

Interchange Fees for Bank Payment Card Transactions at Point of Sales in Mexico*

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Preliminary draft, please do not cite or quote without the authors' permission

March 2008

Abstract

We describe the evolution of interchange fees (IF) for bank card payments at point of sales in Mexico, where such fees came under the central bank's scrutiny in 2004. We provide some background for the payment card market, including the role of the banks and the legal framework, as well as the IF levels and methodologies that have been used to adjust them. Then we describe the development of card payments after such changes. Although since 2004 card payments have increased faster than before, it is very difficult to attribute this progress to IF adjustments only, in view of other measures that came into effect at about the same time. The Mexican experience regarding the setting of IF leaves a number of open questions on the approach that has been followed so far.

Key words: credit cards, debit cards, point of sales, interchange fees

JEL Classification: D40, E58, G21, L10, L40

* We are indebted with David Margolín, Pascual O'Dogherty and José Quijano for the multiple insights that they have shared with us while discussing about this and other payment system matters. We also received many useful suggestions and encouragement to write this paper from Tito Cordella, Mario Guadamillas and Jean Charles Rochet. Lastly, we thank the excellent research assistance of Valeria Castellanos, Paúl A. De la Cruz, Nelly Flores, Daniel Garrido, Diadelfa Ocampo, and Pedro Struck. The opinions contained in this document do not necessarily represent those of Banco de México.

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I. Introduction

In Mexico, the Central Bank Law (*Ley del Banco de México*, LBM) establishes among the main functions of the Central Bank of Mexico (*Banco de México*, BM) “promoting the sound development of the financial system and fostering the proper functioning of payment systems”.¹ The same law gives BM powers to regulate payment systems.² To accomplish this mandate, the BM seeks to promote efficient payment systems.

Although card payments are more efficient than cash payments in many transactions, in the early part of this decade they were used in relatively few establishments. BM identified Interchange Fees (IF) at point of sales (POS) as a possible cause for the scant use of payment cards, and thus became interested in the mechanism that banks use to set these IF. As in many other countries, issuing and acquiring institutions in Mexico used to set the IF based on a barely transparent mechanism with little regard to competition issues.

In this paper, we describe the evolution of IF in Mexico. In the next section, we briefly describe the background for the payment card market, including the role of the banks and the legal framework. In the third section, we present the IF levels that have been in place and the methodology used to adjust IF, and a brief summary of BM’s comments to that methodology. In the fourth section we describe the development of card payments after IF were adjusted. We start with a description of card payments volume and infrastructure trends. Then, we describe the recent developments in the issuing and acquiring market, as well as some effects over merchants service fees and customer benefits. We conclude by stating some of the lessons learned and the still unanswered questions.

II. Background

Mexican retail payments rely heavily on cash. Among non-cash payments, checks were the most important instrument until very recently (Figure 1). Although the number of both credit and debit cards has grown (Table 1), most operations with cards are still cash withdrawals at Automatic Teller Machine (ATM, Table 2).³ However, the number of card payments has increased significantly in the last few years. In turn, the number of POS and of payments at POS is low when compared with countries of similar development (Table 3).

INSERT Figure 1: Structure of Non Cash Payments, Excluding Cash Withdrawals in Mexico, 2001-2007

INSERT Table 1: Number of Debit and Credit Cards in Mexico, 2001-2007

INSERT Table 2: Million of transactions with payment cards at ATM and POS in Mexico, 2001-2007

INSERT Table 3: Number of Payment cards and POS for several countries, 2004

The development of the card market is related to the market structure, the role of card associations in the Mexican market, the current regulation and the IF, which is the particular subject of this study.⁴ We will briefly describe each of these features.

Any commercial bank in the country may issue debit and credit cards. Several store chains issue credit cards as well, but these are not general acceptance cards. Almost all issuers of general acceptance cards are banks.⁵ Banks may issue both Visa-branded or MasterCard-branded cards and, in fact, banks offer credit cards with a wide variety of characteristics. All acquirers are banks, and all issuers

¹ See LBM, Article 2.

² See LBM, Article 24.

³ All POS and ATM transactions in Mexico are on line; those at POS are signature based and those at ATM are PIN based.

⁴ Other factors that have likely influenced the development of the card market are the lack of payments infrastructure in some regions, the limited access to financial services, and the payment habits among Mexican consumers and retailers.

⁵ There is only one non-bank that issues credit cards in Mexico (Cetelem), and its market share is very small.

and acquirers participate in an interconnected four party system with two switches.⁶ One is E-Global, which is owned by the two largest banks in the system and serves them almost exclusively, and the other one is PROSA, which serves all the remaining banks and is owned by a subset of them.⁷

In the last few years, several banks have entered both the issuing and acquiring markets. The concentration on both sides of the markets has decreased, although it continues to be high (Table 4). still, the main issuers are also the main acquirers, and in around one third of the total number of transactions, the issuer is also the acquirer (“on/us”).

INSERT Table 4: Concentration indicators of the issuing and acquiring sides of the market, 2002 and 2007

The current development of the card market in Mexico was strongly influenced by the rules and regulations set both by banks and card associations. Mexico’s Bank Association (*Asociación de Bancos de México*, ABM), which is the body in charge of the market self-regulation, originally adopted most of the MasterCard and Visa rules, such as the “no surcharge rule”⁸, the “honor all cards rule”⁹, and the “only issuers may become acquirers”^{10,11}. These rules, however, were adapted by the banks to market specific conditions and have been changing since the early 1990s.

The no surcharge rule was altered in 1993. To answer a request by the Federal Competition Commission (*Comisión Federal de Competencia*, CFC), the three largest banks in Mexico at that time (Bancomer, Banamex and Serfin) signed an agreement with the CFC that sought to prevent price fixing, unfair charges and other anticompetitive practices in the credit card market. As a result of the agreement, acquirers maintained the surcharge rule but they allowed merchants to offer discounts for cash payments.

In 2004, the Mexican Congress issued the Law for Transparent and Orderly Financial Services (*Ley para la Transparencia y Ordenamiento de los Servicios Financieros*, LTOSF) (and issued a new one in 2007).¹² This law gave Banco de México explicit power to assess competition in the banking industry and to regulate retail payments systems, in particular, IF.¹³ As a consequence of this mandate the central bank started to analyze more thoroughly the characteristics and rules of these systems.

The LTOSF specifies price setting as the central bank’s main regulatory tool, but regulating banks’ commissions and fees is complex, because: i) banks provide a variety of bundled services, which makes cross subsidization and indirect pricing to be common practices; ii) the usual mechanisms for price regulation (such as cost based methodologies) do not seem appropriate in banking services, since this market is not a natural monopoly. These difficulties, along with other considerations, led the BM to adopt a different regulatory approach. The BM has sought to encourage the use of the most efficient payment systems and foster banking competition (Ortiz, 2005). To achieve this, the BM has taken several measures that may be grouped into three types: (1) making banks’ charges more transparent; (2) removing any restriction to market participation and entry; and (3) using moral suasion, to become a catalyst of changes that favor the use of more efficient payment instruments.¹⁴ Let us briefly describe some of the most salient measures that the BM implemented for card payments:¹⁵

- (1) To make service charges more transparent, the BM required banks in June 2003 to provide all information about fees and charges on payment instruments in their websites and branch offices, and to inform BM in advance about any changes to their fees and charges before

⁶ American Express also operates in Mexico as a three party system, but we leave it out of the present analysis.

⁷ Notice that, since the switches are owned by banks only, there exists the possibility that owners choose prices that limit the entry of small banks and non-banks into the market.

⁸ This rule forbids merchants from overcharging those who pay with cards.

⁹ This rule forces merchants to accept all cards having the associations brand, regardless of the card issuer and the card type.

¹⁰ In some less than mature markets, the associations set a rule by means of which only card issuers may become acquirers.

¹¹ As we mentioned before, banks in Mexico may issue Visa or MasterCard branded cards. The reason is that the ABM never adopted the so called “duality rule” that prevents banks that issue an associations particular brand of cards from issuing other associations’ cards. In 1996, the CFC received a complaint from American Express against Visa, claiming that the latter would not permit associated banks to issue American Express cards. Later on, Visa informed the Commission that it would not prevent its associated banks from dealing with competing brands, so the Commission considered that the issue was solved.

¹² The new LTOSF left most of the central bank’s powers regarding regulation of IF remained basically unchanged.

¹³ See LTOSF, Article 4th.

¹⁴ Actually, this approach closely resembles the BIS recommendations for involvement of central banks in retail payment systems (see “Policy issues for central banks in retail payments”, Committee on Payment and Settlement Systems, BIS; March 2003).

¹⁵ See Negrín (2005) and the 2007 Financial System Report (*Reporte sobre el Sistema Financiero*) for more details.

these become effective, including those of credit cards (June 2003). Also, banks must report any change to their maximum commissions and fees to the central bank, which in turn will publish them in its website (August 2003). The BM has also published in its website and in the press the IF that issuer banks charge to acquiring banks for payments with credit and debit cards at POS (2006 and 2007), as well as the maximum Merchant Service Fees (MSF) that acquiring banks charge to merchants for those transactions (August 2003).

- (2) To remove participation restrictions and entry barriers, BM eliminated regulations that banned non banking institutions' participation in retail payments clearing houses. The "honor all cards rule" was also modified in 2005, so that merchants can accept only credit or debit cards (that is an "honor all issuers rule").¹⁶ The card associations' rule stating that "only issuer banks can become acquiring banks" is still in place, partly because most banks already issue cards. Visa, MasterCard and some banks have expressed some safety concerns about participation criteria that are too lax.
- (3) In 2004, BM suggested the banks to develop a mechanism to determine the IF, consistent with promoting the most efficient payments mechanism.

In the following section we describe in more detail the mechanism to set IF that was in place before the payment card market was analyzed by the BM and the one that the ABM proposed in response to its review request.

III. The mechanism to set IF in Mexico

III.1 The mechanism in place from 1993 to 2005

The IF scheme of a credit and debit card market usually receives careful attention from competition or financial authorities because in many cases it is set through an agreement among banks, with little intervention of VISA and MasterCard, and not through the usual market forces. A high IF level has often concerned authorities because it sets a floor to the acquiring banks' MSF on card transactions and may hinder merchants' acceptance of card payments.¹⁷

In Mexico, the ABM sets the domestic IF for the four party system, and Visa and MasterCard have a very limited role. In 1993, after the agreement among the CFC and the major banks, the IF were set as a multilateral charge flowing from acquiring to issuing banks involved in interbank card payments. By mid 2004, the levels of IF remained almost unchanged, even as some costs related with data processing probably dropped significantly and the opportunity cost of money raised and fell sharply during that decade. Both credit and debit card transactions shared the same scale, set according to the value of transactions performed at each merchant. There were 5 different categories, with higher fees associated to lower monthly transaction values (Table 5). Members of the national association of department stores (*Asociación Nacional de Tiendas de Autoservicio*, ANTAD) bargained for a different scale for debit cards, and got a fixed 0.90 MXP IF per transaction.¹⁸

INSERT Table 5: ABM's Schemes of Interchange Fees in place between 2004 and 2005

This scheme's dependence on merchants' transaction value seemed specially unsuitable to promote the POS network development in Mexico, where there are many small commerce and service establishments. Also, it does not seem appropriate to charge the same fees for credit and debit operations, since for credit cards the issuer incurs in the costs of a free financing period for many users and had much more generous reward programs. Moreover, these IF levels seemed high when

¹⁶ See Rochet (2007) for more details..

