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An Economic Analysis of the 2010 Proposed Settlement* between the Department of Justice and Credit Card Networks

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Abstract:

In 2010, the Department of Justice (DOJ) filed a lawsuit against the credit card networks American Express, MasterCard, and Visa for alleged antitrust violations. We evaluate the extent to which the recently proposed settlement between the DOJ and Visa and MasterCard (henceforth, "Proposed Settlement") is likely to achieve its central objective: *"…to allow Merchants to attempt to influence the General Purpose [Credit] Card or Form of Payment Customers select by providing choices and information in a competitive market."* In word and spirit, the Proposed Settlement represents a significant step toward promoting competition in the credit card market. However, we find that merchants are unlikely to be able to take full advantage of the Proposed Settlement's new freedoms because they currently lack comprehensible and complete information on the full and exact merchant discount fees for their customers' credit cards. We analyze the likely consequences of this information problem, and consider ways in which it could be remedied. We also evaluate the probable welfare consequences of allowing merchants to impose surcharges to reflect the fees associated with the use of payment cards.

JEL Classifications: E42, G29, D14

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* On July 20, 2011, the settlement was approved by the United States District Court for the Eastern District of New York; however, when this paper was written and posted, the settlement's status was "proposed."

CONSUMER PAYMENTS Research Center

1 Introduction

Payment card markets in the United States exhibit a market imperfection—imperfect information about merchant fees—that can be readily addressed through public policy. A recent Proposed Settlement between the U.S. Department of Justice (DOJ) and Visa and MasterCard (MC)[1] attempts to increase competition in the credit card market by remedying this market imperfection, in addition to proposing other changes. Under the Proposed Settlement, merchants would, for the first time, be explicitly allowed to disclose to consumers their fees and costs associated with accepting different payment instruments. With this new freedom merchants could provide enhanced discounts and other incentives to encourage consumers to use lower-cost payment methods. The Proposed Settlement represents a significant step toward removing the explicit and implicit current restrictions placed on merchants by credit card networks. Instead of regulating the credit card interchange fees—the approach used in regulating credit card markets in many other countries—the Proposed Settlement relies on market forces to let merchants inform customers about merchant discount fees (whose largest portion is the interchange fee) in an effort to steer customers toward the payment methods the merchants view as optimal for themselves. Under the Proposed Settlement, merchants would be allowed to disclose or display fee information and to offer discounts for cheaper payment instruments, although they would not be forced to do so.

This paper analyzes the probable economic effects of the Proposed Settlement, and examines the extent to which the Proposed Settlement is likely to achieve its stated main goal: to allow merchants to influence consumer payment choice. There is reason for concern that the Proposed Settlement may fall short of meeting its objective. The basic problem is that merchants currently lack sufficient information to disclose fees or differentiate their prices according to the method of payment. In theory, the Proposed Settlement would allow merchants to try to steer consumers toward lower-cost payment instruments by disclosing the fees merchants incur in accepting payment cards, and by offering enhanced discounts. In practice, however, merchants

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[1] See http://www.justice.gov/opa/pr/2010/October/10-at-1115.html for the announcement, and http://www.justice.gov/atr/cases/f262800/262875.htm for the text of the Proposed Settlement.

may not be able to use these privileges effectively because they may not know the exact merchant fee on each credit card until long after the transaction has taken place, and even then merchants typically learn only their aggregate monthly fees and not the specific fee for accepting a given card. Interchange fees—which account for the bulk of merchant fees—range from below 1 percent to over 3 percent. [2] Merchants may be aware of this range, but they currently do not have all of the information they need to enable them to match an individual credit card presented by a consumer to the corresponding merchant fee for that card. Therefore, merchants would not be able to disclose the relevant card fees to their customers or to completely and accurately differentiate prices across payment instruments. In this paper, we analyze the likely effects of this information imperfection and consider the merits of some possible ways information could be provided, including a recent disclosure by the U.S. government that Visa and MasterCard will introduce electronic inquiry services that provide information to merchants about the type of card swiped.[3]

If merchants had the necessary information in real time (that is, at or before the time of the transaction) to facilitate the mapping of cards and fees, under the Proposed Settlement they could attempt to steer customers toward lower-cost payment methods. However, merchants would still be restricted in the mechanisms they could use to this end because the Proposed Settlement did not challenge the Visa and MasterCard rule that prohibits merchants from imposing surcharges that reflect the costs they incur in processing payments. We discuss the likely consequences of this restriction, and whether economic welfare would be enhanced by allowing surcharging.

Overall, we find that there is a strong case for disclosing to both merchants and consumers the fees associated with different payment options. Policies designed to reveal and enhance full information about merchant fees to both merchants and consumers are likely to enhance competition in payment card markets in at least two ways. First, full information and transparency of fees is likely to encourage reductions in interchange fees and give merchants

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[2] Martin, Andrew (January 4, 2010). "How Visa, Using Card Fees, Dominates a Market," *The New York Times*.

[3] *Federal Register*, Vol. 76, No. 127, July 1, 2011, pp. 38700-38708.

incentives to steer consumers toward lower-fee cards. Second, by reducing merchants' payment costs and offering consumers correct incentives to balance the costs and benefits of alternative payment methods, disclosure of full information about fees is likely to encourage competition among merchants to offer lower retail prices to their customers. However, relying exclusively on market forces without resorting to directly regulating the level of those fees has not been tried before, so the extent to which market forces can and will bring about the benefits of enhanced competition in payments markets remains to be seen. Throughout this paper, we discuss potential barriers to the market-based approach taken in the Proposed Settlement.

The rest of the paper proceeds as follows. Section 2 summarizes the DOJ intervention. Section 3 presents our assessment of the Proposed Settlement. Section 4 analyzes imperfect information related to payment card fees. Section 5 deals with pricing issues and explains how discounts differ from surcharges. Section 6 discusses consumers' information needs. Section 7 discusses how merchant fees might be disclosed. Section 8 evaluates the effects of the Proposed Settlement, and Section 9 concludes.

2 Executive summary of the DOJ intervention

2.1 Background

The history of antitrust lawsuits against card networks in the United States goes back to the early 1970s, when several prominent lawsuits were filed by merchants and merchant associations against card networks and their large issuers, and the litigation has continued ever since (see Wildfang and Marth 2006 for the history of antitrust litigation, and Bradford and Hayashi 2008 for a summary, including litigation in other countries). While most of the lawsuits were brought by private entities, the networks were also sued by the DOJ. In one of the most prominent cases, the DOJ brought suit in 1998 against Visa and MasterCard, accusing the networks of exclusionary rules that prohibit their members from issuing competing cards, such as American Express or Discover (see Wildfang and Marth 2006 for details).

Despite the fact that Visa lost in many of the lawsuits, no private party or the U.S. government has been able to constrain the interchange fees. It is clear, however, that this Proposed Settlement is only the most recent case in a long history of litigation between the government and the credit card networks.

Concern about the potential for market power in credit card markets to increase interchange fees reached a pinnacle in 2009, and the response to this concern was embodied in the 2009 Credit Card Accountability Responsibility and Disclosure (CARD) Act. The CARD Act directed the U.S. Government Accountability Office (GAO) to review competition in the credit card market. The GAO report found that although consumers had benefited in some regards from competition in the credit card market, merchants had been incurring increases in interchange fees, and some larger merchants had found the higher costs had outstripped the advantages of higher sales.[4] The GAO report reviewed options for regulating interchange fee rates and terms of credit card acceptance, and highlighted four:

1) Limiting or capping interchange fees
2) Requiring the disclosure of interchange fees
3) Loosening restrictions on merchants for card acceptance
4) Allowing merchants and issuers to directly negotiate interchange fees

In the Proposed Settlement the DOJ pursued versions of options 2 and 3.

2.2 Essence of the Complaint

The DOJ has conducted antitrust investigation into the merchants' credit card acceptance rules mandated by the Visa, MasterCard, and American Express card networks. On October 4, 2010, the DOJ and 18 states announced that they were filing a civil antitrust lawsuit (henceforth, the

[4] U.S. Government Accountability Office (2009) "Credit Cards: Rising Interchange Fees Have Increased Costs for Merchants, but Options for Reducing Fees Pose Challenges," GAO-10-45, November 19. See also the Federal Reserve Board study on interchange fees by Prager, Manuszak, Kiser, and Borzekowski (2009), which was used as an input to the GAO study.

"Complaint") in U.S. District Court for the Eastern District of New York.[5] The Complaint alleges that the networks violated Section 1 of the Sherman Act by preventing merchants from offering discounts or rewards, and from providing information about the cost to merchants of accepting credit cards. The Complaint further alleges that these merchant restraints have a negative impact on price competition in the credit card market and interfere with price setting at the point of sale. The Complaint focuses on three main points:

1) The defendants (card networks) have sufficient market power to impose "merchant discount fees" (aka "card acceptance fees" or "swipe fees") that amounted to more than $35 billion in 2009, which merchants may pass on to consumers via higher retail prices.
2) The defendants impose uncompetitive rules, policies, and practices on merchants ("Merchant Restraints") that insulate the defendants from competition by impeding merchants' ability to encourage competition among payment card brands.
3) The Merchant Restraints also impede merchants' ability to steer their customers (consumers) to lower-cost forms of payment by providing discounts, rewards, or other incentives.

The Complaint further alleges that because the Merchant Restraints prevent merchants from encouraging consumers to use less-costly payment methods, merchants' costs—and therefore retail prices—are higher than they would otherwise be. Although merchants are allowed to offer cash discounts, few do, and most choose a one-price policy, possibly because the current policy is highly restrictive, as we explain in Section 5.1, and because merchants cannot disclose their costs to consumers. The uniform pricing produces a cross-subsidy of consumers who use higher-cost payment methods like credit cards by consumers who use lower-cost methods like cash or PIN debit. Schuh, Shy, and Stavins (2010) estimate that credit card use generates a retail price markup that is about 0.4 percentage points higher than the markup on non-credit card

[5] Joining the DOJ in its original lawsuit were the states of Connecticut, Iowa, Maryland, Michigan, Missouri, Ohio and Texas. On December 21, 2010, 11 more states joined: Arizona, Hawaii, Idaho, Illinois, Montana, Nebraska, New Hampshire, Rhode Island, Tennessee, Utah, and Vermont. On April 8, 2011, the State of Hawaii withdrew as a plaintiff.

payments. The Complaint also emphasizes income redistribution consequences: Less wealthy consumers using other payment methods subsidize "the cost of expensive American Express card benefits and rewards."[6]

2.3 Essence of the Proposed Settlement

In connection with filing the Complaint, the DOJ announced that it had reached a proposed settlement (called "Final Judgment" and referred to here as "Proposed Settlement") with Visa and MasterCard. If approved by the court, the Proposed Settlement would require the two networks to allow merchants to influence their customers' choice of payment method by offering discounts, incentives, and information to consumers to encourage the use of payment methods that are less costly to the merchants.

