

The effects of the mandatory decrease of interchange fees in Spain

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ABSTRACT

On 2 December 2005, a government-enforced Agreement to reduce Interchange levels for a five-year period (2006-2010) was signed by the main Spanish merchant associations and card schemes¹. The main results of the mandated Agreement have disturbed the necessary balance of the electronic payment system market and have damaged the majority of participants and society as a whole. The reduction in interchange fees was 3,329.96 million euros by the end of 2010. Although statistical correlations can never prove causality, and can be attributed to several factors involved, the average annual decline of more than 830 million has harmed consumers by raising cardholder fees and reducing card benefits, without any improvement of services being taken into account. But to different extents this is also true for the acquiring and issuing banks, which have been forced to protect themselves against loss of income, and even for merchants and card schemes which signed the Agreement. There is no evidence that prices have been lowered or the fulfilment of other objectives of the Agreement. This has altered the four-party system, which favours other less participatory systems and reduces incentives to innovate to improve the quality and safety of the service. In addition, it has also slowed the replacement of cash, which is more expensive and slower, less efficient and less transparent. This has benefitted the black economy, not income tax revenue or general welfare. As such, the main incentives to boost electronic payments as instruments of innovation, transparency and cost reduction have suffered. Nor has there been an increase in trade volumes, which have also been affected by the crisis and the increase in defaults, which has led to higher commissions.

1 Introduction: objectives and methods

The copious literature on methods of payment presents a lack of clarity and transparency all over the world, but above all in Spain. It would be reasonable to expect a more detailed specification of the costs and benefits of something so basic to the economic system. However, almost all these studies lack *quantitative data*, despite the numerous relevant public interventions all over the world and endless debates, theories, scientific papers and doctoral theses. Dealing with this deficiency is the main objective of this quantitative study to measure the effects of administrative intervention.

The European Commission, for example, has spent almost a decade reducing cross-border interchange fees. At the same time, numerous member states, among them Spain, have taken measures regarding merchant service charge (MSC) and interchange fees. Rules have sometimes been agreed upon after long public debates. But these have never been accompanied by corresponding reports on benefits and costs, despite the affect on the interests of consumers, trade and the issuing or acquiring credit card entities. Nor have rigorous and thorough evaluations of the anticipated results for the economy and society as a whole been carried out.

There is one exception – a study realized in Australia in 2008² – and it is on this that we base our quantitative methods and scientific objectives. We also consider and compare official and unofficial statistics, in addition to carrying out both quantitative and qualitative surveys with consumers, merchants and banks. We have found extensive gaps in the statistics and data. Together with our findings, some of the unanswered questions have

¹ *Merchant associations:* ANGED, FEH, FEHR and CAAVE *Schemes:* Servired, 4B and Euro 6000

² Stillman Robert, William Bishop, Kyla Malcolm and Nicole Hidebrandt, *Regulatory Intervention in the Payment Card Industry by the Reserve Bank of Australia. Analysis and evidence**. CRA International. London, (2008): April 28.

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led to announcements of improvements in information, amplification of the indicators employed and greater and more frequent publicising of the results.

2 The reality of payment systems worldwide and in Spain

The economic literature generally characterizes the payment card sector as a two-sided market. The term originates in the fact that operators (above all, banks, and now telecommunications and Internet companies) use technological platforms to sell services to two types of client³:

- a) Consumers or cardholders. These may purchase goods or services from those merchants accepting cards, or remove money from cash points.
- b) Merchants, who allow cardholders to pay with cards through point of sale terminals (POS terminals), dataphones and now smartphones.

In any case, the two-sided payment card market presents different business models: systems of two, three and four parties. The most common are the ones with most parties (four-party systems): Visa or MasterCard bank cards (as well as the majority of national networks), since on the one hand banks and consumers participate, and on the other there are other acquiring banks and merchants. The banks use networks, such as – in the case of Spain - Servired, Sistema 4B and Euro 6000.

In the three-party system a commercial company lends its services directly to consumers and merchants (American Express and Diners Club⁴). In two-party systems only consumers and merchants are involved; merchants issue their own cards, known as private cards. These represent almost a quarter of the total number of payment cards in Spain, with 1% - 2% represented by three-party cards (mainly American Express); the remainder are bank cards⁵, which are unique in that they publish official statistics about number, transactions and fees⁶.

Four-party systems involve both debit cards (the majority and fastest growing) as well as credit cards. With each commercial transaction, the issuer (in name of the cardholder) pays the acquirer (in name of the merchant) for the value of the service of the product purchased.

These services, which are much faster and more convenient for society in general than cash, require two kinds of revenue to maintain and improve their quality. One is provided by commissions paid to the issuing bank or acquiring bank in exchange for their services by customers or merchants; for example, annual fees to maintain cards and POS terminals. The other is the merchant service charge⁷ paid by the merchant to the acquiring

³ Börestam, Ann, and Heiko Schmiedel, *Interchange fees in card payments*. Occasional paper series N° 131, European Central Bank, September 2011, p. 10.

⁴ While in the four-party scheme the issuer has a contractual relationship with the cardholder and the acquirer has the same with the merchant, in the three-party model the network acts as issuer and acquirer and has a direct contractual relationship with the cardholder and the merchant; one variant of this is the three-party model which also allows other payment service providers to obtain an issuing and/or acquisition license (so-called "three-party schemes with licensees") according to the ECB's own definitions. Among the three-party networks operating in the EU are included American Express and Diners Club, while four-party networks include Visa Europe, MasterCard and most of the national networks. It should be noted that three-party schemes are fundamentally three-party credit card networks, while four-party schemes are both debit and credit card networks. The larger member states still have at least one national card network that only allows domestic payments. This is the case, for example, of Belgium, Denmark, Germany, Ireland, Spain, France, Italy and Portugal.

⁵ DBK: *Competitors: tarjetas de pago*, 2007. <http://www.dbk.es/esp/default.cfm?CFID=11313976&CFTOKEN=58742134>

⁶ <http://www.bde.es/webbde/es/sispaqo/sispaqo.html>

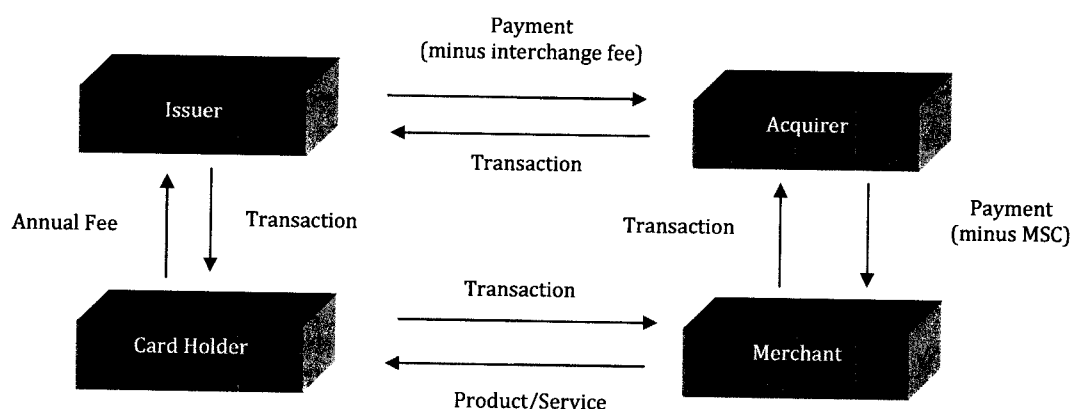
⁷ In the European economic literature this is called a "merchant service charge" (MSC) and in the American literature, the "discount fee" (DF).

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entity as a percentage of the final price of the purchase for providing the merchant with the means of payment and to provide an advance to cover the days, weeks or months it takes the consumer to pay.

A significant part of the merchant service charge goes towards dealing with amounts that the acquiring bank transfers to the issuer for collaborating in the service. This compensation is known as the interchange fee.

Figure 1. Movements in four-party payment systems



Consequently, the interchange fee is used to balance the assumption of costs of the means of payment between acquiring and issuing banks. Thus it functions to balance the demand on both sides of the market. As a result, all parties and society as a whole obtain the benefits of this payment method and the indirect network effects⁸, among which are the optimisation of the use of the cards and their acceptance⁹.

Interchange fees are usually the result of general agreements reached between parties. As these rates are very dependent on local markets, in the absence of or difficulty in reaching agreements, they are fixed by brand owners such as Visa or MasterCard. Some competition authorities have called into question this open-market method, suggesting it should be entrusted to state regulators. However, since in three-party systems brands such as American Express or Diners Club have a double role as both issuers and acquirers, any agreement is unnecessary and, as such, competition rules do not apply even though rates are generally much higher.

⁸ The greater the number of consumers who use cards, the greater will be their acceptance by merchants, while the greater the number of merchants who accept cards, the more useful such cards will be perceived by consumers. Network effects arise when the value of forming a part of the network varies depending on the size of the network. Such effects are known as "indirect network effects". See the study of CRA International *Regulatory intervention in the payment card industry* by the Reserve Bank of Australia. 28 April 2008, pp. 61.
⁹ Evans, David, and Schmalensee, Richard, *The Economics of Interchange Fees and Their Regulation: An Overview*, AEI-Brookings Joint Center for Regulatory Studies, Related Publication 05-12, May 2005, and Wright, Julian, *The determinants of optimal interchange fees in payment systems*, Journal of Industrial Economics Vol. 52, Issue 1 (March 2004), pp. 1-26.

3 Fees and the future of payments in the economic literature

Interchange fees and the present and future of electronic methods of payment have been the focus of an intensive but rather long-winded investigation in the literature by academics and independent economists or those connected with regulatory bodies, supervising banks, competition authorities, consultants and representatives of each of the parties involved. We have examined several hundred texts and have found that the main themes cover approximately thirty main aspects discussed by more than fifty prestigious authors (judging by the number of academic citations).

The economic literature demonstrates a broad consensus regarding the reasons why interchange fees effectively work in the four-party payment system. However, this is not the case with reference to the ideal assignation of costs and benefits, nor with reference to the possible economic effects of the restrictions introduced by administrative constraints. The debate has increased as attempts to reduce interchange fees have spread, recently in the United States and other countries, where they are higher than in Spain and Europe. Discussions about which payment method is economical and socially ideal tend to favour electronic money, even while a consensus is growing concerning the need to bolster the empirical evidence, as we are attempting to do here.

The majority of these articles have been published within the last decade, above all during the period 2003-2006. Thirty or so countries and intergovernmental bodies, such as the European Commission, have established regulatory measures¹⁰, the majority of which have been restrictive for interchange fees and cards. Others, however, such as Argentina or South Korea, have promoted these measures as a way of avoiding or reducing fraud or tax revenues, and to increase the transparency of cards compared to cash.

The most important issues dealt with concern competition, the extent of the role of the market in optimizing the system, the characteristics and benefits of the system (the main focus of this investigation into the case of Spain), the bilateral or multilateral fixing of the interchange fees, the multiple benefits and costs of regulation (the quantitative instrument used in our research), the effects of innovation and technology in the formation of networks and two-sided markets, the comparison of costs and advantages of each of the methods of payment, and if the market incentives which bring about the substitution of cash by electronic money should or should not be reinforced by Public Administrations – an important issue which, like others, is outside the scope of this research, which focuses on the causes and effects of the reduction in interchange fees in Spain as a response to accusations concerning rules of competition.

3.1 The problem of competition in the search for optimums

Since the 1970s there has been an intense controversy about whether interchange fees and their transfer to MSC violates fair competition, and also concerning market inefficiencies in assigning resources, which is what is usually used to justify the intervention of competition and regulatory authorities. These inefficiencies refer to the use or abuse of a method of payment in reference to its social cost. Paradoxically, a growing body of literature indicates that electronic payments are cheaper than cash; this is suggested by a dozen studies published in the last ten years in Europe¹¹. But the monopoly on the issuance of cash is not subject to intervention or competition rules,

¹⁰ These measures are discussed in Appendix 2 of this report, also available from the authors on request.

¹¹ Dot.econ, *Costly cash, International evidence on cost of making payments*, Sept 2011.

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despite the persistent criticisms of certain schools of economics, such as the Austrian. Such actions center on cards and four-party payment systems, not on those of two or three parties.

The first country establishing regulatory controls of interchange fees was Norway in 1989. But the most well known and influential interventions were carried in Australia, although this was done later than those in Spain. A study by the Payments System Board of the Reserve Bank of Australia concluded that interchange fees were too high and did not conform to the rules of competition. Consequently, Visa and MasterCard were forced in 2000 to eliminate their no-discrimination rule (NDR)¹² and reduce their interchange fees. Many authors, such as for example Evans et al (2011)¹³, have said that there is no clear theoretical basis for such measures, including the further proposed reduction of interchange fees in the U.S. (Federal Reserve System, 2010)¹⁴. They conclude that in these cases administrative intervention is not justified: "It neither identifies clearly that there is a market failure, nor considers the almost unanimous position in the economic literature that rules based solely on the concept of "cost" are not justified, nor guarantees that the outcome of the standard will benefit consumers."

Most of the literature on public interventions regarding reducing interchange fees focuses too much on the price of services, as noted by Bradford and Hayashi (2008)¹⁵. The most reasonable approach for many academics would be to achieve a more efficient structure for society of all commissions, not just reduce one or the other, to transfer the benefits to the final consumers, as indicated by Evans, Litan y Schmalensee (2011)¹⁶, the previously cited report of the Federal Reserve System (2010), or, earlier, Stillman et al (2008)¹⁷.

