

# THE CARD - CURRENCY WITH AND WITHOUT CASH

**Țirlea Mariana Rodica**

*“Dimitrie Cantemir” Christian University Bucharest  
Faculty Of Economic Sciences Of Cluj-Napoca*

**Nicoară Mihaela**

*“Dimitrie Cantemir” Christian University Bucharest  
Faculty Of Economic Sciences Of Cluj-Napoca*

*Use by individuals and businesses resulting in reduced cash cards in circulation, the corresponding increase in transfer payments and payments accounts also limit exchange risks and make effective use of currency. As a result, we have the effect of reducing cash in circulation.*

*These advantages are also available for businesses and for banks and leads to favorable effects on import-export business.*

*Following this, banks can diversify our products, so to meet customers' new products.*

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## **1. INTRODUCTION:**

The large cash flow and the cost of cash in circulation amounted to 2-3 percent of the banks was very high costs for banks. This was the reason that led to the need to find solutions that reduce cash operations.

Solving this problem has direct effects on economic activity, resulting in a series of medium and long term benefits provided: reduce cash in circulation, the corresponding increase in transfer payments and payments accounts, which are equally benefits for individuals, businesses and banks. Banks have the opportunity to diversify their services so as to come as much to meet customers' wishes.

In Romania, the first payment system was introduced by VISA global network, which is the largest international network which performs 80 percent of all commercial transactions in countries where it is used.

Stages, the transition from cash payments from card operations is as follows:

1. to create logical, necessary support for foreign card holders, issued by foreign banks, can be used anywhere in Romania;
2. stage show, the Romanian banks have begun issuing credit cards, conditioned that the cardholder must meet the requirement of having bank accounts
3. ATM network establishment.

In 2005, the Bank has issued regulations on the principles and organizing card payments by the banks, which led to the creation of legal framework in Romania and therefore creating the conditions for companies, banks and households to benefit fully from new payment instruments.

## **2. THE LITERATURE AND THE PRACTICE**

The first reference to card, as new means of payment, was made in the paper published in 1880, "Looking Backward" of the American writer Edward Bellamy, who already imagined that in 2000 the money will be replaced with a value card payment predetermined, which would enable their holders to receive credit.

1914 is the first birthday of the card, symbol of a relationship between a business entity and a customer. This year, "General Petroleum Corporation of California" (later the Mobil Oil) issued a credit card to its officials and a few carefully selected clients. The issued card, which takes the form of metal plates, had a recorded information on each client who had a credit line. At that time, The Western Union handed over a metal plate such its most loyal customers and the

telegraph company in 1915 to issue plates for its main customers and identify and authenticate their telegrams.[\[1\]](#)

The advance took credit cards occurred in a relatively short period and went hand in hand with technological advances. Its size is directly related to technological innovations, particularly Internet and the rest of the media.

The first modern form of card appears only in 1949 when Frank McNamara along with his partner, Ralph Schneider, created the first credit card payment in restaurants, with Diners Club Card brand. In a few years, the card would be accepted by thousands of traders. In 1951 there were 20,000 such cards. Diners Club Card will be recognized as a new payment instrument.

Banks soon found McNamara's success and began to develop payment systems on the same principle but with some improvements. Profits were realized from fees charged owners. Their number was higher, the banks had higher incomes. Institutions such as American Express and Franklin National Bank began an offensive to popularize the real card.

In 1958 there is a leap forward in the history of payment cards, due to U.S. Bank of America Bank of San Francisco, which introduced the universal precursor of the modern card, called BankAmericard. The Bank of America bank card quickly proved that there is an extended market for bank credit cards and universal (general purpose), in that it is accepted by any merchant participating in the payment system for buying any kind of product and that any of its holder to buy on credit.

Gradually banks have found another opportunity and profit: the interest. From business based charging, the cards have become a huge business based on charging interest. The concept "buy now pay later" has become extremely popular in a very short time. The banks have realized that profits from consumer loans can be higher than in commercial loans.