In the Proposed Settlement with Visa and MasterCard, the two card networks agree to allow merchants:

- More flexible discounting and price differentiation:[7]
  - to offer customers a discount or rebate if the customer uses a particular brand or type of general purpose card, or any other form of payment;
  - to offer a free or discounted product, enhanced service, or any other incentive for the above;
  - to express a preference for the use of a particular brand or type of general purpose card or other particular form of payment;
  - to promote a particular brand, card type, or any other form of payment;
- Information disclosure:

[6] "Amended Complaint for Equitable Relief for Violation of Section 1 of the Sherman Act, 15 U.S.C. § 1," p. 26. See Schuh, Shy, and Stavins (2010) for a detailed analysis and quantitative estimates of the cross-subsidies generated by credit card use between credit card users and non-users as well as between low-income and high-income households.
[7] In April 2011 Visa issued some modifications to their U.S. rules, allowing merchants to set minimum charges on credit cards and to provide discounts on cash, checks, debit or credit cards, provided that they not differentiate on the basis of the issuer or payment card network. See http://usa.visa.com/download/merchants/Card-Acceptance-in-US-and-its-Territories-PUBLIC-April-2011.pdf.

- to communicate to a customer the reasonably estimated or actual costs incurred by the merchant when a customer uses a particular brand card type relative to costs of using different brands, types, or other forms of payments;
- to prohibit MasterCard and Visa from preventing an acquiring bank from providing to the merchant information about the costs or fees of accepting credit cards.

Because cash discounts were allowed prior to the Proposed Settlement, the major enhancement introduced by the Proposed Settlement is the flexibility allowed to merchants in terms of the variety of discounts and other incentives that may be offered to consumers. The Proposed Settlement allows merchants to give different discounts on different card brands (for example, different discounts for Visa versus MasterCard), although merchants will not be allowed to differentiate their discounts according to different issuers (banks) of the same brand card.

Neither Visa nor MC admitted to any wrongdoing as part of the Proposed Settlement. American Express stated that it had no intention of settling the case and denied any wrongdoing, arguing that it lacked the market power to force merchants to accept its products or pricing. In an open letter in the *Washington Post* dated October 8, 2010, the CEO of American Express argued that this Proposed Settlement will give an advantage to Visa and MC, who have 70 percent of the market, and that "The Justice Department is supporting bad policy and disguising it with vague promises of consumer benefit. We think their case is weak and we intend to fight it."

2.4 Public comments on the Proposed Settlement

The Proposed Settlement was published in the Federal Register on October 13 and the public was invited to submit comments to the Court within 60 days. Following that public comment period, the DOJ reviewed and responded to the public comments. These documents were filed on June 14, 2011, shortly before this paper was published. Six comments were submitted by the public. All comments generally agreed that the Proposed Settlement is in the public interest and none argued against the Court's entering it.[8]

However, the comment submitted by the Retail Industry Leaders Association (RILA) requested further relief because it noted that merchants currently do not have full information about fees in real time at the point of sale to enable them to distinguish among types of credit cards. In particular, RILA requested card type information both electronically and visually (on the credit card). In response to the RILA comment, the DOJ explored with Visa and MasterCard how to address the concern about fee information and learned that Visa offers, and MasterCard will offer, a new "inquiry service" to merchants providing information about the type of card electronically but not visually. The DOJ states in the response to the public comments, "these electronic services address the concern raised by RILA for many merchants." Based on the limited public information available, we are not able to evaluate fully the functionality and effectiveness of these services at this time.

2.5 The Proposed Settlement from an international perspective

For over a decade, competition authorities in many countries have challenged card networks to lower their interchange fees. Compared with the experience of several other countries, the U.S. Proposed Settlement with Visa and MasterCard arrives relatively late. In addition, we cannot draw exact parallels between the U.S. Proposed Settlement and settlements in other countries for the following reasons:

1) Most settlements resulting from investigations and court cases brought against issuing banks and card networks in other countries have been antitrust cases based on the assumption that card networks fix the interchange fees rather than letting them be determined in competitive markets. The focus has been on a mandated reduction in the level of interchange fees. In contrast, the U.S. Proposed Settlement does not mandate changes in the level of the interchange fees.

[8] The public comments and the DOJ's response are summarized by the DOJ in the *Federal Register*, Vol. 76, No. 127, July 1, 2011, pp. 38700–38708.

2) In many other countries, the no-surcharge rule has already been declared illegal and in some cases surcharging has occurred. To our knowledge, the United States is the only country that does not allow card surcharges, but permits cash discounts. The main purpose of the U.S. Proposed Settlement is to expand the circumstances under which merchants are allowed to give discounts only, and therefore the U.S. situation is not comparable to the situations in most other countries.

Below are some examples of settlements in other countries. In 2005 the European Competition Commission reached an agreement with Visa and MasterCard to publish their intra-European cross-border interchange fees on the Internet.[9] The European Competition Commission was concerned that merchants lacked the necessary information to be able to establish differential pricing according to the costs and fees of means of payment.

Most of the settlements in other countries focused on reductions in interchange fees, motivated mainly by concerns over lack of competition in payment card markets (see Chakravorti 2010). The Reserve Bank of Australia (RBA) imposed weighted-average credit card interchange fee caps in 2002 and later imposed per-transaction targets for debit cards; it also required Visa and MasterCard to publish interchange fees, and allowed merchants to surcharge card transactions. In Mexico, the central bank has put pressure on banks to reduce their credit and debit card interchange fees. In Europe, the European Competition Commission charged card associations with anticompetitive practices such as the coordination of interchange fees among all card issuers. As a result, in 1999 the Spanish government mandated a reduction in interchange fees, and in 2002 the Spanish antitrust authority requested that interchange fees reflect only operating and fraud-related costs. In 2007, the European Commission decided that MasterCard's multilateral interchange fees (MIF) for cross-border payment card transactions with MasterCard and Maestro branded debit and consumer credit cards in the European Economic Area (EEA) violate EC Treaty rules on restrictive business practices (Article 81).[10]

[9] See http://ec.europa.eu/competition/publications/cpn/2005_2_57.pdf

[10] See http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1959&format=HTML&aged=0&language=EN&guiLanguage=en

The full effects of these international reductions in interchange fees are complicated and difficult to assess in theory and practice, but the limited available research suggests that merchant and consumer welfare likely increased. For instance, in its 2008 review of the effects of interchange fee regulation, the RBA (2008, page i) concluded that "…the reforms have delivered significant benefits, improving the overall efficiency of Australia's payment system." Some concerns were raised about excessive and undisclosed surcharging, especially where no alternative payment was available, but the RBA concluded that these occurrences were relatively minor and were greatly outweighed by the benefits of allowing surcharging. However, three years later (RBA 2011) there were more definitive concerns about excess surcharging (see Section 8.2 for details). Carbo-Valverde, Chakravorti, and Rodriguez-Fernandez (2010) used bank-level data to conduct an empirical analysis of the reductions in Spanish interchange fees. They found that merchant acceptance and consumer adoption of credit cards both increased during the period of reduced interchange fees. Thus, the reduction in bank revenue from the lower interchange fee was offset, at least to some extent, by increased volume of card use. However, much more research is needed to assess the social welfare impact of interchange fee regulations.

2.6 Proposed Settlement in relation to the Dodd-Frank reform legislation

The Proposed Settlement contains language and issues that are related to some, but not all, aspects of the Durbin Amendment to the recently enacted Dodd–Frank Wall Street Reform and Consumer Protection Act (H.R. 4173, Sec. 1075, "Reasonable Fees and Rules for Payment Card Transactions"). The first part of the Durbin Amendment concerns "Reasonable Interchange Transaction Fees for Electronic Debit Transactions." Thus, this portion of Durbin pertains to debit card interchange fees, and not to credit card interchange fees. In contrast, the Proposed Settlement deals with credit cards rather than debit cards and does not attempt to set or regulate the interchange fees of credit cards.

The second part of the Durbin Amendment concerns "Limitation on Payment Card Network Restrictions." The Amendment says, "A payment card network shall not … inhibit the ability of any person to provide a discount or in-kind incentive for payment by the use of cash, checks, debit cards, or credit cards…" Thus, the language and discounting freedoms in this portion of the Durbin Amendment bear some similarity to those of the Proposed Settlement. However, the Durbin Amendment forbids networks from prohibiting merchants from offering a discount for an *entire payment method category*, such as a discount for use of any debit card. The intention of the Proposed Settlement appears to have been to allow more specific discounts, promotions, and other incentives, such as by "a Brand or Type of General Purpose [Credit] Card," thereby allowing merchants to differentiate less expensive cards from more expensive ones.[11]

The Durbin Amendment also explicitly defines "discount" as something that "does not include any means of increasing the price that customers are informed is the regular price," which presumably includes a surcharge. The Proposed Settlement does not challenge the networks' merchant rules prohibiting surcharging or any other form of price increase. Neither the Amendment nor the Proposed Settlement precludes card networks from prohibiting price differentiation that is based on the issuer of the payment card. Finally, the Proposed Settlement acknowledges that its terms must comply with the Dodd-Frank Act.

3 General assessment of the Proposed Settlement

The Proposed Settlement can be viewed as a breakthrough in promoting competition in the payments card market, because it removes constraints placed on merchants by the credit card networks. The Proposed Settlement allows the merchants to provide incentives to consumers to select less-costly payment methods, and thus relies on market forces to increase the level of competition, rather than regulating the level of interchange fees, a practice that has been recognized as very difficult and potentially distortionary. Several authors have pointed out that the available models and data are insufficient to determine the optimal level of interchange fees.

