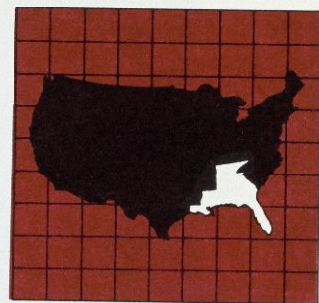


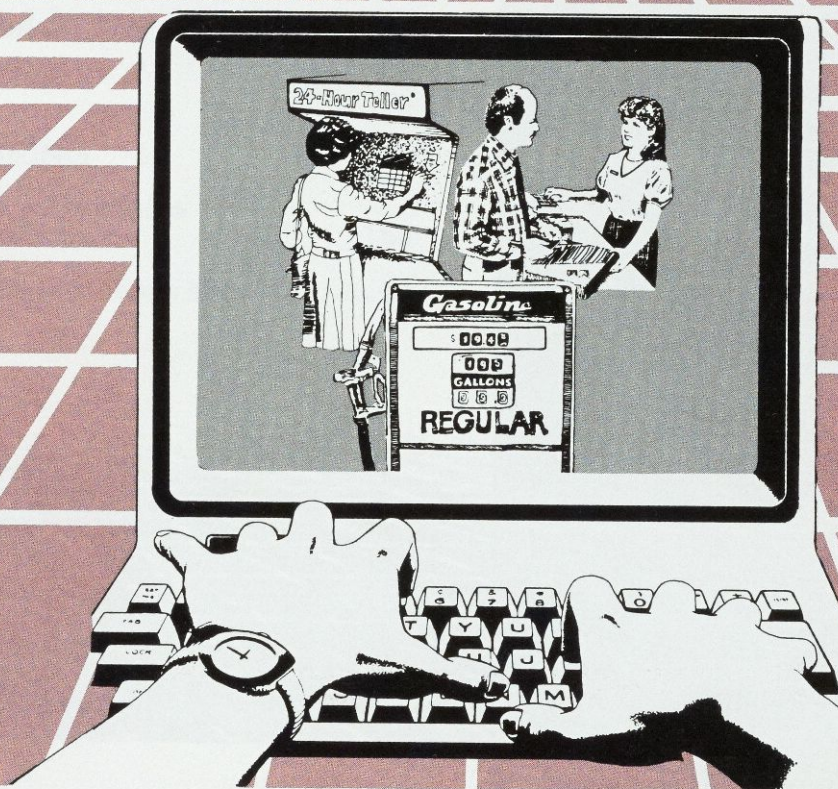
Economic Review

FEDERAL RESERVE BANK OF ATLANTA

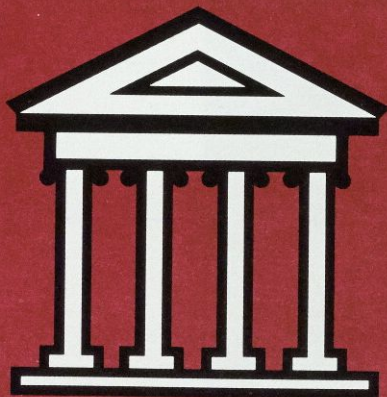
JULY/AUGUST 1984



The Revolution in Retail Payments



Special
Issue



President:

Robert P. Forrestal

**Sr. Vice President and
Director of Research:**

Sheila L. Tschinkel

Vice President and**Associate Director of Research:**

William N. Cox

Financial Structure:

B. Frank King, Research Officer

Larry D. Wall

Robert E. Goudreau

National Economics:

Robert E. Keleher, Research Officer

Mary S. Rosenbaum

Joseph A. Whitt, Jr.

Regional Economics:

Gene D. Sullivan, Research Officer

Charlie Carter

William J. Kahley

Bobbie H. McCrackin

Joel R. Parker

Database Management:

Pamela V. Whigham

Payments Research:

David D. Whitehead

Visiting Scholars:

George J. Benston

University of Rochester

Gerald P. Dwyer

Emory University

Robert A. Eisenbeis

University of North Carolina

John Hekman

University of North Carolina

Paul M. Horvitz

University of Houston

Peter Merrill

Peter Merrill Associates

Communications Officer:

Donald E. Bedwell

Public Information Representative:

Duane Kline

Publications Coordinator:

Cynthia Walsh-Kloss

Graphics:

Eddie W. Lee, Jr.

Cheryl D. Berry

The **Economic Review** seeks to inform the public about Federal Reserve policies and the economic environment and, in particular, to narrow the gap between specialists and concerned laymen. Views expressed in the **Economic Review** aren't necessarily those of this Bank or the Federal Reserve System. Material may be reprinted or abstracted if the **Review** and author are credited. Please provide the Bank's Research Department with a copy of any publication containing reprinted material. Free subscriptions and additional copies are available from the Information Center, Federal Reserve Bank of Atlanta, P.O. Box 1731, Atlanta, Ga. 30301 (404/521-8788). Also contact the Information Center to receive **Southeastern Economic Insight**, a free newsletter on economic trends published by the Atlanta Fed twice a month.

ISSN 0732-1813

Special Issue

The Revolution in Retail Payments: Are Banks Being Disenfranchised?

OVERVIEW

Introduction 4

**"Off-Bank" Retail Payment Systems:
The Economic Issues..... 6**

**Firms Involved in ATM, POS, and Home Banking:
A Survey 13**

VOLUME LXIX, NO. 7

ATM AND POS	
4 A Retailer's Perspective on ATM and POS Systems	20
6 A Banker's View of the Payments Area	26
EFT in Florida: A Banker's Perspective	28
13 POS Is on Its Way	32
HOME BANKING	
Chemical Bank's Experience with Home Banking	36
The Business Plan for Home Banking	40

CONCLUSION

The Revolution in Retail Payments: A Synthesis	46
The Heart of the Issue	48
Banks and Retailers: Two Views of the Future	50
SELECTED BIBLIOGRAPHY	55
STATISTICAL SUPPLEMENT	56

Correction: A paragraph on page 58 in Samuel L. Hayes' article, "Investment Banking: Commercial Banks' Inroads," in the May issue of the **Review** was misplaced. Lines 1-15 on p. 58 should follow line 30. We regret the error.

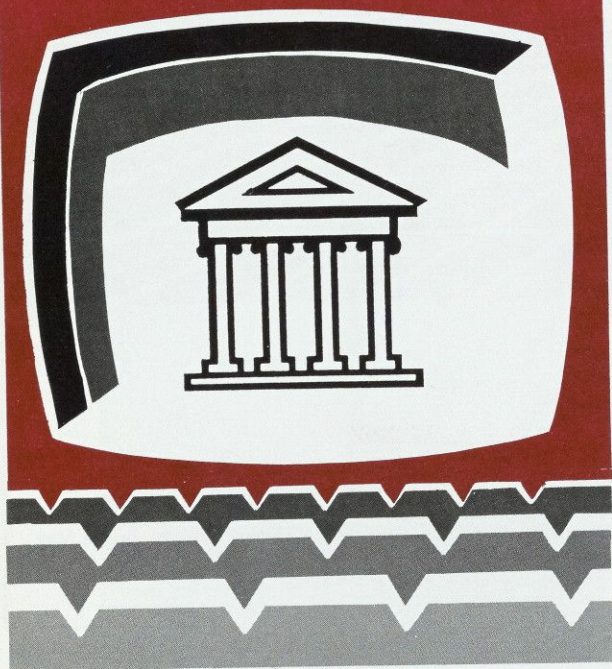
OVERVIEW

Introduction

Traditionally, commercial banks have stood between purchasers and sellers, not only providing the means through which transactions are settled (demand deposit accounts) but collecting and dispersing information relevant to these transactions. The latter is integral to the service banks provide because collecting and dispersing information facilitates the bank-customer contact on which customer loyalty is based. But with technological advances in the electronic communications field, nonbanks are finding it advantageous to offer alternatives to the banks' payment systems. The alternative payment systems offered by nonbanks may effectively eliminate the unique payment systems franchise commercial banks have traditionally enjoyed.

The commercial banks' franchise in the settlement area is not particularly threatened by these events because banks still control the means of settlement, demand deposits. However, the new technology is threatening the banks' unique role in providing access to and information concerning consumers' bank accounts. Automated teller machines (ATMs), point-of-sale (POS) terminals, and home banking are three examples of how communications technology is being applied to replace established payments devices. The purpose of this special issue of our **Economic Review** is to assess the comparative advantage of banks or nonbanks in supplying these new payment systems. We explore the revolution now underway in the retail payments area and attempt to define the degree to which banks may be in danger of losing the uniqueness of their franchise in the payments area.

Banks, retailers, data processors, communications companies, and vendors of the new technology all are locked in a serious struggle to establish their niches in the electronic payment systems of tomorrow. The winners will profit handsomely and will form the basis of a new structure of financial institutions and ser-



vices. As an essential part of the current payment system and as a regulator entrusted with ensuring the safety and soundness of the banking and payment system, the Federal Reserve is most interested in the outcome of this competition.

The Federal Reserve Bank of Atlanta sponsored a one-day workshop with key representatives from each of the major sectors vying for a position in the future payment system. The speakers were associated with firms actively engaged in or testing the feasibility of ATMs, POS, or home banking services. We asked each to review his firm's experience and from that to generalize on the future of the various services. Specifically, the speakers were asked to assess the value added by each of the electronic services, and this raised further questions. Are consumers willing to pay for the value added? What are the relative costs and benefits of supplying these services? What types of firms appear to be in the best position to offer these services profitably? The presentations stimulated lively discussion and culminated in a much clearer picture of which electronic services are likely to be accepted by consumers and of the types of firms that hold a comparative advantage. The role of commercial banks in the payment system is indeed changing.

George Benston, a visiting scholar at the Federal Reserve Bank of Atlanta and professor of accounting, economics, and finance at the University of Rochester, opened the workshop with a concise statement of the economics of electronic payment systems. He set the stage by outlining the potential costs and benefits of each type of electronic service, and the characteristics of firms most likely to enjoy a comparative advantage in offering the services. **David Whitehead**, senior financial economist for the Atlanta Fed, followed with a description of the firms actually involved in offering or testing the feasibility of electronic payment services today. He emphasized what the players are doing and how they are doing it.

Next to speak was **Craig Gieler**, vice president of administration for The Williams Group and former Kroger executive, who presented the potential advantages and disadvantages of ATMs and POS from the retailer's viewpoint. **Gordon Oliver**, executive vice president of Citizens and Southern National Bank, then countered with a generalized banker's view based on his experience with C&S and the Avail network; **David Strickland**, senior vice president of Barnett Banks of Florida, gave a close look at his organization's experience offering retail electronic funds transfers in Florida through the Honor System. To round out the morning session, **Ronald Osterberg** of the Antietam Group presented a stimulating analysis of who is likely to benefit from ATM and POS transactions and, hence, who is likely to pay whom for the services.

The afternoon session was devoted to questions surrounding home banking. Among these, the chief question was whether home banking would provide consumers with sufficient value added to allow banks to play a leading role in developing home information systems, or whether home banking is likely to be simply one more service on the menu. **Lee Pomeroy**, vice president, Chemical Bank, presented Chemical Bank's experience with Pronto home banking, and its long-term strategy in the home banking arena. **Allen R. DeCotiis**, vice president of Payment Systems, Inc., broadened the picture with a more generalized overview of the home banking issue.

We asked **Bernell Stone**, Mills B. Lane professor at Georgia Institute of Technology, **Peter Merrill**, president, Peter Merrill Associates, and **William Cox**, the Atlanta Fed's associate director of research, to summarize the findings of the workshop. Each approached the significant results somewhat differently, but all agreed on the probable future role that commercial banks will play in the evolving electronic payments area. We trust you will find this special issue of our **Economic Review** both informative and enjoyable.

—David Whitehead

"Off-Bank" Retail Payment Systems: The Economic Issues

George J. Benston

Competition among bankers, retailers, and other firms in supplying remote or electronic banking services should help consumers and discourage unfair practices, one scholar believes.



Retail electronic and other "off-bank" payment systems (that is, those that are remote from bank premises) can be developed, owned, and operated by banking institutions, retail outlets, and independent companies. Various types and combinations of systems have emerged. For instance, the systems can be proprietary or open; the banks and retail outlets can work individually or in groups; the independent companies can work with or separately from banks and retail outlets. To predict which systems will likely characterize the future and the course of public policy decisions regarding their regulation, it is useful to understand three basic economic factors that yield benefits and costs to the developers, operators, and users of retail remote payment systems.

One particularly important concept is "comparative advantage," which refers to the ability of a particular supplier or group of suppliers to provide a payments service. Comparative advantage gives one supplier an edge over other potential suppliers of the service. For example, a bank might have a comparative advantage over retail stores in developing a payments network because it already has experience with similar systems. A retail store might have a comparative advantage over a bank in designing a point-of-sale (POS) system because it has experience with recording sales in its industry. An independent company might enjoy a comparative advantage in combining home banking and other personal computer based services.

The second concept is that the owner of a "scarce resource" commands an economic rent. A scarce resource is one for which there are no ready substitutes. A supermarket, for example,

has the resource of a location where people want simultaneously to charge food purchases and do banking. The net benefits to these people, the amounts that they and banks are willing to pay for the activity as compared with alternatives, can be garnered by the supermarket, since it owns the scarce resource—its location. In economic parlance, the supermarket gets the rent.

In an important sense, the ownership of scarce resources constitutes a significant comparative advantage. Supermarkets thus may hold a comparative advantage over banks in providing locations for POS and ATM (automated teller machine) terminals, while banks may have a comparative advantage in designing or integrating the systems.

"Exogenous changes," the third economic concept, impinge on existing relationships so as to change them. In the present context the three most important are inflation, technology, and deregulation. The inflation of the 1970s increased nominal interest rates; high rates increased the opportunity value of using funds effectively. Depositors became aware of the value of investing their balances, and both bankers and nonbankers searched for ways to attract depositors' funds. As the value of making funds transfers increased and as improved computer technology reduced the cost of transfers, electronic payment systems became economically feasible. Deregulation was partly a consequence of the interaction of inflation and improved technology in that banks had incentives to get around the regulations of the 1930s as nonbanks bid for the bank customers' trade.

The initial form of de facto deregulation involved banks' paying for their customers' balances with "free" or nominally free services, such as off-premise banking and 24-hour ATMs. But even if inflation were to halt, we would not return to the relationships of the pre-inflation period, since investments in technology are irrevocable, or

The author, a visiting scholar at the Federal Reserve Bank of Atlanta, is professor of accounting, economics, and finance at the University of Rochester.

sunk, costs and consumers now are aware of the available alternatives. Legal deregulation of interest rates increased the economic desirability of electronic banking as it became more cost-effective than brick-and-mortar banks with human tellers. If the Banking Act of 1933 were amended to permit direct interest payments on demand deposits, banks might find it necessary to charge explicitly for transactions and other services. This would affect further the development of off-bank and electronic payment services.

For purposes of analysis, four groups are delineated: consumers, banks, retailers, and independent companies. The benefits and costs of payment services to each group form the basis for predicting future payment structures and evaluating the role for government regulation. The discussion that follows should be read as illustrative, rather than exhaustive, of the benefits and costs to each of the groups, and as indicating

avoid the cost of visiting a bank because they find a retail store, such as a supermarket, more convenient. People tend to shop for food at least once a week and food purchases are perhaps the largest regular cash expenditure made by most householders. A branch facility or ATM in a supermarket location can yield special convenience for consumers.

It would be best for consumers if all banks could be accessed through a single facility. Rarely is the overlap complete between consumers who find it desirable to shop at a particular store and use a particular bank. Where a bank is not represented, some consumers will choose either to change banks or retail stores. The problem for banks or stores that want to take advantage of such induced changes is predicting which the consumer will do. For example, if a bank has a proprietary system in a particular supermarket, will a consumer change to that bank or change to

“Convenience of location and time are the major benefits to consumers in making funds transfers and deposits at off-bank premises.”

tendencies rather than certainties. These are the musings of an economist rather than the insights of an expert participant in the payments system.

Consumers' Benefits and Costs

Convenience of location and time are the major benefits to consumers in making funds transfers and deposits at off-bank premises. They can bank at a location where they wish to be for other reasons and outside regular banking hours. The value of this convenience is measured by a comparison with alternatives they might use: a bank or branch with an ATM or human teller to get cash and make deposits and transfers among accounts; the mail for deposits, payments, and account transfers; the telephone for payments and account transfers; and retail stores for cashing checks, charging purchases, and making payments for past purchases.

Banking at Retail Stores. With respect to the transactions that otherwise would be done at a bank, consumers benefit when they are able to

a supermarket at which his or her present bank is represented? For the consumer, of course, it is preferable not to be faced with that alternative, all other things being equal.

POS Debits. Where only a POS system is available consumers might prefer the alternative of paying for purchases with checks or credit. These alternatives provide consumers with the benefit of float, since the checks written and credits assumed do not reduce their balances immediately. The benefit from check float, though, is unlikely to be great unless inflation drives the nominal and implicit interest rates up to a much higher level than has been experienced in the United States. But float on credit is beneficial to consumers because stores and many credit card companies do not as yet charge immediate interest, and because the consumer usually has the choice of paying off the balance or extending payments at a price.

Delay is a factor for both checks and credit charges, because the store monitors the consumer's credit standing. Avoidance of delay can

offset the advantages of float, particularly where the amounts that would have been charged are relatively small, as is the case for gasoline and food purchases. However, when electronic card checking is available the delay is slight and, for the consumer, credit cards are preferable to debit cards.

Where cash is the alternative means of payment, a POS debit would be preferred if it were not very time consuming. Consumers would not have to be concerned with carrying cash, which could be lost or stolen. This security benefit could compensate for the charges for POS debits which, in turn, might be offset by explicit or implicit interest paid on the consumer's bank balances held in lieu of cash. The net benefit to consumers of POS payments thus depends on the consumer's perceived advantage from not having to carry cash less the net cost of using the system.

Home Banking. The personal computer makes it physically possible for consumers to pay bills and transfer funds from home. Of course, they cannot access accounts that are not on the system nor make deposits or obtain cash. The

shopping, and at times beyond regular banking hours. They also benefit from avoiding credit-checking delays when they use POS debits; at the same time, they lose the advantages of float and delayed payment through credit. Where consumers usually pay cash for purchases, such as at supermarkets, a POS debit represents a net benefit. But where they have enjoyed the alternative of an initially free credit charge, such as at department stores and, until recently, at gasoline stations, a POS debit is unlikely to be preferred without a considerable savings in time or a charge for credit. For a POS system to be economically viable it seems that its costs would have to be largely offset by savings in present value terms in the banks' and the retailers' other operations costs.

Banks' Benefits and Costs

Benefits. Meeting customer demand is the primary benefit to banks. A bank may benefit from this demand by charging the consumer for the service, or by not forgoing the consumer's trade should a competitor offer the service. The

"Home banking would seem to be a net benefit to consumers only if it were one of several products that could be accessed with personal computers."

cost of home banking includes purchase or lease of hardware, charges by banks for access and transactions, and learning to use the system (which for some computer aficionados is a benefit, and for some others an overwhelming nuisance). If only banking is done with a personal computer, most consumers would likely consider the costs to be greater than the benefits. Further deregulation of interest rates would decrease the benefits, since banks could offer interest-bearing transaction accounts that would obviate consumers' gains from transferring funds among accounts. Consequently, home banking would seem to be a net benefit to consumers only if it were one of several products that could be accessed with personal computers.

Summary. Consumers benefit from having the choice of banking at locations where they regularly shop, particularly if they require cash for that

gross monetary value includes the present value of the fees charged plus the expected gains (net of marginal operating costs) from serving customers who would shift their business to a competitor.

Attracting customers from a competitor that does not offer the service is a related benefit. To achieve this the bank would want exclusive access to the ATM and POS terminals or to bar competitors from access. The expected benefits from this arrangement, however, would have to be weighed against the charge made by the retailer to compensate it for the loss of customers who would change retailers rather than change banks. Furthermore, the retailer owns the scarce resource of access to consumers and would charge the bank for the value of exclusive access. The bank's gain from such a restricted access arrangement is thus doubtful.

Charges made to retailers that benefit from having banking services available to their customers and from using POS systems may constitute a third bank benefit. But banks also benefit, and so who charges whom depends on who owns the scarce resources and the magnitudes of the other comparative advantages.

The saving of bank resources otherwise expended at branches and in processing checks rather than electronic debits represents a fourth benefit. The amount of this saving depends on the additional cost to the bank of consumer transactions made at off-bank locations compared with those made at existing and planned bank locations. Marginal and total opportunity costs should be used for this calculation. For example, a bank with excess physical capacity at its existing locations may find that a remote location saves only the services of one teller. Other payment vehicles, such as mail deposits and telephone transfers, also enter the calculation since these alternatives define the opportunity cost of ATM or POS terminals and systems. Consequently, many banks may find that retail payment systems

the long period banks have been involved in payment systems, it seems likely that they possess some expertise that could be applied economically to remote payment systems. The system also would have to be integrated into the retailer's control and management information system. Banks could develop this expertise but there is no reason to believe that they would have a comparative advantage here. For maintenance and servicing, which includes restocking ATMs with cash, retailers playing host to these facilities might have a comparative advantage.

ATM and POS systems have been developed and maintained by consortia of banks. This arrangement has the advantage of pooling expertise and reducing the costs to each of the members, since many costs are fixed. An inherent but manageable problem with such an arrangement is the expense of coordinating the effort and determining how its costs, benefits, and responsibilities are divided among the participants. In this regard a single bank, retailer, or independent company has a comparative advantage over a consortium. If travel time is a costly consideration, retailers could more efficiently

“Banks might have some comparative advantages in the development and operation of remote payments services, but here they compete with each other and with retailers and independent companies.”

increase operating expenses. Yet banks in expanding markets may find that remote locations obviate or delay such expensive alternatives as construction of a new branch or expansion of an existing one. Banks in contracting markets also might benefit if ATMs could permit them to close branches.

Costs. Remote banking costs include the expense of developing a system, integrating it into the bank's and the retailer's systems, investing in the purchase and maintenance of the hardware and software, and maintaining and servicing the facility. In addition, customers might have to be convinced that the system is beneficial to them and instructed in its use. Some banks might have comparative advantages in making the initial expenditures, particularly when they have had considerable experience in the development and maintenance of similar systems. Considering

service and maintain ATM and POS equipment at their locations; hence, they would have a comparative advantage from owning the equipment.

Summary. Remote banking facilities might give banks the benefit of serving their customers better, charging retail outlets, and saving operating costs. Banks would incur development and operating costs and might have to pay retail outlets to use their facilities, the most important scarce resource. Banks might have some comparative advantages in the development and operation of remote payments services, but here they compete with each other and with retailers and independent companies.

Retailers

Benefits. Retailers' benefits come from four sources, one of which is customer satisfaction.

Customers save the costs of having to bank and shop at different locations and, for POS systems, having to wait while their credit is checked. To maximize this benefit, the retailer would want representation from all institutions at which its customers banked, and would charge banks for an exclusive facility.

