

The Effect of Electronic Payment Systems on Economic Growth in Jordan During The Period (2003-2015)

Imane BOUGUERRA ^{1,*}

¹ Faculty of Economic, Commercial and Management Sciences
Ghardaia University ; (Alegria)

Received: 01/02/2018; **Revised:** 28/02//2018; **Accepted:** 05/11/2018.

Summary: The aim of this study was to evaluate the experience of electronic payment systems in Jordan and to identify their impact on economic growth during the period 2003-2015. To achieve the objectives of this study, the simple linear regression model was applied to detect the effect of the independent variable on the dependent variable. The study concluded that the electronic payments sector in Jordan is witnessing The electronic payments sector in Jordan is witnessing an evolution in the payment systems and the settlement, either in terms of large payment systems and retail payments systems, or in terms of retail payment tools. The study also found a statistically significant relationship between the electronic payment systems and economic growth in Jordan during the period 2003-2015.

Keywords: Effect; Evaluate; Electronic Payment System; Economic Growth; Jordan.

Jel Classification Codes : G21; G 24; E59; E01; E58.

I- Introduction :

Over the past years, there has been an increase in interest in the development of the financial and banking sector infrastructure, especially in the area of clearing and settlement of payments and securities, and is aware of the associated upgrade of these systems in contributing to adjusting the systemic risk and establish the elements of financial stability on the one hand, and did not play by the presence of payment systems an efficient and sophisticated in facilitating access to financial services in the economy and increase the speed of turnover of money in the economy and also reduce the amount of cash floating in the economy in addition to security and protection by legislation and laws, banking systems, electronic payment, Which would contribute to the increase in GDP on the other.

The Central Bank of Jordan, like other central banks practiced several different roles in payment systems is the first user of these systems Linda its role as a weapon Cash to settle open market operations and payment operations relating to its customers, and secondly the operator and manager of some of these systems so that service reports and payments to members of the participants in these systems, including the provision of appropriate infrastructure for these systems in addition to its vital role as a catalyst for change, Third, a role which has increased in significance in recent times is the role of the supervisor and the observer on these systems to ensure the efficiency and integrity of these systems and reverse it to find the robust infrastructure of the financial system in Jordan.

Based on the above mentioned came to this study as an attempt to measure the impact of the adoption of the Strategic Plan by the Central Bank of Jordan and in collaboration of commercial banks and the private sector, and for the development of payment systems in Jordan and control systems paper-based to electronic systems on economic growth in Jordan, and we can ask the main question: **"how successful is the strategy of the central bank of Jordan to adopt electronic payment systems, and what is their impact on economic growth in Jordan during the period 2003 to 2015?"**

* Corresponding author, e-mail: bouguerra87@yahoo.fr

The importance of the study is that the electronic payments is the main contributor to the consumption, production, increasing economic growth and job creation, based on the latest studies economic that showed that states that experienced significant increases in the use of the cards has also undergone significant contributions to the overall growth in their economies.

As explained by those studies that the shift to electronic payments made to benefit governments contributed to creating a business environment open and more stable, in addition, helped of electronic payments in reducing what is commonly known economy gray or parallel, which economic activity is based on cash handling and is registered. As a result, provided electronic payments are the base revenues of the tax potential of higher governments, while the additional benefits of less cost for handling cash currency, and secured for financial inclusion of the broader for consumers.

This study aims to identify the following objectives:

- Evaluate the success of the experience of electronic payment in Jordan.
- The advantages of electronic payment systems for the Parties to participate.
- The importance of electronic payment systems in Jordan within the requirements of the development infrastructure and banking, central as to achieve monetary stability and financial depth

- Describe the impact of the electronic payment systems on economic growth in Jordan.

This study to test the following main hypothesis:

There is a statistically significant relationship between electronic payment systems and economic growth in Jordan.