In 1976, the BankAmericard cards have become the well known Visa and Bank of America, together with other associated banks and going through several transformations, is Visa International. Visa International is a huge cooperative association of banks that serve the same regulation and jointly contribute to the development and operation of the association. Other international electronic payment systems will be developed later, being more or less inspired or shaped by Visa. Thus, in 1966 and still having originated in Bank of America, has 17 U.S. banks formed association Interbank Card Association (ICA), which eventually became no less famous than International MasterCard with its own private telecommunications network (BankNet), the main competitor and rival Visa. The two systems of electronic payments by cards currently hold about 90% of the market.

The fictitious money on the card can give the false impression that they are inexhaustible.

### **3 THE BANKING CARDS IN ROMANIA**

The principles of organization card payments by the banks in Romania are set out in Regulation no. 6 / 14.11.1995, which is to lay down the rules applied in the service activity funds transfer and settlement of payment card.

The year onset bank cards in Romania is 1992 when a group of banks: BankAgricultural, Romanian Commercial Bank, Romanian Bank for Development, Bancorex Commercial Bank "Ion Tiriac" and in 1995 and BancPost, set up card programs in Romania, banks engaged in card issuing and in creating conditions for acceptance these payment instruments as a means of settlement in the Romanian economic environment. A first step was the accession of the program banks of Visa International and Europay systems worldwide, and creating specialized departments dedicated bank card operations.

Since 1993, banks have initiated programs for processing transactions on cards issued by international banking system. To this end, was formed the ROMCARD company specializing in automatic processing operations performed by cards. Romcard also acts as a related entity (interface) between the Romanian banks and international use of the card system. Romcard offers

the advantage of obtaining the Romanian traders, the authorizations in a time of 30 sec., and provide foreign settlement facility within two business days.

Another important step was the issuance of cards in local currency. Starting in 1996, the Romanian commercial banks have started issuing the cards to cover the value in local currency denominated deposits.

Use by Romanian companies issued cards VISA or Eurocard / Mastercard, involves favorable effects on import-export activities such as foreign exchange risk limits and actual use of foreign exchange payments.

The Romanian market the cards, although it was in the beginning, is characterized by a diversification of products. Thus, BRD launched its first national card, called the first card issued under a deposit agreement in lei. Overcoming their availability is allowed for the payment instrument, within the coverage within 30 days.

Among the products launched by other banks we noted: "Agricultural Bank Visa Classic"; "Europay BCR Maestro"; "BCR VISA Classic"; "BCR Eurocard - Mastercard"; "Banc Post - VISA Classic Thrive"; "Ion Tiriac Bank - Eurocard Mastercard" which highlights traders prefer to use these payment instruments, compared with cash payments.

In this paper payment cards in Romania, the authors Red-Hamzescu, and others, MONDO Publishing-EC, Craiova, 1997, payment cards fulfill different functions such as identification, debit and credit. Starting from these relations that arise are very different. Such identification card when we deal with relations between the holder and issuer and subject of these relations and the account balance is included in it, if we deal with a credit or debit card, present client, beneficiary and payer's account manager. This book uses paying customers to adjust its debt to the trader substituting payment by check or cash. If the check is a payment, the order book is nothing but generating matrix of the wire.

When a bank issues a payment card, it opens holders who are natural persons or legal accounts. The bank is required to ensure their full monthly account statements containing the following specifications: amounts relating to transactions, bank fees, interest on deposits side, bank interest charged for loans, date of transactions, merchant name and location where operations concerned, etc. [3]

#### **4. THE CARD. CONCEPT, CLASSIFICATION AND FEATURES**

The credit card is a means of cashless payment and settlement, enabling cash withdrawals from ATMs counters, which provides the owner authorized the purchase of goods or services, financial linkages between traders and consumers

The literature in banking practice meets these criteria for classification of cards:

- 1) By the way of information storage and security features of the card;
- 2) After the functions performed;
- 3) After the quality of the issuer;
- 4) After the transaction.

- 1) By the way of information storage and security features of the card
  - Magnetic stripe cards;
  - Microprocessor cards.
2. After the functions performed
  - Debit cards;
  - Credit cards.
3. After the quality of the issuer
  - Cards issued by banks;
  - Cards issued by non-banking companies.
- 4 After the moment when is using the transaction

- Payment cards before (frontloaded);
- Pay now (debit cards);
- Pay later (credit cards);
- Card dealer (retailer card);
- Card charges (charge card).