This is because there is a consensus among economic theorists that it is impossible, except by chance, to reach the socially optimal interchange fees through any regulatory system that considers only costs. While some studies suggest that privately set interchange fees end up being inefficiently high, others conclude that they end up inefficiently low. But the truth is that there is no theoretical or empirical basis for concluding that it is possible to improve social welfare by the significant reduction in interchange fees, as Evans and Schmalensee conclude (2005)¹⁸, so that it is for the regulatory authorities to bear the burden of proof regarding supposed market imperfections and demonstrate that regulation can lead to an improvement in social welfare.

In summary, there are five solutions given by public authorities to this "theoretical" problem of competition, according to Prager et al (2009): 1) Remove confusing restrictions on price differentiation of each payment method to reflect true costs and benefits; 2) Submit interchange fees to multilateral negotiation - which is not so simple, since when it has been

¹² Known in the literature as the "no-discrimination rule" (NDR), it prohibits merchants from surcharging payment by credit cards over other payment methods to try to recover the costs of the discount rate.

¹³ Evans, David S., Litan, Robert E., Schmalensee, Richard, *The Economic Principles for Establishing Reasonable Regulation of Debit-Card Interchange Fees that Could Improve Consumer Welfare*. Submission to the Board of Governors of the Federal Reserve System, February 22, 2011.

¹⁴ Federal Reserve System. 12 CFR Part 235 *Debit Card Interchange Fees and Routing*. Proposed Rules. [Regulation II; Docket No. R-1404]. RIN 7100-AD63. Federal Register. Vol. 75, No. 248. 2010.

http://www.federalreserve.gov/boarddocs/meetings/2010/20101216/20101216_InterchangeFeeProposedRuleDRAFTFRNotice.pdf

¹⁵ Bradford, Terri, and Hayashi, Fumiko, *Developments in interchange fees in the United States and abroad*, Federal Reserve Bank of Kansas City, April 2008 <http://www.kansascityfed.org/Publicat/PSR/Briefings/PSR-BriefingApr08.pdf>

¹⁶ Evans, David S., Litan, Robert E. y Schmalensee, Richard, *The Economic Principles for Establishing Reasonable Regulation of Debit-Card Interchange Fees that Could Improve Consumer Welfare*, February 22, 2011. <http://ssrn.com/abstract=1769890> o <http://dx.doi.org/10.2139/ssrn.1769890>

¹⁷ Stillman, Robert; William Bishop, Robert ; Malcol, Kyla and Hidebrandt Nicole, *Regulatory Intervention in the Payment Card Industry by the Reserve Bank of Australia. Analysis and evidence*. CRA International. London, (2008) April 28.

¹⁸ Evans, David S. and Schmalensee, Richard, *The Economics of Interchange Fees and Their Regulation: An Overview*, MIT Sloan, Documento de Trabajo N° 4548-05

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attempted, ultimately one position has been imposed, as seems to be the case in Spain; 3) Adjust the level of interchange fees to optimize overall system efficiency, although they are only one part of the system and there is no guarantee that the reduction of fees will be instrumental in maintaining an optimum balance among all, as pointed out by Calvano (2011)¹⁹: "relevant economic literature does not support the premise of only reducing interchange fees by merely arguing costs; 4) Relax card approval rules, for example to limit the application of the "honor-all-cards rule", forcing merchants using a network to accept all cards issued by the network, and; 5) Do nothing, especially if it is not entirely clear that the market allocates resources inefficiently.

Which is preferable? It is not enough to consider which is the most efficient option for each party; the interests of all parties must be taken into account. Finding the optimum involves comparing both costs and benefits for the individual and for the society as a whole. But academic economists and regulators do not even agree on whether current models are socially optimal.

Consequently, the discussion of theoretical models centers around two key issues, which can be summarized as: how to ensure efficiency without affecting free competition. There is broad consensus that less public intervention and an increase in transparency in pricing schemes contribute substantially to the efficiency of payment systems, helped by product innovation.

3.2 The two-sidedness of the market and how to fix interchange fees

The theoretical literature with most impact in the debate on competition discusses, among other things, two-sided markets, defined by Rochet and Tirole (2004)²⁰ as those where there are two conditions: 1) the price structure or balance (the fee that each user pays in the end) affects the total volume of transactions, and 2) end-users are unable to negotiate prices based on costs of participating in the platform. Hence, the socially optimal structure would be the one that maximizes the total of the surplus of the consumer, the merchant and the bank.

This characterization of the card market as two-sided involves two types of challenges. One is clearly positive: the increasing decline in transaction costs related to the benefits derived from innovations introduced by information technology and digital communications and their reduced temporal and spatial barriers, positive network externalities (value delivered grows with the number of users) or other effects and regularities of the new knowledge-driven information economy²¹, which with the digital revolution is gaining ground over the traditional economics of materials moved by energy. The second challenge is negative, as when the discussion of these markets is linked to competition and other complex issues such as income transfers between agents or cross-subsidies²². The reason is that two-sided markets foster an asymmetric distribution of costs and earnings: one party pays less than the other or, in extreme cases, nothing. Paradoxically, the bias toward that significant asymmetry is often attributed to positive network externalities (Evans and Schmalensee, 2005)²³.

¹⁹ Calvano, Emilio, *Note on the Economic Theory of Interchange*, Economic Theory of Interchange Fees. *Comment Submitted to the Federal Reserve Board Regarding the Implementation of the Durbin Amendment*. February 22, 2011.

²⁰ Rochet, Jean-Charles, and Tirole, Jean, *Two-Sided Markets: A Progress Report*, *Rand Journal of Economics* 37 (3), 645-667, 2006, <http://onlinelibrary.wiley.com/doi/10.1111/j.1756-2171.2006.tb00036.x/abstract>

²¹ Terceiro, José B. and Matias, Gustavo: *Digitalismo*, Tauros 2001, Madrid.

²² In Appendix 1 can be found the classification of topics and names of authors and works, preceded by the number of citations in academic journals, including web links.

²³ Evans, David S. and Richard Schmalensee, *The Economics of Interchange Fees and Their Regulation: An Overview*, *MIT Sloan*, Documento de Trabajo N° 4548-05

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Among the most outstanding authors in our rankings²⁴ can be included, along with Rochet and Tirole (their 2006 article has received five hundred citations and those of 2003 and 2010 nearly a thousand each), Wright (2004, one hundred and fifty citations), Armstrong (2006, 893 citations), Schmalensee (2001, 244 citations). Many of these articles are founded on the contributions made several decades ago by Baxter (1983), a pioneer in justifying the need for interchange fees. The role he assigns to them is to address market failures caused by externalities (such as "shoe leather costs" that payment cards save), since these rates have the potential to align benefits and social costs. Although Baxter's model has been criticized for being based on simplistic assumptions such as the homogeneity of consumers and merchants, today it remains one of the most cited articles in books and journals: cited 263 times as of November 2011 according to *Google Scholar*.

For most analyses, the key is precisely that the two-sidedness of the market prevents strategic interaction – not of the acquiring or issuing bank with consumers and merchants, but between the different interests of the latter two parties, key players in retail trade. The most important authors who reject that strategic interaction are Rochet and Tirole (2006)²⁵ - this is one of the most cited works in the academic literature (506 times cited, and the supplement of 2010 around a thousand more) - and Verdier (2009)²⁶, in one of the most prestigious overviews published. Before this Wright (2001)²⁷ had stated that, despite the known heterogeneity of interests, the volume of payments would be maximized as the demand of both parties reached a balance. This paper has been cited in the academic literature 150 times, a figure only exceeded by that of Schmalensee's 2001 paper (244 citations)²⁸, with reference to similar issues and the dynamics of price discrimination. Schmalensee rejected the existence of an economic basis for proprietary systems that do not balance their interests with interchange fees (two-party and three-party systems).

Another of the deficiencies ascribed to the economic models of interchange fees affects the strategic interaction between merchants. As there is competition among them to attract customers, in principle this encourages them to accept cards and even accept higher rates, as recognized for example by Vickers (2005) and Rochet and Tirole (2008). The subsequent problem is an increase in the total net cost: competition forces unwelcome choices for some market participants. The truth is that the statistics indicate that large merchants have the lowest interchange fees.

No less important are the debates in the literature about whether interchange fees should be set on a bilateral or multilateral basis. Even from the majority view that the exchange between value achieved by consumers and merchants should cope with heterogeneous markets and avoid situations of underuse or overuse, it is recognized that it is not the same maximizing profits, fees or welfare. This is what theorists cited several hundred times in the academic literature recognize (such as Schmalensee (2001), Wright (2004),

²⁴ Appendix 1 summarizes the controversy over two-sided markets dealt with in several hundred articles dealing with thirty aspects of the issue.

²⁵ Rochet, Jean-Charles, and Tirole, Jean, *Two-sided markets: a progress report*, The RAND Journal of Economics, Volume 37, Issue 3, pages 645–667, September 2006, supplemented by *PLATFORM COMPETITION IN TWO-SIDED MARKETS*, Journal of the European Economic Association Volume 1, Issue 4, article first published online: 13 DEC 2010.

²⁶ Verdier, Marianne, *Interchange fees in payment card systems: a survey of the literature*, Journal of Economic Surveys, Volume 25, Issue 2, pages 273–297, April 2011.

²⁷ Wright, Julien, *The Determinants of Optimal Interchange Fees in Payment Systems*, Economics Working Papers, University of Auckland, jwright@auckland.ac.nz

²⁸ Schmalensee, Richard, *Payment Systems and Interchange Fees*, NBER Working Paper No. 8256, Issued in April 2001, NBER Program(s): IO ; *Payment Systems And Interchange Fees*, Journal of Industrial Economics, 2002, v50 (2 June), 103-122. Paper available as PDF (206 K) in <http://www.nber.org/papers/w8256>

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and Rochet and Tirole (2006)). They also address other problems associated with the abovementioned issues, such as forms of negotiation, price discrimination and optimums.

But most of the theoretical models have not been subject to empirical tests, even those which urge the benefits of reducing interchange fees at all costs, irrespective of possible consequences. Moreover, even taking into account the different costs for different methods of payment, they differ in approaches and definitions used, particularly in the face of the more general but interesting problem related to the optimizing of payment systems: the substitution of cash by electronic money, as we will see later (although this is not the objective of this research).

3.3 The replacement of cash by electronic money

As controversial as the above is the question of whether the lowering of interchange fees would help consumers and merchants to decide whether to use cash more or less²⁹. The discussion is connected with the above because electronic methods of payment approach the social optimum: they have proven to be cheaper, more efficient, more transparent, more convenient, innovative, and so on. But we have already said that the decision maker focuses on his own interests and not the collective interest, and in something as important to the economic system as a whole it is not clear how to compare costs of different payment methods, especially given the difficulty of estimating the cost of cash, as mentioned by Leinonen (2007), and Verdier (2009).

In theory, the substitution of cash is in everyone's interest, and the reduction in interchange fees only to merchants, not banks or consumers, who are the source of the payment chain. Almost all the estimates compared by *Costly Cash*³⁰ show that the greatest cost of cash for consumers is in time and travel, and for merchants in fraud and manipulation, although fees vary widely between countries since they do not follow the same methods. With cards and their technology, bank fees and interchange fees come to the fore, although the total cost of electronic payments is reduced to a third of that of cash, despite excluding numerous important concepts as has been pointed out.

The imbalance in compensation in the four-party system usually occurs through administrative intervention or agreements between parties that do not satisfy some of them. These parties then try to recover revenues from other sources, as has happened with the rise of bank charges to consumers in different countries and even to merchants to compensate for reduced interchange fees and MSC, as evidenced in Australia, Canada³¹, Spain, and now the U.S., and so on, while in other countries merchants charge additional fees³². These reactions are considered in much of the literature as a source of net diseconomies for the whole, as well as for those most directly affected by them.

The main reason is that they introduce a brake on the incentives to the changeover from cash, and on the optimization of the volume of transactions or the net social benefits of payments. But despite this and the increase of the relation between cash/GDP in the eurozone after the creation of the euro, electronic payments have grown to a 22% share

²⁹ Methods or instruments of payment are the devices (electronic cards or mobile phones), documents (bank drafts, checks or bills of exchange) that allow the use of bank money (cash and deposits) to pay, without the need for physical money (notes and coins in circulation). See www.bde.es/Documentos/completo_3_MB.pdf

³⁰ Dot-econ, *Costly cash: a synthesis of international evidence on the cost of making payments*. 2011.

³¹ Canada reduced interchange fees to zero order of the Competition Bureau, after which Evans, Chang and Weicher (2011) estimated there would be significant increases in the fees charged for use to consumers

³² Brits and Winder, *Payments are no free lunch*, De Nederlandsche Bank. Occasional Studies Vol. 3, No 2, p. 5, observe that an increasing number of merchants charge a small fee (0.10 - 0.20 euros) for payment by debit card for purchases under 10 euros.

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and are now being increased further by mobile phone payments, which take below \$10 the threshold at which electronic payments are cheaper than cash payments.

In articles on possible trends concerning overutilization or underutilization of payment methods (Prager et al, 2009), a widespread idea is that cash will be replaced only if consumers and merchants find sufficient incentives. Revealing these incentives is precisely the concern of interchange fees in the works of Leinonen (2007), and Verdier (2009).

