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# Mobile banking in Mexico as a mechanism for financial inclusion: recent developments and a closer look into the potential market

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# Mobile banking in Mexico as a mechanism for financial inclusion: recent developments and a closer look into the potential market

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## Abstract

The low levels of banking penetration in the Mexican population, as compared to other Latin American countries, present the challenge of increasing the range of financial services towards new markets through the use of technological advances and innovative channels. Mobile phones are an attractive way to promote that range, given their extensive presence in the population and their capacity to rapidly and securely connect to carry out a transaction. In recent years, regulatory changes in Mexico have enabled us to establish favorable conditions for the development of the market for mobile banking: a regimen of simplified accounts, an extensive network of banking correspondents and specific regulations for mobile accounts. This new regulation, in some ways, followed in the steps of other international experiences in which the models based on a range of financial services through mobile telephony led to significant advances for the financial inclusion of the population without access to banking services. Against this backdrop, in 2012, several banks launched mobile banking products. Though they were generally well-received by the population, the use of a cell phone for carrying out transactions in the bank's payment system is still low as a percentage of the whole. In this paper, following a review of the recent developments and the regulatory framework, we will present a market quantification for the development of mobile banking, while taking supply and demand aspects into consideration. In our study, we found that the total potential demand gap for mobile banking could stand near 40%, which corresponds to the difference between the number of current bank accounts and possession of mobile phones, with the latter being understood as a channel to access the financial system. By gender, it was found that males have a greater number of accounts than females, and that the demand gap with respect to possession of a mobile phone is lower. In terms of level of education, the demand gap of the population is greater in those with secondary education. Finally, when carrying out the segmentation by age into 6 five-year interval groups, starting from the age of twenty-five, the demand gaps found were fairly similar. Extensive room for mobile banking development was observed in the country. Our study identified the existence of geographic and social-demographic characteristics associated to the Mexican case that could catalyze a greater level of adherence to mobile financial services, which would strengthen its viability and capacity to provide access to the population not covered by the traditional channels.

# Executive Summary

1. **The recent changes to banking regulation in Mexico,** focused on establishing a regimen of simplified accounts, an extensive network of banking correspondents and the figure of niche banking, **have provided favorable conditions for the development of the mobile banking market.** Some bank accounts can be linked to a cellular phone, and new regulations have established the foundations for a category of accounts with minimal documentation requirements for opening an account and whose transactional amount is restricted to fight money laundering.

2. **The creation of easy-to-open accounts increases the number of potential users by increasing the critical mass of customers** needed for the model to be profitable for the suppliers and attractive to those who use it. **Furthermore, correspondents provide the population residing far from a traditional branch, greater access** to cash deposits and withdrawals, thus increasing the availability of the funds for mobile financial service users. However, there is significant room for progress, as the majority of the correspondents are in urban areas, with the exception of Telecomm, and penetration through smaller retailers would be advisable.

3. The World Bank's 2011 Financial Inclusion Survey (Global Findex) shows that **50.5% of the world's population has an account in a financial institution and 22% carried out some type of saving in said institutions. In Mexico, these percentages are as low as 27.4% and 7%, respectively, which are below the levels observed in the Latin American and Caribbean region.** Although only 7% of the Mexicans surveyed answered that they had savings in a formal financial institution in the last year, 27.1% claimed to have monetary savings. **This gap between savings and the percentage that is channeled to financial institutions shows** that the lack of use of formal financial services in Mexico is not due to the absence of demand for those services, but rather to the **inability of current supply to meet such demand.**

4. On **one hand, only 55% of municipalities in Mexico have at least one point of access to banking institutions, where cash deposits and withdrawals can be carried out.** In some rural areas, there is no bank presence, since the volume of transactions cannot offset the costs of opening and maintaining a branch. Therefore, other intermediaries, like popular savings banks (cajas), have covered the demand for financial services in those areas. Moreover, in urban areas where there is access to formal financial services, there are obstacles to their use, such as matters of customers not identifying with the financial institutions, the lack of resources and the high costs of maintenance and fees of the traditional bank accounts. In that regard, the Bank of Mexico's prohibition of eliminating fees for withdrawals in ATMs or service windows of the bank where the accountholder has deposited its funds, could lead banks to establish high fixed price rate schemes instead of transactional schemes.

5. In that regard, the mobile pay models are particularly attractive to the low-income population living in remote towns, for whom sending funds through transfers or deposits between traditional bank accounts is not an option, or for inhabitants of urban areas, for whom mobile banking would enable them to have a bank account without having to present documentation and to be able to avoid the payment of costs associated with maintaining a minimum average balance. **Bearing in mind the limiting factors in Mexico for the access and use of the banking system, it is important to consider the potential for development represented by mobile telephony** as the axis of financial penetration for groups that are currently excluded.

6. **In order to review the market in Mexico, the results of two surveys were processed. These surveys were the** Global Findex and the MODUTIH (the National Survey on the Household Use of Information Technologies) with regard to cellular phones. **We found that the total potential demand gap for mobile banking could be near 40%,** measured as the difference between the number of actual accounts and possession of mobile phones, with the latter being understood as a channel to access the financial system. By gender, it was found that males have a greater number of accounts than females, and that the demand gap with respect to possession of a mobile phone is lower. In terms of level of education, the demand gap is greater in the population with secondary education.

7. **Furthermore, our study identified the existence of geographic and social-demographic characteristics associated to the Mexican market that could catalyze a greater level of adherence to mobile financial services,** which would strengthen its viability and capacity to provide the population not covered by the traditional channels access to financial services. This would include the potential market for sending remittance through mobile banking, which would involve a much lower cost than the one currently in place.

# Introduction

Today, mobile phones represent a potential channel for promoting financial inclusion, given their extensive penetration in the population and feasibility of interconnecting data securely and economically. Therefore, the use of mobile phones linked to banking products enables the development of new business models to provide financial services to people who traditionally would have been excluded from the formal financial system.

According to the AFI (Alliance for Financial Inclusion, 2010), there are nearly 100 million people worldwide who use mobile financial services, the majority of whom are in Asia and Africa, and this group is growing rapidly. Though the degree of penetration of the implementation of mobile financial services continues to be modest in most countries, there can be an accelerated incorporation of those services in some regions.

The primary objective of this paper is to evaluate the development and potential for mobile banking in Mexico from the various relevant points of view, with financial inclusion as the axis for the analysis. Therefore, in the first chapter, we explain the context of banking penetration in Mexico, analyzing the primary indicators for access to and use of formal financial services in several Latin American countries, in order to determine the situation and challenges of financial inclusion in Mexico from a more global perspective.  In the second chapter, we explain the current regulations for the development of banking activity and deployment of financial services through mobile devices, with the objective of identifying the opportunities and restrictions of financial services through mobile banking. In the third section, we quantify the potential demand for mobile financial services by analyzing the data from the World Bank Global Financial Inclusion Survey (Global Findex), as well as the 2012 ENIF (National Financial Inclusion Survey) in order to gain an in-depth understanding of the social-demographic characteristics of the population of users and non-users of formal financial services. The fourth chapter focuses on the analysis of the current supply and potential for financial services in Mexico, through the different channels and with a specific look into the recently developed mobile banking market. Finally, in the fifth chapter, we comment on the perspectives for mobile banking in Mexico regarding geographic and social-demographic factors, which enable us to anticipate a favorable scenario for achieving the greater financial inclusion of sectors that are not traditionally covered by the formal financial institutions.

# 1. General aspects and the challenge of financial inclusion

According to the Center for Financial Inclusion (CFI), financial inclusion is a "state in which everyone who can use them has access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, with respect and dignity." In addition, Morales and Yánez (2006) define banking penetration as the establishment of broad, stable relationships between banks and their uses with respect to a set of available financial services. The measurement of banking penetration is not single-faceted, but rather, it should be pondered from different points of view as it is a multi-dimensional phenomenon. The dimensions most commonly used for its measurement are: i) depth, as the ratio of lending to GDP (penetration of lending in the economy of a country) or deposits to GDP; ii) inclusion, which can be recorded in terms of segments of the population that are covered by the banking system and based on its geographic reach, which can also be interpreted as coverage of services and, iii) intensity of the use of the different instruments or banking products.

For the purposes of this document, banking penetration in Mexico will be measured using indicators for access to and use of formal financial services, which are linked to geographic penetration. This allows us to make reference to the financial infrastructure or distribution channels through which various services are offered. In broader terms, the points of access in Mexico are branches, banking correspondents, ATMs, point-of-sale (POS) terminals, mobile banking and online banking.

According to the CNIF (National Council on Financial Inclusion)[1], 55% of municipalities in Mexico have at least one point of access to banking institutions where withdrawing and depositing cash is possible, with coverage of 96% of the adult population. A total of 45% of the municipalities have access to branches, while 55% of municipalities have access to banking correspondents. Similarly, BBVA Bancomer and GAUSSC (2013) indicated that as of December 2011, 58% of the population over 18 years of age used some banking product directly (see Figure 1). A total of 13% of that population are users without access to the financial or payment system (they use a banking service to receive support from social programs, or have performed some transaction with a banking correspondent or used a prepaid card). This means that 71% of the population is, at least, a user of the financial system. The remaining 29% of that population is made up of two groups from which the remaining potential for financial inclusion can be estimated: 8 million people (11%) who would be willing to use the payment system or traditional banking services and 13.2 million people (the remaining 18%) who are very unlikely to be banked. It can be stated that the potential for banking penetration is estimated at 17.5 million people (24% of the population over the age of 18).

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1: See CNIF (2012), Fourth Financial Inclusion Report 2012

Chart 1.
**Financial Inclusion and Banking Penetration Potential, December 2011**
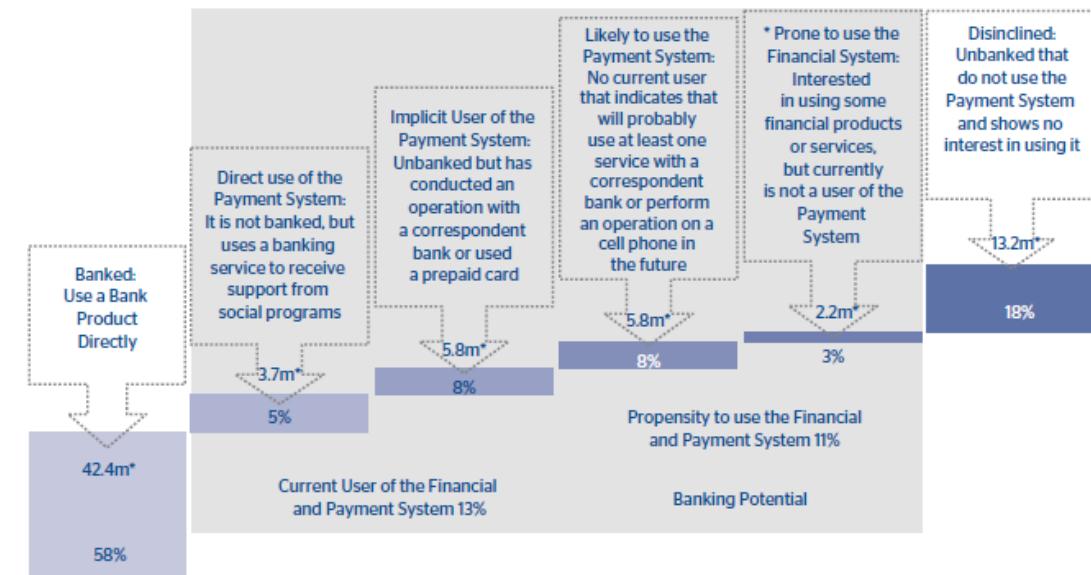


Source: BBVA Bancomer and GAUSSC (2013)

Likewise, the 2012 National Financial Inclusion Survey, conducted by the CNBV (National Banking and Securities Commission)[2] and INEGI (the National Institute for Statistics, Geography and Information Technology) revealed that the channels for access to the financial system most commonly used by the population continue to be branch offices (40%) and ATMs (38%), which are used primarily to perform three transactions: cash withdrawal, deposits and checking account balances. It should be noted that 30% of all adults already use banking correspondents for some basic financial services, which have allowed those services to reach places where there previously was no banking presence. One area of opportunity continues to be the use of technology to perform transactions with financial products, given that only 5% of adults use online banking, and 2% use mobile banking. In terms of use of banking services, Table 2 reveals that they are also low. This case can be corroborated in the following paragraphs in comparing the data for Mexico within the terms of Latin America.

Table 1
**Indicators of access to financial services at a national level as of December 2011**

| Channel | Number per 10,000 adults |
|---|---|
| Branches | 1.83 |
| Banking correspondents | 2.64 |
| ATMs | 4.72 |
| Point-of-sale terminals | 65.41 |
| Accounts linked to cell phone | 13.63 |

Source: BBVA Research, based on the Fourth Financial Inclusion Report

2: Supervisory and regulating entity for banking in Mexico

Table 2
**National indicators of banking service use**

| Product | Per 10,000 adults |
| --- | --- |
| Transactional payroll accounts | 3,078 |
| Transactional open-market accounts | 8,036 |
| Savings accounts | 6 |
| Time deposits | 352 |
| Debit cards | 10,544 |
| Credit cards | 3,155 |
| Mortgage loans | 117 |

Source: BBVA Research, based on Financial Inclusion Report, June 2012

From a comparative standpoint against Latin America, according to the data from the Financial Access Survey conducted by the International Monetary Fund in 2011 (Chart 1), countries like Brazil and Chile, and even Peru in the case of branches (including banking correspondents), have a larger range of channels for accessing banking services than Mexico. Only when the number of bank accounts and loans used is taken into account do the figures improve slightly for Mexico (Chart 2) in the comparison, although they continue to be low.

Chart 2
**ATMs per 10,000 adults, 2011**



■ ATMs per 10,000 adults
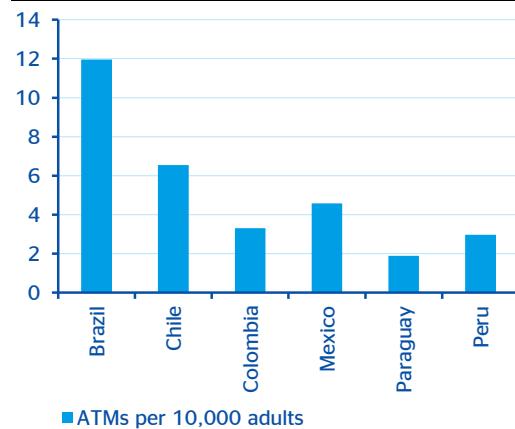
Source: BBVA Research, based on the Financial Access Survey, IMF

Chart 3
**Bank branches***
**per 10,000 adults, 2011**



■ Bank branches per 10,000 adults
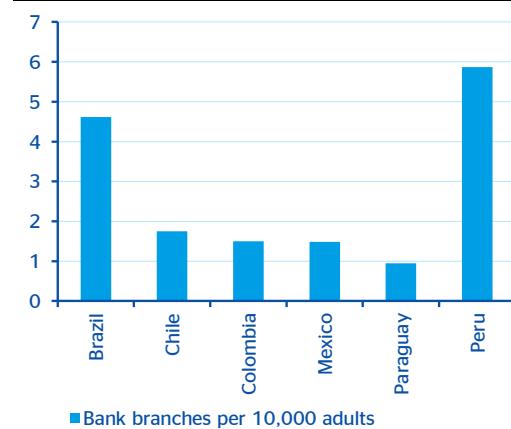
\* The number of branches also includes banking correspondents .
Source: BBVA Research, based on the Financial Access Survey, IMF

Chart 4
**Deposit bank accounts per 10,000 adults, 2011**



■ Deposit bank accounts per 10,000 adults
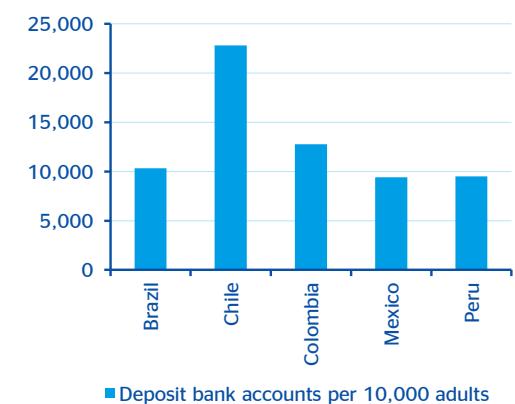
Source: BBVA Research, based on the Financial Access Survey, IMF

Chart 5
**Credit bank accounts per 10,000 adults, 2011**



■ Credit accounts per 10,000 adults
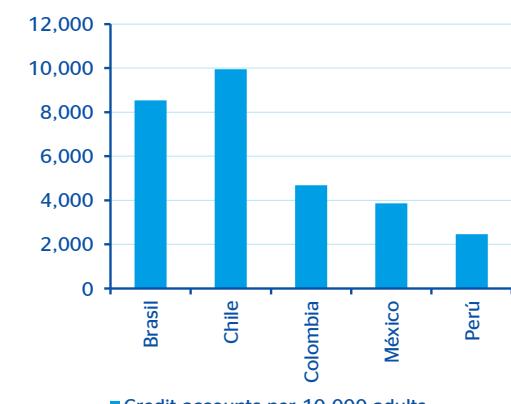
Source: BBVA Research, based on the Financial Access Survey, IMF

Bearing in mind the limiting factors described in Mexico for several of its indicators for access to and use of the banking system, it is important to consider the potential for development represented by mobile telephony as the axis of financial penetration for groups that are currently excluded. According to AFI (2010), mobile telephony as a mechanism of financial inclusion plays two different roles, often simultaneously: (i) as a channel for providing electronic financial services, in parallel with other channels (such as ATMs or correspondents); and (ii) as a payment instrument that enables the transmission of payment orders between electronic accounts or electronic wallets.