The cards have some common features:

- Presents card in plastic, standard size and thickness;
- On the card is printed by printing (embossing) or laser engraving: the issuer's name, the card number, the duration, the name of owner;
- On the reverse of the card issuer is printed a logo, a hologram security standard;
- On the reverse of the card is always applied magnetic tape registration elements and signature space designated owner;
- These common features provide uniformity card technology and universal recognition. [1].

## **5. THE ELEMENTS OF SECURITY OF THE CARD AND THEIR PRESENTATION**

The card features special material must be of PVC or other material PVCA or fulfill the same features such as polyester or polyethylene, resistant to deformation: the book must allow deformations (bending, not folding) occurring during normal use in a device read or print without prejudice the operation of the book; rigidity: if the book is too flexible it could not be used under normal conditions.

The physical characteristics of the cards are: flammability, chemical resistance, toxicity, humidity, light, heat stability.

The card thickness was determined taking into account the human factor: young, orientation, insertion and retrieval easy, convenient pocket.

The plastic card printing is mainly used to soften at 50 degrees Celsius. Allowing this card, there where created the characters in relief on their stamping. The payment card sizes are subject to international standardization in this area (ISO 2894), and the format is retained to 86x54x0.76 (in millimeters) with low tolerances.

### **5.1. THE MAGNETIC STRIPE CARDS**

The magnetic strip card is located on the backs, which can be protected by a thin plastic film (overlay). The tracks of tape magnetization corresponds to the various networks of transmitters, the style of card reader devices (ATMs, payment terminals) must be adapted to the characteristics of all network cards used and must take account of factors likely that can affect the magnetization tracks. In order to allow an international payment, the card standard was needed to support both itself and the information contained therein. After these requirements, it was prepared using two formats for magnetic tracks.

### **5.2. THE TRANSAC FORMAT**

It is called as the French manufacturer who has developed the first magnetic cards for cash withdrawal through vending machines bank notes. These magnetic tracks were known as T2 and T3, they are used to automatic first French are used today along with tracks ISO1, ISO2, ISO3, corresponding to ISO format.

The information can be recorded on the tracks that follow the format Transac and they are: T2: copy of identity banking service code and PIN (Personal Identification Number), T3: time of validity, date of withdrawal operations, limit withdrawals and number of weekly PIN attempts.

### **5.3. THE ISO FORMAT**

These were finalized after developing Transac format, the ISO track covers the following information: ISO1: 68 characters, fixed length (ISO 3554). This track is divided into three areas,

and it contains the following data: the first card number, name bearer in the second-by date, service code, the PIN verification, an area of 68 characters for the whole competition track for the third area. ISO2: 40 characters, fixed length (ISO 3554). This track consists of two parts: the card number in the first area and the second area includes: the validity date, service code, area confidential check code, a free competition in the 40 characters for all track.

ISO3: 107 characters, fixed length (ISO 4909), is a complement to track ISO2 and its encoding is optional. This track is divided into two areas: country code, currency, currency type, the total amount authorized per period, the balance available for the current period, the period start date, duration, number of tests of the code of confidentiality, the nature of accounts, date of validity, are among other elements the first area and the second area includes: a code structure, operating a number, date operations, the total amount authorized period, the balance remains available in the current period, on commencement of the period and duration.

Following these rules can make the following observation: only tracks ISO3 and T3 can be deleted to reset totals or authorized regular operations. T2 lanes, ISO1, ISO2, can only be read.

The magnetic cards have limits, they are related to technological and capacity of the runways and the degree of security they provide. These limitations include: limited capacity, security questioned where we need to discuss the risks of using the card, damage due to prolonged use, vulnerability to fraud, protect information, and a future compromise.

#### **5.4. THE BOOKS WITH ELECTRONIC MICROCIRCUITS**

These books include a microcomputer, on the one hand, only with the memory cards, without any "intelligence" and any protection and on the other hand, smart protected cards to access the memory area. In this section we understand payment card memory card with electronic microcircuit (CME) protected by security means.