[11] For details on this distinction, see the Federal Register, vol. 75, no. 197, October 13, 2010, page 62867, footnote 1, available at http://www.gpo.gov/fdsys/pkg/FR-2010-10-13/pdf/2010-25655.pdf

For example, Evans and Schmalensee (2005) write, "...there is no basis in economics for concluding that the privately set interchange fee is just right."

Although this Proposed Settlement removes some of the existing obstacles, it will require merchants to have full information about card fees to achieve its central objective: *"…to allow Merchants to attempt to influence the General Purpose Card or Form of Payment Customers select by providing choices and information in a competitive market."* Absent full information, the Proposed Settlement may not provide merchants with sufficient tools to differentiate their prices and to provide information to their customers in a way that allows customers to make informed and efficient choices over payment instruments. We consider the merits of two additional steps that may help to achieve the stated objective of the Proposed Settlement:

1) Provide merchants with complete information about their exact cost of accepting each credit card (currently merchants have incomplete information, and therefore cannot price optimally or provide full information to consumers).
2) Allow at least some merchants the right to surcharge based on the means of payment (discounts are allowed under the Proposed Settlement, but the two mechanisms are not equivalent, as we discuss below).

3.1 Credit card fees

As background to our analysis of the Proposed Settlement, we briefly explain how a typical credit card transaction works and the major fees involved. Figure 1 shows a simple diagram of a credit card transaction. During the transaction, a cardholder makes a credit card payment to a merchant. The merchant then transfers a fraction of that payment (the merchant fee) to his financial institution (the acquirer). The acquirer transfers most of the merchant fee (the interchange fee) to the issuer. If the cardholder's card carries rewards, the issuer gives some part of the interchange fee back to the cardholder in the form of rewards.

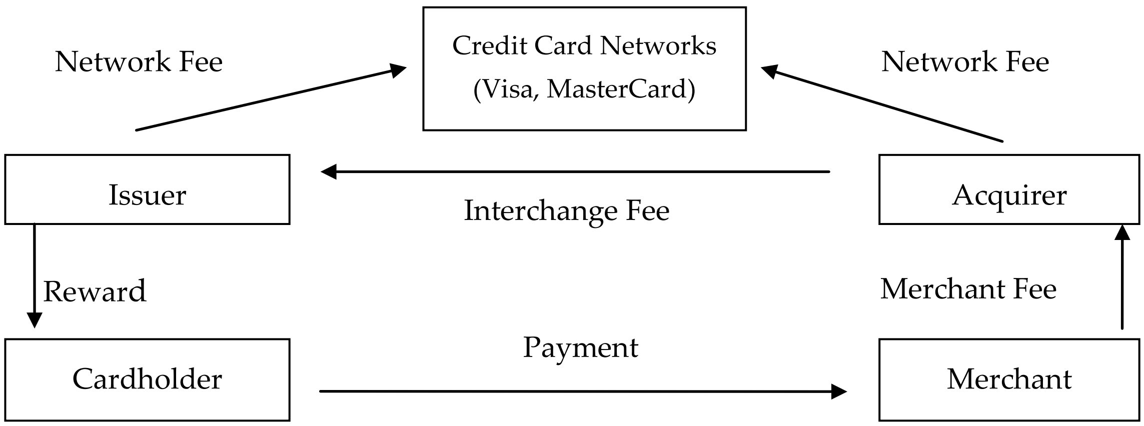

Figure 1: Credit card transaction diagram.

The bulk of the merchant fee is paid to the credit card issuing bank as interchange fees.[12] However, some other fees are added for the merchant's acquirer, the card brand, and the card network. Interchange fees are set by Visa and MasterCard and vary depending on card type and the circumstances of the transaction.

Interchange fees have a complex structure, based on the card brand, region, type of credit card, type and size of the merchant, and type of transaction (for example, online, phone order, in-store, and whether the card is present for the transaction). Most merchants pay fees based on three-tier pricing, where the merchant's account provider groups all the transactions into three groups (tiers), and assigns a rate to each tier based on a criterion established for that tier. The tier depends mainly on whether the card carries rewards, and whether a transaction is made by swiping a card through a credit card terminal or is keyed in manually.[13] Interchange fees are typically structured as a flat fee plus a percentage of the total purchase price. In the United States, the fee averages approximately 2 percent of transaction value, which was about $42

[12] According to a recent article in an international industry publication ("The MSC Squeeze," *Cards International*, June 2010, pp. 10-11), "Interchange fees take up the bulk of MSCs. Some industry experts estimate that interchange fees account for approximately 70 percent of the MSC, while some merchants have said that the figure can be more like 90 percent." MSC is an acronym for merchant service charge (the merchant fee).

[13] For more details on the complexity of merchant fees see http://en.wikipedia.org/wiki/Merchant_account.

billion per year of revenue for banks in 2009.[14] However, there are dozens of different interchange fees, varying by type of card, by merchant's sector, and by type of transaction.[15] Some merchants (especially small ones) pay a "blended rate," which combines all charges by card issuers (banks), card networks, and processors, and also combines fixed and proportional fees into a single proportional rate. Merchants who are not on a blended rate contract may be on an "interchange plus" contract, which means that the acquiring bank charges the merchant a fixed or a proportional rate (or both) above what the acquiring bank pays the issuing bank of a particular card.

3.2 Disclosure of merchant fees

Currently, merchants do not appear to have the right to disclose their card fees to customers. The card networks' merchant rules (Visa 2011, MasterCard 2010) do not explicitly prevent merchants from disclosing the fees, and we do not know what is in the propriety contracts that merchants sign with the card networks. However, the merchant rules do suggest that merchants cannot disclose fees as part of an effort to steer customers to lower-cost payment methods. For example, among the rules issued by MasterCard is the following: "A merchant must not engage in any acceptance practice that discriminates against or discourages the use of a (MC) Card in favor of any other acceptance brand." (MasterCard 2010, section 5.11.1, page 5-19) The Proposed Settlement provides explicit permission to merchants to disclose their payment fees.

Without complete information, merchants may have difficulty taking full advantage of this provision. Although merchants can find interchange fee schedules online, the schedules set by the card networks are complex, with many different fees. At present, merchants do not have sufficient information to map each one of their customers' credit cards to those detailed schedules, nor do they know the additional fees that comprise the full merchant fees. Thus, merchants cannot determine exactly how much it really costs them to accept a given card.

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[14] This estimate equals 2.0 percent of total credit card spending in 2009 as reported in the Call Reports.

[15] For MasterCard's interchange fee (the major component of the merchant fee) merchant categories see http://www.mastercard.com/us/merchant/pdf/MasterCard_Interchange_Rates_and_Criteria.pdf. For Visa see http://usa.visa.com/merchants/operations/interchange_rates.html. These fees are updated about twice a year. The latest schedule of interchange fees for MasterCard we accessed online (effective as of April 2010) had 135 pages of instructions.

Without that information, a merchant cannot determine whether he should encourage or discourage his customer's use of a given card, let alone set appropriate prices corresponding to the exact cost of accepting that card. If merchants cannot distinguish among costs and fees associated with accepting different means of payment, they will not be able to devise a proper menu of prices to reflect their true costs.

Leinonen (2010) explains that transparency can increase efficiency in payments. Merchant fee disclosure may be viewed as analogous to information advertising. Telser (1964), Nelson (1971, 1974), and Demsetz (1979) have proposed that advertising serves as a tool for transmitting information from sellers to consumers, thereby reducing consumers' cost of searching for the most-preferred brand. Benham (1972) found that information disclosure through advertising generated significantly lower retail prices in states where eyeglass prices were advertised, as compared to states where advertising was prohibited. More recently, the Internet has reduced the cost of information, leading to more competition and lower prices in the term insurance industry (Brown and Goolsbee 2002). Just as advertising and the Internet can provide information about price differences and lead to lower retail prices, merchant fee disclosure could enable merchants to discount lower-cost payment methods and/or surcharge higher-cost ones (if allowed).

The consumers' and merchants' current lack of information about merchant fees, combined with the complexity of the market stemming from the involvement of four parties in each card transaction, creates a situation of "reversed" competition in the market for cards. Because card issuers compete for cardholders by offering cards that generate higher rewards, competition in the current market structure generates fee increases rather than decreases, unlike the typical case in competitive markets. Although the Proposed Settlement restricts Visa and MasterCard from preventing an acquiring bank from disclosing the merchant fees to the merchants, it does not require the acquiring bank to disclose those fees. The new electronic inquiry services appear to provide a channel through which merchants can obtain the fee information from their acquirers, and the DOJ maintains that Visa and MasterCard will not charge merchants for these services. Moreover, the DOJ argues that "Competition among Acquiring Banks will give them incentives to find new and innovative ways to meet merchant demand for information and technology that will allow them to implement their desired steering methods."[16]

Following the Proposed Settlement, if consumers become aware of the merchants' fees, merchants might have sufficient tools to provide correct incentives, inducing consumers to select lower-fee cards and thereby put pressure on acquirers to lower their merchant fees. That pressure might then be passed on to the card issuers via the acquirers and card networks. However, this effect is unlikely to occur unless consumers are fully and accurately informed about the fees generated by their specific cards. As we discuss below, consumer acceptance of differential pricing likely hinges on consumers' understanding and knowledge of the costs that retailers incur in accepting different payment instruments, and on consumers' trust in the accuracy of the information they receive about costs and prices.

Even if consumers had complete information about all merchant fees, they might question what fraction of the price markup over marginal cost is attributable to card merchant fees. In general, as shown in Weyl and Fabinger (2009), consumer prices increase more or less proportionally in response to an increase in cost (merchant fee in our case), depending on the degree of competition and demand elasticities. The extent of pass-through is somewhat uncertain, with important implications for how the gains from fee disclosure and relaxation of the no-surcharge rule would be split between consumers and merchants.

