

**The electronic clearing system in Algeria after 13 years of reforms:
with reference to the Tunisian experience**

نظام المقاصة الالكترونية في الجزائر بعد 13 عاما من الإصلاحات: مع الإشارة إلى التجربة التونسية

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Abstract:

This study aims to highlight the assessment of the Algerian electronic clearing system, set up since 2006, thus after 13 years of the reform, and aimed essentially at the dematerialization of the exchange of values. This passage was an obligation imposed by the economic situation that the banking system knows through the internal and external landscape.

The study showed that the Algerian electronic clearing has a static position in the development of the means of payment circulating in the system as well as the recovery times of values. Algerian banking system suffer late compared to that of neighboring countries like Tunisia, where the electronic clearing went from 48 hours to 24 hours between 1999 and 2011 in terms of recovery, and the entry into E-clearing of standardized bills of exchange, after four years of operating application.

Keywords: Electronic clearing; Algeria; Bank; Dematerialization; Means of payment.

JEL Classification Codes : E58, G21, O33

ملخص:

تهدف هذه الدراسة إلى تقييم المقاصة الالكترونية في الجزائر، والتي تم استحداثها عام 2006م، أي بعد 13 عاما من الإصلاح الذي كان يهدف بالدرجة الأولى إلى لامادية تبادل القيم. حيث كان يعد هذا الانتقال حتمية لا بد منها نظرا للوضعية الاقتصادية للنظام المصرفي آنذاك والمرتبطة بالمشهدين الداخلي والخارجي.

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أظهرت هذه الدراسة أن المقاصة الالكترونية في الجزائر تعرف نوعا من السكون فيما يخص وسائل الدفع المتداولة إضافة إلى آجال تحصيل القيم. وهذا ما يعني أن النظام المصرفي الجزائري يشهد تأخرا في هذا المجال مقارنة بالنظم المصرفية لدول الجوار كتونس مثلا التي شهد نموذج المقاصة فيها انتقالا لآجال تحصيل القيم من 48 إلى 24 ساعة في المجال الزمني المحصور بين عامي 1999م و2011م، ناهيك عن البدء في استغلال السفتجة المنمطة خلال 4 أعوام من دخول المقاصة الالكترونية حيز التنفيذ.

كلمات مفتاحية: مقاصة الكترونية، الجزائر، بنك، لامادية، وسائل الدفع.

تصنيفات JEL: E58، G21، O33

1. Introduction

In 2006, the Algerian authorities decided to switch from manual clearing to electronic clearing. This is part of the modernization of the banking system to make it more attractive to foreign investors, and even for Algerian business.

This passage was not easy, given the heaviness of the design of the system itself, and the density of the Algerian-banking network in terms of the number of agencies.

To this end, we report that Algeria at the launch of this system, appealed to the French in the establishment of the platform of the Bank of Algeria and some commercial banks. In addition to Tunisians for the remaining part of the Banks.

This is the reason why we adopted in our analysis the Tunisian approach in electronic clearing, comparing it with the Algerian model in the practical case of this article.

The problem of this study lies in the assessment of electronic clearing in Algeria, after 13 years of reform since 2006. So, we propose the following sub-questions:

- What is the general clearing framework in Algeria, before and after 2006?
- What are the technical specificities of the Tunisian electronic clearing model?

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- What are the technical specificities of the Algerian model of electronic clearing?

This study has a number of objectives, which can be summarized as follows:

- Definition of the general framework of the Algerian clearing system before and after the reform;

- The determination of the technical specificities of both the Tunisian and Algerian models of electronic clearing;

- Make a comparison between the two countries, in order to take advantage of the Tunisian experience in this area.

The context of this study, is part of the evaluation of the electronic clearing in Algeria through the Tunisian model, this compared to the reforms that the Algerian banking system is experiencing in terms of modernization of information systems, notably that the introduction of the electronic clearing date since 2006, so it is mature now to be evaluated.