¹⁷ See, for instance, "Investigation of the multilateral interchange fees provided for in the UK domestic rules of Mastercard UK Members Forum Limited (formerly known as MasterCard/Europay UK Limited)", Decision of the Office of Fair Trading, No. CA98/05/05, United Kingdom, 6 September 2005.

¹⁸ Before the 0.90 MXP fee per transaction was in place, the ANTAD scheme consisted of a set of 10 brackets of non-proportional fees. The criteria to assign an ANTAD merchant to a bracket was the number of yearly transactions performed by that merchant. The simple average level of the ANTAD-debit IF was approximately 0.04 US dollars. Interestingly, this scheme dated from 1997, when the CFC investigated a complaint raised by some merchants that refused to accept debit cards. The problem was solved through the agreement between banks and ANTAD members to set up the special debit IF schedule for ANTAD merchants' transactions. The investigation was closed in 1999, without reaching a formal conclusion on the anti-competitiveness of a multilateral IF agreement.

compared to international standards, although the ANTAD fixed fee was lower than that used in several countries (and this gave ANTAD merchants another advantage over small shopkeepers). Therefore, although the scheme certainly facilitated the interconnection among all participants, it did not help to promote the use of payment cards at POS.

The ABM realized that the IF scale was not supporting either the network development or the use of cards at POS and, thus, made some changes (Table 5). For example, in February 2005, it reduced the credit cards IF in 43 basis points on average and eliminated the highest bracket. In non-ANTAD transactions with debit cards, the IF was reduced twice between August 2004 and June 2005, on 134 basis points on average. It also introduced some special merchant levels.¹⁹ Although these changes reduced the average IF, and lowered the IF for debit card more than for credit cards, the main disadvantages described before prevailed; as a consequence, the ABM developed a new mechanism to set the IF.

III.2 ABM's proposal of a new methodology to set IF

The ABM presented its new methodology to set IF in October 2005.²⁰ It estimates a reference IF for credit and debit cards separately, based on a model that balances the weighted issuing and acquiring banks' profits (net of interchange) through the IF, in the spirit of Visa's methodology, as described in Wright (2000).²¹ These reference fees are then adjusted for several business categories. The original model uses a three stage framework to determine the IF. However, during 2007 the ABM proposed a few modifications to the original model.

To calculate the equation that determines the reference IF, the ABM gathered data on income, costs, volume and value of POS transactions with credit and debit cards from 6 issuer and acquirer banks.²² Furthermore, to take into account network growth in this calculation, an expected network growth rate was added in a somewhat ad hoc manner to Wright's equation. So, although the reference fee model seems a more transparent mechanism than the previous one, the proposal's anchor is a methodology that has a focus on the recovery of issuer costs.²³

Once the reference fee is determined, the methodology used the results from a survey among cardholders and merchants from 22 different business categories to roughly estimate the influence of four "idiosyncratic factors" (market penetration, share of earnings, sales sensibility to card rejection, and sales sensibility to a variation in the IF) on card usage and acceptance. Then the reference fee was adjusted to obtain a particular IF for each business category according to the influence of each factor.²⁴

Clearly, this stage seeks to bring into consideration consumer and merchant diversity, which is not taken into account in the balancing formula, nor is an element commonly dealt within theoretical economic models. For example, most two sided market models assume that there is one type of consumer and one type of merchant whose marginal costs and benefits from using cards determine

¹⁹ Ortiz (2005) describes in more detail the IF reductions that were carried out before the new methodology was proposed.

²⁰ Ortiz (2005) describes in more detail the IF reductions that were carried out before the new methodology was proposed.

²¹ Wright (2000) states a simple formula:

$$\frac{R_I + a - c_I - C_I}{R_I + a} = \frac{R_A - a - c_A - C_A}{R_A - a}$$

where R_I and R_A represent the per transaction revenue for issuers and acquirers, respectively; c_I and c_A are the per transaction variable issuer and acquiring costs; C_I and C_A are the per transaction fixed issuer and acquiring costs, a is the interchange value per transaction. Gans and King (2003) also provide a description of the Visa methodology and compare it with other alternatives.

²² For more details, see Castellanos et al (2008). In 2007, more banks provided data for the calculations, yet not all the banks of the system collaborated.

²³ In effect, Gans and King (2003) have observed that the balancing formula of Wright (2000), the MasterCard approach, the Frontier Economics approach, the Avoidable Cost approach and the Reserve Bank of Australia (RBA) approach basically differ as to whether they include issuer revenues to offset those costs, whether they include fixed issuer costs, and also in the components that comprise marginal issuer costs. Let us add that these approaches' basis has been thoroughly criticized by the proponents of two sided market models (Gans and King, 2003; Schmalensee, 2002; Evans and Schmalensee, 2005; Wright, 2001, 2003; Rochet, 2003; and Rochet and Tirole, 2004).

²⁴ The reference fee increased in 5 or 2.5 basis points for credit and debit cards, respectively, if a factor resulted highly relevant. In turn, when the factor resulted low, the reference fee was reduced in 5 or 2.5 basis points accordingly.

the market equilibrium and the optimal fee.²⁵ On the other hand, both profit or social welfare optimization may call for some price discrimination.

After the 22 business categories' fees were calculated, in the original model there was one last adjustment by "exogenous factors" that sought to simplify the IF category scheme and provide incentives for payment cards use in specific sectors, grouping these categories into in 6 "families" or "business groups". This aspect of the proposal seemed particularly unclear and had no technical basis, given the previous stage effort to bring into consideration consumer and merchant diversity.

During 2007 the ABM improved on the previous methodology by gathering more consumer and merchant data. This allowed them to get rid of the last stage by having a more explicit dependence of the specific IF on whether in a business category the number of transactions has grown faster or slower than the number of POS, to determine adjustments' signs and sizes.

This methodology was expected to produce a scale of fees which would lead to a reduction on the prevailing average weighted per transaction IF of 24% in credit cards and of 42% in debit cards. Maximum IF would fall from 2.70% to 1.95% in credit cards and from 1.94% to 1.15% in debit cards (Table 5 and 6).

INSERT Table 6: IF for credit and debit card payments of the 2005 ABM proposal

The data on issuer and acquirer costs were very incomplete. First, only a few banks provided their data to the ABM. Second, among participants, several small banks could not report all the requested cost concepts. Also, there are the following deficiencies in the model:

- ABM claimed, with no basis, that the model maximized use of payment cards. In particular, the network growth rate is included in an ad hoc manner.
- The adjustment based on idiosyncratic factors is not based on the demand elasticity for POS services; however, the merchant sector separation proposed might be a good proxy.
- The adjustment based on exogenous factors in order to simplify the IF structure and provide incentives to certain sectors seems arbitrary.

Despite these problems, some important advantages in the proposal were recognized. It further reduced the IF scales for credit and debit card payments and, since IF for debit card payments were reduced by a larger extent than for credit cards, the lower costs for debit card transactions would reach merchants. Also, scales were now set according to business type rather than on merchants' transaction value, mitigating discrimination against small merchants. Therefore, the ABM made the following adjustments:

- There should be a maximum charge of MX\$13.50 per transaction for debit card payments, because the proposed IF still seemed high with respect to international standards.
- The IF for credit card would become effective on February 2006. The IF for debit cards would become effective on May 2006, so banks would have more time to deal with the MXN 13.50 cap.

Also, BM would publish the IF scales, as well as the maximum MSF, on its website.

The IF structure and levels would continue under review by the ABM and BM.

To have more evidence on the mechanism to set the IF, BM reviewed the international experience on cost-based methodologies.²⁶

III.3 International experience setting IF through cost-based methodologies

²⁵ In regards to card payments, these marginal costs and benefits vary depending on multiple characteristics. Particularly, there are some types of merchants whose willingness to accept card payments may be more elastic to the idiosyncratic elements mentioned before (or others). Likewise, some consumer types have more elastic demands for cards. For instance, it is well documented that in the United States young people are more willing to pay with electronic instruments (bank cards, electronic funds transfers, etc.) and less willing to pay with checks, while older people have opposite preference ranking among these instruments. See Black and Morgan (1999) or Klee (2006), for more details.

²⁶ We report the results of an international survey of methodologies to set IF performed during 2006 in Appendix 1.

We gathered data to build an International Standard for Interchange Fees (IF), to assess the IF levels in Mexico. The information was acquired through a questionnaire that was sent on early August 2006 to central banks and banking associations in 30 countries: Argentina, Austria, Brazil, Bulgaria, Canada, Chile, Denmark, Finland, France, Germany, Hong Kong, Hungary, India, Indonesia, Italy, Lithuania, Japan, Malaysian, Norway, New Zealand, Peru, Poland, South Korea, Romania, Russia, Sweden, Thailand, Taiwan, Turkey, and Uruguay. Hence, there was an attempt to include both developed and developing countries in the sample.

The questionnaire contained the following questions:

1. What is the current level of IF for domestic credit card and debit card transactions in POS in your country?
2. When was the last time these IF were modified? Which were the IF previous to this adjustment?
3. Is the methodology to set the IF publicly available? If so, is it a cost based methodology?
4. Are there any plans to evaluate the IF level and structure in your country at present?

We received answers from agencies and institutions in 23 countries. Only 3 of them provided all the requested information; 6 agencies provided the IF levels; 9 agencies informed that both the methodology and the IF levels were private information; other 5 agencies suggested us to contact another source because the central bank was not the proper authority (Table 7).²⁷

INSERT Table 7: Summary of the main answers

This survey on the international experience on setting IF suggests that there is no consensus regarding the most adequate international practices. In many countries, the IF are set on a bilateral basis between issuer and acquiring banks, or either on a bilateral or multilateral basis among the local payment card schemes and the international schemes VISA and MasterCard. In these cases, the methodology and levels in place are deemed as commercial secrets and are not supervised or regulated. However, there are countries in which the central bank or competition authority has revised the methodologies for setting the IF. In some of them, authorities have determined that the IF levels obstructed competition conditions and, therefore, ruled on the mechanism to set the fees.

The international experience also points out that most authorities disapprove the fact that the fees are not directly related to processing costs. Particularly, the authorities have strongly criticized that:

- In several countries, the IF has not changed for several years.
- In some countries where the IF has been reduced, such reductions have not reflected on the charges made to cardholders or merchants (either through better services or lower fees).
- Some authorities have pointed out that higher IF would allow issuer banks to recoup costs unrelated to payment processing; this leads to anticompetitive levels of IF, which generate high earnings to issuer banks (which are in turn used to compete through advertising, promotions and interest-free periods).

On the other hand, among countries that applied cost-based methodologies, there is a noticeable variation in the cost concepts included (Tables 8 and 9). Moreover, countries that had undergone IF regulation had faced several practical obstacles. Some countries' authorities have granted the banks 2 or 3 years to gather all their cost data. In other European countries where the local authorities had dedicated efforts to analyze the IF, the project was delayed until the European Commission Competition Directorate provides a guideline. Nevertheless, these issues have not precluded that some countries adjust the IF levels.

