



# **CBO PAPER**

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COMPETITION IN ATM MARKETS:  
ARE ATMs MONEY MACHINES?

July 1998

**CONGRESSIONAL BUDGET OFFICE  
SECOND AND D STREETS, S.W.  
WASHINGTON, D.C. 20515**



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**NOTE**

In this report, all data refer to the United States unless otherwise indicated.

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## PREFACE

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The shared computer networks that link the nation's fleet of automated teller machines (ATMs) with depository institutions are in the midst of a wave of mergers and consolidation. At the same time, many ATM owners have been raising the fees that they charge cardholders to use their machines. Policymakers have begun to question whether those changes are dampening competition in the banking industry and specifically in the ATM market. Of further concern is whether market forces alone will ultimately drive down charges for ATM use.

The Congressional Budget Office (CBO) prepared this report at the request of the Senate Committee on Banking, Housing, and Urban Affairs. The paper analyzes the economic structure of the relevant markets and the nature of competition and change within them. In keeping with CBO's mandate to provide objective, impartial analysis, this report makes no recommendations.

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## SUMMARY

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Most automated teller machines (ATMs) in the United States are connected to one or more computer networks that let depositors access their accounts virtually anywhere. No longer must depositors hunt for an ATM connected to “their” bank to get cash from their account. However, ATM owners, which are principally banks but increasingly include nonbanks such as data-processing firms, have begun to impose a fee, or surcharge, for that convenience. (In this paper, the term “bank” encompasses all institutions that both take deposits and make loans, including commercial banks, savings banks, savings and loans, and credit unions.) The perception among cardholders that they are often being charged twice for ATM transactions—once by their own bank and once by the owner of the ATM—has fueled cardholders’ ire. Meanwhile, federal policymakers have expressed concern about how the surcharges may be affecting competition in the banking industry.

Since 1996, more and more owners and operators of ATMs have imposed surcharges on cardholders who use their ATMs. In most instances, banks do not impose a surcharge on their depositors; the fees are paid only by people who use so-called foreign ATMs—that is, ATMs not owned by the bank at which they maintain their account. In other cases, the ATM owner, especially if it is a nonbank, applies surcharges more generally. The rapidity with which such fees have spread and, for some, their large size have brought them to public attention.

The computer networks that connect the machines operate at several different levels—some link machines only in a particular region, whereas some have nationwide coverage. Before 1996, the national ATM networks Plus and Cirrus, which are run by the major credit card associations, banned surcharges; no ATM owner who wanted to connect to their networks could impose a surcharge on users. Despite that national ban, some regional networks, most notably Pulse (in and around Texas), permitted surcharging. In several other states, regulators and legislators made bans on surcharging illegal. In addition to action by the states, ATM owners who wanted to impose surcharges began to file antitrust suits against the national ATM networks. In the face of these legal challenges, the Cirrus and Plus networks lifted their ban on surcharging on April 1, 1996.

After the decision by the national networks, many regional networks that had previously banned surcharges quickly lifted their prohibitions as well, presumably to avoid losing members. ATM owners quickly took advantage of the end of the bans. Current surveys indicate that between two-thirds and three-quarters of all banks now impose surcharges on foreign transactions.

## ATMs AND SHARED ATM NETWORKS: BACKGROUND INFORMATION

Each ATM is typically connected to at least three computer networks—some shared and some not. The first connection is to the (usually proprietary) network of the bank or firm that owns the ATM. The second is to a shared network that links many of the banks operating in a state or region of the country and allows their customers to use (or share) all the ATMs of the member banks. The third connection is to the national networks operated by the major credit card associations. The national networks permit ATM cardholders from other states or regions to use an ATM. Typically, when cardholders insert their cards into the ATM, the machine checks to see which network connection would be the most appropriate, starting with the bank's proprietary network and expanding regionally.

### Rise and Consolidation of Shared Regional ATM Networks

When banks first started installing ATMs, they quickly found that they could not individually provide all of the access to ATMs that cardholders desired. In response, the banks formed coalitions and developed state and regional networks to which virtually all ATMs today are connected. Cardholders thus do not have to travel long distances to use their own bank's ATM, which would defeat the convenience of the service, and each bank does not have to invest in as many ATMs as they would otherwise.

As banks have spread geographically, increasingly crossing state boundaries, so, too, have the shared networks. Furthermore, like the banks they serve, the larger networks have in many cases taken over smaller networks whose regions they have moved into. As a result, the number of shared regional networks has dropped substantially over the past 10 to 15 years, from over 150 in the early 1980s to less than 50 today. And industry analysts expect further consolidation. Like institutions in the financial services industry, the larger networks reduced their costs by spreading fixed expenses across a wider base and allowing depositors a broader geographic reach. In essence, the consolidation of the regional networks reflects—perhaps in an exaggerated way—consolidation in the banking industry.

### Proliferation of ATMs

Consolidation of the shared regional networks coincides with rapid growth in the number of ATMs, which have increased from fewer than 100,000 units in the early 1990s to over 165,000 today. That recent growth has several explanations.

- o The troubles in the banking industry in the late 1980s have largely ended.
- o The cost of buying and operating ATMs has dropped dramatically.

- o Surcharges have made investments in ATMs substantially more profitable.

Most of the recent increase in the number of ATMs has come from extending their reach away from banks and into new corners of the American landscape (for example, to convenience stores and shopping malls). ATMs located off bank premises account for the large majority of the growth since 1994. However, most ATMs are still located at banks. The growth in the number of ATMs has outstripped the growth in ATM transactions. Consequently, the number of transactions per ATM has fallen in recent years.

### The Fee Structure in Shared ATM Networks

Five general classes of fees structure the relationships in an ATM system (see Summary Table 1). The first three—membership, switch, and interchange fees—are set by the ATM network. The foreign fee is set by the card-issuing financial institution and the surcharge by the ATM owner. An ATM owner pays a fee to be a member of an ATM network; such fees range from hundreds to thousands of dollars per year or per month. Card-issuing banks pay a so-called switch fee to the network itself for each transaction made by their cardholders; the fee usually ranges from 2.5 cents to 12 cents. Card-issuing banks pay the interchange fee to the ATM owner for each transaction made by their cardholders. For cash withdrawals, interchange fees typically range from 20 cents to 60 cents. Cardholders pay the foreign fee, which usually averages from \$1.00 to \$1.30, to their own bank when they use a foreign ATM (one owned by another bank). Cardholders may also be required to pay a user surcharge to the ATM owner. Those fees usually range between \$0.50 and \$1.50 but may be higher in some locations (see Summary Table 1). The combination of the last two fees—the foreign fee and the surcharge—is the "double-charging" at the heart of cardholder complaints.

### COMPETITION AMONG ATM NETWORKS

Shared regional ATM networks have reduced their numbers, growing in geographic size and dominance by merging with or simply swallowing their neighbors. The geographic structure of the industry raises concerns among policymakers about the exercise of market power by the networks against the banks—their direct customers and, for the most part, their owners. Economists define market power as the ability to set prices above competitive levels. A common criticism leveled at the shared

SUMMARY TABLE 1. ATM FEES

Fee	Who Pays It?	Who Receives It?	Who Sets It?	Range
Network				
Membership <sup>a</sup>	Card-issuing bank	Network	Network	\$0 - \$125,000
Switch <sup>b</sup>	Card-issuing bank	Network	Network	2.5¢ - 12¢
Interchange <sup>b</sup>	Card-issuing bank	ATM owner	Network	20¢ - 60¢ <sup>c</sup>
Foreign or User <sup>b</sup>	Cardholder	Card-issuing bank	Card-issuing bank	\$0 - \$2.50
Surcharge <sup>b</sup>	Cardholder	ATM owner	ATM owner	\$0 - \$3.00

SOURCE: Congressional Budget Office based on the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), and Government Accounting Office, *Automated Teller Machines: Survey Results Indicate Banks' Surcharge Fees Have Increased* (April 1998).

NOTE: ATM = automated teller machine.

- a. The membership fee is usually paid either monthly or annually.
- b. This fee is paid per transaction.
- c. The range stated is for a cash withdrawal. Interchange fees vary for different types of transactions. For example, the interchange fee is usually higher for a deposit transaction than for a balance inquiry.

regional ATM networks is that they have become tools of the largest of their member banks and are acting against the interests of the majority of smaller member banks that are also connected to the network. The Congressional Budget Office (CBO) analyzed several trends in the ATM market in its study of those issues.

### Decreasing Network Switch Fees

The fees that networks charge for their own activities—that is, switch fees—have been falling, not rising. Some observers contend that such decreases, which benefit institutions with many transactions, are another indication of the influence and market advantage of the large banks. Surveys of regional network fees during the mid-1990s suggest that the regional networks were lowering their switch fees on ATM transactions to the levels of point-of-sale transactions (for example, people paying for groceries with an ATM card). Industry-compiled data on the switch fees of 10 of the largest ATM networks showed that they lowered their average reported switch fee on ATM transactions by 22 percent between 1993 and 1997. In 1993, the average ATM switch fee was 8.5 cents; it fell to 6.7 cents in 1997.

The answer to the question of whether the recent decline in switch fees favors large or small institutions depends on whether one measures the change in absolute amounts or percentages. The reason is that the switch fee structure of many ATM

networks is tiered: a card issuer with many transactions pays a lower fee per transaction than a card issuer with relatively few transactions. Generally, CBO assumes that large institutions will have more transactions than small ones because large banks have more depositors. Between 1993 and 1997, the median ATM switch fees paid by small institutions declined by 15 percent, whereas the median fee paid by the larger institutions declined by 25 percent.

Although the percentage declines were greater for the large institutions, the actual change in the size of the fee was the same for large and small institutions. Networks reduced both the high and low tiers of median fees by 1.5 cents per transaction between 1993 and 1997. Furthermore, the differential between the median fees for large and small institutions has remained constant at 4 cents throughout the 1993-1997 period. CBO has not been able to determine whether those differentials are justified on the basis of costs.

An outcome in which the absolute decline and the percentage decline tell different stories is quite common in industries with dropping costs. Because of the simple arithmetic, changes in the differentials in tiered pricing are not immediate proof of the exercise of undue market power.

#### Increasing Relative Interchange Fees

The regional networks play a role in ensuring that the fees going to ATM owners remain high—in particular, the interchange fee paid by a card-issuing bank to the institution that owns the ATM. Because bigger banks play a disproportionate role in the shared regional networks and account for a sizable fraction of all ATMs connected to even the largest such networks, they can exert their influence to keep interchange fees high.

Consequently, despite a drop in costs in the electronics and telecommunications markets, interchange fees in nominal terms have remained stable or have risen since the mid-1980s (see Summary Table 2). Moreover, the stability of the fee actually suggests an increase in the interchange fee relative to general costs, which would mean increased profits for ATM owners.

The shared networks argue that they have difficulty adjusting the fees once they have been set. They also note that although equipment and telecommunications costs have decreased substantially, more ATMs are now off bank premises and so cost more to service. Another weakness in the argument that networks are holding interchange fees artificially high is that this pattern of stable fees dates back to a period before substantial network consolidation, when networks presumably were

SUMMARY TABLE 2. INTERCHANGE FEES FOR CASH WITHDRAWALS FROM AN ATM CHARGED BY SELECTED NETWORKS, Various Years (In cents per transaction)

Network	1985	1990	1995	1997
BankMate	55	55	n.a.	55
Cash Station	25	25	44	45
Honor	40	40	40	40
MAC <sup>a</sup>	25	30	30/34	34/38
Magic Line <sup>a</sup>	60	55	n.a.	36/55
NYCE	38	38	38	38
Pulse <sup>a</sup>	40/65	50	50	50
Star System <sup>a</sup>	40	40/60	45/55	45/55

SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTES: The interchange fee is the fee paid by a card-issuing bank to an ATM owner for transactions occurring at that ATM.

ATM = automated teller machine; n.a. = not available.

a. For some years, the first number is for an on-bank-premises ATM, and the second is for an off-bank-premises machine.

more competitive than they are today. Other analysts argue that this pattern of fees rewards the largest ATM owners. Furthermore, in four of the top 10 networks, the interchange fees have risen, often substantially. That rise undercuts the argument that it is difficult to adjust fees.

### Declining Use of Shared Networks

At the same time that total ATM transactions have been rising, the number of transactions handled by shared regional networks has fallen, both in absolute numbers and as a share of all ATM transactions. Foreign ATM transactions have dropped somewhat since the widespread introduction of surcharges in 1996. (Monthly foreign ATM transactions in 1997 were 2 percent lower than in 1996.) Considering that total ATM transactions have continued to rise, the decline in foreign transactions is all the more telling—and all the sharper when contrasted with the healthy rise that preceded it. (Foreign ATM transactions had been rising at a rate of 9 percent per year for the three years before 1996.)

Simultaneously with the drop in transactions handled by the shared networks, banks' own networks have increased in importance. Given the relative shift in prices, such a trend would be expected, even without the surcharges. Shared ATM networks were created when ATMs were few and expensive. As the machines have become cheaper to own and operate, the level of investment needed by the bank to service its customers and maintain its market share has fallen. That change alone would suggest a relative shift in the use of the bank's own network versus the shared networks, but the growth in the size of the regional banks exaggerates that shift even further. Another contributor to the trend is that the vast majority of cardholders wish to avoid surcharges and thus increasingly use only their bank's ATMs rather than those of the network.

### COMPETITION AMONG ATM OWNERS

Competition among ATM owners occurs at two levels. For banks, ATMs are one of the means by which institutions compete for bank customers. Among other things, banks may compete on the basis of the size and range of their proprietary network, the level of their foreign fees, and their surcharges. Therefore, ATM surcharges should be viewed as one facet of banks' competition for customers in general. For nonbanks that own ATMs, the competition focuses more on placing ATMs in locations that capture ATM users who are willing to pay for the service. But all ATM owners—banks and others—have to compete for transactions, because if no one uses the machine, the investment will lose money.

The development of the ATM market cannot be viewed separately from changes that are occurring in the financial services industry generally. One major change is that the industry is rapidly consolidating. Banks, thrifts, and other financial services firms are merging, reducing the number of firms even as they increase their capacity to provide services to cardholders.

#### Competition Among Banks

All other things being equal, a bank with more ATMs is more valuable to customers than a bank with fewer machines, especially now that surcharges have become more widespread. Consequently, ATMs and ATM fees form part of a bank's strategy to attract customers. For example, most banks will not impose surcharges on their own customers for fear of driving them away.

Banks with large ATM networks may view surcharging as a way of shifting customers from banks with few ATMs toward themselves. In response to the spread of surcharges, an increasing number of small and medium-sized banks have had to stop charging their cardholders foreign fees for using other banks' ATMs, presumably in response to cardholder complaints about being "double-charged."

What effect do ATM surcharges have on the ability of banks to attract and retain deposits? One way to answer that question is to compare the experience of banking institutions in the eight states that passed laws either prohibiting network surcharge bans or explicitly permitting ATM surcharging by 1995 with the experience of banks in the rest of the United States. If ATM surcharging induces people to move their accounts to banks that own large numbers of ATMs, one would expect to see a greater increase in the concentration of deposits in those banks in states allowing surcharging than in the rest of the United States during the same time frame. And greater-than-average increases in concentration have, indeed, resulted. However, states allowing surcharging started from a lower level of bank deposit concentration than the nation as a whole. Consequently, the data are not conclusive with respect to the change that has occurred.

The preexisting trend toward consolidation in the banking industry makes it difficult to isolate the effects of ATM surcharging. Nationally, big banks have increased their share of all deposits while small banks have seen their share fall. In 1991, commercial banks with \$1 billion or more in assets held 67 percent of all deposits; in 1995, they held 72 percent, and in 1997, their share was 76 percent. The smallest commercial banks, those with assets of \$100 million or less, experienced shrinkage in their share of deposits nationally, which went from 12 percent in 1991 to 9 percent in 1995 and 7 percent in 1997. Thus, even before the nationwide spread of ATM surcharges, big banks were growing at the expense of small banks.

Since 1996, when the national ban on surcharging was lifted, large banks have expanded their share of the ATM market and small banks have watched their share grow smaller—at an increasing rate of loss. But how much of the increase in that rate can be attributed to the widespread practice of surcharging and how much was caused by other factors is difficult to discern. For example, the Riegle-Neal Interstate Banking and Branching Efficiency Act took effect in the last quarter of 1995. The act expanded the ability of banks and bank holding companies to operate across state boundaries and may have contributed to the climbing rate of concentration. Consequently, it is difficult to attribute the changes in concentration that have occurred since surcharging became widespread to either the surcharges or to the preexisting trend toward consolidation.

### Competition Among All ATM Owners

ATM owners generally have to balance several factors in their calculations regarding both the number of ATMs in which to invest and the charges to impose:

- o Surcharges render investments in ATMs, especially those away from bank premises, much more profitable, even if a large majority of cardholders avoid ATMs that surcharge.



- o The number of ATMs has increased dramatically, but given that most cardholders, if at all possible, avoid machines that surcharge, ATMs that impose those fees are competing for the small pool of cardholders who are willing to pay them. An additional factor is that the number of transactions per ATM has been declining for several years.
- o Alternative means of obtaining cash, most notably point-of-sale transactions (for example, people paying for groceries with an ATM card and getting cash back) are becoming increasingly widespread and provide cardholders with a substitute for ATMs. Furthermore, cash, as a means of payment, is declining as a share of consumer spending.
- o Certain locations may be particularly advantageous for ATMs—for example, airports and recreation areas, which are likely to see high usage despite surcharges because travelers are usually unable to find their own banks' ATMs and thus avoid the extra fees. Such advantageous locations and other factors that affect cardholders' willingness to pay for convenience may create market segments in which high surcharges can be sustained.
- o Cash dispensed at convenience stores or shopping malls may directly boost the sales of the store or other merchants that are collocated with the ATM. As a result, store owners may have more incentives to enter into agreements to have ATMs installed on their premises.

The increasing numbers of ATMs and the decreasing numbers of transactions per machine suggest that high ATM surcharges may not be sustainable. If simple supply and demand were at work, the entry of nonbank ATM deployers in particular should undermine high and increasing surcharges. However, a large part of the market response to ATM surcharges is exhibited in changes in frequency of use, not in changes in price. Consumers typically arrange their affairs so that most of the time, they do not pay surcharges at all. Thus, firms that surcharge see a drop-off in the number of their foreign transactions—but usually not by enough to make them drop the surcharge.

## CONCLUSIONS AND POTENTIAL POLICY OPTIONS

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The widespread rise of ATM surcharging has led policymakers to question whether some impediment to free-market forces exists in ATM markets. Is shared regional network consolidation leading to undue market power? Is the ATM market relatively competitive? Can government intervention help the ATM markets work better?

The available data, although limited, suggest that shared regional ATM networks do not appear to be wielding worrisome market power. Although the

shared regional networks have been consolidating, they still face competition both from the ever-larger proprietary networks and from the national networks operated by Visa and MasterCard.

The answer to the question of whether the ATM market is relatively competitive is not straightforward. Competition in the ATM market rests on the balance of two opposing forces. Competition from new entrants should force fees to drop. However, some ATM deployers may be able to continue to charge high fees in particular market segments. (Market segments may be based on location, such as airports or recreation areas, or on cardholders' willingness to pay.)

Cardholders' complaints about ATM fees and concerns about undue competitive advantage in the ATM market have led policymakers to consider intervening. Some proposed legislation would mandate disclosure of ATM fees at the terminal. Although in some instances such legislation might duplicate state laws, mandating uniform disclosure of ATM fees nationwide might help to heat up competition as cardholders "shopped around" for the lowest price. Other proposed legislation would restrict surcharging. Another approach under discussion would regulate interchange fees.

The widespread incidence of ATM surcharging is a recent phenomenon, and the market has not yet settled. Other charges associated with ATMs and usage patterns are in flux as well. For example, foreign fees are dropping in some cases and the average number of transactions per ATM has started to decline. In such unsettled circumstances, the effects of any legislation or regulatory change may be difficult to determine in advance and could produce unintended effects.

CHAPTER I  
INTRODUCTION

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In the past decade, the automated teller machine (ATM) has revolutionized the way many Americans handle their banking—in particular, the transactions in which they withdraw cash from their accounts. Convenience is the basis of the ATM's popularity: because the machines are connected to one or more ATM computer networks that link institutions across the country, people no longer have to hunt for an ATM that is connected to “their” bank but can access their accounts virtually anywhere, through any affiliated ATM.

Since 1996, however, more and more owners and operators of ATMs—principally banks but also nonbanks such as data-processing firms—have begun to charge ATM users a fee, termed a surcharge, for this convenience. (In this paper, the general term “bank” encompasses all institutions that both take deposits and make loans, including commercial banks, savings banks, savings and loans, and credit unions.) In most instances, only people who use “foreign” ATMs—that is, ATMs that are owned by an institution other than the bank at which they have their account—pay the surcharge. But in some cases, all users of a particular ATM—no matter where they bank—pay a surcharge on their transactions. ATM owners argue that the surcharge is a legitimate convenience fee for the use of their machine and that it is necessary to allow them to continue to provide services and maintain their profitability.

The rapid spread of the practice of surcharging and the large size of some of the fees have provoked ATM cardholders and raised concerns among policymakers. Several issues have been raised. Many cardholders feel that they are being “double-charged” when they see on their monthly bank statement that their own bank has charged them a fee to use another institution’s ATM and they also pay a surcharge at the time of their transaction. Policymakers worry about whether increases in ATM fees are an exercise of monopoly or other undesirable market power, given the consolidation that appears to be occurring in both the financial services industry and in the computer networks that connect ATMs in many regions of the country.

This Congressional Budget Office (CBO) paper brings some evidence to bear on whether ATM surcharging is affecting competition in the broad ATM market. The context for that analysis (presented here and in Chapter 2) includes the current extent of ATM deployment and how ATM networks carry out transactions, as well as a discussion of ATM market participants and the system of fees that structure their relationships.

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## THE INCREASINGLY UBIQUITOUS ATM

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ATMs and the computer networks that connect them are enjoying growth typical of the electronics sectors of the economy. Moreover, advances in ATM services and the capabilities of their networks mirror the fast pace of technical change characteristic of those sectors. Like the electronics industries, however, what governs investments in and use of ATMs is in many instances not the technology but the fundamentals of demand and supply.