Mobile telephony as a channel for accessing financial services can help reduce costs for both the user and the financial institutions. As a payment instrument, cellular phones permit the creation of new products and innovative business models that can be offered to the broad segment of the population with a cellular phone but who still does not have a banking product for savings. With regard to the international success stories of mobile telephony as a mechanism for financial inclusion, one of the most commonly mentioned cases in the literature is that of the M-PESA in Kenya, a mobile banking product offered by the Safaricom telephone operator, which also allows money to be saved, cash to be withdrawn and payments to be made by SMS, as well as to buy air time. Subscribing is simple and is facilitated by an extensive network of agents, and there are no formal branches. According to Deloitte (2012), in only two years, M-Pesa already reached nearly 40% of the adult population of Kenya, and in four years, two-thirds of all households in Kenya used the service. Following this same business line, and taking mobile telephone channels as the basis, the same company is starting to penetrate the world of bank and credit accounts with the creation of M-Shwari, also in Kenya, with fairly auspicious projections for development in its first months of operation since the end of 2012.

# 2. Mobile banking and its regulatory framework

The institutions offering financial services in Mexico can be classified into three types: i) regulated formal, ii) non-regulated formal and iii) informal (Peña and Vázquez, 2012). The regulated formal institutions are: banks, popular savings banks (cajas), popular financial associations, credit unions, limited object financial companies and financial companies linked to a financial group. The unregulated formal institutions are unregulated multiple object finance companies linked to a financial group and pawn shops, while the informal institutions are "tandas" (group savings pools) and speculators.

The presence of the three types of intermediaries varies between urban and rural areas. For example, according to the CNBV Financial Inclusion Reports, in some rural areas, there is no bank presence, since the volume of transactions cannot offset the costs of opening and maintaining a branch; therefore, other formal intermediaries like popular cajas have somewhat met the demand for financial services in those areas. Moreover, in urban areas where there is access to formal financial services, there are obstacles to their use, such as the population's lack of financial literacy, economic insolvency or demands for documentation to carry out banking transactions.[3]

## 2.1. The banking market in Mexico and the development of mobile banking

As of July 2012, there was a total of 44 multiple banking institutions[4] authorized by CNBV, of which 42 are in operation and two that were recently authorized are in the process of starting their activity[5]. The CNBV (2012b) indicates that, as of June 2012, the five largest banking institutions in terms of assets (BBVA Bancomer, Banamex, Santander, Banorte and HSBC), absorbed 71.8% of the banking system's funds, as shown in the following chart (see breakdown in Appendix 1).

Chart 6.
**Market share in the Mexican Banking Sector, 2012 (% assets)**

| | |
|---|---|
| BBVA Bancomer | 21% |
| Banamex | 19% |
| Santander | 13% |
| Banorte | 10% |
| HSBC | 8% |
| Other | 29% |
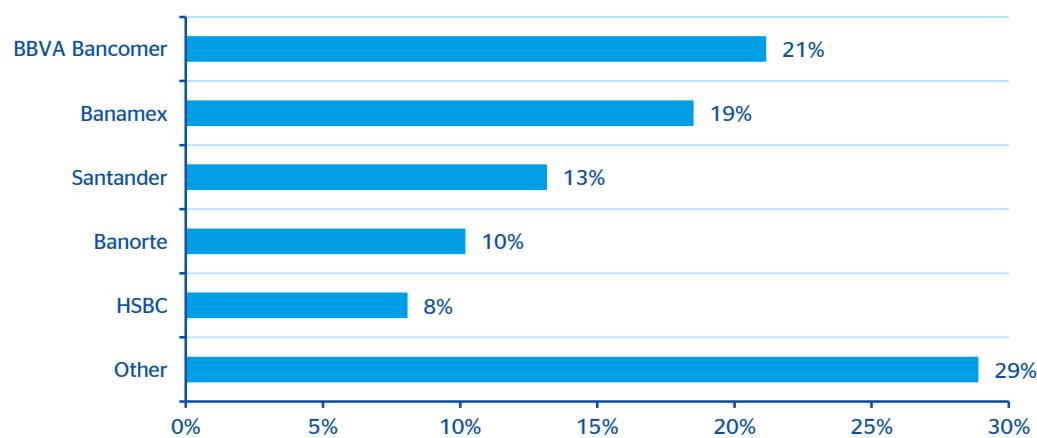
Source: BBVA Research, with information from the CNBV Multiple Banking Statistics Report, November 2012

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3: Until recently, banks required documents like proof of identity and address for practically any transaction. Many people do not have that documentation and were thus excluded.
4: Banking and loan services in Mexico can only be rendered by multiple banking or development banking institutions
5: The Bicentenario and Agrofinanzas banks were authorized in July 2012

One relevant aspect that results in a new configuration of the system is that, as of September 2012, 15 banks were authorized to offer financial services through the banking correspondent scheme[6]. To that end, 752 correspondents have been incorporated[7] with a network of 22,748 establishments, with which it is possible to access additional points for making loan payments, receiving deposits, withdrawing cash, paying for services, cashing checks, checking fund balances and opening simplified accounts (low-risk accounts).

The CNBV (2012c) highlights that the primary banking transactions performed through the brokers in the January to September 2012 period were: loan payments (58%), receipt of deposits (30%), cash withdrawals (8%) and payment for services (3%). Each one of the 15 authorized banks operates through the establishments of the different brokers pertaining primarily to the category of supermarkets, pharmacies and other services. The broker with the greatest national coverage is Telecomunicaciones de México (Telecomm[8]), which operates in 1,106 municipalities in all of the States. A list of banks operating with the different correspondents as of September 2012 can be found in Appendix 2.

## 2.2. Mobile Banking in Mexico

However, since 2009, the Bank of Mexico has had a history with the release of Circular 26/2009 that created and regulated Mobile Accounts, banking accounts associated with a mobile telephone number; the rest of the regulation on the opening of accounts, their operation and Anti-Money Laundering (AML) regulations for the creation of records that were misaligned. In April 2012, the CNBV, the Bank of Mexico and the SHCP harmonized different pieces of the regulation[9] to create a new scheme of simplified accounts to develop a regulatory framework that would permit, on the one hand, a flexible regimen for opening banking products and, on the other, would facilitate the linking of those products to mobile phones.

It is important to highlight that, with the new regulatory framework, Mexico has become the first country in the world to ease the AML regulations for bank accounts linked to mobile phones, while complying with the new recommendations of GAFI (Money Laundering Financial Action Group) on low-risk products.

According to Deloitte (2012), there are two groups of mobile banking users: one belonging to the banked sector and the other that does not. The first group considers mobile banking as an additional channel for accessing the traditional channels (branches, ATMs, customer call centers); a significant percentage of those customers have smartphones, as such, the value offers for them are being made through the development of applications (apps). The second group is the unbanked, low-income population that is not necessarily in large cities, and that perhaps has not had access to the aforementioned banking services but do actually need them. This community requires access to cash and to transactions, using low-grade phones and with product ranges that operate through text messages (SMS[10]) or through the USSD channel[11]. However, it should be noted that given the high cellular phone replacement rates in the region, the technological gap between both types of customers will be narrowing, and by 2020, the great majority of the population will surely have smartphones.

With respect to the services to which the already banked population has access by mobile phone, there are at least two solutions for exchanging secure messages between a mobile phone and the account management system of a bank. A specialized chip (SIM card[12]) or downloaded online application is needed: they could be (i) SMS (encrypted), through the

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6: Companies that enable banks to have more points of contact to serve their customers.
7: Banamex has 688 brokers that are small retailers ("Banamex Aquí" [Banamex Here] program), while Afirme has a similar scheme with 36 brokers.
8: Telecomm is a decentralized agency of the Mexican government that offers telegraph services and voice and data connectivity (rural telephony). According to CGAP (2013), Telecomm has a network of over 1,600 points in rural and semi-urban areas, where it operates as a correspondent for 7 banks.
9: CNBV modified chapter XI of the CUB, Banxico Circular 2019 and SHCP Rules of Article 115 of the Credit Institutions Act.
10: Short Message Service.
11: Unstructured Supplementary Service Data, is a service for sending data through GSM mobiles, like SMS.
12: Subscriber Identity Module, is a removable smart card used in mobile phones that securely stores the subscriber's service key used to identify subscribers within the network.

cellular phone where payment instructions are generated using mechanisms very similar to that of sending text messages; or (ii) internet, which would allow websites to be accessed through the cellular phone (WAP[13]) or a cellular phone through which messages can be sent, similar to those the client would send from his/her computer. The message is independent of the customer's phone company. Of these access modalities, there may be several variations, and each one of them has been used with varying degrees of success by different banks, as mentioned further on.

The potential development of mobile banking could, to a large extent, depend on the availability of cellular infrastructure in the countries in question. The OECD (2012) states that, as of June 2012, the mobile telephony service had 97.6 million subscriptions, while the density is 86.9 subscriptions for every 100 inhabitants. However, many clients have various mobile lines. Therefore, it is unclear how many people, in reality, have a mobile phone: one CGAP report (2011) estimates that nearly 55 million people (approximately 50% of the population) have a cellular phone. Furthermore, according to the International Advertising Bureau (2012), 17% of users have smartphones, while the remaining 83% have traditional cellular phones.

The Mexican market for mobile telephony has four carriers with national coverage; however, some regions are not covered. The table below describes the market share of the different players in mobile telephony in Mexico. Appendix 3 provides greater detail on the operation of the market:

Table 3
**Mobile Phone Companies in Mexico**

| Company | Stake | | Technology for data services |
| | Of market | Of revenues | |
|---------|-----------|-------------|------------------------------|
| Telcel[1] | 70.0% | 69.2% | 4G |
| Telefónica[2] | 21.8% | 12.3% | 3G y 4G (algunas zonas) |
| Nextel[3] | 3.8% | 13.5% | iDEN[4] |
| Iusacell | 4.4% | 5.0% | WAP |

[1] Telcel is owned by América Móvil and has concessions to operate a wireless network in the nine geographical regions of Mexico.
[2] It does not have coverage in all geographical regions.
[3] The majority of their clients are businesses with post-payment.
[4] Integrated Digital Enhanced Network that enables direct communication through two-way radio.
Source: BBVA Research based on OECD (2012)

# 2.3. Mobile Banking Regulatory Framework

In the General Provisions Applicable to Credit Institutions (also known as the "Circular Única de Bancos", CUB [Single Banking Circular], issued by the CNBV, Mobile Banking is defined as the online banking service[14] in which the accessing device consists of a mobile telephone, whose line number is associated with the service.

According to López-Moctezuma and Samaniego (2012), the process of gathering funds to associate them with a mobile phone is considered a deposit, and given that in Mexico, fund-gathering is restricted to financial entities authorized to that effect, the associated business models should be strictly run by banking institutions. Therefore, only authorized financial entities can participate as suppliers in the mobile financial services market, such that only mere adjustment need to be made to the financial regulations, and not to those for telecommunications, in order to permit operations with these new schemes.

As stated by López-Moctezuma (2012), the creation of easy-to-open accounts increases the number of potential users by increasing the critical mass of customers needed for the model to be profitable for the suppliers and attractive to those who use it. Furthermore, the correspondents provide greater access for the population residing far from a traditional branch,

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13: Wireless Application Protocol, is an open international standard for applications using wireless networks.
14: Set of banking services and operations carried out through electronic media (equipment, optical media or any other technology, automated data processing systems and telecommunications networks, be they public or private).

for cash loading and withdrawals, thus increasing the availability of the funds for mobile financial services users.

Furthermore, the Secretaría de Hacienda y Crédito Público (the Tax Agency and State Credit Secretariat)[15], established the rules for customer identification and compliance with documentation requirements, to prevent money laundering, but at the same time, provided the flexibility needed to allow access within the mobile banking scheme to allow banks to open different types of accounts, depending on the identification information provided by the customers:

1. **Low-Transactionality Accounts**

   – Identification records consisting only of information regarding the customer's name, date of birth and registered address.

   – Their operations are limited to transactional levels below 2 thousand UDIS[16] per month.

   – Only for Natural Persons.

2. **Low-Risk Accounts**

   – Identification records consisting only of information regarding the customer's name, place and date of birth, nationality, occupation, profession, business purpose (where applicable), personal registered address and phone number.

   – Their transactional limit will be established by the institution itself according to its risk analysis.

   – The customers can be Natural Persons and Entities.

As mentioned previously, in order to enable the development of new banking business models, the CNBV modified the CUB in 2010 to include the rules for operation through banking correspondents, mobile financial services, easy-to-open accounts and niche banking. Thus, the regulatory measures recently implemented in Mexico have been complemented to permit the use of alternative channels in the range of financial services, granting certainty to the user on the means of electronic access to financial products.

Chart 7
**Primary aspects of the CUB regulatory changes**

Equiping commercial establishments for the range of financial services

This figure is particularly favorable for the case of retailers that already work as points for loading and unloading air time

Permit remote opening of accounts

The registration and opening of accounts can be delegated to the mobile phone companies (who are acting as correspondents)

Banking Correspondents

Easy Opening of Account

Niche Banks

Correspondent Administrator

The entry barries for participating in the market as a banking institution are reduced

Allows "TELECO-exclusive" business models to provide mobile financial services

It facilitates and streamlines the correspondent recruiment and authorization process

In the case of mobile phone companies, they can be delegated the administration of their network so that they operate as correspondent

Source: CNBV (2012)

Following the figure above, we will now analyze the role of the four elements highlighted.

## a. Banking Correspondents

In December 2008, the modifications of the Credit Institutions Act were published regarding banking correspondents, which are third parties that establish business relationships or connections with a credit institution in order to offer financial services to its customers for and on its behalf. Taking advantage of the infrastructure of the existing commercial establishments, the banking correspondents offer a profitable business model to provide the population with access to means for cash deposits, transfers and withdrawals in places that are familiar and convenient. In this way, correspondents address several of the obstacles currently facing the inclusive range of financial services:

- They expand the banking infrastructure faster and at a lower cost.

- They reduce the transactional costs for customers, as they bring the financial services to establishments that they already frequent in their daily lives.

- They foster the development of financial products that adjust to the needs of the population without coverage under traditional banking.

The scheme implemented by the banks to operate through banking correspondents (greater detail about the services offered, the requirements demanded and the banking correspondents can be found in Appendix 4) affects the accounts involved in real time, giving customers certainty about operating with their bank and guaranteeing the protection of each of the participants' funds. As an example, a deposit with a correspondent is simulated in Figure 4: (1) The customer arrives at the Correspondent and requests a deposit of $1000 pesos; (2) then, the customer is authenticated (proof of identity) before the Correspondent and the bank using an electronic method. The Correspondent authenticates himself/herself before the customer and the bank with the same electronic method; (3) the Correspondent requests that the bank make the deposit; (4) the Bank applies the transaction, online and in real time, to the customer's and the Correspondent's accounts; that is, the bank withdraws the money from the Correspondent's account and deposits it to the customer in his account; (5) the Bank sends the authorization to the Correspondent; (6) the Correspondent gives the customer the transaction receipt provided by the bank; (7) finally, the money remaining in the Correspondent's account is his or her property; it does not belong to the customer or to the bank.