According to this idea that this study is important because the Tunisian model is close to that of Algeria, in the start in terms of software used, the means of payment that circulate in the system, as well as the human factor that manipulates it.

For the moment, the current state of knowledge is pleasant and the technics used in electronic clearing in Algeria have become ordinary, and reforms are recommended, which this study aims to propose a panoply of recommendations, to make it more efficient for the future. For the interest of the banks as well as its customers.

In an attempt to answer the problematic of this study, we will tackle the following axes:

- First section: General framework of clearing in ALGERIA.

- Second section: Case study (Technical overview on Tunisian and Algerian electronic clearing models).

In this context, we expose some previous studies related to this topic as a literature review:

- Study of SIDI MAMMAR Lydia, *Essai d'analyse de l'impact de la réforme du système de paiement sur l'utilisation des moyens de paiement scripturaux en Algérie : cas de la commune de TIZI OUZOU*, thesis of magister, UMMTO, 2015. This study consisted of knowing the impact of the new payment system on the level of use of fiduciary means of payment in Algeria. The researcher revealed that the use of fiduciary means of payment in Algeria is not a purely banking problem, but it refers to several social, regulatory and technical factors that limit its use. Such as the weight of the informal economy and the lack of awareness campaigns and incentives for the population towards the use of bank payment methods.
- Study of kouider SENOUCI and abdellatif KERZABI, *Le nouveau système de paiement et la gouvernance bancaire*, revue l'entreprise, University Algiers 3, n° 04/2015: The researchers exposed in this paper the relationship between banking governance and the introduction of the new payment systems, including electronic clearing and the real time gross settlement system. The objective is to see how the new payment systems can meet the requirements of good banking governance. This study has shown that weak banking and network density, staff overload, centralization of lending and weak demand for banking services, characterize the Algerian banking system. To this end, banks and financial institutions must prepare for the era of connections to the international financial system in order to escape the bad surprises that may arise.
- Study of Alexander Ekow Asmah and al, *Understanding the Electronic Cheque Clearing System in Ghana*, The Electronic Journal of Information Systems Evaluation, ejise-volume21-issue1, Jun 1, 2018: This study addresses this research gap by studying the nature of Electronic Cheque Clearing System ECCS in Ghana to identify the inherent challenges. To achieve the objective, data was collected through interviews, observations and direct participation. Findings suggest that cheques go through five set of processes before they are cleared electronically; different from the four processes indicated in existing literature. These processes are Pre-Conversion, Conversion, Transaction, Security and Storage. The preconversion process depends on the banks objective, whilst some banks centralize the process to

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reduce cost; other banks decentralize the process to enhance service delivery to customers. The remaining processes are the same across all banks in Ghana. The study also found that security breaches at cheque printing houses, poor bank collaboration and manual cheque reviewing process are the main challenges facing ECCs.

- Study of Adel M. Qatawneh and al, *The Impact of Applying the Electronic Cheque Clearing System on Employees' Satisfaction in Accounting Departments' of Jordanian Islamic Banks*, International Business Research; Vol. 9, No. 2; 2016: This study aims to investigate the impact of applying the electronic cheque clearing system on employees' satisfaction in Accounting Departments' of Jordanian Islamic banks. The population of this study was the employees who work at the Accounting Departments. A random sample of (150) employees who work in Accounting departments, particularly clearing directory in the Islamic Banks in Jordan were chosen to be the sample of the study. One hundred and fifty questionnaires were distributed to the employees who work in clearing directory and those who worked in this directory in the Islamic Banks in Jordan. The results indicate that there is a weak impact of the independent variable the applying ECC system (Reliability, Responsiveness, Tangibility and Privacy) on the dependent variable (Employees' Satisfaction) in Jordanian Islamic banks. Against expectation, the results show that only Tangibility has a positive and significant relationship with 'Employees' Satisfaction. The researchers recommended that employees' satisfaction in bank sector may affect customers' satisfaction positively or negatively because most of employees in this sector deal with customers face to face.