Manufacturers today produce an array of ATMs of differing capabilities. At the high end, full-service ATMs function as “through-the-wall” bankers, often performing all the functions of tellers. At the low end of the ATM spectrum, simple cash-dispensing machines have a much narrower range of functions. ATMs are also increasing in areas of the economy that are not strictly related to banking; for example, some machines dispense not only cash but also stamps and telephone calling cards.

Until recently, growth in the number of ATMs followed the typical S-shaped curve for the introduction of a new technology (see Figure 1). In the mid-1970s, banks were introducing the machines and experimenting with their marketing, location, and legal requirements. Growth accelerated in the early 1980s as consumer demand made access to ATMs a competitive advantage for a bank. Between 1981 and 1983 the number of ATMs almost doubled, rising from the 1981 level of 25,000 to 48,000 in 1983. By the mid-1980s, deployers of ATMs had used up the most profitable sites for the machines, and the less desirable locations began to be occupied but at a slower rate.

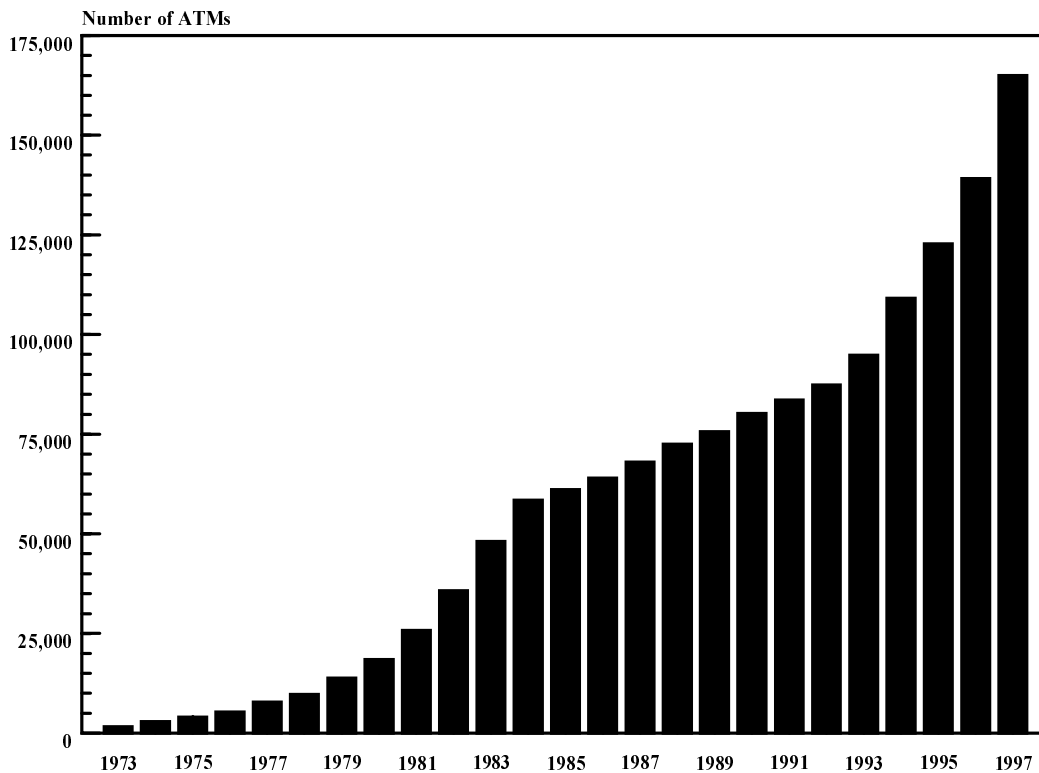
Growth has picked up again during the past several years, breaking out of the expected S-curve and indicating that the economy was not yet saturated with ATMs. In 1993, the number of ATMs stood at around 95,000; since then, the number of machines has risen by over 66 percent.

Initially, banks deployed ATMs to reduce their teller costs, hoping to persuade depositors to use ATMs rather than the more costly (for the banks) services provided by human tellers. To a certain extent, they succeeded: according to some surveys, in 1997, about 40 percent of people with a bank account used an ATM at least once per month.<sup>1</sup> But ATM cardholders have not reduced their use of tellers

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1. Analytica, Inc., *1997 Consumer Research on ATM and POS Usage in the South and Southwest* (Houston, Tex.: Pulse Electronic Funds Transfer Association, 1997), p. 16.

FIGURE 1. ATMs IN OPERATION , 1973-1997



SOURCE: Congressional Budget Office using data from the Board of Governors of the Federal Reserve System and the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), p. 20.

NOTE: ATM = automated teller machine.

substantially, which means that ATMs have not saved the banks as much money as the banks had originally hoped.<sup>2</sup>

Most of the recent expansion in the number of machines has come from extending the reach of the ATM away from banks and into new corners of the U.S. landscape. Technological advances have made the machines more functional, cheaper, and easier to accommodate; they have essentially become a type of vending machine. (A low-end, stand-alone ATM now costs under \$10,000 and can be easily wheeled into a convenience store or other location.) Moreover, advances in the telecommunications capabilities of ATMs have reduced costs substantially: the telephone connection to the verification network need no longer be permanent but

2. Liz Moyer, "Citi, Combating Too-Frequent ATM Visits, Hikes Minimum Withdrawal," *American Banker*, March 9, 1998.

can be a dial-up line similar to that used for credit card validation at a merchant's store. A further, significant reason for the ubiquity of ATMs is that surcharges have made them quite a profitable investment.

ATMs located off bank premises—for example, in convenience stores, grocery stores, and other locations—account for the majority of the growth in deployment since 1994 (see Figure 2). In 1995 and 1996, machines located off bank premises accounted for between two-thirds and four-fifths of all new ATMs. Only in 1997 did ATMs located on bank premises approach 40 percent of new ATM installations. Yet despite the recent growth in off-premises machines, 60 percent of all ATMs are still to be found on bank premises.

The number of ATMs is rising much faster than the number of ATM transactions, and consequently, the number of transactions per ATM has been declining (see Figure 3). That combination of factors may put pressure on surcharging as more ATM owners compete for cardholders' transactions. Indeed, some observers believe that ATM deployers are beginning to face the consequences of market saturation.<sup>3</sup>

## HOW ATM NETWORKS WORK

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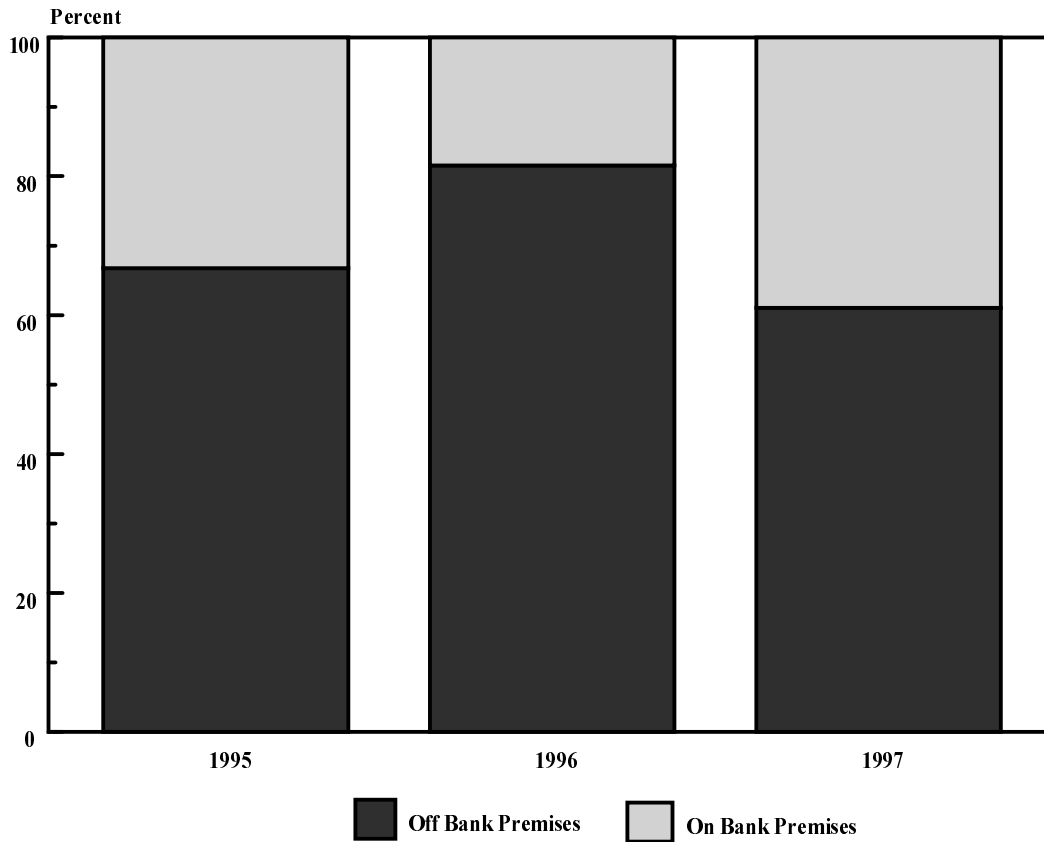
With minor variations, most ATM transactions occur in the same manner. Cardholders insert their card with its magnetic stripe loaded with account information into the ATM. They then enter the personal identification number, or PIN, that the bank has assigned, using the number pad. The ATM contacts (usually by telephone wire) the data-processing company that operates, or “drives,” that particular ATM and transmits the PIN and the account information. The processor determines which institution issued the card, contacts it, and works through all the validation and authorization routines—such as the correct PIN, limits on withdrawals, and whether there are sufficient funds in the account. If all the routines are executed successfully, the processor signals the ATM to complete the transaction (see Figure 4 on page 7).

To carry out the tasks required in an ATM transaction, each machine is typically connected to several computer networks. If the ATM is owned by a bank, it will be on the bank's own network. In addition, the ATM is usually connected to a shared network that serves many of the banks in the region. For national or international transactions, the ATM in many cases is also connected to one of the national shared ATM networks, the largest of which, Plus and Cirrus, are run by the major credit card associations, Visa and MasterCard, respectively.

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3. See Charles Keenan, "Saturation, Bank Mergers Hobble ATM Industry," *American Banker*, June 11, 1998; and John M. Berry, "Determining When a Cash Cow Begins to Go Dry," *Washington Post*, May 14, 1998, p. E1.

FIGURE 2. PERCENTAGE OF NEW ATMs INSTALLED ON AND OFF BANK PREMISES, 1995-1997

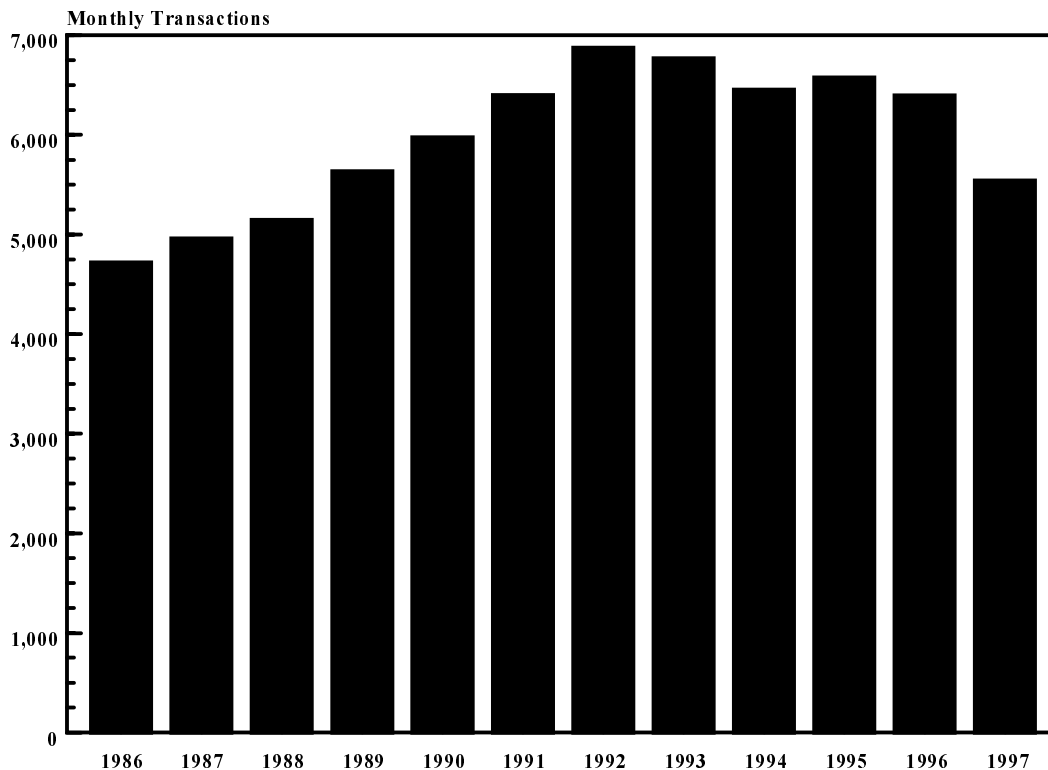


SOURCE: Congressional Budget Office using data from the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), p. 20.

NOTE: ATM = automated teller machine.

Typically, the computer driving the ATM will use the lowest network level that can complete the task. The computer checks first to see whether the card was issued by the bank that owns the ATM. If the card was issued by the owner bank, the transaction is known as an “on-us” transaction. If the transaction is not “on us” but the issuing institution is a member of the regional computer network, the processor will transmit the transaction information either through the shared regional network computer or directly to the ATM processor of the card-issuing institution. (Bypassing the regional network by contacting that processor directly is called subswitching.)

FIGURE 3. MONTHLY TRANSACTIONS PER ATM, 1986-1997



SOURCE: Congressional Budget Office using data from the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), p. 20.

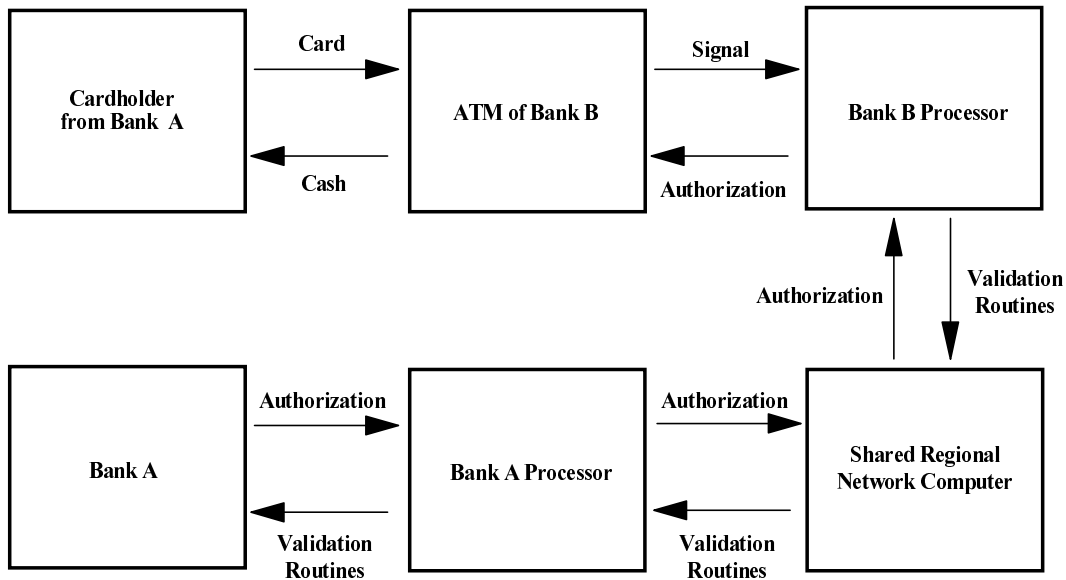
NOTES: In 1997 and 1996, monthly transactions were measured in June and August, respectively. Earlier years used September data. ATM = automated teller machine.

If the issuer of the card is not a member of the regional network, one of two things can occur. Sometimes two regional networks will have an agreement to accept each other's cards and, as part of that agreement, have an electronic gateway that allows them to accept each other's transactions. If the regional networks have not entered into a gateway agreement, the transaction goes to one of the national networks. In any event, the ATM owner controls the routing for all transactions and sets the routing to obtain maximum profit from each ATM transaction (see the discussion of fees in Chapter 2).

Shared ATM networks earn revenue from carrying out transactions. Networks compete for transactions by persuading the deployers of ATMs and the issuers of ATM cards to sign up for their services. The decision of which network to join will determine how foreign transactions will be handled. Thus, it is the



FIGURE 4. TYPICAL CASH WITHDRAWAL FROM AN ATM ACROSS A SHARED REGIONAL ATM NETWORK



SOURCE: Congressional Budget Office.

NOTE: ATM = automated teller machine.

periphery of the network—the cards and ATMs—rather than the high-technology core of computers and advanced telecommunications that is at the heart of competition in the market for ATM transactions.

## ATM CARDS

Cardholders can use one of three main types of cards for conducting an ATM transaction: on-line debit cards, also called ATM cards; off-line debit cards, also called check cards; and national credit cards. Each type of card is associated with a different set of consumer protections, which are described in Box 1.

### Debit Cards

A debit card directs a bank to pay money from a deposit account. The debit may be in the form of a cash withdrawal to the cardholder, or it may be directed to a

BOX 1.  
CARDHOLDER PROTECTIONS

Disclosure of fees, liability limits for unauthorized use, and dispute resolution procedures are the primary means of cardholder protection. As of 1996, 18 states required ATM owners to disclose the surcharge fee to ATM users. Federal legislation requiring disclosure of ATM surcharge fees has been introduced in the Congress (H.R. 264).

The Electronic Fund Transfer Act of 1978 and its implementing regulation, Federal Reserve Regulation E, cover the rights of cardholders and the liabilities associated with the use of debit cards. Cardholder protections associated with the use of credit cards are found in the Truth in Lending Act of 1968 and the corresponding Federal Reserve Regulation Z. In general, cardholder protections are greater for the use of credit cards than for debit cards. Each federal banking regulator enforces the regulations for member banks under its supervision.

Debit Cards

Under Regulation E, a debit cardholder may be liable for unauthorized transactions in three tiers of responsibility:

1. The lesser of \$50 or the amount of unauthorized transfers, provided the cardholder notifies the financial institution within two days of discovering that the card is lost or stolen.
2. Up to \$500 if the cardholder fails to notify the financial institution within two business days of learning of the loss or theft.
3. Potentially unlimited liability for all unauthorized transactions if the cardholder fails to notify the financial institution of unauthorized transactions within 60 days of the institution's transmittal of the statement on which the unauthorized transactions appear.

If a cardholder's debit card is lost or stolen, liability is greater the longer the cardholder takes to inform the financial institution. A cardholder's liability for unauthorized transactions that are made before the statement is sent and up to 60 days following is based on the first two tiers of liability. If someone makes unauthorized transactions without actually obtaining a cardholder's debit card or personal identification number, or both, the first two tiers do not apply. However, if a cardholder fails to report unauthorized transactions within 60 days of receiving the bank statement on which they appear as debits, the cardholder will be liable for all transactions that occur between the end of those 60 days and the day he or she reports them to the financial institution.

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1. See 12 C.F.R. 205 for Regulation E.
  2. See 12 C.F.R. 226 for Regulation Z.

BOX 1.  
CONTINUED

The loss or theft of a debit card results in what is arguably a worse situation for a cardholder than the loss or theft of a credit card. For one thing, a cardholder who has been the victim of unauthorized debit card transactions must fight to get his own money back rather than fight to get charges removed from a bill, as would be the case in resolving the unauthorized use of a credit card. Moreover, other checks that a cardholder has written may be returned for insufficient funds (because the unauthorized transactions have drained the account). A further inconvenience is that a cardholder's deposit account may be tied up for 10 to 45 days while the bank investigates the unauthorized transactions that the cardholder has reported. If an unauthorized transaction occurs at a point-of-sale terminal, the time allowed for a bank to investigate is doubled to 20 days, which may be extended to 90 days.

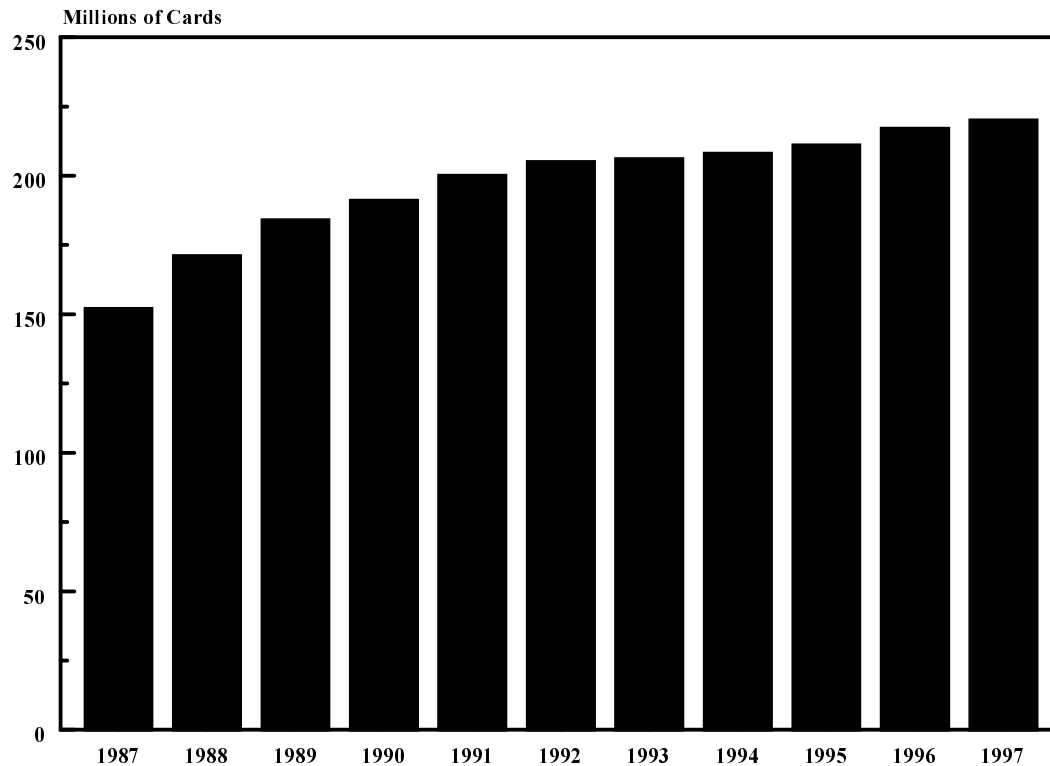
Credit Cards

A cardholder's liability for fraudulent use of a credit card and the procedures for error resolution are spelled out in Federal Reserve Regulation Z. A credit cardholder is only liable for up to \$50 of unauthorized transactions made on a credit card. Although the card may be used at an automated teller machine, it is not covered by the Electronic Fund Transfer Act (and Regulation E's liability rules) as long as the transaction is an extension of credit that does not involve a bank account. However, Regulation E does govern credit extended through an electronic fund transfer under an agreement between the cardholder and the financial institution, such as a credit line to cover overdrafts on a checking account.