Chart 8
Outline of banking correspondent operation

**Example: how a deposit is made in a correspondent**
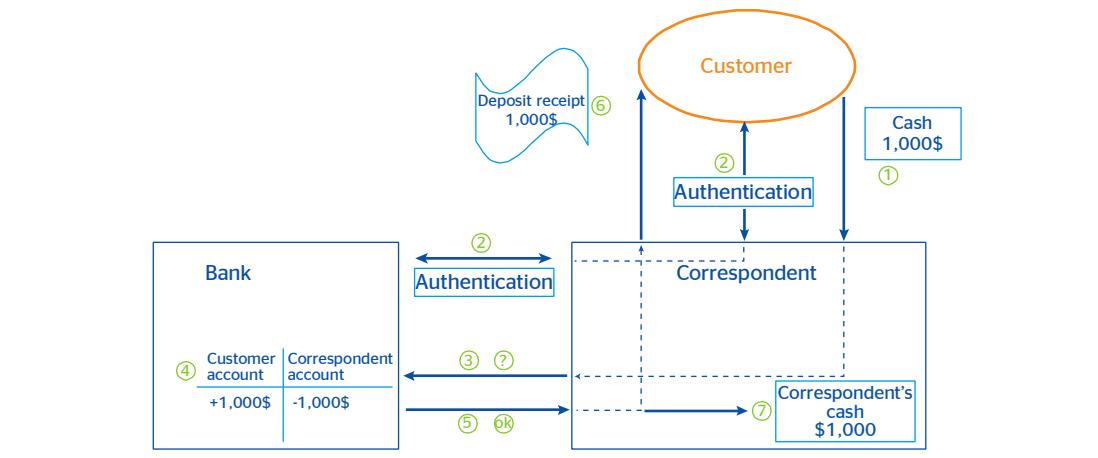


Source: CNBV (2012a)

In this regard, in order to guarantee that the transactions carried out through the banking correspondents, offer users the same security as those completed in a traditional branch, the regulation calls for operational requirements, including the following: (i) the employee and the customer withdrawing the deposit must identify themselves with two modes of identification; (ii) the account balances, of both the correspondent and the customer, must be updated online in real time; (iii) automatic generation of a receipt for the transaction, issued by the institution.

The figure of the correspondent network administrator is critical in this scheme, which significantly streamlines the process of recruitment, authorization and management of correspondents. Under this figure, the banks can grant powers of attorney to the network administrators so that, on behalf of the banks, they can sign correspondence contracts and carry out the management of their network of correspondents. Along the same lines, mobile phone companies are very attractive administrators of correspondent networks because they have contractual relationships with an extensive network of establishments; they maintain customers who are familiarized with loading and reloading air time through their network, and have penetration in unbanked market segments. As a result, in order to promote the development and range of products that adapt to the needs of the population, the regulatory framework sets out the option to associate an electronic wallet to a mobile phone device, so that it can be used as a transactional channel to enable diverse transactions, such as loading and reloading prepaid products linked to cell phones, or rather, to receive transfers to acquire goods and services.

Chart 9
**Outline of banking correspondents with the development of mobile payments**
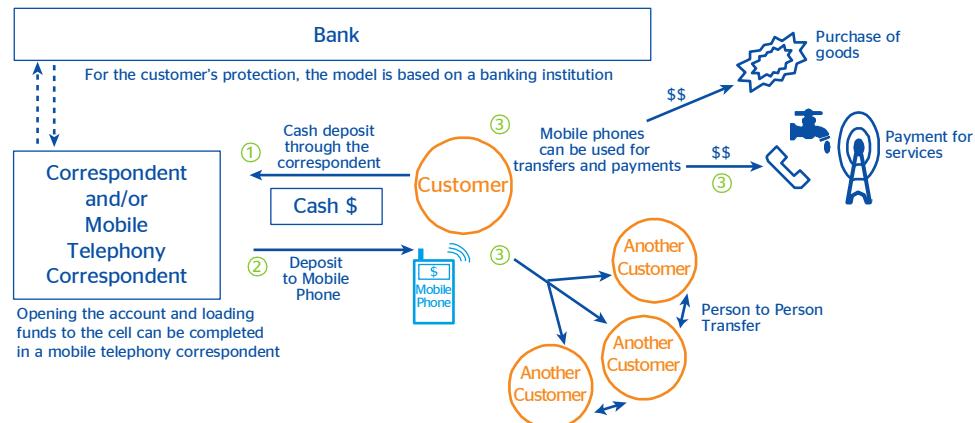


Source: CNBV (2012a)

Chart 10
**Potential increase in banking penetration with the mobile payment model**
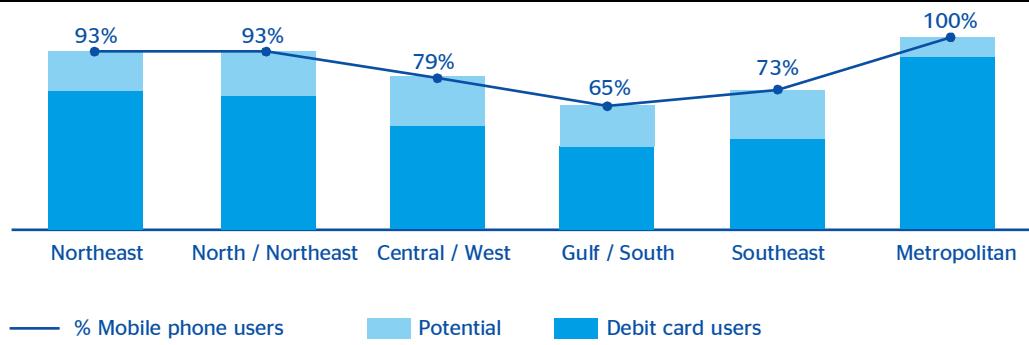


Source: CNBV (2012a)

In order for different service range models to be developed, the regulatory framework allows different commercial agreements to be established between banks, telecommunications companies and third parties, ranging from purely banking agreements (that use telephony only as a means for sending information or as a *carrier*), to shared business models in which telephone companies can administrate the operating platform.

Chart 11
**Various commercial agreements for mobile banking brokers**
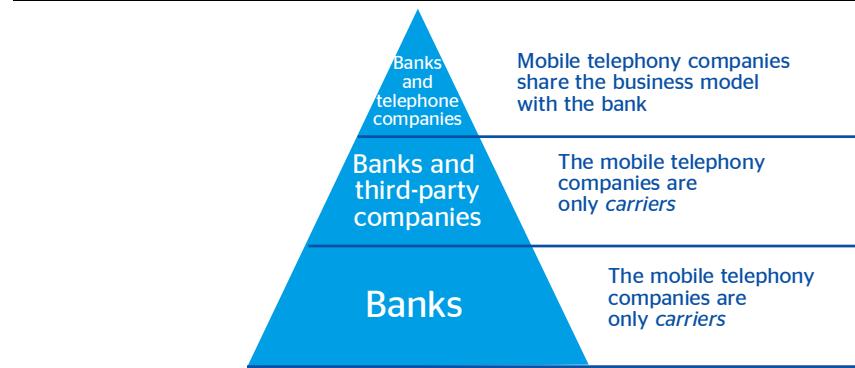


Source: CNBV (2012a)

It is important to keep in mind that, in all cases, a prudentially regulated bank is involved and that, in this latter case, it is the party responsible for the funds deposited. Likewise, the mobile payment schemes are attractive to the population without access to the financial system as they increase access to financial products and services; provide products and services that are easier to use; decrease the risk of transporting cash and reduce the operational costs for both the bank and the customer. Moreover, in order to promote better competition in the financial services market, the regulatory framework fosters the interoperability between the banks' platforms.

Chart 12
**Interoperability of the mobile payment business models**
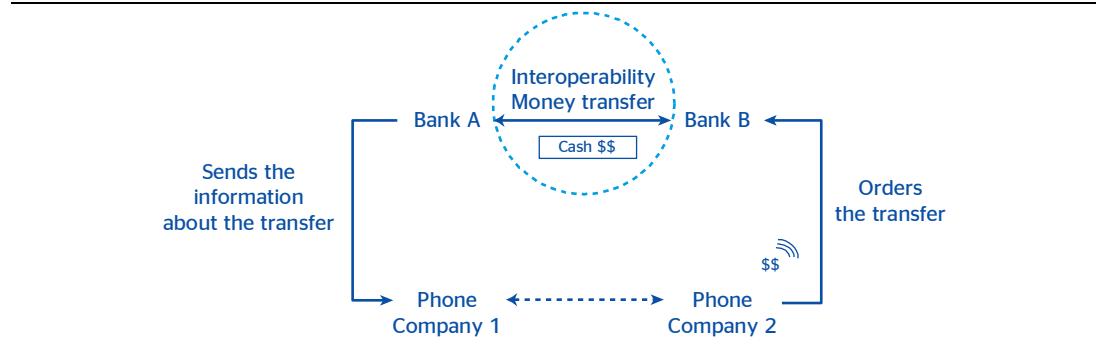


Spurce: CNBV (2012a)

## b. Opening simplified accounts

To complement the increased availability of financial services associated to the figure of banking correspondents, modifications to the Credit Institutions Act were published in April 2010. Their objective was to incorporate a new alternative for opening deposit accounts that would allow simplified, flexible procedures to be applied. Thus, four "levels" of accounts were defined, which are differentiated by their maximum volume of transactions and the documents required to open them[17].

This new regimen facilitates the rendering of financial services by banking correspondents and mobile telephony. In this way, four levels of accounts were established according to the potential levels of risk of money laundering and fraud: the "traditional" or "full procedure" accounts are classified as level 4 accounts, which have no limit to the deposits that can be received and allow the use of checks for making payments; the level 1 to 3 accounts are considered "simplified procedure", low-risk accounts, since, in line with the amount of customer information that can be collected by the bank, limits are placed on the monthly deposits that can be received. We should point out that level 1 accounts can be anonymous; therefore, they are the only accounts with restrictions on the balances that can be maintained and cannot be linked to cellular phones or online banking to issue electronic transfers. In all of the other accounts, all electronic means and channels can be linked to issue or receive payments. The level 2 accounts are considered to be the most appropriate for the range of mobile financial services at the base of the pyramid.

Simplified Accounts can be opened easily at any banking correspondent, or even remotely through any other channel. This multi-channel option for opening the accounts significantly reduces the costs for mobile financial service providers and for the users of mobile financial services. This channel reduces transaction costs for both parties: the banks saves resources, and the customer saves time and effort. Payments into Simplified Accounts linked to a phone can be made with cash, checks or electronic transfers of funds, and the funds can be made

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17: Level 1 does not require any holder information, but it only allows deposits of up to 750 investment units (UDIS) per month and a maximum of 1,000 UDIS as a monthly balance. Level 2 only requires the name, date of birth and registered address, and allows deposits of up to 3,000 UDIS per month. The level 1 and 2 accounts do not require the physical presence of the customer to be opened. Levels 3 and 4 do require the customer to be present, in addition to further documentation, but transactions at a greater amount are allowed. In January 2013, one UDI was equivalent to 4.88 pesos.

available to the user through cash withdrawals and electronic transfers ordered through the associated mobile phone number. The objective of the Simplified Accounts linked to a mobile phone is that cellular phones can be used not only as electronic wallets for making payments in multiple establishments, but also as means for transferring money to other accounts and for completing deposits and withdrawals for up to 2 thousand investment units (UDIS) per month and under the same restrictions as ATMs and banking correspondents with average daily withdrawal limits of 6 thousand pesos per day.

According to the CNBV (2012a), as of March 2012, there were 1.6 million level 2 accounts, with a cumulative balance of 630 million pesos. Of those accounts, nearly 1 million have been associated to cellular phones and 4,200 electronic transfers for 1.8 million pesos have been made.

With regard to the unbanked population, the Simplified Accounts figure is a mechanism that permits financial inclusion, especially in areas where there are no bank branches. The main features of these accounts are:

- Easy opening: they can be opened with few requirements and without the need to go to a banking branch

- Easy use: they can be operated through a cellular phone

- Some transactional limits are in place, based on the requirements for opening, which make them a low-risk product according to GAFI recommendations.

- Banks can use the correspondent scheme to open and operate this type of account.

- Availability: The customer can have access to the funds in his/her simplified account by visiting the correspondent or the branch of the bank backing the account.

- Easy Access: The population without access to computers can easily issue electronic transfers. And, they have extensive access to them through the scheme of banking brokers.

- Low Costs: Banks do not need a branch to offer electronic payments with accounts linked to mobile phones. They can use interconnecting channels already in place.

- Security: The issue of transfers must comply with the security requirements established by the CNBV for electronic media (Chapter X of the CUB); for example, to send transfers for amounts over 70 UDIS, the destination account must be registered.

- Interoperability. Since they are bank accounts, banks must allow their customers to send and receive transfers between accounts linked to mobile phones and other types of bank accounts, regardless of the bank and telephone company.

- Transaction costs with the use of a mobile account can be significantly reduced, particularly in low-income areas, since the population without access to financial services because of the high costs or due to their non-existence, can obtain them using their cellular phone.

- Taking advantage of the payment infrastructure: Use of banking correspondents to open and operate mobile accounts

For example, to open the simplest account (level 1), no account holder information is needed. As a result of this change, it is to be expected that people without documentation will now have greater access to basic formal financial services, and business models that focus on serving the segments of the population in the market that are currently uncovered are now viable. As a result, the potential for financial inclusion has increased. Therefore, the population facing obstacles to compile complete identification records can have access to basic financial services, and the costs that would be incurred by the retailers designated with correspondents would be reduced with respect to if they had to complete a full registration of information from all of the financial service users.

The authorities are working so that, later on, these new simplified accounts can evolve beyond merely transactional functions to provide more extensive access to the financial system

through the range of other financial services. These services would include voluntary savings in pension funds, sending and receiving remittances, micro-loans, micro-insurance policies, investment in government bonds, online transactions and conditional direct transfers from the government. Below is the structure of the requirements for opening simplified accounts, based on the level of risk and transactionality:

Table 4
Bank-gathering products

| | Low-risk bank accounts (Simplified procedure) | | | | |
| | Level 1 | Level 2 | Level 3 | Level 4 | Traditional |
|---|---|---|---|---|---|
| Holder's information | None (anonymous) | Full name, date of birth, gender and registered address. | The same as level 2 accounts | The same as level 2 + country of birth, nationality, occupation, profession, business activity or purpose, telephone number | The same as level 4 accounts |
| Opening and identification requirements | Not in person | Not in person Only information, no copies | In person and not in person (verify information). Only information, no copies | In person opening. Check information against identification. Only information, no copies | In person opening. Save copies of documentation |
| Place of distribution or opening | Branches, brokers, electronic media and retailers | Branches, brokers, electronic media | Branches, brokers, internet | Branches, brokers, entities | Branches |
| Limits | Deposits: 750 UDIS per month Minimum Balance: 1,000 UDIS | Deposits: 3,000 UDIS per month | Deposits: 3,000 UDIS per month | Deposits: 10,000 UDIS per month | Limit set by the bank |
| Access to funds by mobile | No | Yes, subject to the limits per transaction set by Online Banking regulations | | | |
| Means of access | Branches, ATM, POS terminals and brokers | Branches, ATM, POS terminals, brokers, electronic media and cellular phone | | | Branches, ATM, POS terminals, brokers, online banking, cellular phone and checks |
| Coverage | National | National | National and international | | |
| Additional controls | All of the accounts are subject to monitoring, operational and technological controls to guarantee the integrity of the information | | | | |

Source: Banco de Mexico (2011)

## c. Niche banking

Modifications to the Credit Institutions Act were published in February 2008 and December 2009 regarding the figure known as niche banking. These modifications determine the minimum amount of capital that multiple banking banks must have, based on the transactions expressly included in their company bylaws, the infrastructure necessary for their development and the markets in which they intend to participate. This favored the creation of new specialized intermediaries who could gather funds from the public, have access to the payment system and be subject to the same regulatory standards as multiple banking, but whose minimum capital requirement is lower. As of February 2013, there were four authorized niche banks, as shown in the table below (Table 5):

Table 5
## Niche banks

| Banck | Services offered |
| --- | --- |
| Banco Bicentenario | Financing for foreign trade companies |
| Agrofinanzas Banco | Loans for agro-businesses and medium-sized agricultural producers |
| Banco Forjadores | Group micro-loans to small entrepreneurs |
| Banco Pagatodo | Payment channel services in small and medium-sized retailers (prepaid cards, payment for services, reloading of cellular phones, loyalty programs, dispersion of government aid programs such as pensions for elderly adults in the federal district) |

Source: BBVA Research with information from EI Economista. "CNBV autoriza creación de dos bancos de nicho" (CNBV authorizes the creation of niche banking), 18 September 2012

According to the Alliance for Financial Inclusion (2010), though Mexico has not authorized non-banking institutions to issue electronic money, niche banks can do so, under lower capital requirements than traditional banks.

# 2.4. Regulation related to customer identification and security mechanisms

The CNBV assumes a risk-based approach in defining the growing controls of customer authentication based on the amount of the transaction and its implicit risk, as the CUB indicates that banking institutions must use authentication factors to verify the identity of its users and their ability to carry out transactions through the online banking service. The details and characteristics of those authentication factors are reviewed in Appendix 5.

# 3. Quantifying the potential demand

In this section, we quantify the current market of the population that uses the banking system (traditional and mobile) by analyzing the results of financial inclusion surveys and household polls. We also quantify the potential market for financial services through mobile banking and identify the reasons stated by the unbanked population for not using formal financial services.

## 3.1. Current market (Customers)

The World Bank's Global Financial Inclusion Survey (Global Findex)[18], conducted on adults over 15 years of age in 2011 in 148 countries, allows us to monitor the effects of the financial inclusion policies, as well as to gain an in-depth understanding of the way in which the population saves, becomes indebted, makes payments and manages risk.