3.3 Surcharging card payments

Currently, the card networks' merchant rules explicitly prevent merchants from directly or indirectly surcharging credit card holders (see Visa 2011, Core Principle 6.3, page 372, and MasterCard 2010, section 5.11.2, page 5-19). Although the Proposed Settlement allows merchants to discount based on payment methods, it does not challenge the networks' merchant rules prohibiting merchants from surcharging card transactions. That is, even if the Proposed Settlement is ratified in its current form, merchants will not be allowed to surcharge card transactions. The no-surcharge rule was enacted into law in 1976 as part of the Cash

[16] *Federal Register*, Vol. 76, No. 127, July 1, 2011, p. 38705.

Discount Act (Public Law 94-222). Although this law expired February 27, 1984, the no-surcharge requirement is still mandated by the card networks, and acquirers cannot waive this requirement.[17] The Cash Discount Act also gave merchants the right to offer cash discounts, a right that card networks still honor in their contractual agreements with merchants. However, some merchants may prefer to surcharge credit card payments rather than offer cash discounts because surcharging and discounting are not equivalent methods of price differentiation for merchants, as explained in Section 5.

Even if the card networks agreed to allow merchants to surcharge credit card payments, merchants would not be allowed to do so everywhere without further legislative reform. Ten U.S. states have laws that prohibit surcharging consumers for their use of payment cards: California, Colorado, Connecticut, Florida, Kansas, Maine, Massachusetts, New York, Oklahoma, and Texas.[18] This prohibition stands in contrast to the situation in some other countries that have banned the no-surcharge rule, such as England, Australia, and New Zealand, where retailers may apply surcharges to any credit card transaction whenever they find it beneficial to do so. To allow surcharges for U.S. merchants, the no-surcharge states would have to drop their legal prohibitions or Congress would have to enact federal law permitting merchants to surcharge.

4 Imperfect information about payment card fees

The freedom to disclose payment fee information, as stated in the Proposed Settlement, raises a fundamental question about what participants in the transaction currently know. Part of the distortion in the card market stems from the fact that some of the parties have either no information or incomplete information about fees and costs. Table 2 displays what information about fees currently is available to each party in a card transaction. The shaded regions indicate where there is essentially full information, and the non-shaded regions indicate where there is

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[17] Visa's rules for Visa merchants state: "Always treat Visa transactions like any other transaction; that is, you may not impose any surcharge on a Visa transaction. You may, however, offer a discount for cash transactions, provided that the offer is clearly disclosed to customers and the cash price is presented as a discount from the standard price charged for all other forms of payment." See http://www.orionps.com/pdfs/VISA%20rules%20for%20merchants.pdf.
[18] See http://usa.visa.com/personal/using_visa/checkout_fees/index.html .

imperfect information. Acquirers and card networks essentially have full information about all fees (first column). All market participants have access to full information about interchange fees (first row), which are posted on the internet, although it is doubtful that all merchants have viewed them and almost certain that few consumers have. An essential prerequisite for competition in the credit card market, full information about fees in real time, currently is missing for market participants in the un-shaded region of the table.

	Banks		Other Parties	
Fee Type	Acquirers and Networks	Issuers	Merchants	Consumers
Interchange fee categories[a]	Y	Y	Y	Y
Interchange fee on specific card during the transaction	Y[b]	Y	N	N
Average merchant fee	Y	N	Y	N
Merchant fee on a specific card during the transaction	Y[b]	N	N[c]	N

Table 1: Card fee information. Y/N means information available/not available to the party.

[a] Visa and MasterCard publish their interchange fee categories on their websites, although it is not clear how many consumers are aware of that.

[b] Based on conversations with bankers and card networks, we assume that acquirers have information about specific merchant and interchange fees in real time during transactions.

[c] Unless fees are flat across all card types.

4.1 Banks (card issuers and card acquirers)

The DOJ's response to the public comments on the Proposed Settlement reveals that the networks' new inquiry services will enable card-acquiring banks to provide information about the type of card swiped to merchants, which could be used to disclose fees and implement price differentiation according to the cost of payment instruments. Acquiring banks pay the interchange fees charged by the issuing banks and receive the merchant fees from the merchants, implying that they have the exact fee information in real time at the time of each transaction. For the fee disclosure provision in the Proposed Settlement to have the desired effect, acquirers will need to deliver the inquiry services to the merchants in real time at the point of sale (or entry to the merchant venue) in a cost-effective and operationally viable format.

Card issuers do not know the exact merchant fees charged by the acquirer to the merchants because they are not directly involved in either paying or receiving the merchant fees. However, as we explain in the next subsection, even if issuing banks cannot retrieve merchant fee information directly from the acquirers, there may be some value in having issuers provide the interchange fees (which issuers do know) on each cardholder's term statements, because interchange fees constitute the vast majority of the merchant fee[19]

4.2 Merchants

As Table 1 shows, merchants may know the interchange fee structure (publicly available) and know their aggregate or average merchant fees (from their periodic bills). However, they have no way to map the particular card that a consumer is using to a corresponding interchange or merchant fee at the time a card is swiped. Furthermore, merchants may never know the precise merchant fee for the payment cards it accepts. If the merchant cannot map the card to the right interchange fee category, he cannot price differentiate the payment card appropriately.

Therefore, the only way merchants can inform their customers about their costs of accepting credit cards is to provide customers with averages based on a previous month or year of transactions. The lack of more specific and timely information prevents merchants from offering optimal incentives. The form in which they receive the information, electronically versus visually (on the card), may also be important to merchants and may affect how they communicate about this information with their customers.

4.3 Consumers

Although facing the full range of fees would likely be confusing for consumers (see Section 6.3), the lack of information about fees creates an inefficiency, because consumers not only fail to

[19] Our assessments of the information structure of banks and networks come from public statements by, and our personal interviews with, representatives of banks and networks.

bear the cost of their decisions, they are also unaware of the true cost their decisions impose on merchants. In the absence of information about the fees incurred by retailers, consumers may view differential pricing across payment instruments as an attempt by merchants to extract extra profits at their expense. Merchants, anticipating a backlash from angry consumers and the loss of goodwill, might then be reluctant to implement differential pricing. So, in order for differential pricing across payment instruments to work successfully, consumers, as well as merchants, need to be informed about fees accurately and completely.

4.4 Mapping cards to fees

A credit card number is typically 16 digits long.[20] It comprises a six-digit "Issuer Identification Number" (IIN, of which the first digit is a "Major Industry Identifier" (MII), previously referred to as "Bank Identification Number" or BIN), the individual account number (the next nine digits), and a validity check code (the final digit). American Express, VISA, and MasterCard each have different MIIs. The rest of the IIN identifies the card issuing bank. In addition to indicating the bank, the IIN may also indicate the type of card (co-brand, gold, classic, etc.), although the type does not necessarily correspond to a specific interchange fee.

As we mentioned above, there are many different interchange fee categories, usually grouped into three tiers. The interchange fee tier is not part of the card number sequence because the card account number was designed to minimize the risks of identity theft and fraud that can occur when cards and card numbers are lost or stolen. So, under this current card numbering system, merchants do not receive full information about the exact magnitude of their fees during the transaction.

Even with access to the networks new inquiry services, merchants may have to re-program their payment acceptance technology (registers, card readers, data bases, etc.) to manage the fee information and disclose the merchant fees to their cashiers and customers. We do not know the specific details of what technological changes would have to be made to

[20] Some credit cards may have 13, 14, or 15 digits, but 16 digits is the most common format.

facilitate this communication of the specific fee in real time to the merchant. Therefore, a more detailed and complete benefit-cost analysis would have to be undertaken.

4.5 Fee disclosure in other industries

Regulators in other sectors have been promoting transparency. For example, there is a proposal that the Department of Transportation (DOT) issue rules that would require airlines to reveal to passengers total air travel costs, including airfares, surcharges, and fees. The reason for the proposed rule is that once these fees are made public, travel agents and airline ticket websites will be able to create ways for travelers to better compare the true cost of air travel.[21] Thus, competition could be enhanced by enabling potential air travelers to compare true airfares (all fees included) before they purchase their tickets, instead of finding out after the transaction whether any fees were added.

Examples also exist in the financial sector. On June 24, 2009, the House Committee on Education and Labor approved the H.R. 2989 401(k) Fair Disclosure and Pension Security Act of 2009, which requires[22]

1) 401(k) plans to disclose fees taken from participants' accounts in a worker's quarterly statement, and
2) 401(k) service providers and plan administrators to disclose fees charged on 401(k) plans, broken down into four categories: administrative fees, investment management fees, transaction fees, and other fees.

The committee's chairperson explained the motivation for this legislation by noting that most account holders report that they do not know how much Wall Street middlemen are taking from their retirement accounts. Just 1-percentage-point in excessive fees can reduce a worker's 401(k) account balance by as much as 20 percent or more over a career.

[21] *Newsweek*, September 14, 2010, http://www.businessweek.com/news/2010-07-14/u-s-airlines-may-be-forced-to-widen-fee-disclosure.html.

[22] http://www.dcemploymentlawupdate.com/2009/06/articles/employee-benefits/house-committee-approves-fee-disclosure-and-investment-advice-bill/

5 Differential pricing of payment cards

We now discuss the importance of differential pricing based on payment instruments. We explain how the Proposed Settlement improves the currently allowed pricing strategies, and why surcharges are not equivalent to discounts.

5.1 Current restrictions on cash discounts

As we explained in Sections 2 and 3, credit card networks in the U.S. allow merchants to give cash discounts to their customers, but until recently all have prohibited merchants from surcharging credit card users and from distinguishing credit cards from other payment methods.[23] That is, a cash discount has to be relative to all other payments, treating all the other payment methods equally. Merchants are prohibited from surcharging credit card transactions and even from enacting alternative discount schemes. This restriction precludes merchants from implementing alternative pricing arrangements, such as discounting cash payments by more than they discount debit, and discounting non-reward credit cards by more than they discount reward cards. Like any other pricing decision, a merchant's unrestricted decision about how to price the various payment methods would likely be based on his costs, as well as on his customers' price elasticities of demand. The current restrictions on varying discounts to reflect the cost of the means of payment make it impossible for merchants to implement such a pricing strategy, and the Proposed Settlement loosens this restriction.