Although by summing the entirety of individual interests we come close to the overall interest of society itself, those who decide on one method of payment or another do this according to their own perceptions of costs, which are generally subjective and far from the overall total cost. Hence, the comparative study between the dozen or so previously mentioned European studies simply concludes that electronic money is much cheaper, faster and more convenient than cash. But most private economic costs are excluded from these measurements because they are considered transfers between economic agents (banks, merchants and consumers) and not final costs³³; this is the case of interchange fees, which are included together with other fees charged by banks and payable by merchants and consumers in the classification we have consulted containing a list of around thirty costs; others are not assessed due to a lack of statistical information.

Furthermore, these studies do not even consider the benefits of the transparency and efficiency of digital money and its impact on income and on public expenditure, so that in practice interchange fees are reduced to a fraction of all such costs and benefits, and are not even considered part of the whole since they figure as part of revenue transfers between agents.

However, interchange fees appear in many other dimensions or theoretical perspectives as a factor explaining the recent and future evolution of means of payment, together with technological variables, and even have more weight than others that are economic, financial, institutional or purely political.

3.4 Quality and other dimensions and outlooks on the debate

One of these widely discussed issues is the relationship between the level of interchange fees and the quality of services paid with them. Verdier (2006 & 2010)³⁴ attempts to define an optimum from the question of whether system operators and banks have any interest in inflating interchange fees to maximum levels. There is no evidence that this is so in the literature. But Verdier's suggestion is that such an interest in inflating them would not necessarily be bad for net social welfare, provided that additional revenues were used to recover the higher levels of fixed costs and ensure security and innovation. Thus there may be social efficiency in the system, despite the resulting higher interchange fees.

Nevertheless, there is also a consensus regarding both the function of interchange fees in generating those higher levels of quality, and that more competition between networks facilitates the reduction of interchange fees and, as a result, the MSC, or at least makes

³³Of the 30 types of costs classified by the authors in Appendix 3, over a third are excluded from measurement for one reason or another in the dozen comparative studies by Dot.econ, *Costly cash*, 2011

³⁴Verdier, Marianne, *Interchange Fees and Inefficiencies in the Substitution between Payment Cards and Cash*, March 29, 2010 <http://www.ny.frb.org/research/conference/2010/econ/IF-cash-cards.pdf>

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their level more acceptable (Bolt and Schmiedel, 2011)³⁵. This is confirmed by many recent experiences, especially with the general downward trend in Europe, where consumers and merchants can also benefit from the SEPA.

Of course, there are many issues related to these debates, such as, for example, the causes of the proliferation of cards, agents and payments, the attitudes of merchants, consumers and their sensitivity towards prices, reward schemes and other attempts to gain loyalty; the dominant position of mobile operators, card network theories; analysis of costs and benefits of the payment method; efficiency, transparency and other positive effects; hidden costs and externalities; specificities affecting regulation and competition (networks, economic externalities, cross subsidies, price discrimination, and so on); incentives to invest and innovate; surcharges; impact on social welfare and credit; other economic effects and problems, and of course the presence of many of these issues in the regulation of fees by country and zone such as the European Union and Spain.

3.5 The economic literature and interventions in Spain

The literature on interchange fees and government intervention in Spain shows similar characteristics to what is seen internationally, being influenced by regulation in Australia³⁶, and debating competition, two-sided markets and substitution, as well as emphasizing the theoretical over the empirical. The most outstanding authors, Carbo, Chakravorti and Rodriguez Fernandez³⁷ analyzed in 2009 the effect of caps on multilateral interchange fees in the period between 1997 and 2007. They concluded that the income of consumers and merchants improved when exchange rates were reduced by agreement between the parties in conflict. Banking income also increased at the same time, because the increase in transactions offset the decline in unit revenues per transaction. But they recognize that their results depend on market acceptance, "far from complete initially and during the application of maximum fees" and suggest as likely the existence of interchange fees below which social welfare decreases.

At the same time, Corral (2009)³⁸ states that it does not seem the increase in fees has been particularly important during the period 2007-2008 - with the exception of issuance and renewal fees - nor that such an increase is the solution to offset the negative effect of the fall in interchange fees. Corral argues, on the contrary, in favour of increasing activity and interest income, imitating the Anglo-Saxon model, where in 2007 the balances deferred or financed by consumption reached 30%, almost triple the 12.5% of Spain. This strategy of focusing future business on income from fees, as is done in the UK, turned out to be supported by 97% of the organizations surveyed in our research. In contrast, the second hypothesis (that the main beneficiary of lower interchange fees was the final consumer) was categorically rejected by 93%: these respondents identified the retailer as the main beneficiary, compared to only 2.3% who felt it was the final consumer.

³⁵ Bolt, W. and Schmiedel, H. *Pricing of Payment Cards, Competition, and Efficiency: A Possible Guide for SEP*, Annals of Finance, pp. 1-21, cited by Ann Børestam y Heiko Schmiedel, *Interchange fees in card payments*, occasional paper series, number 131/September 2011, pp. 8 <http://www.ecb.eu/pub/pdf/scpops/ecbocp131.pdf>

³⁶ Carbo Valverde, Santiago; Humphrey, David, and López del Paso, Rafael, *The Falling Share of Cash Payments in Spain*, Moneda y Crédito, Revista de Economía, n° 217, 2003, pag 167-190. <http://europa.sim.ucm.es/compludoc/AA?articuloid=248822>

³⁷ Carbo Valverde, Santiago; Chakravorti, Sujit, and Rodríguez-Fernández, Francisco, *The Costs and Benefits of Interchange Fee Regulation: An Empirical Investigation*, FRB de Chicago, Documento de Trabajo N° 2009-11 (Preliminary version) and *Regulating Two-Sided Markets: An Empirical Investigation* (November 19, 2009). FRB of Chicago Working Paper No. 2009-11. Available at SSRN: <http://ssrn.com/abstract=1511809> or <http://dx.doi.org/10.2139/ssrn.1511809>

³⁸ Corral de la Mata, Daniel. *Nuevo enfoque del negocio de tarjetas bancarias en el sistema español de medios de pago*, Facultad de Ciencias Jurídicas y Sociales, Universidad Rey Juan Carlos, Doctoral thesis, (2009), pp. 141.

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However, we understand that in tackling this research that neither the period studied by the previous research is relevant, nor do the findings coincide with our hypotheses and empirical results.

During that period there were two different policies: the PP government in the years from 1995 to 2004 and the PSOE government from 2004 to 2011. The result of the second policy was an agreement to reduce interchange fees in line with the desire of regulators. But this agreement, as we shall see, was imposed and neither brought widespread benefits nor in the end was able to maintain the increase in transactions, which began to decline before the recession began in 2009, indicating that what the economic cycle provides it can later take away.

In Spain, the reduction began earlier than in Australia. The framework of the debate was the "Commission to study the problems arising from the use of cards as a method of payment," ("*Comisión de estudio de los problemas derivados de la utilización de tarjetas como medio de pago*") established in April 1999. Before this there were various efforts that led Congress to urge the Government to create the Commission, assisted by the Secretary of State for Commerce (*Secretaría de Estado de Comercio*). The commissioners were, together with the three card schemes and independent experts, trade associations. In face of opposition to reduce MSC, it was agreed only to lower interchange fees. These were to remain at a maximum of 3.5% from July of that year and each year were to come down 0.25 points to 2.75% on July 1, 2002, as the Competition Tribunal (*El Tribunal de Defensa de la Competencia*) authorized in April 2000.

With the expiry of this agreement in 2003, when regulation began in Australia, the trade associations ANGED, FEH, FEHR and CAAVE denounced the three Spanish card networks to the Spanish Office for the Defence of Competition for alleged abuse of the MSC. In May of that year, Congress once again urged the Government to adjust interchange fees in accordance with the principles accepted by the competition authorities of Spain and Europe, objectively, transparently and according to cost by category.

Before the Government acted directly, in April 2003 the Competition Tribunal denied authorizations of fees requested in December 2001 by 4B and in April 2002 by Servired, while revoking the authorization of Euro6000. It argued that they were not sufficiently justified in terms of costs and were the same for debit and credit; plus the system favoured some merchants over others. But it said that such fees contribute to technical and economic progress if they are public and objectively determined by cost mechanisms, assuming four conditions are met: distinguishing between debit and credit; setting for debit fees a fixed maximum per transaction limited to covering authorization and processing costs; limiting credit fees to cover costs of authorization, processing and fraud risk; and distinguishing between four types of purchases: by post, telephone, manual or Internet.

However, these were more restrictive than those costs acknowledged in the same year (2003) by the Australian rules, reviewable every three years and subject to scrutiny of experts approved by the RBA: the processing of credit card transactions, verification, receipt and settlement; fraud; development and maintenance of fraud control systems; costs related to the authorization of transactions; telecommunications costs related to authorization; costs to the issuer for financing interest-free periods; direct staff costs related to credit cards; programs, machinery and computers; recruitment costs or third-party outsourcing; internal expenses charged by other business units in relation to the activities of credit card and costs of sending invoices and cards.

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In Spain, merchants and schemes appealed against the decision to the National High Court (*Audiencia Nacional*), and maintained their position until the following Government established an agreement. A resolution was approved on May 18, 2005 in the Congress of Deputies (*Congreso de los Diputados*) urging the Government to: "take the necessary measures in relation to card payments regarding interchange fees applied to them to ensure they meet the criteria of the resolutions of the Competition Tribunal (*Resoluciones del Tribunal de Defensa de la Competencia*) of 11 April, 2005. The Ministries of Economy and Finance, and Industry, Tourism and Trade shall establish the necessary mechanisms to ensure transparency and information on the fees applied."

In this way Industry, Tourism and Trade set up an Agreement signed on December 2, 2005 between merchants associations and card schemes on the fixing of multilateral interchange fees in card payments. The signatories were, for financial institutions, Servired, Sistema 4B and Euro 6000, and for the trade sector, ANGED (supermarkets), CECc (retail), AVAD (distance selling), CEHAT (hotels), CAAVE (travel agencies) and FEHR (catering).

The agreement established a new multilateral system for setting interchange fees for the next five years, in which the following points can be highlighted:

- The system is to be subject to the Competition Defense Service (*Servicio de Defensa de la Competencia*), "allowing the financial sector to undertake the necessary technology investments to expand the card payment system in its convergence with other EU countries and to improve its efficiency".
- The agreement will especially benefit the commercial operators that bear higher rates. "This reduction in interchange fees is expected to lead to a decline in fees paid by merchants to banks (MSC) and ultimately translate into improved service and lower prices for the consumer."
- "It provides for a transitional period of three years, between 2006 and 2008, for which a table of maximum fees to be respected by card schemes has been established. This will allow a study of costs, which can be used to calculate fees for the next two years. In any case, a guarantee clause is in place so that no merchant suffers higher fees than those currently experienced." The maximum interchange fees in each year are shown in the Table 1 below:

Table 1. Maximum Interchange Fees. Projected evolution 2006-2010

Euros (€)	2006		2007		2008		2009 - 2010	
	Credit (%)	Debit (€)	Credit (%)	Debit (€)	Credit (%)	Debit (€)	Credit (%)	Debit (€)
0-100 mill.	1.40	0.53	1.30	0.47	1.10	0.40	0.79	0.35
100 - 500 mill.	1.05	0.36	0.84	0.29	0.63	0.25	0.53	0.21
> 500 mill.	0.66	0.27	0.66	0.25	0.54	0.21	0.45	0.18

Source: Ministry of Industry

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- The Ministry of Industry, Tourism and Trade has been requested by the parties involved to set up an observatory as a forum for the monitoring and dissemination of electronic payments in the commercial sector in Spain. Entities processing card payments pledged to endow a fund of three million euros over the period 2006-2008, in order to disseminate and promote the use of cards as a method of payment, especially with small merchants.

For the first three years (2006-2008), maximum fees were set and later were to be determined in relation to an audited costs analysis. This would be completed in July 2008, and if no agreement were reached then immediately identical fees would be applied. Intrasystem fees become dependent on the volume levels.

For intersystem transactions, the maximum will be equal to the weighted intrasystem average plus the weighted average of interconnection costs in each of the systems, which is expressed as a fixed amount per transaction, but may not exceed a ceiling of six cents (0.06 euros). These reductions were expected to reduce the fees paid by merchants and also benefit the consumer - effects which are tested in this research.

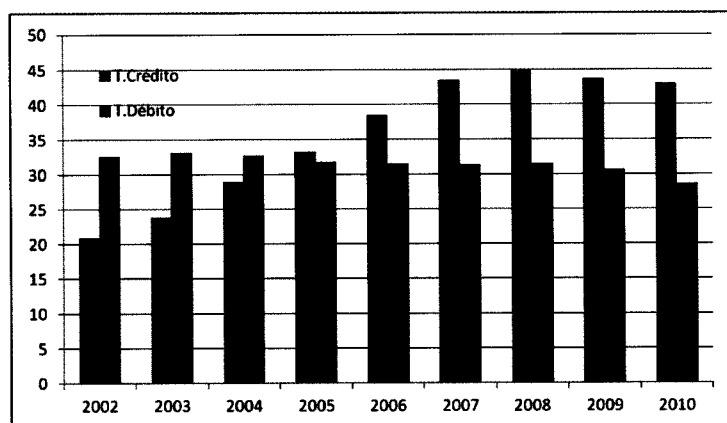
4 Intervention in Spain: Effects and amounts by agents

In this section we analyze the evidence of the intervention in Spain since the December 2005 Agreement until the end of 2010 in the four-party system. During these five years the banking sector has gone from a situation of unprecedented growth – as has the payment card sector - to one that is much more restricted. The economic cycle has slowed activity in both electronic and cash payment methods, although in Spain the use of electronic payment has slowed further than the use of cash, in comparison with other countries that did not cut their interchange fees.