The microcontroller book was invented in 1974 by Roland Moreno and the book has several advantages over tape. This book was the first means of disseminating information with logical access security architecture features a multi-dimensional, with a certain autonomy characterized by responsiveness to external events (blocking circuits after introducing a number of times the PIN wrong site) with a capacity calculation etc. The choice of components on the market to be a microcircuit card depends on your application needs to be done with it. These components are: electronic memories, processing units, micro-modules.

#### **5.5. MICROPROCESSOR CARDS**

A microcomputer can contain the same component of a microprocessor, different memory, registry status, data and address buses. Some companies have developed microcontroller cards with "two-way" and even "multi-chip". Microcircuit contains, besides the microprocessor itself, a music program, working memory and data memory. The information stored in the microcircuit is organized in words of 32 and they serve as indicators of system status, which is programmed to act differently depending on the value of those bits.

These bits are:

- A bit of validation, it indicates if the word is written or not;
- A bit that specifies the type of transaction: money or service;
- A bit of memory protection: secret word or unclassified;
- A bit starting block.

The operation of a microcomputer depends on keys introduced at different stages of life card:

- The key manufacturer: it protects the card to personalize it. Consists of the card serial number, indication of the manufacturer, card type and other information;
- The key Bank is the need to record a level of expenditure and its frequency to change the PIN. This key is specific to each card;
- The transaction key used for the calculation certification transactions;

- The opening key words or Service authorizes access to memory for one or more previously established providers.

If a card is inserted automatically, the microcircuit identifies it. If its components are operational, he expects orders to the PLC where it is connected. If the state control and the automatically procedure are correct, the card will respond to its various applications, such as identification card application, confidential code verification, application for registration of a transaction, record the information in the memory etc. [2]

## **6. THE CARD PAYMENT INSTRUMENT WITH AND WITHOUT CASH**

### **6.1 THE CARD PAYMENT INSTRUMENT WITHOUT CASH**

The credit cards are a simplified form of payment.

The card is a cashless payment instrument by which an owner may be authorized to pay for the goods or services purchased from authorized dealers or get cash from the issuing bank. Thus, the card offers to its holder the following facilities:

- On the one hand, a card holder can withdraw cash from their account (for this it uses special devices such as cash vending machines);
- On the other hand, using a card can pay the equivalent of a good or service, so based on an agreement between the payment card holder, issuer and trader of goods or service.

Thus, can be a group of these two big cards criteria:

A. After the facilities it provides:

- The credit card (credit card);
- The store card (card shop);
- The debit card;
- The cheque guaranteed card;
- The multifunction cards;
- The smart card (smart card).

B. After the issuer:

- The banking cards;
- The private cards (issued by retailers);
- The cards issued by other institutions and organizations.

As it follows, there are some card types listed above, along with highlighting the main benefits arising from their use for each participant in the transaction: cardholder, its issuer and merchant (store that accepts payment cards). [3]

### **6.2 THE CARD. THE CASH PAYMENT INSTRUMENT**

To release cash in banknotes and transfer funds for payment of services, providing account information using ATMs that are safes with notes, a counting mechanism, and another taking notes and transport are operated electronically, and a locking device connected to the alarm user to display a screen instructions so there is a payment card entry slot to convey information to the bank's computer center and receiving the answer, a keyboard to key money or payment for services requested and a slot with a cash drawer release.

The cashing procedure is as follows:

- Introduction of the payment card bay (card reader);
- Typing PIN (allowed only two typographical errors, in the third mistake is retained ATM card);
- Typing the desired amount not to exceed the limit specified in the Convention;
- Release cash and debit card personal account;
- Restitution payment card;
- Release receipt.

Payment transactions appear in the menu that is displayed, of which the most common concerns:

- For services such as telephone bills, electricity, gas etc.
- Loan repayments, interest payments, commissions etc.;
- Obtain account balances and other account information;
- Obtain the financial information market (interest on deposits, loans, securities or other securities);
- Cash management operations.

By typing the chosen menu, the requested data is processed, then waited and the solicitation transaction confirmation is optional.

