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Electronic Funds Transfer: An Introduction.... 7
The use of EFTS is growing in the nation and in the Ninth District. A sampling of the wide variety of services made possible by EFTS is described here. And the public policy issues that arise as the introduction of EFTS changes the financial industry are discussed.

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First Half '76 Review

The rate of economic activity in the district slowed somewhat in the second quarter. The slowdown seemed especially acute compared to the unusually strong first-quarter increases in many sectors.

In most sectors, economic activity surged rapidly upward in the first quarter of 1976. District manufacturing sales outpaced year-ago levels by about 15 percent in current dollars and 10 percent in constant dollars; and current-dollar retail sales in Minnesota were running about 25 percent over a year earlier. Seasonally adjusted housing permits were also substantially above 1975. Employment, too, moved upward from a year before, and the seasonally adjusted unemployment rate averaged 5.8 percent in the quarter—down from October's peak of 6.9 percent.

Many economic indicators leveled off in the second quarter, however. Retailers surveyed by this bank reported a general slowing in the rate of sales increases during the quarter. Consumer spending appeared somewhat weaker in rural than in urban areas, possibly due to the impact of the drought. Only a few retail firms in urban areas reported that year-over-year sales increases were fairly large, and they weren't as substantial as those reported in the first quarter.

Other indicators also slowed from the first-quarter pace. Manufacturers responding to our Quarterly Industrial Expectations Survey in May revised their expectations of future sales downward from the previous survey, a fairly reliable indication that actual sales would fall short of earlier expectations. The number of housing units authorized (seasonally adjusted) slowed from the first quarter. Due to the strong first-quarter showing, however, the monthly average of permits for the first half of 1976 was still much above that of 1975. The seasonally adjusted unemployment rate averaged 5.9 percent in the second quarter, not a lot higher than the 5.8 percent first-quarter rate, but not a continuation of the downward trend either. And business investment spending did not pick up during the quarter.
Second-quarter developments were disappointing, especially when compared to the first quarter's. Nonetheless, it appears that there was underlying strength in the district economy. The slowdowns were perhaps not as sharp as the data indicate. The first-quarter growth rates of some variables, such as consumer spending, were simply too large to continue for long. In addition, the very substantial retail sales advances in May and June of 1975 make the slowdown in year-to-year growth rates a somewhat misleading indicator of current economic performance. Finally, the uncommonly mild winter generated an unusual seasonal pattern in business activity, so that seasonally adjusted second-quarter data suffer by comparison.

Second Half '76 Outlook

Second-half economic performance may be more moderate than activity in the beginning of the year, but the outlook continues to be encouraging. One indicator lending support to this outlook is that personal income in the district has been growing at a healthy rate for several quarters in both nominal and real dollars. In the first quarter of 1976, personal income increased 13 percent above 1975 in current dollars, consumer prices were up about 7 percent, and the rate of improvement in real income accelerated rapidly. Armed with more real purchasing power, consumers should help sustain the recovery in coming months—though future increases in spending are not likely to match first-quarter gains.

Recent labor market developments also point toward a continuing recovery. Actual district employment is still rising: the overall gain in the second quarter of 1976 was 3.4 percent over a year earlier; but individual state gains varied. Employment in North Dakota, for example, increased a sharp 9 percent over a year before, while Upper Michigan, plagued by unemployment in the copper industry, saw almost no change at all. Seasonally adjusted district manufacturing employment, which lagged during the first quarter, showed signs of a moderate revival.

Some advance in inventory accumulation in the district seems likely in the second half. However, purchasing agents still have vivid memories of the inventory overhangs of 1974, so any buildup in stocks will probably be kept in line with sales.

Business investment spending remains a soft spot in the district economy. Indications are that excess capacity still exists in most sectors and that large increases in capital spending are not likely in 1976. Some industries in the region, such as taconite, are rapidly expanding capacity, though. And higher rates of aggregate business investment should begin showing up by year-end.