2. The General framework of clearing system in ALGERIA :an overview

From a historical point of view, the clearing in Algeria can be subdivided into two parts: manual clearing before 2006 and electronic clearing after 2006. In this section, we will present these two notions. While expressing the need that provoked such a reform in Algeria.

2.1. The era of manual clearing before 2006:

Before 2006, the Algerian banking system worked with manual clearing, in terms of recovery of values. This weighed heavily on both banks and their customers. In this section, we will expose the manual clearing according to several parts as follows:

2.1.1. Definition of manual clearing:

The manual clearing is realized by the daily meeting of the banks on the same place within the clearing house, to exchange the values, which are domiciled to each other, and to determine for each of them the final range, which it will have to settle. Alternatively, to receive towards the community (SIDI MAMMAR, 2015, p. 124). Clearing operations mean all the daily exchanging operations between the Bank of Algeria and the Members and those occurring between the Members. In favor of the holders of accounts recorded in their books, as well as the means of fiduciary or electronic payment including, namely, the checks and any other bills held daily by such members and bank against each other, as well as the transfers. Such operations shall obligatory be carried out at the Head Office of the Clearing House at the presence of the Members' Representatives (Bank of Algeria, REGULATION 97-03 OF NOVEMBER 17 TH , 1997 RELATING TO THE CLEARING HOUSE, 2019). To this end, we proceed based on these definitions, that the manual clearing is a physical exchange operation of the means of payment within the Clearing house of the Bank of Algeria. This operation allows the allocation of customer balances without the need for a physical move. Since the banks do it.

2.1.2. The classic clearing system:

In Algeria before 2006, for the recovery of fiduciary means of payment issued to their customers, the banks, Algerian Poste and the Public Treasury resorted to various methods of recovery, generally divided into two parts, namely: intra bank and interbank (GUETTAF , 2006, p. 6). This can be done by different systems like (La banque de développement local , 2005, p. 6):

- Clearing at the house of the BA (Bank of Algeria, REGULATION 97-03 OF NOVEMBER 17 TH , 1997 RELATING TO THE CLEARING HOUSE, 2019);
- Direct exchanges;

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- Interbank recovery (GUETTAF , 2006, p. 6);
- Intra-bank discounts by writing between head office.

2.1.3. The progress of the clearing operation:

In a clearing operation, we can distinguish two technical steps, namely the agencies and the Bank of Algeria.

2.1.3.1. Agency tasks: these functions are as follows (La banque de développement local , 2005, p. 5):

- Customers turn to their bank agencies to ensure the recovery of their debts or the payment of their debts;
- They entrust them with means of payment (at sight or at maturity) for recovery from one of the agencies or from the other banks.
- At the same time, the agency receives means of payment (at sight or at maturity) from other agencies or colleagues to be charged to the accounts of its customers.

2.1.3.2. Tasks of the Bank of Algeria: these functions are as follows (GUETTAF , 2006, p. 7):

- Presentation by banks, Algeria Post and the Treasury of their values (checks, bills & transfers) on paper;
- Exchange of values with other banks;
- Establishment by the B.A of summary checklists for each payment instrument;
- Establishment of the balance sheet of the clearing, the amounts of which are debited or credited to the current accounts of participants held by B.A.

2.1.4. The constraints of manual clearing:

Compared to the presence of a host of obstacles characterizing the manual clearing in Algeria, the transition to the automated one was made in 2006. The reasons that justified such a passage are the following (شايب، 2007، صفحة 158):

- The multiplicity of procedures and clearing segments;
- The multiplicity of deadlines for payment of the value of means of payment;
- The heaviness of settlement operations between banks and financial institution;

- The double treatment of operations, namely at the level of the primary banks' portfolio services and the clearing houses of the Bank of Algeria thereafter;
- The huge need for a workforce in quality and quantity;
- The high cost of paper, archiving, transport, and processing ... etc.