The Reserve Bank of Australia (RBA) investigated the payment market and the IF on 2000, and came up with an IF setting standard for credit cards in 2002. Though, the reductions on IF that would be applied to debit card came into effect until November 2006. Although, the RBA has faced some critics in view of the difficulties when measuring the social costs and benefits of the regulation and that there has not been a significant reduction to the merchant fees, several specialists consider that publishing

²⁷ We cannot present the more detailed answers that were received because several were provided by country authorities for internal deliberation purposes only)

the IF levels and methodology represented a landmark towards achieving transparency in the payment market's fees. In 2005, the Bank of Spain gave a 3 year deadline to issuer banks to present their cost information, which will be used to determine an IF based on the weighted average of the costs presented by the issuer banks. In the meanwhile, the Bank of Spain and the issuer banks reached an agreement to a stepped reduction of the IF from 2.57% in 2005 to 1.40% in 2008. Israel represents another interesting example. Gilo and Spiegel (2005) report that the antitrust authority requested Visa International to present a cost analysis to determine an equilibrium IF in 1998, but extended the period to 2000 since it failed to present the cost analysis. In 2001 Visa was again unable to present the required analysis. So in that year, two local banks presented their own cost methodology, setting an average IF of 1.25% for four different merchant sectors. But that proposal was rejected and these banks and Visa International presented a joint methodology proposal in which the IF was a function of issuer's costs, income and market share, and a measure of the willingness to pay for credit cards. However, the Supreme Court decided that the willingness to pay for credit cards was practically impossible to measure. For this reason, this methodology was also rejected, and the previous proposal by the local banks was temporarily allowed, until a better one is proposed.

INSERT Table 8: International comparison on IF methodologies and structures

INSERT Table 9: Cost elements included in the IF for several countries

IV. Trends of the bank payment cards market since the new IF are in place

IV.1 Infrastructure and transactions

Since 2004, card payments in Mexico have increased faster than before. However, this behavior can not be attributed to IF adjustments only, since the other measures that BM promoted came into effect at about the same time. Additionally in November 2004, the Federal Government set the Electronic Payments Infrastructure Fund (*Fondo de Infraestructura de Medios de Pago Electrónicos*, FIMPE). The FIMPE is a private, non-profit-making trust fund formed by acquirers. It aims at promoting and extending access to the electronic payment network among small and middle size business, as well as to increase consumers usage of them. In order to develop the program, the Mexican Government granted a 3,100 million MXP fiscal incentive for installing POS terminal for the next three years. Fund programs includes banking card usage promotion and first time free POS installation on commercial and service business. It is believed that FIMPE highly contributed to POS installation in Mexico throughout 2005 and 2006..

By June 2007, the number of POS installed was 342,157. Operations at POS will probably exceed 550 million by the end of 2007; of these operations 49% are with credit cards and 51% with debit cards. (Figures 2 and 3). In addition, transactions per card have increased for both credit and debit. The use of debit cards is also increasing in relation to the number of cash withdrawals at ATM (Figure 3).

INSERT Figure 2: Number of POS and Payment Card Operations

INSERT Figure 3: Percentages and Ratios of Transactions at POS with Respect to Cards and ATM

Even in view of these trends, it is important to look closer at the development of both the issuing and acquiring sides of the market, since in a two sided market the evolution of transactions, POS and cards is influenced by the dynamics of both sides. Regarding the issuer side of the market, due to the increase in the number and value of transactions, income received by issuer banks from IF has grown in recent years (Table 10). Besides, the recently authorized banks, launched by commercial firms that already granted consumer credits. could become significant payment card issuers. Among the new banks that are starting operations during 2007, there are three chain stores with regional or national coverage. In November 2006, when *Walmart*, *Coppel*. and *Chedraui* obtained the authorization to open banks, they had 855, 478 and 97 stores, respectively, where they can offer banking services.²⁸ If

²⁸ At December 2005, there were 7,990 bank branches in Mexico.

past experience can provide any indication of future trends, it is worth mentioning the case of Banco Azteca, which was the first case of a bank opened by a chain store, Elektra. Since 2002, when Banco Azteca started operations, it has opened 1,109 branches up to date, many of which are located in Elektra stores (931 stores at present). Besides, while this bank started to issue cards immediately, it started to install POS more than 3 years afterwards.

INSERT Table 10: Interchange Fee Income

Most issuer banks ask card applicants similar requirements. Regarding debit cards, as of 2007 the Law of Credit Institutions (*Ley de Instituciones de Crédito*, LIC) requires that banks offer a low cost basic account product which includes a debit card with minimum requirements.²⁹ In addition, most banks also offer several other deposit accounts with debit cards. To open any of these accounts, applicants are required to present an official ID, a proof of address, and they must be at least 18 years old.³⁰ For credit cards, besides an official ID and address, there is a minimum monthly income request between 3,000 and 10,000 MXP (5,500 MXP in average).³¹ Most issuers also require personal and banking references, as well as a credit record review from the Credit Bureau (*Buró de Crédito*).³² On the other hand, most banks only issue payment cards to people between 18 and 65 years old.

According to the data of BM, in June 2007, there were about 18 million credit cards and 33 million debit cards. However, as we should expect, cardholding is not uniformly distributed among the population. The data of the National Survey of Household's Income and Expenditure (*Encuesta Nacional de Ingreso y Gasto de los Hogares*, ENIGH) indicates that in 2002 most cardholders (both credit and debit) were concentrated on the ninth and tenth income deciles, where more than 30% of the households had a card. In contrast, less than 15% of the households in the first six deciles reported having a credit or debit card. This situation seems to have been improving during the past five years. For example, credit cardholding has increased in all deciles. Particularly in the second to eighth deciles, the percentage of households with cards per decile increased by more than 180% from 2002 to 2006 (Figure 4).

INSERT Figure 4: Percentage of Households that have Credit and Debit Cards by Income Decile, 2002 and 2006

Given that any adult can open a deposit account with a debit card, theoretically they would constitute the potential debit cardholding demand. In regards to credit cards, the minimum income requirement of around 3,000 MXP per month was satisfied only by 32.6 million adults in 2006. So, if income is considered as the main requirement for credit cards and we assume that, given the current card holding patterns, one adult chooses to have 1 debit card and 2 credit cards on average, we can estimate that the upper bounds of the cardholders are 60.7 million adults for debit and 32.6 million adults for credit (of course, these bounds may be overestimated to the extent that many banks ask card applicants for the additional requirements mentioned before).³³ These figures would yield an estimated market coverage of 54% for debit cards and 28% for credit cards.

In contrast, some indicators suggest that the acquiring market still is less developed than the issuing market. For instance, the ratio of issued cards per POS is one of the highest ratios among the selected comparison countries and the number of POS per inhabitant still is one of the lowest ratios among the selected comparison countries, almost one sixth of the estimated average (Table 3).

²⁹ These accounts are required to have monthly flows equal or lower than 165 times the current daily minimum wage.

³⁰ Banks can also require additional documents or specifications for any deposit account except the basic account. For example, to open any account, banks usually require a proof of address; such as a utilities service bill. Therefore, many adults, specially in the first deciles, may not be able to obtain a debit card given their housing conditions. Regarding the minimum age, some banks often offer deposit accounts to underage customers.

³¹ We refer to basic or 'classic' credit cards only. Most banks issue a wide variety of credit cards with additional benefits and requirements.

³² Businesses must also present their Tax Registration (*Cédula Fiscal*) when requesting a credit card.

³³ Recent surveys of credit card holding among users of internet banking in Mexico have found that each of these users holds on average 2 cards (see "Estudio AMIPCI de Banca por Internet en México," AMIPCI, 2006). In turn, the figure of 1 debit card per adult would be supported by international comparisons that suggest that access to deposit accounts in developed countries is above 90% of the population (for more details, see Claessens, 2006). The importance of the income prerequisite for obtaining credit cards is discussed in Negrín and De la Cerda (2002).

According to information collected from banks' websites and through a telephone survey conducted during June 2007, banks offer acquiring services in a quite standard manner: POS accept both Visa and MasterCard credit and debit cards, POS are linked to a banking account, the acquirers provide access online banking, technical support and maintenance for merchants.³⁴ Merchants can offer monthly installments³⁵ and access to some rewards programs to their customers. Requirements to get a POS also are very similar: merchants must sign a contract, must present a copy of their Tax Registration, a copy of an official ID, a *comprobante de domicilio*, and the risk assessment analysis. Some acquirers impose a minimum monthly sales value, a minimum deposit to open an account, and a minimum on average balance on such accounts. On the other hand, while the FIMPE has been in place, small businesses can get POS by paying very low MSF, as long as their card sales are less than 40,000 MXP per year.³⁶ So, we think that at present the requirement of holding a Tax Registration is the main constraint for merchants to get a POS.

Consequently, to estimate the potential demand for POS among businesses, we identified that, according to the 2004 Economic Census performed by the National Institute of Statistics, Geography and Informatics (*Instituto Nacional de Estadística, Geografía e Informática*, INEGI), there were 2.5 million retail and services establishments in Mexico during 2003.³⁷ But this figure overestimates the market size to the extent that in Mexico many businesses may be choosing to not accept card payments for tax avoidance reasons. So to take this important consideration into account, we looked at the informality estimations by Perry et al (2007) and considered that only 54% of the businesses with 2 or less employees and only 72% of those with 3 to 5 employees are registered tax payers. This yields an estimated potential demand of about 1.5 million businesses in commerce and services (Table 11). Consequently, the current coverage of 342,000 POS seems very limited; in effect, below 23% of the potential demand. However, let us point out that only because the FIMPE program is in place, it seems adequate to ignore this prerequisite. Once that this program ends, it may not be adequate to abstract from this constraint because at present most banks only offer POS to businesses with annual card sales above 84,000 MXP (Table 12 and Figure 5).

INSERT Table 11: Businesses in Commerce and Services by Number of Employees

INSERT Table 12: Number of Commerce and Services Businesses (thousands)

INSERT Figure 5: POS Supply Curves of the Main Banks (yearly MSF and rental fees)

In sum, the figures and estimates described suggest that the acquirer market still is less developed than the issuer market, since the market coverage in the latter is noticeably higher than the coverage of the acquirer market (particularly for debit cards).

IV.2 The impact of IF reductions on MSF and cardholder benefits

³⁴ The survey of bank offer conditions was carried out again in October 2007. It revealed very few changes with respect to the above description. The most salient one is that two banks relaxed their minimum yearly card sales requirements. One of them, that had its threshold at 120,000 MXP, started a new program that omits this prerequisite but asks that card sales voucher are higher than 160 MXP. The other bank reduced its minimum threshold from 180,000 to 60,000 MXP.

³⁵ According to a consultation to the ABM on September 2006, the monthly interest free payment schemes are offered to merchants in these business categories: Wholesale Stores, Retailers (Jewelers, Furniture stores, Department stores, etc.), Airlines, Government and Hospitals. The average voucher value for a monthly payments purchase is usually quite high (yet we can find purchases as low as 500 MXP). The acquirers have a larger possibility to negotiate a monthly payment scheme with some merchants, but also non-acquiring banks can offer these schemes. The issuer bank charges a fee on these kind of transactions that differs for each business category. For a 6 months interest free scheme, the fee ranges from 4% to 8% plus VAT, for a 12 months scheme it ranges from 9% to 13%. Merchants offering such schemes usually charge different prices on regular and interest free transactions.