Operations cost savings promise a second benefit for the retailer. An in-store banking facility reduces the amount of cash the retailer must keep, limiting the cost of robbery insurance. But this cost also is reduced when the retailer simply cashes customers' checks and allows them to charge purchases, as has been the common practice. More important, a POS facility greatly reduces the cost of credit checking and bad check and credit losses.

The third benefit is reduced float and credit operations cost savings possible when a retailer can dispense with running its own credit system or with paying credit card companies for processing

would seem to lack much of a comparative advantage in developing and maintaining such systems, except as they provide information to the store's management. Supermarkets might be able to effect cost savings by combining POS technology with automated checkouts.

The tax aspects of electronic banking also should be considered. Many, and perhaps most, development costs can be deducted immediately. This can be an advantage for retailers but not for banks if the banks have no taxable income. This situation is common since banks are not required to offset against tax-free interest income the interest and other expenses incurred to obtain the funds invested. As noted below, the tax benefit may be greatest for independent companies.

The cost of space is simply the opportunity value of the space used for a banking facility. Should a POS system be combined with a computerized checkout system, this cost would

"Because retail customers benefit from banking where they shop, particularly when they shop there often and regularly, the retailer has a valuable resource it can sell—its location."

charges. A collateral benefit may be derived from improved managerial control for integrating the POS system with the retailer's information and banking records.

Finally, because retail customers benefit from banking where they shop, particularly when they shop there often and regularly, the retailer has a valuable resource it can sell—its location. Retailers such as supermarkets are in the position of renting space or access to ATM and POS systems to banks and other financial institutions or independent companies.

Costs. Two aspects of costs may be delineated, the first being the cost of the payment system. For ATMs, retailers should tend to have comparative disadvantages compared with banks, whereas POS systems tend to be within the retailers' sphere of experience. In particular, large retailers that have been heavily involved in credit systems, such as chain department stores and gasoline companies, may have valuable experience and systems that can be integrated with or adapted to POS systems. Many other retailers, however,

be zero. Indeed, to the extent that a POS system replaces check cashing, the cost could be negative.

Summary. Retailers benefit from increased customer satisfaction, operations and credit systems cost savings, improved use of funds and managerial control, and ownership of the scarce resource of location. Retailers that have experience with large credit systems probably have comparative advantages in designing, installing, and running POS systems. Retailers also can benefit from integrating a POS system with their present systems, though they are unlikely to have other comparative advantages.

Independent Companies

Independent companies can have comparative advantages in developing, installing, and maintaining ATM and POS systems. Their principal advantage is derived from economies of scale. Once they have established a few systems—have learned about the availability and capability of

hardware, developed and debugged software—they should have become aware of pitfalls and profited from mistakes. These capital investments in expertise and software can be sold at a lower price than most banks or retailers would have to incur to do the job directly.

Independent companies also may have tax advantages over banks, and possibly over retailers. If they are organized as proprietorships, partnerships, or special corporations, they can pass on their expenditures for development and similar costs as deductions against their owners' taxable income. Furthermore, independent companies are more likely to be able to compensate highly talented programmers and entrepreneurs than are banks and large retailers. Independents also have comparative advantages in risk taking and monitoring risk takers, since they can combine management and ownership.

With no barriers to entry, the market for system services should be competitive. Hence,

and banks that, by design or chance, have become expert in the systems. While some of the systems were designed and installed by groups of banks, it is doubtful that this form of organization will continue. Consortia have inherent management problems that give them a comparative disadvantage over individual banks, retailers, and independent companies. Retailers that already operate large-scale credit systems may have comparative advantages in designing and installing POS systems, particularly if they are fully integrated into the retailer's payments and accounting system. In any event, the absence of barriers to entry into this field should ensure competition among those providing systems. Consequently, the only reason that a particular bank, retailer, or independent company should want to enter and remain in this market is that its investments in experience and software and the inherent abilities of its principals give it a comparative advantage over others.

"The only reason that a particular bank, retailer, or independent company should want to enter and remain in this market is that its investments in experience and software and the inherent abilities of its principals give it a comparative advantage over others."

independent companies should earn only a competitive rate of return, which makes it even more unlikely that many retailers and most banks can beat the independents' price. An exception would be those banks and perhaps a few retailers with such considerable experience operating ATM systems that they are, in effect, more knowledgeable than specialists.

Summary. Compared with banks, independent companies suffer a comparative disadvantage in integrating ATM and POS systems into the banks' own systems. Similarly, retailers might have comparative advantages in integrating the systems with their own. Thus, independent companies need not be the preferred provider of remote payment systems.

Implications for Future Developments

Several implications about the providers and beneficiaries of remote payment systems can be drawn from the analysis. The principal providers probably will be independent companies

The sole scarce resource—access to consumers—is the retailers' possession. No matter who provides the remote banking system, the retailers will be the only ones who might earn an abnormal profit due to economic rent. In general, it will be in their interests to give all suppliers of financial services (banks and brokers, for example) access to the facilities. The only exception would be a supplier of financial services that imposed greater costs on the retailer than that retailer was willing to pay. Small financial services institutions need not be excluded if the retailer uses a variant of the two-part tariff, with a fixed charge made for inclusion in the system plus a variable charge for each transaction.

Some retailers, though, will pay banks or other providers of remote banking facilities because the benefits to the retailers exceed the benefits to the suppliers. Examples are small retailers and shopping centers that want to attract customers from other centers where consumers have ready access to banking facilities.

The major beneficiaries of remote banking systems are consumers. Access to such facilities

tends to reduce their cost of making financial transactions; however, consumers' use of such facilities also is a function of the monetary cost to them. They will favor charge-free credit over POS debits to bank accounts, except where they can save considerable time. Where consumers are charged for POS debits or ATM transactions, they will tend to avoid these facilities unless the cost of using alternatives is greater. This could occur if discounts for cash, including POS debits, or immediate charges for credit become more prevalent. In the absence of such charges, remote banking facilities will be supported primarily by banks' and retailers' operations cost savings, and will be seen as a useful tool in the competition for consumers' deposit balances and purchase of other profitable financial services. The payment of explicit interest on deposit balances would make such bundling of service less desirable, except for the fact that the individual consumer gains a tax advantage from offsetting nondeductible bank charges against taxable interest payments. Consumers would benefit if banks offset interest earned by charging service fees, thereby reducing the amount of reportable, taxable interest income.

Implications for Government Regulation

The implications for government regulation emerge clearly from our analysis. If some suppliers of remote and electronic banking facilities collude to exclude others, the antitrust statutes can be invoked. But, considering the absence of barriers to entry, it is highly questionable whether such a conspiracy could be effective anyhow. Competition among banks, other providers of financial services, retailers, and suppliers of remote and electronic banking facilities, which can include the foregoing, should prevent unfair practices and benefit consumers.

The conclusion might be clouded by the reporting of seemingly supernormal profits by successful systems developers. It might seem that these "profits" were gained from monopoly or collusive practices. Or it might appear that the owners of the systems were overcharging users if, as is likely, the developers' recorded costs were considerably below the prices charged. The numbers on which such charges might be based, however, probably would be the result of three inoffensive factors.

The first is the accounting practice of writing off (expensing) the capital costs of systems development and consumer acceptance. When the system becomes operative, the recorded periodic expenses are understated, since economic depreciation and amortization of past, written-off capital expenditures are not included. Furthermore, because assets are understated the reported rate of return on assets or equity is overstated. Hence, a currently profitable ATM or POS system may, in fact, be a negative present value project—a loss to the shareholders. While the developer of the system now owns a valuable asset, it would have been better off never having begun the project.

The effect of risk is a second factor. Remote banking and similar computer based systems are risky ventures, characterized by many failures. Even if investors were not risk averse and the expected *ex ante* (assumed beforehand) rate of return were normal, the expected *ex post* (after the fact) rate of return on such investments would be greater than normal to compensate for losses. Successful ATM, POS, and home banking systems thus should report higher-than-normal returns, even if these were measured correctly. Furthermore, if investors were averse to risk, as is generally assumed, the *ex ante* and probably the *ex post* returns would be greater than normal.

The third factor is the effect of luck and exceptional talent. Developers who are endowed with either will gain higher-than-normal returns on their ventures. The effect of luck is obvious, even if its source is not understood. Exceptional talent yields rent to its owner. When the owner of such talent also owns the firm that uses it, as is often the situation in independent companies that design and implement computer based systems, the rent is recorded as higher-than-normal company profits.

What might appear to be exceptional profits deriving from the development and running of ATM, POS, and home banking systems could more likely be the result of accounting practices, risk, luck, or rent on the exceptional talents of systems owners. The absence of barriers to entry makes the earning of actual supernormal profits as a consequence of market power very unlikely. Reported "high" profits and prices, therefore, should not be considered as evidence supporting a need for government regulation.

Firms Involved in ATM, POS, and Home Banking: A Survey

David Whitehead

Retailers, data processors, and others are bidding for a share of the payments market once dominated by bankers. Judging from this Atlanta Fed survey, the race for customers is well underway.



The acid test of whether banks are in danger of losing at least part of their traditional payments role is the degree to which nonbanking firms are successfully offering payment services. Changes in the economy and in communications technology, and the impact of interest rate deregulation on commercial banks certainly provide an opportunity for nonbanks to compete in a number of service areas. Our focus is retail payments services, leaving aside the area of corporate payments. Specifically, our survey identifies banks and nonbanks either testing or currently providing automated teller machines (ATMs), point-of-sale devices (POS), and home banking. Reviewing who the major players are and what they are engaged in gives some insight into how the market for these services is evolving.

It should be stressed that, although we endeavored to identify all firms and organizations actively involved with ATM and POS services in the retail environment or with testing home banking, our data may not be 100 percent inclusive. Our information sources included news publications, trade publications, and previous research. Furthermore, we personally contacted organizations offering these services and asked them to identify others that were involved. The result is a good overall inventory of the players and their products.

ATM and POS

Through an ATM several banking functions can be obtained that previously required personal contact at a banking site. These services normally include cash dispensing (both from demand

deposits and credit accounts), deposit taking, movement of funds among a limited number of accounts within the bank, and balance inquiries. ATMs may be located on or off the bank's premises. In a retail store the ATM is most often used as a cash dispenser only, allowing customers to obtain cash to acquire merchandise. With customer access to cash through an ATM, the retail firm may benefit from reductions in check volume, bad check losses, and time spent at the checkout counter verifying checks. Moreover, an ATM located at a retail site may attract customers into the store to take advantage of a convenient banking facility; while there the consumer also may purchase merchandise that otherwise may have been purchased elsewhere.

A POS terminal is a different animal, one that allows a consumer to initiate an automatic debit to his account and an automatic credit to the merchant's. Whereas POS does not offer the extensive array of banking services that an ATM does, it has many of the same benefits to the retailer, such as reducing checkout time and bad check losses. In addition, the retailer may reduce his cash holdings, thereby diminishing the store's attractiveness to robbers. Except for the benefit derived from attracting customers into the store to take advantage of a convenient place to make banking transactions, ATM benefits to retailers are inferior to those associated with POS; therefore, ATMs may simply be a first step as retailers move toward POS.

What types of firms are offering customer access to ATM and POS terminals today? We find that the leaders are gas stations, supermarkets, and grocery and convenience stores. Most other types of retail establishments, such as department stores and specialty shops, have yet to venture into this area. Some interesting differences exist among the retailers' approaches and, as might be expected, the largest firms are the

The author is senior financial economist and head of payments research at the Federal Reserve Bank of Atlanta.

Table 1. Gas Stations
Type of Payment System and Locations

Name	Starting Date	POS or ATM	Location
Amoco	mid 84*	POS	PA(6)
Arco	9/83	POS	CA(25)
Carioca Oil	mid 83	POS	AZ(1)
E-Z Serve	mid 82	POS	TX(4), HI(12)
Exxon	7/83	POS	TX(10)
	11/83	POS	AZ(83)
Fina	9/83	ATM	FL(6)
Gulf	1/84	POS	TX(16)
	mid 84*	POS	PA(15)
Marathon	1983	POS	OH(9)
Mobil	8/83	POS	VA(58)
	9/83	POS	CA(477)
	4/84	POS	FL(55)
OK Oil	7/83	POS	GA(20)
Shell	1983	POS	OH(11)
Standard of Ohio	mid 84*	POS	PA(10)

*Estimated date.

Source: Federal Reserve Bank of Atlanta, April 1984.

activate the transactions. Because bank debit cards are used to activate transactions, the gas companies maintain a relationship with banks that provide these services. The tests using direct debit cards are split evenly between shared and proprietary networks. (Shared systems link a number of banks together in the network, increasing the customer base by allowing card holders of different banks to use the same system.)

Who owns the POS or ATM is important because it points to the moving force behind the test. In all but two of the tests, the gas companies own the POS or ATM terminals. Quite obviously, banks are not taking the lead here.

In adopting POS the gas companies' objectives are to induce consumers to purchase full tanks of gas and to reduce costs associated with cash, check, and credit transactions. These retailers are less interested in attracting customers by presenting a convenient opportunity for them to bank when they purchase gas. Gas companies have established a broad credit card base and to some extent have developed customer loyalty. Their motives for using this new technology are thus quite different from supermarkets'.

Supermarkets

Table 3 lists the supermarkets and grocery stores currently using or testing POS or ATM. It also indicates the starting date, the type of terminal used, the state, and the number of stores involved. Supermarkets inaugurated their electronic payment systems earlier than the gas companies. Some of the players, like Kroger, Dahl's Foods, Starmarket, and Angelo's, started their experiments in the mid-1970s, but the rest are relatively recent. Again, the major supermarkets tend to be the leaders in testing or adopting the new technology.

In all, 18 supermarkets are using ATM terminals and 5 are using POS. Thus there is a clear preference for ATMs on the part of supermarkets. In offering convenient banking, supermarkets are giving their customers another reason to enter the store; they are creating the potential for additional sales while providing customers with the means of purchasing their goods.

Table 4 shows types of cards used to activate the supermarket terminals, and type of network to

bellwethers. They are most capable of identifying the advantages of ATM and POS terminals, and of funding the research and development necessary to implement their use.

Table 1 lists firms in the retail gas business using ATMs or POS, as well as the type of terminal being tested and the location and number of terminals involved. The institutions most active in testing POS and ATMs are among the industry giants—Exxon, Mobil, Gulf, Shell, and Amoco. Also note that none of these companies was involved earlier than 1982; in fact, the majority started as late as 1983-1984. It is obviously a new area of activity.

Gas stations tend to favor POS devices over ATMs. Both devices require a tremendous card base and gas stations already have large proprietary card bases. Gas stations are interested in reducing cash while facilitating the transaction. The POS serves their purpose better than does the ATM. Only one institution, Fina, is offering ATMs, testing six of them in Florida.

As Table 2 shows, most of the tests by gas companies utilize true debit cards. Only five of the tests involve POS where the sale is activated by a credit card. Mobil is sponsoring the largest test, using both the direct debit and credit debit to

Table 2. Gas Stations
Type of Card and Network

Name	Type of Card	Type of Network	Who Owns Machines
True Debit Card			
Amoco	bank debit	shared	retailer
Arco	bank debit	proprietary	retailer
E-Z Serve	bank debit	proprietary	retailer
	bank debit	shared	retailer
Exxon	bank debit	proprietary	retailer
	Exxon debit	proprietary	retailer
Gulf	bank debit	shared	retailer
Marathon	bank debit	proprietary	retailer
Mobil	bank debit & Mobil credit	shared	retailer
OK Oil	Buypass debit	proprietary	retailer
Shell	bank debit	proprietary	retailer
Standard of Ohio	bank debit	shared	bank and retailer
ATM			
Fina	bank ATM	proprietary	bank
Debit to Credit Card			
Carioca Oil	bank credit		retailer
Gulf	Gulf credit		retailer
Mobil	Mobil credit		retailer
OK Oil	bank credit		retailer
Standard of Ohio	Boron credit		bank and retailer

Source: Federal Reserve Bank of Atlanta, April 1984

Table 3. Supermarkets and Grocery Stores
Type of Payment System and Locations

Name	Starting Date	POS or ATM	Location/Stores
Albertson's	1983	ATM	FL(28)
Allied Supermarkets	1983	ATM	MI(3), OK(9)
Dahl's Foods	1975	ATM	IA(10)
Food Giant	1983	ATM	GA(6)
Food Lion Supermarkets	fall 84*	ATM	NC(150)
	future	ATM	SC, VA
Giant Food Stores	mid 84*	ATM	DC'(24)
Goodings	1983	ATM	FL(3)
Jewel Food Stores	9/81	ATM	IL(17)
Kroger	mid 70s	ATM	AR, FL, GA, IN, KY, LA, OH, TX, WV, VA(200)
Mid Atlantic Food Dealers Association	mid 84*	ATM	DC'(11)
Pantry Pride	1983	ATM	FL(24)
Pathmark Supermarkets	mid 84*	ATM	NY(5)
	future	ATM	CT, DE, NJ, PA
Publix Supermarkets	12/82	ATM	FL(225)
Randall's Food Markets	1981	ATM	TX(6)
Safeway Supermarkets	1983	ATM	CA(60)
	1983	ATM	TX(75), DC' (92)
Smitty's Supermarkets	1983	ATM	AZ(20)
Wegman's Food Markets	6/83	ATM	NY(30-40)
Winn-Dixie	12/83	ATM	FL(26)
	1983	ATM	FL(60)
Angelo's	1976	POS	MA(18)
Dahl's Foods	1981	POS	IA(1)
Hyvee Food Stores	1981	POS	IA(12)
Mid Atlantic Food Dealers Association	mid 84*	POS	DC'(12)
Starmarket	1976	POS	MA(43)

Table 4. Supermarkets and Grocery Stores
Type of Card and Network

Name	Type of Card	Type of Network	Who Owns Machines
Albertson's	bank ATM	shared	third party
Allied Supermarkets	bank ATM	shared	bank
Dahl's Foods	bank ATM	shared	retailer
Food Giant	bank ATM	proprietary	retailer
Food Lion	bank ATM	N.A.	third party
Supermarkets			
Giant Food Stores	bank ATM	shared	joint venture
Goodings	bank ATM	shared	third party
Jewel Food Stores	bank ATM	shared	retailer
Kroger	bank ATM	shared	bank
Mid Atlantic Food	bank ATM	shared	joint venture
Dealer's Association			
Pantry Pride	bank ATM	shared	third party
Pathmark Supermarkets	bank ATM	shared	joint venture
Publix Supermarkets	Publix ATM	shared	retailer
	bank ATM		
Randall's Food Markets	bank ATM	shared	bank
Safeway Supermarkets	bank ATM ¹	proprietary	third party
	bank ATM	shared	bank
Smitty's Supermarkets	bank ATM	proprietary	bank
Wegman's Food Markets	bank ATM	proprietary	retailer
Winn-Dixie	bank ATM	shared	bank
	bank ATM	shared	third party

¹ Merrill Lynch CMA cards also have access.

Source: Federal Reserve Bank of Atlanta, April 1984.

which the terminals are linked, as well as ownership of the terminals. Not surprisingly, in an overwhelming number of cases the supermarket ATMs are tied to shared systems that allow customers from numerous financial institutions to activate transactions. This arrangement tends to extend the card base, making the service more widely available to the supermarket's customers.

Terminal ownership also has the potential to produce profits. In the case of supermarkets, the ownership is split fairly evenly among banks, the supermarkets, third parties, and joint ventures among the three groups. Apparently, all players view providing electronic payments and banking-type services in supermarkets as a fertile area.

Convenience Stores

Convenience stores are similar to the supermarkets in that they favor ATMs over POS, and ownership of the equipment is split almost evenly among retailers, banks, and network operators (see Table 5 and 6). The Conna Corporation, based in Louisville, is the only convenience store we identified as using POS terminals.

Again, ATMs began to appear in convenience stores only recently. Given the problems that convenience stores have experienced with robberies, it is surprising that they are not moving more quickly to POS to reduce cash in the stores. But the ATMs may simply be an interim step for them.

Table 5. Convenience Stores
Type of Payment System and Locations

Name	Starting Date	POS or ATM	Location
Conna Corporation and a group of other convenience stores	9/82	POS	FL, IN, KY(124)
Circle K	4/83	ATM	AZ(50)
Family Mart Stores	10/83	ATM	FL(12)
Kash 'N' Karry	1/84	ATM	FL(27)
Little General	mid 84*	ATM	FL(20)
Qwik Stop	mid 84*	ATM	AK(12)
Quik Trip	3/84	ATM	KS(42)
Shop and Go	mid 84*	ATM	FL(20)
Southland Corporation	10/83	ATM	FL(26)
	mid 84*	ATM	TX, DE, PA, IL
National Convenience Stores	1983	ATM	TX(81)
U-Save	1/84	ATM	FL(10)
Xtra	1983	ATM	FL(1)

*Estimated date.

Source: Federal Reserve Bank of Atlanta, April 1984.

Table 6. Convenience Stores
Type of Card and Network

Name	Type of Card	Type of Network	Who Owns Machines
Conna Corporation and a group of convenience stores	Conna debit bank credit	proprietary	retailer
Circle K	bank ATM	shared	network
Family Mart Stores	bank ATM	shared	bank
Kash 'N' Karry	bank ATM	shared	bank
Qwik Stop	bank ATM	shared	network
Quik Trip	bank ATM	shared	retailer
Southland Corporation	bank ATM	shared	bank
National Convenience Stores	bank ATM	shared	retailer
U-Save	bank ATM	shared	bank

Source: Federal Reserve Bank of Atlanta, April 1984.

Table 7. Shared Networks

Area Covered	Name	Number of Cardholders
California	Interlink	6,814,000
Texas, Oklahoma, Louisiana, Arkansas, New Mexico	Mpact and Pulse	5,500,000
Maryland, Virginia, Washington, D.C.	Most Exchange Network	5,000,000
Florida	Honor	4,000,000
Michigan	Magic Line	2,400,000
Colorado	Plus	2,000,000
Wisconsin	Tyme	1,700,000
Oregon, Washington, Idaho, British Columbia	The Exchange	1,700,000
New York and part of Connecticut	New York regional switch	1,600,000
Georgia	Avail	1,400,000
Massachusetts	X Press 24 and MONEC	1,200,000
Minnesota	Instant Cash and Fast Bank	1,025,000
Chicago area	Money Network and Cash Station	987,000
Iowa, Illinois, Missouri, South Dakota, Nebraska	ITS	800,000
Missouri, Kentucky, Kansas, Iowa, Illinois	Bankmate	250,000

Table 8. Organizations Involved in Home Banking Projects

Organization	Project	Who Operates Switch
Banks		
Chase Manhattan Bank	Home Banking	proprietary
Chemical Bank	Pronto	proprietary
Citibank	Homebase	proprietary
First Interstate Bank of California	Day & Night Video Banking	Tymshare
Horizon Bancorp	Horizon Home Banking and Information System	CompuServe
Huntington Bank	Banc Share	CompuServe
Madison National Bank	Hometeller	proprietary
National Bank of Detroit	Video Information Provider	proprietary
Shawmut Bank of Boston	Home Banking	CompuServe
Toledo Trust	Vistabanc	proprietary
Retailers		
J. C. Penney	First Hand	Tymnet
Sears ¹	Trintex	N.A.
Communications Companies		
CBS	Venture One	The Treasurer, Inc.
Continental Telecommunications	Contelvision	proprietary
Cox Communications	Indax	Chase Manhattan
Times Mirror Videotex	Times Mirror Videotex	VideoFinancial Services
Viewdata Corporation (subsidiary of Knight-Ridder Newspapers)	Viewtron	VideoFinancial Services
Other Organizations		
ADP	Home Banking Interchange	proprietary
Keycom Electronic Publishing	Masterkey	VideoFinancial Services
Financial Interstate Services	Bank-at-Home	CompuServe
Macrotel	Macrotel	Metroteller
Shuttle Corporation	Shuttle	proprietary

¹Newly formed joint venture with CBS and IBM.
Source: Federal Reserve Bank of Atlanta, April 1984.

