# Antitrust Issues in Payment Card Networks:
## Can They Do That? Should We Let Them?

BY ROBERT HUNT

In the United States, payment card networks coordinate the activities of thousands of financial institutions that issue cards, millions of retail locations that accept them, and several hundred million consumers that use them. This coordination may include the collective setting of certain prices and other controversial network rules. Such practices have recently come under the scrutiny of antitrust authorities in the U.S. and abroad. In this article, Bob Hunt describes the economics of the payment card industry and explains how it differs from the textbook model of competitive markets. He argues that these differences should be reflected in the antitrust analysis of payment card networks.

In the United States, general-purpose payment cards — Visa or MasterCard, ATM cards, or debit cards — are ubiquitous and easy to use. In 2000, there were about 900 million general-purpose payment cards in the U.S., or about four for every adult. These cards were used in 28 billion transactions worth $1.9 trillion. Indeed, payment cards are displacing the paper check at the point of sale — the number of consumer checks written peaked during the 1990s and is now in decline.[1]

In this article, I explore how payment cards work and explain why we need to think a little differently about the market for consumer payment methods than we do for most other markets. This has implications for when, why, and how the rules of antitrust law — which regulate how firms may exercise market power — should be applied to this industry. This is not just an academic question: In the U.S. there are currently two important antitrust cases involving payment cards. Australia recently introduced new regulations for the payment card industry in that country while the U.K. and the European Union have contemplated similar measures.

Payment cards have two distinguishing features that lead us to think differently about this market. First, payment cards exhibit what economists call network externalities — for example, payment cards are more valuable to consumers when more merchants accept them. Second, in the U.S. at least, thousands of banks and other firms provide payment card services to millions of cardholders and millions of merchants who accept cards. In an environment with network externalities and so many participants, economic theory suggests that some form of coordination is beneficial, possibly essential. In the U.S., this is usually done by forming a payment card network.

Payment networks coordinate the behavior of banks, merchants, and consumers by setting certain prices and rules. In many other contexts, such practices might be considered anti-competitive. It is also possible they can have anti-competitive effects in the market for consumer payments. Yet a careful examination of economic theory tells us this is not always the case.

The challenge to policymakers is to decide, based on the available information, whether a network's

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[1] These statistics are from the Bank for International Settlements' *Statistics on Payment Systems in Selected Countries* (2002), Table 6. They exclude store cards. The decline in checks' share of consumer transactions — relative to credit and debit card transactions — is documented in the article by Geoffrey Gerdes and Jack Walton.

pricing strategy and rules are likely to advance or retard economic efficiency. Such conclusions are complicated by dynamic considerations — a network that exercises market power may spur the development of competing networks with superior technology.

## THE ORGANIZATION AND ECONOMICS OF PAYMENT CARD NETWORKS

The U.S. payment card industry involves thousands of banks participating in a number of networks, millions of consumers who find it valuable to use a payment card, and millions of merchants who find it valuable to accept those cards.[2]

**Pricing and Rulemaking in Payment Card Networks**. Banks engage in two types of activities within a payment card network.[3] Card *issuers* are banks that offer cards to consumers and determine the level of any fees or finance charges their customers see on their regular statements.

Merchants also have banks, called *acquirers*, that process card payments on their behalf.[4] Merchants pay their acquirer for these services by accepting a *merchant discount* — when a consumer makes a $1 purchase using a payment card, the acquiring bank pays the merchant slightly less than $1 for that transaction (Figure 1).

An *open payment network*, like the bankcard associations Visa and MasterCard and most electronic funds transfer (EFT) networks, allows many banks to participate. The association builds and maintains much of the infrastructure: the lines and switches required to route transaction information between different acquiring and issuing banks. The associations specify that, for each transaction, an *interchange fee* be paid to the bank issuing a card by the bank acting as the acquirer for the merchant.[5] In the U.S., about 1.5 percent of the value of all general-purpose-card transactions flows to issuers in the form of interchange fees — about $23 billion a year.[6]

An interchange fee is one way to ensure that network participants are

[2] The organization and development of the U.S. payment card industry is described in the book by David Evans and Richard Schmalensee and the book by Lewis Mandell.

[3] In this article, I will focus on general-purpose credit cards, such as Visa or MasterCard, and debit cards. I will not discuss department store cards, oil company cards, or bank cards when they are used at ATMs.