4.1 Impact on the use of cards

Before the Agreement the number of bank card transactions in Spain doubled every three or at most four years. After 2005 it took six years for debit card transactions to double and even longer for credit card transactions. The number of credit card transactions grew in the last six years from 743 million to 1,062 million, while those of debit and credit almost doubled, growing from 675 million in 2005 to 1,302 million in 2011, according to statistics from the Bank of Spain. The growth in card use in 2010 and 2011 was also conditioned by a restrictive credit policy implemented by financial institutions in 2009, as a result of the impact of the economic crisis

Figure 2. Evolution of payment cards 2002-2010



Source: Bank of Spain. Millions of cards (*T. Crédito* = Credit cards; *T. Débito* = Debit cards)

However, the explanation lies not only in the international business cycle, since up to the end of 2008 Spain was one of the countries with the highest GDP growth among its neighbours. It was also among those European countries with a lower level of development in payment cards and thus had a tremendous potential for growth.

Among these variables can be highlighted the possibility of bridging the gap resulting from the fact that Spain is one of the European countries with a greater use of cash, which increased during the decade prior to 2009 as a result of the housing bubble and a larger underground economy linked to construction. This was true despite the fact that the Eurozone is the second largest area in the world for noncash payment methods, which amounted to 21% by volume in 2009, behind the 40% of the United States³⁹. But Spain

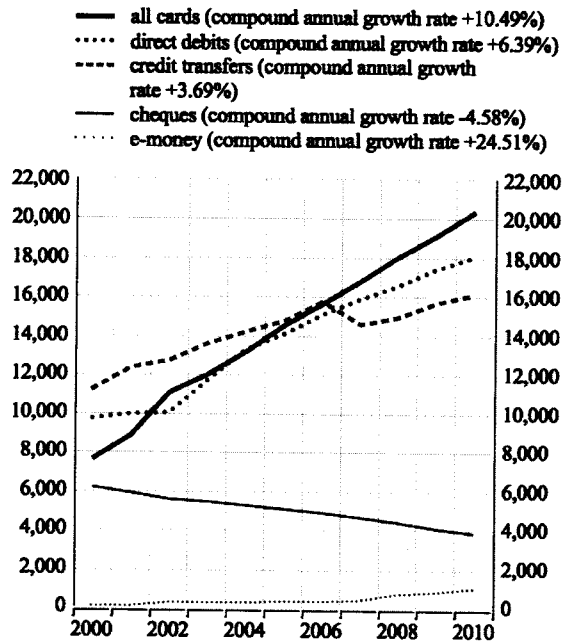
³⁹ Capgemini, *World Payments Report*, 2011, p. 10.

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barely reached 17% both in regards to this ratio as in the very similar in POS terminal payments with respect to total private consumption.

Figure 3. Use of payment instruments in the euro area
(millions of transactions)



Source: ECB 2011, Statistical Data Warehouse.

Despite being one of the main four or five major economic powers in Europe, Spain has not been among the countries with the greatest progress in noncash payment methods, neither in the peak years nor in the recession.

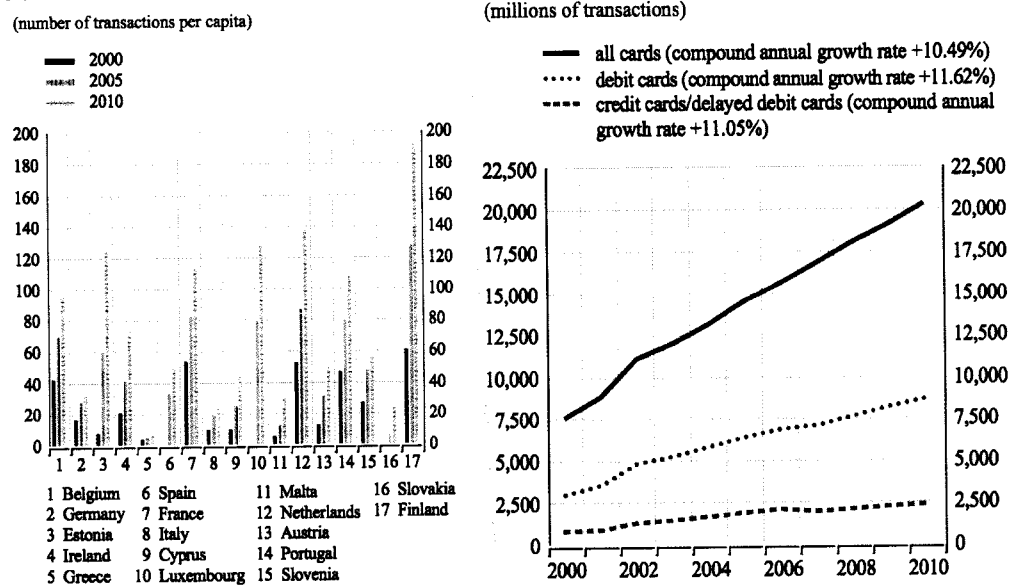
Despite the strong monetization resulting from the introduction of the euro, during the decade 2000-2010 payment cards staged the largest absolute growth in the eurozone, attaining more than 20,000 million payments in 2010. The euro countries with the highest use of cards are Finland, Estonia, Netherlands and Luxembourg.

In contrast, in Greece and Italy, as in Spain, payment cards obtained smaller increases in the number of transactions per capita. The greatest growth occurred in Estonia, Slovakia, Netherlands, Luxembourg and Malta, countries which in adopting more recently the euro registered higher GDP growth rates.

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Figure 4. A comparison of debit card transactions with credit card and deferred debit card transactions in the euro area



Source: Statistical Data Warehouse, BCE: *Towards an integrated European card payments market*. Data for 2000 are not available for Spain, Luxembourg and Slovakia. Note: For the table on the left data for Spain, Luxembourg and Slovakia are not available for the year 2000. ECB. Monthly Bulletin, January 2012. In the table on the right, the "sum of the components" is not equivalent to the "total" in all cases because while all countries provide data on total, not all provide data on the subgroups, for example France.

In addition to these macro variables that should have led to broader comparative growth of card payments in the last decade, Spain experienced other favourable sociological and microeconomic conditions. Of the factors which are most influential in the choice between cash or card, the main one is age, and Spain currently has a population that is younger than the European average, as well as having the highest life expectancy.

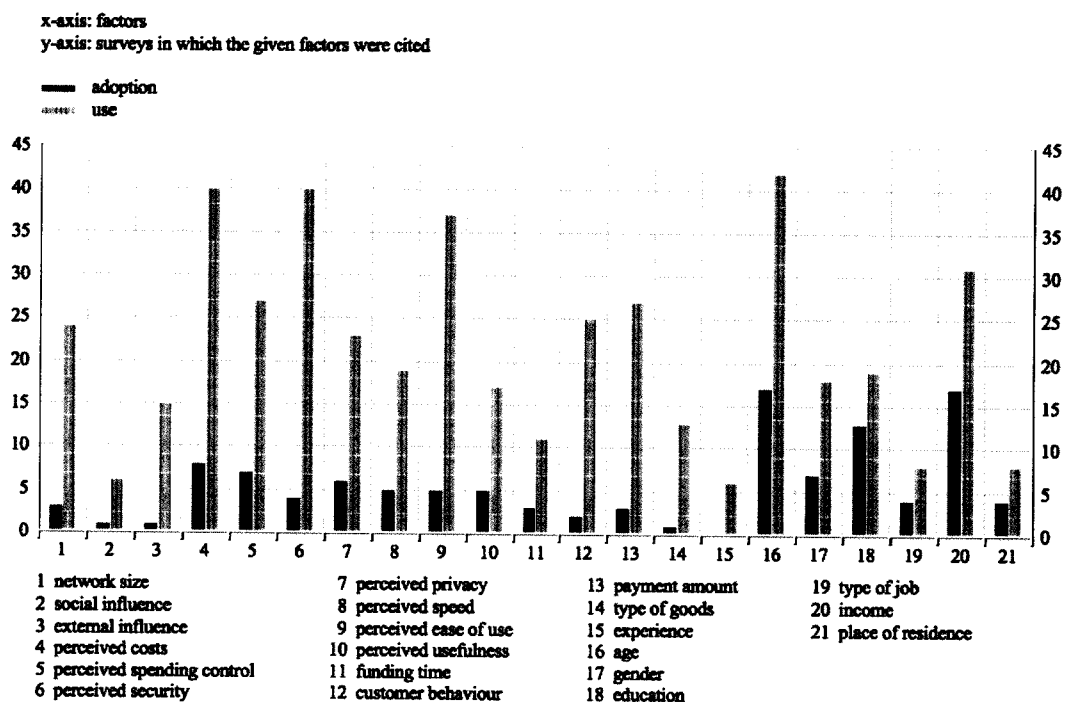
In Figure 5 below are the perceptions of insecurity⁴⁰ and costs, followed by the perception of ease of use. In connection with the latter two, a large ATM network for the withdrawal of cash acts against card payments, while, on the contrary, a large POS terminal network has the opposite effect.

⁴⁰ Card payments services cover operational, legal, financial and even systemic risks

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Figure 5. Meta-analysis of 130 empirical surveys on the factors influencing the adoption and use of payment instruments



Source: Data of the ECB. Monthly Bulletin, January 2012

Consequently, intervention to reduce interchange fees has not allowed such potentials to function in favour of payment cards. The idea that this has been a causal factor stems from the fact that until 2005 there were structural changes that were stopped short precisely during the years of the Agreement (2006-2010). But it is very difficult, if not impossible, to demonstrate a straightforward relationship with the reduction, apart from noting that the fees themselves remained almost frozen in the first year (2011) after the end of the agreement, when they depended only on the market rather than on regulation, as we shall see later. On the one hand, growth in the use of cards in 2010 and 2011 is conditioned by the restrictive credit policy implemented in 2009 due to the economic crisis. On the other, the fact that rates did not keep going down in 2011 is yet another cause of the growth in purchases made with cards.

One of these structural changes prior to the Agreement was that the percentage growth of POS terminals had passed for the first time that of ATMs (leading to the greater cost of cash, in more common use in Spain). In 2005 Spain had a total of 57,000 ATMs and almost 62,000 at the start of the banking crisis. The number of ATMs (1.3 per thousand inhabitants, a third more than the UK) has increased since then, giving Spain a higher ratio of ATMs per population than any other European country; likewise in terms of POS terminals (over 31 per million inhabitants), double those of the most advanced European countries.

Despite all this, the volume of transactions and the average per card were, after the Agreement, more affected than cash. The first is clearly shown in Table 2 below: the first year of the Agreement (2006) the growth rate of cash use went from 1.6% to 3%, while

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cards (cheaper, faster, more convenient and more transparent) halted their advance from 14% in 2003 and 2005 to 10.7%. In the recession of 2009 payment card use declined by 3.5%, whereas the use of cash went down by only 2.9%, although it should be noted that in 2004-2005 payment card use grew at almost three times the rate of cash withdrawals.

Table 2. Volume of purchase at terminals and cash withdrawals from Spanish ATMs

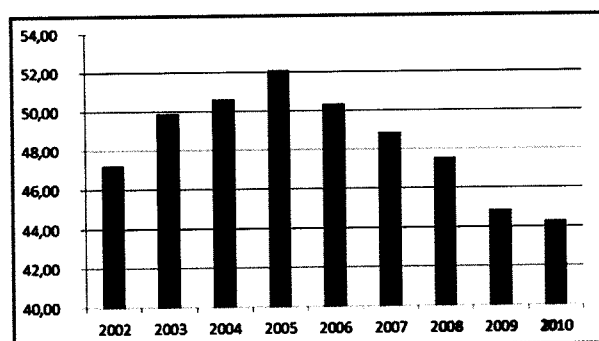
YEAR	PURCHASE AT POS TERMINALS				CASH WITHDRAWALS FROM SPANISH ATMS			
	Transactions	% interannual	Amounts	% Variation	Transactions	% interannual	Amounts	% Variation
2002	991,564		46,828.92		899,075		82,024.59	
2003	1,070,162	7.93%	53,403.00	14.04%	923,126	2.68%	91,023.74	10.97%
2004	1,235,093	15.41%	62,515.42	17.06%	942,503	2.10%	96,013.22	5.48%
2005	1,372,055	11.09%	71,468.43	14.32%	957,561	1.60%	101,619.36	5.84%
2006	1,571,046	14.50%	79,115.03	10.70%	986,399	3.01%	107,976.41	6.26%
2007	1,830,000	16.48%	89,395.89	12.99%	1,011,467	2.54%	113,936.79	5.52%
2008	1,985,168	8.48%	94,413.92	5.61%	1,018,939	0.74%	116,555.44	2.30%
2009	2,030,902	2.30%	91,075.50	-3.54%	988,827	-2.96%	113,196.09	-2.88%
2010	2,149,184	5.82%	95,184.09	4.51%	987,458	-0.14%	114,161.80	0.85%
2011	2,232,631	3.88%	98,267.79	3.24%	969,156	-1.85%	113,570.13	-0.52%

Source: Bank of Spain and our own sources. Transactions in thousands, and amounts in millions of euros.