2.1.5. The modernization of the payment systems:

After a phase of diagnosis and studies, the Bank of Algeria and the banks of the place undertook, from 2003 and in a resolute way, the development and the modernization of the payment systems and this, in coherence with government orientations (Banque d'Algérie, 2019). The reform implemented was conceived as a global response to these rigidities within the framework of an integrated and structuring project for fast modernization of payment systems, whose main actions implemented, are as follows (Ministère des finances Algérien, 2019):

- Optimization of processing times and security for checks;
- The development of the use of the transfer for inter-company payments, wage payments and for certain payments between individuals;
- The mutation of information systems towards an architecture adapted to electronic clearing;
- Creation of the Interbank Pre-Clearing Center (IPC), a subsidiary of the Bank of Algeria, to take over the management of the electronic clearing system;
- Introduction of provisions amending the Commercial Code by including the notion of dematerialization in the processing of payment transactions when presenting the check and the bill of exchange to the clearing house, the derogation from the bankruptcy law and the definition of certain payment instruments other than check: transfer, direct debit and bank card;
- Adaptation of the bank information system to electronic clearing;
- Increase in the rate of banking of economic activity (SNOUCI & KERZABI, 2015, p. 41);
- Adapt interbank payment, clearing and settlement systems to the needs of administrations, businesses and individuals, and take into account the

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requirements of a modern economy, particularly by promoting the development of new electronic instruments (Banque d'Algérie, 2019, p. 105).

2.1.6. The results of the reform:

The achievement of the objectives referred to above, has led to a consistent progress on the Algerian banking system, this can be translated in relation to the following points (Banque d'Algérie, 2019, pp. 106-107):

- Develop the standards of payments, an essential precondition for the modernization of mass payments;
- Modernize the information system of the Bank of Algeria as a necessary complement and support to the payment systems and processing of monetary policy operations;
- Strengthen the telecommunications infrastructure between the Bank of Algeria and the head office of each bank, Algerian Post, the Treasury and the central depository;
- Establish an infrastructure to improve efficiency in the processing of interbank transactions and the financial market.

In this context, the Bank of Algeria has also contributed to the preparation of the regulatory framework for the organization and operation of the two payment systems, namely electronic clearing and real-time gross settlement. These two payment systems went into production in 2006, the real-time gross settlement system with large amounts and urgent payments on February 8 and the electronic clearing on May 15, 2006.

2.2. The clearing system in Algeria after 2006: toward the electronic clearing:

The project of setting up the electronic clearing was registered since the 80s. It was a recurring request of the whole banking place, to answer the legitimate requirements of the customers concerning the speed, the reliability and the security of payments, but it was also at the top of the recommendations made by the multilateral financial institutions in the context of the financial system assessment work (Ministère des finances Algérien, 2019). On this basis, it is clearly remarkable that the introduction of this reform in Algeria was no longer a choice but a multidimensional

requirement. Imposed by the external environment to Algeria, the customers, and even by the Banks. To make this banking market more attractive and flexible in managing daily banking operations.

2.2.1. Definition of the electronic clearing:

"The system of electronic clearing is intended to reduce recovery times by replacing the system of physical exchange of values between banks by an electronic exchange system. Thus enabling the clearing to be settled within two business days of the date of delivery by the customer " (BETTAIEB , 2007, p. 7). It is also defined as" a system of automated clearing of checks, bills, transfers, cards and direct debits. This system is a complementarity to the system of real-time gross settlements of large amounts and urgent payments " (Banque d'Algérie, 2019, p. 109). In addition, a payment system is defined as "a set of instruments, procedures and rules for the transfer of funds between participants in a system, normally based on a technical infrastructure" (ZALENE , 2007, p. 3). Finally, we note that the Algerian legislator has defined this system by the electronic settlement system called Algeria "Inter-bank clearing system", called ATCI has been set up by the Bank of Algeria. This is an electronic inter-bank clearing system for cheques, securities, bank transfers, direct debits and payment with bank cards (Bank of Algeria, Regulation 05-06 of december 15 th 2005 relating to the Clearing of checks and other mass instruments of Payment, 2019). Thus, the electronic clearing can be defined by an electronic exchange system of values contrary to the manual clearing. Having the advantage of reducing the time taken to recover values between banks.