If there were only two means of payments (say, cash and one type of card), and if all consumers had the same relative preference for paying with a card relative to cash, then a single (cash) discount would be sufficient for price differentiation from the merchant's perspective.[24] However, when there are several types of cards, the market outcome resulting from a single cash discount is not equivalent to the flexible discounts allowed under the Proposed Settlement rules. Frankel (1998) has pointed out that a prohibition on credit card surcharges can have a different effect from that resulting from a prohibition on cash discounts, because card

[23] As indicated in footnote 7, Visa has recently relaxed this prohibition, and these rules are evolving.

[24] There might still be a difference between discounting and surcharging in terms of consumer response to the pricing policy, as we explain below.

surcharges allow merchants to vary their charges according to the different merchant fees they pay on different cards, whereas a cash discount is taken from a single card price, and therefore gives merchants less pricing flexibility. However, variable prices based on different types of cards *can* also exist when only discounts are allowed, as long as there can be multiple discounts for various payments.

To demonstrate differences between a single cash discount (allowed under the current network rules) and multiple discounts (allowed under the Proposed Settlement) consider the following example of a merchant with three customers, as illustrated in Table 2. For this illustration, we assume the pass-through of the merchant fee to consumers is 100 percent and discuss deviation from this benchmark later.

Customer's name	Consumer 1	Consumer 2	Consumer 3
Means of payment	Cash	Non-reward card	Reward card
Merchant's cost/fee	0.5 percent	1.5 percent	2.5 percent
Prices w/single cash discount	Pcash = $100.50	Pnon = $102.00	Prew = $102.00
Prices w/multiple discounts	Pcash = $100.50	Pnon = $101.50	Prew = $102.50

Table 2: Single cash discount differs from a flexible discount schedule.

Assume that the merchant breaks even if she can collect $100 (net of fees and cost associated with payment instruments) for each item sold. Table 2 assumes that the merchant's cost of handling cash is 0.5 percent, and that acquirers charge 1.5 percent for a basic (non-reward) card transaction, and 2.5 percent if the consumer pays with a reward credit card.

First, suppose that the merchant offers a cash discount. Under the no-surcharge rule and a single cash discount (currently allowed by Visa, MasterCard, American Express, and several states), the merchant is not allowed to set different prices for customers who pay with different types of cards, regardless of whether different cards impose different fees on the merchant. To recover costs on card transactions, the merchant sets a base price Pnon = Prew = $102.00. At that price, the merchant loses 50 cents by accepting the reward card, but gains 50 cents on a non-reward card transaction. Thus, in this example, non-reward card users subsidize reward card users. As Schuh, Shy, and Stavins (2010) have shown, this type of subsidy occurs under the no-surcharge rule.[25] Finally, note that the merchant recovers her costs on cash transactions by simply advertising the good for $102 and then providing a $1.50 cash discount, as allowed by the card networks under the current rules.

Next, suppose that, instead of offering a single cash discount, the merchant is allowed to offer multiple discounts based on the means of payment (as specified by the Proposed Settlement).[26] The base price is now set at $102.50, but she discounts non-reward card transactions to Pnon = $101.50 and cash transactions to Pcash = $100.50. Under the flexible discount policy, the merchant recovers her costs on each consumer separately, so no cross-subsidy among consumers is required. In contrast, a single cash discount leads to a cross-subsidy among payers, where consumers who pay with high-fee reward cards are subsidized by non-reward card users.

Since under the Proposed Settlement, the merchants are still not allowed to surcharge, the advertised base price always has to be the *highest* price. In the next subsection, we explain why surcharges and discounts are not equivalent. However, there are circumstances under which merchants may choose not to provide discounts even under the more flexible provisions of the Proposed Settlement. They include the following:

1) Consumers may be suspicious of merchants' motivation in offering discounts, and merchants may risk the loss of goodwill in establishing discounts for some payment types if consumers regard the discounts as unrelated to merchants' costs. Disclosure of merchant fee information to consumers is essential for overcoming this obstacle.
2) Merchants may not find it profitable to offer a cash discount to consumers who would use low-cost payments anyway; discounts may be profitable if they induce

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[25] Schuh, Shy, and Stavins (2010) find that on average, each cash-using household pays $149 to card-using households and each card-using household receives $1,133 from cash users every year. Because credit cards are disproportionally used by higher-income consumers, this transfer is regressive.

[26] The Settlement allows merchants to vary discounts or other incentives by card type, where type is defined as: "a category of General Purpose Cards, including but not limited to traditional cards, rewards cards, or premium cards (e.g., a "Visa Signature Card" or a "World MasterCard")." See http://www.justice.gov/atr/cases/f262800/262875.htm.

substitution toward low-cost payment methods, but unprofitable otherwise. In addition, merchants may need to post multiple prices for each product based on payment method, which would be costly to them and potentially confusing or frustrating to their customers.

3) In general, the optimal profit maximizing discount for merchants depends not only on the costs incurred by payment type but also on the number of transactions made with each payment instrument and the price elasticities of demand of various types of consumers. Lacking full information on some of these factors, merchants may choose to forgo discounting.

Regardless of the above conditions, it would be more conducive to competition if merchants were allowed to choose their pricing strategy taking into account the costs that they incur, their competitive market conditions, and their customers' preferences and demand elasticities.

5.2 Discounts versus surcharges

Although cash discounts and card surcharges may have equivalent arithmetic representations in some situations, they are not equivalent from a behavioral perspective. As first shown by Kahneman and Tversky's (1979) work on prospect theory, individuals perceive a bigger impact of losses than of gains, even when the monetary value is the same (a phenomenon known as loss aversion). As a result, consumers are likely to respond differently to discounts than to surcharges even if their value is nominally arithmetically equivalent.

Based on prospect theory, if consumers have to pay a surcharge for credit card transactions, they view the surcharge as a loss and are less likely to use a credit card, whereas if they are offered a discount for using cash or debit, they view the discount as a gain. Thaler (1980) makes this argument specifically about credit card surcharges and cash discounts, arguing that surcharges are perceived as an actual out-of-pocket expense, while discounts are perceived as an opportunity cost. Consumers view them differently because consumers are loss averse. If surcharges on credit card transactions are allowed, credit card use may decline, resulting in lower revenues for credit card issuers and networks. This may be why banks and credit card networks are opposed to surcharges.

There is little direct, transactions-based evidence on the overall effects of discounts and surcharges on merchants and consumers. However, Swedish furniture store IKEA reported results of its own recent experimentation with both practices at a 2010 conference.[27] IKEA, which views surcharging as "the last resort," began surcharging credit card payments by a fixed fee of 0.7 pound (70 pence) per transaction at its stores in the United Kingdom in 2004. This fixed-fee surcharge amounted to less than 1 percent of the average transaction value. IKEA found that "37 percent of credit card transactions moved to debit," and credit card fees fell 15 percent. (This result implies that smaller-value payments responded to the surcharge more than larger payments, probably because the latter are more likely to involve the extension of revolving credit.) IKEA also adopted a discount policy for debit cards at its stores in the United States. At the 2010 conference, IKEA reported that earlier it had given customers who used PIN debit a 3 percent price discount on the *return* shopping trip.[28] IKEA found that this discount policy, which it views as "less clear as price message and less efficient as guide [than surcharging]," produced a 9 percent reduction in credit card and signature debit card payments.[29] The surcharge and discount results are not exactly comparable because of the different countries and time periods, but they generally support the notion that consumers respond more to surcharges than to discounts.

Another common misconception is to view surcharges as anti-consumer and discounts as pro-consumer. Surcharging sometimes has a negative connotation to consumers and consumer groups. One comment on the Proposed Settlement submitted by the head of a U.S. consumer group alleges that consumers will pay more for retail products under the Proposed Settlement unless the Proposed Settlement explicitly prohibits surcharges. These views arise especially if the consumers have less than full information about the merchants' costs resulting from the consumers' payment decisions, and incomplete understanding of merchants' pricing policies—including the extent to which merchants pass through the merchant fee to final retail prices.

[27] See "Competition in Card Payments" by Martin Weiderstrand (IKEA EU Affairs), presented on June 22, 2010, at the conference *Payments Markets: Theory, Evidence, and Policy* at the University of Granada, Spain.

[28] IKEA later reduced the U.S. PIN-debit offer to a 1 percent price discount on return shopping trips, which is where the discount stands as of July 2011.

[29] IKEA returned to customers all surcharge fees it collected "thru one designated product" by reducing the price of that product and informing customers that the reduction was attributable to the surcharge fee revenue.

Competitive merchants already include the cost of payments, such as the merchant fee on credit cards, in their retail price. Because most merchants accept multiple methods of payment but charge one price for all payment methods, the markup in retail prices for payment costs reflects the combined effects of low-cost and high-cost payment methods. Thus, in theory, a surcharge on high-cost payment methods (credit cards) should steer consumers toward lower-cost payment methods, as it did for IKEA. As merchants' total costs of payments decline, competitive pressures should result in their offering lower retail prices. In practice, this market-based effect requires either a high degree of competition among merchants in retail markets or the pass-through of the cost savings by merchants who have some market power. The efficacy of the market-based effect may also depend on merchants' full and credible disclosure of their payment costs and pricing policies to consumers.

5.3 Examples of surcharges

Although U.S. merchants are prohibited by networks from surcharging credit card transactions, some government entities and non-profit educational institutions charge what is called a "convenience" fee for paying with a credit card. This occurs if an entity outsources credit card processing to an outside company and passes on the additional cost of credit card processing charged by that company to the customers. Although the fees are not labeled "surcharges," the effect is similar: consumers who choose to pay with a credit card pay a higher price. Figure 2 below provides an example of how a municipality surcharges for school lunch bills paid with credit cards, relative to paying via a bank account deduction. Notice that in percentage terms the "convenience" fee is not constant over a range—5 percent for $100 and 2.51 percent for $199—and it averages 3.76 percent, well above the average credit card merchant fee of about 2 percent.

Figure 2: Government disclosure of its card fees.

Similar surcharges for credit card transactions are imposed by colleges and universities for their tuition payments. Below is a quote from the University of Rochester website: "If paying by credit card, the UR ePAY vendor will assess a non-refundable 2.75% convenience fee for providing payment services."[30] The quote indicates that the fee is assessed by an outside vendor, and the university is just passing the full amount of that fee onto their customers (in this case, students and their families).

