



## Research Article

# Behavior of Credit Cards in Colombia

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### Abstract

Since the implementation in 1971 of credit cards in Colombia, the economy has had to adapt to the changes brought about by the emergence of new information technologies; This is how the means of payment have also evolved to offer advantages to users in the face of the flow of information that this globalization shows. The purpose of this document is to give a brief historical overview and relevant moments of the Credit Cards in Colombia and some countries in the region, to analyze some important aspects such as interest rates, technological and security methods such as the EMV (it is the acronym for "Europe and MasterCard Visa", the three card associations that initially collaborated in the development of this standard: The EMV standard defines the interaction between chip cards and the point of sale) when making payments. It is also intended to present a perspective of the future of credit cards, for this a statistical analysis will be made based on the information provided by the Financial Superintendence of Colombia, in which the financial behavior of Colombians will be observed; so that credit cards are used, how many credit cards are in Colombia, payments are made through virtual electronic or dataphone, the amount of progress made by Colombians and how is their payment behavior. This is compared with data from other countries in the region and you have an overview of credit card trends.

### Keywords

Credit cards; Interest rate; Financing; EMV

## Introduction

This document aims to present the reader with a historical overview of the relevant moments of the credit cards; how the idea arises, when they arrive in Colombia, as was their behavior and growth in the past decades. Afterwards, an analysis of the current behavior of the Colombian financial system will be made, in terms of credit cards, taking some analysis variables such as: interest rates, costs for services, number of cards in use, use of cards of credit, banks issuing credit cards, debts, financial rating of users, number of advances, value of progress, cost of advances and establishments with electronic payment. This will be done taking as reference the databases provided by the Financial Superintendency, by means of graphs and tables the behavior of these variables and their trends will be shown.

In addition to this, some concepts of technological and security preferences regarding electronic means of payment will be presented; We will talk about the magnetic stripe, EMV chips (the acronym for "Europe and MasterCard Visa", the three card associations that

initially collaborated in the development of this standard). The EMV standard defines the interaction between smart cards and the point of sale) and new technologies in development. There will also be a look at the process of globalization and the increase of virtual businesses in which the concept of cash is lost.

After the credit cards as a means of payment, new systems emerge, attributed to technological globalization and telecommunications towards the future, these mean a change in the way of seeing financial institutions, so that users can have new facilities and benefits with these more efficient means, which is why, based on the information found, an idea of how the concept of credit cards will change in future years will be presented and for which panoramas users should prepare.

## Methodology

For the development of this document, the information collected in 20 articles, research documents, economic newspapers and finance are taken as the main base; to which a syntax work is done by means of a reading card or bibliographic record. This article, in which a financial topic is developed, is based mainly on statistical data and its analysis to obtain a concrete behavior of the variables that are connected to the credit cards.

## Results

### Historical review

When the first economic movements in antiquity were presented, manifested in barter and the exchange of goods, the way to interact and increase the development of the populations was found. This growth that began had the benefits of changing goods that some possessed by those of another accessing different benefits, however the problem was the same system, since it did not fit the different needs of the individuals and the valuation given by the same for each product, the lack of a unified concept in the exchange operations and the lack of simplicity that would be required for a civilization to develop. With the birth of an economic standardization through money, which consisted of metals that were represented in an equivalent value, obstacles were overcome in some way since the means of payment of goods and services were organized, besides making it possible to quantify the wealth of a person. Since then, the growth of economies has had the main share of money in history, adapting in the forms, equivalences, materials and forms of transactions.

At the moment when problems began to arise in the process of manufacturing the pieces of money made of metal, by scarce and by time, the first money forms appeared on paper, which showed the equivalence in metal they represented, and being easier to carry meant that the one who owned them would be safer. According to the records, the first forms of money on paper were given in China around the 7<sup>th</sup> century by the Ming Dynasty, but only until the 9<sup>th</sup> century was its use official. Then, in 1661, the first issue of banknotes appeared in Sweden, which represented a "receipt" for anyone who deposited gold or any precious metal in the then newly founded Bank of Stockholm.