2.2.2. The launch of the electronic clearing in Algeria:

The Bank of Algeria has delegated the power of the technical management of the electronic clearing to the Interbank Pre-Clearing Center created in 2004 in participation of 18 participants, namely: the Bank of Algeria, the commercial banks, Algeria Post and the Public Treasury (شايب، 2007، صفحة 161). As stated above the effective entry into operation of this system was until 2006. In this sense, we note that the time interval between 2004 and 2006 was reserved for the technical and legal preparations of a heavy system, the size interbank electronic clearing.

2.2.3. Characteristics of electronic clearing in Algeria:

This system holds a range of specificities of a purely technical nature, we can mention the following (Centre de Pré-compensation Interbancaire, 2005, pp. 05-08):

- A net system calculating at the end of each day of clearing, the multilateral balances of each participant, balances it transmits to the system of payments of large amount managed by the Bank of Algeria, for settlement;
- A self-protected system with maximum authorized limits of multilateral balances that in case of overrun; the operator is alerted to make the necessary arrangements;
- A secure system against the risk of fraud through sealing and encryption techniques, and against operational risks, hence the implementation of hot and cold back-up systems;
- Multilateral clearing balances are recorded in the RTGS system in the settlement accounts of participants on an "all or nothing" basis;
- An automated and dematerialized system, based on the exchange of electronic transactions and the elimination of the physical exchange of values (principle of dematerialization) (GUETTAF , 2006, p. 12).

2.2.4. The interbank pre-clearing center:

In 2004, the Bank of Algeria created a subsidiary called Interbank Pre-Clearing Center, with the participation of banks and Algeria Post, to ensure the realization of the system of electronic clearing (Banque d'Algérie, 2019, p. 109). The main missions of this structure were (Centre de Pré-compensation Interbancaire, 2005, p. 11):

- Opening, operating and closing the System;
- Supervision of preventive and curative maintenance interventions;
- Implementation of regular tests of contingency plans or continuity of operation;
- Coordination of the actions of all stakeholders in the event of a major breakdown of a component of the computer system or telecommunications and more specifically, the management of the emergency plan (GUETTAF , 2006, p. 20);

- Establishment and management of the means of physical and / or electronic archiving of compensated values (Algerianbanks, 2019);
- To act as certifier (Algerianbanks, 2019);
- Determination of the balance of clearing (SNOUCI & KERZABI, 2015, p. 44).

2.2.5. Organization of the electronic clearing day:

The profile of the electronic clearing day is divided into three periods, which are:

- The trading period, during which the central system is open to process discounts and possibly respond to requests from participants;
- The settlement period, which begins by sending the multilateral balances file to the RTGS system for settlement and ends with the receipt of the settlement confirmation notice;
- The operating period reserved for backup, archiving, purging, administration of the database.

For this purpose, the central system calculates the current positions of the participants in the course of the water by settlement date, generates a daily pre-payment file for the balances and presents it to the RTGS, and upon receipt of the notification of settlement, it transmits to each participant its settlement summary. In case of insufficient provision in the settlement account of a participant in the RTGS, the day's clearing is rejected. The central system can proceed with the recalculation of the clearing by excluding the movements of the defaulter and a new balances file is then transmitted to the RTGS (Centre de Pré-compensation Interbancaire, 2005, pp. 19-21).

3. Case Study - Technical Overview of the Tunisian and Algerian electronic clearing Models -

We considered it useful to proceed with the exposure of the overview of Tunisia before that of Algeria, because this neighboring banking system started this technique before Algeria, so this logic is based only on a historical chronology. The choice of the Tunisian model was made because it is close to that of Algeria, in the startup in terms of the software used, the means of payment that circulate in the system, and the human factor that handles it. They are almost homogeneous because computer software and training of

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staff of a large part of Algerian banks was imported from Tunisia, at the start of this system in 2006.