³⁶ FIMPE's small business package currently targets commerce and services establishments with a yearly card sales value of less than 40,000 MXP. The package consists on a single monthly fee of 90 MXP plus VAT, which for the maximum allowed sales value corresponds to a MSF of 3.11%.

³⁷ In the Economic Census an establishment or economic unit is defined as any business unit performing mainly one economic activity on a permanent basis, within a physically permanent location, combining operations and resources controlled by a single entity, in order to provide goods or services, whether for profit or not for profit.

There is an open question about the impact of IF changes on both the MSF that acquirers charge to merchants and the benefits provided by issuers to card holders (RBA, 2004). In Mexico, the decrease of the IF has been followed by decreases of the maximum MSF (Figure 6). Fees for small businesses, such as restaurants and retail stores, have dropped to almost half their levels of 2004. Nowadays, the IF stands for 66% of the maximum MSF for credit cards and 49% for debit cards (Table 13). To assess whether the maximum MSF for credit and debit cards in Mexico still seem high, it is important to examine whether their level may be a substitute for other explicit charges, such as a monthly fee for the POS, additional charges for terminal's service and maintenance, additional charges for telecommunications and terminal's inter-connection; or the paper and ink for the POS. Indeed some studies show that in several countries the bundling level of acquirer services is related to the MSF level; that is, the higher the level of bundling, the higher the MSF is. For Mexico we observe an intermediate bundling level whereas the MSF for debit cards is the highest among the sampled countries (Table 14); hence, there may be some room for adjusting these charges.³⁸

INSERT Figure 6: Interchange Fees and Maximum Merchant Service Fees

INSERT Table 13: IF share of the maximum weighted average merchant service fee for debit and credit card by business category

INSERT Table 14: Merchant Service Fees for debit and card and types of services bundled into debit Merchant Service Fees

To investigate the pass-through from the IF reductions to the MSF, at the end of 2006, the BM carried out a survey among commercial and service firms.³⁹ More precisely, the questionnaire asked which MSF banks charged to card accepting businesses then and in the year before, so the effect of the most recent scales' change is captured. Results show that almost all sampled firms that accepted credit cards reported lower MSF in 2006 than in 2005. Actually, the whole distribution of MSF both for credit and debit shifted toward lower levels (Figure 7)

INSERT Figure 7: Distribution of MSF levels in 2005 and 2006

For credit cards MSF, there was an average reduction of 22 basis points or 8% across all business categories; in pharmacies and supermarkets the reduction was close to 40 basis points or 40% (Table 15).⁴⁰ It is also interesting to notice that the margin of the MSF to the IF was, on average, 112 basis points in 2005 and diminished to 85 basis points in 2006. Hence, in the survey period the IF passed from representing about 62% of the MSF to 68%.

INSERT Table 15: Distribution of Merchant Service Fees in 2005 and 2006 among businesses that accept credit cards, by business category

Among the surveyed firms that reported accepting debit cards, also most of them claimed that the MSF charged in 2006 was lower than in 2005; the average reduction was 30 basis points or 12% (Table 16). At the business category level, in supermarkets and pharmacies the reduction was around 60%. However, despite that MSF diminished more for debit cards than for credit cards, the margin of debit MSF to IF continues to be higher. It decreased from 156 to 120 basis points, so the IF participation in the MSF changed from 40% to 47% in the analyzed period.

³⁸ See Jones and Jones (2006) for more details.

³⁹ The survey was carried out with the collaboration of INEGI. It is based on a sample of around 1,000 firms extracted from three firms surveys that INEGI performs in a periodical basis. However, since the sample contained a majority of large firms, it is not possible to make statistical inferences for the whole firm population.

⁴⁰ The survey's firms were grouped to coincide as much as possible with those defined by the ABM.

INSERT Table 16: Distribution of Merchant Service Fees in 2005 and 2006 among businesses that accept debit cards, by business category

On the other hand, it is difficult to assess the effect of IF reductions in cardholder benefits because the banks' rewards and pricing schemes have many components. There is evidence that banks promote actively their card products through many different reward schemes (Table 17), and both opening fees and annual commissions that banks charge on credit cards have been decreasing since 2003 (Figure 8).⁴¹ Despite that we lack the data before the changes in IF and a method to formally compare reward schemes, this evidence seems enough to suggest that cardholder benefits may not have decreased after the reduction in IF.

INSERT Table 17: Bank Reward Programs for Card Holders

INSERT Figure 8: Credit Card Commissions

V. Some learnt lessons and still open questions

Since the IF levels of Mexico that became effective in 2006 still seem relatively high in comparison with other countries' (Figure 9) and the available indicators hinted that the acquiring side still is less developed than the issuing side of the market, at the beginning of 2007 the BM suggested the banks to further reduce the IF levels. So in January 2008 the IF structure for credit card transactions will be adjusted so that the implicit IF diminishes to 1.61%. In turn, the IF structure for debit card transactions will not be changed, but the maximum charge per transaction will decrease from MX\$13.50 to MX\$9.50. These schemes will be effective until April 2009. During this time, the banks will continue improving the methodology to set IF.

INSERT Figure 9: IF levels for several countries

The Mexican experience regarding the setting of IF leaves a number of open questions on the approach that has been followed so far. For instance, whether in the absence of a theoretical standard to set the level of IF, can a practical set of "rules of thumb" be developed to provide some light on this issue (e.g. how much should the IF be adjusted and how often). This seems specially important, given despite that at present there already exists a variety of theoretical models or approaches to set IF, most of them face important implementation restrictions (such as lack of adequate data). In view of such difficulties, it is not surprising that on December, 2007 the European Commission announced its decision that MasterCard's multilateral interchange fees for cross-border payment card transactions with MasterCard and Maestro branded debit and consumer credit cards in the European Economic Area violate the European Community Treaty rules on restrictive business practices, after concluding that during four years of investigation that company failed to submit the required empirical evidence to demonstrate any positive effects on innovation and efficiency which would allow passing on a fair share of these fees' benefits to consumers and, thus, balance the negative effects on price competition between its member banks.⁴²

⁴¹ While analyzing reward schemes associated to payment cards of a group of banks, we detected that some of them rely heavily on offers such as monthly interest free payments, discounts and other promotions whose costs are mostly absorbed by merchants, in contrast with point/miles, lotteries or cash backs whose costs are mostly absorbed by banks. These features, along with some evidence gathered by Mexico's Consumer Protection Agency (*Procuraduría Federal del Consumidor*, PROFECO) suggesting that many consumers are not aware of loyalty programs or try to redeem their rewards, beg a closer investigation of these programs' true impact on card usage. Some preliminary estimations of Castellanos and Garrido (2008) of card holding and usage patterns in Mexico suggest that after controlling for the usual economic and demographic variables that determine that households have credit cards, it is the availability of POS terminals and not of additional income (which may partially describe the impact of the card rewards) that increases households' card expenditures.

⁴² For more details, see "Antitrust: Commission prohibits MasterCard's intra-EEA Multilateral Interchange Fees" European Commission, Reference IP/07/1959, 19/12/2007.

Exploring other mechanisms to transmit the IF reductions into MSF and cardholder benefits is another open question. As we mentioned before, BM published the IF, as well as the maximum MSF, through its website on May 2006 and, more recently, on February 2007. Between those dates, the average maximum MSF fell less than 3% (though, between 2004 and May 2006, the cut was about 50%). However, in view of some theories that suggest this type of publication may become some sort of coordination mechanism that facilitates collusion, it is not clear whether further publications will foster or hinder future MSF reductions. On the other hand, as part of a comprehensive strategy to foster competition among acquirers, it is important to examine whether the rule stating that “only issuer banks can become acquiring banks”, that still is in place in Mexico, or the banks only ownership of the switches are not inhibiting market entry.

For banks, the use of debit cards in POS represents a cheaper means of giving their clients access to their deposits compared to both branches and ATMs. So, it should be analyzed if further reductions of the IF are transferred to consumers as higher prices for other services or lower interest rates on deposits.

It is also worth studying whether the reduction of IF implemented in the four party system is providing an unfair advantage on the three party system of American Express, as has been claimed to have been the case in Australia, or whether that system has decreased its MSF or increased its cardholder benefits.

Since IF reductions hit the small issuers harder than the large issuers, there may be an adverse effect on competition in that side of the market (even though as long as the IF is set in a manner that improves market efficiency, small issuers' problems should be a second order consideration).

Among all these questions, perhaps the most important lessons to be learned of the Mexican experience are two. The first one is that both banks and authorities must invest substantial resources to collect the data for setting and evaluating the effects of the new IF mechanism. The second one is that the industry participants cannot be left out of the regulatory process.

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Tables and Figures

Table 1: Number of Debit and Credit Cards in Mexico, 2001-2007

Payment Card	2001	2002	2003	2004	2005	2006	2007
Credit	6,080,481	7,822,364	9,403,201	11,649,617	14,704,280	17,121,257	18,086,567
Debit	29,759,551	32,972,637	32,191,744	31,788,759	34,301,268	35,897,214	33,069,430 ^a

Source: Payment System Statistics, Banco de México

^a Figures for March 2007.

Table 2: Million of transactions with payment cards at ATM and POS in Mexico, 2001-2007

Year	ATM	POS
2001	914.8	152.5
2002	1,104.1	169.8
2003	1,169.6	200.2
2004	1,244.4	242.1
2005	1,069.4	412.1
2006	1,168.4	570.1
2007 (June)	615.7	322.7

Source: Payment System Statistics, Banco de México.