Similarly, the average transaction made with payment cards (the ratio between total volume of transactions and number of transactions) increased to a maximum of 52.1 euros in 2005, to fall steadily to 44.3 euros during the five years of the Agreement. In contrast, the average transaction at ATMs for cash increased from 91.2 euros to 117.2 euros during the same years (ratio of amounts and transactions).

The banks attribute the increase in average cash withdrawals to the Bank of Spain rules on the communication of the commissions regarding cash withdrawals at ATMs. However, this trend is consistent with estimates of the increase of the cash-based underground economy. This is the case both in the years prior to the crisis and in the subsequent recession. Supporting this observation is that when in 2011 interchange fees stopped being lowered, volumes of payment cards again grew strongly while those of ATMs declined, despite the fact that the economic crisis affected both.

Figure 6. Average transaction with payment cards



Source: Bank of Spain (in €)

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Consequently, the end of the reduction of interchange fees in 2011 led to observations of two types of inefficiencies, attributed in the literature to two facts: for consumers and merchants, the greater cost of cash, increased by the use of ATMs, and for public administrations, lower tax revenue as a result of the growth of the underground economy. However, in relation to the added value created for the entire national economy, card purchases grew from 7.83% of GDP to 9.05% through 2005-2010. In addition, final consumption expenditure or household expenditure increased from 13.82% to 15.96%. But in view of the increased use of cash the conclusion of some⁴¹ cannot be confirmed in the sense that the income of consumers and merchants improved when interchange fees were reduced. More realistic seems their other conclusion about the existence of interchange fees below which social welfare decreases.

Table 3. Purchases at POS terminals in € and % of GDP and private consumption

	Operations	% Interannual variation (b)	Amounts (millions)	% Interannual variation	Nominal GDP at market prices	% GDP	Final consumption in households (millions and %)	
2005	1,372,055	11.09%	71,468.4	14.32%	909,298	7.86%	517,107	13.82%
2006	1,571,046	14.50%	79,115.0	10.70%	985,547	8.03%	557,460	14.19%
2007	1,830,000	16.48%	89,395.9	12.99%	1053,161	8.49%	595,099	15.02%
2008	1,985,168	8.48%	94,413.9	5.61%	1087,749	8.68%	612,339	15.42%
2009	2,030,902	2.30%	91,075.5	-3.54%	1047,831	8.69%	578,019	15.76%
2010	2,149,184	5.82%	95,184.1	4.51%	1051,342	9.05%	596,322	15.96%

Source: Our data plus data from the Bank of Spain and the National Statistics Institute (INE).

In any case, the use of payment cards in Spain is still low: less than 50 transactions per capita per year, compared to about 90 in the EU 15, nearly 190 in the U.S. and 350 in some other advanced countries. There are four factors which provoke opposite effects and which lead to data revealing apparently contradictory behaviours:

1. The evolution of economic activity, very significant throughout the period, with a strong and positive growth until 2008, and an economic recession of particular note between 2009 and 2010, with a significant decline in the weight of household consumption on GDP of more than one point in 2009.
2. The effects of increased fees on debit and credit cards, analyzed in the next section as a clear and logical reaction of banks to the reduction in interchange fees, with a series of negative impacts on the entire financial system and on commissions, fees, interest rates and payment card facilities and services.
3. The special initial situation regarding payment cards in Spain, characterized by a much lower level of use than in many of the neighboring countries.

⁴¹ Carbó Valverde, Santiago; Chakravorti, Sujit, and Rodríguez-Fernández, Francisco., *The Costs and Benefits of Interchange Fee Regulation: An Empirical Investigation*, FRB de Chicago, Documento de Trabajo N° 2009-11 (Preliminary version).

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4. The extremely important growth of Internet commerce throughout this period, in which payment cards play a key role, which largely offset the negative effects of the economic cycle on payment cards, but not the effects of the increase of the submerged economy

Between late 2005 and 2010, e-commerce using cards⁴² increased from 1,547.7 to 7,317.6 million euros, an increase of 472.8%. As in the same period total card transactions increased from 71,468.48 to 95,184.09 million, of which 23,715.66 million increase, 5,769.9 million corresponded to electronic commerce: 24.3% of the total growth in bank cards since the entry into force of the Agreement.

Although Spain is among the countries with a lower per capita use of cards (only 20 payments, compared to 31 in the Eurozone), this may improve as the population ages: by age profile, 40% of clients under the age of 30 make purchases with payment cards, compared with 18% of users over 60. Hence the volume of POS terminal purchases shows a steady increase, only interrupted by the recession of 2009: after 2010 they exceeded the historical peak levels of 2008.

Thus, despite the mentioned brake on total sales caused by the Agreement of 2005, the process of replacing cash with payment cards has continued. The advantages of cards over cash transactions are reflected in a dozen European studies over the past decade, mostly those of Central Banks (Dot-econ, 2011)⁴³. But this substitution - also confirmed by the official data from Spain's National Statistics Institute - was greater in the years prior to the Agreement of 2005, when sales at POS terminals increased each year between 0.8 and 1 points in overall household consumption, then slowed but did not fall even in the recession of 2009, so that in 2010 these sales reached almost 16% compared to 13.8% in 2005 and barely 11% at the beginning of the decade.

4.2 Banking: reduction of fees and increase in commissions

The application of the Agreement of 2005 reduced both the relative figures forecast as well as absolute figures of the two types of multilateral fees: the MSC, charged to merchants by banks and acquirers, and the interchange fees, paid by these to issuers. MSC were on average 1.52% of sales but dropped to 0.74% in late 2010. Interchange fees were 1.55% and declined to an average of 0.64%. In both cases, almost half of the entire reduction took place in the first year of the Agreement, 2006. Once the Agreement expired and the dynamics of the market were re-established, neither of the two rates changed in 2011, as both were left unregulated⁴⁴.

⁴² Comisión Nacional de Mercado de Telecomunicaciones. *Informe sobre el comercio electrónico en España a través de entidades de medios de pago*, IV Quarter, and Eurostat, *Internet Usage in 2010 – Households and Individuals*, nº 50/2010. On average, 69% of EU 27 citizens are Internet users and 53% use the Internet almost every day, although only 8% of EU online shoppers buy from merchants in another country. According to a study by the European Commission 31 (Mystery Shopping Evaluation of Cross-Border E-Commerce in the EU - Final Report), 60% of attempts to make credit card payments in cross-border shopping over the Internet are not successful owing to the rejection of Internet merchants to accept non-domestic credit cards. http://ec.europa.eu/consumers/strategy/docs/EC_e-commerce_Final_Report_201009_en.pdf. See also *Consumer 2020: From Digital Agenda to Digital Action*, Report of the European Commission, 23 May 2010, available at: http://ec.europa.eu/information_society/newsroom/cf/document.cfm?action=display&doc_id=750.

⁴³ Dot-econ. (2011). *Costly cash: a synthesis of international evidence on the cost of making payments*.

⁴⁴ Bank of Spain, *Memorias anuales de supervisión* 2006, 2007, 2008, 2009, 2010 and 2011, and quarterly statistics of payment methods at www.bde.es. These only offer averages of MSC, along with their minimums and maximum, but not interchange fees, even though in both cases they receive the published data of the three Spanish payment systems that signed the Agreement with the commercial sector.

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Table 4. Turnover of POS Terminals and average MSC and interchange fees

	2005	2006	2007	2008	2009	2010	TOTAL
POS terminal purchases	71,468.4	79,115.0	89,395.9	94,413.9	91,075.5	95,184.1	520,652.80
MSC	1.52%	1.13%	1.02%	0.88%	0.81%	0.74%	
Interchange fees	1.55%	0.94%	0.91%	0.81%	0.77%	0.64%	
Difference	-0.03	0.19	0.11	0.07	0.04	0.10	

Source: Our data plus data from the Bank of Spain.

A first observation is that the decline in interchange fees was greater than that of the MSC, so we can see that the issuing bank's income was reduced to the same degree compared with the acquiring bank. Revenues for the acquiring banks from interchange fees were slightly lower than fees transferred to the issuers (0.05 points less in 2004 and 0.03 points less in 2005). This "primary deficit" for acquiring entities rose in 2004 to 31.25 million euros and in 2005, the year of the Agreement, declined to 21.4 million euros as a result of discount revenue worth nearly 1,086 million and payments worth 1,107 million. But this corrected itself immediately. In the five years of the Agreement acquiring entities took in 4,078.74 million euros from MSC, and of that amount paid to issuers 3,632.39 million in interchange fees, thus obtaining a surplus of 446.35 million to compensate the acquiring banks for their work

Table 5. Banking revenue from fees

	2005	2006	2007	2008	2009	2010	TOTAL 2006-10
MSC	1086.32	893.999	911.838	830.84	737.71	704.362	4,078.74
Interchange fees	1107.76	743.681	813.502	764.75	701.28	609.178	3,632.39
Difference	-21.44	150.317	98.335	66.089	36.429	95.183	446.35

Source: Our data plus data of the Bank of Spain. In millions of €.

Consequently, in addition to benefitting retailers, the greater reduction in interchange fees with respect to MSC has enabled acquiring banks to avoid a deficit that would have risen to 136.8. Without the Agreement, discounts paid by merchants (6,827.6 million) would have been throughout this period lower than those generated by interchange fees (6,962.4 million).

Table 6. Overall fees without the 2005 reduction (merchants savings) million € and %

	2005	2006	2007	2008	2009	2010	Ahorros
Volume turnover	71,468.43	79,115.03	89,395.89	94,413.92	91,075.50	95,184.09	
MSC	1.52	1.52	1.52	1.52	1.52	1.52	
Income from MSC	1086.32	1202.548	1358.818	1435.092	1384.348	1446.798	2,748.85
Interchange fees	1.55	1.55	1.55	1.55	1.55	1.55	
Income from Interchange Rates	1107.761	1226.283	1385.636	1463.416	1411.67	1475.353	3,329.96

Source: Based on data from the Bank of Spain.

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4.2.1 Effects on acquiring banks and trade

In keeping the rates of 2005, the acquiring entities would have made 2,748.85 million euros more from MSC, an amount that necessarily would have had to come from the commercial sector. On the other hand, acquiring banks would have had to pay issuers 3,329.963 million, a figure greater by 581.113 million than the money brought in. Those 2,748.85 million have been the savings for commerce as a result of the 2005 Agreement.

The Agreement set a timetable for reductions of three types: 1) if the rates were intersystem or intrasystem (within or outside the network), 2) if the card was credit (percentage reduction) or debit (reduction in euros), and 3) by the expected turnover in two-sided contracts for each business with its accepting entities. The methodological objective was that, by substantially lowering interchange fees, the MSC would also go down. To differentiate between fees within or outside the system one should add to these the weighted average of interconnection costs, which despite being different, could be expressed as a fixed amount per transaction, up to a maximum of 0.06 euros.

Under the agreed schedule (see Table 1), reductions in interchange fees by almost a half in five years would be greater in proportion to sales volume. As in Australia, where the transitional period ended in 2008, interchange fees were to be set according to an analysis of audited costs, to be completed in July 2008; in its absence, the fees were to be applied for the following two years (2009/2010.) The analysis was presented, but as the Administration reached no decision, in the following months the same rates as in 2008 continued to be applied. Thus in 2009 the average discount rate barely fell from 0.88% to 0.81%; likewise in 2010 (to 0.74%). The biggest fall was from 1.52% in 2005 to 0.88% in 2008.

A first conclusion is that, before the Agreement promoted by the Government, the MSC applied in the market hardly changed, as they would not even in 2011. In the three years prior to 2005 only the maximum rates fell, although these declines were offset by higher minimums. The average remained unchanged at 1.59% from 2002 to 2005. After this point the average declined during the five years of the Agreement by more than 50% (from 1.52% to 0.74%).