3.1. A technical overview on the Tunisian electronic clearing model:

The process of electronic clearing has been started in Tunisia since 1996, with effective entry into operation in 1999. In this part, we will focus on the technical profile of the electronic clearing day in Tunisia, while presenting the key dates related to this system.

3.1.1. Procedures for recovery by electronic clearing in Tunisia:

In Tunisia, the customer's bank is required to execute on the day of its receipt, any order given by its customer if it contains all the required information, including the beneficiary's Bank details, and that the account is provisioned. Thereafter, the transfer order is transmitted by the bank of the payer to the Interbanking Company of clearing which is responsible in Tunisia, after processing and controls, to make it available to the bank of the beneficiary.

The beneficiary's bank then proceeds to the credit of the customer's account as soon as the windows are opened, for checks and bills of exchange. By dint of this system, any value given by the customer to his collection agency is processed and forwarded (electronically) to the Interbanking Company of clearing (ICC), which is responsible for transmitting it to the recipient bank. If there is no rejection from the recipient bank, the remitting bank then credits the account of its customer.

However, and in order to allow the recipient banks to carry out the usual checks (formal regularity of the title and verification of the signature), and to make the payment of the checks (or bills of exchange) presented to them through the registrations computer, the visualization of these checks (or bills of exchange) proves necessary. Thus, the computer records exchanged are accompanied by scanned images of these same checks (or bills of exchange) (BETTAIEB , 2007, pp. 7-8).

This project is part of the ongoing modernization of national payment systems aimed at improving the quality of services and compliance with international standards. It was started in a progressive manner for the transfer

in November 2010 then the direct debits in December 2010 and the bill of exchange in January 2011.

To ensure success and make the most of the new 24 hours electronic clearing system, the Tunisian professional bank and financial institutions advises customers (individuals, professionals) to develop the reflex to deposit its values with their banks in the morning and preferably before noon, so that they are treated the same day (Tunisienumerique, 2019).

Therefore, as explained above in explanation, the profile of the day of electronic clearing in Tunisia is composed of two types of flows, which are the flow in information and time. Therefore, the information passes from the remitting bank to the recipient bank and returns within a maximum of 24 hours. Indeed, this process is crowned by sending a detailed report to the Central Bank of Tunisia, including the net clearing situation.

3.1.2. The main dates of the electronic clearing evolution in Tunisia:

Le electronic clearing in Tunisia is linked to time intervals, specifying the achievement of a certain number of objectives. In this context, we note that Tunisia has gradually developed this system within the banking circuit as follows:

Table 1. The main dates related to electronic clearing in Tunisia

Period	Achievement
Before 1996	Clearing values materially through the physical exchange of values. Photo: Former Tunis Clearing House at the Central Bank of Tunisia where representatives of the various local banks used to meet. Clearing values materially through the physical exchange of values.
1996	First step in the dematerialization process: clearing values by collecting data on a magnetic support. Photo: Manual collection of data using disks at the Central Bank of Tunisia.
Dec. 1996	Decision of the public authorities to launch a project to upgrade the banking sector.
Nov 1998	Designing the new Electronic Clearance System

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Nov. 1, 1999	Establishing interbank company clearing.
Dec. 17 1999	Launching the electronic clearing of transfers and direct debits.
Dec. 28 2001	Launching the electronic clearing of check without using scanned images.
June 21, 2002	Generalizing the electronic clearing of check using scanned images.
Oct 25, 2002	Launching the electronic clearing of standardized bills of exchange without using scanned images.
Nov 6, 2003	Launching the electronic clearing of standardized bills of exchange using scanned images and hypothecated bonds.
Nov 22, 2010	Migration of the electronic clearing of transfers to the 24 hours version.
Dec. 13 2010	Migration of the electronic clearing of direct debits to the 24 hours version.
May 9, 2011	Completion of 24-hours electronic clearing start-up for all values.

Source: BOUNATIROU & SALAOUTI, 2005, p. 09 and SIBTEL, 2019.