Table 3: Number of Payment cards and POS for several countries, 2004

Country	Payment cards per capita		Debit cards per capita		Credit cards per capita		Transactions at POS terminals per capita		POS per million inhabitants	
	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank	Ratio	Rank
Australia	1.82	8	1.25	5	0.58	11	112.11	6	23,182	6
Austria	1.07	21	0.81	16	0.26	25	22.15	23	10,611	23
Belgium	1.51	12	1.20	6	0.30	22	60.68	14	10,392	24
Brazil	1.12	20	0.82	15	0.29	23	11.92	26	6,091	29
Bulgaria	0.46	36	0.44	33	0.01	38	0.62	38	976	39
Canada	2.39	3	0.62	25	1.77	2	143.34	4	17,085	15
Chile	0.46	35	0.29	37	0.17	28	5.81	33	3,361	36
Cyprus	0.95	26	0.47	32	0.47	16	19.76	24	27,745	4
Czech Republic	0.64	32	0.60	26	0.04	35	8.30	30	4,349	31
Denmark	0.81	27	0.67	23	0.15	29	111.38	7	22,882	7
Estonia	0.95	25	0.78	19	0.17	27	43.34	17	8,171	25
Finland	1.37	15	0.86	14	0.52	12	110.71	8	18,356	11
France	1.30	17	0.62	24	0.67	7	74.61	11	17,009	16
Germany	1.32	16	1.07	11	0.25	26	27.57	21	6,303	28
Greece	1.00	23	0.48	31	0.52	13	4.31	36	41,092	2
Hungary	0.65	31	0.60	27	0.05	34	7.84	31	4,324	32
Ireland	0.81	28	0.32	35	0.49	14	37.19	19	12,315	20
Iceland	1.95	7	1.34	4	0.61	8	295.29	1	45,958	1
Italy	0.99	24	0.52	30	0.46	17	11.55	27	17,318	14
Japan	-	-	0.003	40	-	-	23.96	22	8,081	26
Latvia	0.57	33	0.54	28	0.03	36	12.78	25	5,121	30
Lithuania	0.74	29	0.71	22	0.02	37	10.03	28	3,941	33
Luxemburg	1.62	11	0.88	13	0.74	5	69.44	13	17,413	13
Malta	1.06	22	0.79	18	0.27	24	5.93	32	20,085	10
Mexico	0.42	37	0.31	36	0.11	32	3.52	37	1,556	37
Netherlands	2.07	5	1.71	1	0.36	20	84.47	10	11,983	21
New Zealand	1.74	9	1.16	7	0.58	9	171.03	2	29,100	3
Norway	1.67	10	1.09	10	0.58	10	167.79	3	21,229	8
Poland	0.46	34	0.37	34	0.09	33	5.28	34	3,751	34
Portugal	2.00	6	1.50	2	0.49	15	59.72	15	13,059	19
Rumania	0.27	39	0.25	38	0.01	39	0.27	39	809	40
Singapore	2.41	2	1.48	3	0.94	4	-	-	6,381	27
Slovakia	0.66	30	0.53	29	0.13	31	4.33	35	3,651	35
Slovenia	1.49	13	1.16	8	0.33	21	38.00	18	20,386	9
Spain	1.45	14	0.77	20	0.68	6	28.61	20	24,103	5
Sweden	1.13	19	0.74	21	0.40	19	70.30	12	17,920	12
Switzerland	1.25	18	0.80	17	0.45	18	45.60	16	11,741	22
Thailand	0.27	38	0.13	39	0.14	30	8.32	29	1,319	38
United Kingdom	2.34	4	1.10	9	1.24	3	94.23	9	15,375	18
United States	5.15	1	0.91	12	4.24	1	141.61	5	16,672	17
Average	1.29		0.77		0.50		55.22		13,780	

Note: In all rankings, countries are sorted in descending order.

Source: European Countries: Blue Book Addendum. European Central Bank, March 2006. Non-European countries other than Mexico: Statistics on Payment and Settlement Systems for Selected Countries, Bank for International Settlements, March 2006. Mexico: Payment System Statistics, Banco de México.

Table 4: Concentration indicators of the issuing and acquiring sides of the market, 2002 and 2007

Concepts	Payment cards				Points of Sale (POS)		Number of transactions at POS			
	Credit		Debit		2002 ^a	2007 ^b	Issuer		Acquirer	
	2002 ^a	2007 ^b	2002 ^a	2007 ^b			2002 ^c	2007 ^d	2002 ^c	2007 ^d
Number of Banks	11	17	15	21	8	13	14	19	8	13
Market share of 2 largest banks (%)	65	51	66	48	55	50	68	56	72	70
Market share of 4 largest banks (%)	89	81	91	81	85	82	92	85	90	90
Herfindahl index	2,570	1,900	2,536	1,843	2,113	1,910	2,914	2,079	2,846	2,825

Notes:

a/ Data from 4th Trimester of 2002.

b/ Data from 2nd Trimester of 2007.

c/ Total transactions of 2002.

d/ Total transactions of 1st Trimester of 2007.

Source: Payment System Statistics, Banco de México.

Table 5: ABM's Schemes of Interchange Fees in place between 2004 and 2005

Category	Merchant's monthly transaction value (millions)		Interchange Fees in place						
			Till Aug04	Sep04		Feb05		Aug05	
	From	To	Both cards	Credit	Debit	Credit	Debit	Credit	Debit
1	MX\$300	Above	2.00%	2.00%	1.35%	1.80%	1.35%	1.80%	0.75%
2	MX\$100	MX\$300	2.40%	2.40%	1.75%	2.20%	1.75%	2.20%	1.25%
3	MX\$10	MX\$100	2.75%	2.75%	2.00%	2.50%	2.00%	2.50%	1.60%
4	MX\$0.2	MX\$10	3.00%	3.00%	2.15%	2.70%	2.15%	2.70%	1.95%
5	MX\$0	MX\$0.2	3.50%	—	—	—	—	—	—

Source: Banco de México.

Table 6: IF for credit and debit card payments of the 2005 ABM proposal

Business Category	Business Group	Credit		Debit	
		Prevailing IF (Jul 2005)	Proposed IF (Oct 2005)	Prevailing IF (Jul 2005)	Proposed IF (Oct 2005)
Gas Stations	Gas Stations	1.26	1.10	0.61	0.50
Schools and Colleges	Special	1.92	1.25	0.75	0.75
Government	Special	1.78	1.25	0.96	0.75
Car Rental	Strategic	2.58	1.80	0.80	0.75
Hotels	Strategic	2.39	1.80	0.77	0.75
Travel Agencies	Strategic	2.48	1.80	0.90	0.90
Airlines	Strategic	1.80	1.80	1.76	1.10
Wholesale Stores	Incentive	1.80	1.75	1.55	1.10
Pass. Land Transp.	Strategic	2.69	1.80	1.58	1.10
Restaurants	General	2.56	1.95	1.74	1.00
Hospitals	General	2.23	1.95	1.80	1.15
Entertainment	Strategic	2.38	1.80	1.29	1.15
Pharmacies	Incentive	2.57	1.75	1.94	1.00
Supermarkets	Strategic	1.95	1.80	1.94	1.10
Retail Sales	General	2.48	1.95	0.75	1.00
Telecommunications	General	1.97	1.95	1.45	1.10
Insurance Companies	General	2.34	1.95	1.60	1.15
Parking Lots	Incentive	2.70	1.75	0.87	1.15
Tolls	Incentive	1.80	1.75	1.40	1.15
Fast Food	Incentive	1.77	1.75	1.93	1.10
Charity	Charity	2.00	0.00	1.36	0.00
Others	General	2.01	1.95	1.65	1.15

Note: Although the IF scheme that prevailed in July 2005 was still based in merchants transactions volume, the ABM built the correspondence between that scheme and the merchant sector one that this table shows.
Source: Asociación de Bancos de México.

Table 7: Summary of the main answers

Questions	Answers
1. Is the CI set on a bilateral or multilateral basis?	Bilateral agreements in 5 countries, and multilateral in 11 countries. In 3 countries the arrangement is set by a central entity or authority, and 4 countries provided no answer.
2. Has the Central Bank or Competition Authority intervened in the IF setting arrangements?	The surveyed Central Banks have only intervened in 3 countries. In another 4 countries, the Central Bank is responsible of the IF supervision, though they have not decided to intervene. In 12 countries it was reported that the supervision of IF arrangements is not the responsibility of the Central Bank. Of these 12 countries, 7 reported that their Competition Authority is currently in charge of charges such as the IF and 5 did not indicate which is the responsible authority for IF supervision. Finally, 4 countries did not report which is the authority that supervises IF.
3. Are there any plans for further intervention?	2 out of the 3 Central Banks that have previously intervened, will continue to supervise and, if needed, intervene to determine new IF levels. In the remaining countries, 3 Central Banks have stated their intention or intervening, 16 Central Banks do not foresee any future intervention, and 2 countries failed to respond. The Competition Authorities of 2 countries might intervene, depending on the results of market evaluations.

Table 8: International comparison on IF methodologies and structures

Country	Is the IF set based on a cost methodology?	Is it set as a maximum or as a unique fee?	Is it set differently for credit and debit cards?	Is it set differently per type of merchant sector?	Is the IF set as a fixed fee or as an ad-valorem fee?	Are the IF level or the methodology subject to further revisions?
Australia	Maximum	Yes	No	Ad-valorem fee for credit cards; fixed fee for debit cards	The IF will be recalculated for credit cards on 2006 and debit cards on 2009	Maximum
Spain	Maximum	Yes	Not since 2006	Ad-valorem fee	Issuing costs will be reviewed to set a new IF on 2009.	Maximum
Israel	Maximum	Yes	Temporarily different IF per sector. The new methodology doesn't differ per merchant	Ad-valorem fee	The new methodology is expected to be approved on 2006	Maximum
Italy	Unique fee	Yes	Not since 2003	Fixed amount plus a percentage covering cost elements related to the amount of transactions	Issuer costs will be reviewed considering technological progress. The overall IF level will be reviewed in 5 years from now.	Unique fee
United Kingdom	Yes	Yes	Yes	N.A.	Yes	Yes
Switzerland	Maximum	Yes	Yes	Ad-valorem fee	Yes, every three years.	Maximum
Visa	Yes	Unique fee	Yes	Yes	Ad-valorem fee	N.A.

Sources: "Reform of the EFTPOS and Visa Debit Systems in Australia," Reserve Bank of Australia, 2006; "Common Benchmark for the Setting of Credit Card Interchange Fees," Reserve Bank of Australia, 2005; "Agreement among Commercial Sector Associations and Credit Entities to Reduce Multilateral Interchange Fees for Payments with Cards (Acuerdo entre las asociaciones del sector comercial y las entidades de crédito para la reducción de las tasas multilaterales de intercambio en los pagos realizados con tarjeta)," Ministry of Industry, Tourism and Commerce of Spain, 2005; "The Credit Card Industry in Israel," Gilo, D. and Y. Spiegel, Review of Network Economics, Vol 4, 2005; Provvedimento n. 49 – PAGOBANCOMAT, Bank of Italy, 2004; "Competition in UK Banking: A Report to the Chancellor of the Exchequer, Review of Banking Services in the UK," Cruickshank, D., 2000; "Amicable Settlement in the case of the Investigation under Article 27 of the Federal Act on Cartels and Other Restraints of Competition – Interchange Fees," Competition Commission of Switzerland, 2005; Merchant Service Provider (reviewed September 2007); 2005 Mastercard/Visa Interchange Fees; and "Interchange Fees in Various Countries: Developments and Determinants," Weiner, S. and J. Wright, Review of Network Economics, Vol.4, 2005.

Table 9: Cost elements included in the IF for several countries

Are these cost elements included in the IF for credit and debit cards?						
Country	Transaction authorization	Transaction processing	Account acquisition and management	Maintenance	Fixed costs	Indirect expenses (marketing, promotions, cardholder incentives)
Switzerland	Yes	Yes	Yes	Yes	Yes	No
Israel	Yes	Yes	No*	No*	N. A.	No*
Spain	Yes	Yes	No	No	No	No
Visa Intnl.	Yes	Yes	No	No	No	No
UK - MasterCard	Yes	Yes	No	No	No	No
Australia	Yes	Yes	No	No	No	No

Sources: "Reform of the EFTPOS and Visa Debit Systems in Australia," Reserve Bank of Australia, 2006; "Common Benchmark for the Setting of Credit Card Interchange Fees," Reserve Bank of Australia, 2005; "Agreement among Commercial Sector Associations and Credit Entities to Reduce Multilateral Interchange Fees for Payments with Cards (*Acuerdo entre las asociaciones del sector comercial y las entidades de crédito para la reducción de las tasas multilaterales de intercambio en los pagos realizados con tarjeta*)," Ministry of Industry, Tourism and Commerce of Spain, 2005; "The Credit Card Industry in Israel," Gilo, D. and Y. Spiegel, Review of Network Economics, Vol 4, 2005; Provvedimento n. 49 – PAGOBANCOMAT, Bank of Italy, 2004; "Competition in UK Banking: A Report to the Chancellor of the Exchequer, Review of Banking Services in the UK," Cruickshank, D., 2000; "Amicable Settlement in the case of the Investigation under Article 27 of the Federal Act on Cartels and Other Restraints of Competition – Interchange Fees," Competition Commission of Switzerland, 2005; Merchant Service Provider (reviewed sept. 2007); 2005 Mastercard/Visa Interchange Fees; and "Interchange Fees in Various Countries: Developments and Determinants," Weiner, S. and J. Wright, Review of Network Economics, Vol.4, 2005.