Among the previous studies that dealt with the subject of the present study, we mention, for example, but not limited to the following:

- **Study of Balakrishnan 2015:** This paper provides a brief overview of the benefits of payment systems for economic growth and the benefits of electronic payment systems. It explains the various payment systems in India and analyzes India's position in terms of payment systems between selected countries and emerging countries. He then went on to explain the current state of financial integration in India and the various steps that could be taken to improve the use of electronic payment systems and promote the objectives of financial integration.¹

- **Study of Sharfani, 2017:** this study examined the impact of bank credit on economic growth of a sample of selected member states in the Arab Monetary Fund through the application of the model simple linear regression, and the research led to the existence of a positive correlation between the two variables in those states, but it should be available to bank credit is a certain amount of sophistication in the financial system in order to show its positive influence on economic growth better.²

- **Study of kutubi 2017:** It proposes to study a new e-payment system that is connected to the Internet that meets the key security requirements of electronic payment, namely, anonymity, non-detachability, non-inspection, double-spending monitoring, conditional tracking and fraud prevention. The main idea is to use blind signature, The link between the electronic currency and its owner ensures anonymity from both the client and the merchant. It suspends the expiration, deposit and transaction dates to each electronic currency in order to effectively manage the bank database, to calculate the interest on the electronic currency correctly and to assist arbitration if the untrusted customer tries to double the currency spending; it also ensures anonymity for the customer as long as Spend a legitimate currency. Only when a fraudulent electronic transaction is detected can the bank, with the assistance of the central authority (a trusted entity), identify the unreliable customer and refer to the system as offline since the bank does not need to be involved in transactions between the client and the merchant. Finally, it also provides analyzes of prototype performance and basic security requirements of the proposed system.³

This study differs from previous studies mentioned in the following points:

- The duration of the study, which ran from 2003 to 2015 that provide data about the value of electronic payments during the period just mentioned, and it is annual data only.
- The country of study, where the focus of the state of Jordan.
- Variables the study of GDP as the dependent variable and the value of electronic payments as an independent variable.

I.1. Electronic Payment System in Jordan:

The payments sector in Jordan has witnessed a remarkable development in recent years in the payment, clearing, settlement, banking and electronic finance systems offered in both the large payment money cycle in the economy to enhance economic efficiency and protect the financial systems and retail payments systems, The Central Bank of Jordan seeks to exploit the fruits of this development, aiming to achieve the speed and ease and reduce the operational costs resulting from the implementation of transactions of payment and electronic transfer of funds, and enhance the means of security and protection of payments and the role of this in increasing the speed of flow and Which affects the desired growth of money and the ability of the Central Bank to manage the monetary aggregates more accurately, as well as the added value of customers and end users, and the impact on the achievement of the objectives of the Central Bank of Jordan to enhance the financial inclusion in Jordan and access to the digital economy . In cooperation with the banks operating in Jordan and the relevant partners, in order to reach a secure and efficient national payment system that supports the effective implementation of monetary policy and contributes to achieving financial stability and facilitating the consumer and enable participation wider payment, clearing and settlement systems.⁴

- ❖ **The concept of the electronic payments system:** Payment services that use information and communication technology,⁵ including encryption and communication networks, and is defined as the mechanism by which electronic money can be transferred from one account to another regardless of the location of the owner's branch or the catcher for each account It is also known as the settlement of payments between the parties, whether seller or purchaser,⁶ as well as a system for clearing inter-bank instruments between the creditor and the debtor in particular and payment in general.⁷
- ❖ **Payment and Settlement Systems in Jordan:** The system of payments in Jordan is a system for exchanging electronic payments within the banking system through a secure and efficient network. The Central Bank of Jordan is the controlling party and its operational manager as the owner of the system and manages the settlement accounts for the participants to ensure the clarity and efficiency of payment systems and clearing operations. The following:⁸
 - **First: Large-scale payment systems (immediate gross settlement system):**

The RTGS-JO system, which was introduced in 2002, is the main pillar of the payment infrastructure in the Kingdom, as well as the central point and cornerstone on which the electronic payment and clearing systems operating in the Kingdom are connected. The immediate gross settlement system is an electronic central system that operates on an immediate, total, final and continuous b-basis for the execution of credit transfer orders and provides a settlement point for liquidation systems operating in the Kingdom through central bank accounts. The system is used to settle large-value, high-value payment orders that have been taken into account in the construction of two important factors, efficiency and safety.