Typically, a financial institution will cancel a credit card number as soon as the cardholder reports a lost or stolen card or unauthorized transactions on a billing statement. But the financial institution can usually institute a new credit card account immediately. Consequently, a credit cardholder suffers less inconvenience during a financial institution's investigation of unauthorized transactions than a debit cardholder does. Furthermore, a credit cardholder is not obligated to pay for disputed charges while the financial institution is investigating. In contrast, a debit cardholder has already lost the money that was taken from his account through unauthorized transactions, which may not be refunded until the financial institution has concluded its investigation.

merchant, as in a point-of-sale transaction. (A point-of-sale, or POS, debit transaction is one in which cardholders use their ATM card at a grocery store or other merchant to pay for a purchase and perhaps receive cash back.) The term "on-line" means that verification through the network occurs at the time of the transaction, which is posted to the cardholder's account on the same day. An off-line transaction is similar to a check: it does not involve verification through the network and takes two or three days to be posted to an account.

FIGURE 5. TOTAL NUMBER OF DEBIT CARDS IN USE, 1986-1997 (In millions)



SOURCE: Congressional Budget Office using data from the *Debit Card Directory*, 1996 and 1998 eds. (New York: Faulkner & Gray), pp. 19 and 20, respectively.

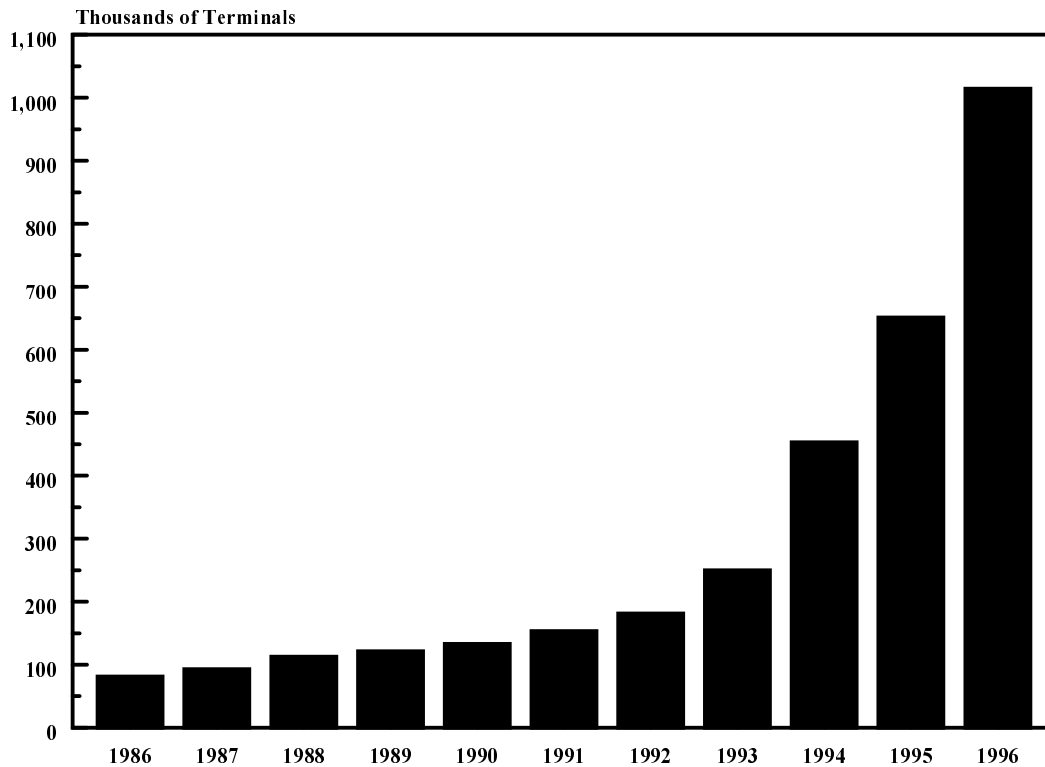
NOTES: A debit card directs money to be paid from a deposit account either to the cardholder, as a cash withdrawal from an automated teller machine, or to a merchant, in a point-of-sale transaction.

Debit cards comprise both on-line cards (verification of the card occurs at the time of the transaction, which is posted to the deposit account the same day) and off-line cards (no verification is required, and the transaction takes two or three days to be posted to the deposit account).

After growing by roughly 33 percent between 1987 and 1991, the total number of debit cards has been stagnant, growing at only a couple of percentage points per year since about 1992 (see Figure 5).

**On-Line Debit (or ATM) Cards.** An on-line debit card is the traditional type of ATM card issued by depository institutions to customers and used to debit the cardholder's checking account in lieu of a check. Use of the on-line debit card requires a personal identification number—a layer of security that both off-line debit and credit cards lack. Because of that requirement, use of the card is limited to ATMs and merchants with dial-up connections who have number pads for entering the PIN. Together, about a million such terminals are in place (see Figure 6).

FIGURE 6. ON-LINE TERMINALS THAT CAN BE ACCESSED USING DEBIT CARDS (In thousands)



SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTES: On-line terminals comprise both automated teller machines and point-of-sale terminals that have number pads for entering the cardholder's personal identification number.

A debit card directs money to be paid from a deposit account either to the cardholder, as a cash withdrawal from an automated teller machine, or to a merchant, in a point-of-sale transaction.

Debit cards comprise both on-line cards (verification of the card occurs at the time of the transaction, which is posted to the deposit account the same day) and off-line cards (no verification is required, and the transaction takes two or three days to be posted to the deposit account).

**Off-Line Debit Cards.** An off-line debit card can be used without a PIN, essentially functioning like a plastic check. The national credit card associations, Visa and MasterCard, have been sponsoring off-line debit cards for more than a decade, but only recently have banks been issuing off-line debit cards to increase their revenues.<sup>4</sup> Like conventional ATM cards, depository institutions issue the off-line cards to customers with a checking account. Although transaction amounts are debited directly from the customers' accounts, they clear through the MasterCard and Visa credit card settlement networks, bringing the national networks into competition for

4. *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), pp. 135 and 269.

transactions with the regional networks. An additional requirement imposed by the national associations is that off-line debit cards be issued only to customers who pass certain credit screens.

Most off-line debit cards can also be used as on-line cards—in other words, with or without a PIN. (Withdrawals of cash from ATMs always require a PIN.) Customers who have such cards can use them with a PIN, wherever ATM cards are accepted, or without a PIN, at retail establishments that accept national credit cards. There are about 5 million merchants that are linked to the credit card networks, compared with only 1 million ATMs and POS terminals. Consequently, off-line debit cards can be used at roughly five times as many places as on-line debit cards.<sup>5</sup>

Off-line debit cards have proven popular with the issuers of the cards because of the increased fees they bring. The fees that the card issuer collects on an off-line debit transaction are close to those for a credit card transaction (typically 1.2 percent to 2 percent of the transaction amount). In contrast, fees for an on-line debit (or ATM) card are typically between 3 cents and 11 cents.<sup>6</sup> Merchants pay those fees, so for the same reason that issuers prefer off-line cards, merchants prefer on-line ones.

Despite their popularity with issuers and the convenience they offer to cardholders, off-line debit cards have provoked some criticisms. Some observers cite the lack of security built into the card. For example, when cardholders use off-line debit cards at stores that lack PIN pads, their signature may be the only verification. Furthermore, unlike a check, a photo ID is generally not required by the merchant when an off-line debit card is used.

Another controversial issue is the requirement by the national credit card associations that merchants who accept Visa and MasterCard credit cards must also accept off-line debit cards. Such rules have raised antitrust questions, and some big retail store chains and their trade associations have a class action suit pending against the national credit card associations.<sup>7</sup> The security and antitrust issues related to off-line debit cards are significant. However, they are beyond the scope of this paper and are not fully explored here.

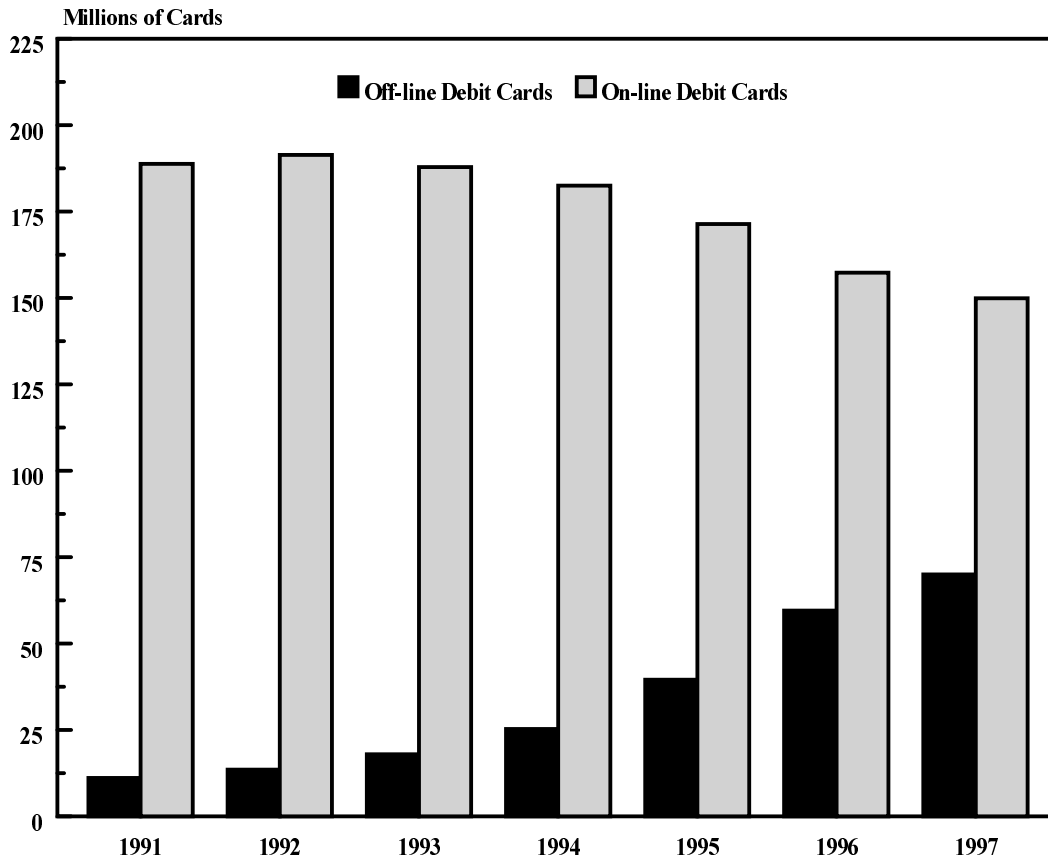
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5. Dove Associates, *The Future Use of ATMs* (Houston, Tex.: Pulse Electronic Funds Transfer Association, 1997), p. 79.

6. Charles Keenan, "Debit Card Acceptance Heats Up Feud Over On-Line vs. Off-Line Versions," *American Banker*, March 13, 1998.

7. *Ibid.*

FIGURE 7. NUMBER OF OFF-LINE AND ON-LINE DEBIT CARDS, 1991-1997 (In millions)



SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTES: A debit card directs money to be paid from a deposit account either to the cardholder, as a cash withdrawal from an automated teller machine, or to a merchant, in a point-of-sale transaction.

With on-line debit cards, verification of the card occurs at the time of the transaction, which is posted to the deposit account the same day. For off-line cards, no verification is required, and the transaction takes two or three days to be posted to the deposit account.

The growth of the off-line debit card has come at the cost of a reduction in the issuance of strictly on-line debit cards (see Figure 7). By mid-1997, 70 million off-line debit cards had been issued, up from approximately 60 million the year before.<sup>8</sup> However, between 1993 and 1997, the number of on-line cards fell by 20 percent, whereas the number of off-line debit cards more than tripled.

8. *Debit Card Directory*, p. 20.

### Credit Cards

Many credit cards allow cardholders to get cash advances at ATMs, although the cash advance feature is peripheral to the much more common credit feature. (The number of credit card transactions is roughly three times the number of debit transactions.)<sup>9</sup> Typically, the credit cardholder has a separate PIN that must be entered to receive cash advances. Additional fees and interest charges are also typical of cash advances, but those charges are imposed by the cards' issuer and not by the ATM owner or network. Thus, depending on the ATM, a credit cardholder getting a cash advance might have to pay both a surcharge to the ATM owner as well as a cash advance fee and interest charges to the credit card issuer.

The whole structure of fees and charges in the ATM industry has become an area of controversy in recent years. All of the participants in the ATM market pay one or more fees, which are discussed in more detail in the next chapter.

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9. Ibid.



## CHAPTER II

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### THE MARKET FOR ATM SERVICES

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Analyzing the extent of competition in the automated teller machine market requires knowledge of all parties involved in the ATM networks, the various fees charged in conjunction with the operation of an ATM, and to which party each fee is paid. Cardholders' needs for cash and their attitudes toward convenience drive the demand for ATM services. On the supply side, various types of companies play a role in the ATM market, setting, paying, and collecting the fees associated with ATM transactions.

#### DEMAND SIDE: ATM CARDHOLDERS

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Although the number of ATM cardholders is growing, the number of ATM transactions will depend on several other factors as well: the use of cash in the economy, the attitudes of cardholders toward convenience, and the alternatives to the ATM. Each of those factors will affect the extent to which people with debit accounts demand ATM services.

#### Number of ATM Cardholders

The growth in the number of ATM cardholders is likely to be drawn from two sources. First, having and using ATM cards is inversely correlated with age. Roughly two-thirds of account-holders over age 65 have an ATM card; however, more than 90 percent of those under age 55 have one.<sup>1</sup> Thus, as the population ages, an ever larger percentage of it will feel comfortable using ATM cards.

The second major source of growth will come from the federal effort to reduce federal costs by disbursing benefits such as food stamps through electronic means. Commonly called electronic benefits transfer (EBT), the approach would give beneficiaries access to deposit accounts through ATM cards that they could use at ATMs and point-of-sale terminals, just as other account-holders can. The federal government is now in the process of setting up programs to give deposit accounts to the millions of recipients who do not have a checking account. In addition, many states are also experimenting with pilot EBT programs.

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1. *Bank Network News*, cited in Dove Associates, *The Future Use of ATMs* (Houston, Tex.: Pulse Electronic Funds Transfer Association, 1997), p. 28.

### Demand for Cash

U.S. consumers acquire the roughly \$1 trillion they spend in cash (currency and coin) every year in a variety of ways.<sup>2</sup> They may go to a bank and get it from a teller. They may cash a check at a grocery or other store. Or they may visit an ATM, using either their debit card or a credit card. Increasingly, they may also use their ATM or other card to get cash from a grocery store or other merchant cashier.

Consumers' need for cash shapes the demand for ATM services. Cash purchases have declined as a share of all consumer purchases over the past decade. According to a 1984 Federal Reserve telephone survey, cash purchases accounted for 36 percent of total consumer expenditures. When the Federal Reserve repeated the survey in 1995, cash purchases accounted for only 18 percent of such expenditures.<sup>3</sup> In contrast to the declining use of cash, the share of credit cards over the same period has doubled, reaching 13 percent of consumer expenditures by the mid-1990s. And checks increased their already disproportionate share, rising from 57 percent to 67 percent of all expenditures over the same time.

### Attitudes Toward Convenience

At least part of the rapid proliferation of surcharges on ATM transactions arises from the discovery by banks and other ATM owners that cardholders are willing to pay for convenience. As cardholders have become more familiar with ATMs, they have come to value that convenience more highly. And if people value something highly, they are typically willing to pay more for it.

Paying for convenience is common in many markets. A soda purchased from a vending machine at a gasoline station or in an office basement is typically more expensive than the same soda purchased in a grocery store. In the airline industry, the convenience of purchasing a refundable ticket at the last minute without travel restrictions, such as having to stay over Saturday night, often doubles or triples the price. Convenience in many cases is just another attribute of a product, like styling or quality, that businesses incorporate into their pricing structure.

However, cardholder willingness to pay is limited, and potential competitors may view cardholders' resistance to convenience fees as an opportunity to enter the market. For example, hotels are discovering that their customers are using cell phones to circumvent the costly surcharges on hotel telephone calls. Similarly, a recent survey of cardholders found that as many as 78 percent of them avoid ATMs

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2. Congressional Budget Office, *Emerging Electronic Methods for Making Retail Payments* (June 1996), p. 18.

3. *Ibid.*, p. 17.

that impose surcharges.<sup>4</sup> The same survey found that the surcharges so alienated cardholders that they refused to look at the bank's other products, such as home equity or consumer loans. In the end, although ATM owners may be able to exploit to some extent cardholders' willingness to pay, they must also consider the costs and risks of such actions.

### Alternatives to ATMs

The use of one alternative to the ATM, the point-of-sale debit transaction, is growing more rapidly than the use of ATMs. Over the past decade, monthly ATM transactions have been growing by 10 percent per year. During the same period, POS transactions have been growing by 36 percent per year (see Table 1).<sup>5</sup>

Yet despite that growth, ATM transactions are still about eight times more common than POS transactions, although their lead is shrinking. Furthermore, the cash-back transaction is still only a fraction of all POS transactions. Nevertheless, additional use of ATM cards in non-ATM situations—and other market changes, such as the use of phone cards and other so-called stored-value products—may reduce the value to the cardholder of obtaining cash from an ATM. That lessening of value may in turn reduce cardholders' willingness to pay fees to use it.

What is behind the extraordinary growth in POS transactions? Part of the answer may lie in the additional incentives that merchants have to install POS terminals with PIN pads. With many of the new debit cards, the financial intermediaries charge merchants more if the cards are used "off-line" without the pads. Consequently, in high-traffic situations such as grocery stores or retail superstores, merchants would have sufficient reason to make what are relatively costly investments in PIN pads and thus increase the potential for use of debit cards.

### SUPPLY SIDE: THE PARTICIPANTS IN ATM NETWORKS

The automated teller machine market comprises a surprising number of participants whose relationships can be quite complex. Broadly speaking, there are three

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4. "Card Briefs: ATM Fees Prejudice Service Sales," *American Banker*, March 9, 1998.

5. Calculation based on the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), pp. 17-18.

TABLE 1. TOTAL MONTHLY ATM AND POINT-OF-SALE TRANSACTIONS, 1988-1997 (In millions)

	Point-of-Sale Transactions	ATM Transactions
1988	7.4	373.4
1989	9.2	426.4
1990	12.4	479.3
1991	17.6	534.9
1992	23.3	600.5
1993	32.2	642.1
1994	45.9	704.5
1995	57.0	807.4
1996	75.4	890.3
1997	120.2	915.0

SOURCE: Congressional Budget Office based on data from the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray), p. 20.

NOTES: In 1997 and 1996, monthly transactions were measured in June and August, respectively. Earlier years use September data.

ATM = automated teller machine.

categories of participants: machine owners, the networks, and processors. But that straightforward description obscures the tangled interconnections that may arise now that ATM services can be broken down by components and one participant may carry out several functions (for instance, a depository institution may own ATMs and perform ATM processing). A further complication is that the interests of the participant performing a particular function may differ depending on the identity of that participant—for example, a bank that owns an ATM may behave differently from a nonbank owner. That kind of complexity, which is reflected in the system of fees imposed on and collected by the various participants, has implications for competition (discussed in Chapters 3 and 4) in the ATM market.

### ATM Owners: Banks and Others

When ATMs were first deployed, they were all owned by depository institutions because legally they were considered bank branches. Today, each state determines whether an ATM is considered a bank branch and whether nonbanks may own ATMs. Consequently, in many states, ATM owners now include grocery stores, convenience stores, and even third parties that lease ATMs to stores and shopping malls or rent space for their machines. At the end of 1997, Bank of America held the

top spot in terms of number of ATMs; the third largest owner of ATMs was the EDS Corporation, which is not a bank.

Despite the recent increase in nondepository ownership of ATMs, that change should not be overstated. Of the top 50 ATM deployers, roughly 40 are depository institutions, and some of the nondepository institutions may be owned by banks or by groups of banks.<sup>6</sup> Nevertheless, industry observers say that of the new ATMs being shipped out, a much larger proportion than in the past are going to businesses that operate ATMs as their main line of work. Those so-called independent service organizations expect to profit directly from their ATM investments.

### ATM Networks

As noted earlier, ATMs typically conduct transactions through one of three types of computer networks:

- o the bank's proprietary ATM network,
- o a shared regional ATM network, or
- o a shared national ATM network.

Bank Proprietary Networks. Most banks have proprietary networks that operate their ATMs. However, in most instances, they do not actually run the network because they lack the specialized expertise to do so efficiently. Instead, they contract with an outside firm to provide that service.

Shared Regional Networks. Initially, when banks first started installing ATMs, they deployed their own proprietary ATM systems. But they quickly found that they could not individually provide all of the access to ATMs that cardholders desired.<sup>7</sup> In response, they formed state and regional networks to which virtually all ATMs were connected.<sup>8</sup> Cardholders thus did not have to travel long distances to use their bank's ATM, which would have defeated the convenience of the service, and each bank did not have to invest in as many ATMs as they would have otherwise. The

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6. *Debit Card Directory*, pp. 146-152.

7. For more details, see James McAndrews, "The Evolution of Shared ATM Networks," *Business Review*, Federal Reserve Bank of Philadelphia (May-June 1991), pp. 3-16.

8. One report from the Federal Reserve Bank suggested that, in 1996, only 100 of the 139,000 ATMs then in operation in the United States were not on an ATM network. See Robin Prager, "ATM Network Mergers and the Creation of Market Power" (draft working paper, Board of Governors of the Federal Reserve System, Washington, D.C., December 1997), p. 4.

number of shared regional ATM networks rose rapidly, peaking in the mid-1980s at almost 180.

In its broadest sense, a shared ATM network consists of a trademark, a computer switch, a set of rules, institutions that issue debit cards, and institutions that own ATMs. The ATM cards of one institution can be used at ATMs deployed by all network members. A central switch, which may or may not be owned and operated by the network, connects the ATMs in the network to the data centers of the card-issuing banks. Networks collect fees from network members (discussed in the next section) to cover the costs of operations.