According to this table, we note that Tunisia has continuously developed its system of electronic clearing, with the addition of one period to another of a new means of payment or another technical option. Until the arrival at the stage of a system in 24 H. knowing that, this banking system currently envisages the future design of a system in real time (SIBTEL, 2019).

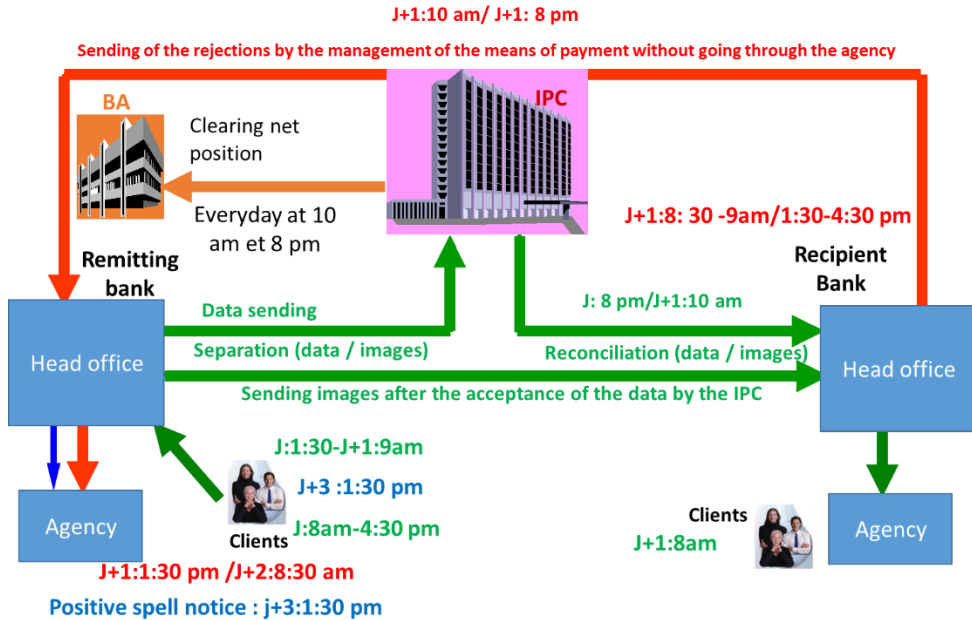
3.2. A technical overview on the Algerian electronic clearing model:

The Algerian electronic clearing System, is linked to a day profile differ from that of Tunisia. In this part, we will technically explain this profile, while presenting the main dates inherent in this system.

3.2.1. Procedures for recovery by electronic clearing in Algeria:

The profile of the electronic clearing day does not resemble the one existing in Tunisia. The following diagram illustrates this circuit, which we designed based on interviews with several Algerian-banking executives.

Fig.1. The electronic clearing circuit in Algeria



Source: Prepared by the researcher based on: Algerian banking executives, 2019 and BEN MANSOUR, 2005, p. 04.

According to this figure, and as specified above in the Tunisian model. We also see two types of flows, which are the flow in information and time. Therefore, the information passes from the remitting bank to the recipient bank and returns within a maximum of three days. Since the rejections and payments are offset by a day in Algeria. Also we specify that the images and the data of the checks separate at the level of the platform of the remitting bank, since the solution of treatment electronic clearing existing at the level of Bank of Algeria is not compatible with the formats image. For this purpose, the images are separated and sent to the platform of the recipient bank and this, after approval of the IPC. In addition, we specify that the commercial effects be not concerned by this separation, because to this day this means of payment is sent physically in Algeria. Only the data relating to it only circulating in the electronic clearing system. Therefore, there is no scanned image for him to have a separation.

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Moreover, it should be mentioned that some Algerian banks in the private and even the public sector have shifted the function of processing back-payment transactions by agencies to central structures, unlike Tunisian banks. This is an advantage especially in the case of a problem of network breakdown, between the agency and the Bank's head office. However, it should be noted that if the customer's account is in short supply, the agency is contacted by the head office to possibly manage the payment incident.