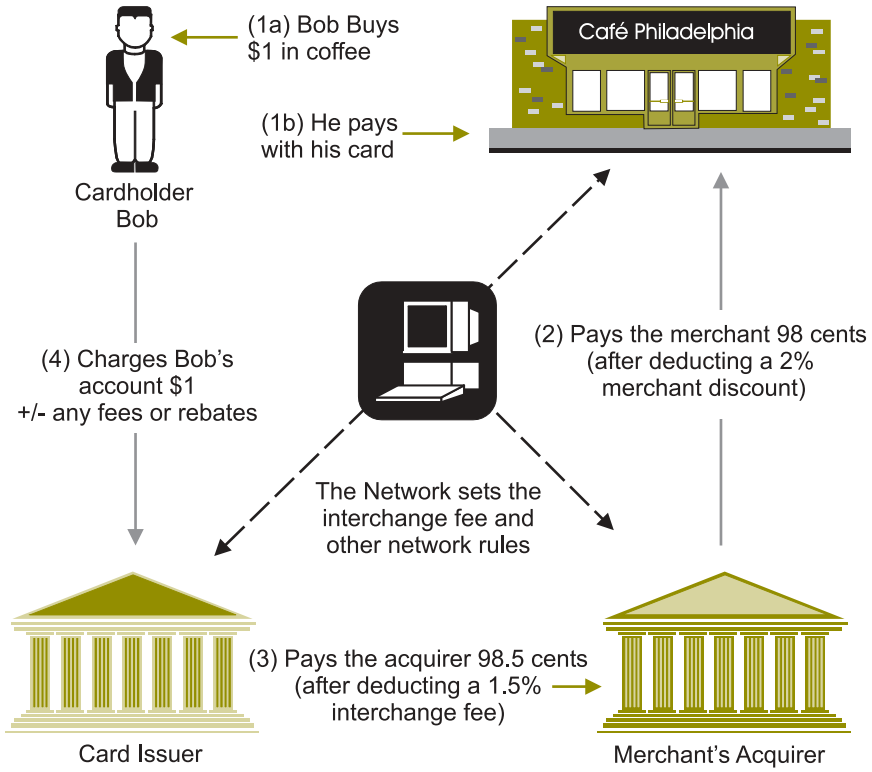
[4] They are called acquirers because they acquire transactions for the network.

[5] In a *closed* network, the card issuer also acts as the acquirer. Such networks carry a merchant discount but not an interchange fee. Examples include American Express and Discover.

[6] This estimate is from *The Nilson Report*, February 2002 (No. 758).

## FIGURE 1

### Flow of Payments in a Stylized Card Network*




* This figure is an illustration; it is not a precise description of any actual network. In particular, it does not reflect the timing of actions required to authorize or settle a transaction.

In the figure, the card issuer makes a payment directly to the merchant's bank. In some networks, this is not done directly, but instead is done via payments to and from the network itself.

The merchant discount and interchange fee are simply illustrative. Other fees (e.g., switch fees) are not included in the figure.

able to recover their costs. But, as we will see, it can also be used to coordinate the activities of banks that issue payment cards and acquiring banks that process transactions on behalf of merchants. Even though consumers do not directly pay the interchange fee, it often affects the cost and benefits of using a payment card. For example, issuing banks that receive higher interchange fees will have an incentive to reduce fees that cardholders pay (annual fees, transaction fees, or interest rates). Or they may offer incentives such as cash back or frequent flyer miles. The interchange fee also affects the acquiring bank because the bank must cover that fee through the discount it charges merchants. That, in turn, influences merchants' willingness to accept cards.

The bankcard association also acts as the rule-making body for the network. In recent years, two of these rules have received a great deal of attention. First, the *honor-all-cards rule* says that merchants wishing to accept a card brand must accept all cards issued under that brand. For example, a merchant who accepts a Visa card issued by ABC Bank must also accept Visa cards issued by XYZ Bank. In addition, merchants must accept all types of a particular brand — from platinum to plain vanilla cards.[7]

Second, the no-surcharge rule says that merchants may not charge customers more for a transaction using one brand of card than for a transaction involving any other brand. Taken together, these rules require that merchants treat all cards issued under a given brand equally and must not favor another card brand by offering its users better prices.

[7] Bankcard association rules require merchants to accept their brands of debit cards as well.