The shared network has two main functions. Its primary role is to route transactions through the central switch and act as a clearing house to settle those transactions. That activity involves developing standard protocols and administering computer hardware and software. The second function is to market the network trademark to maintain and increase the network's base of users and ATMs.

Most shared regional networks are organized as joint ventures that are owned and controlled by competing, usually large, financial institutions. Sometimes ownership is concentrated in a handful of banks, and in other instances ownership will be dispersed among 100 or more member banks. A few shared regional networks function as cooperatives; some are owned and operated by a single firm as a profit-making enterprise.

National Networks. With the high levels of business and other travel in the United States and the rising demand by cardholders for the convenience of ATM access to their bank accounts, regional ATM networks soon proved insufficient. In response, the regional networks began to consolidate, and, simultaneously, national networks began to form. The formation of superregional and national networks exploited three phenomena:

- o *The desirability of larger networks* (ATM owners preferred to be available to more cardholders with a single network);
- o *Economies of scale* (the computer network and other fixed costs could be spread over more machines); and
- o *The spread of interstate banking* (interstate bank holding companies wanted to pay for membership in as few ATM networks as possible).

The largest networks have continued to garner increasingly larger shares of the volume of ATM transactions, with the result that today there are fewer than 50 nationally. (The most recent survey by *Bank Network News* lists 41 regional

networks.)<sup>9</sup> Most regions have a single dominant network, and there have been no significant entrants into this industry for a long time.

The largest national shared ATM networks, Plus and Cirrus, are operated by the credit card associations. There are also other specialized national networks such as the Armed Forces Financial Network.

### ATM Processors

ATM processing, sometimes called back-office operations, transfers the information concerning an ATM transaction by computer to the relevant depository institutions. ATM processing covers many functions:

- o One type of processing, sometimes referred to as transaction processing, is the switching and routing of transaction information to and from the relevant parties.
- o Another level, sometimes referred to as data processing, covers the billing, account balancing, clearing, and settlement of ATM transactions.
- o A third type is the actual “driving” of the ATM machines, the communication links, and the servicing, such as filling the machines with cash. As the driver, the ATM processor maintains the software at the terminal, makes sure it is operational, maintains the network links, and the like. Driving ATMs is akin to maintaining a computer network.

Some shared regional networks engage in processing as a commercial endeavor separate from providing network connections. Their members can also process their own ATMs or use third-party processors. Large banks may do their own processing; small banks are more likely to use the network processor or a third-party firm. In some cases, there may be several processors involved with a single ATM. For example, a separate company may provide the communication links between the ATM and the ATM processor that does the routing, and another processor may perform the clearing and settlement.

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9. See “EFT Network Data Book: 1998 Edition,” *Bank Network News*, September 26, 1997. Some networks have merged since that tabulation. The tabulation also excludes some smaller specialized networks.

## THE FEE STRUCTURE IN THE ATM MARKET

Each of the connecting networks that make up the ATM system imposes different fees, just as different long-distance telephone companies impose different charges on various types of long-distance calls. (The same long-distance call can vary widely in price depending on the long-distance carrier of the person originating the call, whether the calling party uses a collect calling service or other reseller of long-distance service, and the time of day and day of the week.) Similarly, each of the networks to which an ATM is connected has its own fees and cost structure. And just like the long-distance companies, the fee structure is an important aspect of each network's competitiveness.

An ATM system comprises five general classes of fees: membership fees, switch fees, interchange fees, foreign fees, and surcharges (see Table 2). The exact size and structure of the fees are determined by commercial relationships, subject to some minimal government regulation. National competition among networks has reduced the range of fee sizes. Networks that charge their members too much are finding that more efficient networks are aggressively entering their regions.<sup>10</sup>

### Membership Fees

Network members pay a monthly or annual membership fee to the network to help cover the costs of operations as well as advertising and other promotional expenses. The membership fee is usually a fixed fee; it is not charged per transaction as the other four fees are. Many networks admit only depository institutions as members; however, most networks allow nonbank ATM owners to become members if they are sponsored by a member depository institution.

Membership fees in ATM networks range from nothing to \$125,000 per year.<sup>11</sup> Even within the same network, the range of fees can be as wide as \$2,000 to \$125,000. The posted fees are virtually all of the information available on the actual charges; the data are unclear regarding how many institutions pay each level of fee.

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10. For a recent example, see Charles Keenan, "MAC Network Expanding in Michigan; Signs 8 Banks with 850 ATMs," *American Banker*, June 8, 1998.

11. *Debit Card Directory*, p. 21.



TABLE 2. ATM FEES

Fee	Who Pays It?	Who Receives It?	Who Sets It?	Range
Network				
Membership <sup>a</sup>	Card-issuing bank	Network	Network	\$0 - \$125,000
Switch <sup>b</sup>	Card-issuing bank	Network	Network	2.5¢ - 12¢
Interchange <sup>b</sup>	Card-issuing bank	ATM owner	Network	20¢ - 60¢ <sup>c</sup>
Foreign or User <sup>b</sup>	Cardholder	Card-issuing bank	Card-issuing bank	\$0 - \$2.50
Surcharge <sup>b</sup>	Cardholder	ATM owner	ATM owner	\$0 - \$3.00

SOURCE: Congressional Budget Office based on the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), and Government Accounting Office, *Automated Teller Machines: Survey Results Indicate Banks' Surcharge Fees Have Increased* (April 1998).

NOTE: ATM = automated teller machine.

- a. The membership fee is usually paid either monthly or annually.
- b. This fee is paid per transaction.
- c. The range stated is for a cash withdrawal. Interchange fees vary for different types of transactions. For example, the interchange fee is usually higher for a deposit transaction than for a balance inquiry.

### Switch Fees

The network levies a switch fee on all ATM transactions routed through the central switch. Something of a membership charge, the switch fee is dictated by the network agreement, which lays out the organization's by-laws, fee structure, and the like. The network collects the switch fee, which is typically paid by the card-issuing institution, to recover the costs of operating the central switch. The switch fee is a "hidden fee" as far as the cardholder is concerned—the cardholder neither sees it when making an ATM transaction nor is it reported on the cardholder's bank statement. Switch fees generally range from 2.5 cents to 12 cents per transaction, although large ATM deployers may be able to negotiate lower fees.

### Interchange Fees

Like the switch fee, the interchange fee is not apparent to the ATM user. Instead, the bank that issued the debit or credit card used for the transaction pays it to the owner of the ATM. Most networks fix the interchange fee for all network members rather than allowing pairs of members to negotiate the fee between themselves. Banks that own many ATMs connected to the network or particularly high-volume ATMs (in other words, banks that are net recipients of interchange fees) prefer fees to be set at

high levels; banks that own fewer ATMs (net payers of interchange fees) prefer fees to be set at lower levels.

Interchange fees differ by type of transaction (withdrawals, deposits, balance inquiries, transfers, and point-of-sale purchases). The interchange fees for POS transactions are the lowest, ranging from zero to 10.5 cents. The interchange fees for deposits are usually the highest, ranging from 25 cents to \$1.60, with most networks charging around a dollar. The interchange fees for withdrawals typically range from 20 cents to 60 cents.<sup>12</sup>

Before the widespread practice of surcharging, owners of ATMs were limited to the interchange revenue they received to cover the costs associated with operating their ATMs. Because the network, rather than the ATM owner, set the interchange fees, ATM owners typically deployed ATMs in locations where the owner expected sufficient transaction volume to produce interchange revenue that would cover the costs of operation. However, in some cases, banks deployed certain ATMs for “strategic” reasons (for example, to keep depositors satisfied) and not as profit centers on their own.

### Foreign Fees

Most banks charge their depositors a foreign fee whenever depositors use a foreign ATM (as noted earlier, an ATM that is not owned by their bank). Individual financial institutions, not the network, set those fees, which range from zero to \$2.50 and average between \$1.00 and \$1.30, depending on the type of transaction.<sup>13</sup> Foreign fees are often waived if the bank's customer maintains a minimum balance or makes fewer than some set number of foreign ATM transactions per month. ATM networks have never regulated foreign fees. The fees typically appear on a depositor's monthly statement but are not necessarily disclosed during the ATM transaction. Like interchange fees, foreign fees vary by the type of ATM transaction.

The level of foreign fees that banks set has raised questions because it is apparently so much higher than the banks' cost for the service. Presumably, the foreign fee covers the switch fee and the interchange fee, which the card-issuing institution must pay. But banks argue that the fees cover other costs as well—for example, their connections to the ATM network and their liability for fraudulent use of ATM cards. Foreign fees may also subsidize transactions in which depositors use the bank's own ATMs without charge. Thus, it is not unreasonable that foreign fees

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12. Ibid.

13. Board of Governors of the Federal Reserve System, *Annual Report to the Congress on Retail Fees and Services of Depository Institutions* (June 1997), p. 14; see also the *Debit Card Directory*, p. 19.

exceed the interchange and switch fees, nor would foreign fees necessarily disappear if the interchange fee was eliminated. (Box 2 discusses the interaction between the foreign fee and the surcharge.)

### Surcharges

For the purposes of this analysis, a surcharge is a fee that the owner of an ATM charges a cardholder for using its machine. (Put another way, the surcharge is essentially a convenience fee that a cardholder pays to use an ATM.) ATM owners like surcharges because surcharges can increase the revenue earned by ATMs and in turn cover the costs of installing and maintaining ATMs in more locations. Owners maintain that surcharging ultimately benefits cardholders by offering the convenience of having more ATMs in locations that are off bank premises.

Banks that are ATM owners usually impose surcharges only on foreign users of their machines, exempting their own depositors. But between 2 percent and 7 percent of banks and 7 percent and 11 percent of savings associations impose surcharges on their own customers, depending on the type of ATM transaction.<sup>14</sup> Of course, at an ATM owned by a nonbank, all users are foreign and subject to surcharges, because the only relationship the ATM owner has with any cardholder is the use of the ATM.

Some analysts assert that the term "surcharge" should apply only to transactions at foreign ATMs.<sup>15</sup> They believe that only in those instances does the cardholder pay a true surcharge, that is, a second charge to the owner of the ATM, in addition to the foreign fee that the cardholder pays to his or her own bank. ATM charges for transactions at a person's home bank do not involve double-charging (that is, no foreign fee is imposed), and therefore, these analysts argue, such assessments should not be called surcharges. Although that argument certainly follows from a strict construction of the term "surcharge," the definition does not follow the industry's convention, which defines as a surcharge any fee imposed on the cardholder by the ATM owner for use of an ATM. In this paper, the Congressional

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14. Board of Governors of the Federal Reserve System, *Annual Report to the Congress*, pp. 8-10.

15. Legislation proposed in the Congress (S. 885) defines an electronic terminal surcharge as a transaction fee assessed by a financial institution that is the owner or operator of the electronic terminal. By that definition, the fee charged by a nonbank owner of an ATM is not a surcharge.

BOX 2.  
INTERACTION AMONG CARDHOLDER FEES

The double-charging of automated teller machine (ATM) users, under which they pay both the foreign fee and the surcharge, raises questions of economic efficiency. Both fees are set independently of each other. The ATM owner does not know what, if any, the foreign fee will be, and the cardholder's bank does not know what, if any, the surcharge will be. Each fee can range from zero to a dollar or more. Under specific circumstances, this setting of fees can lead to cardholder charges that are even higher than those a monopolist would impose. If the practice became widespread, cardholders would make fewer foreign transactions than is suggested by the cost of deploying ATMs and thus reduce the social value of the nation's fleet of ATMs. Economists call this effect "double marginalization" or "successive monopoly."<sup>1</sup>

Double marginalization occurs only if both the cardholder's bank and the ATM owner have some degree of market power. Many goods in the economy are provided jointly by different firms (for example, movies and movie theaters) without introducing these economic welfare losses. Consequently, the degree of loss of economic welfare will vary according to the amount of monopoly market power exercised by the two firms in question.

Under what circumstances do banks and ATM owners have sufficient market power to distort consumer choices? Large regional banks have some degree of market power, as evidenced by their ability to charge more across the board for all services. Yet the presence of about 10,000 banks competing for depositors suggests that their power is limited. Similarly, the ownership of ATMs is somewhat concentrated, with the top 50 owners accounting for 60,000 of the 165,000 ATMs deployed nationwide. Nevertheless, that still leaves 100,000 ATMs in the hands of other deployers.

No doubt some ATMs enjoy local monopolies in selected locations. In some remote or physically isolated areas, such a monopoly can probably be sustained over long periods of time, given sufficient traffic by tourists and other travelers with limited choices. However, the typical ATM in an urban location probably cannot be described as having substantial market power because cardholders have too many alternatives nearby.

Vertical integration in the ATM industry complicates this analysis. The largest ATM owners are banks. Consequently, most ATM transactions will occur within a single bank, and many foreign ATM transactions will occur between competing banks. In those circumstances, foreign fees and surcharges may be part of the bank's competitive strategy, which may change the manner in which fees are set. All of these factors serve to reduce the number of occasions on which cardholders might be subject to double marginalization. Consequently, since the number of foreign ATM transactions has been declining as a share of all ATM transactions for years and many foreign ATM transactions involve some of the 6,000 small banks (which are unlikely to have substantial market power), the portion of ATM transactions subject to double marginalization is likely to be a small fraction of the total.

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1. For a discussion of this effect in the case of ATMs, see James McAndrews, "ATM Surcharges," *Current Issues in Economics and Finance*, vol. 4, no. 4 (April 1998).

Budget Office follows industry convention but notes that the vast number of depository institutions do not charge their own customers for using their ATMs.

Surcharges for ATM withdrawals typically range from 50 cents to \$1.50.<sup>16</sup> (However, ATM owners with "captive" audiences, such as at casinos, may impose surcharges of \$3.00 or more for a cash withdrawal.)<sup>17</sup> Disclosure of surcharges may or may not be required by the network. Some states have enacted surcharge disclosure laws.

As noted earlier, surcharges only recently became a part of the fee structure for ATMs in most of the United States. Before 1996, the national networks, Plus and Cirrus, banned surcharges: ATM owners who wanted to connect to those networks (and the vast majority did) could not impose a surcharge on users. But that ban has given way in the face of challenges on several fronts to the rate-setting powers of ATM networks.

Background. In the late 1980s, banks that were deploying substantial numbers of ATMs began to question the amount of the interchange fees that the networks set to compensate ATM owners for their costs.<sup>18</sup> One such dispute, between First Texas Savings and a regional ATM network, the Pulse Electronic Funds Transfer Association, illustrates some of the issues in those conflicts. First Texas Savings had begun deploying several hundred ATMs primarily at locations that were off bank premises and stood to be at the mercy of Pulse's decision about the level of interchange fees. First Texas Savings thus requested an end to network-dictated interchange fees and proposed that ATM owners set their own fees and pass them on directly to cardholders. Rather than wage a potentially costly legal battle, the two organizations agreed to binding arbitration. The arbitrator ruled that Pulse could set the interchange fees for the network, since that fee was a transfer between members of the association, but that each ATM owner would also be permitted to charge cardholders a "convenience fee," now known as a surcharge.<sup>19</sup> Pulse members imposed the first surcharges in 1989.

The national networks' ban on surcharges also came under fire from state governments. In the years following the Pulse/First Texas Savings decision, some states passed measures that overruled the existing network prohibitions on surcharging. Several of those states were tourist destinations; there, surcharges were

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16. *Debit Card Directory*, p. 13.

17. Ross Kerber, "High-Fee ATMs, Low Profile Operators," *Wall Street Journal*, December 4, 1997, p. B1.

18. Dove Associates, *The Future Use of ATMs*, pp. 40-43.

19. The arbitrator also allowed ATM owners to pay a rebate to encourage use of a particular ATM. So far, few ATMs give rebates (that is, pay the cardholder to use the ATM).

meant to benefit in-state banks largely at the expense of out-of-state residents. Regulators and legislators of some sparsely populated states perhaps thought that additional compensation for ATM owners was a necessary incentive for banks to deploy more ATMs. By April 1996, 15 states—Maine, New Mexico, Texas, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Nevada, Idaho, Utah, Montana, Wyoming, North Dakota, and South Dakota—had passed laws or taken regulatory action on ATM surcharges. Some states simply made surcharges legal in their jurisdictions, in many cases accompanied by related disclosure requirements. Others declared the surcharge bans imposed by ATM networks to be illegal. In addition to action by the states, ATM owners who wanted to impose surcharges filed suit on antitrust grounds against the national networks.

With so many states acting and the threat of costly lawsuits facing them, the two main national networks, Cirrus and Plus, lifted their ban on ATM surcharging on April 1, 1996.<sup>20</sup> Following that decision, many regional networks that had previously resisted surcharges also lifted their bans, presumably to avoid losing member banks. ATM owners quickly took advantage of the end of the bans, and by April 1997, all but four of the top 25 ATM deployers nationwide were actively surcharging in at least one of their markets.

The Current Extent of Surcharging. As the later discussion shows, surcharges make ATMs a substantially more profitable investment for the owner.<sup>21</sup> Consequently, even some banks that at first eschewed surcharges have found them irresistible. According to a recent survey by the General Accounting Office (GAO), 64 percent of banks impose surcharges.<sup>22</sup> And the share of banks, small and large, imposing them rises each year. One recent survey of small community banks that had been vocal in opposing surcharges shows that their use of them is now climbing.<sup>23</sup> In 1996, only a third of the surveyed banks had imposed surcharges on ATM use by nondepositors; 57 percent plan to do so in 1998. Other surveys reveal similar patterns of steadily rising rates of surcharging among banks, although the exact percentages may differ.<sup>24</sup>

The economic value of surcharging becomes even more apparent in considering the disproportionate number of ATMs that the surcharging banks

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20. David Balto, "ATM Muddle Shows How Not to Regulate E-Commerce," *American Banker*, October 3, 1997.

21. Alan Kline, "Half of Small Banks Report Surcharging on ATMs," *American Banker*, Sept 16, 1997.

22. General Accounting Office, *Automated Teller Machines: Survey Results Indicate Banks' Surcharge Fees Have Increased* (April 1998).

23. "Business Bulletin," *Wall Street Journal*, March 5, 1998, p. A1.

24. General Accounting Office, *Automated Teller Machines*; and Valerie Block, "A Year After ATM-Surcharge Surge, Banks Bloodied but Unbowed," *American Banker*, March 31, 1997. See also Kline, "Half of Small Banks."

represent. Although their share of all banks is 64 percent (according to GAO), their share of all ATMs is 79 percent.<sup>25</sup> Moreover, banks have discovered that those cardholders who are willing to pay surcharges are willing to pay higher surcharges than the banks had initially expected. The first surcharges on the Pulse network were on the order of 25 cents per transaction. Some banks then increased that fee to 50 cents, and now surcharges in the range of \$1.00 to \$1.50 are not uncommon.

The rapid spread of ATM surcharges has raised the ire of cardholders and spurred policymakers to consider action. Legislation has been introduced in the 105th Congress—in the House, to require disclosure of ATM surcharges (H.R. 264), and in the Senate, to restrict surcharging (S. 885). Much of the attention that policymakers are now focusing on the ATM industry seeks to determine whether the networks are exercising undue market power and whether competition is being stifled.

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25. General Accounting Office, *Automated Teller Machines*, p. 8.





## CHAPTER III

### ATM NETWORKS AND BANKING COMPETITION

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Policymakers have expressed concern in recent months about the exercise of market power in the ATM network markets. Economists generally define market power as the ability of firms to raise prices above the level that would obtain in a purely competitive market. Those higher prices basically represent a transfer of income from other firms and from consumers to the companies with market power. Companies can exercise such power if they control a large portion of all transactions in a market and if they can keep existing or potential competitors at bay. Some observers note that the geographic structure of the ATM industry could lead shared networks to exercise their market power against their direct customers, the banks.

In the market of the shared ATM networks, ATM owners (for their profit) and cardholders (for their convenience) desire to communicate with as many ATMs and networks as possible. Because of that desire for interconnection, the number of shared ATM networks has shrunk, while those remaining have grown in geographic size and market dominance by merging with or simply swallowing their neighbors. A few firms have thus come to account for a large share of all ATM network transactions, raising the question of market power and its exercise directly in the network market and indirectly through its effects on competition in the banking sector.

### NETWORK EFFECTS AND COMPETITION IN THE ATM NETWORK MARKET

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The desire for interconnection that has played a role in decreasing the number of competing networks in the ATM market is similar to but not necessarily the same as what economists refer to as network effects. In that phenomenon, a connection to a network becomes more valuable as—in this instance—the number of ATMs connected to the network rises. Network effects have been observed for telephones and, in recent years, for the Internet. (Indeed, some observers suggest that network effects are very strong in electronics industries in general.)

The case of ATMs is slightly different from that of telephones and other instances of conventional network effects. Telephone users typically wish to be able to make telephone calls to any and all other telephone users. By contrast, ATM cardholders want ATMs to afford them access to their money, but they do

not require that every ATM be connected to every network. Indeed, most commercial districts in cities will have several competing ATMs in close proximity, and in that situation, a person would need only a proportion of them to accept his or her card. (Of course, in special or remote locations, consumers might be willing to pay a premium to use a machine with access to all the shared ATM networks.)

Network effects at the level of the ATM owner may be stronger than such effects for cardholders. ATM owners, especially those whose income derives from surcharges, want to be "connected" to as many potential customers as possible. Yet even before surcharges, ATM owners sought the highest level of transactions possible for each machine, consistent with the lowest cost, by joining the biggest network available to them. That desire for connectivity works against a new firm in the network market, because that firm might not be able to offer as many connections as an established or consolidated firm.

Sometimes the cost of the hardware necessary to set up an ATM network is cited as an explanation for the widespread consolidation of the shared ATM network market, but network effects are the more likely cause. Relatively inexpensive midsize computers can handle the switching and processing required from a network, and the leased telephone lines needed for remote access are easily obtained from many sources.<sup>1</sup> Networks thus are merging not to get each other's hardware but each other's clients. A corollary to that proposition is that it is not the need to install a large infrastructure that is hindering new networks from forming but rather banks' contractual ties to incumbent networks. A new network may not be able to establish the critical mass of new members required to successfully compete.