## **7. THE MANAGEMENT OF THE CARDS**

The credit risk management portfolio focuses primarily on cards issued by banks.

The conditions of developing banking risks are determined by the expression of several factors that depend on general evolution of the economy, changes in organization bank, financial decisions, political and economic conditions.

The operations management with cards is in connection with the risk management.

Relative to risk, they refer to: operational risk, reputational and legal risk as the major categories of risk, especially for international banks.

The operational risk can arise from a failure to correct the system of electronic money or electronic banking and the development or inadequate implementation of these systems. In this category fall the following risks:

The security risk: this risk may be increased if the banks fail to incorporate adequate measures to detect and prevent counterfeiting.

The risks associated with the design, implementation and maintenance of a bank is the risk of an interruption or slowdown systems, whether electronic bank or electronic money bank elected not compatible with user requirements.

The risks that arise due to misuse by customers of banking products and services, are increased when a bank fails to properly educate customers on security precautions, the existence of appropriate

measures to verify the transactions, customers may reject transactions that they have approved in the past, thereby creating numerous bank financial losses, the bank may suffer financial losses due to unauthorized transactions. Money laundering can be another source of concern.

The reputational risk is the risk due to significant negative public opinion, it is important not only for a single bank, but it is important for the entire banking system.

The legal risk is the violation or noncompliance with laws, rules, regulations or practices prescribed.

Other risks, such as credit risk, liquidity risk, interest rate risk and market risk are risks that can occur in electronic bank activity.

Inadequate procedures which determine the credibility of borrowers seeking loans through electronic channels can lead to credit risks bank

We decided to do an analysis of performance related bank card risk management, analysis during the crisis and measures to reduce or remove it, based on risk management, which means their identification, assessment, quantification and strategy counter their respectively solutions of some levers to alleviate or even eliminate the possibility of occurrence or the consequences that would occur if they appear.

## **8. METHODOLOGY**

We took into account the existing research, the evolution of the economy reflected in GDP growth, the evolution of inflation, monetary stability. The banks depend on a country's economic condition at some point upstream because monetary policy decisions that the central bank are

applied through banks and banks downstream draw their resources and made investments in and nonbank environment, generating results macroeconomic level and at the same time affected the overall evolution of the economy. The card is an issue often addressed in recent years, as is the current theme is in line with recent research and trends which are in the banking system on the new requirements for risk management and reporting as Basell 2.

It is interesting that the crisis increased the number of cards though as value, witnessing a decline in value thereof.

## 9. CONCLUSIONS

The advantages for the owner of credit card are:

- The holder of a credit card, the buyer, can choose when he is making certain purchases, because the credit is available, you can buy a product when you need it, even when there is available in its account;
- Cardholder may, as we have seen, pay the debt in full receipt of balance situation, or to pay the balance in monthly installments, if the debt is paid in full, the credit card holder can get a loan without interest for a period of up to 56 days;
- The transactions are carried out more quickly than the check, if the store (retailer) is equipped with appropriate equipment (terminals for electronic transfer of funds), the procedure will be the only card insertion device, but it will take to process and transmitting the data recorded in magnetic tape, automatically will generate the bill and will issue to the client.
- Advantages for the retailer:
  - The merchant account is immediately credited with the value of goods or services sold based on credit card when confirming sales documents (invoices, receipts, invoices) are presented to the bank for payment;
  - Offering goods on credit, credit card accepting merchants attract more customers, compared with those who have introduced this method of payment;
  - Operating with credit cards, the merchant is burdened with much of the costs and risks involved in using cash;
  - To improve customer service, as a part of the big chain stores enable customers to obtain cash by presenting the card, the customer, this is an added bonus, and the trader is a way to "convey" cash without expenditure for such an operation.
- Advantages for the banks:
  - Allow increasing automation of operations, thereby reducing the volume of operations manual;
  - Reduces the cash operations;
  - Interests in transactions with credit cards are higher than for most other forms of borrowing;
  - Fees charged to merchants who accept payment by credit cards for goods and services they are a source of income taken into account for the bank, I called this bank revenue from the fees they pay merchants and companies that are connected to the network can carry out transactions using cards.

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