**The New Kid on the Block: The Debit Card**. Debit cards allow customers to pay for goods and services at the point of sale by authorizing a withdrawal from their checking or savings account. In the U.S., debit transactions at the point of sale only became common in the 1990s, but they have increased extremely rapidly. In the 20 years ending in 2000, consumer purchases made via debit cards rose from essentially zero to account for nearly 12 percent of all noncash consumer transactions. During this same period, the share of these transactions paid via credit card increased from 14 to 21 percent; the share paid by check fell from 86 to 59 percent.[8]

In the U.S., debit transactions at the point of sale only became common in the 1990s, but they have increased extremely rapidly.

Most ATM cards can be used at the point of sale as debit cards. Such transactions are called *PIN debit* transactions because the cardholder must enter her four-digit PIN to authorize the transaction.[9] Funds are then immediately withdrawn from the associated bank account. The transaction itself is routed through an electronic funds transfer (EFT) network, for example, Star, NYCE, and Pulse.[10] But in order to accept PIN debit transactions, the merchant must first install a PIN pad and have a contract with one or more EFT networks. Today, about 1.3 million different store locations can accept a PIN debit transaction.

Visa and MasterCard offer their own brand of debit card, but they function differently. These cards can typically be used for PIN debit transactions, but they can also authorize transactions with just the signature of the cardholder. A purchase paid for in this manner is often called a signature debit transaction. Unlike a PIN debit transaction, a signature debit transaction does not immediately remove funds from the cardholder's account; it typically takes a day or two for the transaction to clear. This delay creates some credit risk for the issuing bank because the cardholder may have insufficient funds in her account at the time the transaction clears. So, unlike with ATM cards, banks offer signature debit cards only to account holders that meet minimum credit standards.

Another important difference between the two types of debit transactions is that a signature debit transaction can be carried out with the same equipment used to authorize credit card transactions. In fact, under the honor-all-cards rule, stores that accept Visa or MasterCard must also accept the comparable brand of debit card. Currently, 4.9 million store locations in the U.S. accept one or both of these cards, offering a huge merchant base for signature debit cards.[11] Signature debit transactions are routed over the card associations' network, and the card

[8] See the article by Gerdes and Walton. These statistics refer to the number of transactions, not the value of those transactions.

[9] A PIN, or *personal identification number*, is a four-digit number entered on a keypad at an ATM machine or point-of-sale terminal. Many networks require a PIN because, as long as it remains confidential, a PIN can verify that the card is being used by the authorized cardholder.

[10] These networks are also the backbone of the 350,000 ATM machines around the country.

[11] Information is from *The Nilson Report*, June 2002 (No. 765), in a column entitled "Retailer/Bank Card Lawsuit."

issuer receives an interchange fee comparable to the interchange fee on a credit card transaction.[12]

**Network Effects and Fixed Costs in Payment Card Networks.** Payment networks function differently from most markets, in part because of *network effects*.[13] A payment card is more valuable to consumers when more merchants accept the card. At the same time, merchants are more willing to accept a card if they know many consumers use it. Every consumer who obtains a card and every retailer who accepts a card increase the value of the network to all other cardholders and all other merchants who accept it. Such decisions create externalities that have a number of implications for the evolution and efficiency of payment networks.[14]

First, consumers and merchants are unlikely to take network effects into account unless such effects are reflected in the prices they pay or the benefits they receive.[15] If these effects are ignored, the payment network is likely to be too small or underutilized.

Second, payment networks exhibit increasing returns to scale. If a network is introduced on a small scale, there is inertia — consumers and merchants have little incentive to join. Since such a network would clearly be unprofitable, it would never be launched. But if a network is launched on a large scale, it's possible that many consumers will carry the card and many stores will accept it. If that happens, even more stores are likely to accept the card, which may induce even more people to carry the card and so on.

Third, network effects suggest that there could be significant barriers to entry, and those barriers may permit established payment networks to maintain prices above costs for some time. The reason is that in order to successfully enter the market, a rival network must do so on a large scale. But the market may not be large enough to support more than a few networks at such a scale.

Modern payment card networks require large investments in communications and computing facilities in order to make card transactions convenient to customers and merchants and to minimize fraud.