The statistics of this survey reveal that 50.5% of the world population over the age of 15 have an account with a financial institution (bank, credit union, cooperative) and 22% had arranged some form of savings with a financial institution (FI) in 2011. In Mexico these percentages drop to 27.4% and 7%, respectively. These levels are lower than those seen in Latin America and the Caribbean[19], where the respective percentages are 39.2% and 9.5%, as shown in the chart below:

Chart 13
**Population with an account with a FI, with savings and with savings in a FI, 2011**
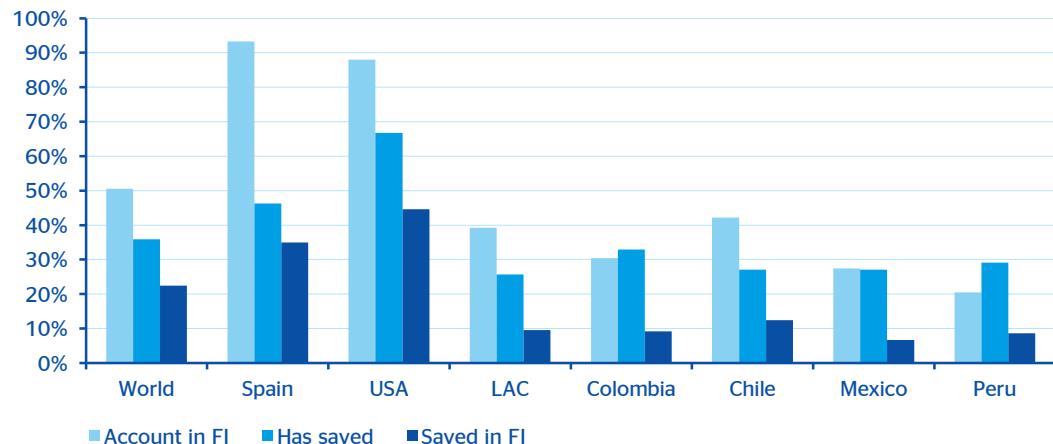


Source: BBVA Research with Global Findex 2011 data

Although only 7% of the Mexicans surveyed answered that they had savings in a formal financial institution in the last year, 27.1% claimed to have monetary savings. According to López-Moctezuma (2012), this gap between savings and the percentage that is channeled to financial institutions shows that the lack of access to formal financial services in Mexico is not due to the absence of demand for those services, but rather to the inability of current supply to meet such demand. Regarding the population that has used cellular phones for monetary transactions in the last 12 months, in Mexico, 3.9% of the population has done so to pay bills, 1.5% to send money, and 3.1% to receive money. The use of the mobile phone for monetary transactions in Mexico is high when compared to other countries:

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18: Appendix 6 presents the breakdown of the methodology and questionnaire from that survey.
19: Includes Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela.

Chart 14
**Population that uses mobile phones for monetary transactions, 2011 (% total)**



Payment for services   Send money   Receive money
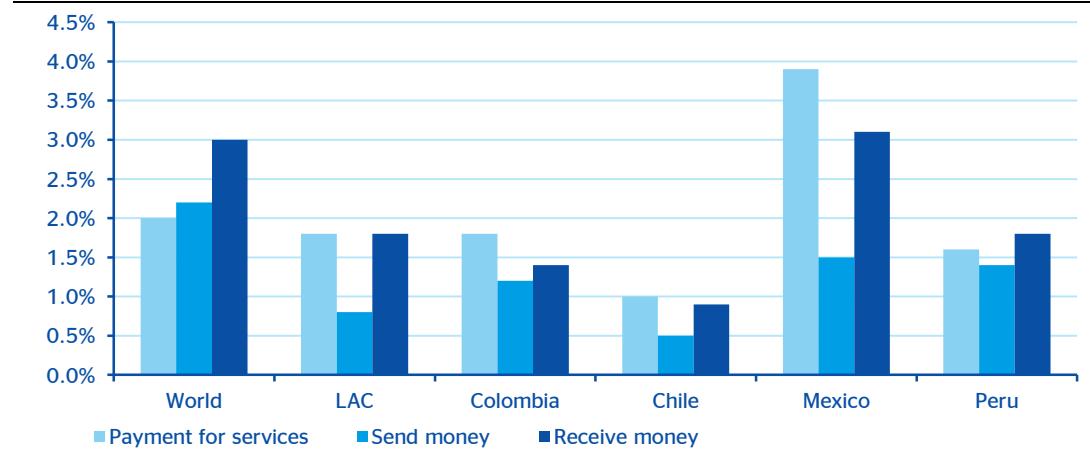
Source: BBVA Research with Global Findex 2011 data

In order to analyze the banked population in greater detail, below we have included a breakdown including the characteristics of age, gender, level of education and social-economic status:

- A total of 33% of males have an account in a FI, as compared to only 22% of females.

- By social-economic level, only 12% of individuals belonging to the first income quintile have an account in a FI, 13% in the second quintile, 19% in the third quintile, 37% in the fourth quintile and 58% of individuals with the highest income (fifth quintile).

- By level of education, 13% of individuals with primary education, 31% with secondary education and 59% with tertiary education have an account.

Chart 15
**Population in Mexico with an account in a financial institution (% total), 2011**

**By sex**

**By level of education**

**By income quintile**

**By age**
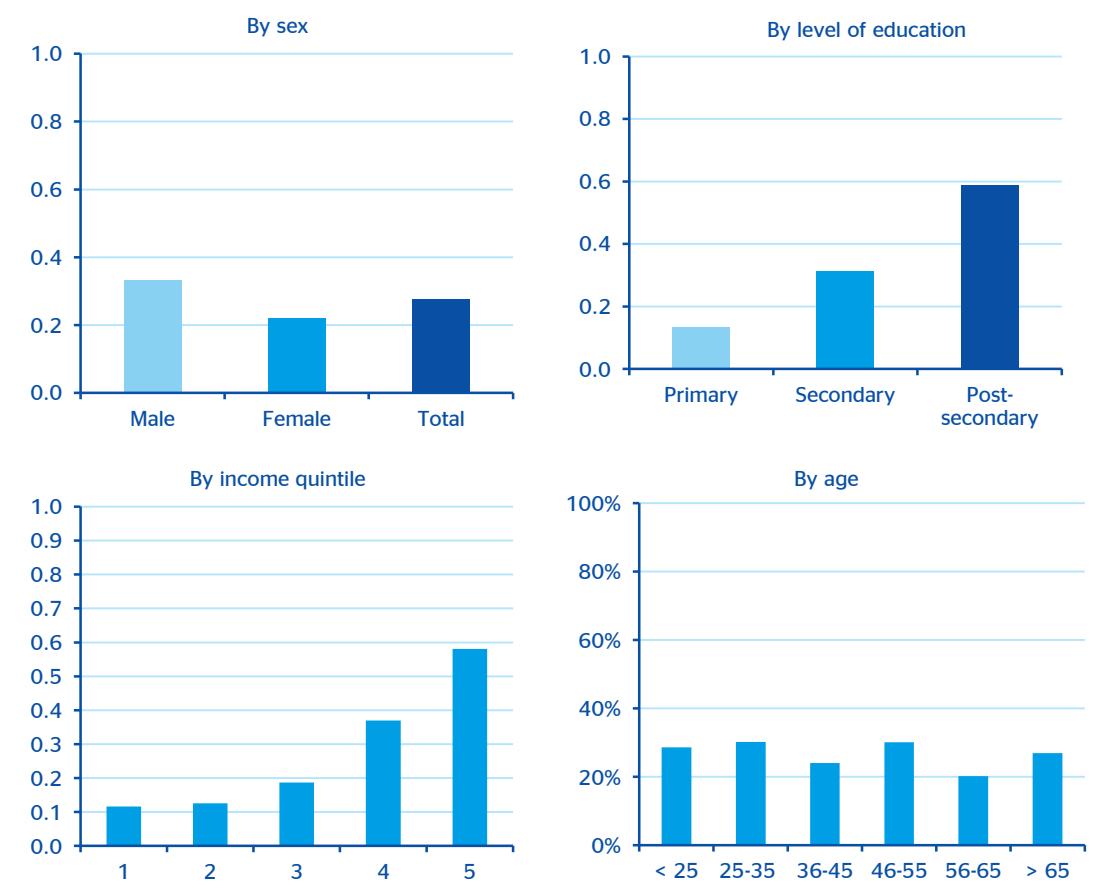
Source: BBVA Research with Global Findex 2011 data

In terms of cellular phone use for monetary transactions, we observed that males use it more often (6% to pay for services, 2% to send money, 5% to receive money) than females (2% to pay for service, 1% to send money, 1% to receive money). By educational level, the population with primary education uses mobile banking services less (2% to make payments, 1% to send money, 1% to receive money) than individuals with secondary education (5% to make payments, 1% to send money, 3% to receive money) or tertiary education (4% to make payments, 3% to send money, 6% to receive money). By social-economic level, the highest-income quintile is the population that makes the most payments for services (9%) and receives money (6%), while individuals in the first income quintile have the highest percentage for sending money (3%), as can be seen in the chart below:

Chart 16
**Population that uses mobile phones for monetary transactions, 2011 (% total), 2011**

By age

By level education

By income quinlile

By age
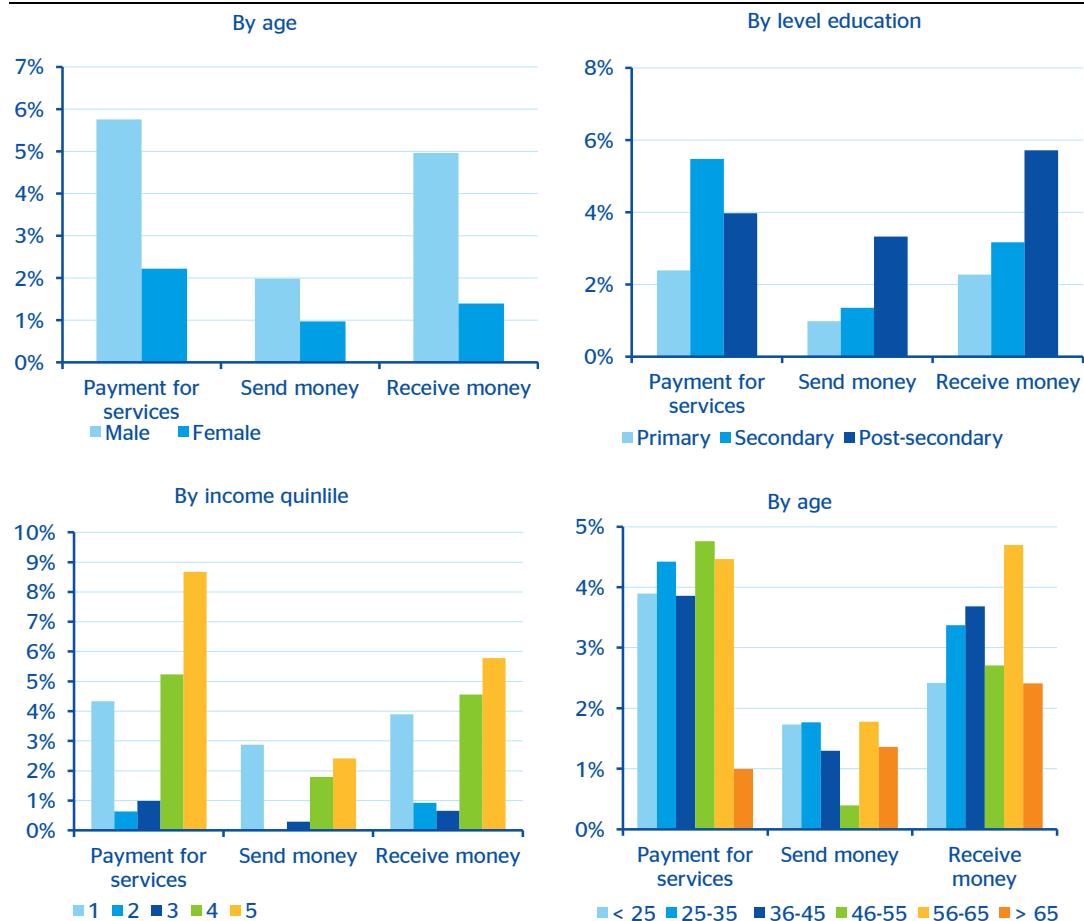
Source: BBVA Research with Global Findex 2011 data

The differences observed in the classifications above give us a clearer idea of which groups make up the current market of the banking sector and mobile telephone users for monetary transactions, and, therefore, on which groups the financial inclusion strategy should focus.

Furthermore, the National Financial Inclusion Survey (ENIF) 2012, prepared by the CNBV and INEGI, helps identify the needs of the population with respect to access and use of financial services, as well as the main barriers for non-users. For the first time, results related to the demand for financial products are being obtained at a national level, since the previous measurement of financial inclusion used information related to the supply.

Some of the primary results are as follows:

- In Mexico, 97% of the adult population (77.6 million people) have access to the financial system, but only 56% use some type of financial product.

- At the national level, 35.5% of adults (25 million) save through a financial institution. The two most important products for doing so are salary accounts and savings accounts, at 60.5% and 46.6% respectively.

- A total of 43.7% of the adult population saves through informal means: Mexicans prefer to keep their money at home (64.8%), in "tandas" (group savings pools) (31.7%) or lend it to family members.

- The most commonly used channels of access to the financial system are still bank branches (40%) and ATMs (38%), which are mainly used for three operations: cash withdrawals, deposits and balance enquiries.

- On average, the time it takes to reach a bank branch is 26 minutes and the cost is $28, while reaching an ATM takes 20 minutes and costs $21 pesos. In this context, banking correspondents are gaining relevance (30% of the population uses them), as well as the possibility to have channels such as mobile banking, which enables time and costs of traveling to an ATM or banking correspondent to send money to be reduced.

Chart 17
**Use of savings (% adults)**
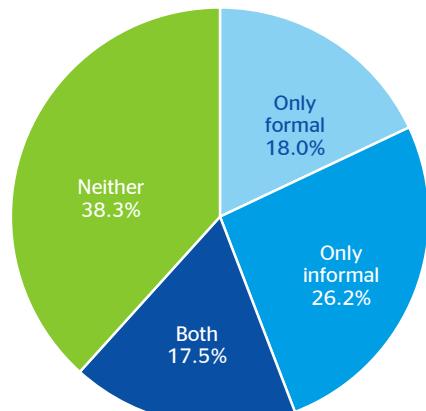


Source: BBVA Research with ENIF 2012 data

Chart 18
**Formal savings mechanisms (% users)**
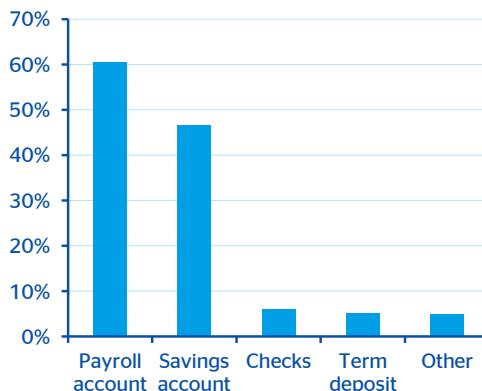


Source: BBVA Research with ENIF 2012 data

Chart 19
**Access to the financial system, use of savings and loans**
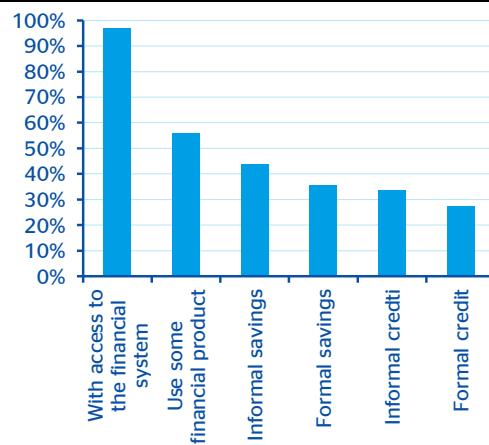


Source: BBVA Research with ENIF 2012 data

Chart 20
**Use of channels to access the financial system**
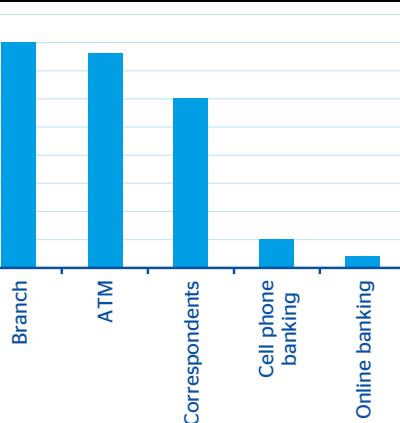


Source: BBVA Research with ENIF 2012 data

## 2.2. Potential market (prospects)

To be able to quantify the potential market for financial services through mobile banking, it is necessary to understand the reasons for which individuals do not have an account in a FI, as well as the current market of mobile telephony users. Next, we present the results obtained from using the exploitation of surveys regarding these topics:

## a. Reasons for which individuals do not have an account in a FI

According to the Global Findex Survey in Mexico, the reason most commonly cited for not having a formal account is the high cost of maintaining an account. This response is given by 47% of adults without a bank account, with 21% citing it as the only reason (multiple responses were permitted). The following most-commonly indicated reasons for not having an account are lack of money (35%), not trusting a FI (29%), lack of documentation needed to open an account (21%), or believing that banks are too far away (19%).

