to a decrease in its market price. Al-Jerjawi, 2008: 52).

It is calculated as follows (Adnan, 2008: 108): The net value of the share (Liquidation Value) (Adnan, 2008: 73): The value that the shareholder of the company expects to receive per share in the normal case. Liquidation of the company after excluding all its obligations and it is calculated according to the following: Thus, it is the stock's balance from the value of the company's assets after liquidation and sale and payment of all rights and obligations of third parties from creditors

and all other parties that receive priority upon liquidation of the company (Al Shabeeb, 2012: 243).

**The real value (Real Value):** The concept of real value is related to securities in general and to ordinary shares in particular, and indicates the reasonable value or fair market value. Fair Market Value) This value is determined in relation to the share in the light of objective data that include the company's asset base, profits distributed to shareholders, future growth prospects and the efficiency of the company's management (Fahmy, investment, [www.ivorytraining.com](http://www.ivorytraining.com))<sup>(2)</sup> What matters to the investor in making his investment decision, whether buying or selling, is the fair price of the stock, where the investor compares the two prices (the market and the real one) and whether the stock is overvalued or not. The equation (Al-Shammari et al., 2017: 150):

**Market value (Market Value):** It is defined as "the price that is dealt with in the stock market, which is not characterized by stability but rather it fluctuates from time to time, and the market value of the stock is determined in light of the general economic conditions and the expected performance of the company (Hassan and Al-Hakim, 2010: 57). The market value of the stock refers to the closing price of the company at the end of the period. At the end of the period, and thus it can be considered one of the most important indicators for measuring market efficiency and the development of its activity, this indicator is adopted by many analysts, evaluators and financial observers (Al-Hamdani and Al-Juwaijati, 2007: 139), as well as it is known as "the value of the ordinary stock in the financial market and is determined through the interaction of The forces of supply and demand on the shares offered for trading in the market, and this value is characterized by instability, as it fluctuates continuously or according to the change in investors' expectations regarding the return and risk of stocks and the economic situation of the country. Usually, these expectations include the element of rumors and do not depend on sound analysis (Al-Mashhadani, 1995: 14).

**Market value can be classified To:** (Arab Monetary Fund, 2003: 3) share market value It represents the closing price of the company's stock at the end of the period. Market value of subscribed shares It represents the number of subscribed shares multiplied by the closing price of the company's shares at the end of the period. The market value of the companies included: It represents the sum of the market values of the subscribed shares of the companies listed in the market. Stock markets and stock exchanges around the world have a pivotal and essential role in the economic growth of countries, and in many cases they are the measure of the country's economic stability and give many advantages to the economy and the financial system. large number of investors in those markets intake Their decisions are to buy, sell, or hold shares.

### **Factors affecting the share price**

There are several factors that can affect the market share price, and the volume of its trading in the financial market, including the following: (Kashmiri, 2020: 211) Realized profits Shares with increased profits are bought, and shares that are expected to be profitable are sold to decline. Dividend It is the cash dividends distributed on the stock from one period to another. An increase in the percentage of profits leads to an increase in the expected returns from the stock, followed

by an increase in the share price and trading volume, in the case of drop Dividends go down and stock returns follow drop In share price and volume trade it.

Expectations related to the future of the company and the strength of its position financial: If the expectations are optimistic about the facility based on the strength of its financial position, its success and its ability to achieve greater profits in the future, this led to an increase in the price and trading volume of its shares, in contrast expectations of the weak financial position of the company and its failure to achieve greater profits leads to drop The price and trading volume of its shares in market. general economic conditions for the state: The economic activities of the state and the accompanying growth in the economy, which leads to an increase in the demand for the stock and an increase in its price and volume of trading in the market, while stagnation or economic downturn leads to a decrease in demand for the stock, and thus its price and volume decrease. trade it.

price Benefit: An increase in the interest rate leads to drop The level of consumption in various sectors economic, and thus leads to drop In demand for sales volume and profits with The continued rise in interest rates increases the debt servicing costs of companies borrowed, It is normal drop Dividends distributed on shares and investors' unwillingness to buy, and then drop Stock prices and trading volume in market. The level of efficiency of the financial market An element affecting the prices and trading volume of the shares of the companies traded in it, on the level of efficiency of the market and the transparency characteristic that it enjoys, and then on the accuracy and fairness of share prices, given that the higher the efficiency of the market, the chances of spreading the phenomenon of rumors and leaking private information that lead to the emergence of the phenomenon of speculation will be eliminated. harmful.