Table 10: Interchange Fee Income

Year	Value of Interbank Operations (millions of pesos)	Yearly growth rate	Weighted or Effective Interchange Fees	Yearly growth rate	Issuers' Real Interchange Fee Income (millions of pesos of 2002)	Yearly growth rate
2002	\$ 58,374.00		2.50%		\$ 1,716.19	
2003	\$ 75,664.00	30%	2.50%	0%	\$ 2,139.44	25%
2004	\$ 103,440.00	37%	2.50%	0%	\$ 2,780.50	30%
2005	\$ 145,869.00	41%	1.91%	-24%	\$ 2,899.03	4%
2006	\$ 246,290.00	69%	1.42%	-25%	\$ 3,497.32	21%

Source: Banco de México.

Table 11: Businesses in Commerce and Services by Number of Employees

Number of Employees	Businesses	Percentage of registered tax payers
0 to 2	1,863,377	54%
3 to 5	459,234	72%
More than 5	186,512	100%

Source: 2004 Economic Census and Perry et al 2007.

Table 12: Number of Commerce and Services Businesses (thousands)

Estimated Annual Card Sales ¹	Total	Percentage of registered tax payers
Total	2,509	1,522
Below or equal to 40,000 MXP	1,880	1,030
Between 40,000 MXP and 84,000 MXP	342	239
Equal or higher than 84,000 MXP	287	254

Note: Estimated annual card sales were obtained by multiplying the business' value of production by 20%, which was the penetration of payments with credit and debit cards reported by ANTAD stores in the first semester of 2007.

Source: 2004 Economic Census, 2007 ANTAD Statistics, and Perry et al (2007).

Table 13: IF share of the maximum weighted average merchant service fee for debit and credit card by business category

Business category	Debit card			Credit card		
	MSF	IF	IF share of MSF	MSF	IF	IF share of MSF
Charity	0.26%	0%	0.00%	0.21%	0.00%	0.00%
Gas Stations	0.92%	0.50%	54.48%	1.35%	1.10%	81.77%
Schools and Colleges	1.58%	0.75%	47.32%	1.97%	1.25%	63.35%
Government	1.72%	0.75%	43.53%	2.07%	1.25%	60.29%
Wholesales Stores	-	-	-	-	-	-
Fast Food	1.87%	0.75%	40.10%	2.63%	1.75%	66.67%
Pharmacies	2.08%	1%	48.09%	2.70%	1.75%	64.83%
Tolls	1.89%	1%	52.81%	2.50%	1.75%	70.00%
Parking Lots	2.42%	1%	41.28%	3.23%	1.75%	54.17%
Supermarkets	1.81%	1.10%	60.76%	2.50%	1.80%	72.08%
Passenger Land Transp.	2.08%	1.10%	52.99%	2.59%	1.80%	69.49%
Car Rental	2.05%	1.10%	53.59%	2.55%	1.80%	70.66%
Travel Agencies	1.92%	1.10%	57.19%	2.55%	1.80%	70.61%
Hotels	2.09%	1.10%	52.71%	2.57%	1.80%	70.11%

Entertainment	2.17%	1.10%	50.64%	2.83%	1.80%	63.70%
Airlines	1.41%	0.75%	53.23%	2.39%	1.80%	75.33%
Telecommunications	1.80%	1.15%	64.04%	2.10%	1.95%	92.72%
Insurance Companies	2.02%	1.15%	56.98%	2.66%	1.95%	73.20%
Hospitals	2.00%	1.15%	57.62%	2.66%	1.95%	73.28%
Restaurants	2.44%	1.15%	47.20%	2.95%	1.95%	66.08%
Retail Sales	2.31%	1.15%	49.83%	3.07%	1.95%	63.59%
Others	2.58%	1.15%	44.53%	3.14%	1.95%	62.06%
Average	1.88%	0.95%	49.00%	2.44%	1.66%	65.90%

Source: Maximum Merchant Service Fees published on the website of Banco de México. The MSF are weighted on base to the information provided by Prosa and Eglobal on September 2006.

Table 14: Merchant Service Fees for debit and card and types of services bundled into debit Merchant Service Fees

Country	Debit Cards	Terminals	Terminal Maintenance	Telecoms	Consumables	Settlement Period	Bundling level
Germany	0.30% - min. € 0,08	0	0	0	0	T + 3	0
Finland	0.00%	0	0	0	1	T + 6	1
Norway	0.00%	-	-	-	-	T + 2	0
Denmark	0.11%	0	0	0	0	T + 1	0
Netherlands	0.13%	0	0	0	1	T + 2	1
Switzerland	0.17%	0	0	0	0	T + 2	0
Belgium	0.18%	0	0	0	1	T + 3	1
United Kingdom	0.27%	0	0	1	0	T + 2	1
Ireland	0.30%	0	0	0	1	T + 1	1
Italy	0.67%	1	1	0	0	T + 1	2
France	0.70%	0	0	1	0	T + 1	1
Spain	1.12%	1	1	1	1	T + 1	4
Austria	1.14%	0	0	0	1	T + 2	1
Portugal	1.42%	1	1	1	1	T + 1	4
Greece	1.85%	1	1	1	1	T + 3	4
Mexico	1.88%	0	1	0	1	T + 1	2

Codes: **1** – bundled, **0** – no bundled; **Terminals**: the monthly fee for the POS; **Terminal Maintenance**: additional charges for terminal's service and maintenance; **Telecoms**: additional charges for telecommunications and terminal's inter-connection; **Consumables**: the paper and ink for the POS; **Settlement Period**: the settlement period of transaction; **Bundling Level**: the bundling level indicates how many features are bundling into the MSF with no charge, 4 – all of them, 0 – no free charges.

Sources: México: Banco de México. Spain: Estadísticas de Tarjetas Bancarias, Banco de España, 2007. Germany: The information was provided by the contacts of each central banks from July to November 2006. Remaining countries: Jones, P. y C. Jones (2006), Explaining differing European MSF levels, Papeles de Economía Española, Tarjetas de pago y tasas de intercambio, n° extraordinario.

Table 15: Distribution of Merchant Service Fees in 2005 and 2006 among businesses that accept credit cards, by business category

Categories	IF 2006 (%)	Merchant Service Fees		
		Average 2005 (%)	Average 2006 (%)	Difference ¹ (2006-2005)
Colleges and Universities	1.25	3.21	2.87	-0.34*
Pharmacies	1.75	3.18	2.78	-0.40**
Hospitals	1.95	2.98	2.86	-0.12
Hotels	1.80	2.55	2.35	-0.21***
Other	1.95	2.98	2.74	-0.24
Restaurants	1.95	2.86	2.64	-0.22**
Supermarkets	1.80	2.97	2.54	-0.43**
Air Transport	1.80	2.63	2.43	-0.19
Land Transport	1.80	2.90	2.57	-0.33
Retail Sales	1.95	2.96	2.74	-0.22***
Total		2.85	2.63	-0.22***

Source: Survey of Means of Payments Usage (*Encuesta a usuarios de medios de pago*, ENUM), INEGI and Banco de México, 2006.

1/ ***, **, * Significant difference at 1%, 5% and 10% level, respectively.

Table 16: Distribution of Merchant Service Fees in 2005 and 2006 among businesses that accept debit cards, by business category

Categories	IF 2006 (%)	Merchant Service Fees		
		Average 2005 (%)	Average 2006 (%)	Difference ¹ (2006-2005)
Colleges and Universities	0.75	2.80	2.42	-0.39*
Pharmacies	1.00	2.90	2.33	-0.57***
Hospitals	1.15	2.68	2.51	-0.17
Hotels	1.10	2.29	2.05	-0.25***
Other	1.15	3.18	2.89	-0.29
Restaurants	1.15	2.51	2.19	-0.32**
Supermarkets	1.10	2.62	2.02	-0.60**
Air Transport	0.75	2.02	1.79	-0.22
Land Transport	1.10	2.41	1.90	-0.51
Retail Sales	1.15	2.59	2.28	-0.30***
Total		2.53	2.23	-0.30***

Source: Survey of Means of Payments Usage (*Encuesta a usuarios de medios de pago*, ENUM), INEGI and Banco de México, 2006.

1/ ***, **, * Significant difference at 1%, 5% and 10% level, respectively.

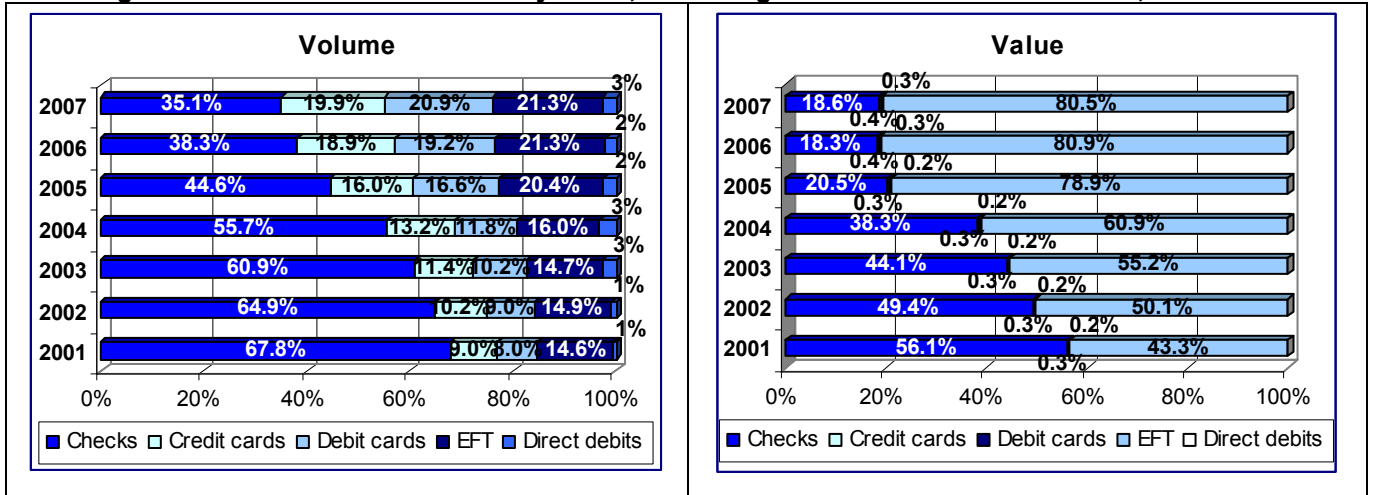
Table 17: Bank Reward Programs for Card Holders

Bank	Points/Miles	Cash back	Monthly interest free payments	Discounts	Sweepstakes	Other promotions
Bank A	-	DC	-	-	-	CC, SA
Bank B	CC	-	CC	CC	SA	CC, SA
Bank C	-	-	-	CC	CC	CC
Bank D	CC	-	CC	CC	SA	CC
Bank F	CC	CC, DC	CC	-	-	-
Bank G	CC	-	-	-	-	-
Bank H	CC	CC	-	-	-	-
Bank I	CC	CC, DC	CC	-	-	CC, DC
Bank J	TDC	CC	-	CC	-	CC
Bank K	CC, DC, SA	-	-	CC, DC	-	CC, DC
Bank L	CC	CC	CC	CC	CC	CC
Bank M	CC	-	CC	-	CC	CC

Codes: **CC**: credit card; **DC**: debit card; **SA**: saving account; **Points/Miles**: the cardholder earns points or miles using his card. These points or miles could be used to buy products and services; **Cash back**: programs where the cardholder gets back a percentage of the amount of his card balance; **Monthly interest free payments**: purchases on monthly partial payments with no interest over the remaining debt; **Discounts**: price rebates on products and services; **Sweepstakes**: lotteries to obtain money or some product or service; **Other promotions**: any kind of reward offered by banks that are not included on the above mentioned. Private label cards, investments and mortgage loans are not included.