Although the network effects described above make it difficult to create new networks, the desire to dispense with surcharges—and in doing so attract more customers—has spurred several such efforts as well as attempts to establish surcharge-free areas within existing networks. Small and community banks have begun to form surcharge-free alliances in several states, and a new small-bank network, Cartel, is operating in 48 states. In the Cartel network, most ATMs do not impose surcharges; however, the network is quite young and whether it can compete in the long run is open to question.<sup>2</sup>

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1. Charles Keenan, "With a Third Partner, Arkansas ATM Network Plans to Expand Out of State," *American Banker*, February 19, 1998.

2. Charles Keenan, "Small Banks Join No-Fee Alliances in Bid to Retain ATM Customers," *American Banker*, January 8, 1998.

Despite the entrance of at least one new network into the ATM market, the general trend has been toward network consolidation, suggesting that some network effects are not yet exhausted—at least not as far as ATM owners are concerned. Growth and consolidation of the networks may also be the result, in part, of their owners and leading clients—the large regional banks—growing and consolidating as well. In that sense, the landscape created by changes in the networks may be reflecting (or anticipating) the state of the banking industry that the networks serve.

The power that network effects give to shared networks relative to ATM owners has on at least one occasion led to an attempt to tie network switching to other operations of member banks. ATM operations can be divided into switching messages between banks and processing individual transactions. In the late 1980s and early 1990s, MAC, the regional network that serves Pennsylvania and adjacent states of the mid-Atlantic region, tied its provision of switching services to individual account processing; that is, a bank could not use the MAC network to connect to foreign ATMs unless it also used the MAC computers to process the transaction.<sup>3</sup> In the 1994 consent decree ending that practice, MAC and its parent corporation, Electronic Payment Services (EPS), agreed to provide network switching services at competitive rates to banks that wanted to use an outside processor.

Whether a shared regional network could ever again be so blatant in its attempts to exercise monopoly market power is open to question. The EPS case made it clear that federal authorities would not countenance so-called tying arrangements. Furthermore, as detailed in Chapter 4, surcharges and other factors have increased the number of transactions handled by proprietary networks relative to shared networks. That shift has the potential to reduce the market share (and thus market power) of the shared regional networks.

The other new factor limiting the power of the regional shared networks is the growth of the national networks. The national networks have begun to expand their role as the network of last resort and are conducting increasing numbers of transactions that earlier would have been done by the regional networks. In addition, new products from the national networks (such as off-line debit cards) are putting pressure on the regional networks. Yet despite the increased competition from the national networks, the regional networks have several factors in their favor. In particular, the large regional banks may feel that they have more control over the shared regional ATM networks than they do over the ATM networks run

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3. For discussions of the antitrust aspects of this case, see David Balto, "The Murky World of Network Mergers: Searching for the Opportunities for Network Competition," *Antitrust Bulletin* (Winter 1997), pp. 793-850; and Donald Baker, "Shared ATM Networks—The Antitrust Dimension," *Review*, Federal Reserve Bank of St. Louis (November/December 1995), pp. 5-16.

by the credit card associations. As a result, they may not be so quick to leave the regional networks and to put themselves solely at the mercy of the national systems.

### TESTS OF MARKET POWER AMONG SHARED ATM NETWORKS

To investigate the exercise of market power by shared regional ATM networks, the Congressional Budget Office undertook a series of empirical tests. Those assessments, which deal with concentration and price, illuminate aspects of the market's structure and how the shared ATM networks operate within it. The tests for concentration investigate the extent to which one network or a small group of networks provides all the services in a market. Because of deficiencies in the data, CBO found those tests to be inconclusive. By comparison, the main findings from the tests for price suggest that regional networks have successfully increased the income of their major customers, the large ATM deployers. The networks' own pricing has tracked actual costs more closely.

Much of the data used in the tests comes from industry sources, specifically the *Debit Card Directory* published annually by Faulkner & Gray. Each year the publisher surveys the ATM networks to determine their output (the number of ATM and point-of-sale transactions) and their fee structure. Of course, unaudited industry self-reporting of that kind suffers from problems of exaggeration by some respondents. Compounding the problem of validity is that output is reported by network, affording no anonymity. In the ATM industry, however, such publications are, for the most part, the only source of information. (The wide use of the *Debit Card Directory* at least suggests that it has passed a kind of market test of reliability.)

#### Geographic Concentration in the ATM Network Market

As part of its analysis, CBO investigated the geographic spread of the ATM network industry. Each year, *Bank Network News* analyzes the markets of each of the networks, noting the states in which they are active.<sup>4</sup> Its 1998 publication reported on 41 networks; it provided specific state listings for 35 of them. A simple count of the states in which each network claimed to be active revealed that, on average, each ATM network was active in 5.6 states and each state had an average of 3.8 active networks. However, because six networks had no state listings, that number undercounts the true average per state. Assuming that the

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4. "EFT Network Data Book: 1998 Edition," *Bank Network News*, September 26, 1997.

excluded networks had the same state count as the others, the average number of networks per state would rise to 4.5. With between 3.8 and 4.5 networks operating within its borders, the average state could have experienced substantial competition among shared ATM networks.

The average figures also hide substantial variability. The median state had only three networks and 23 states had only one or two, although that number was probably among those most affected by the missing state-level data. Other states had more networks: for example, 21 states had four or more. The states with large numbers of networks—for example, Arkansas, Kansas, and Missouri, which all had between nine and 11 networks—tended to be far away from either coast, perhaps reflecting the movement of the large regional banks.

Most important, the networks with the most transactions and the most ATMs connected to them were each active in a large number of states. For example, each of the four largest networks was active in 11.5 states, and six states had two or more of the top four networks operating within their borders. Several of those states, such as New York, New Jersey, and Pennsylvania, accounted for a disproportionate share of deposits and depositors. Similarly, the largest ATM network as measured by transactions, the Star System, faced a total of 29 competitors in the 12 states it served.<sup>5</sup>

### Concentration Ratios at the National Level

Economists use concentration ratios as a measure of economic power in a market, and among the more commonly used is the share of output represented by the largest four and largest eight firms in the industry. The more one firm or a small group of firms provides all the goods or services in a market—that is, the more highly concentrated the market—the more those firms may be able to impose high prices on their customers. By that measure, the market for ATM network services is not concentrated at the national level. CBO was unable to find systematic information on concentration at the regional level.

Despite the lack of regional statistics, which would better describe the main market in which the shared networks compete, some insight can be gained by looking at the national statistics. The most important point is that the regionally based history of the ATM networks will not necessarily predict their future. Given the lower costs of computers and communications, a number of the regional

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5. Some of the 29 are duplicates in the sense that the Star System may face the same network in two different states. Conversely, some of the excluded networks also serve the states that Star serves.

networks could become national or nearly national in the near future. Thus, looking at the past, regional concentration ratios would be a better indicator of concentration in the market. But with an eye toward the future, the national ratios may prove the more telling indicator.

Both the four-firm and eight-firm national concentration ratios have risen substantially for this industry over the past five years. Since 1993, the share of all monthly foreign ATM transactions performed by the four largest regional networks (determined by their 1997 rankings in total foreign ATM transactions) rose from 43 percent to 50 percent.<sup>6</sup> Similarly, the top eight networks—using their 1997 rank—increased their share of all foreign transactions from 60 percent to 74 percent (see Figure 8).<sup>7</sup> Thus, on average, each of the top eight regional networks accounts for 9 percent of foreign ATM transactions.

The four-firm or eight-firm concentration ratios for the ATM networks are high compared with those in the financial services industry generally but about average when compared with manufacturing industries.<sup>8</sup> However, the financial industries—specifically, insured depositories—have legal restrictions on cross-state activities, whereas manufacturing industries, as is the case with the ATM networks, typically have no such limitations. Consequently, the manufacturing concentration ratios might be the more appropriate point of reference. Given that the market for ATM networks is more narrowly defined than the markets for most manufacturing industries, the finding that concentration ratios in the ATM market remain within the average range of those for manufacturing has special meaning. As market definitions are narrowed, concentration ratios typically rise. The fact that the ratios for the ATM networks have remained average even though they are narrow implies that this industry is not concentrated at the national level.

### Regional Network Switch Fees During the 1990s

The ultimate objective of market power for firms is to increase their prices (and, by implication, their profits). Surveys of regional network fees during the mid-1990s suggest that the regional networks were lowering their switch fees on ATM

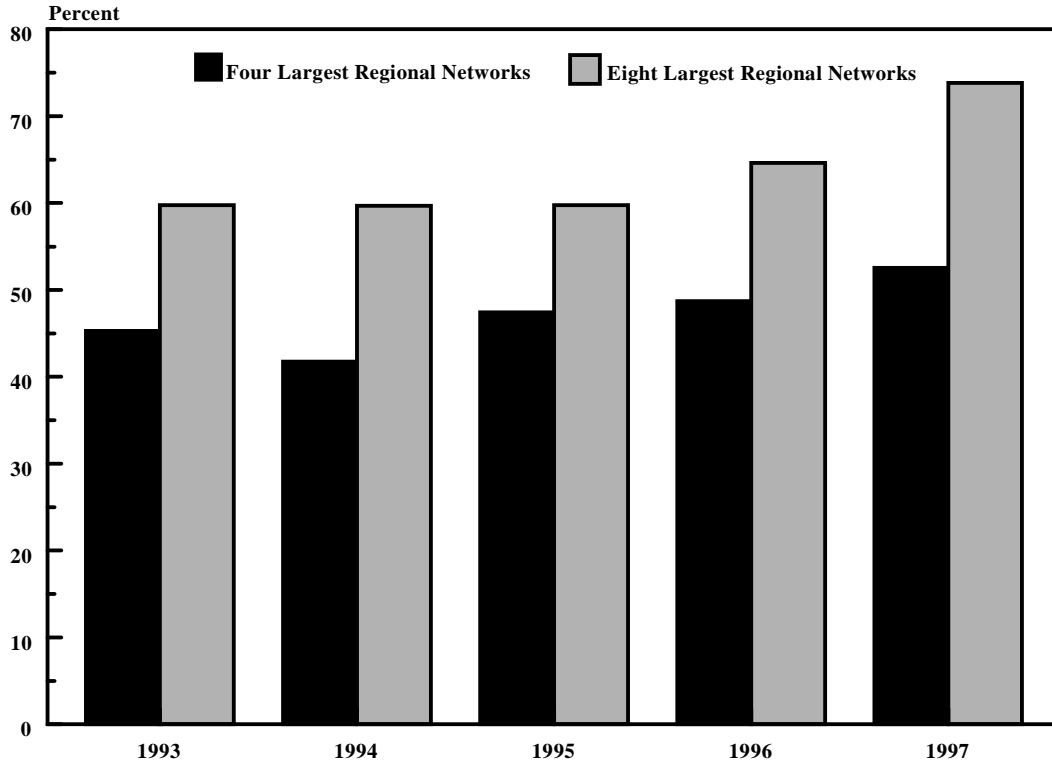
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6. As measured by foreign ATM transactions, the four largest networks in 1997 were MAC, Star, NYCE, and Honor. Other measures would provide a different list.

7. In addition to the four largest networks, the eight largest include Pulse, Exchange, CO-OP, and Magic Line networks.

8. F.M. Scherer and David Ross, *Industrial Market Structure and Economic Performance*, 3rd ed. (Boston: Houghton-Mifflin Company, 1990), p. 77. See also Department of Commerce, Bureau of the Census, *1992 Census of Financial, Insurance, and Real Estate Industries: Establishments and Firm Size* (1995), pp. 1-62 through 1-64.

FIGURE 8. PERCENTAGE OF ALL “FOREIGN” ATM TRANSACTIONS HANDLED BY THE LARGEST ATM NETWORKS, 1993-1997



SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTE: A foreign transaction occurs when a cardholder uses an ATM that is not owned by the financial institution that issued his or her ATM card. In 1997, the largest four networks (ranked by number of foreign transactions) were Star, Honor, NYCE, and MAC. The largest eight expand that list to include Pulse, The Exchange, Magic Line, and the CO-OP. For 1993 through 1996, CBO used those same networks.

ATM = automated teller machine.

transactions.<sup>9</sup> Data compiled by the industry on the switch fees of 10 of the largest ATM networks show that they lowered their average reported switch fee on ATM transactions by 22 percent between 1993, when it was 8.5 cents, and 1997, when it was 6.7 cents (see Table 3). (The actual fees may be different, though, because some regional networks provide rebates and other, nonprice factors affect the net costs that financial institutions incur when they use a regional ATM network.)

9. *Debit Card Directory* (New York: Faulkner & Gray, various years).

Although on average fees might have dropped, the fees for the largest institutions went down by substantially more in percentage terms, though not more in absolute terms, than did the fees imposed on small institutions. For many networks, the switch fee structure is tiered: institutions pay for transactions on the network according to a declining block rate structure. That is, institutions with a relatively low number of transactions per month pay a higher price per transaction on average than institutions with a large number of transactions. Median values in 1997 were 8.5 cents and 4.5 cents per transaction, respectively.<sup>10</sup> Between 1993 and 1997, the price per transaction fell for all institutions by the same amount: 1.5 cents per transaction. Because large-volume institutions started from a lower base, that price drop represented a 25 percent reduction for large-volume institutions and a 15 percent drop for low-volume firms. The differential between the fees for large and small institutions remained constant at 4 cents during the period.

That outcome, whereby the absolute decline and the percentage decline tell different stories, is common in industries in which costs are dropping. As a result, because of the simple arithmetic, changes in the differentials in tiered pricing are not immediate proof of the exercise of undue market power.

The variation in network fees has also diminished, indicating a drop in the very highest fees paid by small institutions. That change may reflect a decrease in the market power of the regional networks. In 1993, the standard deviation in switch fees for small institutions was half the median price. In 1997, it was less than a third of it. The variation among fees for large institutions as measured by the standard deviation also shrank but not by as much, relative to median prices. However, the variation in fees for large institutions was less to begin with.

The evidence on whether shared ATM networks are exercising market power in regard to switch fees is therefore mixed. Fees have gone down substantially over the past five years. On the one hand, the decline in the level of variation among the fees reflects the lowering of some of the highest fees, which presumably were paid by the smaller institutions. On the other hand, smaller institutions still pay considerably higher switch fees than do larger organizations. CBO has no way of determining whether those differentials are justified on the basis of costs.

The general decline in computing and telecommunications costs that occurred over the 1993-1997 period raises the question of whether the average drop in switch fees is greater than the reduction in underlying costs. If costs have fallen

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10. CBO used median fees for comparison between the low and high tiers of fees because the presence of a few outlier observations would have distorted a comparison using average fees.



TABLE 3. SWITCH FEES CHARGED BY SELECTED ATM NETWORKS, 1993 AND 1997 (In cents per transaction)

Network	1993		1997		Percentage Change	
	High	Low	High	Low	High	Low
BankMate	10	10	10	7	0	-30
Cash Station	8.8	6.5	8.5	6.4	-3	-1.5
Honor	10	2	8.75	2.75	-13	37.5
MAC	25	5	13	3	-48	-40
NetWorks	6	6	5	5	-17	-17
NYCE	13	6	12	4	-8	-33
Pulse	6	6	4.5	4.5	-25	-25
Shazam	9	9	8.3	5	-8	-44
Star System	8	3.5	8	3.5	0	0
The Exchange	12	12	12	3	0	-75
Tyme	10	6	6.5	6.5	-35	8.3

SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTES: A switch fee is a charge by the network for routing transactions between an ATM and a card-issuing bank.

Generally, card-issuing institutions that generate few ATM transactions pay the high tier of switch fees. Institutions that generate many transactions pay the low tier.

ATM = automated teller machine; n.a. = not applicable.

by more than 22 percent and the networks only decrease their prices by an average of 22 percent, the networks might be increasing their profits even as they lowered their prices. However, CBO has no way of testing network costs directly.

The results of CBO's analysis are consistent with a recent study of shared network fees by Robin Prager, an economist on the staff of the Board of Governors of the Federal Reserve.<sup>11</sup> Prager's analysis tried to differentiate between networks that had merged and those that had not. Her hypothesis was that by merging (thus decreasing potential competition by their neighbors and so increasing their market power), some networks might have become dominant in a region, which would enable them to charge higher fees than networks that had not merged. Generally, however, Prager found "no evidence that prices charged by merging firms

11. Robin Prager, "ATM Network Mergers and the Creation of Market Power" (draft working paper, Board of Governors of the Federal Reserve System, Washington, D.C., December 1997).

increased relative to those charged by non-merging firms.”<sup>12</sup> The fees charged by the merging networks were higher than those charged by nonmerging networks, but the merging networks decreased their fees over time by larger amounts measured in both absolute and percentage terms. Thus, Prager could not rule out the possibility that some of the networks had had market power to begin with and the mergers did not increase their power.

### Regional Network Interchange Fees During the 1980s and 1990s

Unlike switch fees, interchange fees, which constitute income to ATM owners, have remained stable or even increased in recent years (see Table 4).<sup>13</sup> In only one case among those reported in the table has the fee received by the ATM owner actually declined. In all of the other cases, the fee has either remained constant or has risen since 1985.

The constant levels of interchange fees are quite suggestive of the use of market power to maintain the income of ATM owners. Indeed, the constant price is doubly suspicious. First, in competitive industries, prices are rarely constant; "sticky" prices, according to economic lore, are more characteristic of oligopolies. Second, the costs underlying the fees have fallen, which in a competitive industry should cause prices to fall. Major components of ATM systems now cost substantially less; for example, the price of computing power has fallen to one-sixth of its 1985 level. Declines in the cost of telecommunications have also been dramatic, although the drop has not been as steep as that for computers. Furthermore, as noted earlier, advances in technology have permitted many off-bank-premises ATMs to forgo leased telephone lines, reducing the cost differential for such locations. Thus, in the face of lower costs, constant interchange fees would represent increased profits to ATM owners.

Whether the constant level of the fees indicates an undue exercise of market power is unclear. The lack of change in such charges is not a new phenomenon; the fees have held constant through periods before the industry consolidated, even when there were 180 competing regional networks. Moreover, the shared networks contend that they have difficulty adjusting interchange fees once they

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12. Ibid., p. 13.

13. For earlier years, see the *Debit Card Directory, 1995 Edition* (New York: Faulkner & Gray, 1994), p. 197. For more recent years, see the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), p. 21. For a similar analysis, see Prager, "ATM Network Mergers." Data on the CO-OP network were not available on the same basis as were data on the other networks.

TABLE 4. INTERCHANGE FEES FOR CASH WITHDRAWALS FROM AN ATM CHARGED BY SELECTED NETWORKS, Various Years (In cents per transaction)

Network	1985	1990	1995	1997
BankMate	55	55	n.a.	55
Cash Station	25	25	44	45
Honor	40	40	40	40
MAC <sup>a</sup>	25	30	30/34	34/38
Magic Line <sup>a</sup>	60	55	n.a.	36/55
NYCE	38	38	38	38
Pulse <sup>a</sup>	40/65	50	50	50
Star System <sup>a</sup>	40	40/60	45/55	45/55

SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTES: The interchange fee is the fee paid by a card-issuing bank to an ATM owner for transactions occurring at that ATM.

ATM = automated teller machine; n.a. = not available.

a. For some years, the first number is for an on-bank-premises ATM, and the second is for an off-bank-premises machine.

have been set. They note that although equipment and telecommunications costs have decreased substantially, more ATMs are now off bank premises and so cost more to service. Other analysts argue that this pattern of constant fees rewards the largest ATM owners. Furthermore, in four of the top 10 networks, interchange fees have risen, in some cases by a sizable amount. That rise undercuts the contention that networks find it difficult to adjust fees.

### BANKING COMPETITION AND THE SHARED ATM NETWORKS

Alliances of large banks own and have disproportionate control over shared networks, whose growth has matched that of the regional banks. According to industry analysts, many small banks feel that they have suffered at the hands of the regional networks. One commonly voiced notion is that the networks have become tools of the largest of their member banks and in some cases are acting against the interests of the majority of the smaller member banks connected to the network. According to that line of thinking, the shared-ATM networks are not acting on their

own behalf but serve to increase the market power of the large regional banks that own (and, some say, control) them.

As evidence of this biased role played by the regional networks, analysts point out that many of those networks have tiered pricing, with the result that high-volume users pay less per switched transaction than do low-volume users. The small banks also contend that even the earlier benefit of the shared ATM network—being able to provide customers with access to many ATMs without massive investment—has been turned into a weapon against them: now that surcharges are widespread, customers of small banks face more surcharges than customers of large banks that own more ATMs. Had the small banks not relied on shared networks, they might have built up their own ATM networks gradually and would not now be confronting a decision about whether to lose customers or quickly make substantial investments in ATMs.

The drop in the number of foreign transactions that has recently occurred (described in detail in Chapter 4) also suggests that banks' own networks are becoming more important. All things being equal, a bank with more ATMs can give its depositors better value than a bank without a proprietary fleet of ATMs. That fact will play into the preexisting trend toward consolidation of the banking industry.

The growth in the national networks and the decline in foreign transactions mean that many regional ATM networks will have to find new roles for themselves or be merged into the few shared ATM networks that will survive. Some shared networks are growing quite rapidly and may break out of their regional niche into a national or near-national role. Others may choose to differentiate themselves by providing ancillary services that banks currently perform in-house. In still other cases, the shared networks may choose to serve groups of banks, such as small or community banks. The consolidation and refocusing is likely to take years to play out, during which the number of networks will probably shrink but the array of network services and network types may expand.

## CHAPTER IV

### ASSESSING COMPETITION AMONG BANKS AND OTHER ATM OWNERS

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Has the widespread practice of surcharging by automatic teller machine owners changed the competitive landscape of banking? Opponents of surcharging assert that it confers a competitive advantage on banks that own large numbers of ATMs because it induces customers of banks that own few ATMs to move their accounts to avoid surcharges. Supporters point out that it enhances cardholder convenience because it allows ATM owners to deploy their machines in locations that otherwise could not support one on the basis of interchange revenue alone. ATM surcharging has also encouraged nonbanks to enter the market and become ATM owners. This chapter assesses competition among owners of ATMs and the effects of that competition on bank concentration.

Banks compete for customers in many more ways than simply through the prices they charge for services and the interest they offer on deposits. The convenience of a bank's location, the services and personal attention it offers, the location and number of ATMs it can provide and the networks that the bank's ATM card can access, the number and identities of the merchants that accept the bank's ATM card, the fees associated with accounts, and the interest rate paid on deposits or the rate available on loans are all factors in a consumer's decision of where to open a bank account. With the advent of widespread surcharging by ATM owners, ATM fees now constitute another element in the decision about where to bank.