In terms of payment orders executed through the RTGS system, there were 674,809 payment orders executed in all local and foreign currencies defined on the system. The total value of executed orders amounted to 114,6149 million, a decrease of 32%:
 - **Second: Retail payment systems (RPS):** Retail payments are payments made between members of the payment system through a central clearing system, whereby the debtor and creditor movements accumulate on each member and the final amount is settled. In this type of payment, the number of movements is large, but the amounts of each movement are small. This type of payment is called, and each period of exchange of a special file showing the members Debtors and members of creditors, and the total number of member creditor centers shall be equal to the total of the debtor members' centers in any way. The retail payment systems in Jordan are as follows:
 - **Electronic Clearing Cheques (ECC) :** Electronic clearing is the process of exchanging information which includes data, images, and codes of cheques by electronic means through Electronic Clearing Center at the Central Bank of Jordan and determining the net balances resulted from this process at a specific time. The volume of cheques carried out in the electronic clearing system for cheques amounted to 10361176, a decrease of 3% compared to the previous year, while the value of checks in circulation amounted to 46202 million dinars, a drop of 4% from 2015, and the number of cheques returned either for technical reasons or for insufficient (4.8%) of the total checks carried out during the year, with a total value of 1831 million dinars (4%) of the total value of the cheques carried out, thus achieving a rise in the value of cheques returned by 5.5%.

▪ **Electronic Bill Presentment And Payment Service “eFAWATEERcom”:** Is an effective central and integral system aims at providing the service of presentment and payments of bills and other services electronically for people (natural and legal)- whether holding banking accounts or not- in addition to providers of payment services, banks, and parties issuing bills (billers). The number of payment movements that were implemented through the system 1837214 payment movement with a total value exceeded 561 million dinars. And payment movements executed during the year have achieved a quantum leap and reached a steady growth rate of 284% compared to 2015. As for the services provided by the system amounted to 111 service back in favor of 77 billers compared to 75 postpaid service during the year 2015 back in favor of the 38 billers.

▪ **National Switching for mobile payment (JoMoPay) :** Mobile Payment Service is an electronic system operated and oversight by the Central Bank of Jordan in which banks, companies, and beneficiaries of the service are registered for the purposes of exchanging financial transactions. Through this system, the net clearing position is worked out and debited to the accounts of banks by the use of Real Time Gross Settlement system (RTGS). The total number of electronic portfolios opened was 67570, a 30% increase over the year 2015. The number of financial transactions executed during the year reached 9103 transactions with a total value of 198766.

▪ **Automated Clearing House System (ACH):** is a safe payment system that aims at providing the banks, the Central Bank, in addition to their customers with retail payment service to facilitate and accelerate the execution of numerous yet low- value debit and credit money transfers to contribute to enhancing the efficiency of the financial system in the Kingdom. The ACH system was launched on 30/10/2016.

The ACH system processes the following types of transactions: credit transfers and remittances. The number of payment orders executed in all currencies defined on the system (Jordanian Dinar, US Dollar, Pound Sterling, Euro) 120395 is a total payment of KD 120 million. The Jordanian dinar achieved the largest percentage of the value of the payment orders that were executed, amounting to 93% and the dollar to the United States by 7%.

➤ **Third: Retail Payment Instruments:** The followings are the most prominent payment instruments in the Jordanian Market:

▪ **Cheques:** is the most common commercial paper used in business payments because of its characters and the legal protection it offered for customers dealing with it. The Central Bank of Jordan has established technical and security specifications for cheques in order to reduce its fraudulent. These specifications made the fraudulent process difficult and enabled banks employees to detect any cheque fraudulent easily. It also raised the effectiveness of exchanging cheques by unifying data sites and increasing customers’ confidence in the banking system which would be reflected in their use for reliable payment methods. The total number of bank cheques that were traded in Jordan (both inside and outside the electronic clearing system through cheques and payments) was 16984536 during the year. Dinars in 2015, a decrease of 20% in terms of the number of cheques and 15% of the value of checks. The total volume of counterfeit cheques submitted for disbursement amounted to 65 cheques out of 16984536 checks with a total value of 5216799 million, compared to 140 cheques out of 21,312,245 cheques in 2015, a decrease of 54%.

▪ **payment cards:** Payment cards are used in the Kingdom and vary between prepaid, debit, and credit cards. The debit cards, including prepaid cards, issuance are limited to banks operating in the Kingdom only while it is allowed for financial institutions to issue credit cards. The number of payment cards issued by the banks operating in the Kingdom reached 320,5099 payment cards of various types (credit, city, prepaid) against 3230494 cards during 2015. As for the number of payment movements by payment cards issued by banks operating in the Kingdom and in various types, This year, there were 70206381 transactions with a total value of 10428 million JD compared to 65908534 transactions with a total value of 9744 million JD during the year 2015, reflecting an increase in the number of values and movements of 7%.