Chart 21
**Reason for not having a bank account (% of adults without an account), Mexico 2012**
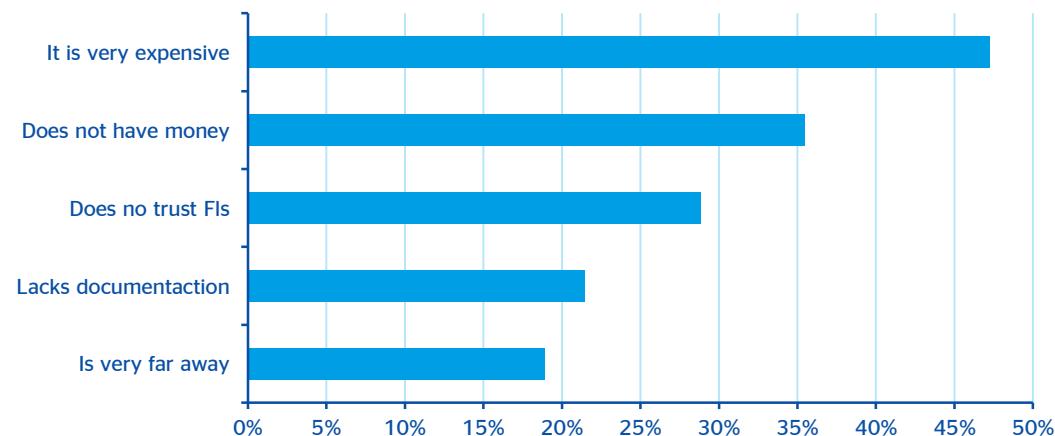


Source: BBVA Research with Global Findex 2011 data

## b. Current market for users of mobile telephony

In Mexico, the MODUTIH (the National Survey on the Household Use of Information Technologies)[20] conducted in 2012 provides information on the use of information and communications technologies in households, specifically about the use of computers, internet, cellular phones and type of electronic transactions carried out by the population over 6 years of age. This survey is conducted with a probabilistic sampling[21] of homes, which guarantees coverage at the national and state levels.

The information contained in the MODUTIH enables us to itemize the variables mentioned by characteristics such as age, gender and level of education, in both individuals and in households. Considering only the population over 15 years of age, below are the responses to the question *"Have you used a mobile phone in the last 12 months?"*:

- A total of 66% of the population used a mobile phone in the last 12 months; the percentage for use is greater in men (69%) than in women (64%).

- By age group, the population between 26 and 35 years of age presents a greater use of mobile phones (79%), while only 26% of adults over 65 use them.

- By level of education, 93% of individuals with tertiary education, 77% with secondary education and 40% with primary education use a cellular phone.

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20: Conducted by the Instituto Nacional de Estadistica, Geografía e Informática (INEGI, National Institute of Statistics, Geography and Information Technology).
21: Survey conducted in 38,426 homes in all States of the country, under a conglomerate, stratified, three-staged, probabilistic sampling.

Chart 22
**Population that has used a mobile phone in the last 12 months, 2012 (% total)**
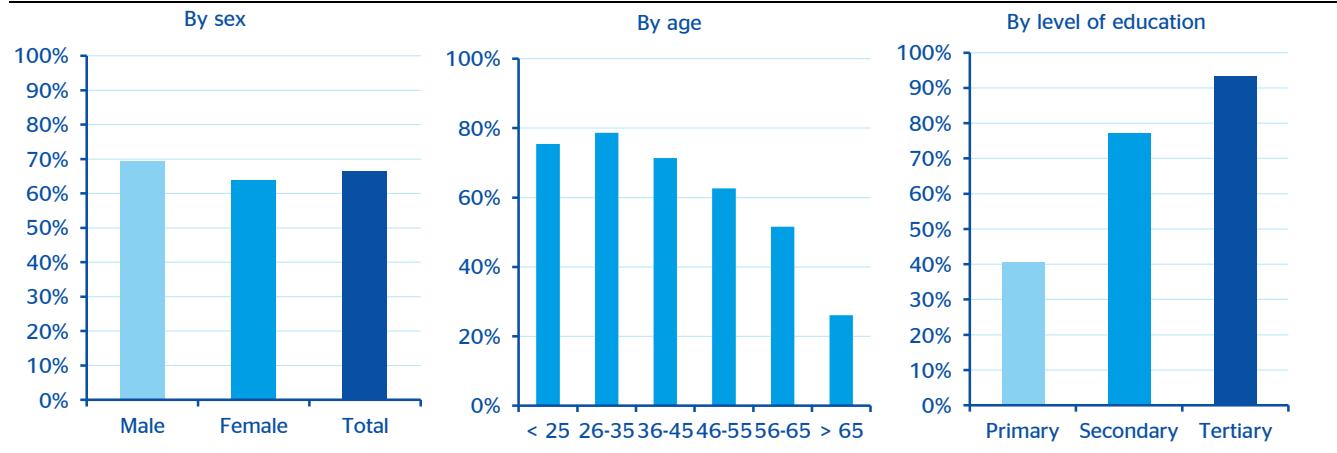


Source: BBVA Research with data from MODUTIH 2012

## c. Potential mobile banking market

Finally, if we compare the percentage of mobile telephone users classified by gender, age and level of education, with the population with an account in a FI, we can estimate the potential demand for mobile banking. However, we need to take into account the willingness of individuals to gain access to banks; even with the use of mobile banking; some of the main reasons why individuals do not have an account in a FI could prevail, such as lack of trust in FIs and lack of money. One barrier that mobile banking, and the use of banking correspondents, could eliminate is the distance to bank branches, while the barrier of the high cost of financial services will depend to a large extent on the prices charged by banks for the mobile banking service (fees and commissions, cost of opening an account, cost per transaction, etc.).

Chart 23 shows that, when analyzing the reasons for not having an account in a FI, breaking down the results by level of education and income quintile of the population surveyed in the Global Findex, we find that the cost of banking services is one of the most commonly indicated reasons for not being banked, regardless of the level of education and income quintile corresponding to the individuals. However, it is even greater among the lowest income quintile, individuals with primary education and people under the age of 25. The distance reason (not having a bank branch nearby) is the reason most commonly indicated by individuals with primary education, the poorest 20% of the population and people between the ages of 36 and 45. The lack of trust in FIs is greater among the population with primary education, in the third income quintile and in people between 36 and 45 years of age.

The detailed analysis of the obstacles to become banked, by social-demographic characteristics like income level, level of education and age, is very important to be able to design mobile banking products that can cover the specific needs of the target population. The development of specific products for each niche of the market can be highly relevant in achieving an adequate commercial strategy, which would allow for improved penetration and reception by potential customers.

Chart 23
**Reasons for not having an account with a FI**

By level of education

By income quitil

By age



■ Primary ■ Secondary ■ Post-secondary

■ 1 ■ 2 ■ 3 ■ 4 ■ 5

■ < 25 ■ 25-35 ■ 36-45
■ 46-55 ■ 56-65 ■ > 65
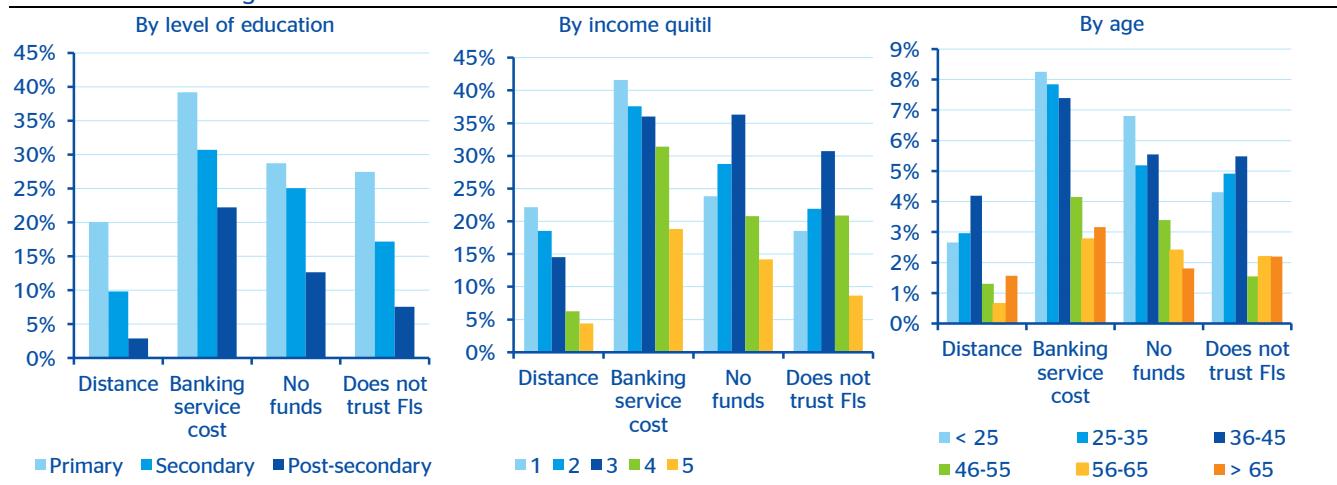
Source: BBVA Research with Global Findex 2011 data

Furthermore, in order to obtain an estimate of the potential market for mobile banking, measured as the difference between the population using cellular phones and the banked population, data from the Global Findex and information from the MODUTIH were used in combination in the following chart; however, the results should only be interpreted as an estimate[22].

Chart 24
**Population with an account in a FI (2011) and mobile telephone users (2012)**

By sex

By level of education

By age



■ Cell phone use ■ Has an account

■ Cell phone use ■ Has an account

■ Cell phone use ■ Has an account
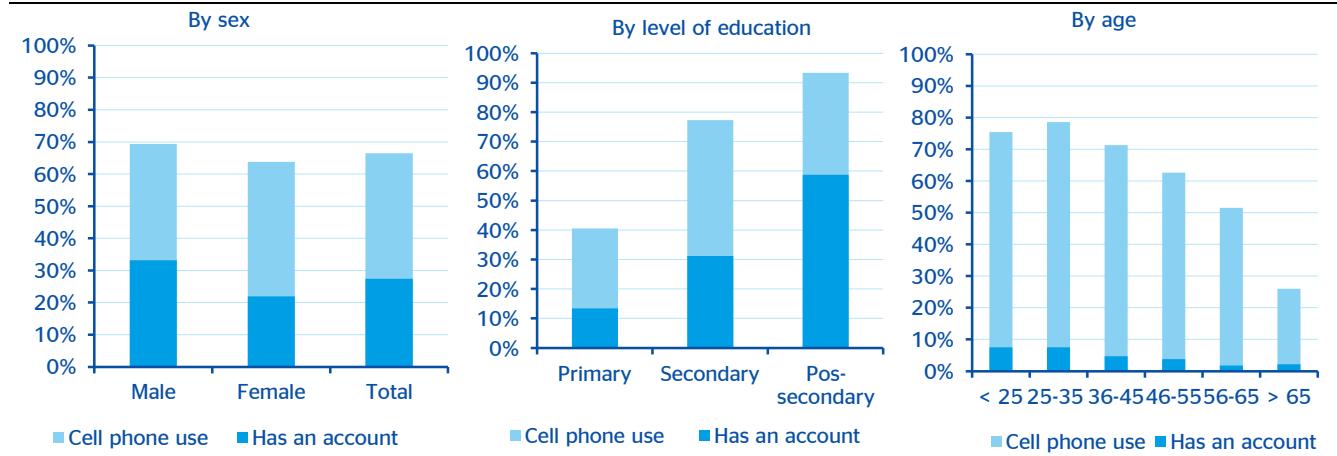
Source: BBVA Research with MODUTIH 2012 and Global Findex 2011 data

The total potential demand gap observed for mobile banking could be near 40%, which is the difference between the number of actual accounts and possession of mobile phones, with the latter being understood as a channel to access the financial system. By gender, it was found that males have a greater number of accounts than females, and that the demand gap with respect to possession of a mobile phone is lower. In terms of level of education, the demand gap of the population is highest in percentage among people with secondary education. Finally, when carrying out the segmentation by age into 6 five-year interval groups, starting from the age of twenty-five, the demand gaps found were fairly similar. In general, there is great potential in the area for the development of mobile banking.

22: The financial inclusion data correspond to 2011, while the mobile telephony user data pertains to 2012.

# 4. Analysis of the current and potential mobile banking range

This section contains an analysis of the current and potential range of banking financial services, concentrating mainly on mobile banking products in Mexico.

## 4.1. Fund-gathering products, services and banking channels

As financial brokerage institutions, banks offer fund gathering and credit services. The fund-gathering banking products are those that the users of financial services (entities and individuals) use to save and receive payroll payments, among other activities, and which are generally linked to a debit card. Credit products are granted to individuals, enterprises and the government.

The banks report, to the CNBV, the fund gathering products that they operate, classified as follows: 1) savings accounts, 2) payroll transactions[23], 3) open market transactions, and 4) time deposits. For their part, banking services are classified as balance queries and account transactions, deposits, cash withdrawals, payment for utilities service (electricity, water, telephone, etc.) and taxes, electronic transfers, payroll transfers, pensions, and other labor-related services, standing direct-draft orders, debit cards, and non-bank cards. The channels through which the banks interact with people are branch offices, ATMs, online banking, banking correspondents, mobile banking. For further detail on banking products in the broad sense, see the detailed explanation in Appendix 7 at the end of this document. A sidebar showing the payment systems for electronic transfers is shown below.

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23: Transactional accounts are demand deposits whose funds are available at any time.

## Box 1. Payment Systems for Electronic Transfers in Mexico

All bank accounts, including the new level 1, 2, and 3 accounts, must have a Standardized Banking Key (CLABE) and must receive electronic transfers from any other account in the banking system. This characteristic facilitates the interoperability of the mobile payment systems that are generated, given that interoperability is secured through the banks.

In Mexico, there are two systems to carry out electronic transfers, which were developed by commercial banks and the Central Bank: the TEF (Electronic Funds Transfers) and the SPEI (Interbank Electronic Payments System).

The majority of interbank electronic transfers are carried out through the SPEI, as the transfer takes only a few minutes. The TEF is a system used generally for the payment of salaries and invoices to suppliers, whose operations may be programmed for payments into an account within 24 or 48 hours, up to a limit of $50,000 pesos.

Banks offer the SPEI through online banking. SPEI transfers are ordered from a bank account.

Each bank designs its website in a different manner, but the general procedure is the following:

a. The ordering party (the person who wants to transfer money from his or her bank account) accesses the internet banking service of his or her bank and follows the identification procedures.

b. If the ordering party wishes to transfer money to a beneficiary who has not registered, he or she will have to carry out the registration process by indicating the beneficiary's information: the bank and (CLABE) of the account, or the debit card number.

c. The ordering party chooses a beneficiary and instructs the issuing bank to proceed with the transfer. The order must include the amount of the transfer and can include a reference (7 digits) or description (40 letters or digits) to help the beneficiary to identify the transfer.

d. Upon receiving the order, the issuing bank verifies that the balance in the ordering party's account is sufficient to cover the transfer. If this requirement is met, the issuing bank accepts the transfer, notifies the ordering party by internet of the precise time at which it accepted the transfer, and provides the ordering party with a unique identification key, known as "tracking code", for future reference.

e. A few minutes later at the most, the issuing bank sends an order to the Central Bank, through SPEI, which includes all of the transfer information.

f. Upon receiving the order, the Central Bank transfers the money from the account held by the issuing bank to the account held by the receiving bank, and retransmits, also through SPEI, all the information of the transfer to the receiving bank and advises it that it has already credited its account.

g. The receiving bank deposits the funds into the beneficiary's account.

# 4.2 Current Mobile Banking Projects in Mexico

## Products offered by mobile banking

In Mexico, Mobile Banking began by offering services directed at those already making use of the banking system, which consisted in allowing them to carry out operations using a mobile telephone without need to connect to the internet, such as balance enquiries, funds transfers, credit card payment, services payment (electricity, telephone, etc.) and the purchase of mobile phone air-time or credit. Among the banks offering these services are: BBVA Bancomer, Banamex, BanBajío, Bancoppel, Banorte, Inbursa, Ixe, Multiva and Banjército. In addition, the Telcel telephone company offers the service from any GSM device for customers of BBVA Bancomer, Banamex, Inbursa and BanBajío, with the only condition being that they have a compatible chip and register it with the bank.

In addition, some banks offer special services such as geolocation systems to find the nearest ATMs or branch offices, and BBVA Bancomer offers the Dinero Móvil (Mobile Money) service.