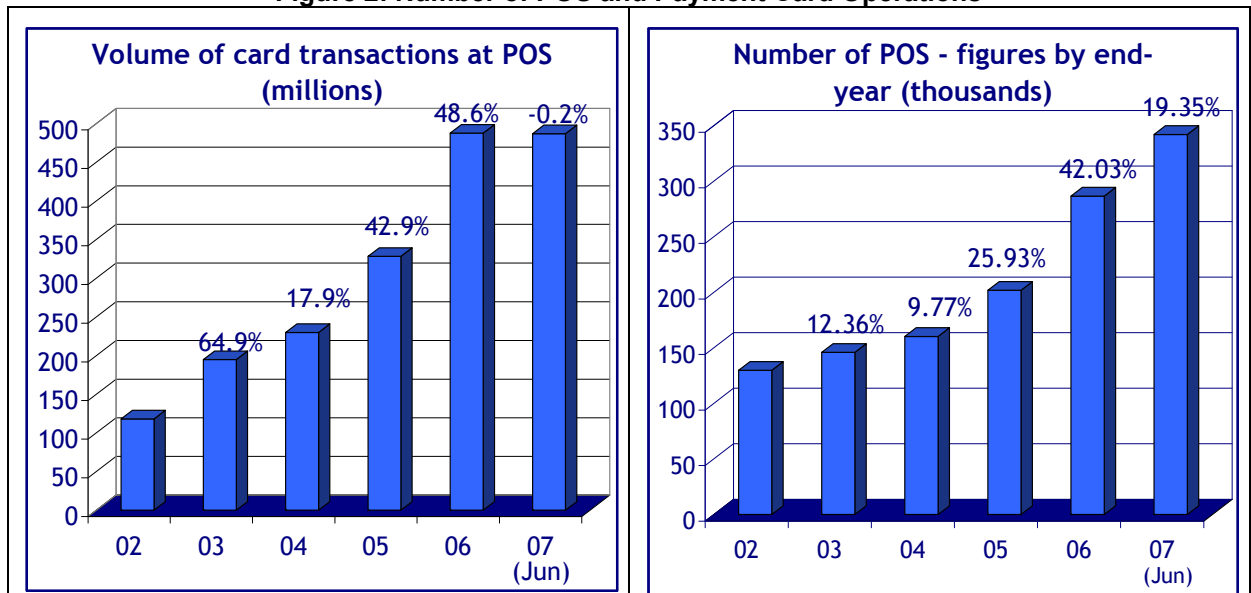
Source: Data collected from the banks' websites and brochures during June 2007.

Figure 1: Structure of Non Cash Payments, Excluding Cash Withdrawals in Mexico, 2001-2007



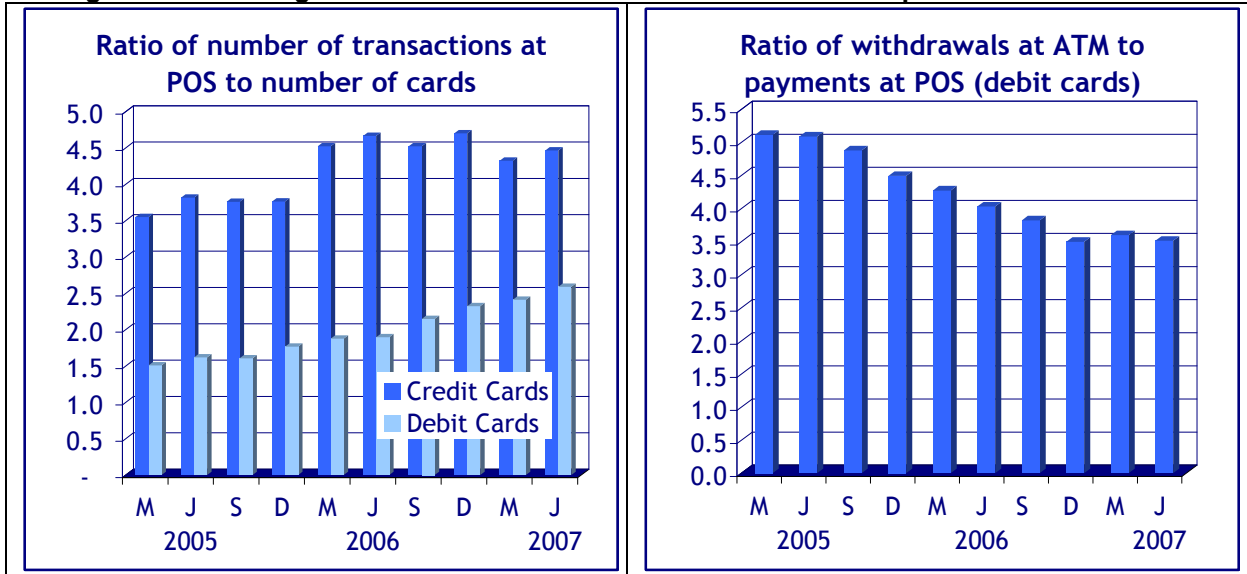
Source: Payment System Statistics, Banco de México.

Figure 2: Number of POS and Payment Card Operations



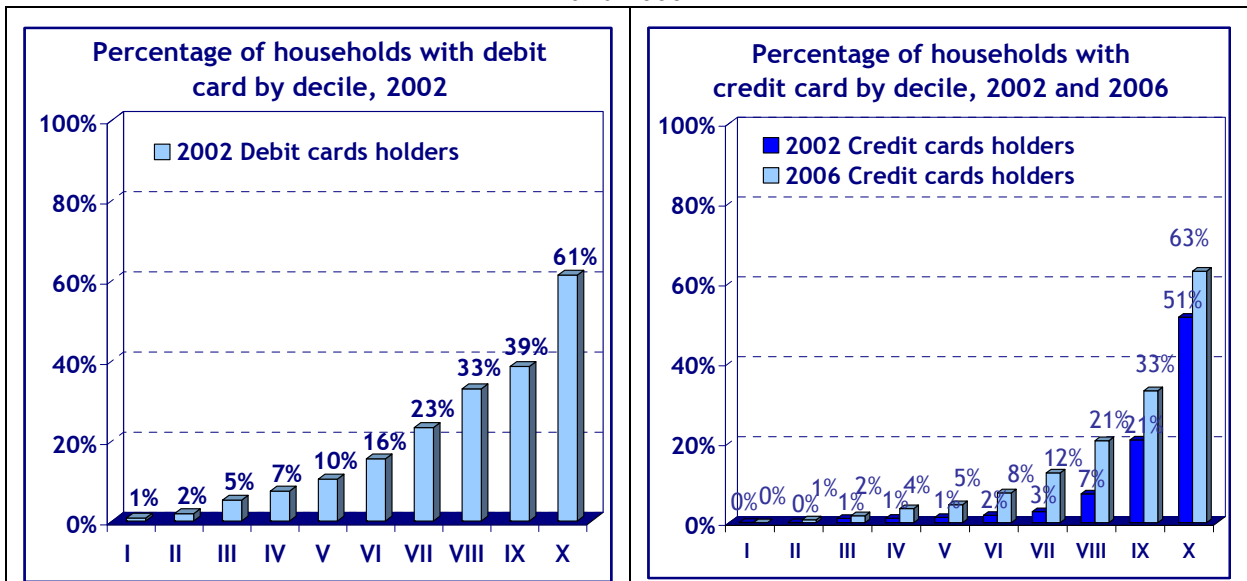
Source: Payment System Statistics, Banco de México.

Figure 3: Percentages and Ratios of Transactions at POS with Respect to Cards and ATM



Source: Payment System Statistics, Banco de México.

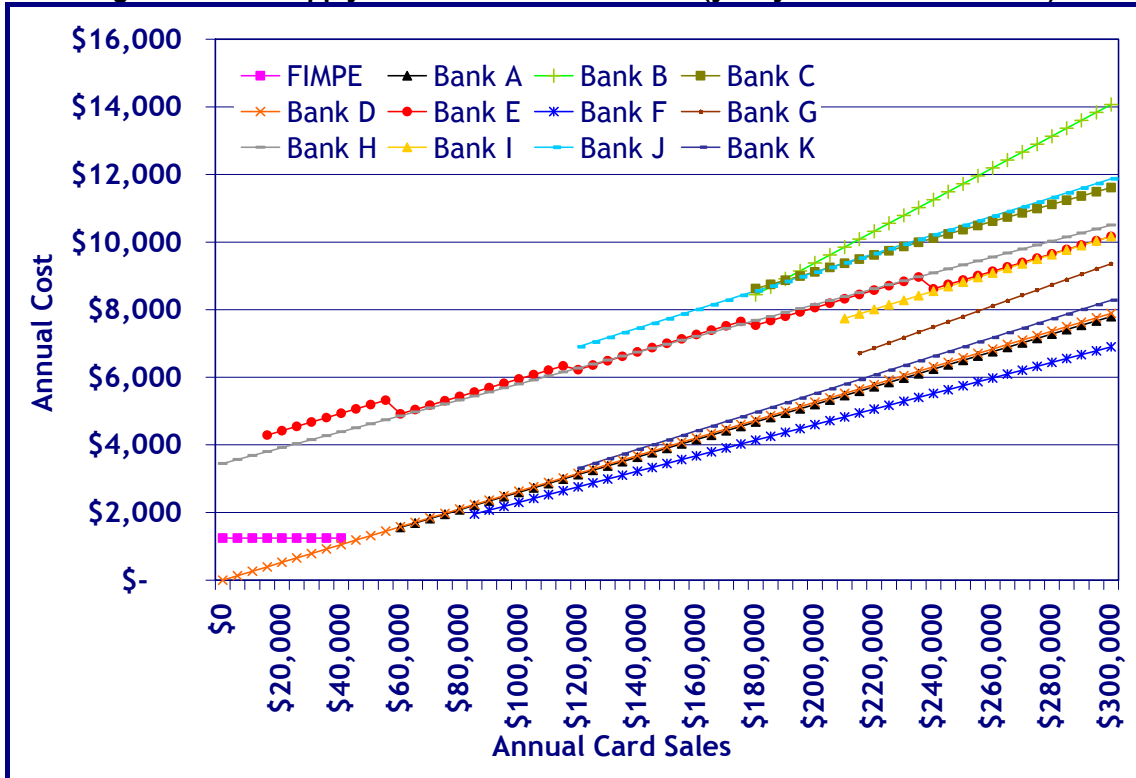
Figure 4: Percentage of Households that have Credit and Debit Cards by Income Decile, 2002 and 2006



Note: Information of debit card holding was not collected in the 2004, 2005 and 2006 versions of this survey.