▪ **Retail Payment Channels:** Primarily, payment channel is the process or mechanism that enables the final beneficiary to conduct payment and fund transfer operations. These channels vary between electronic and traditional channels provided by banks- such as Banks branches, offices, ATMs, internet banking, mobile banking and channels which are provided by payment service providers such as Point of Sales POS and agents of payment services in addition to others. In terms of points of sale in Jordan, there were 28,841 points of sale, including 21,800

(76%) selling points for accepting Contactless EMV cards compared to 25,963 points of sale in 2015, an increase of 11%.

- **International Bank Account (IBAN) in Jordan:** IBAN was created by the International Organization for Standardization based on international standards according to ISO 13616. The IBAN unifies the number of digits for all numbers of banking accounts in the Kingdom which facilitates the operation of banking transfers and their process through electronic systems. It also facilitate developing them toward Straight- Through Processing of remittances and their deposits by identifying the beneficiary account number accurately and quickly. It also enables the sending bank verifying the beneficiary's account number in order to avoid return transfers of wrong account numbers which require a lot of time and effort to be rectified. IBAN is 30 digit long in Jordan and consists of two digits for country code (JO), which refers to the Hashemite Kingdom of Jordan; two check digits, which came as a result of a calculation to verify the validity of IBAN and thus the appropriateness of banking operations and it differs from one customer to another; four digits for the Bank Identifier Code BIC; in addition to four digits for the bank's branch and the customer account number (See table 1).

I. 2 Economic growth in Jordan:

❖ **Definition and importance of economic growth:** Economic growth is defined as a continuous increase in gross national product (GNP), which increases the average per capita real national income, and is defined as a benefit in which real income is increased incrementally and continuously over an extended period of time, of the population growth rate.⁹

Economic studies are very concerned with the process of economic growth and seek to measure its rates, and seeks to identify the factors affecting growth to achieve increasing rates, and these factors that affect economic growth, we find:

- The increase in capital through investment and capital formation (physical and human capital component).
- The increase in the number of members of the labor force (labor component)
- Technical progress leading to increased productivity of both capital and work over time.

In order to achieve the increase in the rates of economic growth through these factors, the resources must be directed towards investment and productive purposes rather than directed towards consumer alternatives, because economic growth requires sacrificing current consumption and directing the bulk of domestic economic resources towards the development of sources of growth in the absence of External sources compensate for local sources.¹⁰

➤ **Indicators of economic growth:** economic growth is usually measured by the rate of increase in the total output achieved by increasing the productive capacities of the society. The economic growth of a country in a given year is usually expressed by the increase in real GDP during that year, as measured Economic growth is sometimes caused by an increase in per capita real GDP during that year (real GDP divided by population). This measure links increases in real GDP to population changes directly, and two types of growth can be distinguished For economic by linking increases in real GDP changes the population as follows:¹¹

- **Broad growth:** means growth in real GDP even if the per capita share does not rise.
- **Intensive growth:** It means growth in real GDP with per capita growth.

❖ **The Reality and Prospects of Economic Growth in Jordan:** We review the most important stages of the economic growth in Jordan during the period from 2003 to 2016, as well as the future prospects for the growth of the Jordanian economy during the period from 2017 to 2021, With an explanation of the most important economic, political and social events affecting the ratio of GDP, as follows:¹²

➤ The Jordanian economy achieved during the year 2007 a strong performance despite some of the challenges faced and most importantly the sharp rise in oil prices and the grain and food in international markets, where GDP growth increased by 6% compared to a growth rate of 6.3% During 2006, and attributed the high level of economic activity and to higher spending total on goods and services consumption, and rising exports to the floor along with the continued flow of foreign direct investment because of Jordan an attractive investment environment, and security and political stability compared to neighboring

countries, as well as the continued implementation of the processes of structural reform and legislation, and adopt sound macroeconomic policies.