Table 7. Average MSC by sector

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Food superstores	0.54%	0.65%	0.71%	0.67%	0.56%	0.55%	0.50%	0.47%	0.44%
Other superstores	1.63%	1.42%	1.37%	1.28%	0.77%	0.72%	0.63%	0.56%	0.50%
Gas stations	0.68%	0.68%	0.70%	0.72%	0.70%	0.70%	0.69%	0.68%	0.65%
Supermarkets	1.15%	1.20%	1.21%	1.21%	1.14%	1.08%	1.02%	0.95%	0.88%
Travel agencies	1.57%	1.59%	1.59%	1.61%	0.93%	0.78%	0.75%	0.69%	0.68%
Highways	2.32%	2.30%	1.89%	1.76%	1.80%	1.71%	1.68%	1.48%	1.34%
Pharmacies	1.59%	1.52%	1.50%	1.46%	1.26%	1.16%	1.04%	0.93%	0.82%
Hotels	1.83%	1.78%	1.75%	1.76%	1.41%	1.24%	1.09%	0.98%	0.91%
Drugstores	2.21%	2.24%	2.17%	2.10%	1.45%	1.25%	1.09%	0.98%	0.91%
Restaurants	2.43%	2.45%	2.42%	2.31%	1.68%	1.45%	1.25%	1.11%	1.00%
Transportation	1.70%	1.79%	1.83%	1.82%	1.38%	1.02%	0.73%	0.72%	0.65%

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Jewelry	2.51%	2.42%	2.31%	2.21%	1.49%	1.30%	1.12%	0.98%	0.90%
Vehicle rental	2.48%	1.76%	1.67%	1.63%	1.37%	1.24%	1.11%	1.05%	0.99%
Casinos	2.04%	2.10%	2.35%	2.08%	1.36%	1.21%	1.13%	1.07%	1.03%
Leisure and Entertainment	1.82%	1.91%	1.87%	1.83%	1.51%	1.29%	1.15%	1.06%	0.94%
Post & Telephony	2.97%	2.77%	2.46%	2.46%	1.81%	1.51%	1.31%	1.10%	1.03%
Massage, sauna, disco	3.48%	3.29%	3.02%	2.91%	2.33%	2.07%	1.79%	1.56%	1.37%
Retail	1.58%	2.08%	2.19%	2.10%	1.47%	1.27%	1.09%	0.97%	0.88%
Discount stores				1.77%	1.71%	1.59%	1.42%	1.35%	
Charities					0.61%	0.58%	0.49%	0.51%	0.43%
Other business	1.96%	2.09%	1.98%	1.98%	1.58%	1.42%	1.15%	1.10%	0.99%
Maximum	3.48%	3.29%	3.02%	2.91%	2.33%	2.07%	1.79%	1.56%	1.37%
Minimum	0.54%	0.65%	0.70%	0.67%	0.56%	0.55%	0.49%	0.47%	0.43%
Average	1.59%	1.59%	1.59%	1.52%	1.13%	1.02%	0.88%	0.81%	0.74%

Source: Based on data from the Bank of Spain.

Consequently, the cross-transfers attributed by the economics literature were realized to a greater extent in the sectors that achieved lower maximum rates without increasing minimums, clearly correlated with those of interchange fees. Highways and gas stations, along with supermarkets and food, are the sectors that yield lower rates, while the greatest rates can be observed in the massage, sauna, discos, casinos and jewelry sectors. There was some convergence of maximum and minimum rates, respectively at around 1.56% and 0.47%. The level of the variable decreased in addition to its variability. This implies a reduction in rank: the difference between minimums and maximums was 2.24 points in 2005 and only 0.94 points in 2010.

The decline fulfilled the objectives and demonstrated the instrumental nature of interchange fees. The agreed timetable ended with these at an average of 0.61% for credit cards, and 0.22 euros for debit cards within the same network. Between different networks, the respective mean values were 0.78% and 0.29 euros respectively.

4.2.2 Responses of the issuing banks: control over the acquiring entities

The issuing entities balanced these reductions in income in interchange fees received by the accepting banks with increases in almost all of their card commissions. Even credit card interest was raised, until it was checked and almost cancelled out by the recessive economic situation from 2008 onwards. Adding both, we estimate that revenues from banking cards were 2,929.5 million in 2005 and 3,096.15 million in 2010.

These estimates are derived from the averages calculated and published by the Bank of Spain on the basis of data received from each entity. Although some entities declare commissions that they later condone or do not charge their clients, a practice that may have increased with the crisis, these estimates approximate not only to the fee reduction, but also to the increase in commissions estimated from actual revenues included in the profit and loss accounts of the sector.

Of course, other factors prevent attributing a causal relationship with the lowering of interchange rates and MSC. The impact of default on the cost of the cards, the increases added to the cost of bank financing, lack of liquidity and the requirements of higher capital

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ratios on assets have also been other variables that have influenced the increase in commissions, as well as the launching of new services.

While acquiring banks reduced the volume of interchange fees to the emitting entities by almost 500 million euros a year (from 1,107.76 in 2005 to 609.18 in 2010, according to Table 5) to offset the loss of up to nearly 400 million in MSC, net income for all types of fees and commissions barely changed. This was 2,268.03 million in 2005 and 2,136.78 in 2010, according to our estimates based on data published by the *Bank of Spain* on its website and in its monthly statistical bulletins. Additionally, interest income increased from 661.12 to almost 959.37 million in the same period.

So, to compensate for lower earnings from interchange fees and MSC and other factors, banks and savings banks have more than doubled their additional revenue annually⁴⁵. In the table below we consider the evolution of net fees and commissions on cards. Interest income from credit cards, in the absence until now of information from the Bank of Spain or other banking entities, has been estimated by exclusion, since in June 2010 statistical requirements regarding the types of interest charged by banks to their customers⁴⁶ were amended and as a result were left out of credit card transactions.

Table 8. Revenue from fees and bank card commissions (without interest)

	Net	Gross	% Cards	Net cards	Gross cards
2005	10904	13143	20.8%	2268.032	2733.744
2006	12244	14519	17.4%	2130.456	2526.306
2007	13594	16225	16.2%	2202.228	2628.450
2008	13026	15555	16.9%	2201.394	2628.795
2009	12163	14630	16.5%	2006.895	2413.950
2010	11871	14415	18.0%	2136.780	2594.700
Total				12945.785	15525.945

Source: Based on data from the Bank of Spain. The percentage of income from cards has been obtained from the information shown in Appendix No. 3.

So then, for the first time it could be deduced that interest and commissions related to consumer credit cards totalled 2,137 million per year. This estimate could be derived from the fact that the average rate of consumer credit published in May 2010 was 6.98%.

Given the sudden drop of 0.99 points solely as a result of this statistical change, we can see the cost of credit cards in terms of APR (annual percentage rate, amount of interest

⁴⁵ The only time the Spanish Banking Association broke down the data of card commissions was to present the accounts up to March 2009, concerning the worst year in recent decades. The most important of these commissions were and are still "marketing of non-banking products," such as mutual funds and pension plans, along with commissions of the "collection and payment services," most notably credit cards and debit cards, which nevertheless in the quarter reached 18% of all banks and savings banks commissions. See Corral de la Mata, Daniel (2009), *Nuevo enfoque del negocio de tarjetas bancarias en el sistema español de medios de pago*, Facultad de Ciencias Jurídicas y Sociales, Universidad Rey Juan Carlos, doctoral thesis, p. 141 and after.

⁴⁶ The Circular of the Bank of Spain 1/2010 of 27 January, modified Circular 4/2002 on interest rates applied by credit institutions to deposits and loans to households and non-financial entities, to adapt it to the changes introduced by Regulation (EC) 290/2009 of the European Central Bank of 31 March. The new Circular provides greater detail relative to new lending. This new information will begin to be published when sufficiently representative data series become available. In addition, the new Circular amends certain criteria that affect the classification and content of certain transactions, causing the resulting breaks in data series. Thus, the data series to May 2010 inclusive, which was called "Overdrafts", also includes, as of June 2010, credit lines and has been renamed "Overdrafts and credit lines" (previously credit lines were included along with other credit transactions). Moreover, in the case of credit lines, the new Circular considers the amount outstanding at the end of each month a "New transaction", and not the amount of credit granted in the month, as before. These changes are reflected in the data of interest rates and in the amount of the new concept "Overdrafts and credit lines". Finally, the changes in the new Circular significantly affect the data of "Consumer credit up to a year" which, from the June 2010 data, does not include credit transactions by credit card.

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and commissions)⁴⁷. Distinguishing what part was from interest and what part for commissions can only be done by approximation. We estimate interest in 2010 as being almost 960 million, some 300 more than in 2005.

Table 9. Revenue from consumer credit interest and cards

	Consumers credit	Card fees	Card financing	Average rates	Interest income from cards
2005	84.354	12.50%	10,544.25	6.27%	661.12
2006	104.445	13.10%	13,682.30	7.32%	1.001.54
2007	114.462	14.50%	16,596.99	8.34%	1.384.19
2008	110.092	14.70%	16,183.52	8.83%	1.429.01
2009	110.101	14.50%	15,964.65	6.96%	1.111.14
2010	107.916	14.00%	15,108.24	6.35%	959.37

Source: Our estimation of credit series and rates of the Bank of Spain with assessments of rates carried out by various consultants. In the case of consumer accounts, both concepts - commissions and interest rates - should not lead to APRs greater than 250% of statutory interest (4% in 2005 and 2006, rising to 5% in 2007 and 5.5% in 2008, up to 04.04.2009, when it returned to 4%, excluding specific rates derived from legal cases and late tax payments).

This development altered the economic structure of bankcards, whose main source of income was trade and is now consumption. It has thus passed from an acquiring business to an issuing business. Various consultants and companies (Tatum⁴⁸, DBK, Visa Europe, etc.) estimated at the beginning of 2006 that cards represented 12.5% of the amount of the funding balances of consumption in Spain. 40% were personal loans, another 22% single-purpose loans and 25.5% were motor vehicles. But the biggest source of income was trade (around 37% of revenue), followed by interest income (26%) and fixed commissions (22%), and the rest ATMs or automatic sales, with 2% claims commissions, currency exchange, and so on. Following the Agreement, cards represented 14%⁴⁹, reaching nearly 15% before the recession in 2009, while weighted types of consumer credit (which rose during the recession from 7.56% to 7.77% and in January 2009 were 8.11%, to reach 8.90% a year later), indicating an immediate tendency on the part of the financial entities to seek compensation for the reduction of MSC and interchange fees. Thus, for an issuing financial institution with a mixed business, if the 26% of financial income is added to that of the 22% of card fees (taking into account their recent increases), consumption accounts for more 50% of card revenue.

The distortions have affected households on many fronts, by raising their outstanding card debts despite the reduction of the total volume of debts in the face of the scarcity of loans, in addition to curbing the demand for private consumption when it was needed to combat

⁴⁷ The exact definition provided by the Bank of Spain in its Monthly Statistical Bulletin is the "weighted average of all maturities, which equals the total cost of borrowing. This total cost comprises an interest rate component and a component of commissions." In some of these publications the BoS recognizes that these commissions are included in "other annual expenses." Thus the APR is differentiated from the NDER (narrowly defined effective rate), which equals the APR without including commissions.

⁴⁸ Tatum, *¿Cómo está evolucionando el negocio de los medios de pago? ¿Por qué se ha reabierto la guerra de tarjetas? (How is the business of payment methods evolving? Why has the card war been restarted?)*, September, 2007 http://www.tatum.es/publicaciones_consultapublicacion.asp?pmid=225

⁴⁹ This 14% deduced from Bank of Spain statistics matches the data provided by the MasterCard Barometer published last November, according to which a credit card customer spends an average of 338 euros per month. 60% use their card once a month. The debit card holder spends 300 euros per month, using the card 3.23 times per month. Precisely for this cost growth one of the most striking facts of the study is the reduction of deferred payment with interest, which fell to pre-crisis levels: 14.1% opted for this type of payment, a figure similar to 2006 and 36% less than the previous year. According to the study, Spanish customers say they increasingly use credit and debit cards for purchases in shops. The number of consumers reporting using debit cards has increased by 8.9% compared to 2010, reaching 77.2%. Also the number of consumers using credit card in stores has increased, reaching 84.8%. Finally, there is a tendency to finance an acquisition for amounts from about 100 to 300 euros. However, 40% never consider doing this.

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the recession and interest rate policy was bearish. The Survey of Household Finances (*La Encuesta Financiera de las Familias*)⁵⁰ prepared by the Bank of Spain every three years, indicates that between 2005 and 2008 families with credit card debt rose from 2% to 7.3%⁵¹, although the percentage of those who had any kind of debt only rose from 49.5% to 50.1%.

Table 10. Families with credit card debt according to employment

	2005	2008
Employed	3.2%	12.7%
Self-Employed	1.1%	4.7%
Retired	0.4%	1.9%
Inactive - Unemployed	1.3%	3.9%

Source: Based on data from the Bank of Spain.

The new predominance of the issuing bank over the acquiring bank stems from when during the five years of the Agreement they increased their commissions for annual issuance fees and card renewal by 855 million euros, from 1,116.7 million in 2005 to 1,972.5 million in 2010.

Table 11. Income from annual issuance and renewal fees

	Millions of cards		Annual fees (Millions €)		Increase
	2005	2010	2005	2010	
Debit	31.83	28.62	353.949	495.126	141.176
Credit	33.25	42.96	762.755	1,477.394	714.639
Total	65.08	71.58	1,116.704	1,972.520	855.815

Source: Based on data from the Bank of Spain.

These estimates and others are included in Table 8 in the net income of cards with interchange fees and MSC. They are consistent with those earlier, although they were estimated using another method: multiplying the number of cards by annual fees. Although Spanish law allows the institutions to set fees freely, each entity must include them in contracts signed with its customers and, in the case of card contracts, any change has to be communicated individually to each customer prior to its implementation. The Bank of Spain publishes maximum and minimum fees (although it does not provide information about the services charged) which enables us to estimate that the average annual fee for credit cards has grown from 22.94 euros in 2005 to 34.39 euros in 2010, an increase of 11.45 euros, while the average fee for debit cards rose from 11.12 euros to 17.3 euros, an increase of less than 6.18 euros a year.

⁵⁰ The household financial survey is conducted with a sample of nearly 6,000 consumers (5,962). 72.4% state that for the year 2008 they had at least one credit card. But not all use them regularly: 59.39% state they use the cards for an average of 10.32 payment transactions per month, for an average total of 1,336.7 euros per month.