Source: National Survey of Household's Income and Expenditure, INEGI, 2002 and 2006.

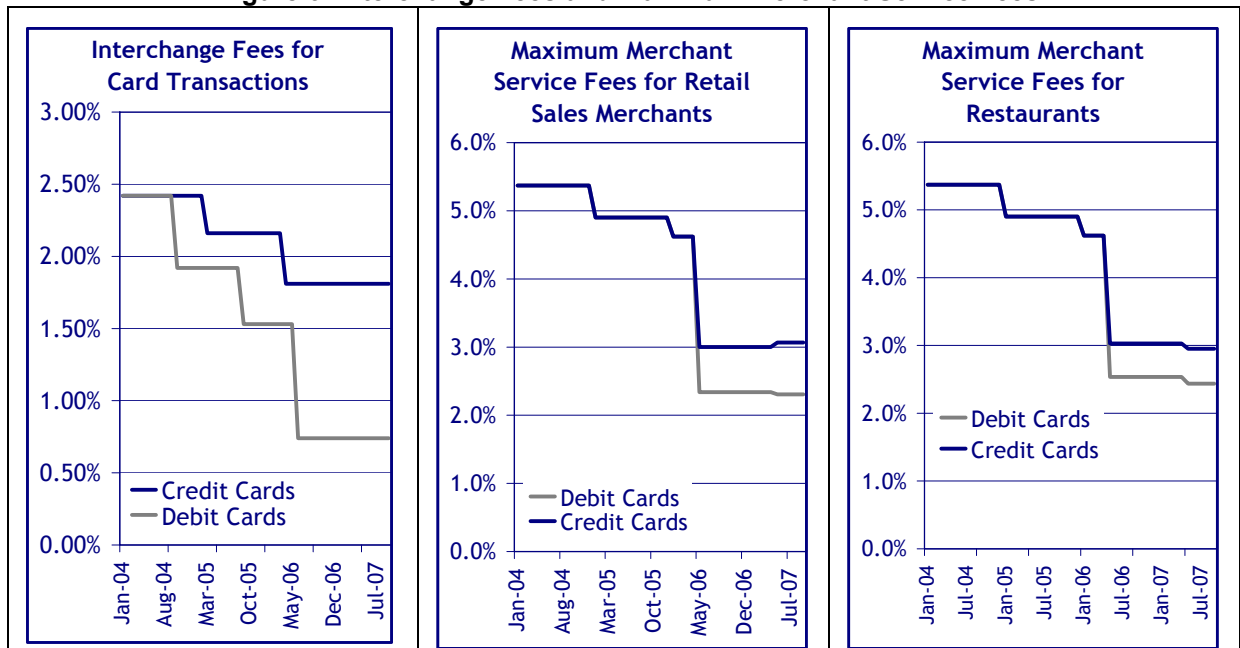
Figure 5: POS Supply Curves of the Main Banks (yearly MSF and rental fees)



Note: These individual supply curves include the data of monthly POS rent and per transaction MSF, expressed on a yearly basis. The MSF is the average maximum MSF for debit and credit card weighted per transactions value. The curves start at the minimum card sales value prerequisite of each acquiring bank. Bank H has a prerequisite based on ticket value instead of minimum yearly sales value.

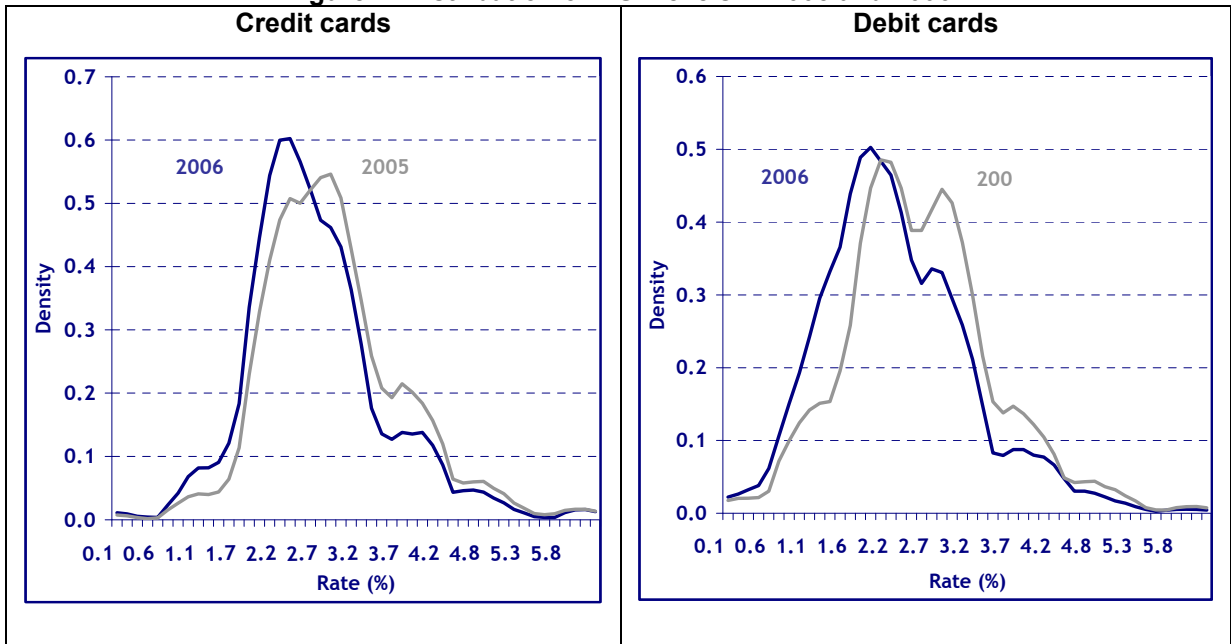
Source: Data collected from banks' websites and through a telephone survey conducted during June 2007.

Figure 6: Interchange Fees and Maximum Merchant Service Fees



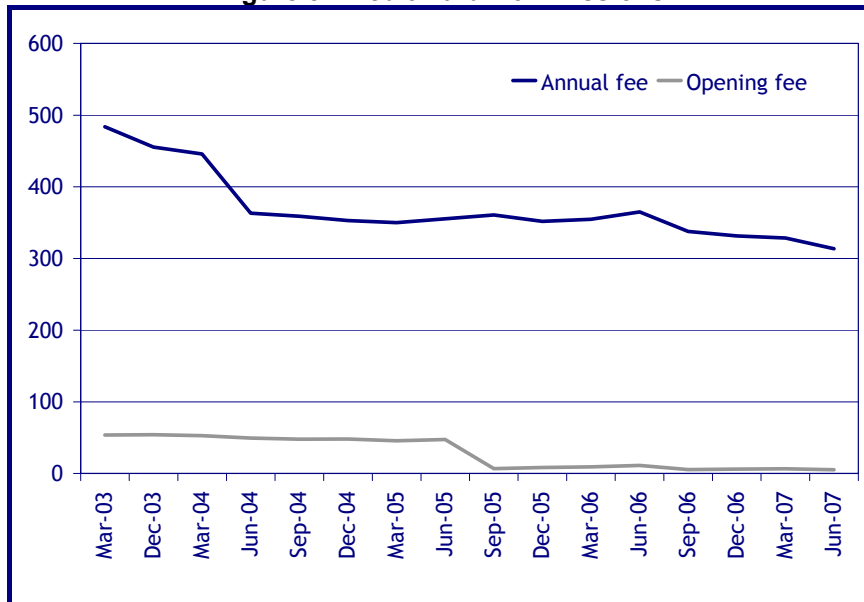
Source: Banco de México.

Figure 7: Distribution of MSF levels in 2005 and 2006



Source: Survey of Means of Payments Usage (*Encuesta a usuarios de medios de pago*, ENUM), INEGI and Banco de México, 2006.

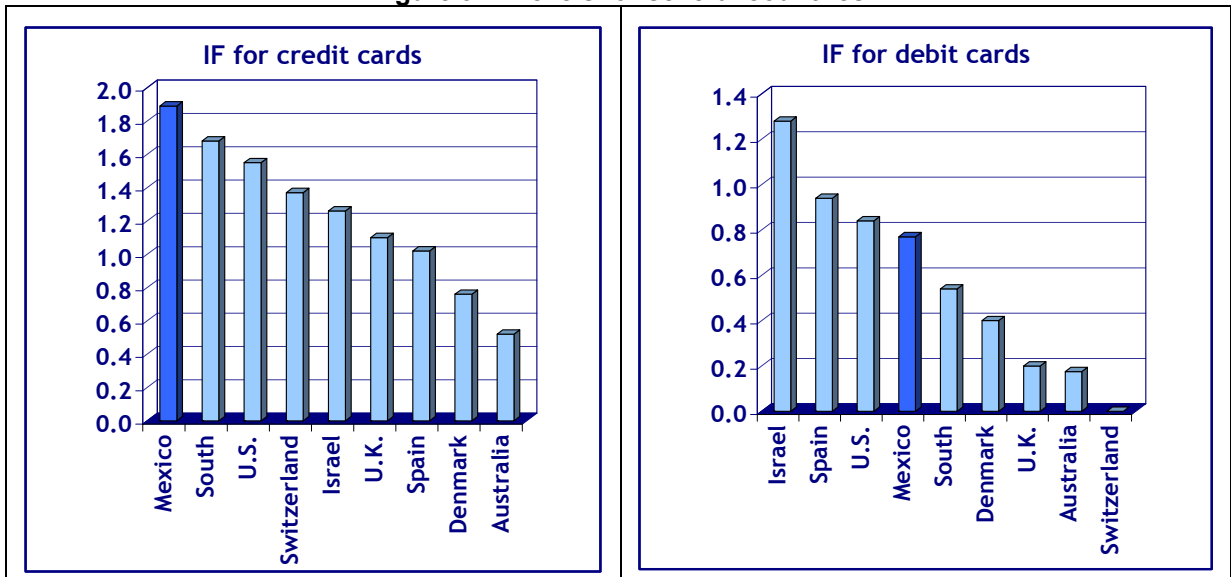
Figure 8: Credit Card Commissions



Note: Commissions shown are the weighted average of maximum fees charged on Classic Credit Cards. The weights are provided by banks' respective market shares

Source: Banco de México

Figure 9: IF levels for several countries



Source: Banco de México and central banks from other countries. IF levels for Mexico are those prevailing on 2006 and for the other countries are those prevailing in 2005.