It can be said that the calculation of this value changes according to the change in facts, the change in the future conditions of the national economy, and the growth of the sector to which the company belongs. It is efficient, and the value of the stock in the market may differ from the real value of the stock due to speculation and manipulation of stock prices in the market and the lack of information about the company's performance or the high cost of obtaining information or insufficient disclosure of information by the company to wrong information and analysis by investors ( Al-Mashhadani, 1995: 15) Predictions about market share values are usually based on the personal judgments of individuals dealing in the market, and these predictions differ from one person to another. Therefore, this difference is a reason for the instability of the market price for shares normal, Therefore, the market value of the share is higher, equivalent, or less than the real value, and this depends on the estimations of shareholders and dealers in securities of the company's future profitability and the amount of profits expected to be distributed, and the general economic situation, inflation rates and interest rates, where it is expected that share prices will rise with a decrease Interest rates on deposits (Hassan and Al-Hakim, 2010: 57).

Based on the foregoing, the spread of bank cards can affect the increase in the number of transactions, transfers and payments, i.e. issuance and transfer commissions, and consequently the profitability and future of banks, i.e. the effect on the share price and market value that will be discussed in this study.

## Methods

The study examines the problem of poor use by banks of modern technologies represented by tools and channels paying off electronic. Such as (Automated teller machines and electronic cards) and the weakness of strategies for disseminating them in a way that meets the needs and desires of customers in a way that can attract the largest number of customers, and therefore achieving an increase in the use of card electronic banking. And promise, increases withdrawals and transfers, and then increase profits, and after the implementation of the Central Bank to settling salaries and paying them with bank cards. The current study will attempt to answer the following question: Does he contribute? Spread Electronic payment methods are on the increase. The market value of the banks? Do you impact? The spread of electronic payment methods to raise the market value of banks? Second: The importance of research: The importance of the research in the theoretical and practical aspects is as follows: Increasing the dissemination of electronic payment methods in Iraq and delivering them to most citizens, in a manner that ensures keeping pace with recent developments in banking systems, which is a cultural phenomenon. Awareness of banks and decision-makers of the importance of publishing electronic payment methods. The possibility of reaching results with statistical significance about the spread of electronic payment methods and their impact on the market value of a sample bank search.

Recognize the effect of spreading Electronic payment methods at market value. Highlighting the importance of electronic payment methods in expanding the scope of the work of the research sample banks and their impact on the financial market.

Presence Relationship morale Between electronic payment methods, represented by electronic cards and automated teller machines, in the market value of the share. There is a significant effect of the means paying off e represented by B cards e and devices Exchange robotic in the value market long-term stock.

time limits: This research was based on the financial statements of the research sample banks from (2017-2021). spatial boundaries: The spatial boundaries of the research were represented in the National Bank of Iraq in Baghdad.

## Result and Discussion

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## **The second topic / the conceptual framework of market value**

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The real value(Real Value):The concept of real value is related to securities in general and to ordinary shares in particular, and indicates the reasonable value or fair market value.(Fair Market Value) This value is determined in relation to the share in the light of objective data that include the company's asset base, profits distributed to shareholders, future growth prospects and the efficiency of the company's management (Fahmy, investment,[www.ivorytraining.com](http://www.ivorytraining.com))(<sup>4</sup>)What matters to the investor in making his investment decision, whether buying or selling, is the fair price of the stock, where the investor compares the two prices (the market and the real one) and whether the stock is overvalued or not.