The district's financial institutions are in a good position. The seasonally adjusted annual rate of growth in savings inflows at S&Ls and banks during the first half of 1976 was in the 10 to 14 percent range. They now appear to have enough liquidity to support a second-half advance in homebuilding and business activity.

In summary, conditions seem to be in place for a fairly broad-based recovery in the second half, with consumer spending, inventory accumulation, business spending, and housing construction all contributing in varying de-
pasture and range conditions in Minnesota were at best only fair and in many areas very dry. Pastures were extremely poor in much of North and South Dakota. With limited grazing available, farmers in many areas resorted to supplemental feeding, thereby placing a strain on existing hay stocks.

The real crunch in feed markets did not come until late June. Stocks of hay in Minnesota, for instance, were substantially above both 1974 and 1975 levels on May 1, and prices of hay in mid-May averaged $43 per ton, far below the $73 of May 1975. But as pastures dried up, hay became more difficult to find. Many stocks were held for on-farm consumption rather than sold in the marketplace. In addition, existing stocks were not spread evenly across regions. So farmers who were forced to buy hay found only limited supplies available. These pressures pushed hay prices up to $68.50 by mid-June.

Agriculture at Midyear
Drought dominated district agriculture in the second quarter. Little rain fell in Minnesota and the Dakotas from mid-April until early July. What effect has the drought had on the district's farm economy?

On Livestock
The immediate impact was greatest in the livestock sector, due to tight feed supplies. July 1...

...and consumers' real buying power strengthened further.

<table>
<thead>
<tr>
<th>Percentage Changes From One Year Earlier</th>
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<tr>
<td>Personal Income (Minnesota, Montana, North &amp; South Dakota)</td>
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<tr>
<td>Consumer Price Index (Minneapolis-St. Paul)</td>
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<td>%</td>
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*First month of each quarter
Sources: U.S. Departments of Labor and Commerce, BUSINESS WEEK

Faced with high feeding costs, some farmers and ranchers increased their livestock marketings. Slaughter of cattle in South Dakota in the first half of 1976 was up about 25 percent from a year before—the heaviest increase in the district; nationwide cattle slaughter was up about 10 percent.
The heavy slaughter helped reverse the upward movement in cattle prices which occurred in early April. By late April, prices of choice steers dropped off from about $45 to $40, and they stayed there through the rest of the second quarter. Stocks of beef in cold storage in early July were much larger than a year earlier, and buyers felt little pressure to bid up prices. Because stocks of pork in cold storage as of June 1 were down from 1975, hog prices were bid above $50, though an expansion in supplies was expected soon.

**On Crops**
The full impact of the drought on district crops cannot yet be determined. On balance, yields will likely be short of trend, but crop conditions change almost daily with variations in weather conditions. Some areas stricken by the May drought received rain in June, which boosted crop prospects; other areas continued dry, worsening prospects.

Crop conditions also varied across the district. Moisture supplies as of early July were still extremely short across South Dakota and western Minnesota. But corn and soybean crops elsewhere in Minnesota were in fair-to-good condition as of June 30. Although crop growth was greater than normal, frequent rainfall was needed to carry it through to harvest. Crop conditions were mixed across North Dakota; and the winter wheat crop in Montana was in good condition, though yields were expected to be down somewhat from last year.

Grain prices in the nation edged up during the second quarter, but only soybean advances were extreme (due to factors other than the drought in the Upper Midwest). Soybean supplies were adequate at the close of the first half, and the ending stocks from the current marketing year were expected to be sizable. But an apparent cutback in acreage of about 10 percent, a continuing strong export demand, and a high demand for soybean meal all raised concern that supplies may be short a year from now, thereby boosting prices. Fears of higher future prices probably caused advance buying which would help drive prices up further.

In the coming marketing year, adverse price movements may represent as great a threat to cash flows as do drought conditions. The latest national outlook is for record crops, which will tend to lower commodity prices. This outlook will change rapidly, of course, if crop conditions deteriorate in other regions of the United States.