These examples of surcharges on credit cards demonstrate that the practice is already viable and accepted in segments of the economy. Of course, in these cases the surcharge right is granted in non-market-based instances (government, not-for-profit) where there is no competition over profits and market share. This fact may attenuate consumer distrust of the payee's motive for surcharging. It would be valuable to have empirical evidence on the effects of these surcharging examples, but to our knowledge no such research currently exists.

5.4 Competition, welfare, and surcharges

The case for allowing merchants to surcharge their customers, provided consumers are fully and accurately informed about costs (including fees) and prices, depends importantly on retail markets exhibiting competition among merchants and a lack of market power of merchants over consumers. In such a competitive market environment, economists generally argue that

[30] http://www.rochester.edu/adminfinance/bursar/billing.html

merchants and consumers are best allowed to decide in the marketplace what pricing and payment arrangement works best for them. Merchants will have the incentive to choose the fee disclosure and payment pricing policies that maximize their profit, and consumers will be able to make consumption and payment choices that maximize their utility.

Some authors, such as Monnet and Roberds (2008) and Wright (2003), argue that the no-surcharge rule can be welfare improving. In essence, the no-surcharge rule might help to correct the market failure associated with the existence of network externalities or monopoly power. Economides and Henriques (2010) argue that the no-surcharge rule "softens competition among payment networks and unbalances the fee structure in favor of card holders to the detriment of merchants" and show how the optimality of the no-surcharge rule depends on the extent of market power and payment network externalities. For this reason, Economides and Henriques argue for allowing surcharging on a market-by-market basis rather than universally. Overall, the externality argument in favor of the no-surcharge rule is most compelling in the case of an emerging payment network, where implicit subsidies may be needed to attract users and establish the network. This argument may have little relevance in the case of a mature payment network, such as credit cards in the United States.

A comprehensive welfare evaluation of the no-surcharge rule is beyond the scope of this paper. However, regardless of whether the no-surcharge rule is welfare improving or welfare reducing, releasing cost and fee information to merchants and buyers can only be welfare improving because merchants currently lack the information needed to optimally set even the cash discounts currently allowed. Incomplete disclosure of fee information will also be an impediment to merchants' ability to steer customers to less-costly payment instruments, as allowed by the Proposed Settlement.

6 Consumer information needs

In this section, we discuss what consumers need to know in order to make informed decisions regarding payment methods. We also touch on the importance of presenting the information in a manner that is clear and easy for consumers to comprehend.

6.1 Consumers lack information

Currently, many consumers have no information about merchant fees. Although they could access some of the information online, they are unlikely to do so. In a recent survey by Auriemma Consulting Group, 59 percent of respondents said that merchants pay transaction fees to credit card networks, with 32 percent assuming the fee is between 1 percent and 2 percent of the sale, somewhat below the actual merchant fee. However, about 41 percent of respondents did not think merchants had to pay credit card networks a fee to process transactions.[31]

When participants in a 2007 Harris Interactive poll (sponsored by the Merchants Payments Coalition) were given a description of interchange fees, only 32 percent said that they had ever heard of them.[32] Interestingly, 94 percent of respondents in that survey agreed (either strongly or somewhat) with the statement, "Credit card networks should be required to disclose to consumers the amount of interchange fees that they charge." Although currently there is only limited consumer awareness of interchange fees, these results provide some indication of latent demand for information about the fees.

6.2 What do consumers need to know?

For the relatively few consumers who may have searched and found publicly available interchange fees, it would be difficult to determine which fee category applied to their particular purchase. Even if they were able to do so, it would be nearly impossible for consumers to infer the exact merchant fee on their specific card use at a specific merchant's location, because of the complexities described above. And essentially no consumer could

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[31] The figures are taken from an article in *PaymentSource* by Stephanie Bell titled: "Consumers Express Mixed Feelings on Differential Pricing," September 10, 2010.

[32] The Harris Interactive report summarizing the survey may be accessed at c0462491.cdn.cloudfiles.rackspacecloud.com/HarrisPollSummary.pdf. The description of interchange fees given to survey respondents included the statements: "Typically, the interchange fee is not broken out separately on credit card statements but is reflected in the price of everything you buy even when you pay using cash, check, or PIN debit. The interchange fee automatically passes through to the consumer." So, it may be the case that some respondents who said that they had not heard of interchange fees knew that merchants pay fees for processing card transactions but did not think the fees were reflected in consumer prices.

possibly determine the extent to which the retail prices they face had been marked up by the costs of their own payment choices, much less by the choices of all other consumers.

As discussed above, consumers' lack of information about merchant fees is a major obstacle to merchants' ability to implement differential pricing effectively, even under the Proposed Settlement. Merchants have long expressed fears that consumers will suspect that they are being overcharged if prices vary with payment instruments. Indeed, there have been isolated cases where merchant surcharges on credit cards were much higher than the cost they incurred.[33] However, even under the no-surcharge rule, nothing prevents merchants from raising the retail prices uniformly for all payment methods. Allowing surcharges would let merchants raise prices differentially, based on their cost of accepting payment methods, most likely eliminating the need to raise prices for all consumers.

6.3 Information might harm or confuse consumers

To avoid confusion, the disclosure must be clear to consumers. Focus groups used by the Board of Governors of the Federal Reserve System in the context of the CARD Act have shown that consumers value clear, simple information, and dislike confusing, excessively large amounts of information.[34] The Board also commissioned studies of effective disclosure of credit card information through the Truth in Lending Act and found corroborating evidence favoring simplicity and clarity.[35]

Whether merchants surcharge credit card use or offer cash discounts, consumers have been observed to favor a single price over complex fee structures. The marketing literature has addressed some of the questions regarding how consumers actively process price information; some of this literature is surveyed in Winer (2005). Both the economics literature and the marketing literature have documented consumers' aversion to price complexity. For example,

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[33] See the *New York Times* article "U.S. Looks to Australia on Credit Card Fees," November 24, 2009, which reports on a case in which an airline charged a passenger 5.6 percent extra for paying with a Visa credit card.

[34] *Federal Register*, Vol. 74, No. 18 (January 29, 2009) and
http://www.federalreserve.gov/newsevents/press/bcreg/20070523a.htm

[35] See the findings of an experimental study and quantitative consumer research in two reports titled "Design and Testing of Effective Truth in Lending Disclosures," which were submitted to the Board of Governors of the Federal Reserve System by Macro International Inc. on December 15, 2008.

Prelec and Loewenstein (1998) introduced the concept of "mental accounting" to describe the "painful" process of sorting out the different prices.

7 Implementation issues and options

Even if merchants had perfect information about merchant fees, allowing them to map each payment card to its exact fee, and were allowed to surcharge their retail prices based on payment methods used, it is not clear how their new pricing flexibility would be implemented in practice. In this section we discuss possible ways merchants or issuing banks could reveal the credit card fees to consumers as well as why they may want to do so (acquirers generally do not communicate with consumers directly about merchant payments).

7.1 Option #1. Provide general information

One option is to inform customers as they enter a store (or web site), by either posting signs or even providing the opportunity to swipe their card before shopping. Some merchants have already appealed to their customers to help keep costs and retail prices down. Figure 3 shows an example of such an appeal spotted in early 2010 at a store entrance. Although the store does not disclose its fees exactly, it conveys a general idea of the costs and asks customers to use cash. This type of appeal is explicitly allowed under the Proposed Settlement, and proliferation of this approach, with even more specific fee information, can likely be expected.

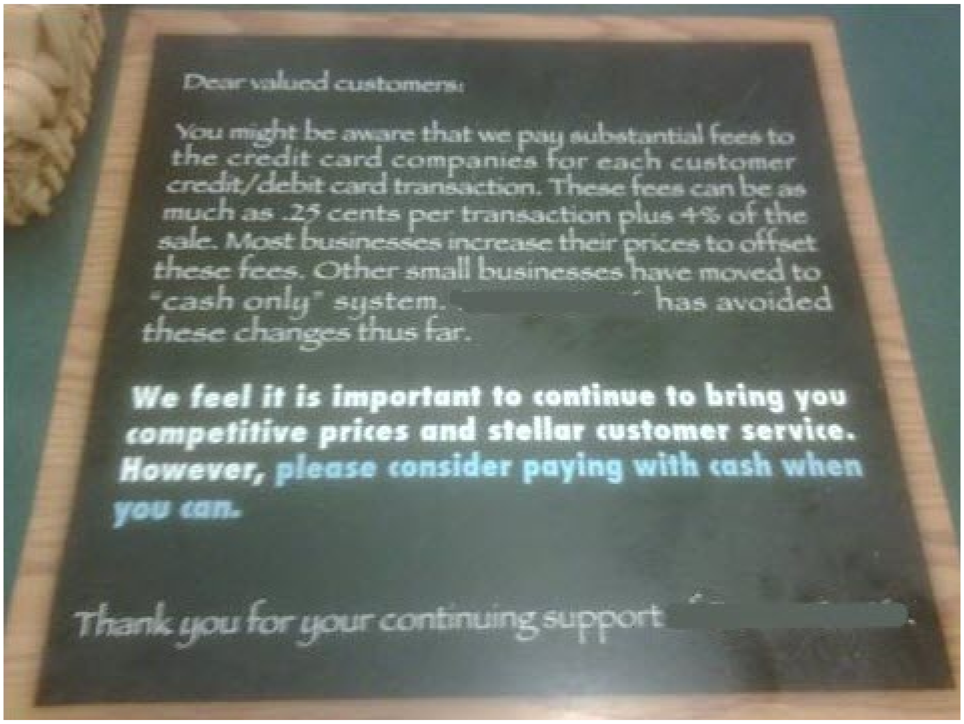

Figure 3: Merchant's appeal for cash

7.2 Option #2. Provide exact information at the point of sale

Another option assumes that the merchant has full information about fees, received instantaneously as the card is swiped. In this case, the merchant could make his credit card fees transparent directly on a customer's receipt. In the example illustrated in Table 3, a 2-percent merchant fee is shown explicitly on the receipt. The receipt would inform the customer of the merchant's cost associated with the use of a credit card in the transaction. The advantage of this option is that consumers would see the impact of their payment decisions at the point of sale for each transaction, albeit after completing the transaction. On the other hand, consumers might be confused by this fee information, which would make their receipts more cluttered, and they might be annoyed to find out the information only after the transaction had gone through.