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### **Third: Factors affecting the share price**

There are several factors that can affect the market share price, and the volume of its trading in the financial market, including the following: (Kashmiri, 2020: 211) Realized profitsShares with increased profits are bought, and shares that are expected to be profitable are sold todecline.

**Dividend**It is the cash dividends distributed on the stock from one period to another. An increase in the percentage of profits leads to an increase in the expected returns from the stock, followed by an increase in the share price and trading volume, in the case of drop Dividends go down and stock returns follow drop In share price and volume trade it.

**Expectations related to the future of the company and the strength of its position financial:**If the expectations are optimistic about the facility based on the strength of its financial position, its success and its ability to achieve greater profits in the future, this led to an increase in the price and trading volume of its shares, in contrast expectations of the weak financial position of the company and its failure to achieve greater profits leads to drop The price and trading volume of its shares in market. **general economic conditions for the state:**The economic activities of the state and the accompanying growth in the economy, which leads to an increase in the demand for the stock and an increase in its price and volume of trading in the market, while stagnation or economic downturn leads to a decrease in demand for the stock, and thus its price and volume decrease. trade it.

**price Benefit:**An increase in the interest rate leads to drop The level of consumption in various sectors economic, and thus leads to drop In demand for sales volume and profits with The continued rise in interest rates increases the debt servicing costs of companies borrowed, It is normal drop Dividends distributed on shares and investors' unwillingness to buy, and then drop Stock prices and trading volume in market.

**The level of efficiency of the financial market**An element affecting the prices and trading volume of the shares of the companies traded in it, on the level of efficiency of the market and the transparency characteristic that it enjoys, and then on the accuracy and fairness of share prices, given that the higher the efficiency of the market, the chances of spreading the phenomenon of rumors and leaking private information that lead to the emergence of the phenomenon of speculation will be eliminated. harmful.

It can be said that the calculation of this value changes according to the change in facts, the change in the future conditions of the national economy, and the growth of the sector to which the company belongs. It is efficient, and the value of the stock in the market may differ from the real value of the stock due to speculation and manipulation of stock prices in the market and the lack of information about the company's performance or the high cost of obtaining information or insufficient disclosure of information by the company to wrong information and analysis by investors ( Al-Mashhadani, 1995: 15)

Predictions about market share values are usually based on the personal judgments of individuals dealing in the market, and these predictions differ from one person to another. Therefore, this difference is a reason for the instability of the market price for shares normal, Therefore, the market value of the share is higher, equivalent, or less than the real value, and this depends on the estimations of shareholders and dealers in securities of the company's future profitability and the amount of profits expected to be distributed, and the general economic situation, inflation rates and interest rates, where it is expected that share prices will rise with a decrease Interest rates on deposits (Hassan and Al-Hakim, 2010: 57).

Based on the foregoing, the spread of bank cards can affect the increase in the number of transactions, transfers and payments, i.e. issuance and transfer commissions, and consequently the profitability and future of banks, i.e. the effect on the share price and market value that will be discussed in this study.

## **Measuring the effect of electronic payment methods for the bank, the research sample, on the market value of the stock**

### **Model Description**

Within this study, the annual data of the independent variables represented by the number of electronic cards, the number of ATMs, and the quarterly data of the dependent variable represented in the market value of the share of the bank was adopted. **Views 12** And by (60) observations of the variables, through which it is possible to identify the effect of the independent variables on the dependent variable, and the model variables are divided according to the following.

Independent variables: Or called the external variables that are determined outside the model and which were obtained through the financial statements of the research sample bank and the Central Bank of Iraq, as the estimated model includes a set of independent variables represented by the number of electronic cards (EC) and the number of automated teller machines (ATMs) ATME)

Dependent variables: Or the so-called internal variables whose values are determined by forces within the model, which are limited to the market value of the stock (MV) as a variable dependent on the bank of the research sample.