Shared Networks—the Key

The profitability of POS or ATMs depends on the number of transactions, consumer convenience, and, for the retailer, the ability to serve the largest segment of the market. Therefore, shared networks are obviously the key to success, and that is exactly what we are seeing in the marketplace. Table 7 lists some of the larger shared

networks and number of cardholders for each. The Interlink network in California is the largest with well over 6.5 million cardholders. A shared system is necessary to make ATM/POS work for retailers, because without a large cardholder base the system will exclude too many potential customers, reducing its efficiency and profitability. The shared system is a necessity if ATMs or POS are to thrive in a retail environment.

Home Information Systems and Videotex

Home banking may take many forms, but generally it constitutes an electronic system that allows the customer to access banking account information from his home. The consumer may be able to initiate preestablished bill payments and move funds among accounts; otherwise, it is simply a static information system. Table 8 catalogs the players involved in home banking or home information services—banks, retailers, communications companies, and system operators. The banks and retailers are some of the largest firms in their respective industries. For example, the list includes Chase Manhattan Bank, Citibank, and Chemical Bank, and, on the retail side, J.C. Penney and Sears, which is in a joint venture with CBS and IBM. These firms are testing the market, assessing the feasibility of offering home information products. The companies are major factors in their respective industries and they are at least interested enough to test the water. The early results are mixed, and their import is not clear to an outsider.

One thing, however, is quite obvious: home banking cannot stand alone. Offered in conjunction with a number of other home information services, it may in fact be viable. Table 9 shows the other types of home information services currently offered along with home banking.

The larger banks are proceeding with their tests, as are the communications firms and system operators. The retailers, on the other hand, are showing mixed interest. J.C. Penney's experiment is no longer active, but Sears is just establishing a joint venture. The communications companies remain involved. Electronically supplying information, including banking information, to the home is a new business and evidently of major interest to some of the largest companies in the country.

Table 9. Services Frequently Offered

- I. Banking
 - Balance Inquiry
 - Bill Payment
 - Funds Transfer
 - Statements
 - Rate Information
 - Stop Payments
 - Messages for Bank Services
 - Loan Applications
 - Purchase Travelers Checks
- II. Other
 - Shopping
 - News
 - Advertising & Classified Ads
 - Weather
 - Electronic Mail
 - Sports
 - Games
 - Ticketing

Source: Federal Reserve Bank of Atlanta, April 1984.

Conclusion

This brief review of who the players were in April 1984 and what they were providing in the area of retail ATM, POS, and home banking systems indicates that retailers, system operators, communications companies, vendors, and data processors all are interested in providing some financial services that have traditionally been the province of banks. The roster of players is rapidly changing. The relevant question then seems to be: "Are banks in danger of losing at least a part of their traditional role in the payments area?" The race is on!

ATM and POS

A Retailer's Perspective on ATM and POS Systems

Craig Gieler

Today's sophisticated consumers desire non-traditional financial products that cater to their convenience. But banks and retailers who rely on electronic technology to meet this demand while controlling their own costs are most likely to prosper.



The difference between winners and losers in the marketplace, between their survival and failure, lies in satisfying consumer wants. In reviewing trends in financial services it is helpful to examine consumer demands, the key to the future structure of the financial services industry and electronic funds transfer systems.

The financial services industry has begun offering new products and services to meet the changing needs of consumers. Inflation and its consequences have increased consumer awareness of higher yielding financial assets, the desirability of more liquidity to reduce risk, and the need to insure their future financial security. Bankers and managers of other types of financial institutions have responded by introducing new products and services that have indeed changed the marketplace. Lines of distinction between the services provided by banks, savings institutions, security dealers, credit unions, insurance companies, and even retailers have begun to fade. Industry participants are scrambling to meet consumers' needs for flexibility, diversity, value, and choice. Even businesses once outside the whole spectrum of financial services have found it profitable to become a part of the industry.

Never have financial institutions faced a more dynamic period of change and readjustment than exists today. Operating systems, marketing strategies, product services, and pricing all are being challenged by businesses unhindered by the rules and regulations that restrict the banking community. Organizations such as Merrill Lynch and American Express have entered the once invulnerable banker's domain where they compete head to head in adding innovative products and services.

One of the best examples of a retailer squarely involved in the financial services area is, of course, Sears, Roebuck. Its capabilities have been enhanced significantly by the acquisition of the Coldwell Banker real estate organization and Allstate Insurance. The chairman of Sears recently said that every Sears store will soon be a financial service center—and quite frankly, they are capable of making that happen.

Even food retailers have entered the financial services marketplace. The Kroger Company and

The author is former director of financial services for the Kroger Company. Currently he is vice president of administration for the Williams Group of Stone Mountain, Georgia. The Williams Group is a major shareholder in Heritage Bank.

Capital Holding Corporation, a Louisville insurance company, have opened 15 financial centers in Ohio, Alabama, and Texas. A professional staff of licensed personnel now offers shoppers in retail food stores a full range of money-market funds, mutual funds, insurance products, and even banking services.

Underlying the radical change in financial service delivery is the growing consumer acceptance of various applications of electronic data processing and telecommunications, often categorized as EFT (electronic funds transfer). Electronic banking is one area of EFT that has grown significantly in recent years, causing a marked change in the relationship between retailers and financial institutions.

Many retailers, such as Publix Supermarkets and J. C. Penney, realized that they, too, can become providers of services in this highly fragmented financial services marketplace. Retailers perceive some common needs in the area of EFT. They are looking at payment systems as a way of augmenting market share and creating additional

changing role of retailers in EFT we must first understand their business capabilities.

Publix Supermarkets

Retailers have an in-depth knowledge of service delivery, which in the retail food business is a prerequisite to simple survival. Retailers also have access to the same technology as bankers, and are very familiar with how to utilize it. Energy systems, time and attendance, order entry for warehouse and direct store deliveries, security monitoring, inventory control, electronic mail, item pricing and checkouts, inventory management, and sales reporting currently involve significant computer opportunities.

One of the best examples of a retailer moving aggressively into the EFT financial services marketplace is Publix, a retail food chain. A typical food retailer handles over 10,000 checks a month in a single store, with total dollar amounts equal to their sales. Food retailers have thus found it

“Electronic banking is one area of EFT that has grown significantly in recent years, causing a marked change in the relationship between retailers and financial institutions.”

sources of income. Especially in 1983 and 1984, retailers recognized that the financial community can generate fee income by providing these services to customers. The displacement of checks by EFT point-of-sale transactions is a good example of low cost payment alternatives; but to make the electronic alternative economically feasible for the retailer, universal access to the payment system must be ensured. Many retailers feel that the best way to do so is for them to become actively involved in making universal access to the payment system possible.

The retailer's drive to improve earnings through EFT is fueled by the need to stay competitive. Retailers wish to offer services that build market shares while at the same time controlling business costs. With the costs of operating systems and handling personnel requirements continuing to grow, retailers have looked at all aspects of electronics and tried to integrate them into their overall operations. In fact, to understand the

necessary to service some of the banking needs of their customers. Publix perceived this role in the early 1970s and capitalized on it by serving customers of specific banks at supermarket offices. They worked out such an arrangement with Hollywood Federal Savings and Loan, accepting their customers' deposits and allowing them to make large cash withdrawals. The bank paid Publix a fee for this service. By the late 1970s both Hollywood Federal and Publix recognized that serving customers through electronically preauthorized withdrawal voucher devices, rather than doing the whole transaction manually, saved on supermarket labor costs.

In 1982, Publix decided that ATM and POS technology had developed to the point where they could serve all their customers electronically through an EFT switch. They proceeded to sign up banks that would participate in Publix Teller. Its numerous advantages were clear to Howard Jenkins, the founder of Publix Teller. The network

gave him an edge on competitors and helped to generate sales; it presented an opportunity to earn fee income and to reduce the cost of handling checks; and network ownership made it possible to profit from transaction fees and control the quality and future of the network.

Vendors encouraged Publix to go ahead with the plan, and NCR has actively participated in the overall program. Currently, Publix has placed orders with NCR for over 250 ATMs and 3,500 EFT point-of-sale devices at a cost exceeding \$10 million. It is important to remember that the players involved are not only retailers, but suppliers—the same suppliers that serve the banking community.

The Publix Teller network has signed up over 200 institutions since the program's inception.

inability to negotiate a pass-through of costs to food retailers, and generally a belief that providing this service lacked potential.

The Jewel Money Center system is available now in 150 Chicago area Jewel Stores. Each store has three remote service units, terminals where customers can get checks approved or use their Money Center cards to make deposits or withdrawals and to transfer funds between accounts. To withdraw cash from a checking account the Jewel shopper presses the "withdrawal from account" key on the Concord terminal, inserts a two-part withdrawal voucher, inserts a bank card, and enters a personal identification number. The message prints out on a form that the customer takes to the office. There the customer's form is matched directly with information from the system

"Retailers are increasingly becoming involved as providers of standardized payment systems to ensure that the right types of services are offered to retail food stores, drug stores, or other outlets."

Member institutions pay \$25,000 for a direct connection to Publix, or \$5,000 to link with Publix through processors like SATM. Members are charged 40 cents for an ATM withdrawal.

Jewel Food Stores

Publix's early involvement in financial network design was a prelude to many of today's activities. Jewel Food Stores is another food retailer moving rapidly into networking with the introduction of the YES System in Chicago. The concept of providing Jewel customers with a convenient place to do their banking was the outgrowth of the check approval system jointly developed by Jewel and First National Bank of Chicago.

The check authorization system was turned over to the supplier of its terminals, Concord Computing, in the late 1970s. During this period the banking community abandoned its investment in EFT at the point of sale—that is, check authorization and check guarantee. First Atlanta, Citibank, Banc One, and Security Pacific sold or wrote off their investments in check authorization and guarantee systems owing to such factors as high equipment costs, system inefficiencies, an

and a verification takes place to ensure that the form has not been lost or stolen.

What is significant here is that *all* major Chicago banks are participating in the system, including the Money Network, Cash Station, and Jewel's YES System. The network, or switch operation, is now owned by Concord, Jewel, and area financial institutions.

Food retailers such as Safeway, Luckie, Supermarkets General, and Giant also are participating in the development of EFT networks owned and operated by third-party service suppliers such as NTSI, ADP, Cash-X, and NCR. More such networks are coming in the near future. It should also be mentioned that these service suppliers plan to expand the services they provide to retailers; that is, aside from payment services they will offer time and attendance, electronic mail, and store security as well. This full array of products excites retailers, because it means that the same electronic lines that cover payment information can increase their ability to serve their customers and reduce their operating expenses through improved communication.

Retailers are increasingly becoming involved as providers of standardized payment systems to ensure that the right types of services are offered

to retail food stores, drug stores, or other outlets. Another key motivation is that customers come in all sizes and shapes, and retailers—that is, the oil industry, food retailers, and general merchandisers—are serving the full gamut of the marketplace. A different strategy exists within each market. They neither need nor desire to focus on one particular economic group, but desire instead to provide these services to everyone, which is the essence of retail strategy.

Bank Debit Cards

A logical extension of the use of networks to complete banking transactions is the use of bank

During the last 12 months, POS experiments have begun in many locations throughout the United States. One of the earliest tests was conducted in Cincinnati by the Kroger Company, NCR, and Central Trust. The basic purpose of the test was to determine whether customers would use debit cards in retail locations.

To initiate a payment the customer presses the “direct payment” key, inserts an Owl Card, enters a personal identification number, and in return receives a voucher that has all the necessary information. After groceries have been purchased, the customer presents this direct payment voucher to the cashier, who keys in the information and records the unique authorization number. The cashier then puts the voucher through a slip printer and gets back a form that meets all the

“A logical extension of the use of networks to complete banking transactions is the use of bank debit cards at the point of sale (POS) by oil and retail food companies.”

debit cards at the point of sale (POS) by oil and retail food companies. As recent tests indicate, implementing point-of-sale systems is complex, for it involves coordination between merchants and banks and support from equipment suppliers and network managers. For POS or direct debit of payment to succeed, financial institutions must deal with transactions in this area effectively. That requires productive interaction with the retailer, communication support companies, and third-party operators. To the food retailer it means better utilization of sophisticated electronic scanning equipment now employed in his front-end operations. Let us take a brief look at that technology.

Electronic scanner checkout systems provide faster checkout, greater accuracy, and more innovative receipts while reducing the operating costs to food retailers. Since 1982 the number of scanning systems has increased exponentially to over 7,500 full store installations at a sizable cost of between \$120,000 and \$170,000 per store. Use of this investment to complete electronic payment transactions has obvious value to the food retailer, who must constantly enhance his competitiveness by offering customers payment choices at reduced processing costs.

voucher requirements to comply with the Federal Reserve's Regulation E. The customer also receives a receipt of purchase.

From the customer's standpoint, research indicates that convenience is the primary determinant for system acceptance. In the tests conducted in Cincinnati, one out of every five proprietary Owl Card holders converted from check writing to direct debits. This result is significant, because it means that opportunities exist to progress into this area without investing significant marketing dollars.

The two-step process in direct payment has appeal to some food retailers who are looking for ways to speed up flow through the checkout lane. This particular system proved very effective within the Cincinnati market where consumers were accustomed to preauthorizing checks before completing their transactions. We can anticipate different configurations for the payment process depending on conditions in the marketplace. Another design, whereby the whole transaction is carried out in the checkout lane, also is being tested in Cincinnati, and in Iowa, and will be used soon in various parts of Florida.

From the food retailer's point of view, direct payment can save considerable labor and time.

Labor requirements for paper check authorization, handling, and processing can be substantial. Direct debit reduces time at the checkout counter and allows faster access to funds and cash management. Direct payment also is a natural extension of the current technology available in many organizations, including financial institutions.

Oil Companies and POS

As we look at the over 40 oil companies, convenience stores, general merchandisers, and food retailers that have announced plans to move ahead in this area, it is fair to say that the oil industry has led the way in testing POS. In fact, Mobil Oil currently is entering into nationwide agreements to supply its customers with EFT services at the point of sale. Arco, Exxon, Fina, Gulf, Mobil, Phillips, and Shell have all announced plans to move ahead with either electronic credit authorization systems or debit systems at their gas stations.

Petroleum retailers' objectives in moving into EFT at the point of sale tend to vary by organization, but they do share some goals. Reducing or eliminating credit card sales and displacing charges to gasoline station credit accounts is an important

should be fast (between 10 and 12 seconds), very reliable, and customized to meet specific needs. These criteria especially are crucial when the oil industry or the food retailing industry attempts to complete transactions right at the pump or checkout rather than going to pre-authorization. Although much of the technology is in place, many ATM networks are ill-equipped to move into the retail arena without substantial changes in their operations.

What can we expect in the future marketplace? There are some telling indicators of changes in direction. Point-of-sale systems will be phased in, with automated teller machines and cash dispensers as the first items that will be used in many retail locations. Even today approximately 3,000 ATMs are located in or near supermarkets, and according to the Food Market Institute, 81 percent of supermarket ATMs belong to shared EFT networks. These numbers underscore retailers' insistence on greater customer acceptance of ATMs. In Florida, ATMs have begun to explode on the retail scene: over 400 ATMs are installed in Publix, Winn-Dixie, Albertson, and Food Fair Stores, and that number is expected to increase significantly.

ATMs cut costs for both the retailer and the bank. They accelerate checkout time, increase

"Point-of-sale systems will be phased in, with automated teller machines and cash dispensers as the first items that will be used in many retail locations."

consideration for all. Many proprietary oil card sales generate as much as a 45-day average float per sale, and the customer is rarely charged interest.

Converting cash customers to debit cards is a priority item for petroleum retailers. Improving market share through greater market penetration is also important, as is adding additional service.

Future Prospects

Authorization requirements for completing transactions at retail food stores or gas stations differ from those typically met by ATM networks. That technology needs to be upgraded. Systems

traffic, reduce cash on hand, and provide customers with information, all of which benefit retailers. Retailers benefit on the income side from fees generated by renting the space for ATM locations. Banks benefit because ATMs provide convenience to their customers, offer deposit-taking opportunities, reduce teller and back room costs, and diminish the need for branch construction. And finally, possibilities for other impressive cost savings are moving both the retail community and the banking community further into automation. ATM availability in retail food stores conditions the customer to the use of cards and is therefore a logical step in moving to POS in the retail environment. The only real advantage that ATMs have over a POS system is

the customer's convenience in obtaining account balance information. For this reason every POS test has either incorporated a preauthorized facility or provided the customer with a means of obtaining his account balance beforehand.

One of the obvious reasons that sharing is becoming a trend is that all these devices are costly. Sharing is going to be crucial for the overall development of EFT at the point of sale. Development of universal access cards such as the VISA Electron Card shows where we are headed. The number of shared networks is continuing to grow, and the number of transactions going through the shared networks is on the increase as well.

One of the big questions that we need to address is how fees should be divided equitably among retailers, financial institutions, and third parties. The industry is still grappling with this question. Capital providers and those who invest in the equipment are surely going to look for a return on their investments. The long-term objective in the POS area is to look for some way of generating a return on the equipment being placed in a retail location by either the retailer, financial institution, or others.

Another issue to consider is that bankers are beginning to look like retailers, and much that will happen over the next five years will entail tremendous fragmentation within the banking industry. Control that bankers believe they can exert is no longer possible. Savings and loan associations and small financial institutions are going to be developing their own niches, attempting to find ways to be more successful. They will seek opportunities to align themselves with retailers, which may be their only means to survive.

As deregulation of the banking industry unfolds, restricted market entry will give way to easy market entry, decreasing market share and reducing vertical integration within the banking industry. And as the number of competitors entering the marketplace rises, it will become increasingly difficult to differentiate products. Profit margins will fall as customers begin to view these financial products and services as basic commodities, much like what food retailers are dealing with today.

With lines between products blurred, the financial services marketplace will require more locations to satisfy the desires of consumers. And finally, as the requirements to expand and provide alternative delivery systems grow, the cost of operations will rise, prompting these organizations to consolidate and merge. The banking community is experiencing this today; the retail community was similarly reshaped in the 1940s and 1950s. Deregulation will encourage marriages that have never occurred before.

Whereas Sears can be considered a major financial institution as well as being a retailer, organizations like Dime Savings and Hollywood Federal Savings will strenuously attempt to differentiate themselves from other bankers. They will create vast opportunities for retailers to interact with banks to provide entirely new services. Both retailers and financial institutions will have to concentrate on ways to offer systems and products to their customers in the most efficient manner possible.


The need for integrating marketing information systems and capital availability will have a great impact on the direction EFT takes during the next five to ten years, because there will be product differentiation in the retail arena as well as in the financial arena. Particular emphasis will be placed on coordinating these efforts through joint operations among vendors, retailers, and financial institutions. The real questions are, how will the fragmented banking community react to these changes in the next 10 years, and will financial institutions as we know them today even exist in 10 years? Clearly, they will be the partners of retailers in many future endeavors.

The change that has taken place in the banking industry over the last few years will continue to accelerate. The industry is challenged by a consumer who is growing in sophistication and who demands competitively priced products and services. The businesses that will flourish in the retail banking community in the 1980s and 1990s will be those that deliver new, nontraditional products and services more conveniently and cost effectively to the consumer. The challenge and opportunity of doing so is what we in the industry need to address today.

A Banker's View of the Payments Area

Gordon Oliver

Bankers enjoy the advantage of a customer base familiar with today's payment system. But, an Atlanta banker warns, the industry must invest in new technology if it is to remain central in tomorrow's system.



The focus of much discussion these days is primarily on ATM and point-of-sale (POS) system developments. But the payment system has been defined quite broadly by the Association of Reserve City Bankers as "the means employed to facilitate the transfer of value from one owner to another." Today, that system includes currency, checks, bankcards, and other retail-oriented payment systems such as ATMs, POS, debit cards, and home banking.

Banking originated as a system for facilitating transactions. The transactions media changed over time, from shells to gold to currency and coinage, and by the 1930s local clearing mechanisms had developed. Until the 1960s, the payment system remained essentially unchanged except for the introduction of Telex. In the mid-1960s and 1970s, credit cards, electronic transfer, ATMs, and microcomputers came into their own.

The banking industry used to promote the value of paper checks as the prime payment system. The growth of that paper based system has forced banks to invest in and develop highly complex, sophisticated, and efficient processing, clearing, and settlement systems. In the case of the C&S Bank, it has been estimated that it probably would cost \$50 million to duplicate our technology and systems capability in cash management and wire services, ACH, and check collection. We are continuing to invest in ATMs, plastic cards, and switching capability.

The payment system is by definition the core of commercial bank business. Historically, the primary motivation of banks was the gathering of deposits to fund lending operations. But slowly

and steadily, the role of banks has moved from **intermediators to transactors.**

Issues and Needs in the Nation's Payments Systems, a 1982 study for the Association of Reserve City Bankers, highlighted the principal policy issues confronting bankers.

- The payment system is efficient and operationally sound and appears viable for the foreseeable future.
- Rapid increases in turnover of balances, together with widening access to payment system facilities, pose potential large financial risks to banks.
- The historic role of banks in the payment system is changing. Traditionally they have been provided a role as the holder of deposits. Now, their role as transactors in the payment system is growing while their role as financial intermediaries is eroding.
- The payment system has become a major factor in shifting competitive relationships among banks and between banks and their nonbank competitors.
- Laws and regulations affecting banking and the payment system do not reflect technical and market realities, and permit competitors to benefit at the expense of banks.
- Events are prompting a reassessment of the role of the Federal Reserve in the payment system with potentially serious implications for the banks.

Over many years the system changed relatively little, except to grow and to develop technology to handle that growth efficiently. But the rate of change today is accelerating exponentially. Even so, the system will only slowly evolve into an electronic money transfer system, because the public will be reluctant to abandon a payment system that is reliable and efficient.

Evidence of slow consumer acceptance is seen in the use of ATMs. After some 14 years of good,

The author is general vice president of the community banking group, C&S National Bank, Atlanta, Georgia and chairman of the board for the Avail network.

hard marketing by the banking industry, only about one-third of all bank customers ever use an ATM. ATMs are an expensive extension of service convenience, and we have never noted any movement of market share because of ATMs. Although C&S expects that check volume will continue to grow, probably through the next decade, we anticipate that the pace of change to EFT will increase and so we must continue to invest in that development.