3.2.2. The main dates of the electronic clearing evolution in Algeria:

The electronic clearing in Algeria is linked to time intervals as well, the following table showing this evolution:

Table 2. The main dates related to the electronic clearing in Algeria

Period	Achievement
May 15, 2006	Start of check clearing.
July 2006	Start of transfer clearing.
October 2006	Start of the electronic clearing of Bank cards transactions.
Until April 2007	Completion of the electronic clearing of direct debits and bills of exchange
perspectives	The total dematerialization of the bills to definitively eliminate the rejection for paper not arrived at the due date of payment.

Source: prepared by the researcher based on: Ministère des finances Algérien, 2019 and Banque d'Algérie, 2019.

The analysis of this table, allows us to deduce that the Algerian system displays a static position in terms of development. Since processing times remain unchanged over 3 days, even standard means of payment have not been updated. Since 2006, the bill of exchange circulates in the electronic clearing system in its non-standardized form.

3.3. Comparison between the two models:

Algeria launched the electronic clearing system in 2006, but since no changes have been made to its structure and even the standardized bill of exchange remains a project drawn up on a roadmap. While Tunisia has proceeded with the electronic clearing with standardized bill of exchange after four years of launching this system only. In addition to this, Tunisia has

moved from 48 hours as 24 hours recovery time after eleven years of launching this system. While this parameter remains unchanged in Algeria is 72 hours and since 2006 is a time interval of thirteen years.

From another approach of analysis, we note that the dematerialization of payment methods in France began in the late sixties with the creation of the withdrawal notice, particularly for the settlement of electricity bills and the settlement of the income tax, then the automated transfer and bill of exchange. It is therefore these three means of payment that have fed the exchanges carried out in the SIT (interbanking system of electronic clearing) to the creation of the latter in 1992. The dematerialization then extended to the commercial effects, exchanged in the SIT from in 1994, and then to all interbank transfers, the physical exchange between banks of which was abolished in 1998 (Bardinet, 2002, p. 58).

4. Discussion:

13 years after the reform, the Algerian system of electronic clearing remains unchanged. The recovery times for the values have been the same since 2006 (system startup year). In addition, the means of payment accepted within this system are the same as well. We also noticed the comparison between Algeria and Tunisia. That the evolution of the systems is a systematic thing. Whether in terms of payment or transaction processing time. It is missing in our banking system. In other words, and to ensure objectivity in our analysis, we must not lose sight of the filled part of the glass. This compared to the size of the two countries, because the comparison is not perfect. Adding to this the clearing of promissory notes in Algeria, unlike in Tunisia, which is due to regulatory reasons. Nevertheless, those elements does not prevent us to boost anyway. On the contrary, it is an encouraging factor, since we have managed to achieve such a system on such a surface, so we are eventually able to meet other challenges in the future.

Based on those results, lessons can be derived from the Tunisian experience, as the adoption of a reflection whose purpose is to reduce processing times for electronic clearing transactions, and the integration of

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other standardized means of payment next to the check, such as the bill of exchange and the other bills.

5. Conclusion, limitation and future research:

The Algerian system of electronic clearing is very close to the Tunisian one, especially at its start as specified in this paper, but the evolution has differed from one banking system to another, from a technical and organizational angle. Hence, the subject of the proposed recommendations, for this purpose the limits of this study can be broken down as follows:

- Make comparisons with other Arab countries that have followed the Anglo-Saxon approach such as banks installed in golf countries;
- Make a comparison with developed countries;
- Conduct empirical studies highlighting the economic impact of the electronic clearing on the balance sheet of Algerian banks, before and after the reforms.

On these bases, future studies that can be developed from this paper are:

- What economic impact of the electronic clearing on the accounting of Algerian banks?
- The check, is it a solid mean of payment after the introduction of the electronic clearing in Algeria?
- The electronic clearing in Algeria, what influence on the attractiveness of foreign investors?

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