**On Financing**
Cash flows into the farm sector were above a year ago through the first four months, despite the widespread drought conditions. Livestock receipts were up due to higher prices and heavier marketings in the first quarter. Since farmers were still selling grain from past years, crop receipts were down only slightly from the first quarter of 1975.

The months of July and August will be critical for district farmers. If the weather is dry, they will have to readjust their financial situations by lengthening debt repayment schedules and by relying more on debt financing to meet operating costs.

Rural banks seem to have an adequate supply of loanable funds. The seasonally ad-
Crop conditions improved in Minnesota but not the Dakotas.

As of June 1, 1976

As of July 1, 1976

Source: U.S. Department of Agriculture
justed loan-to-deposit ratio at ag banks in the district remained unchanged through the first half of 1976. Several banks in regions hit hardest by drought still sold fed funds to other banks in mid-June. Finally, few banks turned to the Federal Reserve System to borrow funds under either the regular discount privilege or the seasonal borrowing privilege.

With respectable cash receipts and adequate liquidity at rural banks and if rainfall is sufficient to produce at least fair yields in many areas, the worst financial effects of the drought may be localized in only a couple of regions within the Ninth District.

John Rosine
Electronic Funds Transfer: An Introduction*

Electronic funds transfer is not a thing of the future. A great number of financial institutions already are using electronic funds transfer (EFT) and offering EFT systems (EFTS) to their customers, and that number is growing. As a result, more people are being affected by EFT every day.

This article provides a brief overview of what EFT is, what types of services it can offer businesses and individuals, and what types of programs are available in the Ninth Federal Reserve District. Though it means increased convenience and efficiency, EFT raises a number of significant issues that must be resolved before the electronic transfer of funds can be fully accepted and implemented. Some of these concerns are examined here, too.

EFT includes all electronic processing of payments, whether within a company or between it and some other firm, institution, or individual. EFTS are complex systems and facilities which electronically process financial data, transmit financial information, or transfer funds between financial institutions (or their customers) within any given area.

EFT technology does not mean that electronic signals will completely take the place of checks, coin, and currency. However, some present-day applications include these examples:

- Employers across the nation can pay workers in a new, “paperless” way—by electronic deposits to their employees’ checking accounts.
- Individuals can preauthorize paperless payment of many recurring bills—like mortgage payments and insurance premiums—so the recipient firm will initiate an electronic transfer of the payment from the customer’s account to the firm’s account.
- A financial institution in Europe can complete a transaction with a bank in the United States by electronic signals in just minutes.

EFT involves the application of electronic and computer technology to many other financial transactions and services as well. But basically, it links financial institutions to each other and to their customers (individuals or businesses). These are the two types of applications looked at here.

EFTS Among Financial Institutions

Eleven New York City clearinghouse banks¹ operate the Clearinghouse Interbank Payments System (CHIPS), which provides for electronic communications and funds transfer among 62

¹A clearinghouse bank acts as an agency through which a voluntary organization of banks in a given area can exchange and settle checks among themselves.
New York City banks, foreign bank agencies, and Edge Act corporations. Each institution is connected to (on-line with) a central computing facility and enters transactions on its own terminal. And even though most of the transactions involve a foreign payor or payee, the funds transfers are settled by the New York Federal Reserve Bank the day after entry. Each day CHIPS handles about 35,000 transactions totaling about $43 billion.

The Society for Worldwide Interbank Financial Telecommunications (SWIFT) is a privately owned system being developed by more than 300 banks in Europe, Canada, and the United States. When SWIFT is completed in October 1976, centers for the transfer of funds (like the central computing facilities of CHIPS) will be located in Brussels and Amsterdam. Transactions will be sent from there to participating countries by special postal and telecommunications lines.

An older system exists within the United States in the Federal Reserve Communication System (Fed Wire). At its beginning in June 1918, the Fed Wire transferred funds for member banks and their customers over telegraph lines connecting the 12 Federal Reserve Banks, the Board of Governors, and the U.S. Treasury. Electronic and computer technology has transformed this system to a 40,000 mile communications network of teletype lines and computer circuits. And the number of linkages has been expanded to include other government agencies, some regional check-processing centers, and 200 member commercial banks.