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### Box 2. Dinero Móvil

This is a service offered by BBVA Bancomer to its customers, through which one can send between $100 to $5,000 pesos per day through the internet, ATM or mobile phone, to any person who does not have a bank account. The recipient of the payment receives an SMS to any telephone company mobile phone; once the operation has been carried out, the customer receives a four-digit security code and the recipient receives an SMS message with a 12-digit withdrawal key. The beneficiary will need both keys to withdraw the cash from any ATM, and the money will be available for seven days.

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During 2011 and 2012 simplified accounts were launched that were linked to mobile phones, the characteristics of which are shown in the following table:

Table 6
**Mobile accounts**

| Product | Express Account | Transfer Account | Mifon* |
|---|---|---|---|
| Bank | Bancomer | Banamex and Inbursa | Banorte |
| Account level | 2 | 2 | 2 and 3 |
| New contracts | At branch | Calling from a Telcel mobile phone | In Telecomm offices |
| Requirements | Formal identification | | |
| Permitted operations | • Account linked to mobile phone<br>• Debit card<br>• ATM withdrawal<br>• Payment at retail establishment | • Account linked to mobile phone<br>• Optional debit card<br>• Withdrawal at<br>• ATM, branch and through banking correspondents<br>• Payment at retail establishments<br>• Person-to-person transfers (P2P) | • Account linked to mobile phone<br>• Optional debit card<br>• ATM withdrawal and through agents<br>• Payment at retail establishment (if debit card was requested)<br>• P2P transfers |
| Costs | • $50 opening fee<br>• No account management cost<br>• Dinero Móvil costs still not announced (free in 2012) | • There is no fee for opening or managing the account<br>• Transfer fee $1<br>• Deposit with banking correspondent $7<br>• Withdrawal without card from ATMs $7 | • There is no fee for opening or managing the account<br>• $25 to issue a debit card<br>• Fee for transfers or payment for services, up to $8 |
| Maximum deposit | $13,500 per month | $6,900 per month | $9,000 per month |
| Maximum money transfer amount | $5,000 monthly | $1,150 per transaction<br>$6,900 per month | $1,000 per day<br>$18,000 per month |
| Money transfer | To any person, account holder or not, using the Dinero Móvil (Mobile Money) service | To any Telcel mobile phone or other banks (via SPEI) | To customers of Mifon and other banks (via SPEI) |
| Provides a debit card | Yes | No | Yes |
| Maximum deposit | $13,500 per month | $6,900 per month | $9,000 per month |

Amounts are expressed in Mexican pesos
*This account was launched as a pilot project in the municipality of Santiago Nuyoó, Oaxaca.
Source: BBVA Research with BBVA Bancomer, Banamex, Banorte and CNBV data.

## Box 3. Growth of banking infrastructure in rural areas

Increasing financial services in underprivileged areas is a considerable challenge. Where commercial banking through traditional channels is not possible or profitable, banking correspondents and mobile banking have become fundamental and efficient tools to provide these services. However, the use of these tools is hindered by a lack of telecommunications infrastructure, which keeps them from operating online according to banking regulations.

With a view to reducing the digital divide in rural communities by providing rural (local) mobile telephony, mobile commerce and access to
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banking services during the period covering January to June 2012 in Santiago Nuyoó, Oaxaca, Telecomunicaciones de Mexico (Telecomm ) and Banorte initiated the Mifon account pilot program as a money-less transactions project, using low-cost mobile phones. A banking penetration rate of 50% was achieved among the population with mobile phone accounts. Although Telecomm must deal with challenges such as the high cost of satellite bandwidth, it plans to replicate the model in up to 9,000 rural Mexican municipalities.

Other Mobile Banking products recently launched are:

### The Bancomer Express Account

The Bancomer Express Account is based on the specific needs of the low-income population. Its main features are:

- A simplified contracting process: it does not require documentation from the customer; formal identification and a minimum initial deposit of $100 are the sole requirements.

- The account number is the same as the phone number.

- Access to mobile banking through an *app* (the application is being developed for SMS)

- The customer has complete control of the fees for each transaction.

- No annual fee is charged, and there is no minimum average balance.

### Pago Móvil Banorte (Banorte Mobile Payment)

The Pago Móvil Banorte application makes it possible to make payments through the mobile phone by generating a virtual card linked to an account (credit or debit) for each occasion. This virtual card is generated based on the amount of the purchase and features a high level of security as it is digitally signed using the Banorte Cellular Token (a security device that generates dynamic codes in the mobile phone to authorize your transactions through online banking). The virtual card will appear on the mobile phone for 180 seconds, during which time the business will need to capture it in its system. If the virtual card is not captured by the business during this time, it will be automatically voided. Each transaction is authenticated with the Cellular Token for the specified amount. In addition, the cards are irreproducible, and cannot be cloned.

It requires an application (*app*) in which, after entering a username and password, a virtual card is generated for the amount to be paid to the retail business with a terminal to receive this type of payment. The available balance is based on the credit limit of the credit card, or on the available balance of the debit card.

### ¡Acepta Banamex

¡Acepta Móvil Banamex is a point-of-sale designed for the payment of products and services that is targeted to the self-employed. It consists in a small device that adapts to Apple mobile devices (iPhone, iPad and iPod), thus converting them into a POS Terminal. The service costs $500 pesos annually and, unlike fixed POS terminals, does not require a minimum level of billing to remain active.

The device requires an application that is downloadable from the virtual Apple store (*Appstore*), and works by reading an EMV chip[24] on any debit or credit card, making the payment quick and secure. The customer signs with his or her finger or with a special pointer designed for mobile devices, so that the seller may verify that the signature corresponds to that found on the card. Finally, the information linked to this sale is sent to the email of both the buyer and seller. As with point-of-sale terminals, the funds for that purchase are deposited in the checking account of the professional or business. This technology is already in operation in Sweden and the US, but using bandwidth technology.

Its use will be promoted for vendors that are multi-level companies, such as Avon, Fuller and Jafra, and in department stores so that "floating" salespeople can provide support in long lines at the registers. Users of this service shall pay a fee for the acceptance of cards from another bank (in this case, other than Banamex), which will vary between 1.80% to 2.50% of each sale depending on the line of business of the company.

## 4.3 Future Mobile Banking Projects

### Wanda Móvil

Wanda[25] is a company created by Telefónica and MasterCard to develop mobile financial solutions in the twelve countries of Latin America[26] where Telefónica operates through the brand Movistar. Currently, it only operates in Argentina and as a pilot project in Peru, and is available only to Movistar employees.

Using a mobile wallet or pre-paid account, Wanda will provide solutions based on the integration of the advantages of using a mobile that offer security, reliability and acceptance of the existing electronic payment systems through an open model guaranteeing interoperability between segments with and without banking services. To this end, it will seek to provide to the current (over 87 million) and potential mobile Movistar users in Latin America a number of payment services through the mobile associated to a mobile wallet, including remittances, time units reloads, utilities payments (electricity, water, etc.), and purchases from businesses and shops.

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24: The security standard for payment channels of Europay, Mastercard and Visa, which make it possible to validate operations made with a credit or debit card, according to information stored in the chip, reducing the possibility of fraud.
25: See www.wandamovil.com
26: Argentina, Chile, Colombia, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela.

# 5. Mobile Banking perspectives in Mexico

According to BBVA Research (2010), the need for banks in Mexico to access its customers through non-traditional channels is clearly linked to geographic and social-demographic factors, given that an important proportion of the inhabitants reside in small and/or remote towns in which establishing a traditional branch may not be economically feasible due to the expected low volume of business. The youth and mobility of the population are among the most relevant social-demographic factors. In Mexico, the current average age of the population is below 30. In addition, population growth projections published by the National Population Council (CONAPO) suggest that the 15 to 64 year-old group, where the majority of banking services recipients lies, will increase from the current 71 million people to 81 million people in 2030 and then fall to 75 million people in 2050, when it will account for 62% of the Mexican population.

In Mexico, many mobile phone users still do not have access to financial services. Some banks in the country have already launched products or applications for mobile payments through bank accounts, as well as access to online banking via mobile phones. However, the use of a mobile phone to carry out operations in the bank's payments system is still very low as a percentage of the total. According to BBVA Bancomer and GAUSSC (2013), as of 2011 only 2% of the population used a mobile phone at least to consult their balance, but not necessarily to carry out a banking transaction. Nevertheless, the potential of these communications media is high: 59% expresses an interest in using a correspondent and 46% the mobile phone. In addition, the study in question indicates that there is a greater tendency towards the use of these media among the younger age groups; it is also greater among the high and medium socio-economic segments, particularly in the latter. However, groups traditionally not using banking services have a high propensity to use these media: 57% with respect to the use of banking correspondents and 43% with respect to the use of mobile phones for women; 44% and 31% respectively for older adults; and 40% and 30% respectively among lower income groups.

Regulations issued by the SHCP, the CNBV and the Central Bank provide a legal framework that supports financial transactions through mobile phones. Some bank accounts can be linked to a mobile phone, and new regulations have established the basis for a category of accounts with less demanding identification requirements. In addition, the amount that can be deposited each month in these accounts is restricted to fight money laundering.

Furthermore, in 2011 the International Financial Corporation (IFC) published a study on Mobile Money in Mexico in which it defines an index of readiness for mobile money (*Mobile Money Readiness Index*) qualifying the global situation of Mexico with a 3 (good level of readiness) on a scale of 1 to 5. This index is made up of qualifications for the various aspects of the question in each country, such as the regulatory framework, financial sector, telecommunications sector, distribution channels, and market demand, as shown in the following table:

Table 7
IFC Mobile Money Readiness Index Mexico

| Aspect | Qualification (1-5) | Comments |
|---|---|---|
| Global Index | 3 | Good |
| Regulation | 4 | The regulating body is open to mobile banking. |
| | | Only registered banks and other institutions can offer mobile financial services. |
| | | The role of mobile network operators (MNO) is limited by law. |
| Financial sector | 3 | Robust banking system |
| | | Significant financial flows, from international remittances |
| | | Dynamic market |
| Telecommunications sector | 1 | Telcel dominates the market and its decisions in the provision of mobile financial services can significantly influence the sector. |
| | | Despite the fact that Telcel has a dominant position in the market, competition is increasing. |
| | | It is expected that MNO will introduce additional mobile financial services in the short term |
| Distribution channels | 4 | Mexico has supermarkets and large department stores that offer a great variety of products, centered in urban areas. |
| | | Among convenience stores, Oxxo and 7 Eleven are the largest chains, and both act as banking correspondents. |
| Market demand | 3 | Many banks offer traditional mobile and online banking services. |
| | | Up to 2011 there were no mobile financial services in Mexico. |

Source: BBVA Research based on IFC

Moreover, the CGAP 2011 Report indicates the main challenges and opportunities that the Mexican market will encounter with respect to mobile payments, as described below:

## Challenges:
- Limited understanding by the banks of the needs of potential low-income customers.

- The banks must develop business models that make low cost, high transactionality accounts viable.

- Regulation of rates in deposit accounts: the Credit Institutions Act establishes that cash withdrawals from ATMs of the same bank must be free, which limits the scope for banks to develop a range for the lower-income segments.

## Opportunities
- The parties are proactive and open to experimentation.

- The regulating body is highly committed and open to increasing financial inclusion.

- The mobile infrastructure for payment and ATM systems is adequate

- International mobile money transfers could play a very important role as a payment method for remittances in Mexico.

According to Fernández de Lis et al (2009), the most common transactions offered over mobile channels includes, in addition to cash management, domestic money transfers, service payments and mobile air-time reloading purchases. However, from the standpoint of financial inclusion, the most interesting services may be deployed once a critical mass has been obtained. These include access to loans (as occurs in Brazil), receipt of international remittances (Latin America is one of the main recipient regions) and the receipt of payrolls or public subsidies.

# National remittances and mobile telephony

According to CEMLA (2012), four of every five of the senders of such remittances had a mobile phone, compared to half of the recipients.

The population surveyed showed a propensity to use a mobile phone for a number of applications in addition to calls: 97% sent text messages and 21% used it to access the internet. In the qualitative interviews, 40% expressed a willingness to use a mobile phone for banking transactions, given that it saves time, but they specified that they still needed to get to know the services well. By contrast, the interviewed people who did not show interest for mobile financial services indicated that they do not understand how they work and do not consider them secure. Furthermore, they indicated that no receipt is kept and that one may make a mistake with respect to the account number.

As López-Moctezuma and Samaniego (2012) indicate, the transfer of funds between individuals at the national level is a need of Mexican families that is currently being satisfied by informal providers, who generate high risks, or money transfer companies that offer the service at high costs[27]. Under this scenario, the funds sent are less than that which could potentially be sent, and saving by the beneficiaries of the transfers is hindered as it is necessary to withdraw the total of the funds received in cash.[28]

Mobile payment models are particularly attractive for the lower income population living in remote areas, for whom the sending of money via transfers or deposits between traditional bank accounts is not available. According to the National Survey on the Use of Financial Services carried out in 2009, the 40% of the population without access to banking services is interested in having a savings account. The mobile telephone services range, together with the possibility of opening accounts remotely using this channel, makes it possible for banks to reach those segments of the market with lower infrastructure costs and by designing products suited to their needs.

Therefore, remittances are a potential market for mobile accounts. However, as Fernández de Lis et al indicate, the sending and receiving of remittances via mobile phones are complex transactions given that they have to interoperate with the mobile network operators and financial systems of various countries. In this regard, international organizations like the CEMLA endeavor to promote the application of the General Principles for Remittances Services on the part of central banks and authorities involved in the regulation, operation and evaluation of the remittances markets in 23 Latin American countries, contributing to make international remittance services more secure and efficient, promoting greater transparency and protection for the user, a better systems infrastructure for low value international payments, a more robust legal and regulatory framework, increased competition and access to the market, and more developed risk supervision systems.

In addition, as part of the Mobile Payment service, balance enquiries will be available only for accounts associated to the service, and money operations limited to the payment or transfer of funds up to 1,500 UDI per day, chargeable to bank cards or accounts linked to the service, as well as to acts for the administration of this service that do not require a Second Authentication Factor.

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27: According to CEMLA (2012), the average cost for sending remittances is $70.7, while the average amount is $1,268 per month.
28: Regulation on remittances establishes that these shall be withdrawn on a single occasion, or be considered deposits, and the money sending company would then be involved in irregular fund gathering (being holding resources of the beneficiary).

# 6. Conclusions

The recent regulatory changes in Mexico, focused on establishing a regimen of simplified bank accounts, an extensive network of banking correspondents and the figure of niche banking, have provided favorable conditions for the development of the mobile banking market. Some banks in the country have already launched products or applications for mobile payments through bank accounts as well as access to online banking via mobile phones. However, the use of a mobile phone to carry out operations in the bank's payments system is still very low as a percentage of the total.

According to the financial inclusion study carried out by BBVA Bancomer and GAUSSC (2013), as of 2011 only 2% of the population used a mobile phone at least to consult their balance, but not necessarily to carry out a banking transaction. However, said study indicates that the potential is high: 46% of the population expresses an interest for financial services via the mobile phone. Furthermore, there is greater propensity to use mobile banking among younger people, as well as among the medium social-economic level.

Also, the reasons that the non-banking population expresses for not having an account in a formal financial institution must be taken into account: according to the Global Findex survey, in Mexico the reason most frequently cited is the high cost of maintaining an account, as well as the lack of trust in financial institutions. Therefore, with a view to boost the positive image of banking, it is necessary to undertake financial literacy campaigns that highlight the benefits of subscribing to formal financial services, as well as publicity campaigns emphasizing that recent banking regulation has promoted measures for decreased costs for financial services users—as in the case of basic accounts and the elimination of any cost for withdrawing cash from ATMs of the account holder's bank—, promoting the advantages of mobile banking products recently launched on the market.

The offer of value in mobile banking models to customers at the base of the pyramid, where other means of payment and traditional transfers are perceived as secure and are already adopted by the population could be rather unclear with respect to their operation, or perceived as mechanisms offering little security, which hinders acceptance of these new business models by customers. On the other hand, the existing business relationship between banks and the telecommunications companies is complex, as there is discretionarity with respect to providing access to channels and discrimination in the pricing of the services that telephone companies offer to the banks. Although this has not been the case in Mexico, there are examples at the international level in both Colombia and Peru, where telephone companies have indiscriminately increased the cost of channels (in particular SMS) to the banks.

However, international experience reveals cases where models based on the range of financial services through mobile telephony have reported significant success in the financial inclusion of the population without access to banking services. Furthermore, there are geographic and social-demographic characteristics associated to the Mexican market that may catalyze greater take-up of mobile banking services, thereby strengthening its viability and ability to provide access to financial services to the population not covered by the traditional channels, as is the case for those living in remote and hard-to-reach areas, where there are no branch offices, or boost the potential market for the sending of remittances via mobile banking, which would involve a much lower cost than the one currently in place.