⁵¹ Bank of Spain (Eurosistema), *Boletín Económico* 12/2010, p. 54 and 55. The EFF also includes information on other debts, besides those involving the purchase of principal residence and other real estate. The main reasons for contracting other debts are carrying out home improvements, investment in real estate assets, financing businesses and the purchase of vehicles and other durable goods. The types of debt that are contracted for these purposes are generally secured debts (including mortgage guarantees different from those used for the purchase of the main dwelling or other real estate), personal loans, credit card debt and other types. Specifically, lines of credit, deferred payment, advance payments, loans from family or friends, debit balances on current accounts, leasing or renting, and others that are not specified.

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There are many other sources of bank income, which are as changeable as the services they provide, although less important. These are estimated in Table 8: the issuing bank receives interchange fees from the acquirer, but sometimes pays to the acquirer interchange fees of ATMs, which work in reverse. Other banking income involves the provision of cash credit at ATMs, fees for debt reclamation, currency exchange in cross-border transactions, excess credit limits and many other commissions. For their part, as well as commissions from merchants (MSC, interchange fees ceded) and self-service fees (interchange fees received from ATMs), acquiring banks and saving banks apply fees for installation and maintenance of POS terminals, though some feel that this is less relevant in the Spanish market than in other countries.

However, the above figures and those contained in the following sections on merchants and consumers are consistent with samples taken of commissions of the top five banks and savings banks (which account for most of the market) by the authors of this research in late 2005 and the end of 2011, as summarized in Appendix 3, as there are entities that charge up to one hundred and fifty different types of commissions⁵² related to payment cards. The main increases outside fixed quotas were in commission claims and foreign exchange. They had little impact on total revenue estimated above. But they are significant in that they had become widespread among banks at the end of the term of the Agreement of 2005.

4.2.3 Controversy on cross-border fees

In general, as indicated in the Seventh Status Report of SEPA, the position of the Eurosystem is neutral on interchange fees. This is a matter that falls within the remit of the European Commission, although it considers that if the SEPA project is to succeed it is essential that all countries in the eurozone can issue, acquire and use cards to make payments in euros without any geographical differentiation. But the fact is that euro notes and coins were successfully introduced in 2002, and the SEPA for electronic payments has not yet been set up. In this context one of the most important disputes lies in whether or not to regulate on the level and the alignment of cross-border interchange fees.

This debate also focuses on the reason for the existence of interchange fees as a motor for other driving forces, such as innovation, transparency and control of payments, the struggle against the underground economy and the lower cost of cards compared with cash. Many agents believe, like most banks, that it is not necessary to align European fees, nor intra-regional or domestic fees. Carrying out such alignments without regard to, amongst other things, the various operating costs or interest rates or delays, for example, would create imbalances in the whole system and each of its parts, as described above in the case of Spain. Thus, the predominant idea is that a forced equality in interchange fees would have negative effects on the entire industry, the economy and society as a whole.

The structure and level of interchange fees applied in different EU states differ⁵³. Domestically, in many countries they were established bilaterally⁵⁴ or multilaterally⁵⁵ by

⁵² On July 8, 2010 Order EHA/1608/2010 of 14 June (*Orden EHA/1608/2010, de 14 de junio*) entered into force, on transparency of conditions and requirements applicable to payment services, which in its second additional provision establishes that the transparency of payment services subject to Law 16/2009 of 13 November (*Ley 16/2009, de 13 de noviembre*) on payment services (transfers, arrears and direct debits, current accounts and savings and card transactions), shall be governed exclusively by its provisions and not by the Order of December 12, 1989 on interest rates and fees, rules of conduct, information to clients and advertising of credit institutions, which was previously in force.

⁵³ Börestam, Ann and Schmiedel, Heiko, *Interchange fees in card payment*, European Central Bank, Occasional paper series no. 131/September, 2011.

⁵⁴ Bilateral interchange fee: a rate of exchange agreed between two parties in a system to process payment card transactions, only for payments between these parties in relation to transactions within this system

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payment card schemes. Most countries without a domestic operator allow Visa Europe and MasterCard to provide the service. At the cross-border level, Visa Europe and MasterCard also set the default interchange fees applicable in the domestic market if there are no bilateral or multilateral agreements. But for more than a decade the European Commission and some national regulators have acknowledged that this affects competition. The debate is whether there are agreements or decisions between companies or associations, who are abusing their dominant position. The Commission has stated that this is the case and the Court of First Instance in Luxembourg ratified this in May 2012. Now this will be debated at higher instance courts if MasterCard decides to appeal.

These cross-border interchange fees have been reduced by various administrative and judicial decisions (Case No. COMP/29.373⁵⁶ and No. COMP/34.579 MasterCard, COMP/36.518 Euro Commerce and COMP/38.580 business cards)⁵⁷. Visa gradually reduced them to 0.7% in 2007 for deferred debit and credit cards with the immediate effect for debit of 0.28 euros⁵⁸. But in April 2009, the Commission insisted, and in April 2010, Visa agreed to cut rates further by 0.2% for debit over a period of four years, and in December 2010 the Commission made this legally binding for four years⁵⁹. A similar situation affected MasterCard from June 2006; it was declared anti-competitive in December 2007 and it appealed to the Court of First Instance⁶⁰, after which it reached an agreement with the European Commission pending the decision to reduce interchange fees by 0.3% for credit cards and 0.2% for debit cards.

Table 12. Comparison of cross-border fees 2005 - 2010

Year	Cross-border (AEE)	
	Debit	Credit
2005	Credits	
	0.70%	1.90%
	Debit	
	0.28€	0.75%
2010	Credit	
	0.70%	0.30%
	Debit	
	0.2% December	0.20%

Source: Our data.

The most noteworthy aspect of this controversy is that, if guidelines imposed by the European Commission on Visa and MasterCard are re-established, as well as recommendations made to various governments, domestic interchange fees should tend in the next few years to hold at levels imposed by Brussels for cross-border fees, which are

⁵⁶ Multilateral interchange fee: an exchange rate that is determined by the processing system for payment card transactions and which applies to transactions in the system to members in the absence of a bilateral agreement.

⁵⁷ Available at: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_29373

⁵⁸ Available at: http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_34579

⁵⁹ It is not possible to disclose the levels of the multilateral interchange fees (MIF) in force prior to the agreement of these reductions, since Visa considers them a trade secret; however, Visa estimated that the effect of the changes (including debit, deferred debit and credit cards) on income earned by the issuing banks thanks to the MIF on cross-border transactions meant a decline in such revenues of more than 20% over the five year period 2002-2007.

⁶⁰ Decision of the Commission of 8 December 2010 on procedures under Article 101 of the Treaty on the Functioning of the European Union and Article 53 of the EEA Agreement (Case COMP/39.398 - Visa MIF).

⁶¹ Since the 1st December 2009 the Court of Justice of the European Union.

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comparatively the lowest in the world: around 0.30% on credit cards and 0.20% for debit cards. Because of the increasing dominance of the former, over the next few years of enforced convergence a weighted average of close to at least 0.28% should be reached, less than half the 0.64% imposed in Spain by the 2005 Agreement. We estimate that this would represent an additional income reduction for issuing banks of another 370 million euros a year until the end of the process. If what has been found in this research is repeated, given the resistance of merchants to assume that extra cost, banks and savings banks will be obliged to accept lower profits or losses if they cannot offset these lower revenues with larger increases in commissions and higher interest rates for consumers, with all the other associated negative effects for the system as a whole, the economy and European society in general. That is, it will further upset the balance of remunerations of the four-party system, accentuating the distortions and disincentives introduced therein by the Agreement of 2005.

We have said that banks would be forced to accept losses or lower profits as the result of reduced income from interchange fees, because the difficulty of passing this on to clients (consumers or merchants) has increased during the current crisis. A detailed analysis of recent trends in their profit and loss accounts shows that such a policy in Spain is showing symptoms of exhaustion, just when the need to seek new resources to offset the rising cost of its liabilities is at its greatest; hence the spread of the "no commission" policy already launched by leading entities.

There are two basic reasons for this change in the making. In addition to the fact that the draft circular on transparency of banking services will force banks to disclose not only the brochures but the fees actually charged (as prescribed in Section 13 of the document circulated by the Bank of Spain), their profit and loss accounts during the current crisis show that banks have been left without margins to compensate via fees for the drop in product revenue. For the entire banking system this drop is around 50,000 million euros per year (from 147,000 in 2008 to 87,000 million in 2011), equivalent to 5% of the Spanish GDP. The amount of this fall in financial revenues is almost double total staff costs. Every day banks find it more difficult to compensate for this by reducing financial costs and fees, since from 2011 the average cost of liabilities stopped falling and began to increase dramatically because of the rise of the Spanish risk premium, which derives its bank risk from sovereign risk, a process whose limitation is today one of the priorities of European institutions.

Table 13. The crisis reduces the benefits of banking by 90%

RESULTS OF CREDIT INSTITUTIONS 2008 TO 2011 (a)				
	2008	2009	2010	2011
Financial products	147,846	107,344	80,401	87,693
Financial costs	-110,237	-61,819	-43,920	-55,661
Interest Margin (MI)	37,609	45,525	36,481	32,032
Comissions (net)	13,823	13,017	12,721	12,428
Service charges and payments (net)	6,456	5,866	5,447	5,298
Servicio de valores (revenue)	1,306	1,193	1,305	1,417
Non-banking products (revenue)	3,899	3,170	3,325	3,248
Liabilities and commitments (net)	1,603	1,651	1,757	1,797

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Foreign exchange (revenue)	58	47	51	56
Other commissions (net)	501	1,091	836	612
GROSS MARGIN	70,048	70,990	66,430	59,318
Administration costs	-28,612	-28,200	-28,311	-27,603
Staff costs	-18,504	-18,258	-18,201	-17,534
PRE-TAX PROFIT	20,266	14,821	10,201	-582
Income tax	-1,850	-1,466	-296	2,485
INCOME	18,351	13,310	9,875	1,881
Average return on earning assets (%)	5.58	3.9	2.9	3.22
Average cost of onerous liabilities	4.19	2.27	1.61	2.06
Return on average equity (c) — — — —	10.93	7.25	5.27	0.95

Source: Bank of Spain. Data available at April 20, 2012. a Data in this table refer to institutions active at some time in 2011. The structure of the table and the data have been prepared in accordance with the CBE 6/2008 of November 26, amending the CBE 4/2004 of 22 December on standards of public and private financial information, and models of financial statements.

4.3 Effect of the reduction of MSC on merchants

The fundamental rationale used by the authorities to reduce the merchant service charge by lowering interchange fees was that it would benefit consumers through lower prices and improved quality of services provided by the merchants. The empirical evidence denies such causal relationships.

The economic crisis has certainly driven down some prices since 2008, by causing sharp declines in domestic demand, both in consumption and investment. Unemployment, moderation of income and the impact of poverty on real estate valuations, combined with negative expectations, have affected private consumption, an effect aggravated by the raising of VAT in July 2010. Given all this, retailers, especially of clothing, footwear, household items and furniture, have implemented large price discounts, as also have as travel agents. Such transactions are generally paid with credit cards.

It is therefore very difficult, a priori, to strictly separate the drop in prices caused by falling demand and that which corresponds to the reduction of MSC. To overcome this quantitative difficulty, and in the absence of relevant statistics, we designed a survey that sought to study in depth the final impact on consumers. The form is shown in Appendix 4. However, given the low response rate and lack of representativeness, the results have in the end not been used.

Therefore, the only data available are those shown in Table 6; business has saved 2,748.85 million as a result of the Agreement of 2005, without any empirical evidence indicating that these savings have translated into an improvement in the quality of service. But there is evidence, on the other hand, that business itself has suffered the compensatory reactions of the banks to protect itself from the fall in income, although with little impact overall: there have been substantial increases by the acquiring banks in the fees for installation and maintenance of POS terminals. Table 14 below shows the commissions declared by the most important entities. There is no data on actual receipt or remission of fees.

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Table 14. Fees charged to merchants for POS terminals (in €)

	2005	2011
Bank 1		
Installation or set up of POS terminal	50	200
Maintenance of bank property/month	5 (quarterly)	50
Rental of portable POS terminal	50	50
Bank 2		
Initial fee	300	300
Billing equal to or more than 300 € or 10 transactions*/month - POS terminal		15
Fixed/month - POS terminal	25	
Potable/month - POS terminal	50	
Saving Bank 1		
Installation or set up of POS terminal	60.1	150
Billing equal to or more than 300 euros or 10 transactions/month - POS terminal	20	20
Billing less than 300 euros or 10 op/month - POS terminal	40	40
Portable / month - POS terminal		30
Portable	48.08	50
Saving Bank 2		
Installation or set up of POS terminal	300.51	300.5
Maintenance of bank property/month	60.1	61
Management of transactions charges		
Bank 3		
Maintenance / year	120	120
Rental of portable POS terminal/month	30.05	30.05

Source: Based on data provided by banks to the Bank of Spain.

Evans and Mateus (2011)⁶¹, who estimate the impact on consumers of the reduction of interchange fees in Europe, endorse these findings. They point out that according to both economic theory and empirical evidence, in highly competitive industries with constant returns to scale, firms transfer 100% of changes in costs to consumers. However, in other situations, as in the case of Spain, this percentage depends on market structure, demand, costs and the nature of the competition.