Banks usually do not impose a surcharge on their own depositors for using a proprietary ATM. Before surcharging became common, the cost to cardholders of using any ATM on the shared network was the same as using one of their bank's own ATMs, except in the case in which the bank levied a so-called foreign fee. Now most cardholders seek out their bank's proprietary ATMs to avoid paying surcharges. Consequently, the prevalence of surcharging has increased the importance to the cardholder of a bank's proprietary ATMs.

Given that access to ATMs and the cost of using them are now a significant part of the way banks compete for customers, ATM surcharges may put small banks—or, more accurately, banks that do not own many ATMs—at a disadvantage. Before ATM surcharging, a small bank that owned few (if any) ATMs was still able to offer its customers access to their accounts through a large number of ATMs by virtue of its membership in a shared ATM network. Customers of small banks could thus enjoy the same convenience, with regard to ATM access, that customers of large banks enjoyed (large in this instance meaning banks that deployed substantially greater numbers of ATMs). But if large banks that own many ATMs impose

surcharges on transactions by other banks' customers, small-bank customers will end up paying more surcharges or limiting their use of foreign ATMs. Those outcomes may induce small-bank customers to move their deposit accounts to the larger banks, resulting in increased concentration in local banking markets.

Overall, the competitive landscape in the ATM market is complex. Understanding supply and demand in any market helps illuminate the state of competition. In the ATM market, supply is driven primarily by the economics of investing in ATMs—how profitable they are. Demand is characterized by consumers' willingness to pay for the convenience ATMs offer. Those forces, the characteristics of networks, and the incentives of bank and nonbank ATM deployers are all aspects of the competitive environment of the ATM market.

### THE ECONOMICS OF ATM SURCHARGES

As noted earlier, ATM owners receive compensation from two fees: the interchange fee, which is paid by card-issuing banks, and the surcharge, which is paid by cardholders. In the aggregate, ATM owners received \$1.5 billion in interchange fees and \$3 billion in surcharges in 1997.<sup>1</sup> Thus, with 165,000 ATMs in place in that year, the average ATM collected about \$30,000 in fees.

The ability to surcharge lowers the minimum number of transactions necessary to generate sufficient revenue for the ATM owner to recoup the cost of deploying a machine. The following analysis outlines the economics of investing in an off-bank-premises ATM whose activities are largely dominated by simple cash dispensing. The decision that the ATM deployer must make is whether an investment in more ATMs would be profitable given typical levels of surcharges and consumer responses to those fees.

#### Investments in ATMs by Banks

Deploying an ATM involves both fixed costs, such as the ATM itself, the enclosure, and other hardware, and recurring costs in the form of rent or profit sharing, cash replenishment, telecommunications, and miscellaneous supplies.<sup>2</sup> According to one industry estimate, a typical ATM installation off bank premises costs about \$1,000

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1. That calculation is based on average interchange fees and surcharges reported in General Accounting Office, *Automated Teller Machines: Survey Results Indicate Banks' Surcharge Fees Have Increased* (April 1998).

2. This analysis is derived from Dove Associates, *The Future Use of ATMs* (Houston, Tex.: Pulse Electronic Funds Transfer Association, 1997), pp. 57-63.

per month to operate, including depreciation but excluding the amount of cash dispensed.

Before surcharging, the principal way a bank could earn revenue from its investment in ATMs was by collecting interchange fees on foreign ATM transactions. Assuming that the revenue from interchange fees averaged 45 cents per transaction and that 50 percent of the use of the ATM was foreign, an ATM would need 4,444 transactions per month to break even. Over the past decade, the average ATM had 5,957 transactions per month.<sup>3</sup> Thus, even without surcharges, the average ATM could be profitable (see Table 5).

Adding revenue from surcharges substantially lowers the number of transactions necessary for an ATM to break even. With a \$1 surcharge on foreign transactions and the same assumptions as above (50 percent foreign transactions and an interchange fee of 45 cents), the number of transactions needed to break even would drop to 1,379 per month. If the surcharge was \$1.50, an ATM would need only 1,026 transactions. However, those calculations take no account of changes in cardholder behavior. According to one recent survey, more than 75 percent of customers actively avoid surcharges.<sup>4</sup> Such behavior means that once a surcharge was imposed at a particular ATM, the percentage of foreign transactions would drop, as would the revenue from interchange and surcharge fees. Assuming that 75 percent of foreign transactions ceased with the imposition of the surcharge, only 12.5 percent of monthly ATM transactions would be foreign. In that case, an ATM would need 5,517 transactions per month to break even, roughly the national average number of monthly transactions per ATM in 1997. In other words, half or more of all off-bank-premises ATMs could be unprofitable under those circumstances.

It appears that surcharging is profitable even if the number of foreign transactions conducted at the machine drops precipitously. In this illustration, as the percentage of foreign customers that decide not to use the ATM declines from 75 percent, the break-even number drops sufficiently to ensure profitability on average. Thus, imposing a surcharge is usually profitable, except when the overwhelming majority of cardholders leave.

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3. These figures are based on data from the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997), p. 18.

4. "Card Briefs. Survey: ATM Fees Prejudice Source Sales," *American Banker*, March 9, 1998.

TABLE 5. BREAK-EVEN ANALYSIS FOR AN ATM

	<u>Consumer Response Scenarios for a \$1 Surcharge</u>			
	No Surcharge	None	Moderate	Substantial
Monthly Costs (Dollars) <sup>a</sup>	1,000	1,000	1,000	1,000
Revenues per Foreign Transaction (Dollars) <sup>a</sup>				
Interchange	0.45	0.45	0.45	0.45
Surcharge	0.00	1.00	1.00	1.00
Percentage of Transactions That Are Foreign <sup>a</sup>	50.0	50.0	25.0	12.5
Average Number of Transactions Needed to Break Even	4,444	1,379	2,759	5,517

SOURCE: Congressional Budget Office.

NOTES: The analysis assumes that only 50 percent of users are initially subject to surcharging.

ATM = automated teller machine.

a. A foreign transaction is a transaction conducted at an ATM that is not owned by the card-issuing bank.

### Investments in ATMs by Nonbanks

Investments in ATMs are increasingly being made by nondepository institutions that have none of the concerns about maintaining customer bases that banks must address. Nonbank ATM owners can, and would probably need to, impose surcharges on all users of their machines. Depending on assumptions about the response by cardholders, their investment in ATMs can be profitable with relatively few transactions.

ATMs that are located in conveniences stores, consumer malls, and other locations where cardholders may spend the money they withdraw from the ATM introduce additional complexity into the calculation of profitability. The store or mall in which the ATM is located can profit if cardholders spend more because they have ready access to cash. Assume that the average ATM withdrawal is \$45 and one-tenth of the funds withdrawn are spent at that location (when they otherwise would not be spent there). That would mean that each transaction produces,



independent of the surcharge, an additional \$4.50 in revenue for the store or stores. Assuming a 25 percent markup over costs, the average ATM transaction would produce \$1.12 in gross profit for the store or stores, again, independent of the surcharge. At that rate, an ATM would need only 892 transactions to cover the \$1,000 monthly cost, even without interchange fees or surcharges. If interchange fees and a \$1 surcharge were included in the calculation, the ATM would need fewer than 400 transactions per month to break even, assuming that the ATM owners and store owners were the same entities or could share all sources of additional revenue. (Those figures help to explain why so many ATMs have been set up in convenience stores and other such locations.)<sup>5</sup>

### CARDHOLDERS' RESPONSES TO ATM SURCHARGES

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Most cardholders use ATMs owned by their bank so that they incur no charges. (In 1997, more than 90 percent of banks did not charge their cardholders fees for using the banks' own ATMs.)<sup>6</sup> The calculations presented in this section confirm that cardholder response to ATM surcharges has reduced the volume of transactions conducted on shared regional ATM networks.

The extent of cardholders' reactions to ATM surcharges can be estimated by how often cardholders use their own banks' ATMs and how often they use foreign ATMs.<sup>7</sup>

Foreign ATM transactions have dropped since the widespread introduction of surcharges in 1996. Estimated monthly foreign ATM transactions in 1997 were 2 percent lower than in 1996 (see Figure 9).<sup>8</sup> Considering that total ATM transactions have continued to rise, the decline in foreign transactions is all the more telling. It is also sharper when seen in the light of evidence that for the three years before 1996, foreign transactions had been climbing by 9 percent per year.

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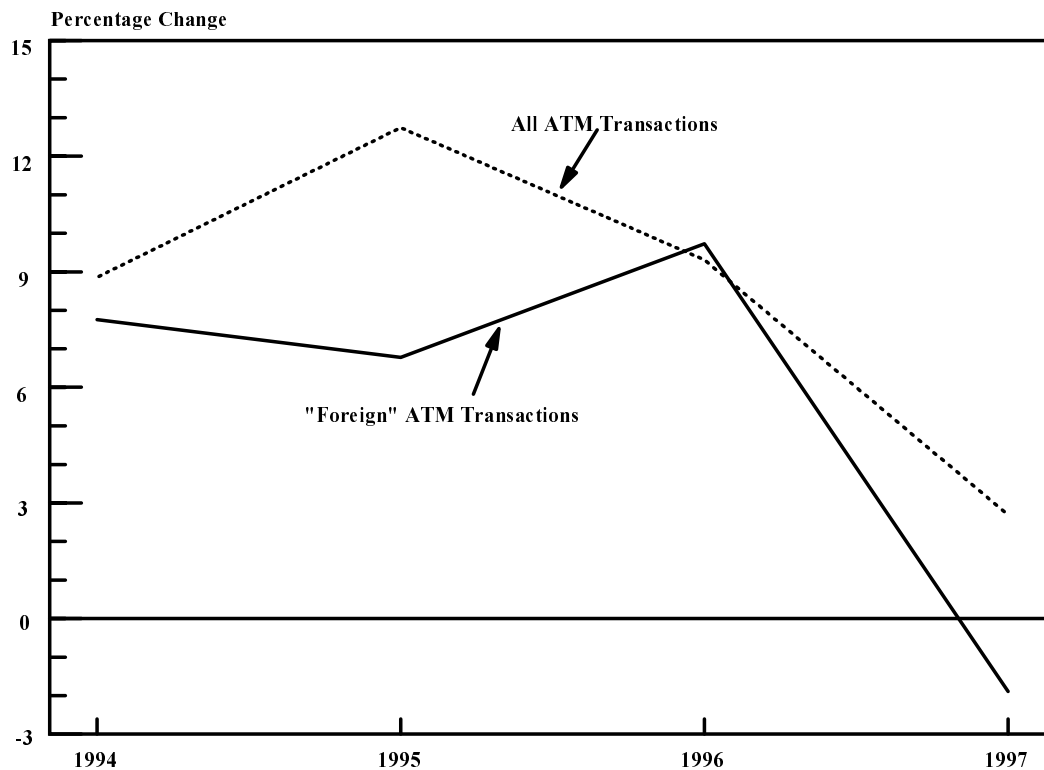
5. Dove Associates, *The Future Use of ATMs*, p. 16.

6. Board of Governors of the Federal Reserve System, *Annual Report to the Congress on Retail Fees and Services of Depository Institutions* (June 1998), p. 7.

7. Actually, the number of foreign transactions is an overstatement of the number of surcharged transactions because the fraction of banks that do not impose surcharges on foreign cardholders using their ATMs is much larger than the number of institutions that charge "their own" customers.

8. The calculation of foreign ATM transactions was derived from data in the *Debit Card Directory*, various years.

FIGURE 9. PERCENTAGE CHANGE IN NUMBER OF ATM TRANSACTIONS, 1994-1997



SOURCE: Congressional Budget Office using data from the *Debit Card Directory* (New York: Faulkner & Gray, various years).

NOTES: A foreign transaction occurs when a cardholder uses an ATM not owned by the financial institution that issued his or her ATM card.

ATM = automated teller machine.

Those data show that in the face of surcharges cardholders have chosen to use the ATMs of their own banks. However, the evidence cannot reveal whether cardholders have switched ATMs or banks.

The shift by cardholders from using shared regional ATM networks to using their own banks' proprietary ATMs means that the shared regional ATM networks have lost revenue in the form of switch fees as a result of the surcharges. If each foreign ATM transaction is assumed to produce 7 cents of regional ATM network

revenue, the decline in monthly foreign transactions would cost the networks almost \$22 million in lost revenues in 1997 alone.<sup>9</sup>

The shift by cardholders also means that banks' proprietary networks have simultaneously increased in importance, giving a competitive advantage to banks with extensive networks.<sup>10</sup> Such a trend would be expected to occur even without the surcharges, given the relative reduction in the cost of ATMs. Shared ATM networks were created when ATMs were few and expensive. As ATMs have become cheaper to own and operate, the level of investment needed by the bank to service its customers and maintain its market share has fallen. That change alone would suggest a relative shift in advantage toward the banks that deployed their own ATMs compared with the banks that relied on the shared ATM networks. The growth in the size of the regional banks further exaggerates that shift. Consequently, as a share of all ATM transactions, foreign transactions have been declining for several years. The surcharges have turned what was a relative decline into an absolute one.

The decline in the number of foreign ATM transactions does not contradict the earlier analysis on the profitability of investments in new ATMs and of surcharges but rather flows directly from it. The point of that analysis was that it was still profitable for the deployer of an ATM to impose surcharges even if the deployer lost most potential transactions. In other words, the loss of those transactions hurts shared network revenues more than it hurts those of the ATM owner.

#### ASPECTS OF COMPETITION IN THE ATM MARKET

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What are the factors affecting competition in the ATM market? Are there barriers to entry or other unusual features of ATM competition that may hamper ordinary market forces supporting price competition among ATM owners? First, as a backdrop, two countervailing trends pervade the financial services industry: the trend toward unbundling products and services (which should increase competition) and the trend toward consolidation of financial firms (which may decrease competition). The discussion that follows explores how the interaction of the characteristics of ATM networks and the incentives of both bank and nonbank deployers of ATMs may hinder the competition one would normally expect to find evolving in a free-market economy.

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9. Increasingly, banks contract with shared regional ATM networks to operate the banks' proprietary networks, a process called outsourcing. Shared regional networks with outsourcing contracts would be less injured by the move to increased use of banks' own networks.

10. See James McAndrews, "ATM Surcharges," *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, vol. 4, no. 4 (April 1998).

### Unbundling and Consolidation

The development of the ATM market and the competitive strategies undertaken by ATM owners should be viewed in the light of changes occurring in the financial services industry generally. Two important trends have been the separation, or "unbundling," of the various components of financial products and services, and the consolidation of financial firms.

The trend toward unbundling of services and products has generally increased competition within the financial services industry. For example, in the past, a savings institution would originate a mortgage loan, service it, and hold the loan in its portfolio. But now that a secondary market for mortgages exists, the different steps in the lending process—specifically, originating, servicing, and financing—may be separated and performed by different parties.

Concomitant with the unbundling of financial services, depository institutions have had to change how they price their products and services in order to remain competitive. During the years that depository institutions were responsible for the whole array of financial services, they were not compelled to price each component separately. Cross-subsidization—in which profits from lucrative products or services make up for the lack of profit on tighter-margin services—probably took place, a situation not unlike that occurring for long-distance and local telephone charges before the break-up of AT&T. Increasingly, however, financial institutions have found that they cannot depend on cross-subsidization. Because of the unbundling phenomenon, competition has increased for many components of financial services. As an example of unbundling, one-fifth of the top 50 ATM owners (ranked by the number of ATMs owned) are not banks. In fact, the third largest ATM deployer, EDS, is not a bank.

At the same time that financial institutions are unbundling products and services, the financial services industry is rapidly consolidating. Banks, thrifts, and other financial services firms are merging, reducing the number of firms even as they increase their capacity to provide services to consumers. Recent legislation lifting some restrictions on geographic boundaries and the rising stock market have undoubtedly helped to fuel such consolidation in the banking industry. Beginning on September 29, 1995, the Riegle-Neal Interstate Banking and Branching Efficiency Act allowed adequately capitalized and managed bank holding companies to acquire a bank in any state. And as of June 1, 1997, banks were permitted to merge and consolidate their operations in the various states under one corporate structure unless the state had "opted out" of interstate branching. By the end of 1997, the number of commercial banks in the United States had dropped from its year-end 1991 total of

11,921 to 9,143.<sup>11</sup> Inevitably, that kind of consolidation is bound to lead to increased concentration.

Despite the trend toward consolidation, the relative concentration of ATM ownership among the top 50 ATM owners has increased only slightly between 1993 and 1997, even though the number of ATMs nearly doubled. In 1997, the top 50 owners accounted for 42 percent of all ATMs, and the top 10 owned 24 percent (see Table 6). By comparison, in 1993, the share of the top 50 owners was 43 percent of all ATMs, and that of the top 10 was 21 percent (see Table 7). In 1993, only the top 10 ATM owners each had 1,000 or more machines deployed. In 1997, the top 10 ATM owners were each deploying 2,000 or more machines.

### Factors Hindering Competition Among Bank ATM Owners

One important factor inhibiting price competition among bank ATM owners is that surcharges are not readily revealed, in contrast to prices in a well-functioning, competitive market. There, consumers can readily discover what a good or service costs and take their business to the supplier with the lowest price. Those responses by consumers usually cause suppliers to price their goods competitively. But in the case of ATMs, surcharges are usually revealed only after the cardholder has initiated the transaction.

Why are ATM surcharges rarely advertised? One reason may be that banks prefer not to draw attention to something that the public perceives as negative. Another reason may center on the banks' strategy for securing new depositors. Because banks do not usually impose surcharges on their own depositors, they would essentially be directing their advertising only toward noncustomers. But if a bank's primary goal is to induce people to become its depositors, as noted above, imposing a high surcharge on noncustomers may be a better strategy for reaching that goal. In a bank's mission to secure depositors, one can think of a large fleet of ATMs as the carrot and ATM surcharges as the stick.

The same rationale may explain why bank ATM owners who do not apply a surcharge to foreign users do not advertise that fact. By advertising, the bank might gain more ATM usage (and earn interchange fees). Without a surcharge, however, noncustomers would have little incentive to switch their accounts and become depositors at that bank.

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11. See Table I-A in Federal Deposit Insurance Corporation, *The FDIC Quarterly Banking Profile* (Fourth Quarter 1997).

TABLE 6. THE 50 TOP ATM OWNERS, 1996 AND 1997

Institution	State	Institution Type	Number of ATMs	
			1996	1997
Bank of America	California	Bank	6,600	7,394
NationsBank Corp.	North Carolina	Bank	2,200	5,930
EDS Corp.	New Jersey	Nonbank	5,823	5,738
Wells Fargo Bank	California	Bank	2,385	4,200
Banc One Corp.	Ohio	Bank	2,083	3,807
U.S. Bancorp	Minnesota	Bank	2,000	3,442
Citicorp	New York	Bank	3,000	3,200
First Union National Bank	North Carolina	Bank	1,415	2,429
Fleet Financial Group	Massachusetts	Bank	1,560	2,022
PNC Bank Corp.	Pennsylvania	Bank	1,507	2,000
KeyCorp	Ohio	Bank	1,536	1,899
BankBoston	Massachusetts	Bank	1,599	1,748
Chase Manhattan Bank	New York	Bank	1,493	1,592
First Chicago NBD	Michigan	Bank	1,342	1,380
Norwest Bank	Minnesota	Bank	1,120	1,162
National City Corp.	Ohio	Bank	745	1,116
Winn-Dixie Stores Inc.	Florida	Nonbank	1,078	1,100
Affiliated Computer Services Inc.	Texas	Nonbank	1,435	1,077
Nationwide Money Services	California	Nonbank	1,200	1,027
Washington Mutual Savings Bank	Washington	Bank	194	1,000
Barnett Banks	Florida	Bank	800	970
TCF Bank FSB	Minnesota	Bank	680	952
Wachovia Corp.	North Carolina	Bank	720	790
CoreStates	Pennsylvania	Bank	457	779
Fifth Third Bank	Ohio	Bank	670	750
First of America Bank Corp.	Michigan	Bank	670	721
Mellon Bank	Pennsylvania	Bank	670	684
Comerica Inc.	Michigan	Bank	650	650
Publix Super Markets	Florida	Nonbank	560	624
AmSouth Bancorporation	Alabama	Bank	191	601
Momentum Cash Systems	Texas	Nonbank	250	550
Star Banc Corp.	Ohio	Bank	402	539
Southtrust Corp.	Alabama	Bank	417	523
Summit Bankcorp	New Jersey	Bank	405	503
The Huntington National Bank	Ohio	Bank	385	500
SunTrust Banks of Florida	Florida	Bank	456	500
Union Planters Corp.	Tennessee	Bank	327	500
State Employees Credit Union	North Carolina	Bank	460	481
Home Savings of America	California	Bank	398	472
St. Paul Federal Bank for Savings	Illinois	Bank	182	450
First Security Corp.	Utah	Bank	475	440

(Continued)

TABLE 6. CONTINUED

Institution	State	Institution Type	Number of ATMs	
			1996	1997
FIServe Inc.	Oregon	Nonbank	523	426
BB&T Company	North Carolina	Bank	310	425
First Commerce Corp.	Louisiana	Bank	359	424
Standard Federal Bank	Michigan	Bank	353	420
North American Cash Systems	Louisiana	Nonbank	350	400
Access Cash	Minnesota	Nonbank	125	400
Crestar Bank	Virginia	Bank	343	396
United Missouri Bank	Missouri	Bank	301	386
Citizens Financial Group	Rhode Island	Bank	218	371
Total, Top 50 Owners			53,422	69,890
Total, All ATMs			139,134	165,000

SOURCE: Congressional Budget Office using data from the *Debit Card Directory, 1998 Edition* (New York: Faulkner & Gray, 1997).

NOTES: In this report, the term "bank" encompasses all institutions that both take deposits and make loans. Thus, banks include commercial banks, savings banks, savings and loans, and credit unions.

Owners are ranked as of June 1997. ATM = automated teller machine; FSB = Federal Savings Bank.

In markets in which a dominant bank already has a large proprietary network, price competition in ATM services may be hindered by the market power of the dominant bank when it is used to construct further barriers to the entry of new firms into the market.

Free entry into a market is generally conducive to competition. Barriers to entry usually hinder it. In the ATM market, the combination of the characteristics of the banking industry and of ATM networks may give incumbents with large fleets of ATMs not only a competitive advantage but the ability to bar the entry of new competitors.