### **Formulation of the model**

The model was used to find out the effect of the independent variables represented by (the number of electronic cards and the number of ATMs) on the dependent variable represented by (the market value of the stock) for the research sample banks and after describing the variables, it can be expressed through the following formula.

$$MV = \beta_0 + \beta_1(EC) + \beta_2(ATME) + U_1 \dots \dots \dots (1)$$

If:

- (Market Value) MV Market value
- $\beta_0$  fixed and vector bound ( $\beta_1, \beta_2$ ) The estimated parameters of the model
- (Electronic Cards) EC Electronic cards
- (ATM) Automated teller machines
- $U_1$  Random Error Limit

### **The results of the stability test for the study variables (Extended Dickey-Fuller test).ADF)**

For the purpose of verifying the inactivity of the time series of the independent variables represented by the number of electronic cards and the number of ATMs (EC, ATM, (and the dependent variable represented by the market value of the stock) MV) in view of the Dickey test–

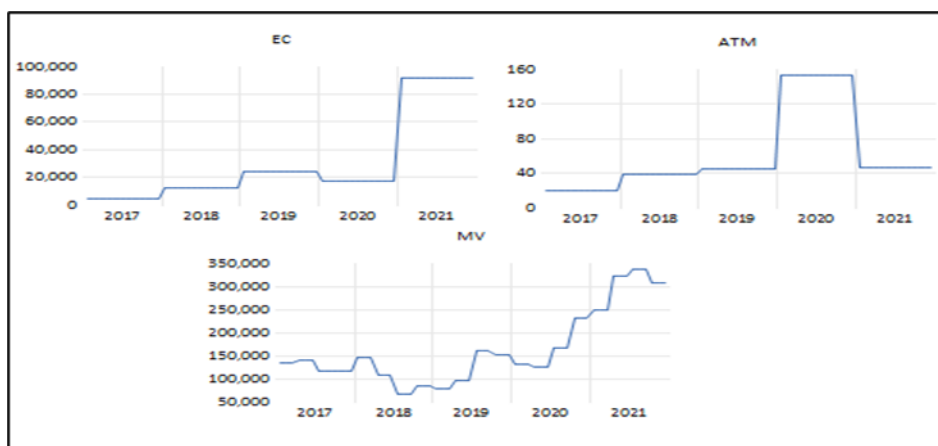
Fuller Expanded Illustrated from the table (17) which shows the results of the test (ADF) Which is evident from the results that the time series are not stationary at the level (Level) for the independent and dependent variables, whether they are in the constant term or the constant term watt-Jah general or the absence of a fixed limit-T and the general trend and that s-ymm(prob) greater than (5%), meaning that it is not significant, and thus we accept the null hypothesis that-r on the presence of c-Ther of the revelation-This is the case-z the alternative hypothesis, which leads to-The researcher decided to take the first difference of the time series in order to avoid the problem of false regression, and the results showed that the value of prob Less than (5%) without a fixed limit and without a general trend, and thus we drift-Z null hypothesis and Q-Paul hypothesis-An alternative in which data is static at a degree of integrity (1)~I.

**Table 17:** Expanded Dicke-Fuller Test Results (ADF)The unit root of the National Bank of Iraq

Unit Root Test (ADF)						
Variables	Level			1 differences		
	Constant	Constant & Trend	Non	Constant	Constant & Trend	Non
	Prob.	Prob.	Prob.	Prob.	Prob.	Prob.
MV	0.94	0.77	0.91	0.00	-	-
EC	0.87	0.63	0.79	0.00	-	-
ATME	0.14	0.77	0.31	0.00	-	-