A second factor that distinguishes payment cards from many, but certainly not all, industries is the large fixed cost associated with establishing a viable payment network. Modern payment card networks require large investments in communications and computing facilities in order to make card transactions convenient to customers and merchants and to minimize fraud. The latter is especially important to card issuers because network rules typically promise to pay merchants for fraudulent transactions as long as the network's procedures are followed. If networks did not make this promise to merchants, fewer merchants would be willing to accept payment cards.[16] But card issuers will accept the cost of fraudulent transactions only if the network's antifraud technology is sufficiently effective.[17]

Network effects and fixed costs at the network level may explain why bankcard associations and EFT networks use many of the strategies described earlier. Setting an appropriate interchange fee is one way to ensure that network members take into account network effects, presumably increasing card usage. This in turn reduces the unit cost of card transactions, making payment cards more attractive to use or accept.

Setting the fee at the network level eliminates costs associated with bargaining between individual card issuers and acquirers and uncertainty about the actual costs of a card transaction.[18] Consumers are more likely to use

[12] A $40 signature debit transaction generates an interchange fee of about 60 cents (1.5 percent) while a comparable PIN debit transaction generates an interchange fee of about 18 cents (0.5 percent). See the August 8, 2002 edition of *ATM and Debit News*.

[13] A nontechnical discussion of this subject can be found in the "Symposium on Network Externalities." For applications of the theory to financial networks, see the article by Nicholas Economides and the one by James McAndrews.

[14] An externality exists when the decisions or activities of one entity affect, positively or negatively, the environment of another.

[15] For example, consumers are sometimes offered cash back or frequent flyer miles as an incentive to use their cards.

[16] An exception to this rule for credit cards is card-not-present transactions, such as Internet or telephone orders, where network rules stipulate that fraud losses are borne by the merchant.

[17] As with network effects, large fixed costs imply economies of scale. This could explain why we did not observe an increase in the number of payment networks in the 1990s (in fact, there was a significant decline), even though technological advances significantly reduced the merchant's cost of accepting a new payment card.

[18] Why doesn't the collective setting of the interchange fee — an obvious example of price fixing among competitors — violate U.S. antitrust law? Federal courts have recognized there are situations where such arrangements may promote rather than retard competition. See the *Broadcast Music, Inc.* and *NaBANCO* cases.

a payment card if they know where it will be accepted and on what terms. The honor-all-cards rule and the no-surcharge rule reduce the uncertainty consumers would otherwise face. This was especially important in the late 1960s and 1970s, when the card associations were trying to build nationwide acceptance of credit cards issued primarily by small banks. But do these mechanisms remain essential after a payment card network becomes well established?

There could be a dark side to all this coordination: These rules might

## Legal and Regulatory Challenges to Payment Card Networks

**United States.** In October 1996, Wal-Mart and other retailers filed an antitrust suit against Visa and MasterCard.[a] This suit later became a class action, representing several million retail locations. In April 2003, the district court ruled on the pre-trial motions, reaching a number of conclusions favorable to the plaintiffs' tying claim.[b] The case was settled shortly thereafter. The bankcard associations agreed to revise their honor-all-cards rules so that merchants can separately decide whether to accept their brands of credit and debit cards, to reduce interchange fees charged on signature debit transactions, and to pay $3 billion in damages over a 10-year period. The reduction in interchange fees in 2003 alone is expected to save merchants $1 billion.[c]

In 1998 the U.S. Department of Justice (DOJ) filed a separate antitrust suit against Visa and MasterCard. Among other things, DOJ objected to the associations' exclusivity rules, which prevent banks that issue Visa or MasterCard credit cards from simultaneously issuing a Discover or American Express card. In October 2001, the trial court invalidated these rules.[d] The case is currently under appeal.

**Europe.** In July 2002, the Competition Directorate of the European Commission announced a settlement with Visa that addresses multilateral interchange fees levied on certain credit and debit transactions that involve banks in more than one member state.[e] Under the terms of the agreement, Visa pledges to reduce those fees gradually over the next five years and to keep them below a cap that will be calculated each year on the basis of card issuers' costs. Allowable costs include transaction processing, financing the interest-free period enjoyed by cardholders, and certain payment guarantees provided to merchants. Visa also agreed to amend its rules so that its interchange fee can be disclosed to merchants.