The central communication facility of the Fed Wire is in Culpeper, Virginia. In this system a bank, acting for itself or for a customer, sends an electronic message describing a transaction (usually a transfer of funds, securities, or Federal Reserve administrative information) to its district Federal Reserve office. That office debits the initiating bank’s reserve account.

The message is then transmitted to the center in Culpeper and to the appropriate Reserve office, which completes the original transaction. An average daily volume is about 30,000 transactions totaling about $120 billion. Today three of the Ninth District’s largest banks have their own terminals and are on-line with the Fed Wire.

Another example of computerized linkage among financial institutions is the Automated Clearinghouse (ACH). This system operates in much the same way as a traditional clearinghouse, but instead of providing for the exchange of payments with batches of paper checks, it provides for the exchange of pre-authorized payments on magnetic tape. The ACH gets a tape of transaction information from a bank and electronically directs each item to the appropriate receiving bank where customer accounts are posted. Operation of the system can be broken down into two types: crediting and debiting.

An example of the credit system is the direct deposit of payrolls. Instead of getting paychecks to cash and deposit, some employees authorize their employer to deposit their pay directly into their bank accounts. In a familiar application of an ACH debit system, customers authorize their bank to deduct fixed amounts to pay regularly recurring bills, such as mortgage payments or insurance premiums.

The development of ACHs began in 1968 by a group of California banks; the first ACH became operational there in 1972. The American Bankers Association played a major role in the early development by sponsoring task forces and encouraging the banking industry to participate in EFT. The federal government has provided further impetus through its Air Force payroll program (about half of all ACH entries are Air Force credits), and Social Security Administration payments will soon be directly deposited by electronic entry. The National Automated Clearinghouse Association (NACHA) was founded in 1974. By year-end 1975 it had 17 regional associations throughout the country with almost 5,200 financial institu-
tions as members. NACHA monitors the practical and legal development of automated transactions in the United States; with approximately 1,000 EFT projects active now, this is a growing responsibility.

**EFTs Between Customers and Institutions**

EFT does more than electronically transfer funds and information for financial institutions. It directly affects consumers by providing new and fast methods of making payments and receiving funds by automating some of a financial institution's customer services. So far, three basic types of consumer electronic terminals offer automated services:

- **Cash Dispensers** enable bank customers to withdraw cash from demand or savings accounts or from an agreed line of credit.

- **Automated Teller Machines** (ATMs) can verify account balances, accept deposits or make withdrawals from checking and/or savings accounts, transfer funds between a customer's checking and savings accounts, and accept loan payments.

- **Point-of-Sale** (POS) **Terminals**, located in retail stores, verify checks and/or funds, dispense cash, or transfer funds directly from customers to merchants.

One of the earliest and certainly one of the most well-known examples of a successful EFT program linking a financial institution with its customers is the one between *First Federal Savings and Loan of Lincoln, Nebraska*, and *Hinky Dinky Food Stores*.

The system began in early 1974 when First Federal installed electronic terminals in two Hinky Dinky food stores in Lincoln. The machines let customers deposit or withdraw from their First Federal savings accounts. Now First Federal has a franchising operation with two other S&Ls in the Omaha area, and there are more than twenty terminals in the state.

An extension of the Hinky Dinky program in July 1975 resulted in a system of shared terminals between First Federal Savings and Loan of Lincoln and the Omaha National Bank. Each institution has a program of automated deposit and withdrawal that operates independently from the same set of terminals, some of which are owned by the savings and loan and some by the commercial bank. Plans are being made for expansion of the shared terminal operation beyond the Nebraska area. First Federal is marketing the idea, through the TMS Corporation of America, to organizations throughout the country.

A successful ATM program in the state of Georgia is *First National Bank of Atlanta’s Tillie the Teller*. The program was initiated during 1974, and in its first full year of service, it handled almost 1.5 million transactions.