**Source:** From the researcher's work based on the outputs of the statistical program (Views 12)

This can be illustrated by Figure (26) below



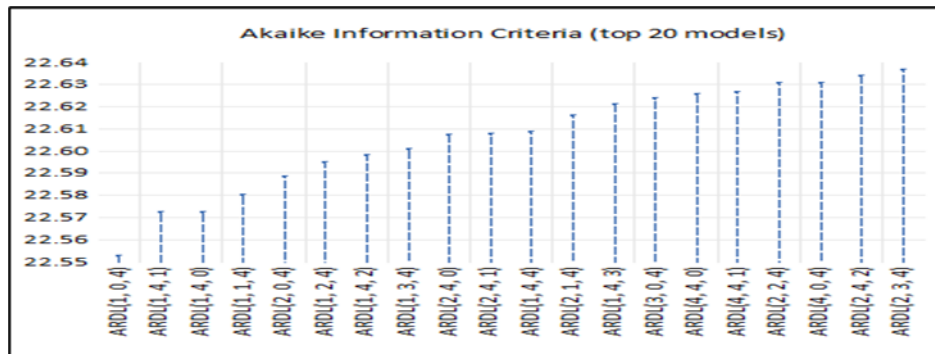
**Figure 26:** Stability of the time series of the independent variables and the variable belonging to the National Bank of Iraq

**Source:** Prepared by the researcher based on the statistical program (Views 12)

#### Estimation of an autoregressive model with distributed lagsARDL

After conducting the unit root test for the time series and making sure that the time series is integrated from the degree (I~(1))It became possible to apply a methodologyARDLFrom the figure, it becomes clear to us that the best model for slowing periods according to the method

(AIC) he (1, 0, 4) Table (17) shows the results of the initial assessment of the model using a methodology ARDL which shows the relationship between the independent variables (EC, ATM) and the dependent variable (MV). The results of the test showed that the explanatory power of the model was (0.993576) as per test  $R^2$ , and that the predictive power of the model was (0.992789) through the value of  $R^2$  Adj, then calculate the significance of the model through the value of  $F$  calculated, which amounted to (1263.041) on a moral level (0.0000000), as well as the value of (DW (reached about) 2.120900) to confirm that the model is free from the problem of autocorrelation.



**Figure 27:** Results of the optimal deceleration periods according to a criterion (AIC: Akaike)

**Source:** Prepared by the researcher based on the statistical program (Views 12)

**Table 18:** Model Estimation Results ARDL For the National Bank of Iraq

Variable	Coefficient	std. Error	t-Statistic	Prob.*
MV(-1)	0.882285	0.064134	13.75683	0.0000
EC	0.253063	0.172712	1.465232	0.1494
ATME	-63.76610	127.9909	-0.498208	0.6206
ATM (-1)	155.0554	165.3958	0.937481	0.3532
ATM (-2)	1.64E-11	165.0113	9.94E-14	1.0000
ATM (-3)	-376.8202	165.0113	-2.283603	0.0269
ATM (-4)	424.0938	124.1583	3.415752	0.0013
C	5586.441	6879.707	0.812017	0.4208

R-squared	0.959692	Mean dependent var	165312.5
Adjusted R-squared	0.953814	SD dependent var	83204.38
SE of regression	17881.47	Akaike info criterion	22.55248
	1.53E+10	Schwarz criterion	22.84182



Sum squared resid			
Log likely F-statistic	-623.4695 163.2610	Hannan-Quinn criter. Durbin-Watson stat	22.66466 2.157035

**Source:** Prepared by the researcher based on the results of the statistical program (Views 12)

### Limits Test for Cointegration

To test the extent to which there is a co-integration relationship and a long-term equilibrium relationship between the independent variables and the dependent variable, through the limits test (Bound Test) From the results of Table (19), we note that the value of the statistic (F-Statistic) calculated amounted to (4.786999) which is greater than the critical values for the upper bounds (3.63) and lower bounds (2.63) (Tables for statistical values and at a significant level) 10%), which means rejecting the null hypothesis and accepting the alternative hypothesis, and this indicates the existence of a joint integration relationship and the existence of a long-term equilibrium relationship that moves from all independent variables towards the dependent variable, which confirms the validity of the research hypothesis.