The banking industry has the advantage of a customer base committed to a system that is as comfortable as an old shoe. But old shoes wear out and must be replaced. C&S Bank, and the industry in general, is committed to making the investment necessary to be leaders in the evolving system. For example, C&S was involved early in the Avail ATM sharing network. An ATM system is very expensive, with the annual cost of supporting one machine ranging from \$30,000 to \$60,000. Simple arithmetic indicates that the proliferation of proprietary systems decreases productivity and adds immensely to costs.

To date there are 117 financial institutions with more than 600 ATMs participating in the Avail network, which is scheduled to go on-line September 30, 1984. Moreover, 85 percent of the debit card holders in the Georgia market are members of Avail. C&S Bank and Trust Company Bank were the founding partners of the Avail

network. Ten other financial institutions (six commercial banks, three savings and loan associations, and one credit union) each paid \$600,000 to join the system as funding members. The funding members jointly own the company which operates the interchange, and C&S operates the switch. The financial institutions must pay a yearly fee dependent upon the type of membership (funding member, charter member, or participating member) and their asset size. Transaction fees are also charged to reward those financial institutions with ATMs on the system. For example, if a Trust Company customer uses an ATM owned by C&S, Trust Company must pay a fee which is split between C&S and the Avail network.

Point-of-sale systems are evolving. Numerous pilot programs are going on around the country, but there is no evidence of widespread use. We think that POS will continue to develop at only a gradual pace. The Avail network today presents the means and system to formulate standards, and the mechanism to provide service in a logical, responsive, and responsible fashion.

Retail banking is more exciting now than ever before. There are plenty of challenges. Technology is exploding, but technology does not dictate what the consuming public wants. Old habits are hard to change.

EFT in Florida: A Banker's Perspective

David Strickland

Florida has emerged as a major testing ground for banks' electronic funds transfer activities, according to a leader in the Honor System, who suggests what the state's experience may herald for EFT nationwide.



EFT activities in Florida are creating widespread interest. Accounts of just what is happening in the state vary according to the source. I would like to discuss Barnett Banks' experience in what is becoming one of the key electronic banking markets. As of this autumn POS will be a major reality in Florida, with over 300 retail locations where 4.25 million cardholders will be able to buy goods with debit cards.

This development is important to all Florida banks, and especially to Barnett. Barnett Banks of Florida is the state's largest financial organization; with \$11 billion in assets, it is number two in the southern United States. Much of our growth has come from retail, or consumer banking. Through 305 branches, over a million people do business with Barnett, giving the bank the largest customer base in the state.

Barnett was somewhat late entering the ATM environment but it caught up rapidly. Today Barnett has about \$9 million invested in the electronic payment system, in terms of its 242 ATMs and electronic switch hardware and software. We have invested so heavily because we want to maintain and increase our market position. Our approach to doing so is the same as a retailer's: provide the utmost convenience and service quality to customers. The evolving payment systems will assist banks in serving customers well, through vehicles such as ATMs, POS, and perhaps home banking.

On the corporate banking side, Barnett's position is to increase market penetration by actively providing a complete array of services

and helping companies to enter the electronic payments environment. We view POS systems as a new area of corporate services. In talking with companies that do business in Florida, we find that most know less about electronic payments than do Kroger or Publix. In fact, the vast majority are looking to banks to provide information and services to them. Thus, rather than a reduced role for banks in the payment system, we see a changing one.

Retailers must come to agree that banks are to be an active rather than passive POS participant. The equipment and switch vendors have the hardware and software, and they certainly have a good salesforce. While banks do not always have the systems, they do have the account relationships, and retailers traditionally have gone to the banks anytime they ventured into a new finance-related service. We must create and demonstrate a value for the retailers to come to us now.

Through Honor, Barnett Banks and others are trying to educate ourselves so that we can educate others, and to create that value for retailers. The creation of the Honor System was a big step in our educational process. The Honor System in Florida is a shared ATM network currently linking each Honor member's off-bank site ATMs. About 4.5 million cardholders are in the Honor System; over 1,800 ATMs are in the state. As of April 1984 member banks' proprietary ATMs, those at branch sites, can be linked directly to the Honor System. In effect, nearly all the proprietary ATMs have now become Honor ATMs. What this will do to the average number of ATM transactions per location is easy to predict. In the short term, Florida may be saturated with ATMs. People are going to make only so many transactions through an ATM, just as the number of times

**The author is senior vice president, Barnett Banks of Florida, Jacksonville. The bank is among the ten original funding members of the Florida Interchange Group, which owns and operates the Honor System.*

Bankers Ask "Who Should Pay?"

In discussion following my presentation, Gordon Oliver of Citizens and Southern Bank mentioned that there is a lot of confusion over the possible benefits in differential pricing between electronic and paper access to funds. He firmly believes that banks have the paper processing business down to a science, making it relatively inexpensive for them to process checks. He is unconvinced, therefore, that electronic movement of funds is cheaper for banks than a paper check process.

Oliver points to productivity as a big problem for banks. As everyone is aware, bank costs have increased substantially because of deregulation. Banks pay for many more balances than they used to, and at much higher rates. This leaves them no choice but to unbundle services, pricing on an explicit basis and allowing consumer costs to rise significantly.

The big problem, stressed by Oliver, is who should pay the cost of the new services. Bankers think they should receive a fee and retailers think just the reverse. As an example, it was mentioned earlier that Kroger was able to earn good fee income (renting space) from installing ATMs. Oliver doubted that this could continue. In fact, he believes that such situations are likely to project us into the point-of-sale environment quicker, because POS devices are cheaper. Banks cannot afford to put ATMs in all the 7-11 stores in Georgia, for instance, when they already have more ATM capacity than is needed to handle the transactions. Having all those additional machines renders the whole system less productive. If adding ATMs yields little further benefit to the banks, surely they will not undertake the capital expense. The question of who bears the cost gets back to the question of who benefits and in what ways. If the retailer benefits through reduced cost then you expect the retailer to be willing to pick up some of that cost.

But to my way of thinking, in the long run we are not talking about offsetting costs for the new system. What I hope we are talking about is a system that eventually reduces costs for everybody involved. Consequently, what we should do is to differentiate the cost of the paper system from the cost of the electronic system. If electronics, POS, and ATMs are less expensive, then banks will be creating incentives for consumers to use electronics simply by charging more for check transactions than for electronic transactions. A prerequisite to success here is that there be equal opportunity access for both systems. If the electronic medium is as accessible as the check medium, and you differentiate cost, perhaps you will wind up with the lowest overall cost for the entire payment system.

Banks cannot be the only players offering incentives for electronic payments, however. Gasoline retailers have pioneered cash discounts and could carry over the concept to debit card transactions. Thus, when a customer uses a debit card at a gasoline station, he will get a 4 cent discount per gallon. Some gasoline retailers are taking the first step forward into this area, and I think other retailers will begin to follow their lead, helping to differentiate the cost of paper and electronics. After all, the retailer gains from lower cost and increased funds availability by shifting to POS.

If electronic payments provide increased convenience for the consumer, then he will be willing to pay something. But the consumer is not willing to pay the entire cost of a new system in which the retailer and the bank will also benefit. Banks, retailers, and consumers alike will share some of the cost, just as every group will realize the long-term benefits.

they will cash a check is finite. Many ATM owners will be hard-pressed to reach a break-even point, because the initial cost is dwarfed by the ongoing expenses and per transactions revenue is fixed by Honor. Annual expense in some cases is greater than initial purchase price.

We believe that the ATM is an interim device for most retailers, and that is why we have decided to pursue the point-of-sale, direct debit, and credit applications of non-ATM devices for the retail trade industry. The most immediate and beneficial impact of POS is the reduction in the cost of credit card transactions. The authorization cost to retailers for customers using credit cards may be reduced as much as one and a half percent through the use of POS. Such cost reductions help retailers to offset

equipment costs and are their chief impetus in moving towards POS. Accepting debit cards seems to be a secondary consideration. With the terminals that are coming out now, a retailer can become part of a debit and credit card POS network for about \$500 to \$1,000 for the terminal and something between 15 and 30 cents a transaction. These prices open up POS benefits not just to the large companies, but to the medium and small ones as well.

Of course, the leaders in POS have been primarily the large companies that are willing to undertake the research and development expense. One of those leaders is Mobil Oil Corporation, with which Barnett has signed an agreement to provide direct point-of-sale applications at over 200 Florida stations. Interestingly, through this endeavor with Mobil we

have discovered that banks are not nearly so far along in developing POS as we had thought. The Honor System was developed by bankers well acquainted with ATM technology, and it functions as a superb ATM shared network. However, many questions are encountered in developing a point-of-sale network that are not raised with an ATM.

For example, what sort of daily transaction amount for an individual consumer do you set in a POS environment? With ATMs the bank allows consumers to take as much cash as it sees fit in a simple bank-customer transaction. In a point-of-sale world with a \$200 daily limit, what do you do if on a Friday you shop for \$120 worth of groceries, proceed to fill up the car for \$30, and then decide you want \$100 cash from the ATM for a trip that weekend? Perhaps banks should set a uniform limit for ATMs and have a different limit for POS, or maybe banks should just increase the limit overall to \$1,000 a customer. Then banks are faced with a security issue.

Another question is, what happens when the system goes down? Point-of-sale direct debit must be on-line, unlike ATMs. In an on-line environment, the service had better be up 99-plus percent of the time or else both retailer and consumer will get angry. The fact is that as long as there is a shared network, as long as there are over 100 banks, each of which has some sort of computer to process those transactions, the risk is always present that one component will fail. Not much thought has been given to the absolute necessity of a simple and efficient backup for off-line POS debit transactions.

What we have had to do is create a paper backup system that allows us to take information from the consumer and create a document that is going to be paid. That might sound easy, but take a look at your debit card. What information can you read off the debit card that tells you anything about your checking account? Not many people could even determine what their checking account number is by looking at their debit cards. When you consider that over 160 institutions are members of Honor, think of the plight of the poor merchant. Many debit cards look like credit cards, and many fail to identify the specific issuing bank. The merchant can

become quite confused with potentially hundreds of acceptable and unacceptable payment methods for POS.

A third POS issue concerns account access. Should we offer the consumer the option of using a savings or checking account to pay at the point of sale? If we offer a savings option, are all types of savings accounts eligible? What about drawing on a credit account via a debit card? Seemingly there will have to be some compromise between consumer options and computer systems so that a POS transaction can remain a fast electronic transaction. Clearly, a great deal more is involved than just converting an ATM system to a POS system.

The new electronic environment has already created some changes in consumer banking in Florida. The most obvious is that new branches are smaller. As we establish more outlets for consumers to access banking services, we have less need for a 4,000 square foot branch. Today, Barnett's average branch is 2,400 square feet and this may shrink even more.

Some institutions are thinking about separating the branch into two parts. One would be a highly automated transaction area, with relatively few tellers but several ATMs. The other side of the office might be reserved for high-profit services—the consulting, investment, and credit services that require more personal, private banking. A bank could design the facility so the two streams of traffic do not intermingle and the transactions for both sets of customers can be completed most efficiently. On the corporate side, some banks are beginning to combine under a single merchant or retailer umbrella service offerings that used to be sold and administered by separate parts of the organization. Additional changes in the way banks provide services will depend upon how rapidly the electronic environment takes hold among consumers and retailers.

If we correctly package our traditional products and utilize new delivery vehicles that are becoming available, banks may have at least as large a role—if a somewhat different one—in the future payment system. By combining in networks and taking a leadership role in educating both the consumer and the retailer, banks can and will maintain their position in the payment system. But this will require an active participation by all the players in all the issues.

Economic Review

1983

FEBRUARY

SPECIAL ISSUE:

The Southeast in 1983

The Southeast in 1982: An Overview

Florida: Poised for a Surge

Georgia: Rebuilding in 1983

Tennessee: Awaiting Recovery
in the Industrial Heartland

Louisiana: Thermostat Setting Lower

Mississippi: Construction and
Consumer Spending Are Keys to Recovery

North Carolina: Diversification Slowed
by Recession

South Carolina: In Transition, But to What?

MAY

SPECIAL ISSUE:

Interstate Banking: Taking Inventory

The Financial Conglomerates

Regional Forces for Interstate Banking

Alternative Avenues to
Interstate Banking

Interstate Expansion and Bank Costs

Will Capital Adequacy Restrictions
Slow the Development
of Interstate Banking?

Technology and Interstate Banking

The Canadian Experience with
Nationwide Banking

Trade Groups Choose Sides

AUGUST

SPECIAL ISSUE:

Displacing the Check

Framework for Change

Three Phases of Personal
Check Displacement

Estimates of Personal
Payments, 1979-1994

Commercial Check
Volume, 1979-1994

NOVEMBER

SPECIAL ISSUE:

Commercial Bank Surveillance

Concepts of Financial Monitoring

Commercial Bank Failure
Prediction Models

The Relevance of Peer Groups in
Early Warning Analysis

Tracking Banks from Afar:
A Risk Monitoring System

Sensitivity, Art and the Shifting Ground of
Bank Monitoring

Capital and Capital Standards

A Review of Bank Capital and Its Adequacy

Full Disclosure: The SEC's Requirements Relating
to Bank Holding Companies

Disclosure and Market Discipline:
Issues and Evidence

Disclosure Needs of Financial Analysts: Large
Bank Holding Companies

Special Issues:

1984

FEBRUARY

SPECIAL ISSUE:

The Southeast in 1984

The Southeast in 1982: An Overview

Florida: Expecting a Boom

Georgia: A Healthy Economy
Looks for Solid Growth

Tennessee: Continuing the Momentum
of Recovery

Louisiana: Hopes Ride on World Trade,
Energy and World's Fair

Alabama: Prospects Brighten for 1984

Mississippi: State in Transition

North Carolina: Impressive Growth,
Long-Term Questions

South Carolina: A Strong Recovery,
But Problems Remain

MAY

SPECIAL ISSUE:

Bank Product Deregulation

Risk Considerations in
Deregulating Bank Activities

Bank Product Deregulation:
Some Antitrust Tradeoffs

Consumer Demand for
Product Deregulation

Business and Bank Reactions
to New Securities Powers

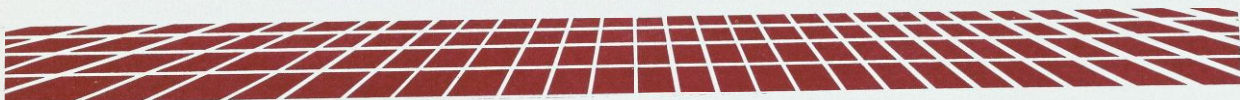
Investment Banking:
Commercial Banks Inroads

Back Issues Available

POS Is on Its Way

Ronald Osterberg

Will bankers pay retailers in tomorrow's point-of-sale or electronic funds transfer systems, or will retailers pay bankers? Here's a look at some of the issues involved.



According to the Antietam Group's estimates, there will be between 10 and 20 billion point-of-sale/electronic funds transfer (POS/EFT) transactions per year by 1992. To put this into perspective, the low number, 10 billion, is greater than the number of bank credit card transactions today, even when retail charge card and all ATM transactions are included. The foremost reason why POS/EFT will surge so quickly—and this depends upon whether you think 1992 is short-term or long-term—is deregulation of the banking industry.

The history of other industries shows several distinct aftereffects of deregulation. The first aftereffect is a greater performance variability among companies within an industry. This means there will be winners and losers, as has been the obvious case in the airlines industry. A second aftereffect is that profitable products come under increased pricing pressures and thus may not be quite so profitable as before. Generally, new but related products are introduced in response to the pressure (for example, innovations in the brokerage industry). A further consequence of the squeeze on profits is that companies often are inspired to replace labor with capital expenses, and here we see one of the major reasons behind the growth of ATMs. The impact of banking deregulation is so important to EFT systems that Susan Skinner, an analyst with Donaldson, Lufkin, Jenrette, set July 1, 1978—the date deregulation was begun—as the starting date for the recent rapid growth in ATM installations.

POS/EFT is in many ways a different matter from ATMs. Check processing is already a capital-intensive operation, and so there simply is

not very much labor to displace. A good omen for POS/EFT, however, is consumer convenience. The past shows that consumers will embrace any new convenience service, assuming that the cost is reasonable. But consumers dislike big changes, and they object to feeling as if they are taking a test when they use a service, as is illustrated by the relatively low ATM acceptance rate. Perhaps those consumers who have resisted using ATMs feel that the machines are too intricate and they are afraid of making mistakes.

To attract consumers, POS/EFT should be simple to use and parallel to accustomed procedures. Some of the emerging POS/EFT systems meet these criteria exactly. The procedures are much the same as for writing checks or charging to credit cards, except they are faster. In fact, using a debit card at the point of sale might end up being easier for many customers to accept than using ATMs. The increase in convenient and easy-to-use services will spur POS/EFT activity.

Another and possibly the most important reason why POS/EFT is imminent is reduced costs. Had deregulation come along about 10 years sooner, technology would have been unable to respond well. POS/EFT was only a dream in the 1960s and ATMs were far too expensive to save money for anyone. Whether ATMs save money even today is questionable, but they surely will within the next few years. The inescapable fact is that the cost of operating ATMs is going down while the costs of human tellers and buildings continue to rise. A break-even point will soon occur.

POS/EFT Defined

Just what is POS/EFT? There are many definitions, and some of us fall into the habit of

The author is a partner in the Antietam Group of Summit, N. J., a research and consulting firm specializing in POS/EFT. Formerly he was president of OAL, Inc., a POS authorization network.

referring to POS/EFT as a specific service rather than a system. POS/EFT is a delivery system that can deliver many services, but is not itself one. For instance, the paper check system has a certain amount of float built into it. Just how much float depends on many factors including where the check is cashed. Even after POS/EFT becomes commonplace, electronic check float and the convenience it offers customers will remain. Rather than a system constraint, float will be one of many POS/EFT services.

One hundred percent authorization of POS/EFT transactions may not be required, although in most cases it probably will be necessary. In the Northeast, there is a check guarantee company called JBS. About 12 years ago George Kraus, a founder of JBS, went to a COPE (Committee on Paperless Entry) conference in Atlanta. One statistic that caught his attention was that 47 percent of all checks written at the point of sale are written on insufficient or uncollected funds. He interpreted this as potential for a service, which he proceeded to refine with his new company. The JBS philosophy is, "we'll guarantee the check and, in a sense, we're buying the float and taking the risk." All of the check authorization companies are growing today because they are preserving the convenience of float while they are authorizing checks. They serve the customer by accepting checks when an ATM would turn them down.

A credit card service with data capture is a form of POS/EFT. By that definition, Sears already has POS/EFT. Most of their card transactions are captured by means of electronics so there is no paper other than that used for archiving. With this system in place, Sears can do just about anything when it comes to adding services. Some services undergo no changes as a result of POS/EFT. What will change is the cost of delivering them as they become more cost-efficient.

Who Pays?

The issue of who pays for POS/EFT systems is rapidly becoming a major stumbling block. The question cannot be ignored because POS/EFT systems will essentially be joint efforts between banks and merchants.

On one side the banks have established complex interchange networks that have to be paid for somehow. They are spending a great

deal of money making them work, and it is these networks that make POS/EFT possible. While they might be unable to support POS/EFT today, these networks will doubtless be able to do so in just a few years.

The reasons behind this optimism are several. Ten years ago there were only a handful of people in the entire nation who could build a good transaction network. Today, there are hundreds who can do so. Even though POS/EFT requires a more advanced system design than ATMs, the technological sophistication that it demands is not an inhibiting factor. The banking industry has developed a remarkable measure of expertise in this business, and third-party vendors offer field proven turn-key systems.

Merchants have been building POS systems for over two decades and they have acquired considerable skill. Adding POS/EFT will be relatively simple for them.

The question of who pays whom for POS/EFT really comes down to who pays for connecting bank data bases to merchant locations. There is a vast network between the two that must be underwritten. One way of addressing this issue is to look at how much POS/EFT costs and how much it will save. The cost of installing POS/EFT in a supermarket is uncertain, but it is less than the cost of an ATM. In fact, the entire cost of setting up POS/EFT in all supermarkets would be less than what has been spent thus far on ATMs.

The costs involved in check acceptance by the retailer are a different matter. Numerous, conflicting figures are available to represent check processing costs of banks and of supermarkets and other retailers. Our study discovered that supermarket hard savings from POS/EFT might be as high as 35 cents for each check converted (see Table 1). That amount includes removing such expense items as bank return fees, check collection costs for bad checks, write-offs, deposit fees, and float. The extent to which these expenses can be displaced by POS/EFT varies according to interest rates, demographics of the neighborhood, store operations, and banking relationships. Both because interest rates are down now and because those stores most likely to use POS/EFT services at the outset have already reduced their check acceptance expenses, a 25 cent savings might be assumed. This figure is lower than the average, but some stores are assuming a savings of even less than 25 cents.

Table 1. Potential Hard Savings

Expense Item	Cost to Supermarket (cents per check)
Bank return fees	4.84
Check collection costs	5.42
Check write off's	6.04
Float of deposits	8.08
Deposit fees	10.00
Total	34.38

Source: The POS/EFT Market Report.

If the only customers to use POS/EFT services were those who currently write checks, and if they continued to use cash for small purchases, there would be no question about who would pay. The supermarkets would bear the costs and they would save a great deal of money in the process. A major doubt in their minds, however, centers around cash conversions; that is, the conversion of transactions that were cash into POS/EFT transactions. Cash transactions cost supermarkets and other retailers very little today, and so each conversion will dilute the savings from POS/EFT. Some estimates place the ratio of cash to check conversions at between one and one and one half.

Assuming there are one and a half cash conversions for every check conversion and that the check conversion rate is 25 percent, there would be 510 weekly transactions that were formerly checks and 765 that were formerly cash (see Table 2). At a savings of 25 cents for each check converted, store expenses will be reduced by \$127.50 per week, which averages out to 10 cents for every POS/EFT transaction.

Another factor that clouds analysis of the POS/EFT fee structure is leverage. For instance, an ATM network can be marginal if it averages only 3,000 or 4,000 transactions per machine, but it would be an enormous financial accomplishment if any ATM network could average 20,000 transactions a month. The point is that volume is vital to the success of any capital-intensive service.

Given a one and one half cash to check conversion ratio, if the typical supermarket converts 25 percent of its checks it will pay about \$127.50 a week for 1,275 transactions. This sum might cover the cost of terminals as

**Table 2. Potential Savings
on an Average POS Transaction**

Number of checks accepted, average week	2,040
Number of checks converted @ 25%	510
Savings @ 25 cents per check converted	\$127.50
Number of cash transactions converted	765
Total POS/EFT transactions	1,275
Average savings per POS/EFT transaction	\$0.10

Source: The POS/EFT Market Report.

well as the cost of getting to the first POS/EFT switch, but no more than that. On the other hand, if 50 or 75 percent of the checks are displaced, supermarkets would be able to spend \$255 or \$368 each week for POS/EFT. The evident conclusion is that supermarkets will install POS/EFT when they are convinced that volume will be sufficient to cover their costs.