First National’s customers have access to the many automated teller services just by putting a special card into the machine. “Tillie” supplements the bank’s human teller operations by speeding up service at heavy times and providing regular teller window services 24 hours a day, 7 days a week. Most of the machines are at branch offices of First National Bank of Atlanta, but others are in outlying neighborhoods: suburban shopping centers, supermarkets, a college campus, and the airport.
Tillie the Teller is widely accepted in the Atlanta area. In early 1975 First National had eleven ATMs, and it added five more at various times throughout the year; during 1975 the average weekly number of transactions per machine was 3,000. The bank added three more facilities in the first few months of 1976 and plans to have a total of twenty by year-end. Management wants to increase the frequency that cardholders choose the ATM over the teller window from 35 to 50 percent of the time, and they estimate that 2¼ million transactions is a reasonable target for the year 1976.

Bankmate is a regional financial communications network being developed for use in Missouri, Iowa, Kansas, Illinois, and western Kentucky. Along with 30 automated financial convenience centers, it will have 1,000 shared POS machines. All 2,300 commercial banks in the area are being asked to participate.

The POS locations will provide check guarantee and automatic, direct transfer of funds from customers' to merchants' accounts. The system is significant because it could link all banks in that area to all the terminals and because it could ultimately interface with other regional systems and national or even international programs.

EFTS in the Ninth District
Ninth Federal Reserve District financial institutions have expressed interest in EFTS, and they are just beginning to experiment with and develop systems for the district. Some programs are now under way and are experiencing varying degrees of success.

One system in which Ninth District businesses are very much involved is the Upper Midwest Automated Clearinghouse Association, which began operating out of Minneapolis-St. Paul in July 1974. At year-end 1975 it had a membership of 1,090 banks and 100 companies were participating. The average monthly volume of private transactions in 1975 was about 2,000 debits and nearly 23,000 credits. In addition, the Air Force payroll program accounts for approximately 24,000 credits per month at the Upper Midwest ACHA.

Merchants National Bank and Trust Company of Fargo, North Dakota, initiated experimental use of its Fastbank in two supermarkets in December 1975. These ATMs, on-line to First Computer Corporation of St. Paul, are operated by store personnel at courtesy counters and are activated by the specially encoded First Bank Cards now held by 3-4,000 customers. Most of the transactions made so far have been deposits and withdrawals from checking accounts, with other types of ATM activities still fairly uncommon.

Merchants' system is the first to be established in North Dakota since state legislation permitted state banks to provide the same kind of EFT service as national banks in the state. The terminals are available for sharing, as required by state law; and though no such link-up has occurred yet, several banks have apparently expressed interest in sharing.
In Minneapolis, Farmers and Mechanics Savings Bank’s Pay-by-Phone plan lets customers use their phones to authorize bill payment from interest-bearing savings accounts. Funds are then withdrawn from the customer’s account and transferred by cashier’s check to accounts of over 980 participating merchants, banks, and other financial institutions.

Since F&M began its system in November 1974, four savings banks on the East Coast have begun to offer a pay-by-phone system, four others have plans to, and twenty savings banks in Massachusetts have joined in a study of its feasibility.

By mid-October 1975, after one full year of operation, F&M reported having 8,500 telephone accounts holding $22 million in deposits. By year-end 1975, there were 12,000 accounts with $27 million. By the end of 1976, their management projects $50 million in Pay-by-Phone accounts.

Twin City Federal Savings and Loan, operating in the Minneapolis-St. Paul metropolitan area, has the most extensive EFT network in the Ninth District. Its Prestige Card system links 125,000 consumers to their funds on deposit in TCF passcard accounts.

The TCF terminals, operated by store personnel, will accept deposits and allow withdrawals and check cashing with savings deposits held as collateral. The POS terminals are all on-line to the TCF computer center which also provides support for over fifty ATMs belonging to TCF as well as other savings and loans in the five-state area.