- GDP in Jordan registered a real growth rate of 5.6% in 2008, and this growth is supported by growth in national exports by a big margin, and the growth of the sector production of the service the pace of rent in addition to the continued flow of foreign investment to the interior.
- Performance of real sector in Jordan during the year 2009 wasn't untouched about the repercussions of the financial crisis and the global economic and the study less clearly influenced by his counterpart in developed countries. It has decreased the pace of real growth in Jordan significantly in 2009, reaching 2.8%, and despite this slowdown in the growth rate but it exceeds the population growth rate of 2.2% for the same year, the slowdown in economic growth primarily to a decline in the pace of economic activity has major partners of Jordan in the areas of trade, employment and investment (including the Gulf states), which led to falling commodity exports and reduced workers' remittances and foreign aid. As to the decline of the domestic demand, both consumption and investment, driven by the repercussions of the global financial crisis played a role in strengthening the slack growth momentum this year.
- The pace of economic growth in Jordan increased to about 3.1 percent in 2010, and this improvement in growth driven by the recovery course in the performance of service sectors within the Jordanian economy on the one hand and in the growth of the export activities of the boil outside, on the other hand.
- The economic growth rate in 2011 rose to about 2.6%, and a slight improvement in economic growth driven by the recovery of the situation in the performance of commodity sectors and especially the industrial manufacturing activities and export to the outside, and despite this challenge however, remains below the level, especially if compared to that of economic growth witnessed in the period between 2000 and 2009, which recorded real growth of strong and amounted to average 6.5% per annum.
- The Jordanian economy grew by 2.7% in 2012 compared to 2.6% in 2011. The growth recorded in 2012 remains below the level achieved during the period 2000-2008, which reached an average of 6.6% per annum. The economic growth in 2012 was driven by the recovery in the performance of most service sectors, especially the trade, restaurants and hotels sectors, as a result of the improvement in the movement of tourism activity and the electricity and water sector to meet the increasing needs of consumers. Extractive industry and agriculture construction.
- Gross Domestic Product (GDP) in 2013 witnessed a slight improvement, growing by 2.8%. This growth was driven by growth in the sectors of financial services, insurance, real estate, transport, warehousing, telecommunications, construction and manufacturing. These sectors contributed 75% Economic growth in 2013, while agriculture and extractive industries contributed 0.3 percentage points to the growth rate.
- Gross Domestic Product (GDP) during the year 2014 was the highest since 2010 and by 3.1%. This growth was driven by growth from all economic sectors, especially financial services, insurance, real estate, trade, manufacturing, construction and agriculture. 61.3% of the rate of growth achieved, which indicates the diversity of sources of economic growth in Jordan.
- The Jordanian economy registered a growth rate of 2.4% in 2015, driven by the growth of most economic sectors, especially transport, insurance, real estate, transport, warehousing, mining, manufacturing and agriculture. 75% growth rate in 2015, indicating the diversification of sources of economic growth, and the decline in GDP growth contributed to the rise of total debt to GDP ratio to an estimated 93% by the end of 2015.¹³
- The Jordanian economy in 2016 witnessed a growth of 2 % despite the continued political and security unrest in neighboring countries.¹⁴ This growth was driven by the growth of most economic sectors, especially financial services, insurance, transport, warehousing, telecommunications, manufacturing, electricity, Water, contributing 70% of the growth rate achieved in 2016, which indicates the diversity of the sources of economic growth in Jordan (see Table 2).
- IMF predicted in June 2017 that real GDP growth in Jordan would reach 2.3% this year and stabilize inflation at 2.5% during the same period and In the medium term, the average

growth is expected to be 2.6% during the period 2017-2019, due to improved tourism and exports¹⁵ in this regard, it should be noted that Jordan is associated with the IMF with an extended facility program aimed at keeping public debt at 94% of GDP and gradually reducing it to 77% of GDP by 2021.¹⁶

II- Methods and Materials:

the reliance in this study on the descriptive analytical method, where the Department of study coupled with my view includes a review of the literature on previous studies that relate to the topic of study, and besides my app has been relying on the compilation of data through financial reports and statistics available to the Central Bank of Jordan and analyzed through the model of simple linear regression to show the effect of the independent variable on the dependent variable. As the study used the software package statistical social sciences (SPSS) representation of the equation of the regression line, in addition to the use of the averages and standard deviations for the variables.

this study explored the impact of electronic payment systems on economic growth in Jordan, so the study used the regression model simple to examine the relationship between some independent variable and the two variables of the form of the following equation:

$$(\text{GDP})_t = b_0 + b_1(\text{EPS})_t + u$$

Where:

- $(\text{GDP})_t$ GDP during the period t.
- $(\text{EPS})_t$: the value of electronic payments during the period t.
- t : represent the period (2003-2015).
- b_0 : The constant limit of the equation.
- b_1 : Regression coefficient.
- u : Coefficient of error..