We see a different picture entirely when looking at banks. Some estimates show that checks cost a bank 50 cents to 75 cents or even a dollar to process. Our study found that, in 1982, the cost of processing a check was 14.4 cents. The acquiring bank pays 6.3 cents and the payor bank 8.1 cents. We have been told by several knowledgeable people that our numbers might be on the low side; in fact, it might cost banks almost 20 cents to process "on-us" checks. Regardless whether it is 14 or 20 cents, only a small part of the cost is accounted for by labor, and there simply is little to displace by switching to POS/EFT.

The acquiring bank will play almost no role in the POS/EFT scenario. Their merchant deposits will be made in a single transfer, either by wire or by some other deposit system that does not require transaction detail. The acquiring bank will receive the deposits, but the number of checks for which it can charge fees will diminish. The bank's fixed capital expenses, however, will remain on the books for some time. It is significant to note that over 40,000 checks must be displaced each week to reduce the bank's payroll by a single person.

Considering the payor bank separately, we realize that the big question is how long it can continue paying the fees it pays today for ATM transactions. POS/EFT will displace few branch checks, and the savings from processing by itself are minimal. How can a bank afford to pay 20 cents or more for each POS/EFT transaction?

And if cash conversions hurt the retailer's economics, they are devastating to a bank's, for they constitute new transactions that banks are paying someone to acquire for them. Even though banks have been keeping the POS/EFT idea alive, I am not sure there are solid cost-reduction grounds for banks to justify POS/EFT.

Factors other than savings must be considered as well. For most merchants, the in-store marketing features that will be intrinsic to most POS/EFT systems will help bear the cost burden. For supermarkets, system acceptance of manufacturer coupons will also help. Today supermarkets accept more coupons than checks and receive 8 cents for each one. Nobody knows just what manufacturers will pay for electronic coupons; nevertheless, they are sure to help offset costs to some degree. Food stamps are an irritation to most supermarkets, and their automation by POS/EFT will help reduce this burden.

Banks might find that some of the checks displaced at the point of sale will offset branch transactions as well. Furthermore, by maintaining constant check volume POS/EFT might obviate the need to increase the net capital account. It makes sense to avoid large capital outlays for an operation that sooner or later will be reduced in scope.

All things considered, it now looks much like a supermarket and bank standoff over the issue of who pays whom. On the basis of cost avoidance and new benefits, the edge seems to be the retailer's; therefore, the fee may well flow from merchants to banks.

Gas stations have a different set of objectives. Mobil Oil, which is a good example, has two goals: increase the average transaction size and reduce float. The feeling is that if the average transaction size can be increased, operating efficiency will improve. Currently, the average cash transaction at a gas station is a little over \$9. The average credit card transaction is about \$18, and conventional wisdom says that it will remain at this level with ATM debit cards. Since deregulation, the petroleum industry in general has been trying to reduce losses on the retail side of the business by decreasing float. Moreover, because of their limited product line and the ease by which services can be automated, POS/EFT services at gas stations resemble ATMs and vending machines more than they do the traditional point-of-sale service. Thus, they are a special case insofar as POS/EFT is concerned.

General merchandise retailers might save less than supermarkets on each check because they are "sales-help" type stores. People do not line up to pay for their purchases—at least that is not in their plans. But general merchandise retailers accept many different forms of payment now, and they will continue to satisfy their customers' payment preferences. Most importantly, many have the systems in place to offer POS/EFT services today.

In the final analysis, who pays whom is going to be resolved not by determining what is logical and what is not. Instead, retailers and bankers will form arrangements that will be equitable to both sides, setting patterns for others to follow. Expenses and possible savings represent the starting points for the negotiations.



Home Banking

Chemical Bank's Experience with Home Banking

Lee Pomeroy

It takes both faith and money for an organization to become a provider of home banking services. According to this analysis, though, the field may generate significant new business for those willing to take the plunge.

Chemical Bank's experience with home banking began in September 1983 in New York City under the name Pronto. Pronto is a two-way interactive information system, an entirely new customer service. It is not a cable television type system but an interactive one that enables the consumer to ask for and receive specific information or to execute transactions. Cable's advantage is that it allows for motion video, and so it clearly will be part of some home information services in the distant future. But cable is not interactive today and there is little likelihood that its suppliers will re-lay the extensive cable system already in place. To base a home information system on the potential of two-way cable appears misguided. In addition, the universe of potential customers on cable systems is quite different from and smaller than the

number with telephones. For these reasons, Pronto is based on the telephone.

To use Pronto as a consumer you need a phone, a television, and a home computer. The home computer might cost from \$40 to several thousand dollars. Today, Pronto can be accessed by any IBM, Apple, or Atari home computer and it is compatible with the Commodore computer. We plan to extend access to other personal computers as consumers buy them. We are simply responding to market share.

The Pronto service is sold at two levels: to consumers at retail and to banks as wholesalers. Banks then sell the service as their own. In selling Pronto through other banks, Chemical Bank has used the same approach as with its cash management system known as ChemLink, or BankLink, now sold by 68 U.S. banks under their own service mark.

Pronto provides only home banking, but through additional modules and enhancements

The author is vice president and director of planning for electronic banking (Pronto) for Chemical Bank, New York.

we plan to expand it into new services. Just as banking services represent a small sector of the financial services industry, so too will home banking be a specialized service in the home information industry. Functions currently available on Pronto include balance inquiry, funds transfer, bill paying, electronic mail, home budgeting, and information on financial services and personal finance issues. New functions being added this year include national and local news, stock quotations, and on-line investment purchases and sales. The functions to be added later are nearly endless: tele-shopping, ticket ordering, and, in New York City, off-track betting. The priority depends on consumer demand. **A Special Study of the Home Information Systems Market**, Booz Allen's 1981 survey of potential consumer demand, showed

We were pleased with the evaluations of the first three months of the Pronto roll-out: by the end of 1983 we had 2,500 customers on the system. That base has expanded to over 11,000 consumers in 5,400 households using Pronto today. During the initial three months, we found a huge increase in consumer awareness of both the Pronto service and home banking in general.

Our market research led us to expect that home banking could be a big draw for new customers and for account consolidations, and our results to date have borne that out. Seventeen percent of Pronto users opened their first account at Chemical in order to obtain home banking services. Press reports on Bank of America's home banking product in California indicate a similar experience of customers

"Just as banking services represent a small sector of the financial services industry, so too will home banking be a specialized service in the home information industry."

financial services and transactions, as opposed to static information, at the top of the list.

The roll-out of Pronto in 1983 gave us a chance to test the retail market for home banking services and to establish a sales force and distribution plan for it. Our target market was limited to consumers owning or planning to purchase a home computer. This market draws from younger, better educated, higher income sectors. Our advertising emphasized convenience, control, security, and 24-hour availability—concepts consumers associate with commercial banks. Of these, convenience was the theme that dominated in all of our promotional efforts.

We introduced the new service and stressed its availability at non-bank locations, as in a joint advertisement with Bloomingdale's. We also used Computerland and Crazy Eddie's, for those familiar with the New York market. Newspapers were quickly identified as our best value for bringing customers in, and since home banking is a new service with a high-tech image, we received good press coverage throughout our market area.

switching banks to obtain the service. The articles indicate that about a third of Bank of America's customers are new.

We also learned from our research that 51 percent of Pronto users have opened a new account with Chemical since taking on the Pronto service. It is clearly a powerful account consolidation tool. Our current market research shows that new reasons predominate in consumer decisions to purchase and use personal computers. Financial applications, including home banking services, have moved to a priority status.

Our plans for Pronto for 1984 focus on our desire to expand our active client base to at least 20,000 households by year-end and to use that client base for hands-on product and market testing. We recently introduced a new product aimed at small businesses and added both financial information and securities trading to the core Pronto home banking package.

We consider the key issue in the growth of home information systems to be—"Whose customer is it and who controls that customer?" Three distribution alternatives are competing

for control of and access to customers. The first alternative, direct distribution from producer to consumer, assumes that consumers would be willing to access numerous specific data bases and to pick and choose the services they apply for, such as Dow Jones Financial News or Home Banking from Bank of America. The second is based on the assumption that consumers would rather deal with only a few information suppliers, who bring together related services they think consumers prefer. Examples of this approach include the Source and VideoFinancial Services, a seven-bank consortium providing home banking services to other home information providers. The third alternative is a system operator who packages the services, providing consumers with a full range of home services obtained directly from producers and some speciality packagers, such as VideoFinancial.

Chemical Bank thinks that packaging services will be the key to obtaining and keeping market share. Packaging simplifies sign-on procedures, security, billing, and customer service. The packager serves as middleman between

potential operator of home information services. Neither insurance companies, brokerage houses, the telephone company, nor retailers enjoy a comparable consumer relationship. But if banks choose not to be system operators they could forfeit this strong customer relationship and the potential profits from providing information services to their customers. Controlling the packaging and offering the services is necessary to maintaining the customer relationship; otherwise banks will simply appear as a menu item. A second loss to banks that are not system operators is the opportunity to participate in revenues from any sources other than home banking. And finally, even the home banking fees paid by consumers will be shared with the system operator.

At Chemical Bank we think that banks have an opportunity to step into the role of system operator, to preserve control of customer relationships, and to share in new revenue opportunities in this emerging industry. Banks should position themselves to benefit from the growth in home information services, not be outsiders insulated from contact with customers.

“Controlling the packaging and offering the services is necessary to maintaining the customer relationship; otherwise banks will simply appear as a menu item.”

consumers and information providers, which presents a marketing opportunity for banks to function as a packager. As packagers, banks not only provide banking transaction information, but offer consumers information on a variety of products and services and expand the bank's value added. If banks do not soon step in to function as packagers, they will have to deal with their home banking customers through a middleman.

Without banks operating those home services, we see several lost opportunities. First, and most important, we will pass to the system operators control of and access to our customers. The relationship with the consumer is paramount for success, and banks enjoy stronger relationships with their customers than any

Banks will be players in this new industry because their services have the highest demand. They must now choose whether they will be in for a piece of the small market—financial services—or a piece of the large market—home information services.

Banks have numerous advantages as packagers of systems for home information services, but none is more important than the customer base. Banking and financial services continually rank among the services most desired by consumers for delivery into the home. Furthermore, consumers continue to exhibit a preference for stronger ties with their commercial banks as long as their banks provide competitive services.

But banks represent only one of the competitors seeking position in this emerging industry.

While only a few home banking or home information services actually exist for consumer purchase today, many players have tested or are testing information services. Publishers, retailers, and hardware and software providers eye the industry with great interest, as all will participate in providing some of the services consumers wish to purchase at home.

The financial motivations are very strong in this potentially huge industry, strong enough to induce three corporate giants—Sears, IBM, and CBS—to join together to develop home information services. This three-way shared venture highlights two facts known to all who have studied the emerging industry of home

information: succeeding in this industry will require an ability to combine skills across industries, and the winners stand to be richly rewarded.

That is the competition. Are they going to leave a place for banks? We think banks have a solid chance to be winners in this new industry. The customer relationship strength banks bring may be more important than all the other technological skills needed for success.

But if banks are not involved in controlling and distributing these systems, a wedge will be driven between them and their customers, leaving banks to function solely as a payment utility. That alone is not a very profitable service.

The Business Plan for Home Banking

Allen R. DeCotiis

Despite tough competition from corporate challengers, commercial banks can win in the competition to supply home information banking services, according to a pioneer in home banking.



Banking by automated teller machine (ATM) began to achieve popularity in the late 1970s and early '80s. It came on very strong compared with other services, and provided the greatest impetus for adding to point-of-sale systems (POS) the electronic services that were already set up and being used in the marketplace by ATM customers. Home banking is a natural and multidimensional extension of ATMs and POS. The systems are similar enough in principle. Many advocates feel that there are efficiencies to be gained and cost savings to be realized in the increasing usage of electronic banking systems.

But how is home banking to be sold to consumers? Just as a packager has to take the same soap, put it in four different boxes, and sell it to particular market segments we must do the same thing with the delivery systems in the marketplace. We must satisfy those needs that the Fed has done an excellent job of quantifying, from paying bills to obtaining information. One system cannot do it all.

What we have tried to ask in our research at Payment Systems, Inc. (PSI) is, what is the business case for home banking?

Business Opportunities: What Part Should My Bank Play?

Home banking has been defined as a system for delivering services to customers, but there are other possibilities inherent in it as well. Chemical Bank, for example, is looking at home banking not only as a delivery system but

as a greater venture capitalist opportunity than might exist in ATM or POS systems.

What we have done is to take this point of view and distinguish, within the context of home banking as a whole, the business case for the system operator. That distinction is the key to understanding the industry, and it is based on having chosen whether to put all the money into the system, build the system, and/or market it. The potential market is the consumer, of course, but the first and foremost market is the information provider who is putting his service on-line on an interactive basis and making it available for sale. Without him there is no system.

Home Terminal Research Program (HTRP), a membership program of PSI, has performed industry case studies, primary industry research, primary consumer and information provider research, and secondary research in the area of home banking. In formulating our business case we have also gone through the process of conceptualization, a difficult one in this environment. (If there ever was a situation where a matrix was necessary for organizing information, this is it.) For example, there are alternative delivery systems or delivery media: Chemical Bank's Pronto is using stand-alone personal computers whereas Viewtron, a joint venture of AT&T and Knight-Ridder Newspapers, is using a dedicated terminal that costs \$600 now and will cost \$900 in the future. A personal computer has multiple functions, but the Viewtron terminal, AT&T's "Sceptre," is a single-function terminal.

These are only two delivery medium options. Other alternatives include using a telephone and television set; a cable and a television set; or a simple display device that has one line of ASCII information scrolling across. And the delivery medium is merely one of the choices

The author is vice president of Payment Systems, Inc., located in Tampa, Florida.

that must be made. Among the many others are the ideal mix of services, pricing for the service, and so on. These types of options make it almost impossible to quantify, or even to conceptualize, the possibilities. As a result, the business decision is based on market forces that dictate a decision one way or the other.

Who are the players in this business? On one side is the home terminal user—that's the consumer. In the middle is the central communications "switch," which is usually the system operator as well. Sometimes, as in Chemical Bank's Pronto, the bank is the central communications switch, having chosen to act as the system operator rather than to be an information or service provider on someone else's system. On the other side are the information providers offering services to the consumer through network system operators. These offerings may be banking and shopping, information, transaction services, and various other products. As we have noted, it is possible for an information/service provider to be a system operator; but it is clearly impractical for all information/service providers to act as system operators.

Another business opportunity in the financial services area is that of acting as a gateway to other financial institutions. Some of the nation's larger banks do not want to be system operators but will assist smaller banks on a flow-through basis to implement home banking. An example of this type of operation is VideoFinancial Services, a consortium that provides gateway service to banks wishing to offer home banking to Viewtron customers.

We cited Pronto as an example of a system in which a banking corporation becomes its own system operator. Pronto has accomplished this by acting as both the bank switch and the system operator, thus retaining total control of its customer base. Furthermore, Pronto can relate to other banks, not only through its own data center but by interacting with other bank data centers.

Being a complete system operator, Pronto also left open the option to bring in other services. Pronto is a remarkable example of an operation that both conducts venture capitalist business, maximizing potential revenue and profit through the system, and retains a delivery system whose clear goals are home banking service to customers and, possibly, increased market share. Pronto is doing an outstanding

job with its marketing strategy, keeping right on target with the approaches that are effective for this type of services.

The Challenge of Pricing

Looking at pricing we must bear in mind that the network organizer (system operator) and the switch are often the same. The customer, in all likelihood, pays a monthly fee to the system operator. Since the fee flows from customer to operator, a bank that offers home service potentially could lose customer control if the bank is not the system operator as well. The switch/system operator is responsible for interacting with the various information/service providers (who may be bankers, advertisers, retailers, or others), while the financial service switch—if it is a separate entity—interacts with financial institutions only.

If it seemed that POS was complex in terms of partnership arrangements and pricing possibilities, home banking is much more so. A partnership between a retailer and a bank is simple compared with the types of partnerships that will be necessary to make home interactive electronic services a success in today's marketplace. That partnership will encompass retailers, banks, other financial institutions, switches, Sears, J.C. Penney, and probably IBM.

Reduced to its basics, the pricing situation entails a customer, a system operator, and an information provider who may or may not be the system operator. Behind the system operator are potential gateways going to still other information providers, and there will be fees flowing everywhere within that context. A simple revenue equation is: consumer revenue plus information provider revenue equals system operator revenue.

We always assume that we are in quest of that perfect fee-based service that will provide a solid, steady revenue stream for a millennium or so. But we always think the consumer is going to pay for it. It seems likely that the consumer will pay, but only to a moderate degree. The true support for home information, videotex, and home banking in particular will come from the information provider. The provider will pay its system operator to make its services available and also to retain market share when this becomes a consideration in the marketplace.

Table 1. In-Home Banking Potential

Percent of customers who answered "definitely" or "probably would use" service offered by their financial institution

	Age				Household Income			
	Total	34 & Under	35-49	50+	Under \$25,000	\$25,000-\$40,000	\$40,000-\$60,000	\$60,000+
Commercial bank	(1,041) 33.1	(352) 45.2	(334) 38.0	(355) 16.3	(363) 28.1	(364) 38.2	(182) 32.9	(65)* 41.5
Savings bank	(213) 26.3	(73)* 41.1	(61)* 27.9	(79)* 11.4	(60)* 20.0	(74)* 31.1	(48)* 27.1	(11)* 45.5
Savings and loan	(603) 26.9	(193) 44.5	(197) 25.4	(212) 12.3	(187) 20.3	(230) 33.9	(112) 22.4	(42)* 35.7
Credit union	(466) 29.4	(164) 43.3	(165) 27.2	(137) 15.3	(125) 28.0	(202) 34.1	(98) 24.5	(18)* 16.7

Note: Numbers in parentheses are total respondents who do business with each type of institution. Numbers directly beneath are percentages of positive responses.

*Caution: small bases

Source: Payment Systems, Inc.

Pricing to Consumers

In formulating our business case, we looked first at potential consumer revenue sources. How can you charge customers? You can levy a one-time charge for terminal fees and sign-up fees, and then another one-time charge for banking alone. You can charge them monthly fees or you can charge them variable fees. A vast number of similar possibilities exist. While we cannot be sure exactly where the consumer fees will come from, our past marketing experiences have made it clear that the fee structure must be simple. One cannot charge a consumer for a terminal, charge him a sign-up fee, and then charge him a one-time banking fee plus a usage fee on the basis of cost. Marketing theory tells us that the need must be quantifiable.

Let us look, then, at the actual marketplace through some consumer research PSI completed in the summer of 1983. It suggested that the banking industry has a needless myopia with respect to consumer awareness of financial services and changes in the marketplace. Fifty percent of the commercial bank customers we surveyed said they were aware of home banking, not merely of its being offered but of its potential. Thirty-three percent of those surveyed said they definitely or probably would use home banking (see Table 1). Of course, that does not mean that as of day one you are going to

sign up 33 percent of your market. If we take a lesson from acceptance rates of other types of services, however, what that 33 percent does mean is that a 24 to 27 percent adoption rate is not an outrageous expectation.

Who are these adopters of innovative services? Generally they are single, well educated males who are 34 years of age and younger. They tend to have over \$25,000 in annual income, and to be professionals and managers. But the adoption process will take time and education. Our market penetration figures based on our research, predict 3 percent penetration initially, growing to 27 percent over five years.

Whether the consumer sees himself or herself as a home banking user goes back to that quantifiable need. The potential home banking customer asks, does this service make sense for me? The answer doesn't always rest on a demographic basis, even though the ability to pay for the needed service very often does.

Among the services that consumers desire most, survey respondents consistently rate bill paying the highest (see Table 2). Balance information, statements, general information, and funds transfer rank significantly lower. I do not believe that we are selling home banking on the basis of funds transfer, nor of bill paying alone. In the future, I predict that, aside from the financial information and passive advice

Table 2. Consumers' Perception of Most Important In-Home Banking Features

	%
Bill payment	27.9
Balance information	23.5
Statement review	19.1
General information	14.2
Funds transfer	8.6
Message sending	2.5

Base = 408 respondents who say they would use in-home banking services.

Source: Payment Systems, Inc.

Table 3. Acceptable Cost for In-Home Banking

	(cumulative) %
Would pay \$50/month or less	5.6
Would pay \$40/month or less	7.4
Would pay \$30/month or less	15.9
Would pay \$20/month or less	36.0
Would pay \$15/month or less	45.6
Would pay \$10/month or less	62.5
Would pay \$7.50/month or less	81.4
Would not pay	13.0

Base = 408 respondents who say they would use in-home banking services.

Source: Payment Systems, Inc.

offered through home banking terminals, we will also be able to conduct new financial services such as financial planning.

In the affluent market, the potential acceptance for home banking services runs about 48 percent, significantly higher than the potential acceptance rate for commercial bank customers in general. Confusion over deregulation and the many options created by it prompts the affluent customer to choose financial planning as a most highly desired service. There already exist a number of neat little financial planning packages that could be implemented readily in a Pronto type of system, where in the future you may have the capacity to do some downloading to home computers.

How much would consumers pay? Any pricing questions asked in the consumer market, especially in a mail questionnaire such as the one we conducted, have to be considered relative. What we were gauging was, would they pay at all. Six percent of those responding to PSI's mail survey said they were willing to pay \$50 a month (see Table 3). This does not mean, if we went out in the marketplace and charged \$50, that six percent of the market would join. The clear implication is that if you go in with a high price you will have a small market, and with a low price you will have a large market.

The maximization potential falls right in the \$25 range. We have seen that a fee of about \$7.50 to \$15 is probably a good entry strategy, but that in a mature market \$25 is not an unreasonable amount. Current industry consumer pricing is a hodgepodge. Some people are giving terminals away, some are charging

\$100, Viewtron is charging upward of \$600. Sign-up fees are usually in the range of about \$25 for the entire service. There are monthly service fees falling between \$10 and \$35, and then there are add-ons for banking and shopping.

The following approach makes sense. Make it clear to the consumer that you want his business by charging only the maximum acceptable monthly fee, not just for banking but for the entire service package. Charge a \$12.50 terminal fee and write off the cost of the terminal over time, just as any big tax shelter would. The basic service fee should be \$12.50, with no connect time charges. The only exception to connect time charges would be in the games area, where you pass through the gate of some other organization.

That is the consumer business scenario. We are currently testing it in the marketplace with a survey of 3,000 consumers. Clearly, that \$25 a month is by no means going to offset the cost of a home banking or home information service. For the remainder of support we must look to the information provider side.

Pricing to Information Providers

Who are these providers of information and services? The largest percentage are financial institutions or others involved in providing financial services, and these are followed by information services. Retailers are not yet heavily represented, and neither are advertisers. It will probably be 1990 before enough consumers use videotex to make retailers decide it is worthwhile to participate in systems in significant

numbers. Bankers will jump in beforehand for competitive reasons, but retailers will delay until there is an established base of use within the marketplace.