TCF began its POS experiment in March of 1975 with the installation of two remote terminals in Red Owl grocery stores. Terminals are now available at seven Red Owl stores, twenty-eight Snyder’s Drug stores, and six Dayton’s department stores. TCF recently announced it will soon be increasing the size of the network with the addition of thirty-three more Red Owls, twenty-seven Applebaum’s grocery stores, and five Powers department stores in the metropolitan area.

The four programs mentioned here are a sampling of how financial institutions in this district are introducing EFTS to their customers. This is just the beginning, and further development of these and other types of systems is likely in the future.

Public Policy Issues Posed by EFTS

The implementation of electronic funds transfer systems presents public policy makers with several significant concerns. Among these are that without some change of current laws and regulations the competitive balance which exists among types of financial institutions might be altered; that a choice between public ownership or regulated private ownership of automated clearinghouses may be required; that a choice between shared or separate POS retail systems may be necessary; and that the privacy and safety of personal finances might be threatened.

Competitive Balance Among Institutions

Present state and federal laws distinguish between types of financial intermediaries in terms of permissible assets and liabilities, interest paid on deposits, and tax treatment. These laws have resulted in a competitive balance among the types of institutions. But introduction of EFTS under current laws could shake this balance.

For example, current judicial interpretation of existing state and federal branching laws seems to be leading to the final determination that automated retail banking terminals are branches and therefore subject to state laws governing branch banking.

This means that in those states which prohibit branch banking all commercial banks would be (as some are now) legally restrained from operating such machines. At the same time, other financial institutions which are not subject to state branching laws, such as federally chartered S&Ls, would continue to be free to offer financial services through these terminals. As a result, commercial banks in many states would not be able to offer the services that other financial institutions could,
possibly resulting in a significant change in the competitive balance.

Policy makers need to decide if this and other such changes are desirable and, if they are not, whether legislation should be enacted to prevent undesirable alterations in the competitive balance.

**Public or Private Ownership of ACHs**

Automated clearinghouses must be large-scale in order to achieve minimum costs and efficient allocation of resources. Therefore, a system of many suppliers, each with a small- (or inefficient-) size operation, would result in higher-than-necessary prices and wasted resources.

The apparent economies of scale in the clearinghouse function suggest that a public supplier, a single (or perhaps joint) unregulated private supplier, or a regulated private supplier of EFT services could outperform a free enterprise structure. But because these alternatives are noncompetitive, policy makers must carefully appraise the benefits and costs of public versus private provision of services. If public ownership is favored, policy makers must establish a pricing schedule which promotes an
efficient and equitable use of clearing services. If private ownership is favored, they must further consider what form of regulation would be necessary to achieve desired performance from a single or joint private owner.

Separate or Shared POS Facilities
Point-of-sale retail systems raise a public policy dilemma between the potential for an undesirable proliferation of terminals and the potential for collusion and other anticompetitive behavior.

As a matter of convenience to their customers, retail merchants would certainly want access to the services of as many financial institutions as possible. If public policy makers adhere to a principle of encouraging competition among suppliers, then each financial institution would want to supply its own hookup with every participating merchant. Unfortunately, such an environment would result in an unnecessary and wasteful duplication of terminals at a given retail outlet. Since it seems unreasonable to expect a retailer to house separate facilities for each and every financial supplier, promotion of a system of strictly separate and competing suppliers might significantly retard merchant and consumer acceptance of the benefits of the POS system.

The alternative to such an undesirable proliferation of POS terminals is some sort of sharing agreement between financial institutions. However, cooperative arrangements could lead to collusion or pricing and create the potential for other types of behavior that would deny the marketplace the benefits derived from having independent competitors. The potential for anticompetitive behavior could be reduced through regulation, but the conflict between promotion of competition and promotion of efficiency will be a difficult public policy issue to resolve.

Privacy and Safety
For consumers, the most important EFTS concern is the increased potential for theft and invasion of privacy. While these possibilities have always existed, EFTS technology in-