The figure (1) illustrates the study model (See appendices).

The population was taken as a sample for study because of its small size. It included the years of study from 2003 to 2015 because the data available on the values of electronic payments in the reports of the Central Bank of Jordan were from 2003 to 2015. They are annual data only. Monthly data are available for one month only for the year 2017.

From the table 3 (See appendices), the results of the descriptive analysis of the time series data (2002-2014) for the country of Jordan (n = 13) for the GDP and independent variable EPS can be illustrated as follows:

- The mean of the gross domestic product during the period of study estimated in Jordanian Dinar (10.1835) and the standard deviation and estimated Jordanian Dinar (1971.40). The value of mean ranged between (9.86) in 2003 and (10.43) maximum in 2015
- The mean of electronic payments during the study period was estimated in JD (8.0697) and the standard deviation and the Jordanian dinar (271200). The value of mean ranged between (7.65) minimum in 2008 and (8.48) maximum in 2009.

III- Results and discussion :

The table 4 (See appendices) shows that: The coefficient of correlation (Pearson) between the value of electronic payments and GDP was (0.844) at a level of significance of 1%, which means that there is a strong and positive correlation between them, The higher the value of electronic payments, the higher the gross domestic product.

We can defined the model of simple linear regression from the table 5 (See appendices) as follows:

$$\text{GDP}_i = 0.844 (\text{EPS})_i$$

The table (5) shows that the study model is statistically significant, where the value of (F Change) was (0.000), which is below the level of significance adopted (0.05). The explanatory power of the model also reached (Adjusted R Square) 67.8%, This means that 67.8% of changes in the dependent variable occur due to changes in the independent variable, There is a statistically significant relationship at the level of significance (0.05) between the dependent variable GDP and

the independent variable the value of EPS, it means there is a positive relationship between the value of electronic payments and GDP.

The higher the value of electronic payments (JD 1 million), the average gross domestic product increased by (0.844), This result confirms the validity of the hypothesis and the existence of a statistically significant relationship between electronic payment systems and economic growth.

The previous results can be explained by the fact that when an economy is provided with an electronic payment system, you are pushing it towards higher levels without a doubt, And when the system supports a mechanism to control the credit process of individuals and businesses, you provide the economy with more streamlining and starting, as well as that the money need to stick, printing, transport, distribution, preservation, counting, recording and destruction after the wear out for frequent use. In contrast, the cost of a single transaction with Visa cards, for example, is much lower than the cost of the cash transaction. Once an electronic payment system has been established, when cardholders use their cards at outlets, they help to keep funds within the banking system and thereby increase family deposits. Electronic payment systems can also put an end to the informal economy and integrate them into the banking system in order to enhance its transparency and increase confidence and participation in it. There is also an organic relationship between increased spending at outlets and an increase in demand deposits, This is due to the strong relationship between personal consumption expenditure and changes in spending on payment cards as a percentage of total consumer spending, Electronic payment devices play the role of a gateway to the banking system, It is also a powerful engine of growth, These instruments draw money from circulation and include it in bank accounts, provide low-cost funds to support investment banking lending and support the economy's entire activity, This leads to greater transparency and accountability and enhances the efficiency and performance of the economy.

IV- Conclusion:

This study concluded the following results:

- There is a statistically significant relationship between electronic payment systems in Jordan and economic growth during the period 2003-2015.
- The period between 2000 and 2009 recorded strong economic growth averaging 6.5% annually.
- However, it witnessed a continuous decline from 3.1% in 2010, 2.6% in 2011, and 2.7% in 2012, and 2.8% in 2013, however, it rose again in 2014 to reach 3.1%, then it fell again in 2015 to 2.4%, and 2.0% in 2016 and 2% in the second quarter of 2017. Growth is expected to improve to 2.3% in 2017 due to improved tourism and exports, and in the medium term, the average growth is expected to be 2.6% during the period 2017-2019.
- The most important statistical indicators related to electronic payment systems, that reflect the reality of payments in Jordan and indicate the level of development in the sector and in line with the strategic directions of the Central Bank of Jordan within its national strategy for payment systems and settlements for the years 2015-2016, which was the following:
 - On the level of RTGS: The total number of payment orders executed in all local and foreign currencies defined on the system, while the total value of executed orders amounted to 114649 million dinars, a decrease of 32% from the value of payment orders executed during the year 2015.
 - On the level of ECC: The volume of cheques carried out in the electronic clearing system for cheques amounted to 10361176, a decrease of 3% compared to the previous year, while the value of checks in circulation amounted to 46202 million dinars, a drop of 4% from 2015, and the number of cheques returned either for technical reasons or for insufficient (4.8%) of the total checks carried out during the year, with a total value of 1831 million dinars (4%) of the total value of the cheques carried out, thus achieving a rise in the value of cheques returned by 5.5%.
 - On the level of Efawateercom: The number of payment movements that were implemented through the system 1837214 payment movement with a total value exceeded 561 million dinars. And payment movements executed during the year have achieved a quantum leap and reached a steady growth rate of 284% compared to 2015. As for the services provided by the system amounted to 111 service back in favor of 77 billers compared to 75 postpaid service during the year 2015 back in favor of the 38 billers.

- On the level of JoMoPay : The total number of electronic portfolios opened was 67570, a 30% increase over the year 2015. The number of financial transactions executed during the year reached 9103 transactions with a total value of 198766.
- On the level of (ACH): The number of payment orders executed in all currencies defined on the system (Jordanian Dinar, US Dollar, Pound Sterling, Euro) 120395 is a total payment of KD 120 million. The Jordanian dinar achieved the largest percentage of the value of the payment orders that were executed, amounting to 93% and the dollar to the United States by 7%.

The recommendations of this study can be summarized as follows:

- Supporting the transition from the paper-based payment environment to the electronic payment environment by supporting modern and available payment initiatives, exploring opportunities to increase investments in the development of electronic payments, facilitating the use of new and innovative means of payment, and developing a regulatory framework.
- Seeking to transfer government payments from paper payments to the large number and size of these payments, since the majority of beneficiaries are non-bank customers: which will make the development process meaningful and clear effect.
- Develop the appropriate legal environment that serves to develop the payment system and develop the means of payment under it developing the means of other retail payments to serve its users and exporters in order to benefit the economic growth in Jordan.
- Set the appropriate risk management strategies that accompany the use and development of the payment system.
- Increase attention to the safety of the payment system and to provide suitable alternatives for the continued operation of the system.
- Train the manpower that deals with the system especially at the level of banks and senior users.
- Select the appropriate method for developing the system's network and selecting the appropriate hardware and software.
- Coordination and continuous cooperation with all concerned banks, financial companies, technical companies and government institutions, which will help in the continuation of development in order to ensure the integration of systems and sub-projects and provide the best services at the level of the business sector and the level of individuals both within the international foundations recognized and applied In the developed countries, in order to promote continuous economy growth in the Jordanian.

The research prospects are the following:

- Financial risk in electronic payment systems as one of the challenges facing banking systems.
- Technological creation as a pillar to improve the efficiency of the institutions performance of the bank.
- Banking supervision of money laundering operations using electronic payment systems.

– **Appendices:**

Table (1): Example of IBAN presentation.

Account number	000131000302
Electronic format	JO94CBJO0010000000000131000302
Paper format	JO94 CBJO 0010 0000 0000 0131 0003 02

The source: Annual report, CBJ,2016.

Table (2): National Accounts Indicators during (2013-2016)

Indicator	2016*	2015*	2014*	2013*
Gross Domestic Product at Current Prices (million JD)	27444.8	26637.4	25437.1	23851.6
Gross Domestic Product at Constant Prices (million JD)	11642.9	11414.2	11147.6	10812.8
GDP Growth Rate at Current Prices (%)	3.0	4.7	6.6	8.6
GDP Growth Rate at Constant Prices (%)	2.0	2.4	3.1	8.2

*Quarterly Estimates.

The source: department of statistics in Jordan, 2016.

Table (3): The mean and standard deviations of the study variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
EPS	13	7.65	8.48	8.0697	.27120
GDP	13	9.86	10.43	10.1835	.19714

The source: Prepared by the researcher.