There are various ways of charging the information provider—one-time fees, monthly fees, and sign-up fees. Just as in the case of consumer pricing, information providers are currently faced with a confusing array of fees. Simplicity in pricing is as important to the information provider as it is to the consumer.

Our business case shows the system operator letting the provider enter at little cost—a \$5,000 sign-up fee and a \$7.50 per month frame storage fee. Then the operator makes the information provider pay for the consumer use.

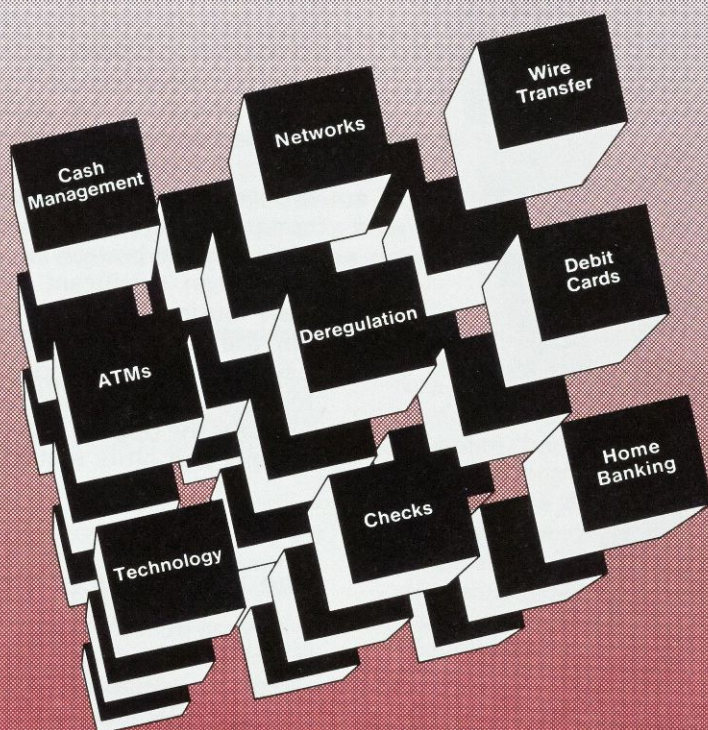
Overall, what we see is consumer revenue per terminal of \$29.92 a month; provider revenue per terminal per month is about \$74. Seventy-five percent of your revenue will come from the information provider market if you are a system operator.

It takes a lot of faith and a lot of money for an organization to get started in home banking. But there are profits to be made in home banking, even from the point of view of a bank acting as information provider. There is a business here, and for a system operator it could be a significant business.

The author gratefully acknowledges the contribution of Diane Smith (Payment Systems, Inc.) in preparing this paper for publication.

Payments in the Financial Services Industry of the 1980s

Proceedings of a conference
sponsored by the
Federal Reserve Bank of Atlanta
September 1983



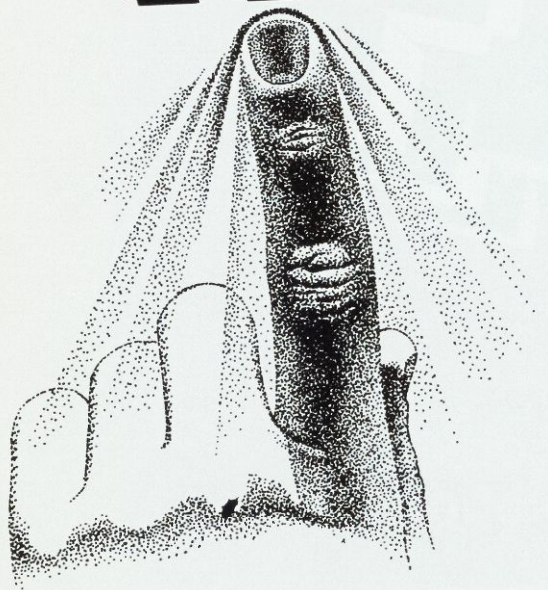
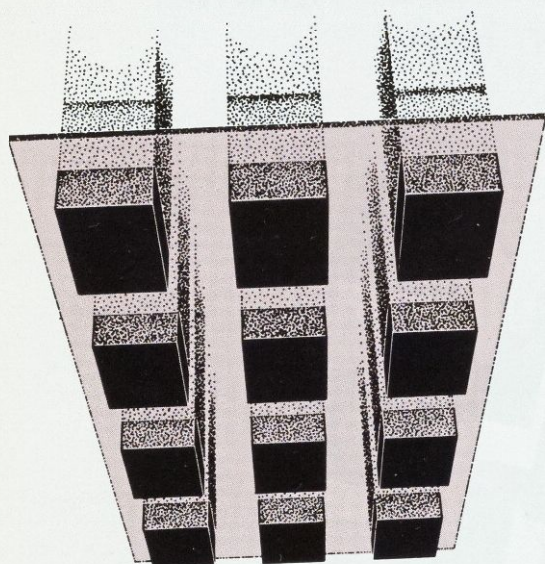
Quorum Books
Available September 1984

Conclusion

The Revolution in Retail Payments: A Synthesis

Bernell Stone

Computer technology has triggered a revolution in retail banking, but a host of obstacles stand in the way of a rapid transformation



Much has been covered in this workshop. To synthesize and yet remain brief, I will comment on retail banking as part of the overall retailing revolution, highlight economic issues, and then summarize key points on the three major subjects we have addressed—ATMs, POS-based direct debit systems, and home banking.

The Latent Retailing Revolution

Central to our discussions has been the fact that existing computer technology holds the potential to revolutionize a major portion of retailing. This revolution goes far beyond payments and the services traditionally within the province of commercial banks.

At the center of this revolution is an electronic interface to the consumer. Computer-based catalogs are an alternative to stores and print catalogs for providing product information, taking orders for many products, and transacting sales. Electronic shopping can replace much of today's store-based shopping and change today's printed catalog into an enhanced electronic analog. Placing orders from electronic devices such as personal computers, special-purpose terminals, and possibly some hybrid of TV and telephone should also mean significant change in distribution, warehousing, and even production scheduling. On the retail side there may be changes in payment practices and the consumer interface to banks. Moreover, part of the retailing revolution presents the opportunity to alter the distribution of bank and other financial services.

The Economics of Electronics

George Benston opened the workshop with an economic framework for viewing the issues. It is crucial to remember that change requires not just an available technology but a cost-effective bundling of the technology into products acceptable to the consumer.

The author is Mills B. Lane professor of banking and finance, Georgia Institute of Technology, and he is founding editor of the Journal of Cash Management (1982-1983).

As computer technology replaces people, paper, and brick-and-mortar branches a shift toward a capital-intensive mode of operation takes place. The move toward electronics is thus usually a move to higher fixed costs and lower variable costs. Until there is a significant volume of use, electronic services cannot be delivered at a cost sufficiently low to induce customers to use them. Pricing down a volume curve involves a gamble that the new service ultimately will build volume and become a widely accepted alternative. Hence, it is crucial to have a long-run economic justification for electronic products. This requires a combination of cost savings and greater value and convenience.

When I look at the economics of electronics in the corporate cash cycle, I see an opportunity to reduce costs and enhance value by several billion dollars each year. Despite many obstacles and barriers to change, I believe that there will be extensive corporate-to-corporate electronic data interchange. In the retail area (corporate-to-consumer) the long-run economic justification is less obvious and in some cases is even dubious.

requirements are no longer pertinent. The opportunity of electronics is to perform banking and other business functions in totally new ways, yet the tendency is to interject electronics into some portion of the existing process.

Telephone bill payment, for example, attempted to substitute a telephone call for writing a check. Little was saved in data entry or processing. In fact, total system costs were often higher since the telephone data capture and bank payment were not automated logically. Telephone bill payment seems to be dying an appropriate death. The creative alternative to retail bill payment would be a service that eliminates initial mailing and paper-based payment with one-time data entry across biller, payor, and financial intermediaries. That service is not yet available.

A second problem involves change barriers. To continue the example of bill payment, I feel that very high overdraft charges—out of all proportion to overdraft processing costs in an automated environment—are a barrier to preauthorized payment, direct debiting, and other direct charges

“The opportunity of electronics is to perform banking and other business functions in totally new ways, yet the tendency is to interject electronics into some portion of the existing process.”

We must therefore examine carefully the market acceptability and the economic justification of various proposals for using electronics in retail banking.

Before reviewing particular electronic service areas, I would like to stress two aspects of change that merit attention here. One is the common error of automating current paper-based systems and the other is failure to recognize “change barriers” that can slow down or prevent the utilization of new technology.

Automated Systems and Change Barriers

In business schools and much of education, we teach students to “solve problems,” that is, to achieve some objective subject to constraints. The opportunity presented by computer communication technology is often to “dissolve problems,” to redefine structure because conventional paper-based and people-based system

to a consumer’s bank account. To remove this barrier and offer a nominally priced overdraft coverage charge (and, of course, a charge for any credit extended) would eliminate some overdraft revenue. The high overdraft charges are a factor causing consumers to keep high transaction balances, which also generates additional bank revenue. Hence, many banks will be reluctant to discontinue current overdraft charge practices. Their persistence, however, will cause consumers to avoid new services like direct debit and preauthorized bill payment, inhibiting the growth of new service volume.

Home Banking

A central issue and major uncertainty is whether banking and related financial services will be a leading factor in home-based and electronics-based retailing or whether they will be a lagging application that is primarily a by-product service,

The Heart of the Issue

Peter Merrill

One major conclusion from this morning's discussion is that bankers are not particularly optimistic about justifying the ATM or POS product on the basis of cost or even market share. This leads some to ask why a bank would want to leap into these products at an early stage. Should they not wait and let the "guerrillas" make the investment, allow unit costs to decline, and then enter on some kind of shared basis? No argument has been forwarded that convinces me that this would not be the most profitable course of action.

A second major conclusion is that deregulation is leading us all to more explicit pricing, which is creating a cost-allocation conflict between the banks and the nonbanks discussing various joint venture arrangements. If it is agreed that the consumer ultimately will bear the cost of innovation, we should now be asking how the costs during the product introduction phase will be allocated between joint venture partners—between banks and retailers, for instance.

The third major point that emerged was that, in this entire EFT/POS/home banking area, we are not speaking about either a pure banking product or a pure retailing product. What we are talking about is a whole new kind of business. The potential service provider—be it a bank, a retailer, or an intermediary—must decide whether it wants to get into this business or not.

Where do these three conclusions finally lead us? Are banks getting "disenfranchised"? If I were to answer that question in a word, I would have to say "yes." The trend increasingly is for nonbanks to develop bank-like relationships with banking clients.

What do banks do about that? Most banks will move more toward service or segment niches to try to differentiate themselves; and many of them will undertake joint ventures with nonbanks. We should note that the entry of nonbanks onto the "turf" of banking results, at least in part, from most banks' inability to bear the cost of introducing the new systems, particularly in the absence of clearly demonstrated customer demand. The retailer, who clearly stands to benefit from the availability of POS services, should reasonably share the costs. Despite the current standoff between bank and retailer over the cost issue, I would predict that we will see more and more viable cost-sharing arrangements because the benefits are shared.

I question whether "disenfranchisement" is an appropriate term. The topic under discussion is rooted in

expanding the availability and convenience of banking services. To do this, we are moving outside of the traditional service delivery location—the bank building. While still the intermediary, the bank is no longer meeting the customer in the old brick-and-mortar environment. Since one of the trends is toward a "shared" environment (with either a competitor, or a retailer, or both), cost sharing is inevitable, and so new ways of calculating shared costs based on shared benefits must be found.

The dissociation of services from the brick-and-mortar setting has another major implication for banks. At least for transaction services, banks will be much less able than in the past to differentiate themselves competitively. Differentiation was based to a great extent on either head office or branch location and amenities, or on the personality and attention of employees. Since transaction services are being moved "off-site" in this way, **differentiation must focus on non-transaction services.** This ultimately may redefine the term "primary banking relationship."

Finally, I would think that one noteworthy implication of today's workshop is that heavy pressure will be placed on the Federal Reserve System, other regulators, the Congress, and the courts, because retailers will begin to resemble banks. Is the bank looking more like a retailer? Not really, unless you count all the toasters and teddy bears in the giveaway inventories, or unless bank services are liberalized to a far more significant degree than is now considered possible.

In my opinion, therefore, the net franchise shift is toward the nonbanks. Whether this implies that the bank charter will be less meaningful over time will depend on the ultimate uniqueness of the bank account. The determinants of bank power will be banks' ability to invest in new systems, their willingness to share in systems development and usage with other banks, and the time horizon for payback that banks will find feasible. The largest institutions will have the deepest pockets; the rest will have to share or make other bets.

The author is president of Peter Merrill Associates, Inc., a Boston consulting firm specializing in strategic planning for the financial services and communications industries.

Table 1. Standard Bank Activities and Home Banking

Cash Dispensing. Home terminals now being discussed have no capability for dispensing cash. The consumer must still rely on an ATM, bank branch, or other check cashing or cash dispensing services away from home.

Deposit Processing. There is no way to make a deposit from a home terminal.

Balance Inquiry. It is easy to provide balance and related account information from a home terminal.

Bill Payment. A bank customer can initiate bill payment for either recurring bills (power, telephone, and so on) or payments associated with other orders. The instruction and payment execution process are very similar to telephone bill payment.

Other Services. Stop payment, money transfer, and other special services can be initiated from a terminal just as they are currently initiated with a telephone call.

used incidentally as a payment convenience when ordering other products. In deciding whether banking will be a leading service or a by-product it is useful to look at specific services and their cost-convenience attributes vis-a-vis conventional delivery.

Table 1 summarizes the usual bank account-related services. The two major reasons for going to a bank or ATM, to obtain cash or make a deposit, are not amenable to any type of home terminal device. Because telephone bill payment has been such a failure, terminal-initiated bill payment from personal computers or other intelligent terminals seems doubtful and should be challenged with much skepticism. Consumers seem unwilling to pay significant amounts for either telephone or terminal-initiated bill payment; and, certainly, few would buy a special terminal or pay a sizable monthly fee. Balance inquiries are relatively low-volume banking activities and any overdraft line makes them virtually unnecessary. Moreover, the educated, upper-income market segment usually cited as most likely to use home banking is likewise the segment most likely to have an overdraft line or a cash management account, to keep track of balances as part of normal record keeping, and to obtain balance data as part of regular ATM usage. In sum, unless new, high value added services are made available via home banking (rather than a subset of current services), consumers will pay little for banking from a personal computer or other terminal.

Banks may find some value in data capture efficiency if bill payment data are keyed by the payer. This value is, however, bounded by check

processing costs, whereas real-time communications and terminal interface devices and processing are expensive. Cost arguments are clearly against real-time bank service delivery.

In the presentations and discussions today, no one has defined the innovative, high value added services that will induce people to seek home banking. Some have mentioned security trading and a range of financial services beyond conventional banking. But similar analysis causes me to ask why a terminal is able to provide either enhanced services or cost effectiveness. Other new services such as the cash management account and various automatic transfer and overdraft coverage services obviate the need for balance information. Thus, I must conclude that home banking will be a lagging rather than a leading edge service. It offers little in either opportunities for high value added services or cost-effective processing.

Automated Teller Machines

In-bank and near-bank ATMs provide automated delivery of a number of standard bank services, namely cash dispensing, money transfer, deposit processing, and possibly bill payment. ATMs offer three benefits: a teller cost is saved; longer hours increase customer convenience and equipment utilization; and in well designed systems customer keying affords data capture economies and, possibly, additional processing benefits from a lower error rate.

To justify the capital investment, a minimum transaction volume per machine is required.

Banks and Retailers: Two Views of the Future

William N. Cox

Experts in decisionmaking tell us that the way we frame a question is often more important than the way we derive the answer. Banks and retailers are looking at the "same" future for point-of-sale and home banking systems. Yet banks are shaping the question as an extension of the traditional banking franchise: "He who controls the switch controls the system." Checks, after all, are what will gradually be replaced and banks are the ones who know about checks. Just as understandably, retailers tend to see the future as an extension of their own franchise: "He who contacts the customer controls the system."

The obvious problem is that while each industry envisions a different future, they are looking at the same market. There is not room for all their answers. Future customers will be choosing between these perspectives.

Today's discussion has offered some fascinating glimpses of how the customer may regard the future. Sifting through all this, I personally suspect that, when we look back, we will find that retailers did a better job of framing the question.

On the banking side, we are moving energetically from proprietary ATMs to shared ATMs to shared point-of-sale systems. The latter two phases of this movement take the banks out of direct contact with the retail customer. The systems represented here today—Honor in Florida and Avail in Georgia—are good examples of dynamic efforts to protect the traditional banking franchise.

As the banker views the future, retailers will be the ticket-generators, sending bank customers' debits upstream through the new networks to the banks, where the real business of payments processing, credit extension, financial counseling, and so on will take place. It is natural to assume from this perspective that control of the computer switch equates to control of the business. Banks are cooperatively investing large sums in building the new systems, impelled by efforts from retail competitors like Publix and Safeway, always with the looming specter of national retailers like Sears and J. C. Penney.

Here and there, banks are beginning to buy transactions from retailers on a loss-leader basis, hoping to attract more profitable business in return. The extent of loss pricing is somewhat obscured by the fact that although banks uniformly pay the switch, what the banker and the retailer work out is up to them. Ironically, some banks are taking the same approach to electronic payments that they were criticizing their S&L brethren for taking with NOW accounts four years ago: they are pricing well below cost to gain market share, hoping to make it up on future business or tie-in sales. In today's session, several speakers noted that as electronic point-of-sale transactions grow, they displace check processing and thus reduce costs. But Ron Osterberg of the Antietam Group expressed a generally shared feeling that it will be a long time before that displacement is profitable.

Banks do have some real advantages. Their image is paramount—they "know" about financial matters. Typically, customers maintain continuing relationships with their banks, whereas those with retailers are more episodic.

On the other hand, banks will be subject to relatively intense regulatory scrutiny. Clearly there will be big

winners and big losers in POS and home banking. To the extent that some of the losers are banks—and some undoubtedly will be—their misfortune is prone to generate regulatory restrictions on the scope of bank activity. I hope this does not happen, but I believe that it will. It is harder to envision the same kind of reactions restricting retailers. If a retailer goes bankrupt, that is the free enterprise system at work; if a banker goes bankrupt, it is a national policy concern. In uncharted waters like POS and home banking, this tendency toward regulation may provide substantial advantage to the non-bank competitors.

Now let us look at the world from the retailer's side. Unlike bankers, some retailers are motivated by a clear cost incentive to move into POS: reduction of check processing costs and of bad-check recovery costs. At grocery stores, convenience stores, gas stations, and possibly drug stores, these reductions are significant in relation to profit margins. Now that banks are providing shared networks which can be used by a high percentage of retail customers, retailers have a high stake in participating actively.

If, on top of this internal incentive, retailers find that some bank network members are willing to pay them for transactions, the retailers' prospects are even more attractive. Somewhere in the process will have to be a customer service charge. Where that fee is charged and its size will influence network pricing and bank pricing of transactions. It may prove that customers will be more willing to pay a fee at the point of sale than on a bank statement. If this is so, the retailer's bargaining position will be enhanced since he will be able to negotiate competitively for the best deal among network members. All these factors would seem to give the retailer a significant advantage, for it is the retailer who is closest to the customer and thus in a position to make the key choices. Do I charge my customer a fee at point of sale, or not? Which bank (network member) do I choose to negotiate my debits through the common system?

Beyond the simple negotiation of fees, what will prevent retailers from extending credit to customers at the point of sale, and offering other retail financial services? Experimentation of this sort is taking place already. As banking itself moves toward a "high-touch front office/high-tech back office" business, the profitability and the advantage will probably move to the high-touch side. If retailers impinge on the bank's traditional customer contacts, banks could find themselves in a serious squeeze.

If banks' recent efforts at network building have assured the future of their retail payments franchise, it will be because their maxim—"He who controls the switch will control the system"—proved to be correct. If retailers have the advantage, it will be because their own principle is more accurate: "He who contacts the customer will control the system." Depending on which formulation is correct, there will be big winners and big losers. My guess is that the retailers will have the edge.

The author is vice president and associate director of research, Federal Reserve Bank of Atlanta.

There is an optimum number of machines. Given the large installed base of ATMs, it is reasonable to ask whether this number has been met, especially with multibank, shared systems and a leveling in the number of new ATM users now that those oriented to ATM-based banking have their cards.

Installing an ATM in a retail establishment involves complex economics. From the viewpoint of a particular store or even a particular retail chain, the essence of the question is whether there is enough transaction volume at a particular store to generate anticipated benefits. The direct benefits would include direct savings from lowered costs of check cashing and providing cash to the customers; indirect benefits would result from higher store traffic. Together these benefits would offset the space costs, machine costs, and servicing expenses associated with ATMs.

The complexity arises when one looks across the entire population of retailers. Many retailers deciding in isolation that ATMs at the margin make economic sense can lead to too many ATMs with excess capacity. None of the ATMs will have adequate volume. In the absence of a secondary market for ATMs (which figures to be

being standard, for example, transfers to third-party accounts (bill payment being a special case), check verification and guarantee, and other banking activities reduced to ATM-based menu-driven interaction.

In the future we will see ATPs (automated transaction processors) that will go well beyond traditional banking services. For instance, the creation of tickets and payment for sports, theater, and other entertainment events based on an inventory of available seats is a logical way to create broad geographical accessibility to tickets rather than relying on sales from one or two points. Similarly, airline and other transportation tickets can be printed from raw stock and distributed from an ATP interfaced to the various airline reservation systems. In fact, many of the services usually depicted in diverse scenarios for home banking and home retailing are probably more logically provided via ATMs and their generalization to ATPs.

Even though there is short-run danger of excess capacity for ATMs, their cost effectiveness, convenient 24-hour delivery of services, and an expanded service offering suggest a good long-run future. Considering the increasing installation of multibank ATMs at retail stores, airports, and

“Even though there is a short-run danger of excess capacity for ATMs, their cost effectiveness, convenient 24-hour delivery of services, and an expanded service offering suggest a good long-run future.”

unimpressive in view of excess capacity and new generations of improved machines), the natural reaction is to impose charges for ATM usage where there have been none, or to raise current transaction prices. Such a price increase would decrease transaction volume and further exacerbate the problem.

The dynamics of this argument suggest that both bankers and retailers should exercise considerable care in looking at ATM economics. Competitor interaction must be taken into account and total capacity compared logically with total ATM requirements as a function of transaction usage price.

From current trends, I predict that excess capacity and associated losses are likely in the near future. A further point not mentioned by other speakers is that likely future innovations in the ATM market are particularly pertinent. We need a second generation of ATMs that are faster and more economical. Their service offerings should be more flexible with more features

other nonbank points of convenience and the possible expansion of ATM or ATP capabilities to offer nonbank services (such as entertainment and transportation tickets, insurance, and investment functions), we can legitimately question the relative role of banks vis-a-vis retailers, network owners, and other service vendors. Banks may let others absorb their capital costs and risks for ATM-type investment in exchange for user fees and the loss of much control and bank-specific differentiation of their services.