The study revealed that the total potential demand gap for mobile banking could stand near 40%, which corresponds to the difference between the number of actual accounts and possession of mobile phones, with the latter being understood as a channel to access the financial system. By gender, it was found that males have a greater number of accounts than females, and that the demand gap with respect to possession of a mobile phone is lower. In terms of level of education, the demand gap of the population is highest in percentage among people with secondary education. Finally, when carrying out the segmentation by age into 6 five-year interval groups, starting from the age of twenty-five, the demand gaps found were fairly similar. Extensive room for mobile banking development was observed in the country.

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Comisión Nacional para la Defensa de los Usuarios de Servicios Financieros www.condusef.gob.mx

Wanda Móvil www.wandamovil.com

# Appendices

## Appendix 1. Total assets and market share of Multiple Banking in Mexico

Table 8
**Total assets and market share of Multiple Banking in Mexico**

|  | **Million pesos as of November 2012** | **Total Assets** | **Market Share** |
|---|---|---|---|
|  | System | 6,135,710 |  |
| 1 | BBVA Bancomer | 1,298,224 | 21.2% |
| 2 | Banamex | 1,135,908 | 18.5% |
| 3 | Santander | 807,614 | 13.2% |
| 4 | Banorte | 625,413 | 10.2% |
| 5 | HSBC | 495,571 | 8.1% |
| 6 | Inbursa | 232,471 | 3.8% |
| 7 | Scotiabank | 212,327 | 3.5% |
| 8 | Deutsche Bank | 203,870 | 3.3% |
| 9 | Banco del Bajío | 101,875 | 1.7% |
| 10 | Interacciones | 98,392 | 1.6% |
| 11 | Ixe | 94,595 | 1.5% |
| 12 | Afirme | 91,004 | 1.5% |
| 13 | Banco Azteca | 87,205 | 1.4% |
| 14 | Banregio | 70,960 | 1.2% |
| 15 | Bank of America | 64,283 | 1.0% |
| 16 | Invex | 51,747 | 0.8% |
| 17 | Banco Credit Suisse | 47,406 | 0.8% |
| 18 | Monex | 47,058 | 0.8% |
| 19 | Banca Mifel | 40,654 | 0.7% |
| 20 | JP Morgan | 40,273 | 0.7% |
| 21 | Barclays | 34,270 | 0.6% |
| 22 | Multiva | 31,038 | 0.5% |
| 23 | CIBanco | 28,265 | 0.5% |
| 24 | Ve por Más | 23,753 | 0.4% |
| 25 | Inter Banco | 19,392 | 0.3% |
| 26 | Bancoppel | 17,384 | 0.3% |
| 27 | Compartamos | 17,234 | 0.3% |
| 28 | Banco Ahorro-Famsa | 14,134 | 0.2% |
| 29 | Bank of Tokyo-Mitsubishi UFJ | 13,315 | 0.2% |
| 30 | American Express | 12,998 | 0.2% |
| 31 | Bansi | 11,431 | 0.2% |
| 32 | Actinver | 10,923 | 0.2% |
| 33 | Banco Base | 10,696 | 0.2% |
| 34 | UBS | 8,693 | 0.1% |
| 35 | Banco Wal-Mart | 6,213 | 0.1% |
| 36 | ABC Capital | 6,096 | 0.1% |
| 37 | ING | 5,244 | 0.1% |
| 38 | Autofin | 5,186 | 0.1% |
| 39 | Volkswagen Bank | 5,051 | 0.1% |
| 40 | Banco Fácil | 3,748 | 0.1% |
| 41 | The Royal Bank of Scotland | 2,990 | 0.0% |
| 42 | The Bank of New York Mellon | 806 | 0.0% |

Source: CNBV Boletín Estadístico Banca Múltiple noviembre 2012

# Appendix 2. Banking institutions operating with banking correspondents. September 2012

table 9
**List of Broker and Bank Modules**

| Broker | BBVA Bancomer | Banamex | American Express | Banorte | Invex | HSBC | Banco Wal-Mart | Scotiabank | Inbursa | Santander | BanCoppel | Monex | Bansefi | Compartamos | Afirme | Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cadena Comercial OXXO | | | | | | | | | | | | | | | | 9,196 |
| Nueva Wal-Mart de México | | | | | | | | | | | | | | | | 1,797 |
| Telecomunicaciones de México | | | | | | | | | | | | | | | | 1,612 |
| OXXO Express | | | | | | | | | | | | | | | | 1,514 |
| Banamex Aquí (688 comisionistas) | | | | | | | | | | | | | | | | 1,509 |
| 7 Eleven México | | | | | | | | | | | | | | | | 1,420 |
| Farmacias Benavides | | | | | | | | | | | | | | | | 1,092 |
| Farmacias Guadalajara | | | | | | | | | | | | | | | | 1,003 |
| Coppel | | | | | | | | | | | | | | | | 941 |
| Tiendas Soriana | | | | | | | | | | | | | | | | 600 |
| Operadora VIPS | | | | | | | | | | | | | | | | 373 |
| Blockbuster de México | | | | | | | | | | | | | | | | 331 |
| Radio Shack de México | | | | | | | | | | | | | | | | 235 |
| Tiendas Chedraui | | | | | | | | | | | | | | | | 234 |
| Tiendas Comercial Mexicana | | | | | | | | | | | | | | | | 204 |
| DICONSA | | | | | | | | | | | | | | | | 194 |
| Sanborn Hermanos | | | | | | | | | | | | | | | | 166 |
| Suburbia | | | | | | | | | | | | | | | | 98 |
| Sears Roebuck de México | | | | | | | | | | | | | | | | 92 |
| Productos de Consumo Z | | | | | | | | | | | | | | | | 47 |
| Pequeños Comercios AFIRME (36 Brokers) | | | | | | | | | | | | | | | | 46 |
| MERCO | | | | | | | | | | | | | | | | 19 |
| Crédito Firme | | | | | | | | | | | | | | | | 8 |
| Assis tu vestir | | | | | | | | | | | | | | | | 7 |
| Red Efectiva | | | | | | | | | | | | | | | | 7 |
| Surtifirme | | | | | | | | | | | | | | | | 3 |
| **Total (752 Brokers)** | 19,150 | 14,205 | 4,056 | 3,022 | 2,882 | 2,424 | 2,268 | 2,181 | 1,761 | 1,612 | 941 | 481 | 194 | 191 | 57 | 22,748 |

Source: CNBV (2012c), Press Release 87/12

# Appendix 3. The Mobile Phone Market in Mexico

The market is dominated by Telcel, which controls 70% of the market. Telefónica is slowly gaining market share, and controls 21.8% of the market, while Nextel and Lusacell share the remaining 8.2%. Prepaid lines make up 93% of the market, and 74% of usage is for SMS.

For the development of mobile banking, Telcel is associated to Banamex and Inbursa, forming the Transfer company, but it also operates as a channel for customers of others banks such as Bancomer and HSBC, among others. Given the size of Telcel and the probable overlap with existing banked segments, the business of transaction channels for the population already using banking services may be easier to focus on and develop than mobile accounts for the population that is not yet banked, given that the latter segment also requires the creation and expansion of a cash-conversion network (banking correspondents).

Also, Telefónica has worked to develop mobile payments by offering its services to low income segments that are not banked, which could consolidate and extend its existing customer base. Telefónica announced a joint venture with MasterCard to develop a mobile payments product (Wanda)[29] for 12 countries in Latin America, including Mexico.  Using this electronic wallet, customers will be able to use their mobile phones for person-to-person transfers, the payment of services, telephone credit recharge, and retail purchases. However, the strategy that it will adopt in Mexico is still not clear.

While the Telefónica-MasterCard alliance seems to represent a promise on the market, Telcel's position in the telecommunications business constitutes an important foundation for payment products for the general public. In both cases, it seems that banks will play a key role in supporting the development of a network of physical locations for cash conversion.

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29: See www.wandamovil.com

# Appendix 4. Banking Correspondents: Services offered, requirements and authorization processes

## Services offered by banking correspondents

- Utilities payments (water, electricity, telephone, pre-dial) and loan payments.

- Cash withdrawal and deposit to customer and third-party accounts.

- Balance situations.

- Payment channels circulation.

- Check cashing.

- Consulting of account balance and transactions.

- Opening of low-activity level accounts and low-risk accounts, including those operated via mobile phone (Mobile Accounts).

## Requirements imposed on the banking correspondent party.

The CNBV (2012a) indicates that the regulatory framework establishes requirements to verify the capacity of the correspondent to act as such, while affording banks sufficient flexibility to choose the establishment to be contracted so as to achieve the potential for expansion of the financial services products network. According to the regulation, a retailer can act as a correspondent if:

- It is an entity or individual with a business activity.

- It has a permanent establishment.

- It has its own separate business area.

- It demonstrates honesty as well as a satisfactory credit and business track record.

- Its staff is trained to operate electronic media to authenticate banking customers.

- It possesses the necessary infrastructure to process banking operations.

Furthermore, the new framework also dictates mechanisms and requirements to guarantee that the banking services offered through banking correspondents are carried out in an orderly manner and with the same level of security for users as that existing in other channels for the provision of these services. These mechanisms include:

- Responsibility of the banking institution for the actions of its correspondents.

- An authorization and supervision process on the part of the CNBV.

- Online and instant charging and crediting of the customer and correspondent accounts.

- Operational requirements for the provision of services through correspondents.

- Establishment of forbidden practices in correspondent activity.

The contracting of correspondents does not exempt traditional banks from compliance to applicable regulation. At all times, the bank is responsible before customers for operations carried out through correspondents. In case of non-compliance to their obligations by correspondents, the banks shall take the necessary corrective measures and, when the situation warrants it, suspend new operations with the correspondent. Pursuant to the aforementioned, regulation specifies that the contract with which the legal relationship between the bank and the correspondent is formalized shall contain at least the following points:

- Permitted and forbidden correspondent activities.

- Procedures for the identification of the correspondent and customer.

- The correspondent's acceptance of on-site inspections by the CNBV.

- The limits of operations.

- The operational and technical requirements that shall be met.

- The sanctions for non-compliance and procedures to rescind or suspend the relationship.

It is important to indicate that banks, through the correspondents, shall provide sufficient information so that their customers may be aware of the procedure to present queries or complaints derived from operations undertaken through said agents. To this end, they shall make available in the physical location, among other information for customers, the telephone number and email of the Specialized Customer Service Unit that the bank must have, as well as the customer care center of the Institution.

Furthermore, they shall indicate the numbers for the "Telephone Service Center" of the National Commission for the Protection and Defense of Users of Financial Services (CONDUSEF).

## Authorization of correspondents

The carrying out of correspondent activities on the behalf of credit banks requires prior authorization from the CNBV. To be granted the authorization, the bank must provide the CNBV with an application to engage in this new line of business that shall be accompanied by a strategic business plan that must contain, among other items, the policies and procedures to supervise the activity of the correspondent as well as the description of processes, systems and electronic means used to undertake the operations. Before authorizing the start of operations, the CNBV shall carry out an on-site inspection during which it shall be verified that correspondent operations are executed in accordance to the application filed. It should be mentioned that correspondents solely offering banking customers cash withdrawal or currency exchange operations shall be subject to simplified regimens.

# Appendix 5. Customer authentication factors and security mechanisms

1. **Category 1 Authentication Factor (AF 1):** Includes information obtained by way of customer questionnaires conducted by telephone service operators, in which information known to the user is required. In no case whatsoever shall authentication factors in this category include solely data that have been included in printed or electronic communications sent by the banks to their customers.

   In order to verify the identity of their users, the banks must create, in advance, the questionnaires that will be used by telephone operators, making it impossible for them to be used in a discretional manner, and validate at least one of the answers provided by their users through electronic means, with no possibility for the operator to consult or know the user authentication data in advance.

2. **Category 2 Authentication Factors (AF 2):** Includes information that only the user is aware of and that he/she provides through an access device, such as passwords and Personal Identification Numbers (PINs). Their length shall be at least six characters, except for the following:

   i.   Four characters for services offered through ATMs and Point-of-Sale Terminals.

   ii.  Five characters for Mobile Payments, and

   iii. Eight characters for online banking.

These authentication factors must include alphanumeric characters when the access device allows it.

Users may change their passwords, PIN, and other authentication information when they wish to do so, using the Online Banking services.

3. **Category 3 Authentication Factor (AF 3):** Includes information contained or generated by electronic means or devices, as well as that obtained by devices that generate dynamic single-use passwords. These electronic means or devices must be provided by the banks to their users and the information they contain or generate must include properties blocking their duplication or alteration. The information must also be dynamic information that cannot be used in more than one occasion, be valid for no more than two minutes, and not be known prior to its generation and use by employees, representatives or agents of the bank or by third parties.

   The information contained in the circuit or chip of the bank cards with an integrated circuit is considered a dynamic password for a single use, whenever these cards are used only for operations carried out at ATMs and point-of-sale terminals, and the card information is obtained through said circuit or chip.

   Banks may use as random password tables as AF 3, as well as perform ATM and point-of-sale terminal transactions by way of bank cards without integrated circuit. However, in both cases, they shall formally agree with their users that the latter shall assume risks and costs of unrecognized operations, and resulting claims shall be paid to users within 48 hours at the latest.

4. **Category 4 Authentication Factor (AF 4):** Includes user information derived from the user's own physical characteristics such as finger prints, hand geometry, and iris or retinal patterns, among others.

   The banks shall use the authentication information obtained by way of biometric devices, elements that ensure that said information is different each time it is generated, so as to generate single-use passwords that may under no circumstance be used again or duplicated with that of another user. The signature of users in the receipts generated by

point-of-sale terminals can be considered to fall under this category only when the users themselves carry out monetary operations for the payment of goods or services through said point-of-sale terminals.

Furthermore, the CUB establishes that the mobile banking user identifier shall be the mobile telephone number associated to the use of said services, and that it shall be obtained in an automatic and unequivocal manner from the corresponding mobile telephone number. With respect to ATM and point-of-sale terminal operations, the user identifier may be the number of the bank card with which the online banking service is accessed.

The technology used in mobile payments must block the reading of the identification and authentication information provided by the user on the screen of the access device. Otherwise, the bank may offer the service only after authorization by the CNBV, providing details on the checks that will allow users to carry out operations in a secure manner[30]. Ensuring that only the user carries out the generation, delivery, storage, unblocking and reestablishment of authentication factors. The user shall be able to authorize a third party to receive said authentication factors as long as the banks maintain procedures so that said authorizations are occasional and may be revoked by the customer when he or she wishes to do so.

Gradual approach to authentication and transmission of data for mobile financial services based on the amount of the transaction makes it possible for micro-payments[31] to be carried out without need for a PIN, so that these payments are quick and simple. As the transaction amount increases, two authentication factors, as well as additional security systems, are required, such as encryption, pre-registration of all beneficiaries and mandatory notices for the user. This progressive approach is demonstrated below.

Chart 25
Checks for the Protection of the Customer in Transactions through a Mobile Phone
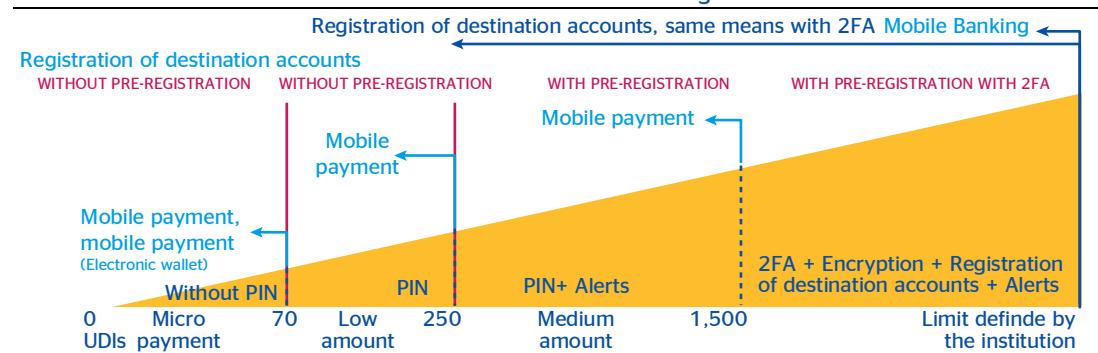


Source: CNBV (2012a)

For the Mobile Payment service, banks shall establish checks that block the association of more than one mobile phone number to a user account and the association of a mobile phone number to the accounts of different users.

Banks can associate up to two cards or bank accounts of the same user to a mobile number as long as one of them only functions according to the micro-payments operational mode.

Furthermore, banks must request their users, upon entering into the contract, to provide contact information such as their email address, or mobile phone number for the reception of SMS messages so as to send them notifications concerning the execution of transfers of funds to the accounts of third parties as quickly as possible, including the payment of credits and goods or services as well as authorizations and instructions for standing orders, or cash withdrawals carried out using mobile payment, ATMs or point-of-sale terminals. These

30: Banks shall assume the risks and costs of operations made through Mobile Payment that do not fulfill the aforementioned conditions and are not recognized by the users. Claims derived from these transactions shall be paid to users at the latest forty-eight hours following the claim.
31: Operations up to the equivalent in national currency of 70 UDIS.

notifications shall be sent when the daily total amount of said operations through the concerned electronic banking service exceeds the national currency equivalent of 600 UDI or when individual monetary operations exceed 250 UDI in national currency. The latter applies whenever banks have specific fraud prevention schemes to continually revise operations that may constitute an unauthorized use of Online Banking services.