In a separate decision published in November 2001, the Commission concluded that Visa's honor-all-cards rule did not restrict competition even when applied to different types of cards (for example, credit and debit) within the same brand (for example, Visa).[f]

**Australia.** In August 2002, the Reserve Bank of Australia (RBA) announced regulations that apply to domestic credit card transactions using Visa, MasterCard, or Bankcard credit cards.[g] As of January 2003, merchants are permitted to surcharge transactions using these cards. In October 2003, credit card interchange fees will be capped according to a cost-based formula that will be revised every three years.[h] Allowable costs include authorizing and processing transactions, financing the interest-free grace period enjoyed by cardholders, and costs resulting from card fraud and its prevention. The card associations must provide RBA with audited data on these costs each year. RBA also invalidated certain card association rules that it concluded were inhibiting entry by monoline credit card banks and merchant acquirers.

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[a] *In re Visa Check/MasterMoney Antitrust Litigation*, N0. 00-7699 (2d Cir 2001).

[b] *In re Visa Check/MasterMoney Antitrust Litigation*, 96-CV-5238 (E.D.N.Y. 2003).

[c] "MasterCard, Visa to Pay $3 Billion to Resolve Card Suit; Will Modify Debit Card Policy, Fees," *BNA Banking Report*, Vol. 80 (May 5, 2003), pp. 739-40.

[d] *U.S. v. Visa U.S.A.*, Inc. 163 F. Supp. 2d. 322 (S.D. NY 2001).

[e] Case No. COMP/29.373 — Visa International-Multilateral Interchange Fees. *Official Journal of the European Community* (July 24, 002).

[f] Case No. COMP/29.373 — Visa International. *Official Journal of the European Community* (November 10, 2001).

[g] Reserve Bank of Australia. "Reform of Credit Card Schemes in Australia IV: Final Reforms and Regulation Impact Statement," August 2002.

[h] RBA is imposing the cap against the volume weighted average interchange fee levied on card transactions rather than specifying caps for different kinds of transactions. RBA expects that once implemented, the caps will reduce average interchange fees about 40 percent.

be used to enhance a dominant network's market power. Such allegations form the basis of an important antitrust case in the U.S., regulation of the payment card industry in Australia, and far-reaching inquiries in Europe (see *Legal and Regulatory Challenges to Payment Card Networks*). In the following sections, I'll examine in greater detail the role of interchange fees, the no-surcharge rule, and the-honor-all-cards rule in consumer payment networks.

## THE PROS AND CONS OF INTERCHANGE FEES

An interchange fee can be used to solve a seemingly intractable problem: how to maximize the value of a payment network while ensuring that retailers and banks are able to cover their costs. Economic theory offers some intuition about solving this problem. All other things equal, prices should be set lower for customers who are more price sensitive, that is, more likely to switch to another form of payment in response to a small change in price. Conversely, prices should be set higher for those customers who are not as sensitive to price differences. Economists refer to this strategy as Ramsey pricing, in honor of the mathematician and economist Frank Ramsey.[19] Intuitively, this rule leaves consumers as close as possible to the consumption choices they would make if they were able to purchase goods and services at a price equal to their marginal cost of production — the competitive ideal.

But open payment networks do not actually control all the prices that consumers and retailers pay for a transaction. Instead, they influence those prices by setting the interchange fee. For example, suppose the network raises the interchange fee so that each card transaction is more profitable for card issuers. Card issuers will seek out more cardholders either by offering them more benefits or by reducing cardholder fees. Merchants will observe more cardholders using the card. But there is a trade-off to raising the interchange fee because it raises costs for the acquiring banks, and at least some of that cost is passed on to merchants. The higher cost of card transactions may cause some merchants to stop accepting the card.

To summarize, economic theory suggests two factors that are likely to influence the size of a *privately optimal* interchange fee, that is, one that maximizes the value of a payment network. The first is the relative size of costs borne by issuing and acquiring banks — banks will not willingly participate if they cannot recover their costs. The second is the degree of price sensitivity exhibited by cardholders on the one hand and merchants on the other. In order to maximize the value of a payment card network, it is necessary to impose more of the costs on those participants who are least likely to stop using or accepting the card.