Banking is not an industry with much so-called hit-and-run entry—most people want their bank to be stable and do not want to do business with a fly-by-night firm. As an industry, banking has fairly high fixed start-up costs (for example, capitalization, regulatory compliance, and brick-and-mortar branches) and relatively low marginal costs (the ongoing operating costs). Generally speaking, in terms of

TABLE 7. THE 50 TOP ATM OWNERS, 1993

Institution	State	Institution Type	Number of ATMs
Bank of America	California	Bank	5,500
Citicorp	New York	Bank	2,450
Wells Fargo Bank	California	Bank	1,821
EDS Corp.	New Jersey	Nonbank	1,739
NationsBank Corp.	North Carolina	Bank	1,700
Banc One Corp.	Ohio	Bank	1,697
First Interstate Bancorp	California	Bank	1,450
First Union National Bank	North Carolina	Bank	1,189
U.S. Bancorp	Oregon	Bank	1,100
BayBank Systems Inc.	Massachusetts	Bank	1,009
Chemical Bank	New York	Bank	884
Norwest Bank	Minnesota	Bank	865
Fleet Financial Group	Rhode Island	Bank	860
PNC Bank Corp.	Pennsylvania	Bank	845
First Bank System	Minnesota	Bank	825
Barnett Banks	Florida	Bank	756
NBD Bancorp	Michigan	Bank	715
KeyCorp/Society Corp.	Ohio	Bank	706
National City Corp.	Ohio	Bank	700
Affiliated Computer Services Inc.	Texas	Nonbank	668
Boatmen's Bancshares Inc.	Missouri	Bank	668
Fifth Third Bank	Ohio	Bank	640
Chase Manhattan Bank	New York	Bank	635
Wachovia Corp.	North Carolina	Bank	612
Mellon Bank	Pennsylvania	Bank	585
First of America Bank Corp.	Michigan	Bank	579
First Fidelity Bancorporation	New Jersey	Bank	574
Comerica Inc.	Michigan	Bank	570
TCF Bank Saving FSB	Minnesota	Bank	559
Publix Super Markets	Florida	Nonbank	512
FIServe Inc.	Oregon	Nonbank	501
Great Western, a Federal Savings Bank	California	Bank	498
Shawmut National Corp.	Massachusetts	Bank	464
SunBanks Inc.	Florida	Bank	440
State Employees Credit Union	North Carolina	Bank	438
National Westminster Bank	New York	Bank	406
Home Savings of America	California	Bank	402
First Chicago Corp.	Illinois	Bank	364
CoreStates	Pennsylvania	Bank	362
Meridian Bancorp Inc.	Pennsylvania	Bank	349
Bank of Boston	Massachusetts	Bank	314
Marine Midland	New York	Bank	307

(Continued)



TABLE 7. CONTINUED

Institution	State	Institution Type	Number of ATMs
Michigan National Bank	Michigan	Bank	300
Union Bank	California	Bank	300
Southtrust Corp.	Alabama	Bank	278
Bank South	Georgia	Bank	275
Integra Card Services	Pennsylvania	Nonbank	270
Crestar Bank	Virginia	Bank	263
Bank of New York	New York	Bank	255
Star Banc Corp.	Ohio	Bank	245
Total, 50 Top Deployers			40,444
Total, All ATMs			94,822

SOURCE: Congressional Budget Office using data from the *Debit Card Directory, 1995 Edition* (New York: Faulkner & Gray, 1997).

NOTES: In this report, the term "bank" encompasses all institutions that both take deposits and make loans. Thus, banks include commercial banks, savings banks, savings and loans, and credit unions.

Owners are ranked as of December 1993. ATM = automated teller machine; FSB = Federal Savings Bank.

costs, ATM networks (both shared and proprietary networks) exhibit increasing returns, meaning that the larger the scale of operation, the lower the cost per unit. In terms of demand, ATM networks also exhibit economies of density or economies of ubiquity within a geographic area (that is, the more ubiquitous, the more valuable the network). Theoretically, in an industry with high fixed and low marginal costs as well as increasing returns, one large firm would tend to dominate.

One way in which a dominant incumbent bank might hinder ATM competition would be by charging its customers high foreign fees. By setting the fees at a high level, a dominant incumbent bank can simultaneously use its market power to charge its customers for foreign ATM use while discouraging them from patronizing its competitors' machines. Because it is costly to switch banks, the dominant firm is likely to maintain its market share with that strategy. Whether the banks are employing the strategy purposefully is difficult to prove. However, the fraction of small banks charging foreign fees declined significantly between 1996 and 1997 while the fraction of large banks charging them increased. That trend is consistent

with the notion that large banks have the market power to charge high foreign fees, whereas small banks usually do not.<sup>12</sup>

Dominant incumbent banks have another tool to keep out new entrants in the sheer number of ATMs that they already have deployed. Today, shared networks are no longer a perfect substitute for proprietary networks. The establishment of ATM surcharging has made proprietary networks competitively superior to shared networks, since a bank owning a proprietary network has control over what its depositors pay to use an ATM (usually nothing) but a bank that is simply a member of a shared network does not control how much its customers will be charged when they use a shared network ATM. Because of economies of ubiquity in ATM networks, to compete effectively in providing ATM services in an area in which an incumbent dominant bank already exists, an entrant bank may need to deploy a fleet of ATMs that is nearly as large as that of the incumbent dominant bank. The high cost of such a large minimum-scale entry could be a substantial deterrent to small banks. Furthermore, new entrants may face a catch-22. To attract depositors, they must deploy a large number of ATMs, but the demand for ATM use in the relevant market may not be great enough to sustain all of the ATMs deployed by both the incumbent and the entrant.

Despite the hurdle posed by the need to deploy many ATMs, it could be argued that small banks are in a better competitive position relative to large banks now than before the introduction of ATMs. On the one hand, the potentially large minimum-scale entry required to compete in the ATM services market may be prohibitively costly to new bank entrants. On the other hand, to the extent that ATMs substitute for brick-and-mortar branches, small banks may find it less expensive to enter the market today than in previous years. However, ATMs are not perfect substitutes for branches, which are still needed to allow customers to open accounts and conduct other transactions not supported by ATMs.

### The Role of Nonbank ATM Owners in ATM Competition

At first blush, it would appear that nonbank entry in the ATM market should heat up price competition, but the constraints on and incentives of nonbanks in comparison with banks may not bear that out. Nonbank ATM owners have every incentive to impose surcharges because that is the primary way they make money from their investment (in addition to interchange revenue). In contrast, as mentioned above, banks usually exempt their own depositors from surcharges. Nonbank entrants

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12. Board of Governors of the Federal Reserve System, *Annual Report to the Congress on Retail Fees*, pp. 10, 19, and 21.

increase the supply of ATMs, but given that they are likely to impose surcharges on all users, they are unlikely to drive ATM surcharges down by much.

The fact that ATM services and checking services are ultimately tied together may be one reason nonbank ATM entry has driven down the level of surcharges by only a very little. Consider what happens when a nonbank ATM deployer enters a market containing a dominant bank's proprietary ATM network. If cardholder depositors from the dominant bank use the nonbank entrant's ATMs, they not only pay a surcharge but may also be charged a foreign fee by their bank. Depository institutions can thus effectively raise the cost for their customers of using a nonbank competitor's ATMs and so discourage such use.

Several explanations come to mind for why a dominant bank ATM deployer may not be particularly concerned about nonbank deployers entering the ATM market and why their entry may not engender price competition. Nonbanks do not compete with banks for depositor business. Furthermore, nonbank ATM deployers may be competing more on the attribute of location than of price. In some cases, nonbank deployers may own valuable locations at which they may have a captive clientele. People are more willing in certain situations than in others to pay a high price to get cash. Consequently, a nonbank ATM deployer with ATMs on ski slopes, at airports, or in casinos may not feel compelled to compete on the basis of its surcharge price.

In summary, for several reasons the so-called free market may not generate much price competition in ATM surcharges, particularly as long as banks are the primary deployers. First, banks have conflicting interests in ATM pricing. If a bank management's main objective is to increase its depositor base, it may try to keep ATM surcharges high, particularly if it has a large, ubiquitous proprietary ATM network. Second, for their customers, banks have the ability essentially to increase the cost of using a competitor's ATMs by charging high foreign fees. Third, surcharges are rarely advertised. That makes it difficult for consumers to "vote with their business," which is the usual mechanism of price competition in markets in which prices are readily revealed.

#### EVIDENCE BEARING ON ATM COMPETITION

Have ATM surcharges led to increased market power in the banking industry? Two ways to evaluate the extent of competition in a market are to examine the concentration of market power and the competitiveness of prices. In general, the evidence on concentration is ambiguous, in part because any interpretations of changes in concentration are complicated by the enactment of the Riegle-Neal Interstate Banking and Branching Efficiency Act, which relaxed geographic

restrictions on banking at about the same time surcharging became widespread. That factor makes it difficult, if not impossible, to distinguish the effect of ATM surcharging on bank concentration from the effects of the trend of increased consolidation of the banking industry in general. The evidence on concentration that is marshalled here is mixed—some is consistent and some is not consistent with the proposition that surcharging is associated with increased concentration. The evidence on pricing suggests the possible exercising of market power—bigger banks do tend to charge higher fees for all kinds of banking services.

### Concentration

How ATM surcharges affect the competitiveness of banks—their ability to attract and retain depositors—may become apparent by comparing banks that surcharge with those that do not. Thus, the Congressional Budget Office compared the experience of banks in states that passed laws allowing surcharging or prohibiting network surcharge bans by 1995 with the experience of banks in the rest of the United States. If ATM surcharging caused people to move their accounts to banks that owned large numbers of ATMs in order to avoid surcharges, one would expect to see a greater increase in the concentration of deposits in states allowing surcharging compared with the rest of the United States during the same period. CBO measured concentration in this case in two ways: by the top four- and eight-firm levels, and on the basis of size category. Each measure has shortcomings for the purpose of this analysis.

Measuring at the Firm Level. With over 9,000 banks in the nation, one would expect banking to be a fairly competitive industry. Yet historically, the market for banking services has been local rather than national; that is, consumers usually choose the bank they do business with from those that have branches in their community, not from the set of 9,000 nationwide. Therefore, to be meaningful, concentration should be measured in each relevant geographic market. The data reported here describe the concentration of deposits by state, a rough approximation of the relevant markets (see Tables 8 and 9).

The measures are the four- and eight-firm concentration ratios of deposits insured by the Federal Deposit Insurance Corporation (FDIC) for each state and the District of Columbia in 1996 and 1997.<sup>13</sup> The four-firm ratio is the fraction of deposits held by the top four bank holding companies in each state; the eight-firm ratios are the fractions held by the top eight companies. The measures are fairly comprehensive because they include the deposits of banks and savings institutions,

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13. Data were drawn from the Summary of Deposits posted by the FDIC at its site on the World Wide Web ([www.fdic.gov](http://www.fdic.gov)).

TABLE 8. FOUR-FIRM CONCENTRATION RATIOS OF DEPOSITS OF ALL FDIC-INSURED INSTITUTIONS, BY STATE

State <sup>a</sup>	Concentration Ratio		Percentage Change	Rank by Growth Rate
	As of June 30, 1996	As of June 30, 1997		
Rhode Island	88.41	87.50	-1.0	26
Arizona	85.39	82.17	-3.8	41
Hawaii	75.41	74.67	0.3	20
Idaho <sup>b</sup>	78.24	74.25	-5.1	47
District of Columbia	73.69	72.12	-2.1	35
Nevada <sup>b</sup>	63.96	67.89	6.1	10
Oregon	68.96	67.81	-1.7	31
Alaska	66.69	64.12	-3.9	42
Wyoming	56.23	58.16	3.4	15
Alabama <sup>b</sup>	58.76	57.67	-1.9	32
Vermont	55.47	57.57	3.8	13
Utah	60.42	57.29	-5.2	48
North Carolina	57.51	56.27	-2.2	36
Delaware	48.13	55.67	15.7	1
Florida	57.21	55.12	-3.7	39
New Hampshire	53.15	54.86	3.2	16
Louisiana <sup>b</sup>	48.96	52.24	6.7	8
Maine <sup>b</sup>	53.91	51.51	-4.5	45
Massachusetts	47.32	51.36	8.5	3
Minnesota	46.86	50.63	8.0	5
Washington	53.67	49.94	-6.9	51
Michigan	50.60	49.66	-1.9	33
Georgia <sup>b</sup>	50.34	49.51	-1.6	30
Pennsylvania	49.97	49.51	-0.9	25
New Mexico	51.21	49.12	-4.1	43
South Carolina	51.08	48.42	-5.2	49
Missouri	44.29	48.02	8.4	4
Mississippi <sup>b</sup>	46.93	47.04	0.2	21
West Virginia	47.22	46.52	-1.5	28
Virginia	46.80	46.05	-1.6	29
Maryland	42.50	45.85	7.9	6
Tennessee	43.68	45.80	4.9	11
Connecticut	43.39	45.12	4.0	12
South Dakota	47.99	44.67	-6.9	50
Colorado	44.80	43.55	-2.8	37
New York	43.01	42.82	-0.4	23
Montana	40.13	42.71	6.4	9
Ohio	40.45	41.86	3.5	14
California	42.52	41.12	-3.3	38
Wisconsin	40.12	40.09	-0.1	22
Nebraska	39.12	38.36	-1.9	34

(Continued)

TABLE 8. CONTINUED

State <sup>a</sup>	Concentration Ratio		Percentage Change	Rank by Growth Rate
	As of June 30, 1996	As of June 30, 1997		
North Dakota	39.48	37.79	-4.3	44
New Jersey	36.71	37.62	2.5	17
Texas <sup>b</sup>	33.80	36.70	8.6	2
Arkansas	35.77	36.57	2.2	18
Illinois	31.60	33.79	6.9	7
Indiana	33.47	32.21	-3.8	40
Kentucky	32.42	32.14	-0.9	24
Oklahoma	29.52	29.94	1.4	19
Iowa	25.73	25.38	-1.4	27
Kansas	20.91	19.90	-4.8	46
Average	49.49	49.56	0.5	n.a.

SOURCE: Congressional Budget Office using data from Federal Deposit Insurance Corporation, *Summary of Deposits Data*.

NOTES: FDIC-insured institutions include commercial banks, savings banks, and savings and loans, but exclude credit unions.

The four-firm concentration ratio is the fraction of deposits held by the top four bank holding companies in each state.

States are ranked in descending order of concentration as of June 1997. n.a. = not applicable.

a. Includes the District of Columbia.

b. Denotes states that permitted surcharging by 1995.

but not credit unions. The data are also quite precise in that they report, for each state, the market share of deposits held by a particular bank, whether or not that bank is headquartered in the state. The major drawback of such statistics is that they are not currently available for the years before 1996. As a result, their usefulness to assess changes in concentration in states allowing surcharging before 1996 is limited.

The data show that concentration varies widely across states. As of June 30, 1997, four-firm concentration ratios ranged from 87.5 percent of deposits in Rhode Island to 19.9 percent in Kansas (the higher the fraction of deposits, the greater the concentration). The average fraction of deposits held by the top four firms was 49.6 percent. As of the same date, the eight-firm concentration ratios ranged from

TABLE 9. EIGHT-FIRM CONCENTRATION RATIOS OF DEPOSITS OF ALL FDIC-INSURED INSTITUTIONS, BY STATE

State <sup>a</sup>	Concentration Ratio		Percentage Change	Rank by Growth Rate
	As of June 30, 1996	As of June 30, 1997		
Hawaii	97.37 <sup>b</sup>	97.51 <sup>b</sup>	0.1	25
Alaska	95.13 <sup>b</sup>	96.73 <sup>c</sup>	1.7	17
Rhode Island	94.95	94.30	-0.7	31
District of Columbia	89.21	89.11	-0.1	27
Arizona	90.50	88.28	-2.5	40
Nevada <sup>d</sup>	78.77	86.34	9.6	2
Idaho <sup>d</sup>	85.11	82.29	-3.3	46
North Carolina	81.28	80.89	-0.5	30
Oregon	75.00	74.15	-1.1	35
Alabama <sup>d</sup>	70.44	70.15	-0.4	28
Wyoming	69.15	70.13	1.4	18
Vermont	70.27	69.60	-1.0	33
Virginia	66.90	67.58	0.9	22
Utah	72.77	67.53	-7.2	31
New Hampshire	66.13	66.89	1.1	19
West Virginia	63.14	65.35	3.5	13
Georgia <sup>d</sup>	65.50	64.86	-1.0	34
Louisiana <sup>d</sup>	58.87	64.50	9.6	3
Delaware	58.71	64.07	9.1	5
Michigan	64.92	63.68	-1.9	39
Florida	64.20	63.13	-1.7	37
South Carolina	64.61	62.94	-2.6	41
Tennessee	59.25	61.76	4.2	11
New Mexico	62.23	60.45	-2.9	43
Missouri	54.28	60.39	11.3	1
Massachusetts	56.21	59.74	6.3	9
Maryland	58.82	59.29	0.8	23
Mississippi <sup>d</sup>	58.88	59.24	0.6	24
Maine <sup>d</sup>	61.36	59.02	-3.8	47
Pennsylvania	59.38	58.91	-0.8	32
New York	57.31	58.55	2.2	15
Ohio	56.86	58.09	2.2	16
Minnesota	52.40	56.87	8.5	6
Washington	59.17	56.26	-4.9	49
South Dakota	58.35	55.22	5.4	50
Connecticut	53.47	54.00	1.0	21
Montana	50.45	53.69	6.4	8
New Jersey	49.04	50.87	3.7	12
Colorado	53.03	50.78	-4.2	48
North Dakota	51.48	50.50	-1.9	38
Wisconsin	49.12	49.18	0.1	26

(Continued)

TABLE 9. CONTINUED

State <sup>a</sup>	Concentration Ratio		Percentage Change	Rank by Growth Rate
	As of June 30, 1996	As of June 30, 1997		
Arkansas	47.10	47.57	1.0	20
Nebraska	46.55	46.34	-0.5	29
Texas <sup>d</sup>	44.41	45.96	3.5	14
California	46.77	45.49	-2.7	42
Indiana	46.24	44.78	-3.2	45
Illinois	40.35	42.48	5.3	10
Kentucky	42.63	41.95	-1.6	36
Oklahoma	36.85	40.24	9.2	4
Iowa	33.27	32.28	-3.0	44
Kansas	27.36	29.21	6.8	7
Average	61.09	61.55	1.01	n.a.

SOURCE: Congressional Budget Office using data from Federal Deposit Insurance Corporation, *Summary of Deposits Data*.

NOTES: FDIC-insured institutions include commercial banks, savings banks, and savings and loans, but exclude credit unions.

Except for Alaska and Hawaii, the eight-firm concentration ratio is the fraction of deposits held by the top eight bank holding companies in each state.

States are ranked in descending order of concentration as of June 1997. n.a. = not applicable.

- a. Includes the District of Columbia.
- b. The ratio is the market share of six holding companies plus the two largest banks without a holding company.
- c. The ratio is the market share of five holding companies plus the three largest banks without a holding company.
- d. Denotes states that permitted surcharging by 1995.

97.5 percent in Hawaii to 29.2 percent in Kansas, with an average eight-firm ratio of 61.6 percent.

The evidence on firm-level concentration suggests that ATM surcharging may affect competitiveness by promoting the concentration of deposits in certain banks. In states in which ATM surcharging was not allowed before 1996, concentration tended to be low, whereas in states where ATM surcharging was encouraged, concentration tended to be higher. Six of the eight states that permitted surcharging



by 1995 (Nevada, Maine, Georgia, Idaho, Louisiana, and Alabama) had four-firm concentration ratios in 1997 that were above the national average for deposits. However, the other two states permitting surcharging, Texas and Mississippi, had four-firm concentration ratios for deposits that were below the national average. The two states in which regulators have interpreted the law as prohibiting surcharging, Connecticut and Iowa, are among the least concentrated on the basis of their four-firm concentration ratios.

Measuring by Asset Class. As noted earlier, the local nature of the market for banking services argues for investigating the concentration of deposits on that scale. But it may still be informative to characterize the concentration of deposit holdings by banks nationwide on the basis of size—specifically, the extent of their assets. The available data are historical and so indicate changes in concentration between 1991 and 1995 for states that allowed surcharging during that time. One drawback of this data set, however, is that it comprises the deposits of commercial banks only and consequently is not as comprehensive as the firm-level data described in the previous section.<sup>14</sup> Another limitation is that the asset-class data report only deposits held by banks that are headquartered in the state. Therefore, they may not be as accurate as the firm-level concentration data presented earlier.

Nationwide, as of December 31, 1997, commercial banks with \$1 billion or more in assets accounted for only 4 percent of all commercial banks by number but held 76 percent of all deposits (see Figure 10). Small commercial banks, those with less than \$100 million in assets, constituted the bulk of commercial banks in the United States (approximately two-thirds of all such institutions), but in 1997, they held only about 7 percent of deposits.

A trend toward growing concentration nationwide can be seen from 1991 to 1997, as big banks increased their share of deposits while small banks lost market share. In 1991, commercial banks with assets of \$1 billion or more held 66.5 percent of all commercial bank deposits; that fraction rose to 72 percent in 1995 and 75.6 percent in 1997. At the other end of the scale, the smallest commercial banks, those with assets of \$100 million or less, saw their share of deposits shrink from 11.7 percent in 1991 to 8.6 percent in 1995 and 6.8 percent in 1997.