When presenting this development with the use of paper, comes

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the idea of the development of central banks, financial entities and credits. And so over time these ideas were evolving to develop the economic model of each nation. In the Middle Ages appear means such as the Bill of Exchange around Italy where the merchants could not take the money with them since it was very risky, so, a banker issued a title in which detailed the obligation to the carrier for a total amount of money, who in the destination city could collect in another bank the amount indicated, prior to a financial relationship between banks. From the nineteenth century came new ways of representing wealth and new means of payment were born in response to the forms of negotiation, increasing amounts and speed of exchanges of goods and services of nations. Even on paper, means such as the check allowed to transfer large amounts of money from one person to another without having to carry the money itself, much less the metal or wealth that it meant.

Later came new means of payment such as promissory notes (1930) that represented a deferred payment commitment, obligations or bonds (1852) as the promise of payment with a fixed interest as remuneration to a debt, shares (1982) as representation of the variable value of the property of a company, among others.

Notwithstanding the foregoing and perhaps having omitted to reference many other forms that we have had throughout the economic evolution and means of payment, the transformation of the latter continues to be maintained and this is how in the middle of the 20<sup>th</sup> century a new material to the means of payment, the plastic.

With the plastic came chips and vouchers that were used for food companies, transportation, telephony, casinos and many other institutions or companies that sought to give them value in terms of products or services for small payments; but also came the plastic cards that for the hotel industry would become the best way to retain their most important customers, who traveled to different cities, taking them to stay again at a hotel in the chain. This modality would also be adopted by gas stations, department stores and later restaurants, to become what we currently know as debit and credit cards of the financial system.

### Relevant moments of credit cards in Colombia

For Colombia, specifically, the first credit card came 11 years after its birth in the United States in the bank americard, for 1970 the bank of Bogota begins negotiations for the inclusion of credit cards in Colombia. A year later, the Credibanco entity was set up to regulate the entire credit system in Colombia up to the present.

Credibanco adopted the name of the universal name of the credit card, at that time being designated as Credibanco Visa for Colombia, an organization that joins forces with the five most important banks of the moment: Banco de Colombia, Banco de Bogotá, Banco Cafetero, Banco Ganadero and Bank This union strengthened the presence of Visa cards in Colombia, and guaranteed, at the outset, a great support for their Visa Classic card, the first product placed on the national commercial market. In the beginning, Credibanco's financial entities were only banks, with time adhering to corporations and other financial institutions. For 1984 the first datáphones appeared in Colombia, giving birth to the network of P.O.S. (dataphone) of Credibanco. These caused revolution for their technological innovation, and were exclusively for use with Visa cards. In principle, the dataphone network was called Credibanco Veloz, then Electronic Service until it reached its current name Credibanco is its Network, with the slogan "I Accept All".

The first authorizations were received by telephone by a group of 30 workers installed in a large room. Each of them transcribed the authorization by hand and passed it to the bank, which sent it abroad through the telex and the auto-telelex, a telegraphic device for transmitting data that was used at the time, taking up to 5 days to get an answer, a time that the user had to wait to claim his purchase. Currently the same operation takes just 5 s.

Although after the credit cards as a means of payment new means have emerged, mainly tied to technological development and telecommunications towards the future, these meant a change in the way financial institutions operate, in the way people live their lives allowing them to access new experiences, reason for which it stops in its knowledge and analysis within the present adjusted study and within the Colombian economic context. To understand the behavior of credit cards in Colombia it is important to take a look at the variables that revolve around these. The behavior of the users with respect to their credit life will be a key factor to understand how the progress will be as the financial system continues to grow [1].