Point-of-Sale Direct Debit

A POS terminal is a smart cash register able to read scannable product codes, accept keyed data, and interface to other computers. The value in inventory management, sales monitoring control, and efficient, timely data capture is well established, and the terminals are being widely

adopted. The issue for this workshop is not POS terminals per se, but whether POS terminals will include a direct debit capability, how it will function, the economics of direct debiting, consumer acceptance of these terminals, and the other payment transactions that they will displace.

POS direct debits arise from in-store purchases. They are thus the application of electronic technology to those retail transactions that remain in stores, and are not removed from traditional sales and distribution channels by home retailing and ATPs. A key question is, what transaction is a direct debit intended to replace—cash, check, or credit card?

Given the networks of ATMs, cash should be readily available to shoppers at a modest cost, generally zero today. If the direct debit transaction has no greater a bank account impact than an ATM cash withdrawal, it must compete with cash in both price and convenience. Since the POS direct debit via PIN (personal identification

is an illusion arising from the free credit involved in many credit card plans that involve timely payment, where “timely” means 20 to 40 days after the transaction. Instituting POS to cure an improperly priced credit extension system is a roundabout way to reprice credit. That problem can be solved much easier by a transaction date-based credit system. The chief point is that the economics, both in benefits and costs, of POS-based direct debit systems should be carefully separated from credit pricing (or mispricing). Direct debit systems must stand independently on the basis of administrative benefits, customer convenience, and safety control.

The direct debit systems we have discussed are real time or quasi-real time. A telephone-like communication link from the store to the banking system is used not only to verify the validity of card and PIN, but especially to ascertain that sufficient funds or credit are available to cover the transaction and to ensure that the exchange

“A well designed direct debit system may be more convenient than a check approval system. . . . But, since the consumer is giving up check float and since checks are free or low-cost, the amount that can be charged for a POS debit transaction is severely limited.”

number) is at least as time consuming as an ATM cash withdrawal, it is improbable that it will displace a significant volume of cash purchases.

A well designed direct debit system may be more convenient than a check approval system, especially compared with a third-party terminal-based service. But, since the consumer is giving up check float and since checks are free or low-cost, the amount that can be charged for a POS debit transaction is severely limited. Likewise, the retailer will not be willing to pay any more for POS than he realizes in savings from not having to process checks. Administratively, comparable direct debit and credit card transactions differ only in when the customer is charged, or credit extension, and in possible credit risk, a part of credit extension. In this context replacement is merely a question of where consumers seeking credit can obtain it in the most cost-effective way.

Often the justification for POS-based direct debit systems is the reduction in funds tied up in float and credit extension. This apparent benefit

of value from customer account to retailer account can be executed. Given delays in posting deposits and updating data bases as well as computer and network downtime, numerous administrative problems, including inadequate response time, may occur. The most severe problem is the prohibitive cost of on-line communications networks and real-time data base access. I find it hard to believe that such systems can be cost competitive with conventional cash, check, or credit card transactions.

Note that my criticism does not cover same-day debiting, which I view as the economic essence of direct debiting. Rather, the problem lies with on-line networks interfaced to banks maintaining expensive real-time access to customer accounts. Unfortunately, the industry seems to have focused on such real-time networks for direct debit systems, presumably to avoid any risk of credit extension or excessive use. Time does not permit a detailed examination of this issue, but it seems that an alternative to real-time networks is a background system that would rely

on the PIN to prevent fraudulent use, would accumulate transactions in the POS terminal or store-based computer, and would settle daily via batch transmissions of transactions to a settlement system that looks like an efficient, same-day automated clearinghouse (ACH).

The real-time direct debit systems and the batch-type systems are analogous to wire and ACH-type systems, respectively. The relative cost per transaction is a factor of 50, 100, or even more. Thus, my view is that real time direct debiting is of dubious economic viability compared with the cash, check, and credit card systems it is intended to replace, or to the batch-type system currently suffering from general neglect. In fact, I believe that with an appropriate value-dating convention, direct debit is just a special case of a POS-based credit system (to replace today's paper-oriented credit card systems) in which there is no unpriced credit extension beyond the day of transaction.

mistakes in product design, system development, and marketing, (4) the necessity to change the pricing of many services, (5) a variety of legal barriers and unresolved regulatory issues, (6) shortages of key skills (especially system design and development), (7) knowledge acquisition, and (8) the slow movement toward national banking. By the year 2050, I am sure that the world will view the electronic banking revolution as a late-twentieth-century phenomenon. And yet, I am equally certain that in 1990 we will all be asking why so little has been accomplished relative to most forecasts of change.

Talk about electronic banking began in the 1950s. By the late 1960s the idea of the paperless, checkless society had caught the imagination of many. By the early seventies, there were predictions that electronic payments would become the main form of payment within a decade. Yet barely 2 percent of the payment volume today is electronic and check volume is still growing.

"The relatively slow pace of change gives community and regional banks a chance to prepare for the future."

The Pace of Change: Slow Revolution

Computer technology is causing a revolution in retailing, including retail banking. Much of the revolution involves a transformation in how bank and other financial services are distributed. The many developments discussed today suggest that this change is taking place rapidly. To maintain perspective, we have to recognize that many of these activities are experiments and pilot projects to test market acceptance or system feasibility.

Although we have characterized this change as a "revolution," it seems that much of it will go considerably slower than suggested by many of the now popular scenarios. Clearly, I question the economic viability of POS-based real-time direct debit systems, and regard home banking as a future by-product rather than a driving force of home retailing. The revolution will be slower than commonly anticipated for a number of reasons: (1) the need to build infrastructure, (2) normal resistance to change, (3)

Credit cards are paper-based and paper-intensive with the usual multipart forms. ATMs are here and PCs are popular; much electronic infrastructure is in place. But paper-based systems also are using modern technology to improve their cost effectiveness. A great deal remains to be done before the revolution is a reality.

Concluding Comments

One issue raised in this workshop is whether banks or possibly segments of the banking system are in danger of disenfranchisement by the retailing revolution. Some banking services may be shifted to retailers or to network providers; however, much of banking requires a settlement mechanism. Unless new payment and settlement systems are created, banks and other depository institutions seem to have a future role. The further questions of disenfranchisement are whether other organizations will share in providing services and where the profits will be. Value

added network operators may reap much of the profit, or there could be excess network capacity with banks reaping the benefit of network competition to sell capacity. The delivery of future financial services is plagued by myriad uncertainties.

In terms of market segments, the large banks seem to be moving toward positions in most aspects of electronic banking. They may be the operators of networks and the creators and franchisers of financial services that are distributed by other banks. My vision of the future for well-run community banks and regional banks is

a bright one, for these banks provide the window to local markets via personal contacts and knowledge of the community. Network providers and service manufacturers will proliferate, and people will remain pivotal to the many aspects of banking that are not easily automated or mass marketed. The relatively slow pace of change gives community and regional banks a chance to prepare for the future. Planning is essential and it requires that bankers understand the use of computer communication technology in providing financial services, and evaluate the underlying economics.

Selected Bibliography

BOOKS

- Bequai, August. **The Cashless Society: EFT at the Crossroads**. New York: John Wiley and Sons, 1981.
- Federal Reserve Bank of Atlanta. **Payments in the Financial Services Industry of the 1980s: Conference Proceedings**. Westport, Connecticut: Quorum Books, 1984.
- Frazer, Patrick, and Dimitri Vitas. **The Retail Banking Revolution**. London: Michael Lafferty Publications Limited, 1982.
- Home Banking Review, 1983**. San Rafael, CA: Data Plus Research & Publishing Company, 1983.
- Naisbitt, John. **Megatrends**. New York: Warner Books, 1982.
- Payment Systems in Eleven Developed Countries**. Park Ridge, Illinois: Bank Administration Institute, 1980.
- The POS/EFT Market**. Summit, N.J.: The Antietam Group, 1983.
- Tydemann, John, Hubert Lipinski, Richard P. Adler, Michael Nyhan, and Lawrence Zwimpfer. **Teletext and Videotex in the United States**. New York: McGraw-Hill, 1982.

ARTICLES

- "ADPs Phillips: A Longer Search for Home Banking," **Bank Network News**, vol. 1 (March 25, 1983), p. 4-5.
- "ATM Sharing: Arrayed for Battle," **The Banker**, vol. 133 (April 1983), p. 87.
- "Bank of America, ARCO Slate Bank Card Test," **Wall Street Journal**, August 23, 1983, p. 3.
- Bennett, Robert A. "Citicorp in the Supermarket," **New York Times**, November 29, 1983, p. D1.
- Bennett, Veronica M. "Check Safekeeping: Transition to the Electronic Future," **Economic Review** (Federal Reserve Bank of Atlanta), vol. 67 (October 1982), pp. 23-32.
- Blyskal, Jeff. "Iowa, the Debit Card State," **Forbes**, vol. 132 (August 29, 1983), pp. 45-46.
- Bonocore, Joseph J. "The War against the Check," **Harvard Business Review**, vol. 60 (November-December 1981), pp. 28-29.
- "Bringing Retailers and Bankers Together," **Bank Network News**, vol. 1 (August 23, 1982), pp. 4, 5, and 8.
- Butler, Jeffrey. "New Frontier: Your Friendly Neighborhood Gas Station," **American Banker**, December 12, 1983, pp. 31-34.
- "California Mobil Stations To Honor First Interstate's Debit Card," **Mountain States Banker**, vol. 69 (February 1984), p. 19.
- Carter, Michael G. "An Integrated Approach to EFT and Retail Service Delivery," **Journal of Retail Banking**, vol. 4 (June 1982), pp. 1 and 2.
- "The Coming Boom in Cash Dispensers," **Bank Network News**, vol. 1 (July 21, 1982), pp. 1-5.
- "Cost of a Cash Transaction Put at 45 Cents," **EFT Report**, vol. 6 (January 3, 1983), p. 5.
- Cox, Edwin B. "Is There a Future for the Debit Card?" **American Banker**, December 17, 1982, pp. 13, 16, and 21.
- "Craig Gieler: How Kroger Wants POS to Work," **Bank Network News**, vol. 1 (January 25, 1983), p. 4.
- "Debit Card Success Hinges on Credit Card Pricing," **Savings and Loan News**, vol. 103 (July 1982), pp. 80-81.
- "Do Shoppers Want POS? FMI Study Gives Clue," **Bank Network News**, vol. 2 (June 25, 1983), p. 5.
- Edwards, Raoul D. "Who Controls at the POS?" **United States Banker**, vol. 94 (December 1983), pp. 57 and 59.
- "EFT Use Is Up, Errors Are Down," **Payment Systems Newsletter**, vol. 3 (August 1983), p. 1.
- "Exxon's POS Trail," **Revolving Credit/Funds Transfer Letter**, March 30, 1984, p. 8.
- "Fill'er Up with Diesel, If You Please, and Cash This Check for the Road," **American Banker**, February 3, 1984, p. 24.
- "Florida's Honor: Racing to Grab the Network Lead," **Bank Network News**, vol. 2 (September 24, 1983), p. 7.
- Garsson, Robert M. "Merchants Want End to Fees," **American Banker**, March 21, 1984, pp. 1 and 11.
- "Mobil Will Offer Point-of-Sale Services," **American Banker**, October 25, 1983, p. 1.
- "St. Petersburg Bank Installs ATMs in 26 7-Eleven Stores," **American Banker**, October 12, 1983, p. 33.
- "Southland To Enter ATM Market by Placing Machines in 7-Elevens," **American Banker**, May 27, 1983, pp. 1 and 11.
- "Gas Station To Use NCR Spinoff of Teller Machine," **Wall Street Journal**, May 2, 1983, p. 28.
- "Gasoline Stations Moving toward Direct Debit Point-of-Sale Systems," **American Banker**, April 6, 1983, p. 21.
- "Georgia Network To Be Called 'Avail,'" **American Banker**, April 11, 1984, p. 18.
- "Giant Plans ATMs with Suburban," **Washington Post**, February 9, 1984, p. B6.

- Goldberg, Joan B. "Supermarket ATMs Add Sites, Cut Check Cashing Costs for Stores," **Bank Systems and Equipment**, vol. 20 (May 1983), pp. 111-12.
- Gross, Laura. "Study Says Technology Is Now Driving Force of Change," **American Banker**, April 8, 1983, pp. 3 and 11.
- "Gulf Sets Plan for Debit Cards at 14,000 Service Stations," **Bank Letter**, August 16, 1982, pp. 1 and 2.
- Hardwick, Leo P. "Understanding the Debit Card," **The Bankers Magazine**, vol. 165 (May-June 1982), pp. 41-44, 46, and 47.
- Henderson, Paul B. "Emphasis Moves from Checks to Electronic Payment," **American Banker**, December 17, 1982, pp. 14, 18, and 19.
- "Igniting an EFT Revolution in Florida," **Bank Network News**, vol. 1 (February 8, 1983), p. 2.
- Jaffe, Maxine Osoby. "Improved Tech, Wider Acceptance Strengthen Chances for POS in '80s," **Bank Systems and Equipment**, vol. 20 (July 1983), pp. 83-87.
- Jedlicka, John J. "Florida Leads the Way in POS," **United States Banker**, vol. 94 (August 1983), pp. 36, 38, and 46.
- Jenkins, Howard. "EFT at the Supermarket Saves Time, Money," **American Banker**, December 13, 1982, pp. 12 and 16.
- Jorgensen, Jim. "Convenience Was the Key to Converting Point-of-Sale to Success in Des Moines," **American Banker**, December 5, 1983, pp. 19 and 20.
- McMurr, Scott. "Merrill Lynch Joins Competitors' Moves to Teller Machines," **Wall Street Journal**, January 13, 1984, p. 33.
- Mahoney, Robert W. "Demand for Convenience Spurs EFT Systems Growth," **Computerworld**, vol. 17 (August 29, 1983), pp. 29-30.
- Metzker, Paul F. "The Debit Card at the Crossroads," **Economic Review** (Federal Reserve Bank of Atlanta), vol. 68 (March 1983), pp. 33-45.
- Moore, James B. "Bankers and Retailers Travel along Parallel Routes," **American Banker**, April 6, 1983, pp. 20-21.
- "Changes in POS Environment Set Stage for Electronic Gas Pumps," **Bank Systems and Equipment**, vol. 20 (September 1983), pp. 101-04.
- "More Questions Than Answers (Electronic Fund Transfer at Point-of-Sale)," **The Banker**, vol. 134 (April 1984), p. 94.
- "Motivating Consumers To Use Direct Debit at the Point-of-Sale," **Innovations in Banking**, February 1983, p. 3.
- Osterberg, Ronald H. "Electronic Point-of-Sale: Its Time Is About Here," **American Banker**, May 15, 1984, p. 16.
- "Payment Systems: Retail Outlet at ATMs," **The Banker**, vol. 134 (January 1984), p. 57.
- "POS Explodes at the Gasoline Pump," **Bank Network News**, vol. 1 (August 9, 1982), pp. 1-3 and 7.
- Reistad, Dale L. "Technology Tomorrow: Caution—Five Years of Change Ahead," **United States Banker**, vol. 92 (November 1981), pp. 64-65.
- "Southland Bids for Supremacy in ATMs," **Bank Network News**, vol. 1 (March 25, 1983), pp. 1-3.
- "Strada: Converting FIG's Promise into Power," **Bank Network News**, vol. 1 (May 11, 1983), p. 5.
- Streeter, Bill. "EFT Is Back: This Time It May Stay," **ABA Banking Journal**, vol. 75 (September 1983), pp. 130-37.
- "Texas 7-Eleven ATMs To Take Credit Cards," **Supermarket News**, vol. 34 (February 2, 1984), p. 19.
- Thompson, Eric. "Debit Cards Will Be the Card Vehicle—Read Why," **ABA Banking Journal**, vol. 73 (September 1981), pp. 172, 175, 176, and 183.
- Tyson, David O. "CBS, IBM, Sears Team Up To Offer Videotex," **American Banker**, February 25, 1984, pp. 1 and 20.
- "Chemical Expects Big Pronto Revenues," **American Banker**, April 20, 1984, pp. 3 and 15.
- "U. S. Banker Round Table: ATM Networks and the Future of EFT (Part One)," **United States Banker**, vol. 94 (July 1983), pp. 24-30 and 73.
- "U. S. Banker Round Table: ATM Networks and the Future of EFT (Part Two)," **United States Banker**, vol. 94 (August 1983), pp. 42-46.
- Weinstein, Michael. "Banks Told To Consider Merchants' Point-of-Sale Concerns," **American Banker**, April 4, 1984, p. 8.
- "Mastercard Plans to Offer New Point-of-Sale Services," **American Banker**, March 12, 1984, pp. 1 and 15.
- "Retailers, Gas Stations Lead Point-of-Sale March," **American Banker**, February 27, 1984, pp. 2 and 7.
- "Standard of Ohio Sets Card Test with MAC," **American Banker**, January 18, 1984, p. 10.
- "Texas Retailer Eyes Multiservice ATM for Stores," **American Banker**, April 5, 1984, p. 1.
- "Trio Plans To Install ATMs in Markets," **American Banker**, February 22, 1984, pp. 1 and 15.
- "Why Iowa's POS Test Remains in a Pilot Mode," **Bank Network News**, vol. 1 (February 8, 1983), p. 6.
- "Why Network Software Holds Its Bloom," **Bank Network News**, November 25, 1983, pp. 1-3 and 8.



FINANCE

STATISTICAL SUPPLEMENT

	MAY 1984	APR 1984	MAY 1983	ANN. % CHG.		MAY 1984	APR 1984	MAY 1983	ANN. % CHG.
\$ millions									
UNITED STATES									
Commercial Bank Deposits	1,351,091	1,345,076	1,251,305	+ 8	Savings & Loans**				
Demand	307,594	303,166	299,605	+ 3	Total Deposits	650,954	657,337	600,932	+ 8
NOW	89,820	88,949	76,933	+17	NOW	19,188	20,097	17,174	+ 12
Savings	359,120	361,665	329,405	+ 9	Savings	176,066	174,476	190,693	- 8
Time	634,542	627,703	580,502	+ 9	Time	458,368	466,136	396,764	+ 16
Credit Union Deposits	51,965	51,941	59,071	-12		APR	MAR	APR	
Share Drafts	5,525	5,226	5,172	+ 7	Mortgages Outstanding	544,124	535,887	481,690	+ 13
Savings & Time	46,414	45,579	47,374	- 2	Mortgage Commitments	41,090	42,518	27,672	+ 48
SOUTHEAST									
Commercial Bank Deposits	155,977	154,436	141,189	+10	Savings & Loans				
Demand	36,960	36,152	35,332	+ 5	Total Deposits	N.A.	N.A.	N.A.	
NOW	11,725	11,680	9,986	+17	NOW	N.A.	N.A.	N.A.	
Savings	40,570	40,913	36,404	+11	Savings	N.A.	N.A.	N.A.	
Time	71,129	69,896	62,959	+13	Time	N.A.	N.A.	N.A.	
Credit Union Deposits	6,037	5,922	5,557	+ 9		APR	MAR	APR	
Share Drafts	537	512	436	+23	Mortgages Outstanding	69,397	69,165	65,748	+ 6
Savings & Time	5,479	5,283	4,770	+15	Mortgage Commitments	5,286	5,117	4,040	+ 31
ALABAMA									
Commercial Bank Deposits	16,224	15,989	14,891	+ 9	Savings & Loans**				
Demand	3,826	3,657	3,624	+ 6	Total Deposits	5,343	5,360	4,959	+ 8
NOW	1,051	1,054	902	+17	NOW	158	165	134	+ 18
Savings	3,294	3,301	3,033	+ 9	Savings	926	897	857	+ 8
Time	8,608	8,456	7,864	+ 9	Time	4,307	4,341	4,028	+ 7
Credit Union Deposits	954	941	863	+11		APR	MAR	APR	
Share Drafts	96	92	80	+20	Mortgages Outstanding	4,034	4,011	3,607	+ 12
Savings & Time	934	818	721	+30	Mortgage Commitments	290	289	205	+ 41
FLORIDA									
Commercial Bank Deposits	55,373	55,020	48,744	+14	Savings & Loans**				
Demand	13,365	13,153	12,633	+ 6	Total Deposits	55,824	56,274	54,763	+ 2
NOW	4,929	4,868	4,246	+16	NOW	2,221	2,314	2,051	+ 8
Savings	19,128	19,318	16,390	+17	Savings	15,264	15,108	17,471	- 13
Time	19,395	18,990	16,559	+17	Time	38,484	39,060	35,715	+ 8
Credit Union Deposits	2,632	2,581	2,414	+ 9		APR	MAR	APR	
Share Drafts	270	258	219	+23	Mortgages Outstanding	40,673	40,590	38,718	+ 5
Savings & Time	2,235	2,185	1,852	+21	Mortgage Commitments	3,441	3,397	2,920	+ 18
GEORGIA									
Commercial Bank Deposits	23,387	22,891	20,117	+16	Savings & Loans				
Demand	7,277	7,032	6,572	+11	Total Deposits	N.A.	N.A.	N.A.	
NOW	1,529	1,528	1,315	+16	NOW	N.A.	N.A.	N.A.	
Savings	5,274	5,230	4,450	+19	Savings	N.A.	N.A.	N.A.	
Time	10,648	10,309	8,719	+22	Time	N.A.	N.A.	N.A.	
Credit Union Deposits	1,261	1,242	1,273	- 1		APR	MAR	APR	
Share Drafts	82	77	61	+34	Mortgages Outstanding	8,557	8,492	8,177	+ 5
Savings & Time	1,184	1,178	1,142	+ 4	Mortgage Commitments	563	551	289	+ 95
LOUISIANA									
Commercial Bank Deposits	25,703	25,647	24,552	+ 5	Savings & Loans**				
Demand	5,716	5,663	5,876	- 3	Total Deposits	9,369	9,378	8,755	+ 7
NOW	1,519	1,532	1,311	+16	NOW	220	233	181	+ 22
Savings	5,507	5,581	5,034	+ 9	Savings	2,402	2,352	2,468	- 3
Time	13,472	13,446	12,871	+ 5	Time	6,847	6,944	6,179	+ 11
Credit Union Deposits	209	206	195	+ 7		APR	MAR	APR	
Share Drafts	23	23	22	+ 5	Mortgages Outstanding	8,640	8,538	7,423	+ 16
Savings & Time	203	200	287	-29	Mortgage Commitments	594	529	411	+ 45
MISSISSIPPI									
Commercial Bank Deposits	12,193	12,072	11,390	+ 7	Savings & Loans				
Demand	2,409	2,367	2,401	0	Total Deposits	N.A.	N.A.	N.A.	
NOW	850	859	788	+ 8	NOW	N.A.	N.A.	N.A.	
Savings	2,466	2,503	2,349	+ 5	Savings	N.A.	N.A.	N.A.	
Time	6,788	6,704	6,156	10	Time	N.A.	N.A.	N.A.	
Credit Union Deposits	*	*	*			APR	MAR	APR	
Share Drafts	*	*	*		Mortgages Outstanding	2,075	2,087	2,021	+ 3
Savings & Time	*	*	*		Mortgage Commitments	73	67	34	+115
TENNESSEE									
Commercial Bank Deposits	23,097	22,817	21,495	+ 7	Savings & Loans**				
Demand	4,367	4,280	4,226	+ 3	Total Deposits	6,980	7,013	7,138	- 2
NOW	1,847	1,839	1,424	+30	NOW	184	193	168	+ 10
Savings	4,901	4,980	5,148	- 5	Savings	1,355	1,333	1,656	- 18
Time	12,218	11,991	10,790	+13	Time	5,481	5,529	5,360	+ 2
Credit Union Deposits	981	952	812	+21		APR	MAR	APR	
Share Drafts	66	62	54	+22	Mortgages Outstanding	5,418	5,447	5,802	- 7
Savings & Time	923	902	768	+20	Mortgage Commitments	325	284	181	+ 80

Notes: All deposit data are extracted from the Federal Reserve Report of Transaction Accounts, other Deposits and Vault Cash (FR2900), and are reported for the average of the week ending the 1st Wednesday of the month. This data, reported by institutions with over \$15 million in deposits as of December 31, 1979, represents 95% of deposits in the six state area. The major differences between this report and the "call report" are size, the treatment of interbank deposits, and the treatment of float. The data generated from the Report of Transaction Accounts is for banks over \$15 million in deposits as of December 31, 1979. The total deposit data generated from the Report of Transaction Accounts eliminates interbank deposits by reporting the net of deposits "due to" and "due from" depository institutions. The Report of Transaction Accounts subtracts cash items in process of collection from demand deposits, which the call report does not. Savings and loan mortgage data are from the Federal Home Loan Bank Board Selected Balance Sheet Data. The Southeast data represent the total of the six states. Subcategories were chosen on a selective basis and do not add to total.