**Table 19:** boundary test results (Bound Test) For the National Bank of Iraq

(Bound Test)		
F-Statistic=4.786999		
morale level	Bound 1~(0)	Bound 1~ (1)
10%	2.63	3.63
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

**Source:** Prepared by the researcher based on the results of the statistical program (Views 12)

### Autocorrelation and heterogeneity test

The estimated model was tested to ensure that there is no autocorrelation problem by using a test (Breusch – Godfrey Serial Correlation LM Test), and test (Heteroskedasticity test: ARCH) to make sure that there is no problem of heterogeneity of variance at the level of significance (5%) and through the table (20) It is clear that the model does not suffer from the problem of instability of variance nor from the problem of autocorrelation because the probability value is more than (5%), and this supports the validity and accuracy of the results for the model used.

**schedule 20:** The results of the autocorrelation and variance inconsistency problem test results to trace

(EC , ATM) on me (MV)

Breusch – Godfrey Serial Correlation LM Test			
F-Statistic	0.700511	ProP.F	0.5015

Obs*R-Squared	1.655181	Prob.Chi-Squared	0.4371
Heteroskedasticity test: ARCH			
F-Statistic	0.926812	ProP.F	0.3401
Obs*R-Squared	0.945257	Prob.Chi-Squared	0.3309

**Source:** Prepared by the researcher based on the results of the statistical program (Views 12)

#### Error correction form (ECM) according to the methodology ARDL

The error correction model (ECM) is important in describing the shape of the relationship between variables during the long and short term, because it shows the effect of the temporal regression of the variables included in the model on themselves, and a model can be applied) ECM) on small samples, in contrast to the previous methods, which cannot be used for such samples, and it is clear from table (21) that the error limit  $CointEq(-1)^*$  The value of the error correction factor is (-0.143049) It is negative and moral, which are the two basic conditions in this methodology, as the value of the error limit indicates that there is a correction from the short term to the long term at a rate of (14%), which is in line with the actual reality of electronic payment methods as a representative of the high market value of the stock of the research sample bank.

**Table 21:** Short-term capabilities and error correction (ECM)

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	std. Error	t-Statistic	Prob.
D(ATM)	-6376610	118.3930	-0.538597	0.5927
D(ATM(-1))	-47.27357	114.1402	-0.414171	0.6806
D(ATM(-2))	-47.27357	114.1402	-0.414171	0.6806
D(ATM(-3))	-424.0938	114.1402	-3.715550	0.0005
CointEq(-1)*	-0.117715	0.036468	-3.227943	0.0022

**Source:** Prepared by the researcher based on the results of the statistical program (Views 12)

#### Estimating the long-term relationship according to the methodology ARDL

It is clear from the data in Table (22) that the independent variable represented by the number of electronic cards (EC) It had a clear effect on the dependent variable represented by the market value of the stock (MV) in the long run, given that the value of  $prob_{lt}$  was less than (10%) and this confirms the hypothesis of the research because the National Bank recorded the highest value in the number of electronic cards, amounting to (91755) cards for the year 2021, which is the highest value compared to other banks in the research sample, while the independent variable represented by the number of ATMs (ATM) It had no clear effect on the dependent variable represented by the stock market value (MV) in the long run to be valuable  $prob_{amt}$  amounted to greater than (10%), and accordingly, the relationship will be according to the following equation:

$$MV = 47457.21 + 2.1498 EC + 1177.1010 ATM + U$$

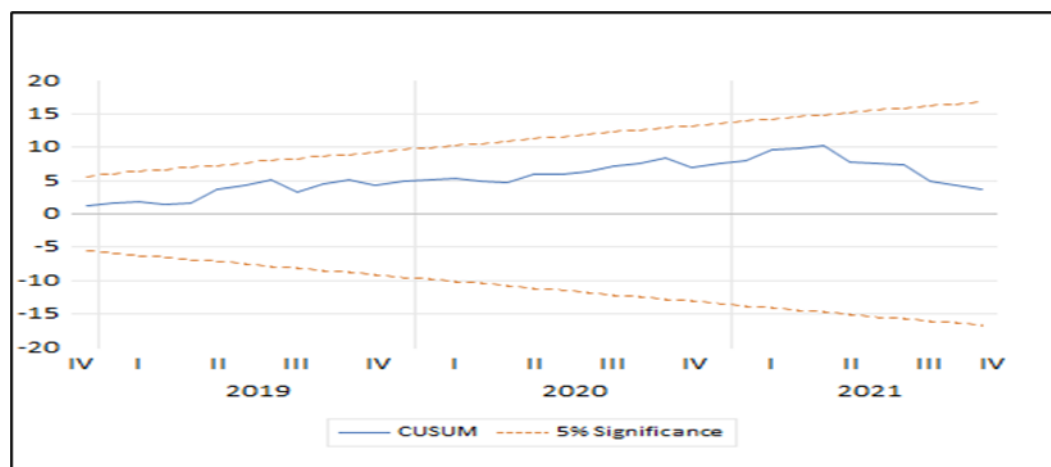
**Table 22:** Results of estimating the long-term relationship according to the methodology (ARDL) for the National Bank

Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	std. Error	t-Statistic	Prob.
EC	2.149792	0.726976	2.957170	0.0048
ATME	1177.101	716.8226	1.642109	0.1071
C	47457.21	44181.32	1.074147	0.2881
EC = Y - (2.1498 * EC + 1177.1010 * ATM + 47457.2130)				

**Source:** Prepared by the researcher based on the results of the statistical program (Views 12)

#### Model stability test cumulative sum of residuals

The test for the cumulative sum of the residuals (cusum) In order to reveal the stability of the estimated model (ARDL) (For long and short-term parameters, this test was developed by Brown, as it states whether the graph of a test) cusum) within the critical limits at a level of significance (5%). It is unstable, as shown in Figure (28) because the estimated line lies within the critical limits and oscillates around zero values, the upper and lower bounds, and at a significant level (5%), and this indicates that the long- and short-term parameters are stable for the estimated model (ARDL).



**Figure 28:** Results of the Cumulative Residual Sum Test (CUSUM) for the impact of electronic payment methods on the market value

**Source:** Prepared by the researcher based on the results of the statistical program (Views 12)

#### Conclusion

Through what was dealt with in the research, the researcher presented the most important conclusions that she reached: The results of estimating the relationship between electronic payment methods represented by electronic cards and automated teller machines in the market value of the stock indicate the significance of the estimated relationship and that there is an effect of payment methods really Electronic on the market value of the stock. I have proven a model (ARDL) There is a complementary relationship subscriber and presence Relationship equilibrium long the term trending From all Variables independent Toward variable subordinate For five banks except Khaleeji Commercial Bank.

The existence of a joint integration relationship and the existence of a long-term equilibrium relationship that moves from all independent variables towards the variable belonging to the National Bank of Iraq, which confirms the validity of the research hypothesis. The independent variable represented by the number of electronic cards (EC) had a clear effect on the dependent variable represented by the market value of the stock (MV) in the long term, given that the value of the prob was less than (10%). The independent variable represented by the number of ATMs (ATM) did not have a clear effect on the dependent variable represented by the market value of the stock (MV) in the long term because the value of the prob amounted to greater than (10%).

### **Recommendations and Suggestions**

Through the conclusions reached by the research, the researcher recommends the following: The bank should intensify financial education campaigns to raise banking awareness to citizens of the importance of electronic payment methods in daily transactions and to stay away from carrying cash or cash. Marketing policies and strategies aimed at spreading direct sales points should be followed (POS) inside markets, shops, restaurants, hotels, pharmacies and other commercial activities more. It is better to take advantage of technical developments in the field of electronic payments in a good way to achieve profits for the bank, not to hoard money and increase banking liquidity because of its great importance to the activity of banks. The researcher recommends conducting new research in the field of the role of electronic payment methods in activating e-government, or reducing administrative corruption.

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