### How Colombians use credit cards

For Colombians, the use of cash advances is becoming more frequent, this behavior not only occurs in the average household, it is also occurring in companies in the country as a financing method to supply momentary responsibilities and with which They can not respond due to lack of liquidity. This situation has been occurring since August 2014 and increased further since November 2015 with growth of 13 percent. However despite this behavior, experts recommend not to defer purchases to more than one fee with credit cards and much less advances in cash, which ordinary users do not put into practice as for regular expenses such as food or clothing, use a method of long-term financing, on the other hand companies differ their progress to a single quota, expecting to pay at the time they receive the payment for their work. Explains Alfredo Barragán Montaña, a specialist in banking at the Universidad de los Andes who *"It is common that in difficult situations, when banks limit access to other types of credits, people and some companies take advantage of the quotas they have enabled in their cards to make progress and thus meet some obligations, including, the payment of the same monthly fee of that card to avoid entering default"*. The use of cash in Colombia grew 1.3 percent in 2016, well above debit cards with 7.9 percent and credit cards with 8.4 percent, placing Colombia as the country most likely to use cash. In Latin America, Colombians prefer to withdraw cash from ATMs and buy in cash

The country is experiencing a deceleration of consumption, and for this reason the banking entities are looking to avoid that billing falls with cards, they are forced to expand the quotas of cash advances [2]. The foregoing also leads us to remember that credit card rates in June 2011 were at 100 percent of the usury rate and are currently at 93 percent of the maximum rate allowed by law, but they are still very high, to date they are close to 32.1 percent, they are the highest interest rates in the last eight years, affecting the holders of the 14 million current credit cards. Each bank creates its credit risk policies, generating healthy competition in terms of interest rates, since this is a very competitive market in Colombia. It is important for users to understand that since there is no different financing alternative, it is best to give credit card very good management, deferring payments to few installments or one if possible, so that the burden of interest is lower, you have to be very satisfied with the payments as interest arrears are increased [3].

## Interest rates

Having a credit card has many advantages, but for a person who has no knowledge and total control over the handling of this, will have to assume a series of implications or consequences caused by the mishandling of the credit process.

Using a credit card carries many benefits, but also risks that users unfortunately do not understand very well when using it, as well as a advertising that is generated within the same community of users with such as “*use it only when it is urgent and necessary*” and on the other hand the publicity of the banking entities “*good interest rates*”. They lead consumers to use credit cards as a fashion and not as a useful service with personal financing in mind [4].

Unfortunately the strong of the Colombians is not the planning and control of personal finances, which leads many users to make their monthly purchases, to pay debts and make cash advances thinking of postponing financial obligations with the concept that it will be easier to pay in the future than to make an adequate management in the present. Over time they realize how high interest rates are and that those obligations that were previously difficult to assume are becoming impossible [5].

Plastic money is the source of financing that has the highest interest rates for loans. In fact, they are very close, and sometimes, at the same level as the usury rate established by the Financial Superintendency, which, up to June 2017, stands at 33.35%. The more installments or longer the term, the greater the interest payment, in addition to this many are unaware that the interest rate of their cards can vary from month to month and past the payment deadline, the interest rate charged the days of default increase without taking into account management fees and transaction costs.

The interest rates are related to the risk of the loan, and when it comes to credit cards the risk is higher because there is no support or

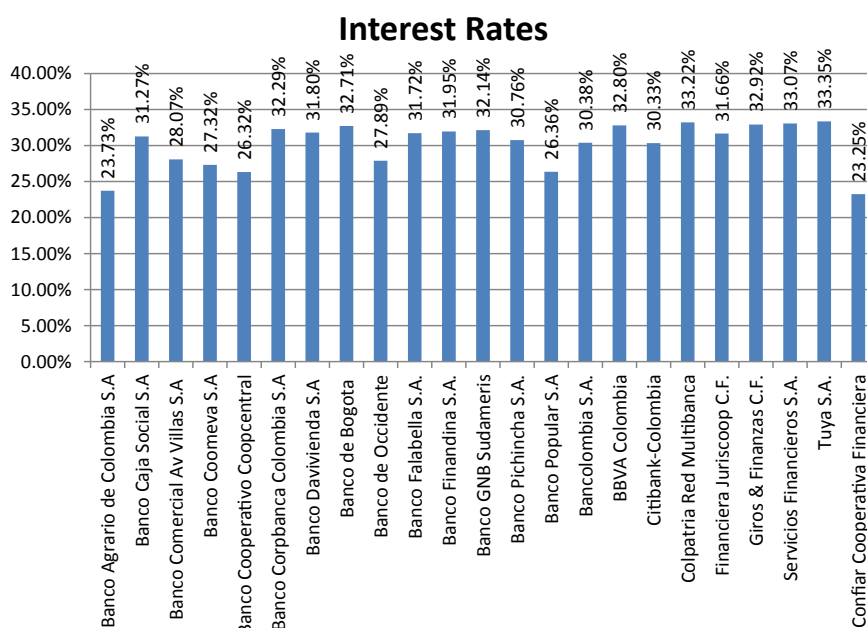
control of the purchases of the users. At the moment of making the decision to obtain a credit card, one must have the information of the interest rates that the entity manages, without forgetting the quota of management, transaction costs and what benefits they offer you, if you have insurance and if it can be used internationally (Figure 1 and Table 1) [6].