* = fewer than four institutions reporting.

FRASER S&L deposits subject to revisions due to reporting changes.

http://fraser.stlouisfed.org Not available at this time.

Federal Reserve Bank of St. Louis

JULY/AUGUST 1984, ECONOMIC REVIEW



CONSTRUCTION

12-month Cumulative Rate		APR 1984	MAR 1984	APR 1983	ANN % CHG		APR 1984	MAR 1984	APR 1983	ANN % CHG
UNITED STATES										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	55,003	54,170	44,768	+ 23		Value - \$ Mil.	73,402	72,084	47,933	+ 53
Industrial Bldgs.	6,287	6,017	4,669	+ 35		Residential Permits - Thous.				
Offices	13,781	13,600	11,131	+ 24		Single-family units	934.8	924.8	655.6	+ 43
Stores	7,985	7,874	5,391	+ 48		Multi-family units	744.8	735.8	520.8	+ 43
Hospitals	1,922	1,957	1,832	+ 5		Total Building Permits				
Schools	770	818	875	- 12		Value - \$ Mil.	128,405	126,254	92,702	+ 39
SOUTHEAST										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	8,714	8,586	6,815	+ 28		Value - \$ Mil.	13,800	13,530	8,516	+ 62
Industrial Bldgs.	829	711	617	+ 34		Residential Permits - Thous.				
Offices	2,040	2,107	1,558	+ 31		Single-family units	192.6	190.0	135.9	+ 42
Stores	1,592	1,541	963	+ 65		Multi-family units	175.8	173.9	102.3	+ 72
Hospitals	497	469	398	+ 25		Total Building Permits				
Schools	109	131	165	- 34		Value - \$ Mil.	22,441	22,042	15,331	+ 46
ALABAMA										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	691	578	348	+ 99		Value - \$ Mil.	470	453	295	+ 59
Industrial Bldgs.	142	42	34	+318		Residential Permits - Thous.				
Offices	73	70	72	+ 1		Single-family units	8.3	8.0	6.3	+ 32
Stores	112	110	46	+143		Multi-family units	9.2	8.7	4.6	+100
Hospitals	12	6	29	- 59		Total Building Permits				
Schools	8	8	5	+ 60		Value - \$ Mil.	1,160	1,030	643	+ 80
FLORIDA										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	4,226	4,243	3,543	+ 19		Value - \$ Mil.	8,015	7,858	4,891	+ 64
Industrial Bldgs.	399	384	331	+ 21		Residential Permits - Thous.				
Offices	904	975	812	+ 11		Single-family units	104.3	102.8	70.3	+ 48
Stores	911	865	566	+ 61		Multi-family units	96.6	96.1	59.4	+ 63
Hospitals	254	270	229	+ 11		Total Building Permits				
Schools	31	32	54	- 43		Value - \$ Mil.	12,241	12,101	8,433	+ 45
GEORGIA										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	1,497	1,499	1,043	+ 44		Value - \$ Mil.	2,642	2,602	1,719	+ 54
Industrial Bldgs.	177	175	135	+ 31		Residential Permits - Thous.				
Offices	508	514	248	+105		Single-family units	44.3	43.6	31.7	+ 40
Stores	198	191	88	+125		Multi-family units	26.0	26.4	17.5	+ 49
Hospitals	55	55	26	+112		Total Building Permits				
Schools	16	32	25	- 36		Value - \$ Mil.	4,139	4,101	2,762	+ 50
LOUISIANA										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	1,193	1,164	1,103	+ 8		Value - \$ Mil.	1,160	1,150	797	+ 46
Industrial Bldgs.	31	31	59	- 47		Residential Permits - Thous.				
Offices	368	364	321	+ 15		Single-family units	16.5	16.7	13.7	+ 20
Stores	167	156	113	+ 48		Multi-family units	18.0	18.1	10.6	+ 70
Hospitals	137	119	61	+125		Total Building Permits				
Schools	44	49	68	- 35		Value - \$ Mil.	2,353	2,314	1,901	+ 24
MISSISSIPPI										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	223	217	163	+ 37		Value - \$ Mil.	354	333	217	+ 63
Industrial Bldgs.	13	11	8	+ 63		Residential Permits - Thous.				
Offices	21	21	16	+ 31		Single-family units	5.1	4.9	4.0	+ 28
Stores	53	50	34	+ 56		Multi-family units	5.9	5.4	2.7	+119
Hospitals	15	15	12	+ 25		Total Building Permits				
Schools	4	4	6	- 33		Value - \$ Mil.	577	550	381	+ 51
TENNESSEE										
Nonresidential Building Permits - \$ Mil.						Residential Building Permits				
Total Nonresidential	884	885	615	+ 44		Value - \$ Mil.	1,159	1,134	597	+ 94
Industrial Bldgs.	67	68	50	+ 34		Residential Permits - Thous.				
Offices	166	163	89	+ 87		Single-family units	14.1	14.0	9.9	+ 42
Stores	151	169	116	+ 30		Multi-family units	20.1	19.2	7.5	+168
Hospitals	24	24	41	- 41		Total Building Permits				
Schools	6	6	7	- 14		Value - \$ Mil.	1,971	1,947	1,211	+ 63

NOTES:

Data supplied by the U. S. Bureau of the Census, Housing Units Authorized By Building Permits and Public Contracts, C-40. Nonresidential data excludes the cost of construction for publicly owned buildings. The southeast data represent the total of the six states. The annual percent change calculation is based on the most recent month over prior year. Publication of F. W. Dodge construction contracts has been discontinued.



GENERAL

	LATEST DATA	CURR. PERIOD	PREV. PERIOD	YEAR AGO	ANN. % CHG.		MAY 1984	APR (R) 1984	MAY 1983	ANN. % CHG.
UNITED STATES						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	2,824.2	2,752.5	2,257.5	+25	Prices Rec'd by Farmers Index (1977=100)	144	146	137	+5
Taxable Sales - \$bil.		N.A.	N.A.	N.A.		Broiler Placements (thous.)	86,776	86,600	83,638	+4
Plane Pass. Arr. 000's		N.A.	N.A.	N.A.		Calf Prices (\$ per cwt.)	61.60	62.30	66.10	-7
Petroleum Prod. (thous.)	MAY	8,778.4	8,756.6	8,615.0	+2	Broiler Prices (\$ per lb.)	33.5	34.8	26.1	+28
Consumer Price Index 1967=100	MAY	309.7	308.8	297.1	+4	Soybean Prices (\$ per bu.)	8.24	7.82	6.05	+36
Kilowatt Hours - mils.	MAR	185.6	188.9	167.2	+11	Broiler Feed Cost (\$ per ton)	246	246	220	+12
SOUTHEAST						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	341.9	333.9	310.0	+10	Prices Rec'd by Farmers Index (1977=100)	137	136	122	+12
Taxable Sales - \$bil.		N.A.	N.A.	N.A.		Broiler Placements (thous.)	33,047	33,222	32,406	+2
Plane Pass. Arr. 000's	APR	4,542.0	5,125.2	4,484.8	+1	Calf Prices (\$ per cwt.)	56.50	58.50	61.16	-8
Petroleum Prod. (thous.)	MAY	1,482.0	1,488.0	1,400.0	+6	Broiler Prices (\$ per lb.)	32.5	34.0	25.5	+27
Consumer Price Index 1967=100		N.A.	N.A.	N.A.		Soybean Prices (\$ per bu.)	8.27	7.94	6.19	+34
Kilowatt Hours - mils.	MAR	28.7	30.1	25.6	+12	Broiler Feed Cost (\$ per ton)	238	234	207	+15
ALABAMA						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	37.7	37.1	34.9	+8	Farm Cash Receipts - \$ mil. (Dates: MAR, MAR)	469	-	412	+14
Taxable Sales - \$bil.	DEC	30.2	29.6	28.4	+6	Broiler Placements (thous.)	11,294	11,313	10,648	+6
Plane Pass. Arr. 000's	APR	117.2	118.8	103.2	+14	Calf Prices (\$ per cwt.)	56.80	57.40	59.40	-4
Petroleum Prod. (thous.)	MAY	52.0	52.0	52.0	0	Broiler Prices (\$ per lb.)	33.0	33.0	25.5	+29
Consumer Price Index 1967=100		N.A.	N.A.	N.A.		Soybean Prices (\$ per bu.)	8.09	7.93	6.06	+33
Kilowatt Hours - mils.	MAR	4.3	3.7	3.7	+16	Broiler Feed Cost (\$ per ton)	255	270	210	+21
FLORIDA						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	128.8	125.4	117.7	+9	Farm Cash Receipts - \$ mil. (Dates: MAR, MAR)	1,140	-	1,408	-19
Taxable Sales - \$bil.	MAY	78.1	77.0	68.4	+14	Broiler Placements (thous.)	2,055	1,995	2,031	+1
Plane Pass. Arr. 000's	APR	2,154.5	2,720.8	2,176.0	-1	Calf Prices (\$ per cwt.)	63.00	63.00	67.20	-6
Petroleum Prod. (thous.)	MAY	43.0	47.0	57.0	-25	Broiler Prices (\$ per lb.)	32.0	34.0	25.0	+28
Consumer Price Index - Miami Nov. 1977 = 100	MAY	166.4	165.6	159.4	+4	Soybean Prices (\$ per bu.)	8.09	7.93	6.06	+33
Kilowatt Hours - mils.	MAR	7.5	7.8	7.2	+4	Broiler Feed Cost (\$ per ton)	285	280	230	+24
GEORGIA						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	61.0	59.6	55.8	+9	Farm Cash Receipts - \$ mil. (Dates: MAR, MAR)	704	-	624	+13
Taxable Sales - \$bil.	4Q	43.2	41.1	40.6	+6	Broiler Placements (thous.)	13,162	13,268	13,047	+1
Plane Pass. Arr. 000's	APR	1,788.0	1,793.6	1,720.1	+4	Calf Prices (\$ per cwt.)	51.10	53.30	56.90	-10
Petroleum Prod. (thous.)		N.A.	N.A.	N.A.		Broiler Prices (\$ per lb.)	31.0	34.0	25.5	+22
Consumer Price Index - Atlanta 1967 = 100	APR	311.1	309.3	297.6	+5	Soybean Prices (\$ per bu.)	8.50	7.93	5.91	+44
Kilowatt Hours - mils.	MAR	4.4	4.4	3.7	+19	Broiler Feed Cost (\$ per ton)	240	215	197	+22
LOUISIANA						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	47.3	46.4	55.8	-15	Farm Cash Receipts - \$ mil. (Dates: MAR, MAR)	421	-	344	+22
Taxable Sales - \$bil.		N.A.	N.A.	N.A.		Broiler Placements (thous.)	N.A.	N.A.	N.A.	
Plane Pass. Arr. 000's	APR	288.4	294.6	285.7	+1	Calf Prices (\$ per cwt.)	59.50	60.40	59.20	+1
Petroleum Prod. (thous.)	MAY	1,297.0	1,300.0	1,202.0	+8	Broiler Prices (\$ per lb.)	34.5	35.0	26.0	+33
Consumer Price Index 1967 = 100		N.A.	N.A.	N.A.		Soybean Prices (\$ per bu.)	8.27	7.98	6.30	+31
Kilowatt Hours - mils.	MAR	4.4	4.7	3.8	+16	Broiler Feed Cost (\$ per ton)	270	285	285	+2
MISSISSIPPI						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	21.8	21.1	20.3	+7	Farm Cash Receipts - \$ mil. (Dates: MAR, MAR)	532	-	468	+14
Taxable Sales - \$bil.		N.A.	N.A.	N.A.		Broiler Placements (thous.)	6,536	6,647	6,681	-2
Plane Pass. Arr. 000's	APR	32.9	35.3	32.4	+2	Calf Prices (\$ per cwt.)	54.20	58.50	60.30	-10
Petroleum Prod. (thous.)	MAY	90.0	89.0	84.0	+7	Broiler Prices (\$ per lb.)	34.5	35.5	26.0	+33
Consumer Price Index 1967 = 100		N.A.	N.A.	N.A.		Soybean Prices (\$ per bu.)	8.28	7.87	6.33	+31
Kilowatt Hours - mils.	MAR	1.9	2.1	1.7	+12	Broiler Feed Cost (\$ per ton)	194	190	197	-2
TENNESSEE						Agriculture				
Personal Income (\$bil. - SAAR)	4Q	45.3	44.3	36.7	+23	Farm Cash Receipts - \$ mil. (Dates: MAR, MAR)	390	-	445	-12
Taxable Sales - \$bil.	MAR	41.9	39.0	38.2	+9	Broiler Placements (thous.)	N.A.	N.A.	N.A.	
Plane Pass. Arr. 000's	APR	161.0	162.1	167.4	-4	Calf Prices (\$ per cwt.)	54.30	57.80	62.00	-12
Petroleum Prod. (thous.)	MAY	N.A.	N.A.	N.A.		Broiler Prices (\$ per lb.)	31.5	34.0	24.0	+31
Consumer Price Index 1967 = 100		N.A.	N.A.	N.A.		Soybean Prices (\$ per bu.)	8.28	8.00	6.14	+35
Kilowatt Hours - mils.	MAR	6.2	7.4	5.5	+13	Broiler Feed Cost (\$ per ton)	215	225	225	-4

Notes:

Personal Income data supplied by U. S. Department of Commerce. Taxable Sales are reported as a 12-month cumulative total. Plane Passenger Arrivals are collected from 26 airports. Petroleum Production data supplied by U. S. Bureau of Mines. Consumer Price Index data supplied by Bureau of Labor Statistics. Agriculture data supplied by U. S. Department of Agriculture. Farm Cash Receipts data are reported as cumulative for the calendar year through the month shown. Broiler placements are an average weekly rate. The Southeast data represent the total of the six states. N.A. = not available. The annual percent change calculation is based on most recent data over prior year. R = revised.



EMPLOYMENT

	APR 1984	MAR 1984	APR 1983	ANN. % CHG.		APR 1984	MAR 1984	APR 1983	ANN. % CHG.
UNITED STATES									
Civilian Labor Force - thous.	112,152	111,828	109,875	+ 2	Nonfarm Employment- thous.	92,808	91,803	89,005	+ 4
Total Employed - thous.	103,628	102,770	98,840	+ 5	Manufacturing	19,579	19,457	18,295	+ 7
Total Unemployed - thous.	8,525	9,057	11,035	-23	Construction	4,091	3,828	3,650	+12
Unemployment Rate - % SA	7.8	7.8	10.2		Trade	20,834	20,569	20,177	+ 3
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	16,066	16,083	16,021	+ 0
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	20,557	20,258	19,517	+ 5
Mfg. Avg. Wkly. Hours	40.9	40.7	39.8	+ 3	Fin., Ins., & Real Est.	5,577	5,547	5,401	+ 3
Mfg. Avg. Wkly. Earn. - \$	373	371	349	+ 7	Trans. Com. & Pub. Util.	5,049	5,017	4,953	+ 2
SOUTHEAST									
Civilian Labor Force - thous.	14,604	14,569	14,278	+ 2	Nonfarm Employment- thous.	12,022	11,930	11,486	+ 5
Total Employed - thous.	13,511	13,433	12,784	+ 6	Manufacturing	2,258	2,241	2,129	+ 6
Total Unemployed - thous.	1,092	1,136	1,494	-27	Construction	710	696	626	+13
Unemployment Rate - % SA	7.8	7.6	10.4		Trade	2,920	2,885	2,740	+ 7
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	2,189	2,191	2,189	0
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	2,434	2,410	2,326	+ 5
Mfg. Avg. Wkly. Hours	41.3	41.2	40.0	+ 3	Fin., Ins., & Real Est.	691	689	657	+ 5
Mfg. Avg. Wkly. Earn. - \$	328	327	304	+ 8	Trans. Com. & Pub. Util.	695	691	691	+ 1
ALABAMA									
Civilian Labor Force - thous.	1,776	1,766	1,767	+ 1	Nonfarm Employment- thous.	1,346	1,333	1,313	+ 3
Total Employed - thous.	1,580	1,548	1,512	+ 4	Manufacturing	352	347	335	+ 5
Total Unemployed - thous.	195	218	254	-23	Construction	63	60	58	+ 9
Unemployment Rate - % SA	11.4	11.9	14.8		Trade	278	274	268	+ 4
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	288	287	292	- 1
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	220	219	219	+ 0
Mfg. Avg. Wkly. Hours	41.1	40.7	40.2	+ 2	Fin., Ins., & Real Est.	61	60	59	+ 3
Mfg. Avg. Wkly. Earn. - \$	324	318	304	+ 7	Trans. Com. & Pub. Util.	72	72	69	+ 4
FLORIDA									
Civilian Labor Force - thous.	4,933	4,980	4,725	+ 4	Nonfarm Employment- thous.	4,131	4,117	3,875	+ 7
Total Employed - thous.	4,649	4,713	4,331	+ 7	Manufacturing	494	493	456	+ 8
Total Unemployed - thous.	283	267	395	-28	Construction	299	296	252	+19
Unemployment Rate - % SA	6.2	5.5	8.8		Trade	1,121	1,117	1,030	+ 8
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	651	653	648	+ 0
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	1,018	1,015	965	+ 5
Mfg. Avg. Wkly. Hours	41.2	41.6	40.0	+ 3	Fin., Ins., & Real Est.	306	304	282	+ 9
Mfg. Avg. Wkly. Earn. - \$	311	315	290	+ 7	Trans. Com. & Pub. Util.	232	229	233	- 0
GEORGIA									
Civilian Labor Force - thous.	2,754	2,714	2,675	+ 3	Nonfarm Employment- thous.	2,379	2,344	2,253	+ 6
Total Employed - thous.	2,593	2,543	2,466	+ 5	Manufacturing	528	525	502	+ 5
Total Unemployed - thous.	161	170	209	-23	Construction	127	122	104	+22
Unemployment Rate - % SA	6.1	6.2	8.0		Trade	578	564	536	+ 8
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	441	440	443	- 0
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	420	410	393	+ 7
Mfg. Avg. Wkly. Hours	41.6	41.3	40.7	+ 2	Fin., Ins., & Real Est.	125	124	120	+ 4
Mfg. Avg. Wkly. Earn. - \$	311	308	286	+ 9	Trans. Com. & Pub. Util.	151	151	147	+ 3
LOUISIANA									
Civilian Labor Force - thous.	1,916	1,897	1,909	+ 0	Nonfarm Employment- thous.	1,570	1,567	1,556	+ 1
Total Employed - thous.	1,746	1,723	1,673	+ 4	Manufacturing	179	177	177	+ 1
Total Unemployed - thous.	170	175	236	-28	Construction	113	114	111	+ 2
Unemployment Rate - % SA	9.0	9.2	12.5		Trade	372	370	362	+ 3
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	319	320	319	0
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	311	311	305	+ 2
Mfg. Avg. Wkly. Hours	42.3	41.9	39.4	+ 7	Fin., Ins., & Real Est.	84	84	82	+ 2
Mfg. Avg. Wkly. Earn. - \$	426	424	385	+11	Trans. Com. & Pub. Util.	114	114	118	- 3
MISSISSIPPI									
Civilian Labor Force - thous.	1,033	1,026	1,073	- 4	Nonfarm Employment- thous.	805	799	784	+ 3
Total Employed - thous.	936	921	924	+ 1	Manufacturing	212	210	198	+ 7
Total Unemployed - thous.	97	105	149	-35	Construction	32	32	36	-11
Unemployment Rate - % SA	9.8	9.6	12.4		Trade	168	166	162	+ 4
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	184	183	183	+ 1
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	128	127	125	+ 2
Mfg. Avg. Wkly. Hours	40.5	40.4	39.4	+ 3	Fin., Ins., & Real Est.	34	34	34	0
Mfg. Avg. Wkly. Earn. - \$	281	281	261	+ 8	Trans. Com. & Pub. Util.	38	38	38	0
TENNESSEE									
Civilian Labor Force - thous.	2,192	2,186	2,129	+ 3	Nonfarm Employment- thous.	1,791	1,770	1,705	+ 5
Total Employed - thous.	2,007	1,985	1,878	+ 7	Manufacturing	493	489	461	+ 7
Total Unemployed - thous.	186	201	251	-26	Construction	76	72	65	+17
Unemployment Rate - % SA	8.6	8.4	12.8		Trade	403	394	382	+ 5
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	306	308	304	+ 1
Insured Unempl. Rate - %	N.A.	N.A.	N.A.		Services	337	328	319	+ 6
Mfg. Avg. Wkly. Hours	41.1	41.0	40.0	+ 3	Fin., Ins., & Real Est.	81	83	80	+ 1
Mfg. Avg. Wkly. Earn. - \$	316	314	296	+ 7	Trans. Com. & Pub. Util.	88	87	86	+ 2

Notes: All labor force data are from Bureau of Labor Statistics reports supplied by state agencies.
Only the unemployment rate data are seasonally adjusted.
The Southeast data represent the total of the six states.
The annual percent change calculation is based on the most recent data over prior year.

Federal Reserve Bank of Atlanta
P.O. Box 1731
Atlanta, Georgia 30301

Address Correction Requested

Bulk Rate
U.S. Postage
PAID
Atlanta, Ga.
Permit 292