Drilling Supply Inc.			
1 Bit Drive, Boston MA			
1-800-555-1234			
Sale: 05/28/2010 17:53			
QTY	Item		
2	Drills @ $45.00	$90.00	
	MA Sales Tax 6.25%		$ 5.62
TOTAL			$95.62**
***Your credit card purchase requires this merchant to pay a credit card processing fee of $1.91 (2%). The fee is shown here for information only, and does not require any action on your part.*			
Card No.: xxxxxxxxxxxx4321 Authorization No. 04321			

Table 3: Sample receipt that provides merchant fee information to consumers who pay with cards.

Full implementation of this disclosure option might be feasible with the networks' new inquiry services, although it might also require some technical adjustments and investments by merchants. The inquiry services might also make it feasible for merchants to allow consumers to swipe their cards at the beginning of checkout and view the card fee information electronically on a screen. This option has the advantage of providing the information before the transaction, but might slow down the payment process.

7.3 Option #3. Print information on the consumer's statements or card

An alternative way of informing consumers about fees that may be less costly to implement in the short run is for credit card issuers to print the fee information on each cardholder's statements or credit card. For this option to be feasible, issuers would need to have information about the fee associated with each transaction (note that, even for a given card, the fee varies with the type of merchant and type of transaction). Recall that a merchant fee includes several components, and the bulk of that fee is comprised of the interchange fee, which is transferred from the acquirer to the issuer. Although issuers probably do not know the exact value of the merchant fee, they should be able to report the exact value of the interchange fee that they charge acquirers.[36]

Transaction Date	Description	Amount	Credit Card Interchange (or Merchant) Fee
05/28/2010	Drilling Supply Inc.	$95.62	$1.91 (2%)
05/29/2010	Kundin Doughnuts	$2.17	$0.05 (2.5%)

Table 4: Suggested monthly statement displaying merchant or interchange fee for each transaction.

This method of fee disclosure could be implemented on a statement in one of two ways, as shown in Tables 4 and 5, respectively. Table 4 shows how issuers could add an additional column to the itemized list of charges on their customers' monthly credit statement, showing the interchange fee for each item, in either percentage terms or dollar terms, or both. However, consumers may have difficulty in discerning the underlying fee structure from the fees itemized by transaction on their monthly statements. So, in addition to, or instead of, listing fees by transaction, issuers could display the fees in summary form (average, blended, etc.) inside the Schumer Box, as shown in Table 5. [37]

Table 5 shows how issuers could add an additional "square" to the Schumer Box displaying the total (monthly) fees paid by merchants (or acquirers) to the card issuing bank for clearing the card transactions listed on the term statement. Likewise, issuers could print some or all of this information, along with card type, directly on the consumer's credit card. An advantage of this strategy is that both the consumer and the merchant would see the same fee and type information for a particular card.

[36] Acquirers also could provide the merchant fee for each transaction to the card issuers the in the same way they would to merchants, as described earlier. In this case, the credit card statement could then reflect the merchant fee, which would reveal to consumers the full impact of the payment choice on merchant costs.

[37] The Schumer Box is named for the then-chairman of the Senate Banking Committee that passed landmark consumer protection legislation, Sen. Charles Schumer. This standardized disclosure "box" features relatively consistent terms and conditions for credit card offers, which allows consumers to compare cards in a consistent way. The Schumer box includes annual fee, annual percentage rate for purchases (APR), other APRs (balance transfer, cash advances, default APRs).

Cardholder's Terms and Fees	
Annual Percentage Rate (APR) for purchases	18.99% Variable
Grace period for repayment of the balance for purchases	45 days
Other Fees	Balance transfer fee: 3% of each balance. Cash advance fee: 3% of each cash advance; $5 minimum. Over-the-credit-line fee: $35
Interchange (or Merchant) Fees Paid for Transactions with this Card	
Entertainment, Transportation, Restaurants, and Hotels	2.50%
Department & Grocery Stores	1.42%
Other Stores	1.95%
Government & Non-profit	0.80%

Table 5: A proposal for an expanded Schumer Box that displays total interchange (or merchant) fees associated with the particular card from this issuer.

Unlike merchants, card issuers do know the exact interchange fee collected for each transaction. They can therefore itemize the fees on the monthly statements sent to cardholders. We view this disclosure by the issuers as more practical—at least in the short run—possibly leading to the implementation of the disclosure by the merchants in the long run. The disadvantage of this approach is that, unlike merchants, issuers have no incentive to make credit card fees transparent to consumers. Revealing interchange fees on each transaction might weaken their competitive position. It is unlikely that issuers would voluntarily agree to disclose that information. In addition, cardholders may get confused as to how merchant fees were paid. Some additional explanation, such as: "these fees are displayed here for information only and are not paid directly by the cardholder," might be helpful.

7.4 Ideas on ways to avoid consumer backlash

Many merchants—even those strongly in favor of fee disclosure or surcharging—readily admit that they face a "public relations nightmare" when it comes to differentiating prices according to payment method. With full information about fees and the right to surcharge, merchants could attempt to influence their customers' payment choice at the register when a credit card is swiped, as described in Option #2. However, most consumers probably would not be happy to learn that their credit card choice will cost extra *after* the register rings up the total sale. Needless to say, consumers might not easily accept the pricing uncertainty associated with such a system.

Thus, even with full information about fees and the right to surcharge, merchants may have to rethink their pricing and payment acceptance policies and revamp them entirely. One possible strategy merchants might have to consider is posting their prices and surcharges well in advance of the transaction, as the exact mapping of each credit card to the corresponding merchant fee would occur only when the card is swiped.

Perhaps a more practical implementation strategy might involve setting up only a few different fees, for example one price for using a plain (non-reward) card, one for using a reward card, and another for using other payment methods. Even though such a simplified pricing mechanism would not capture the complexity of the interchange fee schedule, it would allow merchants to provide incentives to their customers to avoid using the most expensive payment methods, typically the rewards cards. Credit card issuers would be able to notify their cardholders whether their cards carry rewards or not at the time the card is issued.

8 Anticipated effects of the Proposed Settlement

In this section, we assess the potential effects of the Proposed Settlement on the parties involved in credit card transactions: merchants, consumers, and banks. The actual effects observed will depend crucially on two conditions we have discussed thus far: 1) whether merchants have full information about merchant fees for each card in real time; and 2) whether merchants are allowed to surcharge card use (in addition to offering discounts). The networks' new inquiry services may satisfy the first condition, but the second is not likely to occur any time soon. To provide clear and useful assessments, we assume for the purpose of this section that merchants have full information about fees and the ability to surcharge card use.

8.1 Merchants' response

Since the Proposed Settlement *allows* merchants to steer their customers toward less expensive payments methods, but does not mandate them to do so, its effect depends on whether or not merchants take advantage of their new rights. There are at least three possible ways merchants may provide incentives to the consumers to use less costly payment instruments:

(1) disclose their credit card fees (if known) to consumers, either by displaying the fees in the store and/or by including them in advertisements and other promotional materials;

(2) introduce discounts for less costly payment methods, such as PIN debit cards or cash;

(3) impose surcharges on credit card fees (if allowed), either uniformly across all credit cards, or by differentiating the surcharges according to the merchant's costs, for example by surcharging rewards cards at a higher rate than others.

Without policy (1), merchants are unlikely to introduce policy (2) and even less likely to introduce policy (3). That is because without information about the differences in fees across the payment methods, consumers might not realize that merchants are trying to recover their own costs of accepting payments. Informing consumers would likely help merchants alleviate those concerns.

Another possible benefit of full disclosure of merchant fees is that it may induce banks to simplify the entire fee structure. The current interchange and merchant fee structure is complex and confusing to both merchants and consumers, in part because there are over 100 different fees. If banks were mandated to disclose the fees, they might prefer to reduce the current structure to a simpler set of fewer fees.

8.2 Effect on merchants' profits

The Proposed Settlement gives merchants flexibility to introduce policies that are optimal for them, given their specific market conditions. Because merchants are profit maximizing, presumably they will take advantage of this flexibility only if it is profitable to do so. Even if merchants decide to disclose their fees and/or change their prices, their profits may not change if consumers do not respond to the changes. Therefore, merchants' profits likely will either increase or remain the same, but are unlikely to decline—except perhaps in the very short run as merchants experiment with the new flexibility.

In highly competitive retail service markets, competitive pressure would result in merchants' cost savings from reduced merchant fees being largely passed on to consumers. However, in imperfectly competitive markets this may occur to a much lesser extent. The split of lower merchant fees between consumers, who would benefit to the extent to which merchants lowered their prices, and merchants, whose profits would increase if their prices decreased less than their fees, would likely vary greatly over markets, depending on the extent of price competition, the ease of new firms entering the market, and marketing and psychology.[38] It is even possible that in markets where merchants have sufficient market power they might pass through or surcharge more than the actual merchant fee. Wright (2003) shows that when merchants have significant market power, the no-surcharge rule may be able to prevent excessive merchant surcharging.

There is evidence from Australia, which abolished the no-surcharge rule for credit cards in 2003, that such concerns have real-world relevance. A recent review by the Reserve Bank of Australia (2011) summarizes trends in surcharging. The percentage of Australian merchants who impose surcharges has increased over time, and large merchants are more likely to impose surcharges than are small merchants. Among merchants who surcharge, the average surcharge rate has increased over time and currently exceeds average merchant fees. This has led to concern about excessive surcharging and consideration of possible policy responses. Among the policy remedies under consideration are capping of allowable surcharges and disclosure of merchant fees to consumers (so that consumers could judge the reasonableness of surcharges).

[38] For example, there are some widely observed marketing strategies, such as the "99-fixation," where merchants set prices such as $19.99. These practices are set for reasons related to consumers' information-processing patterns during shopping, and these may not change.