Table 1: Some interest rates as of July 13, 2017.

ENTITY	RATE VALUE
Bank Agrario de Colombia S.A	23.73%
Bank Caja Social S.A	31.27%
Bank Comercial Av Villas S.A	28.07%
Bank Coomeva S.A	27.32%
Bank Cooperativo Coopcentral	26.32%
Bank Corpbanca Colombia S.A	32.29%
Bank Davivienda S.A	31.80%
Bank de Bogotá	32.71%
Bank de Occidente	27.89%
Bank Falabella S.A.	31.72%
Bank Finandina S.A.	31.95%
Bank GNB Sudameris	32.14%
Bank Pichincha S.A.	30.76%
Bank Popular S.A	26.36%
BankColombia S.A.	30.38%
BBVA Colombia	32.80%
Citibank-Colombia	30.33%
Colpatria Red Multibank	33.22%
Financiera Juriscoop C.F.	31.66%
Giros & Finanzas C.F.	32.92%
Servicios Financieros S.A.	33.07%
Tuya S.A.	33.35%
Confiar Cooperativa Financiera	23.25%

Source: self made

This table shows some of the entities and their respective rates



Source: self made

Figure 1: Graph interest rates.

The highest interest rate reaches 33.35% Nor should we forget that if the fees are not paid on the established dates, the usury rate is applied to the value of the balance, plus the interest generated up to the payment deadline.

As mentioned above before making the decision to acquire a credit card, you have to know, all costs incurred. The comparative of the possible entities must be done, have all the information necessary to avoid making mistakes, instead obtain benefits such as achieving a good credit rating that will improve the "SCORE" credit (system of automatic evaluation of requests for credit operations, such as consumer loans, mortgages or credit card concessions.)

The credit record expresses the behavior we have had as debtors, the payment habits, generating this data a credit score that is the reference for companies, banks and financial institutions when deciding to grant a loan. All this can be achieved with the proper use of the credit card, paying dues on time, using it responsibly, without reaching the limit of the quota, authorize financial institutions to consult the credit bureau only when they are sure of Acquire a product [5-10].

### Behavior of the credit system in Colombia in recent years

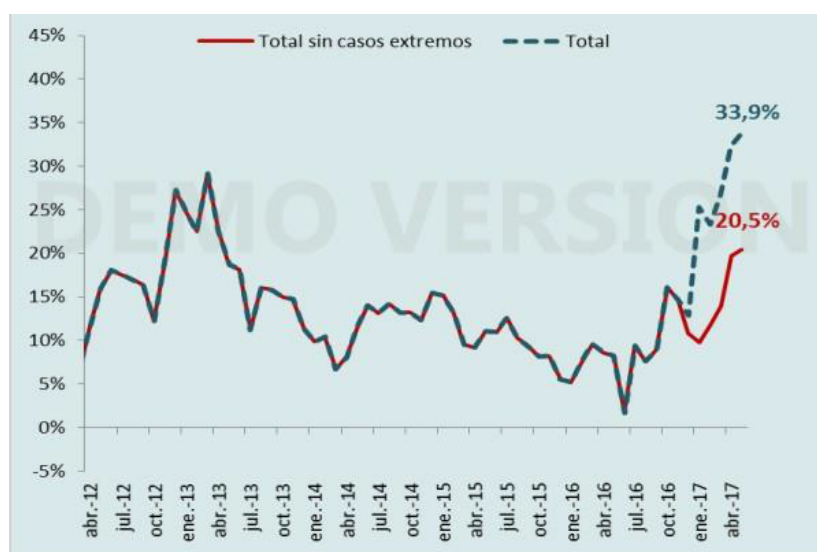
As already mentioned, credit has become a determining factor for the growth of many Colombian companies and households. Through this, there is an economic leverage to perform the tasks properly. Therefore, it is pertinent to analyze these determinant variables in the financial sector that allow us to observe the performance and performance of the credit portfolio, in order to mitigate and act on the risks that constantly arise, such as the payment.