Table (4): The coefficient of correlation (Pearson) among the variables of study

Variables	EPS	GDP
EPS	1	0.844**
GDP	0.844**	1

** Correlation is significant at the 0.01 level (2-tailed).

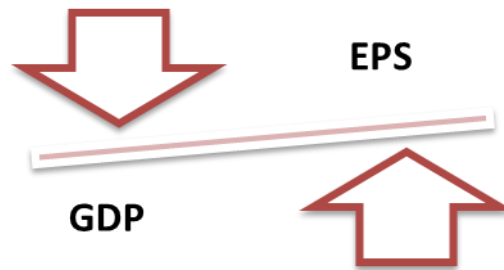
The source: Prepared by the researcher.

Table (5): Results of simple linear regression analysis

Model	Standardized Coefficients Beta	Sig.	Adjusted R Square	F Change
EPS	0.844	0.000	0.678	0.000

The source: Prepared by the researcher.

Figure (7): The study model



The source: Prepared by the researcher.

Referrals and references:

- 1 Balakrishnan, Mahadevan.(2015). **Indian payment systems and financial inclusion: Current status and next steps**, Journal of Payments Strategy & Systems. 9 (3), pp. 242-293.
- 2 Sharfani, Nesreen. (2017). **The Impact of Bank Credit on Economic Growth: A Sample of the Arab Monetary Fund Countries**, Tikrit University Journal of Economic and Administrative Sciences., 1 (37), Iraq, pp. 79-96.
- 3 Kutubi, Md. Abdullah . (2017). **An Offline Electronic Payment System Based on an Untraceable Blind Signature Scheme**; KSII Transactions on Internet & Information.
- 4 Central Bank of Jordan. (2016). **Annual Report of the National Payments System in Jordan**, Jordan, website: <http://www.cbj.gov.jo/Pages/viewpage.aspx?pageID=39t>, (Date of view; 23 /12/2017).
- 5 Moertini, Veronica , and others. (2011). **The Development of Electronic Payment System for Universities in Indonesia: on Resolving Key Success Factors**, International Journal of Computer Science & Information Technology, 3 (2).
- 6 Khosravani, Amir. (2008). **The Modern Integrated Payment System: The Iran Experience to Data** , Journal of internet Banking and commerce, 13 (1).
- 7 Backstrom , Hans , **Payment System in Transition** , financial markets department , 1993.
- 8 Central Bank of Jordan. (2016). **Payment and Settlement systems, Jordan**, website: <http://www.cbj.gov.jo/Pages/viewpage.aspx?pageID=95>, (Date of view,24/12/2014).
- 9 Al-Hammadi, Ali Majeed , (2004). **Analysis of Sources of Economic Growth in the Arab Economies 1991-1998**, Journal of Economics and Political Science, 4 (3).
- 10 Ashkar, Ahmed. (2002). **Macroeconomics**, First Edition, Dar AlSalamia International Publishing and Distribution, Amman.
- 11 Amin, Jalal Ahmed. (1985). **Satisfying basic needs as a criterion in assessing Arab development experiences and studies in Arab Economic Development and Integration**, Center for Arab Unity Studies, Beirut.
- 12 Central Bank of Jordan. (2017). **Annual Reports, Jordan**. Web site : <http://www.cbj.gov.jo/Pages/viewpage.aspx?pageID=68>, (Date of view: 28/12/2017).
- 13 Ababsa. Mariam. (2013). **Atlas of Jordan History Territories and Society**, Presses de L'ifpo. Beyrouth.
- 14 Department of Statistics. (2017). **Jordan in Figures**, Jordan. Web site: <http://dosweb.dos.gov.jo/ar/> ,(Date of view: 23/12/2017).
- 15 World Bank. (2017). **Jordan Economic Observatory: Strengthening the Green Economy**, Washington. web site: <http://www.albankaldawli.org> ,(Date viewed ; 26/12/2017).
- 16 IMF. (2017). **Regional Economic Prospects**, Washington, Website: <http://www.imf.org/ar/Publications/REO/MECA/Issues/2017/10/17/mreo1017>, (Date viewed: 28/12/2017).

How to cite this article by the APA method:

Bouguerra Imane, (2018), **The Effect of Electronic Payment Systems on Economic Growth in Jordan During The Period (2003-2015)**, El-Bahith Review, Volume 18 (Number 01), Algeria: Kasdi Marbah University Ouargla, pp. 571-581.