**Networks May Not Choose the Interchange Fee Best for Society.** But the best interchange fee for a particular payment network need not be the best from the standpoint of consumers.[20] The economic literature has explored a variety of reasons a privately determined interchange fee may not correspond to the fee that maximizes social welfare, but in this article, we'll focus on just one.[21]

Suppose that a merchant charges the same prices regardless of the manner in which consumers pay. For example, customers who pay with a credit card pay the same price as customers who pay with cash. While different payment instruments mean different costs for the merchant, those costs are not reflected in the prices paid by every customer. Users of the cheaper form of payment bear some of the costs created by customers who use a more expensive form of payment. In economic terms, there is a *cross-subsidy*. Consumers tend to overuse the more expensive form of payment because they

An interchange fee can be used to solve a seemingly intractable problem: how to maximize the value of a payment network while ensuring that retailers and banks are able to cover their costs.

[19] Ramsey solved the following problem: A fixed amount of revenues must be raised by charging prices for goods in excess of their marginal cost. But higher prices will reduce consumption and therefore welfare. Under these circumstances, the best that can be done is to charge higher markups on those goods with less elastic demand curves and lower markups on those goods with more elastic demand curves. See Ramsey's 1927 article.

[20] A payment network that enjoys market power has some freedom to choose the amount of resources to raise through some combination of fees and discounts to merchants and cardholders. When there is more than one payment network, it is not necessarily efficient to encourage the growth of a network if it is at the expense of a less costly one.

[21] See the articles by William Baxter; Dennis Carlton and Alan Frankel; Sujit Chakravorti and Ted To; Sujit Chakravorti and William Emmons; Howard Chang and David Evans; Joshua Gans and Steven King; Jean-Charles Rochet and Jean Tirole; Richard Schmalensee; and Julian Wright.

enjoy all the benefits but do not bear all the costs. At the economywide level, this could mean a payment network will grow too large because purchases outside the network are subsidizing purchases made within the network.

It's possible a network can exploit this cross-subsidy by raising interchange fees while reducing cardholder fees. Merchants would pass on these costs to all their customers, increasing the subsidy noncard users pay to card users. If some of the increased interchange revenues are passed on to cardholders (through lower fees or more perks), this would, in turn, increase the number of cardholders. Merchants may not like this outcome, but they may be reluctant to stop accepting the card if they think cardholders will take their business elsewhere.

The actual outcome depends crucially on how consumers react to changes in prices and the nature of competition among merchants. If customers who do not use the card respond to small price increases by switching to merchants that accept only cheaper cards, or just cash, any cross-subsidy must be small. Thus, an important insight gleaned from theoretical models of payment networks is that the effects of interchange fees depend on the extent of market power enjoyed by retailers.

## THE PROS AND CONS OF SURCHARGES

So far, we've assumed that merchants do not set different prices for different card transactions. What happens if payment networks permit merchants to add a fee to transactions when consumers use a more expensive payment method? In principle, merchants could pass on any difference in their cost of using different payment cards to the customers using those cards. This would eliminate any cross-subsidy between customers using different payment methods and encourage consumers to use the most efficient forms of payment. So if we think that a costly payment instrument is being used too much, allowing merchants to surcharge may be a useful remedy.

But permitting surcharges may have a second effect. If merchants are willing to pass on costs in this way, an open payment network cannot use an interchange fee to influence the prices paid by merchants and consumers. To see this, imagine what would happen if the network raised the interchange fee and card issuers passed on the additional revenue to cardholders via lower fees or additional perks. Suppose also that card acquirers pass on the higher interchange fee to retailers by raising the merchant discount. In turn, merchants could increase the surcharge on card transactions, essentially negating the increased benefits provided by card issuers. So with surcharging, raising interchange fees in order to stimulate card use will not be very effective. If network effects are important and cannot be taken into account by some other means, the result could be underutilization of payment cards.

An important insight gleaned from theoretical models of payment networks is that the effects of interchange fees depend on the extent of market power enjoyed by retailers.

But so far we have assumed that given the opportunity, merchants actually would impose surcharges. There is reason to doubt much surcharging would occur. In the U.S., federal law has permitted merchants to offer a discount for cash purchases since 1975. Yet, in 1983, less than 10 percent of retailers offered cash discounts. Most of this activity occurred at gas stations and even this became less common once these stores began to accept bank-issued credit and debit cards.[22] In Sweden and the Netherlands, two countries that banned no-surcharge rules during the 1990s, less than 10 percent of retailers report surcharging their customers and there has been little change in the merchant discount.[23] In practice, then, permitting surcharging may have little effect.