In the card payment market, when interchange fees go down, costs tend to decline as well. The question to address is how to pass on to consumers the cost savings in interchange fees for the acquiring bank. We have seen that in the five years of the Agreement, these total savings (3,330 million) were higher than those from the MSC (2,749 million), so there would have been a margin of almost 500 million to pass on to business, and therefore to consumers. But so as not to save so many costs the acquiring Spanish banks even increased fees of such minor impact as those applied to POS terminals.

⁶¹ Evans, S. D and Mateus, A, *How changes in payment card interchange fees affect consumers fees and merchant prices: an economic analysis with applications to the European Union*, 2011., <http://ssrn.com/abstract=1878735>

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In any case it is already been noted in the literature that that theoretical transfer is not necessarily produced in the same amount. The reason is that merchants generally have access to few acquiring banks. However, some merchants are large companies with a significant sales volume in their respective sectors. These can exert significant buying power, so that the negotiation of MSC and commissions changes proportionate with interchange fees. In the case of small merchants, economic theory suggests that, a priori, acquiring banks would transfer only a portion of the cost savings to the MSC paid by small and medium merchants. This seems to have happened in the light of the results shown in Table 6.

It is even more complex to try to estimate what percentage of the reduction of interchange fees has an impact on the final price paid by consumers. In fact, it depends not only on the sectors – for example, the hospitality industry is more competitive than the supermarket sector, where the offer is smaller - but also on companies in the sectors themselves, in terms of the strategies they adopt, such as differentiation. Studies conducted in Europe estimate a 50% variation in MSC in the long run. Evan's and Mateus' conclusions regarding merchants are:

- a) Merchants would be able to obtain from acquiring entities less than 100% of the reduction of interchange fees. Those with more business could get 100%, while smaller ones would get less than 100%.
- b) Merchants would not immediately reduce prices paid by consumers, given that this reduction would be insignificant in certain transactions.

In the case of Spain, given the low incidence of the reduction in the MSC in the average card transaction, everything indicates that there has been no reduction whatsoever passed on from merchant to consumer. We must also bear in mind that the average card transaction was 52.1 euros in 2005 and 44.3 euros in 2011. Thus, the total reduction for each transaction in this period was 40 cents, that is, about five cents a year. This signifies a minimum percentage of the rate reduction on the price - almost negligible - so that as a result of this there would be no discount on the price.

The refusal of most merchants associations to respond, as well as their contradictory answers, make it clear that the reduction in interchange fees has had no impact on final prices: it has not been passed on to customers.

4.4 Effects on consumers

Besides the data given above and which we will now develop regarding sharp increases of commissions and increased card interest costs, the qualitative methods we use to contrast all this data also endorses the failure of the basic objective of the Agreement of 2005: that the fall in interchange fees would benefit consumers in terms of prices and quality.

4.4.1 Survey of Consumers and Users Associations

We conducted interviews among the most representative consumer and users organizations at a national level. We contacted twelve organizations, of which seven replied, all from the National Council of Consumers and Users. After explaining the context, we posed the following questions:

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1. Do you think that the business sector has reduced the prices of its products or services and/or improved their quality as a result of the reduction in interchange fees over the period 2006-2010?
2. Do you think that there was a greater display of technological development in electronic card payments over the period 2006-2010?
3. Have you seen an increase in maintenance fees of credit and debit cards charged by banks to users during this period?
4. Do you think rewards attaching to payment cards such as points, insurance, discounts, promotions, etc. have fallen, have remained steady, or have increased during this period?
5. Do you think that there has been an improvement in competition in payment cards as a result of the Agreement?

The findings of the interviews reveal that all the consumer organizations have a similar perspective in most areas, as well as being up to date with events, as the following summary of responses suggests:

1. All are fully agreed that the reductions in interchange fees have not been passed on to consumers. Nor do they identify any decline or improvement in the services provided by the commercial sector as a result of lower MSC. Also they consider that the maintaining of prices is only and exclusively due to the effects of the economic crisis of the last two years.
2. As regards technological development in electronic payments, all agree that there has been minimal innovation, and whatever innovation there has been is linked to issues of security in electronic transactions, such as the introduction of chip payment cards. Security, on the other hand, is already guaranteed or by the brands.
3. With respect to an increase in annual payment card fees, all the consumer and user organizations maintain that there has been a significant increase, with some increases being branded as "exaggerated".
4. With reference to rewards, special offers and promotions, the general opinion is that these have not increased. In contrast, most consider them poorer than before. Marketing and advertising are felt to have increased, but only to win more customers.
5. Finally, the majority considers that there has been no improvement of competition.

Table 15. Summary of responses from consumer organizations

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	Price reduction / Improvement of services provided by merchants	Technological development	Increase in annual card fees	Increase of rewards	Improvement of competition
ADICAE	No positive effects on trade to the consumer. They have neither lowered prices nor improved services.	The Agreement was for nothing. Chip cards were brought in, promoted by the EC (SEPA).	Clear increase in card fees due to lower interchange fees.	Not observed. Increase in marketing and advertising, with lower fees and flat rates to preferred customers.	Weak, rather restricted banking competition. This has worsened the situation of consumers.
CEACCU	Neither a lowering of prices nor an improvement in services. The crisis has caused a reduction in prices.	If there was anything it was minimal and it is not perceived as having improved competition.	An increase, though with preferential treatment offered to some clients. Recent increases of 4% and 9% in debt on credit. But 34% in credit and 7% in debit in ATMs from the network.	These are maintained to retain customer loyalty and sell other products	Neither better, nor worse. Operators stay the same, without passing on competitive benefits to consumers.
CECU	No passing on of reductions in interchange fees or MSC to consumers. Neither a lowering of prices nor an improvement in services.	Some improvements such as micro-chip cards and better terminals, but only for security reasons.	A widespread increase in annual card fees paid by consumers.	Some improvements are identified in promotional benefits from the use of cards	There are new cards. The market is more competitive and diversified.
HISPACCOOP	Neither a lowering of prices nor an improvement in services.	Introduction of chip cards, but no other developments. Only an improvement in security.	Increased commissions. Transfer of interchange fees to annual fees paid by consumers. The organization recommends using cards as little as possible in times of crisis.	Reductions of 10% -8% in discounts. Loyalty cards must meet certain requirements that reduce their advantages.	Not improved: operators remain the same.
FACUA	There has been no fall in prices as a result of the drop in interchange fees. Prices have fallen due to the crisis.	Progress has been relatively slight and this is not linked to the facilitation of transactions.	No conclusive data are available, but users are more dissatisfied and there are more complaints concerning in creased fees	Not very relevant, more as a marketing and business strategy. It has not changed and there may be a lack of better deals.	Users do not see it, and believe that behaviour has not changed. Few offers are transferred to the consumer, but a lot of products are.

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FUCI	Prices have risen and consumers are conscious of this. Lowering of fees has not been passed on to consumers.	No technological improvements and we are behind in security issues.	Strong increase, that in some instances have reached 600%	Few if no promotions; they are common and have lost their value because of their lower quality.	As consumers it is something we are unaware of and we believe it is the traders who should know about this.
	Benefits of the reduction in interchange fees have not been passed on to consumers – on the contrary. Neither a lowering of prices nor an improvement in services.	The only improvement has been the chip. The magnetic strip is maintained, with the security risk it entails.	Card fees have increased in an exaggerated way.	They have not improved.	Competition in the sector has not improved. No new card issuers have entered the Spanish market
OCU					

Source: Our data based on surveys of each organization.

4.4.2 Estimations derived from commissions brochures

The estimations derived from commissions brochures of each entity published by the Bank of Spain are more categorical when quantifying the increase in fees than are consumers or consumers organizations, perhaps because banks may waive fees according to the bargaining power of certain customers. The issuing fee went from 22.94 euros to 34.39 euros for credit cards, an average increase of 11.45 euros⁶². If the average fee is multiplied by the number of cards there has been a steady increase, up from 171 million euros in 2006 to 492 million in 2010. The cumulative sum of this fee alone reaches 1,727.844 million.

Table 16. Average annual fees and simulated revenue for credit cards (in €)

	Annual fees: CREDIT CARDS*			Millions of cards	Annual revenue*	Fee revenue 2005*	Difference (A) - (B)*
	Average	Maximum	Minimum				
2005	22.94	35	13.52	38.25	762.755	-	-
2006	27.39	40	13.52	38.49	1054.241	882.961	171.281
2007	28.43	40	13.52	43.49	1236.421	997.661	238.760
2008	31.25	47	13.52	44.82	1400.625	1028.171	372.454
2009	33.30	47	13.52	43.77	1457.541	1004.084	453.457
2010	34.39	47	13.52	42.96	1477.394	985.502	491.892

Source: Based on data from the Bank of Spain. Fees to December of each year.

* Millions.

Using the same type of analysis, the increase in annual fees for debit cards has been 55.57% for the average fee: from 11.12 euros to 17.30 euros per card, with an increase of

⁶² This increase in annual credit card fees has not stopped. As a curiosity, as of 2011 the average fee stands at 37.71 euros per card, that is, the average fee at this date is greater than the maximum credit card fee that was paid prior to the Agreement in December 2005, which was €35.

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9.82 euros on average⁶³. This would have raised the total cost to consumers during the period by another 622.230 million euros.

Table 17. Average annual fees and increases in debit cards

	Annual fees: DEBIT CARDS			Millions of cards	Annual revenue*	Fee revenue 2005	Difference (A) - (B) *
	Average	Maximum	Minimum				
2005	11.12	18	4.51	31.83	353.972	-	-
2006	13.21	20	4.51	31.58	417.172	351.170	66.002
2007	13.71	20	4.51	31.47	431.454	349.946	81.507
2008	15.16	23	4.51	31.57	478.601	351.058	127.543
2009	16.66	25	4.51	30.74	512.128	341.829	170.300
2010	17.30	25	4.51	28.62	495.143	318.266	176.878

Source: Based on data from the Bank of Spain. Data of fees to December of each year.. *Millions

To all this we would have to add the effects of increases in other fees and interest rates, discussed in the section on issuing banks. But it is rather clear who is the principal victim of the 2005 Agreement, and there is no evidence to suggest that either price or quality have been improved for the consumer, and not even competition has benefitted.

⁶³ As we pointed out with regard to annual credit card fees, the evolution of annual debit cards fees has not stopped. It is interesting to note that, as of November 2011 the average fee stands at €20.25 per card; that is, the average fee at this date is greater than the maximum debit card fee that was paid prior to the Agreement of December 2005, which was €18. But it is also greater than the maximum fee paid by consumers in December 2006 and 2007.

5 Summary of conclusions and key findings

On 2 December 2005, a government-enforced Agreement to reduce Interchange levels for a five year period (2006-2010) was signed by the main Spanish merchant associations and card schemes. The main results of the mandated Agreement were:

- A 57.3% average reduction in Interchange.
- The interchange reduction amounted to €3.329 billion in absolute numbers over the five year period.
- The interchange reduction lead to a 51.3% average reduction of Merchant Service Charges (MSC), the fees merchants pay for card acceptance.
- The MSC reduction amounted to €2.749 billion in absolute numbers over the five year period.
- An increase of consumer cost (annual card fees) by 50%, amounting to €2.350 billion over the five year period of the study.

The reduction in interchange has clearly harmed consumers by raising cardholder fees and reducing card benefits

- Faced with a €3.329 billion shortfall of funds covering the costs related to providing card services as a result of reduced interchange, card issuers have been forced to compensate for this amount that merchants previously paid by increasing cardholder fees.
- Consumers have had to bear more than a 50% increase in annual fees for standard four-party payment cards. The additional cost to consumers amounts to €2.350 billion over the five year period of the Agreement. Other fees have also been increased, such as those charged to consumers for overdrafts and debt claims. Additionally, consumers have seen their card rewards and promotions reduced, in addition to paying more for these reduced benefits.

There is no evidence that consumers have benefitted from lower prices following the reduction of interchange fees

- The main beneficiaries of the interchange reduction have been merchants. Spanish merchants have received a MSC reduction of €2.749 billion during this five-year period.
- Furthermore, there is no evidence that even a fraction of this cost saving has been passed on to consumers via reduced prices or through an improvement of the services provided.
- Neither the merchants, the responsible Ministries, The Competition Authority, the Bank of Spain nor the Spanish National Statistics Institute have been able to present empirical evidence documenting that consumers have benefitted, in any way, from the reduction in interchange fees.

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The Agreement has altered the four-party system, affecting competition and reducing incentives to innovate

- The obligation to reduce Interchange has altered the balance of the four-party system and negatively impacted its ability to compete with three-party systems, damaging the competitiveness of the Spanish card payments market.
- The lowering of interchange fees, combined with a reduction in competition, has reduced incentives for innovation, critical for ensuring payment security and for fighting fraud.

The Agreement has slowed down cash displacement

- The intervention has slowed the pace of displacement of costly cash by more efficient electronic means of payment, making it much harder to control the black-market economy, fraud and corruption, which in turn will affect government revenues. Since the agreement the standard four-party payment cards operations average dropped from €52.1 in 2005 to €44.3 in 2010, while the ATM operations average rose from €91.2 to €117.2. See table 18 below:

Table 18. Average operations during the agreement

Average operations during the agreement		
In €	Cards	ATM withdrawals
2005	52.1	91.2
2010	44.3	117.2

Source: Based on data from the Bank of Spain