8.3 Effect on bank revenues and profits

In this subsection we analyze the potential effects on the banking sector, including the issuing banks, the acquiring banks, and the credit card networks. We assume that the current policy of not allowing for fee disclosure or other incentives is the most profitable strategy for banks. It therefore follows that banks—as a sector, not necessarily each individual bank—likely will see lower credit card fee revenue under the new policies. If merchants do not adopt any of policies (1) – (3) above, consumers' payment behavior may not change, and therefore banks' revenues and profits would stay the same. If merchants change their policies *and* if consumers alter their payment behavior, we expect banking revenue from credit card fees to decline. If credit card borrowing declines, bank revenue from revolving credit interest may also fall.

Although we cannot predict the exact magnitude of the effect on banks' revenues without a formal economic model, we can assess the empirical importance of merchant fees and credit card interest revenues relative to total banking sector revenues and profits. Figure 4 shows the share of credit card merchant fees and interest income (from consumer credit cards) in the banks' core revenues during the past several years.[39] Merchant fees constitute approximately 5 percent of total banks' core revenues, and interest and fee income from consumer credit cards constitute approximately 6 percent of banks' core revenues. Both shares have remained relatively stable over the past few years. The combined income related to credit cards constitutes about 11 percent of core bank revenues.

Even if merchants take advantage of the new policies, it is unlikely that consumers will stop using credit cards altogether. Because we have only limited estimates of consumers' demand elasticities in response to differentiated prices by payment methods (for example, the IKEA experiments), we cannot accurately predict changes in consumers' payment behavior. However, to generate a notable decrease in banks' revenues resulting from the new policies, consumers would have to substantially decrease their use of credit cards. It is possible that liquidity-constrained consumers who borrow on credit cards will not diminish their credit card

[39] Core revenues are defined as interest plus non-interest income excluding provisions for loan and lease losses, realized gains (or losses) on securities, and extraordinary items. Data are based on the Federal Reserve Payment Study estimates of credit card spending and the FDIC Call Reports' data on interest income and core revenues.

use at all, even when merchants surcharge credit card use. Other consumers may continue to use credit cards because they value the characteristics of credit card payments enough to offset the cost of the surcharge. Banks may also attempt to offset the decline in revenue from lower consumer use of credit cards by increasing fees for credit card services, although the extent to which they could do so would be limited by competitive pressure and consumers' willingness to pay for credit card services. Banks' revenue from non-credit card payment processing, such as PIN debit, would likely increase if credit card use declined, although the interchange fees on these transactions are substantially lower.

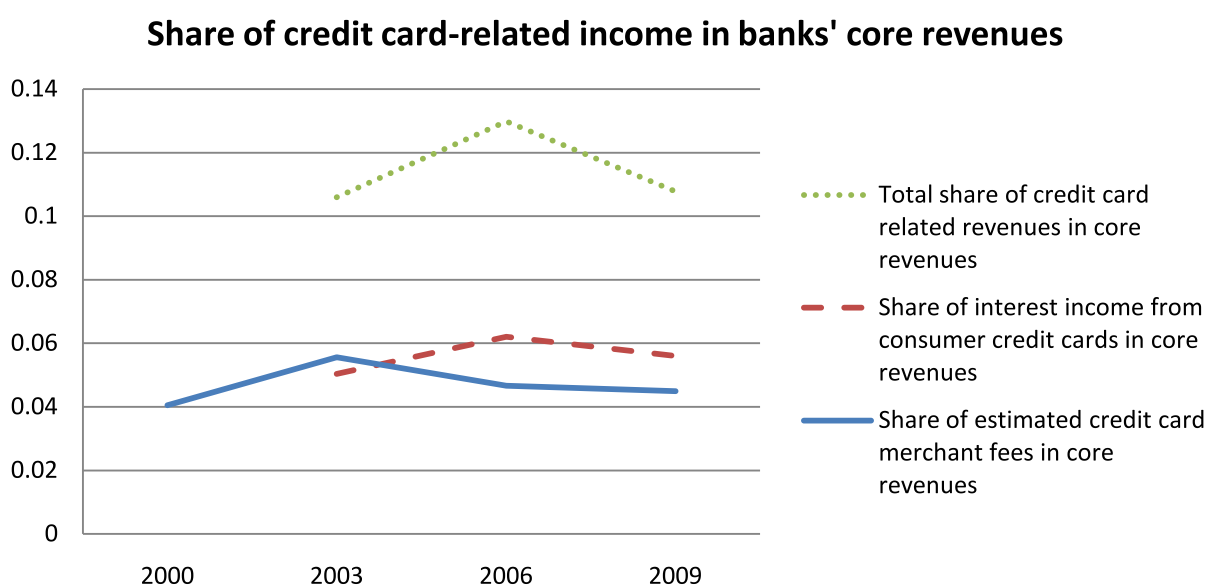

Figure 4: Banks' revenues from consumer credit cards as a share of total core revenues (interest plus non-interest income, excluding special factors; see footnote 39).
Sources: Federal Reserve Payments Study, FDIC Call Reports, authors' calculations.

An additional effect of the policy is the secondary effect of a decrease in credit card rewards. Credit card rewards are at least partly—if not mainly—funded by the merchant fees (recall that the bulk of those fees are transferred to the issuing bank as interchange fees, and the issuing bank gives rewards to its cardholders). A decline in merchant fees may therefore lead to a decrease in rewards, which would reduce banks' costs. Agarwal, Chakravorti, and Lunn (2010) estimate the effect of rewards on credit card spending and debt. They find that credit card spending and debt are highly elastic with respect to rewards, although their analysis is based on an introduction of new rewards, and not on a reduction in rewards, so it is not clear whether reducing or eliminating existing rewards would generate a symmetric effect.

Interestingly, Agarwal, Chakravorti, and Lunn (2010) find that "consumers offset their increased spending and debt on their rewards card by lowering their spending and debt on their other credit cards." If merchants differentiate their prices—either by discounting or by surcharging—between high-fee rewards cards and lower-fee non-reward cards, consumers might switch their credit card purchases to the non-reward cards. In that case, merchants' payment costs would likely decline. But the effect on banks' profits depends on the portion of merchant fees that is returned to the cardholders in the form of rewards. Banks' profits may not be adversely affected if the reduction in merchant fee revenues is fully transferred to consumers when their rewards are cut or eliminated.

8.4 Effect on consumer welfare

We explained above that we expect merchants' profits to be somewhat higher than they are now, and we expect banks' net revenues from credit card payments to be somewhat lower than they are now. The effect on consumer welfare is more ambiguous, and depends on many factors. First, it depends on the merchant reaction discussed in Section 8.1 above. Second, if merchants do react, then the effect on consumers depends on their price elasticities of demand (with inelastic demand they will not change their behavior), on liquidity constraints (see above—liquidity-constrained consumers may continue using credit cards regardless of surcharges), and on consumers' aversion to price complexity (consumers may dislike shopping at merchants with an overly complex pricing structure).[40] Because of the many layers of uncertainty, we cannot foresee the full effect on consumer welfare.

We anticipate that if the additional policies are implemented, merchants' pricing policies will be sufficiently effective to induce consumers to use less-costly payment methods, thus

[40] Using data from the Netherlands, where merchants are permitted to surcharge dedit card transactions, Bolt, Jonker,and van Renselaar (2009) find that surcharging has a sizable impact on consumers' choice of payment instrument.

leading to lower overall retail prices. However, as discussed above, the extent to which reductions in merchant fees are passed through in reduced consumer prices depends on the degree of competition.[41] Lower prices would make consumers better off by increasing their real income, but relative benefits would vary across consumers, given that some consumers benefit from credit card rewards that might be eliminated as a result. A reduction in credit card use and rewards would probably reduce the implicit transfer of wealth from low-income to high-income households described in Schuh, Shy, and Stavins (2010). However, if banks reduce the supply of credit card services (or raise the price) then credit-constrained consumers might be adversely affected if they cannot find comparable credit at the same price.

8.5 Potential response by banks

In the event that card issuing banks face a reduction in interchange fees, banks may respond by changing the menu of credit card services and associated fees that they offer. For example, they might increase monthly credit card account fees or introduce per-transaction fees for payment services that are not explicitly priced now. Banks' response is likely to depend on whether merchants introduce discounts or surcharges on payments, and on how consumers respond to those price changes. Banks may bundle some of their products or services with credit cards to make the cards more attractive to consumers. Whether banks will respond in some of these ways depends on many diverse and complicated factors, including the current profitability of credit card issuance and processing, as well as the levels of merchant fees and cardholder rewards that would emerge under the new policies.

9 Conclusion

The Proposed Settlement is a significant step forward in correcting market failures generated by the existing payment card system. In particular, explicitly allowing merchants to disclose their fees to consumers in an effort to steer their customers toward lower-cost payment instruments

[41] Perfectly competitive product markets are not necessary for the result that relaxation of the no-surcharge rule will benefit non-credit-card paying consumers. Schwartz and Vincent (2006) show that cash-using consumers benefit from relaxation of the no-surcharge rule even when merchants are local monopolists.

is likely to improve the existing system. However, our analysis has highlighted some factors that may inhibit the implementation of the Proposed Settlement.

Our analysis suggests that the Proposed Settlement may not achieve its full intended effect if merchants do not have full information and flexibility to differentially price payments. Full disclosure of merchant fees is likely to complement the provisions of the Proposed Settlement in bringing competitive forces to bear in the payment card market. As the Proposed Settlement currently stands, merchants may not be able to exercise price differentiation due to an inherent lack of detailed knowledge of the level of merchant fees. Allowing merchants the flexibility to use surcharges as well as discounts to influence consumers' choice of payment instrument may also help to further the objectives of the Proposed Settlement, although the effect of surcharging on consumer welfare depends critically on the degree of competition among retailers.

Finally, the refusal of American Express to join the Proposed Settlement may have effects on the participants and functioning of the credit card market. Merchants that accept American Express in addition to Visa and MasterCard may have to continue to adhere to American Express rules, which could limit these merchants' ability to take advantage of the most important provisions of the Proposed Settlement. However, the effects and implications of decisions by American Express are not known at this time and their analysis is beyond the scope of this paper.

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