## THE PROS AND CONS OF AN HONOR-ALL-CARDS RULE

The question regarding an honor-all-cards rule is not whether networks should be permitted to have such a rule, but rather how broadly it can be applied. Suppose a network issues two types of cards — a credit card and a debit card — under the same brand. Should a merchant be required to accept both types of cards even if it prefers to accept only one type?

This was the central argument in the Wal-Mart antitrust case: The plaintiffs argued that the bankcard associations were using the honor-all-

[22] Statistics on cash discounting are from *Credit Cards in the U.S. Economy*. Evans and Schmalensee document the subsequent decline in cash discounts in their 1999 book. Edmund Kitch argues that regulatory barriers made it relatively costly for merchants to offer cash discounts. Alan Frankel argues that merchants believe any benefit of charging different prices is not worth risking a negative reaction from customers. He also wonders whether consumers react more strongly to fees charged at the point of sale than to fees that appear later on their bank statement.

[23] See the November 2001 European Commission decision. In his 2001 report, Michael Katz notes that among retailers in the Netherlands who were aware of the legal change, 20 percent surcharged.

cards rule to impose an illegal tying arrangement, forcing merchants that accept a brand of credit card to accept the same brand of signature debit card.[24] Because card issuers receive more interchange revenue from signature debit transactions, they have an incentive to subsidize consumers' use of these cards. This, in turn, influences consumers' choices about signature vs. PIN debit transactions. Merchants pay these higher fees and pass at least some of the cost on to consumers via higher prices. During the 1990s, the use of both types of debit cards grew immensely (Figure 2). But the share of all debit transactions using a PIN fell from about 60 percent in 1993 to about 38 percent in 2002.

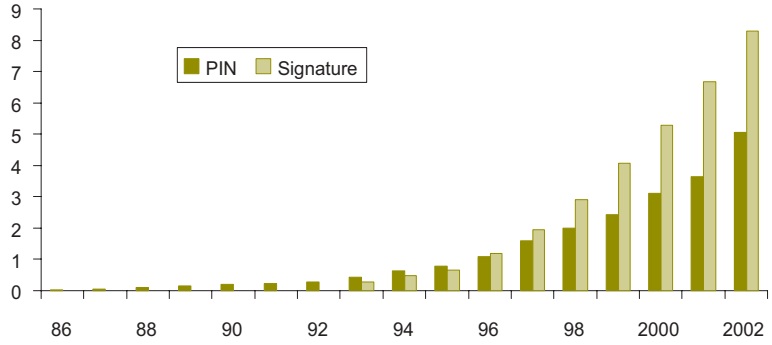
If we view credit and debit cards as distinct products, it seems reasonable that an honor-all-cards rule should be enforced separately for each type of card. In other words, merchants could be allowed to refuse the debit card but still be required to accept all credit cards issued under that brand. Similarly, merchants could separately decide whether to accept a debit card brand but would then be required to accept all debit cards issued under that brand.

The likely result would be that merchants would pay different fees for credit card and signature debit transactions. If signature and PIN debit transactions offer merchants the same benefits, the interchange fee for a signature debit would have to fall in order for these cards to remain competitive with a PIN debit, since the cost of processing a PIN debit is less than the cost of processing a signature debit. Users of signature debit cards would presumably pay higher fees or enjoy fewer benefits, since the use of the cards could not be subsidized as heavily.[25]

**FIGURE 2**

## PIN Debit vs. Signature Debit Transaction Volume

(billions per year)




Sources: EFT Network Data Book, Debit Card and POS Market Data Book, and Card Industry Directory, various years.

**Do Credit and Debit Cards Compete in the Same Market?**

Applying the honor-all-cards rule to both credit and debit cards of the same brand seems more reasonable if these products actually compete in the same market. But do they? Economists typically define the boundaries of a market based on how consumers respond to price changes. If a change in the price of one good induces consumers to switch to another good, we say these goods are *substitutes.* If only a small change in price is sufficient to cause consumers to switch to the substitute product, we say they compete in the same market.

What can we say about consumer substitution between credit cards and debit cards? There is at least some evidence that consumers do not use credit and debit cards in the same way. For example, consumers are more likely to use debit cards in drug and grocery stores than they are at department stores (Table). In addition, consumers can often initiate a PIN debit transaction larger than their purchase and receive the difference in cash, a feature not available in a credit card transaction. While credit cards provide an explicit line of credit, debit cards do not. Such differences suggest that credit and debit cards are not pure substitutes as a means of payment.