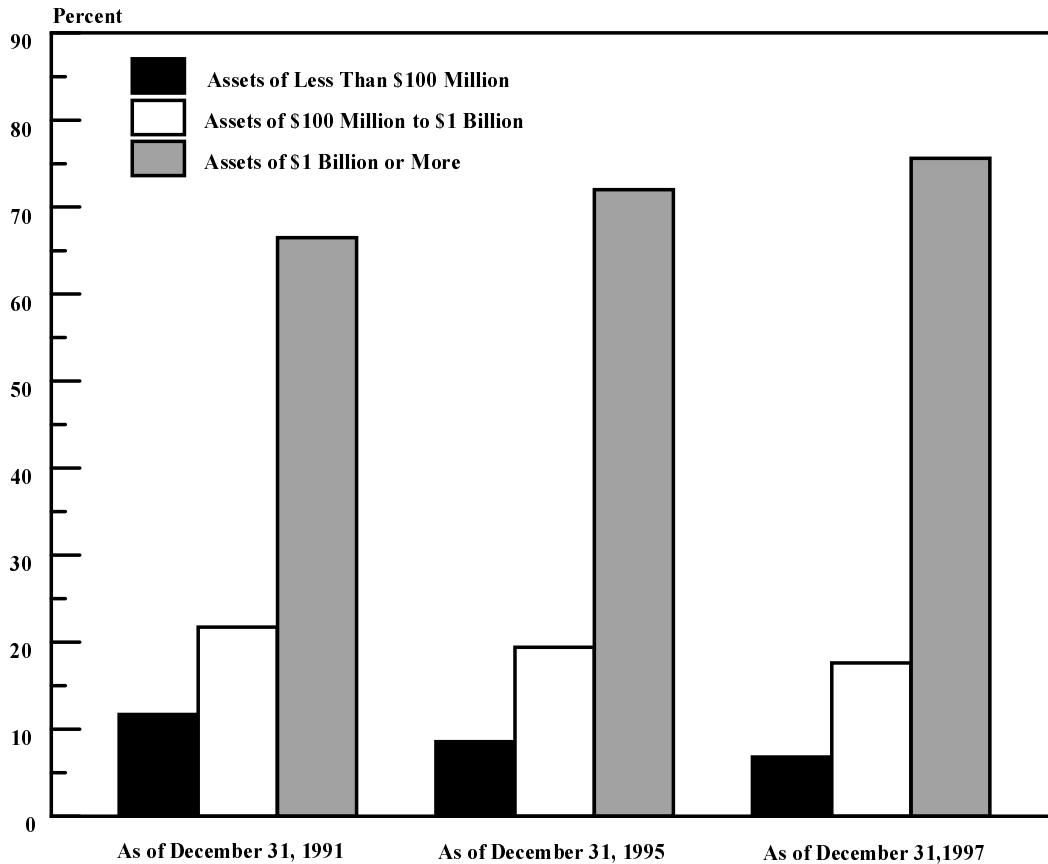
Did banking concentration increase more in states that allowed surcharging before 1996, when surcharging became widespread, than in the rest of the country?

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14. The source of these data is Federal Deposit Insurance Corporation, *Statistics on Banking* (various years). A comprehensive analysis of deposit concentration would also include the deposits held at savings institutions and credit unions. Commercial bank deposits constitute two-thirds of total deposits.

FIGURE 10. SHARE OF DEPOSITS HELD BY COMMERCIAL BANKS NATIONWIDE, BY ASSET CLASS

SOURCE: Congressional Budget Office, based on data from the Federal Deposit Insurance Corporation, *Statistics on*



*Banking*, Table 105A, various years.

NOTE: Commercial banks do not include credit unions and savings institutions.

The evidence is mixed. Seven states passed laws before 1995 specifically allowing surcharging or prohibiting no-surcharge networks: Nevada in 1989; Maine in 1992; Georgia, Idaho, and Louisiana in 1993; and Alabama and Mississippi in 1994. By virtue of a court decision, ATM surcharging has been allowed in Texas since 1989. The concentration of bank deposits in the states with ATM surcharging was less than in the rest of the country at year's end in 1991 and 1995 (see Figure 11). However, the rate of increase in concentration was higher for those states—banks of \$1 billion or more in assets increased their market share of deposits from 52.3 percent to 60.3 percent, whereas in the rest of the country, banks of that size increased their market share from 68.4 percent to 73.7 percent. The market share of deposits for small banks in the eight states permitting surcharging also decreased at a faster rate than

in the rest of the nation. However, at year's end in 1995, small commercial banks in the eight states permitting surcharging still possessed twice the national market share of deposits for commercial banks their size.

The operation of other factors besides surcharging makes it difficult to draw conclusions from the changing concentration of bank deposits in the states allowing surcharging or prohibiting bans on it. Between 1991 and 1995, many small commercial banks, as well as savings and loans and credit unions, closed as a result of serious financial trouble unrelated to ATM competition. Other small banks were taken over by larger competitors, thus increasing the market share of deposits of those large banks.

In sum, the evidence on increased bank concentration does not unequivocally point to ATM surcharging as a major factor. On the one hand, in the eight states permitting surcharging before it became the practice nationwide, commercial bank deposit concentration increased faster than in the rest of the country. On the other hand, the overall concentration of commercial bank deposits in those states was much lower to begin with, and remained lower than in the rest of the country. The firm-level concentration measures for 1996 and 1997 tend to be consistent with the notion that states encouraging surcharging have more highly concentrated deposit markets.

### Price Competition

If the evidence on how ATM surcharging affects bank concentration is ambiguous, the evidence on how it affects ATM pricing is less so. Several studies have indicated that big ATM owners may be exerting market power by charging higher prices for ATM services. In a recent survey of 470 banks conducted by the Public Interest Research Group, more big banks (83 percent) levied surcharges on foreign users than did small banks (65 percent), and the average big bank's surcharge (\$1.35) was higher than the average small bank's surcharge (\$1.16).<sup>15</sup> The annual survey of banking fees that the Federal Reserve conducts also supports that conclusion. In the Fed's survey, the surcharge for the average large bank was \$1.28; it was \$1.11 for the average small bank.<sup>16</sup> The *Washington Post* reported on a broader range of bank fees at banks in the Washington, D.C., metropolitan area and found the same tendency— bigger banks charged higher fees than smaller banks for many services.<sup>17</sup>

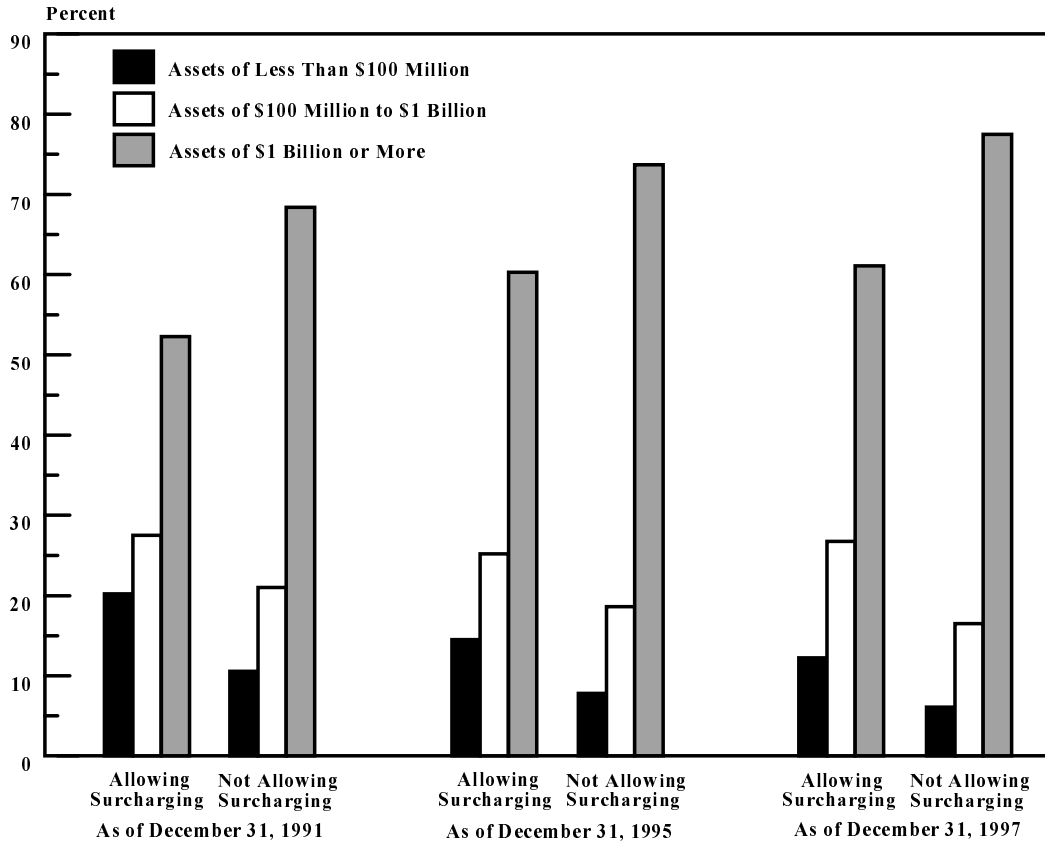
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15. Public Interest Research Group, *Big Banks, Bigger ATM Fees* (Washington, D.C.: Public Interest Research Group, April 1, 1998).

16. Board of Governors of the Federal Reserve System, *Annual Report to the Congress on Retail Fees*, pp. 19 and 21.

17. Michelle Singletary, "The Charges of the Bank Brigade," *Washington Post*, Washington Business Section, March 23, 1998, p. 19.

FIGURE 11. SHARE OF DEPOSITS HELD BY COMMERCIAL BANKS IN STATES ALLOWING SURCHARGING BEFORE 1995 AND STATES NOT ALLOWING SURCHARGING, BY ASSET CLASS



SOURCE: Congressional Budget Office, based on data from the Federal Deposit Insurance Corporation, *Statistics on Banking*, Table 105A, various years.

NOTE: The eight states allowing surcharging before 1995 were Alabama, Georgia, Idaho, Louisiana, Maine, Mississippi, Nevada, and Texas. Commercial banks do not include credit unions and savings institutions.

## CONCLUSION

This chapter has brought some evidence to bear on the question of competition among ATM owners. However, the available data do not permit any inference of causality between surcharging and increasing deposit concentration. Because the geographic restrictions on depository institutions were lifted at the same time that surcharging came on the scene, the effect of ATM surcharging on bank concentration is impossible to distinguish from the effect of the trend of increased consolidation of the banking industry in general.

Despite the lack of clarity in the findings, some of the data suggest that competition among ATM deployers is less than perfect. The inherent characteristics of ATM networks may be causing the market to gravitate toward a structure with a few large and more dominant firms. Moreover, because the primary interest of incumbent banks with large proprietary ATM networks lies in building and holding their market share of deposits, the banks may wield surcharges and foreign fees as strategic barriers to entry into the ATM market.



## CHAPTER V

### CONCLUSIONS OF THE ANALYSIS AND POTENTIAL POLICY OPTIONS

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Trends in the automated teller machine market offer mixed guidance for policymakers. Those trends include:

- o Growth in the number and dispersion of ATMs;
- o Consolidation among shared ATM networks;
- o Consolidation and concentration in the banking industry; and
- o The rapid, recent spread of ATM surcharging.

Two questions are central to current policy concerns about surcharges and their effects on consumers and on competition in the ATM market. First, is the ATM market relatively competitive? Second, is the consolidation of ATM networks leading to the exercise of undue market power?

#### IS THE ATM MARKET RELATIVELY COMPETITIVE?

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The increasing number of ATMs and the decreasing number of transactions per machine suggest that current conditions in the ATM market—especially those affecting surcharging—are in flux. If simple supply and demand were at work, the entry of nonbank ATM deployers in particular should force surcharges to drop. However, those deployers view ATMs as money machines, meaning that they earn their profits through ATM transactions. By contrast, bankers may view ATMs primarily as a means of furthering their ability to compete for depositors. Conventional economic theory suggests that ATM owners will start competing for transactions by lowering their surcharges. In that model, the 1996 decision allowing surcharges, which led to increases in both the deployment of ATMs and the imposition of such fees, should lead to an equilibrium with lower charges (and perhaps fewer deployments) than now exist.

That straightforward explanation of competition in the ATM market has some early evidence in its favor. The first signs of saturation of the ATM market are appearing, and ATM manufacturing firms have begun laying off employees.<sup>1</sup> Furthermore, many banks are now cutting their foreign fees, presumably in response

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1. Charles Keenan, "Saturation, Bank Mergers Hobble ATM Industry," *American Banker*, June 11, 1998.

to widespread cardholder complaints about being double-charged for foreign ATM transactions. The most recent Federal Reserve survey of depositor banking fees saw the percentage of banks that imposed foreign fees on consumer withdrawals fall from 80 percent of the banks surveyed in 1996 to 67 percent of those surveyed in 1997.<sup>2</sup> As one would expect, that decline occurred largely among small- and medium-sized institutions whose depositors typically depend on foreign ATMs. Large institutions, by contrast, have not relinquished their foreign fees. For customers of banks that charge no foreign fees, the cost of a foreign ATM transaction has largely returned to its presurcharging level.

Some evidence, however, runs counter to the model of declining fee levels. For example, in Texas, surcharges have existed for almost a decade, and competition in the market has not eliminated, or even reduced, such fees. Instead, some industry observers suggest they have grown. Moreover, even nonbank ATM deployers apparently are not competing on the basis of lower surcharge prices. What factors are operating to dampen competition?

The most important dampening factor is that most of the time, the majority of people do not pay surcharges. Banks, which still own most of the ATMs, typically do not impose surcharges on their own customers. In addition, a large part of the market response to ATM surcharges is exhibited in changes in frequency of use, not in changes in price. Consumers typically arrange their affairs so that most of the time they do not pay surcharges at all. Thus, firms that surcharge see a drop-off in the number of their foreign transactions—but usually not by enough to make them drop the surcharge.

Also operating to reduce competition is that banks are primarily focused on their depositor base and not on the ATM transaction market. Banks weigh their ATM fees on the basis of how those charges will affect their competitive standing for banking services rather than ATM services. A bank with a large proprietary ATM network that imposes surcharges on foreign users would have little incentive to lower or eliminate them because high surcharges might encourage people to become depositors to avoid paying those fees. (Admittedly, no statistical or broad-based anecdotal evidence can be mustered to support that notion, but its intuitive validity is compelling.)

Location may also grant some localized market power that impedes competition. Once a cardholder is at a given location, traveling to find a better-priced ATM may impose a cost of its own. (Obviously, that local monopoly has its limits, but it does soften the effects of price competition.) Moreover, for a portion

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2. Board of Governors of the Federal Reserve System, *Annual Report to the Congress on Retail Fees and Services of Depository Institutions* (June 1998), pp. 7-10.



of ATM cardholders, the value of their time is worth more than the surcharge. Thus, the market may be segmented based on willingness to pay: the large majority of cardholders pay no fee, but those who do are fairly insensitive to price. In segmented markets, it is relatively common for segments to compete on features such as location rather than on price.

In sum, widespread surcharging is a recent phenomenon, and the market is still adjusting. Cardholders may discover that competitive pressures are operating on surcharges and foreign fees as the market matures over the next few years. Another possibility is that surcharges may remain in place even as average total cardholder fees drop. The likelihood of that outcome rests on the segmentation of the market and the fact that foreign fees and surcharges are set independently by two different market participants.

### IS ATM NETWORK CONSOLIDATION LEADING TO UNDUE MARKET POWER?

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Shared regional ATM networks are becoming fewer in number and larger in their geographic reach. The shared regional networks are competing not only with the ever-larger proprietary ATM networks that service a single bank but increasingly with the shared national networks that play the role of intermediary for foreign ATM transactions.<sup>3</sup>

Those multiple sources of network competition suggest that the increasing concentration of shared regional ATM networks has not helped them to gain substantial economic power despite the reduction in their numbers. Indeed, as the earlier analysis of switch fees showed (see Chapter 3), shared regional networks for the most part have not acted to increase their own profits.

Any market power that the shared regional ATM networks possess is wielded on behalf of their owners, the ATM deployers. For example, the lack of change in the level of interchange fees—in the face of a drop in the underlying costs of ATM ownership—could be construed as an attempt to use market power to raise the profitability of investments in ATMs. The weakness in that argument is that the fees have been steady both during periods when the market had numerous competing shared regional ATM networks and periods when there were few such networks.

Not only is the evidence of market power mixed at best but shared regional ATM networks now face stiff competition from the shared national networks. The

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3. Of course, in some instances, the regional shared network operates the proprietary network through an outsourcing arrangement.

spread of the national ATM networks calls into question the very need for regional systems. An ATM owner might well balk at paying membership fees and following the by-laws and protocols of two or more ATM networks when membership in only one could provide connections with every major financial institution in the world.

Playing out the one-network scenario to its logical extreme would mean that the shared national ATM networks could come to dominate foreign transactions and significantly consolidate market power in their hands. At this time, however, any conclusion regarding such an outcome would be premature. The shared regional networks are transforming themselves and the process of switching ATM transactions both by merging and by entering gateway arrangements with other shared regional networks that allow them to bypass the national networks for many transactions. Current forces in the ATM market could also produce a situation similar to that of the long-distance market, in which a handful of national providers engage in substantial price competition.

## POTENTIAL POLICY OPTIONS

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Policymakers are now considering several approaches to regulating the ATM market. Such policies fall into two main categories: regulation of surcharges and regulation of interchange fees. Given the competitive terrain of the ATM markets and retail banking, the regulation of fees may be premature if current levels are a temporary, self-limiting phenomenon. Clearly, the surcharge trend has not played itself out, and the market has not reached final equilibrium. In such unsettled circumstances, the effects of any legislation or regulatory change may be difficult to determine in advance and could produce unintended effects.

### Regulation of Surcharges

Two bills focused on ATM fees, each with a different approach, have been proposed in the 105th Congress. H.R. 264 deals with the disclosure of fees, and S. 885 restricts surcharging in certain circumstances.

H.R. 264 would amend the Electronic Fund Transfer Act of 1978 to require notice to cardholders of certain fees imposed by the operator of an ATM. Among other things, the proposal would require that the ATM fee be posted conspicuously at the machine's location as well as appear on the screen or on a paper notice issued from the machine after the transaction is initiated but before the cardholder is obligated to complete it. As mentioned earlier (see Chapter 4), disclosure of ATM surcharges should increase competition among ATM owners because it allows cardholders to shop for the lowest price.

Opinion is divided as to the utility of disclosure legislation. Several states have already passed ATM fee disclosure laws. By 1996, 14 states (Alabama, Arkansas, California, Idaho, Mississippi, Montana, Nevada, New Hampshire, New Mexico, North Dakota, South Dakota, Texas, Utah, and Wyoming) had laws on the books requiring that any ATM fee be revealed to cardholders before completion of the transaction.<sup>4</sup> However, some analysts argue that federal legislation creates less uncertainty than uneven state regulations.

As introduced, S. 885 seeks to amend the Electronic Fund Transfer Act as well, but unlike H.R. 264, it would restrict the fees (termed "electronic terminal surcharges" in the bill) charged by financial institutions for the use of ATMs. Essentially, S. 885 would allow a bank to charge its own depositors for using its ATM but would prohibit it from charging others (those who are not accessing a deposit account at that bank). However, the bill would allow nonbank ATM owners to charge cardholders a fee for use of their ATMs.<sup>5</sup>

S. 885 defines the term "electronic terminal surcharge" somewhat differently from the way "surcharge" has been used throughout this report. The Congressional Budget Office's analysis defines a surcharge as the fee that an ATM owner collects from cardholders for using its ATM. S. 885 defines an electronic terminal surcharge as a transaction fee assessed by a financial institution that is the owner or operator of the electronic terminal. Thus, S. 885 presumably would not limit the fees that a nonbank ATM owner could charge cardholders for using its ATM.

### Regulation of Interchange Fees

Some analysts have noted that now that surcharges are widespread, interchange fees are no longer necessary to compensate ATM owners for their investment. Before surcharges, interchange fees were the only compensation for servicing foreign cardholders. With surcharges, ATM owners can be compensated for those services directly by cardholders rather than through the card-issuing institutions.

Policymakers view interchange fees with some concern because they allow collective price setting and thus raise serious antitrust issues. In the days before surcharges, such fees were justified on efficiency grounds. Without them, each

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4. See Appendix A in David Balto, "ATM Surcharges: Panacea or Pandora's Box?" *The Review of Banking & Financial Services*, vol. 12, no. 17 (October 9, 1996).

5. Specifically, S. 885 would prohibit the assessment of an electronic terminal surcharge against a consumer "if the transaction (1) does not relate to or affect an account held by the consumer with the financial institution that is the owner or operator of the electronic terminal; and (2) is conducted through a national or regional electronic banking network."

member bank would have had to enter into hundreds of bilateral negotiations with each and every other member bank about the appropriate compensation for foreign ATM use by its cardholders. The prevalence of surcharges now weakens that justification. Nevertheless, no network can individually eliminate the interchange fee because doing so would encourage ATM owners to seek other ATM networks that allowed them to collect the fee. And if ATM networks tried collectively to eliminate interchange fees, they might be subject to antitrust action by ATM owners or possibly by the federal government. Some analysts have argued, therefore, that one way out of the dilemma would be either to provide the networks with antitrust immunity in that regard or to forbid ATM owners to collect both surcharges and interchange fees.

The policy option of simply prohibiting ATM owners from receiving two payments says nothing about the size of those payments. In theory, that approach would permit an ATM owner to charge a surcharge that was large enough to compensate for the loss of the interchange fee. If, however, legislation limited the compensation of ATM owners (to ensure that cardholders were not overcharged), fewer-than-optimal ATM services might be provided.

More fundamentally, new costs in a market are ultimately shared by both producers and consumers, regardless of who pays for them initially. In the case of surcharges, the initial burden may have fallen on cardholders, but a portion of those costs may ultimately be borne by card-issuing banks. Such banks had been setting their foreign fees without regard to surcharges. Now, however, card-issuing institutions must take surcharges into account in setting their foreign fees. In essence, their adjustment of foreign fees provides card-issuing banks with the opportunity to relieve some of the burden of the surcharge on their cardholders. As noted earlier, 13 percent of banks have already dropped their foreign fees altogether in response to customer complaints about surcharges. Many more have probably reduced them for the same reason.

Some analysts contend that rebates would be a more efficient way of accomplishing the same burden sharing, and some banks currently use that approach. But simply rebating the surcharge gives the cardholder no incentive to avoid foreign ATMs. For that reason, card-issuing banks might want to share the burden rather than shift it completely from the cardholder to the bank.

Opponents of federal intervention to limit the number and types of cross-payments among participants in the ATM market say such laws are likely to reduce the range of such adjustments and could keep participants from arriving at the most economically effective system of fees. They maintain that commercial transactions are best encouraged when market participants can make the type and number of payments they feel are most advantageous.

Other analysts counter that theory by arguing that the level of the interchange fee has been suspiciously constant. The fee's steadiness for over a decade in the face of declining costs is not consistent with any simple model of market adjustment of fees in response to changing costs. On the one hand, CBO's analysis has produced no evidence to suggest that interchange fees are being held at an artificially high level through the use of market power. On the other, there is no reason to assume that the profits generated by those fees will be reduced by competition in the near term. Given the static fees—and the market imperfections that underlie them—the types of market adjustment needed for equitable burden sharing may not be forthcoming.