In this way, the growth of the credit portfolio in the country has been adjusted to the new situations that are prevailing a behavior of lower economic growth that although with a slower speed, the annual real growth rate of the portfolio remains positive in the last year; thus allowing the credit offer is not restricted for users, as seen in the following graph (Figure 2) [11-16].

As of May 2017, the total balance of the gross portfolio, including the National Savings Fund (FNA), amounted to \$ 423.2b, after recording an annual real change of 2.21%, lower than the previous month (2.64%), but higher to the average of the year (1.95%). The growth was basically justified by the portfolios aimed at people, that is, consumption and housing, partially offsetting the effect of lower growth in the gross balance of the commercial portfolio. By type, the consumer portfolio, which represents 27.8% of the total portfolio, reached a balance of \$117.6b, registering an annual real growth of 8.29%. Compared to April, the portfolio increased by \$ 1.1b, driven by the payroll, free investment and Credit cards. The housing portfolio amounted to \$ 57.9b with real annual growth of 7.74%, supported by the product No vis pesos and housing leasing.

On the other hand, microcredit recorded a balance of \$11.5b and recorded a positive growth with 2.81% for the seventh consecutive month. However, in the case of the commercial portfolio, which represents 55.8% of the total portfolio, its downward trend in terms of the gross balance (the real annual variation in May was -1.80%) is explained, in part, by the decreases in the demand for credit in the government, financial and foreign currency segments. On the other hand it should be mentioned that companies also have other means of financing apart from credit cards and one of these is the issuance of corporate bonds, which in recent months has shown growth, which may mean a reduction in the use of credit cards. Notwithstanding the behavior of the past due loan segment (arrears greater than 30 days), it should be noted that 95.75% of the credit portfolio of the system is up to date, that is, the persons and/or companies that have obligations with credit establishments worth \$405.2b that continue to pay within the established terms and conditions (Figure 3).

However, with respect to the remaining 4.25% corresponding to the past due portfolio, it amounted to \$18.0b and showed a real annual growth of 33.8% with a speed lower than that presented in previous months. In a comparative way, these indicators are still below the highs of the last decade. Specifically, the commercial portfolio registered a growth in the overdue portfolio of 44.82% real annual



Source: self made

**Figure 2:** Evolution of the total portfolio. Actual annual change 2006-2017.





Source: self made

Figure 3: Flow of corporate debt issues accumulated as of June 2017.



Source: self made

Figure 4: Variation in the balance due by segment (Commercial).

that reflects the effect already mentioned of particular clients, and in addition shows a deterioration in segments such as corporate, leasing and PyMes, where the behavior of the transport segment (terrestrial) on which the monitored entities make a specific monitoring. In the particular case of the consumer portfolio, impairments have been associated with the free investment and credit card segments [1]. The deterioration of the portfolio has been accompanied by an increase in provisions, which fully covers the balance in the past due portfolio, provisions that in all its components have shown an increasing trend (Figures 4 and 5).