In 2001, a federal court, in a separate antitrust case against the bankcard associations, reached just this conclusion.[26] But in a number of previous antitrust decisions, the courts

[24] In a tying case, the plaintiff tries to prove that the defendant is using the market power it enjoys in one market to extract profits from another, typically more competitive, market.

[25] The Wal-Mart case was settled in April 2003. (See *Legal and Regulatory Challenges to Payment Card Networks.*) Industry analysts predict it will change the debit card market in precisely the way described in the preceding two paragraphs.

[26] This case was initiated by the U.S. Department of Justice in 1998. A similar conclusion was reached in a ruling on pretrial motions in the Wal-Mart case (see *Legal and Regulatory Challenges to Payment Card Networks*).

## TABLE

### Data on the Use of Debit and Other Forms of Payment (for 1999)

| | Stores with PIN Pads (percent) | Percentage of Store Sales Paid via | | | |
|---|---|---|---|---|---|
| | | Cash | Check | Credit Card | Debit Card |
| All Stores | 50 | 35 | 21 | 25 | 8 |
| Discount | 43 | 47 | 17 | 27 | 3 |
| Drug | 73 | 41 | 17 | 26 | 14 |
| Supermarket | 100 | 44 | 32 | 11 | 12 |
| Department Store | 20 | 29 | 15 | 26 | 2 |
| Home Center | 7 | 21 | 27 | 26 | 6 |
| Apparel | 38 | 28 | 19 | 32 | 10 |

Source: "Survey of Retail Payment Systems," *Chain Store Age* (December 1999)
Note: These statistics are derived from a survey of large retail chains. It is not a representative sample of the retail sector.

have defined the relevant market more broadly to include cash, checks, department store cards, and ATM cards.[27] Even in the 2001 decision, the judge recognized that the emergence of all-in-one cards — a single card that can be used for credit, signature debit, or PIN debit transactions — may increase consumers' willingness to substitute between these different forms of payment.

**YESTERDAY, TODAY, AND TOMORROW**

At the end of the day, policymakers need to know the answer to the following question: Does the conduct of a payment network benefit or harm consumers? In antitrust cases, judges are often forced to weigh the static costs of certain conduct against any dynamic benefits it may offer. This is not easy to do when it is not clear how a market would have developed in the absence of the conduct under scrutiny.

Suppose we return to the 1980s, before a thriving debit card market developed. How might such a market be developed? The method chosen by Visa and MasterCard was to graft debit cards on to the existing credit card networks. Using their *honor-all-cards* rule, the associations ensured that millions of merchants would accept signature debit cards. Using their *no-surcharge* rule, the associations ensured that these cards would be accepted on terms equal to those of any other debit card. Even with these advantages, signature debit cards were not immediately successful. Their success occurred only after credit cards were commonly accepted in more price-sensitive retail segments, and virtually all merchants were using modern electronic terminals to authorize transactions.[28]

When network effects and dynamic issues are both important, as they appear to be in this industry, policymakers face a difficult problem in deciding what remedies, if any, will benefit consumers in the long run. On the one hand, network rules and pricing strategies may be essential elements in the successful launch of a payment card network and its subsequent expansion. On the other hand, once a payment network is well established, it is possible the same rules can lead to their overutilization and to pricing well in excess of costs. A further complication is that the pricing strategy of existing payment networks affects how and when newer and presumably better forms of payment emerge. New forms of payment must overcome any subsidies consumers receive when using today's payment instruments, and this may require offering subsidies of their own.[29] Policymakers should take all of these factors into account when examining competition among consumer payment networks.

[27] See the NaBANCO decisions.

[28] Both of these developments were promoted by offering interchange fees below the standard rate. For a more detailed description of the evolution of the debit card market in the U.S., see the book by Evans and Schmalensee and the article by Steven Felgran and the one by Felgran and R. Edward Ferguson.

[29] John Caskey and Gordon Sellon argue that the adoption of debit cards in the U.S. was delayed in part by subsidies resulting from the pricing of consumer check transactions. Today, higher interchange fees paid on debit transactions coincide with debit cards' displacement of checks in many consumer transactions.

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