Cash withdrawals from ATMs through mobile payments may be executed using at least a Category 2 Authentication factor, with banks obliged to ensure that monetary operations are carried out using the number currently associated to the service.

Micro-payments for which the access device is a mobile phone or a point-of-sale terminal may be carried out without banks requesting authentication factors, therefore the banks shall assume the risks and therefore the costs of operations that are not recognized by the users in said cases. Claims derived from these transactions shall be paid to users at the latest forty-eight hours following the claim.

Once the user has been authenticated in the online banking service, the session may not be used by a third party. With respect to the above, banks must automatically terminate sessions and inform the user of the motive. In addition, in operations carried out using mobile payment, ATMs and point-of-sale terminals, the session shall be considered completed when inactivity persists for more than one minute.

Banks must establish procedures so that their mobile payment and mobile banking users can at all times deactivate the use of the service in a temporary manner when required, as well as procedures to reactivate it when the user is ready to do so.

Banks making use of electronic means for operations and the provision of services must implement security measures or mechanisms in the transfer, storage and processing of information through said electronic means so that third parties may not become aware of these operations. To this end, banks shall:

1. Encrypt messages or used encrypted communication means[32] in the transfer of sensitive user information through electronic means, from the access device to receipt for execution on behalf of banks, so as to protect personal information, including that linked to identification and authentication of users such as passwords, PIN and any other authentication factors such as answers to the secret questions. To this end, banks shall use technologies employing encryption and requiring the use of encryption keys to ensure that third parties may not become aware of the data transferred.

   Banks are responsible for the management of encryption keys as well as all other components used for encryption, with respect to procedures ensuring their integrity and confidentiality and protecting the authentication information of their users. With respect to Mobile Payment, comparative checks may be implemented for data transfer encryption so that the data is protected.

2. Encrypting or truncating user account or operation information and encrypt passwords, PINs, secret answers or any other authentication factor in case it is stored in any electronic means component.

3. In no case whatsoever shall passwords and PIN numbers be transferred through email, instant messaging services, SMS text messages or any other technology not featuring encryption mechanisms. An exception is made for passwords and PINs used to access the Mobile Payment service, as long as the banks maintain checks so that user funds and data are not put at risk; banks wishing to employ these checks must obtain prior authorization from the CNBV.

   Furthermore, Category 2 Authentication Factor data used to access account status information may be communicated to the user by way of automatic audio answering

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32: Mechanism that institutions will need to use to protect the confidentiality of information through encryption methods that make use of algorithms and encryption keys.

devices as well as by mail, as long as the information is sent using security mechanisms and upon request from the user, and as long as the corresponding authentication processes have been carried out.

Ensuring that encrypted keys and the encryption and decryption process are installed in high security devices such as those known as HSMs (Hardware Security Modules), which shall include administration routines that block unauthorized access and the disclosure of the information they contain.

# Appendix 6. Global Financial Inclusion Survey (Global Findex)

The World Bank's Global Financial Inclusion Survey (Global Findex)[33], conducted on adults over 15 years of age in 2011 in 148 countries, allows us to monitor the effects of the financial inclusion policies, as well as to gain an in-depth understanding of the way in which the population saves, becomes indebted, makes payments and manages risks.

The results of the survey include a weighting of data to ensure a representative sample for each country: the sample weighting corrects inequalities in the probability of sample selections using national gender, age, education and socio-economic level statistics.

The main aspects of the methodology of the survey and its questionnaire are presented below:

Table 10
**Global Findex Survey Methodology**

| | |
|---|---|
| **Sample Size** | 1,000 interviews |
| **Representativeness** | National |
| **Population under study** | Population 15 years of age and over |
| **Selection of sample units** | Random, proportional selection of sample units |
| **Selection of households and individuals** | Random routes are used. The household is selected randomly, the individual is selected using the last birthday method; up to three visits to the house are made. If no appointment is completed, it is simply replaced. |
| **Technical** | Face-to-face in homes |
| **Margin of Error** | +/- 3.8% |

Source: BBVA Research with Global Findex 2011 data

Table 11
**Main aspects of the Global Findex Questionnaire**

| | |
|---|---|
| **Use of bank accounts** | Do you have a bank account? |
| | Purpose: personal transactions, business transactions, both |
| | Average number of deposits and withdrawals per month |
| | Primary channel of access: ATM, bank branch, correspondent |
| | Have you used checks or electronic payments in the last 12 months? |
| | Use of the account: payroll, to receive transfers from the government, to send or receive money to or from family members |
| | Do you have a credit/debit card? |
| **Primary reason for not having a bank account** | High cost, distrust of the institution, too far away, lack of money, lack of documentation, religious reasons |
| **Use of micro-finance banks** | Have your ever obtained a loan from a micro-loan institution? |
| | Have your ever saved money in a micro-loan institution? |
| **Savings** | Have you saved money in the last 12 months? |
| | Has saved in: financial institution or informal group |
| | Purpose for saving: emergency, planned expense (wedding, education) |
| **Loans** | Have you received loans in the last two months? |
| | Source: bank, buying on loan, family/friends, employee, informal lender |
| | Use: to purchase, add on/remodel home, for education expenses, for an emergency/health issue, funeral/wedding |
| **Use of mobile phone in the last 12 months** | Pay bills |
| | Send money |
| | Receive money |
| **Insurance Policies** | Do you have health insurance other than social security? |
| | Did you personally buy that insurance policy? |
| | Have you personally paid for harvest, livestock or rain insurance in the last year? |

Source: BBVA Research with Global Findex 2011 data

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33: The main indicators on the use of formal accounts and the use of formal credit shall be collected annually while other indicators shall be collected every three years.

# Appendix 7. Fund gathering, credit and banking services products

## 1. Fund gathering products

In Mexico, banks may receive demand deposits from physical persons and legal persons, and freely establish minimum amounts and balances for the opening and maintaining of accounts[34]. The accounts are classified into four levels of operation, depending on the requirements for the opening of the account:[35]

Table 12
**Account levels for fund gathering banking products.**

| | Customer type | | | Withdrawal of account funds through: | | |
|---|---|---|---|---|---|---|
| Level | Physical Person (Individual) | Legal Person (Entity) | Maximum monthly deposit limit | Debit card | Mobile phone | Checks |
| 1 | √ | X | 750 UDIS* | √ | X | X |
| 2 | √ | X | 3,000 UDIS | √ | √ | X |
| 3 | √ | √ | 10,000 UDIS | √ | √ | X |
| 4 | √ | √ | No limit | √ | √ | √ |

*Investment units. As of February 2013, one UDI was equivalent to 4.88 pesos.
Source: BBVA Research with Bank of Mexico information.

The main characteristics of the fund gathering products offered by commercial banking are as follows:

Table 13
**Main banking fund gathering products in Mexico**

| Product | | Features |
|---|---|---|
| Savings accounts | | These require minimum amounts and periods, as well as signed contracts |
| Transactional payroll accounts | Basic payroll account | Does not require a minimum opening or maintenance amount<br>It is exempt of commissions as long as monthly deposits are less than 165 days of minimum salary ($10,685)<br>If the account does not receive deposits for six consecutive months, the bank may convert the account into a Basic Account for the general public |
| | Payroll account | No set limits for deposits<br>Commissions are charged in this case |
| Transactional open-market accounts | Basic account for the general public | These do not require a minimum opening amount.<br>They are exempt of commissions as long as monthlydeposits are less than 165 days of minimum salary<br>Banks can freely establish a minimum average monthly balance, and if this is not met during three consecutive months, the banks have the right to close the account. |
| | Checking account | On-demand deposit account allowing the holder to withdraw funds using checks and debit cards. |
| | Master account | Some banks pay a certain interest rate based on the average balance.<br>For the account holder, this allows cash availability while having an investment account. |
| | Account for minors | The purpose of these accounts is to promote the banking culture among children and adolescents.<br>An easily managed account offering performance, immediate liquidity, ATM network service, etc. |
| Time deposits | | Banks can freely agree with their customers the minimum amounts for which they are willing to receive these deposits.<br>Upon setting up these deposits, the parties shall freely agree, in each case, on the interest rate and maturity of the deposits (binding for both parties). |

Source: BBVA Research with information from Bank of Mexico and the Mexican Banks Association

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34: An exception shall be made in the cases of the basic salary account and basic general public account, which do not feature minimum amounts for their opening or maintenance.
35: Pursuant to the terms of "General Provisions referred to in Article 115 of the Credit Institutions Act" issued by the Tax Agency and State Credit Secretariat.

## 2. Credit products

The main characteristics of the credit products offered by commercial banking include:

Table 14
**Main credit products in Mexico**

| Type | Product | Features |
|---|---|---|
| Credit cards | Basic | • Its sole purpose is the acquisition of goods or services, and it cannot be used to withdraw funds in cash from ATMs.<br>• Credit limit of up to 200 minimum salaries ($12,952).<br>• Exempt from commissions.<br>• Banks are not required to include additional features to the line of credit of the aforementioned basic product.<br>• Banks may only charge the card holder the interest accrued where applicable. |
| | Traditional | • Revolving credit.<br>• Commissions are charged annually.<br>• In addition to payment in virtual and physical retail establishments, they offer additional benefits, depending on the bank, such as the availability of cash at ATMs, promotions for purchases in monthly installments without interest, travel insurance or points to add to the card itself or checking account, or through gift catalogs. |
| | Guaranteed | • These require prior deposit in order for the bank to authorize it to a customer, in general when it is not possible to verify the customer's income. |
| Credits to physical persons | ABCD | • These are loans for the purchase of consumer durables granted so that individuals may acquire durable goods normally consumed over several years, such as domestic furniture, appliances, etc. |
| | Automotive | • Para la adquisición de automóviles nuevos y seminuevos, se otorgan a personas con edades entre 18 y 64 años, con requisitos de ingresos mínimos de $6,000, requieren de la contratación de un seguro automotriz. |
| | Mortgage loans | • Son créditos a largo plazo (cinco a treinta años), destinados a la construcción, compra, ampliación o remodelación de bienes inmuebles (casa, departamento o terreno).<br>• Otorgados a personas físicas asalariadas, profesionistas independientes o con actividad empresarial, con tasa de interés fija o variable con tope.<br>• Se requiere la contratación de seguro de vida, seguro de casa-habitación y seguro de desempleo.<br>• La periodicidad de pago y amortización son mensuales. |

Source: BBVA Research with information from Bank of Mexico and the Mexican Banks Association.

## 3. Banking Services

The services offered by banks in Mexico are detailed in the following table..

Table 15
### Main Banking Services

| Service | Features |
|---|---|
| Consulting of account balance and transactions | Real-time consulting of the account balance, account status or the latest transactions carried out. |
| Deposits | Deposits to bank accounts can be made in cash, electronic transfer of funds and checks. |
| Cash withdrawal | Availability of funds on the account. |
| Utilities payments (water, electricity, telephone, etc.) and taxes | The bank receives the payment for services, and it can charge commissions to those who are not its customers. |
| Electronic transfers | • The sending of money from one bank account to any other.<br>• The transfer of funds through internet or mobile phones.<br>• Banks must assign a Standard Banking Key (CLABE)[36] to each account for levels 2, 3, and 4 as well as to authorize the reception of electronic funds transfers using the aforementioned CLABE, the 16 identification digits of the debit cards, or the digits corresponding to the mobile telephone line associated to the account in question.<br>• They use the SPEI or TEF system (See Sidebar 1)<br>• There are security measures[37] to verify the identity of the user. |
| Salary and pensions transfers as well as other employment-related services | • Electronic funds transfers that facilitate payments of salaries by employers to their staff or retirees, at any banking institution that the latter have chosen, within national territory, regardless of whether the employer or employee have an account with the bank. |
| Direct billing | • Express acceptance by the account holder so that recurring charges be made to his or her account with respect to payment for goods, services, or credits that have a periodic frequency, such as water, electricity, gas, telephone, payments to credit cards or mortgage loans.<br>• A limit to the charge made can be established in a direct debit in order avoid charges higher than expected.<br>• SPEI users. |
| Debit cards (TDD) | • These can be presented in the way that each bank determines, as long as the name of the issuing bank is clearly shown.<br>• Direct Debit Cards associated to Level 1 accounts can only be used in the country, and cannot be used to withdraw cash or make payments abroad, or to make electronic transfers of funds.<br>• The Direct Debit Cards associated to level 2, 3, and 4 accounts can be established as micro-circuits inside mobile telephones as long as, upon using the corresponding application, the name of the issuing institution or any other expression, symbol, emblem or logo that identifies it is displayed. |
| Non-bank cards | • Non-bank cards for the acquisition of goods and services.<br>• These shall indicate on the back that they are not bank cards and that their balance shall not be paid in cash.<br>• Banks that provide these services shall ensure that the cards do not contain on their back side information related to the institutions themselves, such as their name or any other expression, symbol, emblem or logo that could provoke error or confusion with respect to the person who shall fulfill the corresponding obligations. |

Source: BBVA Research with information from "Circular Única de Bancos" and Bank of Mexico

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36: This is a single and non-duplicable number assigned to each bank account that guarantees that funds sent under direct debit orders, salary payments or interbank electronic funds transfers are applied exclusively to the account designated by the customer. It is composed of 18 digits that correspond to the code of the bank, sort code (town or region of the account), account number and control digit.
37: The communication is carried out using a public encryption key ensuring that the issuer of the information is who he or she pretends to be and cannot deny that he or she sent it. Participants in the SPEI communicate with the Bank of Mexico through a private network including security applications such as access control devices (firewalls) and encryption of the information, so that only the participating recipient of the message may read it. Only participants in the financial system who have requested authorization from the Bank of Mexico can access this private network.

## 4. Access channels

Table 16
**Banking access channels**

| | |
|---|---|
| **Branch offices** | • These offices offer a large variety of operations but generally have limited opening hours. |
| **Automatic Teller Machine (ATM)** | • The cumulative daily amount of monetary operations in ATMs that constitute a charge to the account of the customer shall not exceed the equivalent in national currency of 1,500 UDIS.<br>• Banks may not charge a commission to their customers for withdrawals from ATMs pertaining to their own bank |
| **Online banking** | • To access online banking one must have a checking account, or a debit card or salary, as well as sign a contract for the use of this service.<br>• The bank provides a security system to avoid possible fraud, for instance a Token or Netkey.<br>• Depending on the bank, this service may be free or generate a monthly or annual commission that varies according to the type of contract entered into |
| **Correspondents** | • These are third parties that establish relationships or business links with a credit institution in order to offer, in the name and for the account of that institution, financial services to their customers. They can be commercial establishments or State networks (semi-governmental entities such as Telecomm).<br>• Cash withdrawal and payment by check operations carried out over this medium shall not exceed a daily amount by agent of 1,500 UDIS, for each type of investment and account.<br>• Deposits in cash or check charged to the principal bank, for its own accounts or that of third parties, shall not exceed a daily amount of 4,000 UDIS. |
| **Mobile Banking** | • Mobile banking services provide products and services featuring greater ease of use, diminishing the risk of carrying money in cash, and reducing operational costs for both the bank and customer.<br>• Mobile banking is complemented by the banking correspondents scheme, so as to extend the points where the conversion from cash to electronic money can be made.<br>• It is only possible to associate a mobile phone number to one user account.<br>• A mobile phone number cannot be associated to the accounts of various users.<br>• Up to two cards or bank accounts of the same user can be associated to a mobile number as long as one of them only functions according to the micro-payments operational mode (under 70 UDIS).<br>• The cumulative amount of monetary operations carried out by a user through Mobile Payment (even if up to two cards or bank account are associated) cannot exceed 1,500 UDIS in one day and 4,000 UDIS monthly |

Source: BBVA Research with information from "Circular Única de Bancos" and Bank of Mexico

# 5. Relationship between Services and Distribution Channels

Finally, the following table shows the different services offered by the banks and the distribution channels through which they are offered:

Table 17
Relationship between Services and Distribution Channels

|  | Branch | ATM | Correspondent | Online banking | Mobile Banking |
|---|---|---|---|---|---|
| Opening accounts | √ | X | √ | X | X |
| Payment for services | √ | √ | √ | √ | √ |
| Cash deposit | √ | √ | √ | √ | √ |
| Cash withdrawal | √ | √ | √ | √ | √ |
| Balance enquiry | √ | √ | √ | √ | √ |
| Consulting transactions | √ | √ | √ | √ | √ |
| Check cashing | √ | X | √ | X | X |
| Interbank transfers | √ | √ | X | √ | X |
| Taking out of loans | √ | √ | X | √ | X |

Source: BBVA Research

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