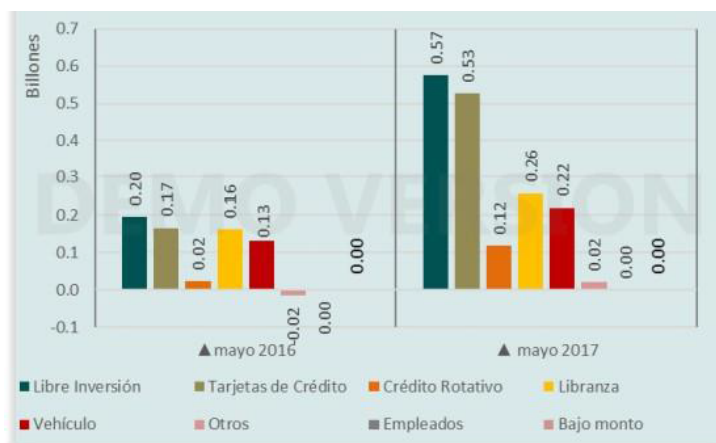
At the end of May, the provisions amounted to \$22.0b with an annual real growth of 14.93%. In the same way, the coverage indicator stood at 122.4%, which means that for each peso in the past due portfolio the CIs have 1.22 pesos to cover it. When looking at the chart of current cards, you can see a relatively stable behavior with a maximum variation of January to February of just 1.16%. What means that users are constant the behavior of their credit cards we could even say that so far this year there have been situations that cause instability in the use of this type of services (Figure 6) [16-19].

The behavior of blocked credit cards contrasts somewhat with the behavior of credit cards in force, so far this year there was an increasing trend from January to April, which could be explained by the level of indebtedness that the the months of December and could cause bad handling in the first months of the following year.

### EMV technology (Europay MasterCard Visa) on credit cards

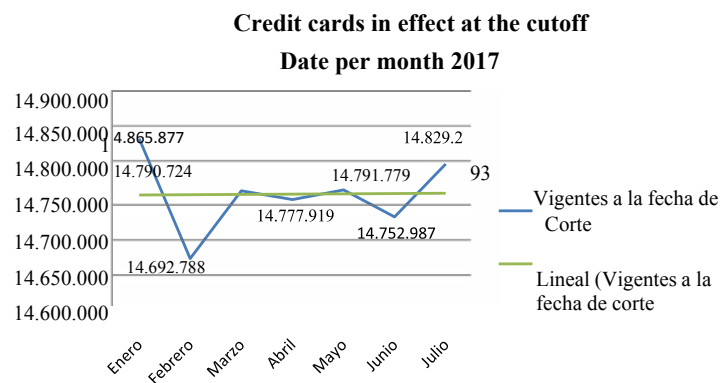
The technology of magnetic stripe has been the method that has prevailed in credit cards for 40 years. Their first versions worked like the tape of the audio cassettes: they stored data in an iron oxide coating contained in a plastic strip attached to the card, which was then passed through a reader.

Meanwhile, the use of chip cards became frequent for credit and debit transactions in the early 1990s. Three companies came together to implement these services: Europay, MasterCard and Visa (hence its name). Instead of storing the data with magnetic technology, they have a chip attached to the card. This is the default technology in some countries of the world, and payment systems with card readers begin to become less common.



Source: self made

Figure 5: Variation in the balance due by segment (Consumption).



Source: self made

Figure 6: Credit cards valid to date.

What is distinctive is that they have a microprocessor attached to them, which acts as a small computer. It is accessed interactively to the chip data, which requires specific responses from a reader to reveal their information. The specific data may vary a bit: each one has a chip and a PIN code, so to carry out a payment it will be necessary to read the banking information and then enter the corresponding code. This shows that users provide two authentication mechanisms: something that the user has (the card) and something the user knows (the PIN code). The purchase process is similar to that used with debit cards, except that it will not be slipped by a reader, but will be entered into it. Some plastics also contain a magnetic stripe to carry out transactions in places that do not have this technology, and in some cases the PIN code is not required, but only the signature.

### Process of globalization and increase of virtual businesses in which the concept of cash is lost

We are in the digital age, in these years a large population of the world is alphabetically digitized; With technology it is easier to lower costs, socialize, buy, travel and even study in a digital media; this is why the importance of electronic commerce and payments, since it is the future of sales in companies and also the future of international trade. We live in a time where time is short, it becomes something precious and negotiations, transactions, and shipments

that are agreed on the Internet provide us with that time required. The business environment and even personal should be aware that we are not alone in the presence of a global network of communication, such as electronic mail, electronic forums or the management of audio and video that facilitate the internal and external means of communication of the companies, we must know that technologies have revolutionized the world of business, the world of electronic payments, every day there is progress in the implementation of new technologies allowing that even from home and from companies can be determined more autonomously and independent items that you want to obtain, you can see several options or designs of what you are looking for and ready your purchase concrete; it gains time and it can do it from any place and with the variety that is had of the technological equipment.

Companies should look for these areas of opportunity, since electronic commerce, electronic payments are a growing tool and therefore in a few years, they must be able to satisfy their digital customers in a commercial context; social networks, virtual businesses are tools that little by little have gained the trust of consumers, today we have evidence like Facebook to say that Internet commerce will be even more popular in the following years, with the population of young people will be born and will grow with these tools will give the

boom to the digital age; Solving shortcomings in this market in terms of monetary and personal, since we do not yet have a legal framework that regulates electronic commerce, nor a technological framework that guarantees that the personal information of the clients is not compromised in the purchases

## Conclusions and Recommendations

The Credit Card product is today one of the most dynamic generating elements in the Colombian economy, not only because of the opportunity it offers to customers to access different products through immediate financing, but also because of the contribution to income. What they mean to financial institutions and credit establishments as a result of the use given by customers. This is largely due to the macroeconomic situation in Colombia which, in recent years, has been improving thanks to growth in the consumption, construction, technology development and banking inclusion and financial inclusion programs carried out by official entities.

The market situation has generated, in addition to the arrival of new players in the financial sector, the greater competition among current participants who seek to maintain productivity growth and product sales, even sacrificing the profit margins with which they had been performing in previous years and offering new benefits and alternative use for cardholders, such as Mobile Banking and Banking Correspondents, hand in hand with the technological impulse of the financial sector. In passing, it is the technology and the dispersion of it in financial services, the main tool that banks have for greater growth; Those who do not have their strategies aligned with this trend will surely have difficulties in achieving the objective. It is this type of entities, those that have just started in the Colombian market or in the credit card category, which present higher levels of growth as a result of the offer, with lower requirements or supported by pre-approved credit, to clients that Traditionally, they were linked to "large" banks with a long history in the industry. Although this has affected the best exercise of the latter and remain within percentages significant market share, is a point to take into consideration for better results complemented with customer retention and maintenance of them.

In relation to this last aspect, several entities with behaviors that generate concern in the cancellation levels against the placement of products are observed in the analysis, where it is seen that the good performance in placement is diminished by the desertion of clients that they have month to month and with it the best exercise of the sector could have had figures surely outstanding. It is then a priority to analyze in the industry the development of a marketing model that leads to greater retention of plastics in the hands of customers, which in turn leverage the extension of the life cycle of the card and to reduce the high turnover of customers between entities product of the repurchases of portfolios. Those entities that are located in favorable positions in the market share, both in number of current cards and in total portfolios, should tend to direct their product strategies towards deepening and customer loyalty in response to the broad and aggressive offer to the which are exposed, while those banks that are part of the decreasing quadrant must redirect the market objectives towards new segments that are of better benefit and even in favor of being developed, such as shared brand cards, in association with with stores of large surfaces or with hook sale chains, which could attract new customers to expand the market in general. However, the best opportunities are for banks that have experienced higher than average annual growth, since this means that their commercial activity is quite effective and could shift their participation towards ever higher rates. This can occur through

the linking of new customers in market segments that demand lower requirements in terms of risk, in addition to encouraging greater use of the credit quotas granted to customers.

Finally, faced with a changing environment such as the one in which the Colombian financial sector develops and the demands of customers increasingly interested in the cost-benefit ratio of products, the sector must move to increasingly innovative services, supported in the technology available at a global level, which increasingly open the opportunity for any customer to access credit card products in an agile and secure manner, and that grant, beyond the financing of consumption, a portfolio of additional benefits, as experienced by the co-branded card, which will result in higher utilization, an increasing level of total portfolio and, surely, higher revenues for the Colombian banking sector.

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