

# Dealing with the dollar, part 2

IN THE SECOND HALF OF A TWO-PARTER ON SETTLEMENT AND CLEARING SYSTEMS IN THE US, **WILL SPINNEY** EXPLAINS THE AUTOMATED CLEARING HOUSE SYSTEM, FEDWIRE AND CHIPS.

**T**he US automated clearing house (ACH) system provides a funds transfer system for the settlement of domestic transactions to US depository institutions through a network of regional ACHs. The regional

ACHs are controlled by financial institutions that are members of NACHA (originally the National Automated Clearing House Association, now also known as the Electronic Payments Association). Most ACHs are run by the regional US Federal Reserve Banks although some are privately run by companies such as Visa.

Originally set up as a way of reducing cheque payments, the ACH system was established in 1973 to handle low-value, high-volume, mainly repetitive payments on a batch basis. Using the ACH network, consumer or corporate accounts at any NACHA financial institution can be debited or credited electronically.

Corporations use the ACH system because it provides a low-cost and convenient alternative to cheques or standard electronic funds transfers. Payroll, pension and annuity payments account for around 96% of all ACH credit items, while approximately 75% of debit items are collections of insurance premiums and other consumer bill payments. The remaining items mainly relate to corporate cash concentration and trade payments. Interestingly, the recent annual growth of the ACH system is largely a consequence of the increase in the use of the network by companies for larger-value trade settlements.

To implement an ACH payment programme, the originating company must obtain the authorisation of the party to be debited or credited. The company then creates a computer file of transactions, usually directly in ACH format with a specified value date, which it forwards to its bank for processing. Alternatively, a company can use an ACH bureau that can accept transactions in any format, including paper. It then converts the items to ACH format and forwards them to the bank on the company's behalf as a computer file. Files may be submitted on tape, disk or via computer-to-computer transmission. Unlike Australia or the UK, where files are delivered directly to the clearing centre, ACH files in the US are submitted via an originating bank called the originating depository financial institution (ODFI). The ODFI could be originating debit or credit transactions, which are forwarded via the ACH to the receiving depository financial institution (RDFI).

Having processed any items on the file for accounts on its





own books, the bank forwards the file to its regional ACH where items destined for banks in the same region are passed to the respective receiving banks. Items for other regions are forwarded to the appropriate regional ACH and then on to the RDFIs.

Both originating and receiving banks debit or credit their customers and settle (usually at the Federal Reserve Bank) on settlement day. As the ACH process takes one or two days (depending on whether transactions are local or inter-regional, or debit or credit items), settlement is either one or two days after origination. ACH credits must be originated two days before settlement and ACH debits one day prior to settlement. Generally, there is no float associated with the ACH.

ACH credit transactions are considered cleared or "final" once the ODFI's account has been debited at 8:20 Eastern Standard Time (EST) on settlement day. The one exception is in the case of an ODFI failure, in which case the Federal Reserve can reverse a credit no later than the morning following settlement. Debits may be returned by the RDFI, no later than opening of business two banking days after settlement and are, therefore, not considered final until two days after settlement. The one exception is that unauthorised consumer debits can be returned up to 60 days after settlement. Figure 1 illustrates the flow of a credit transaction using the ACH system.

Under normal circumstances US banks regard an ACH service as having a two-day credit exposure, and an appropriate credit facility is usually required. Additionally, if a bank categorises its customer as a poor credit risk it may insist on prefunding ACH payments on origination date.

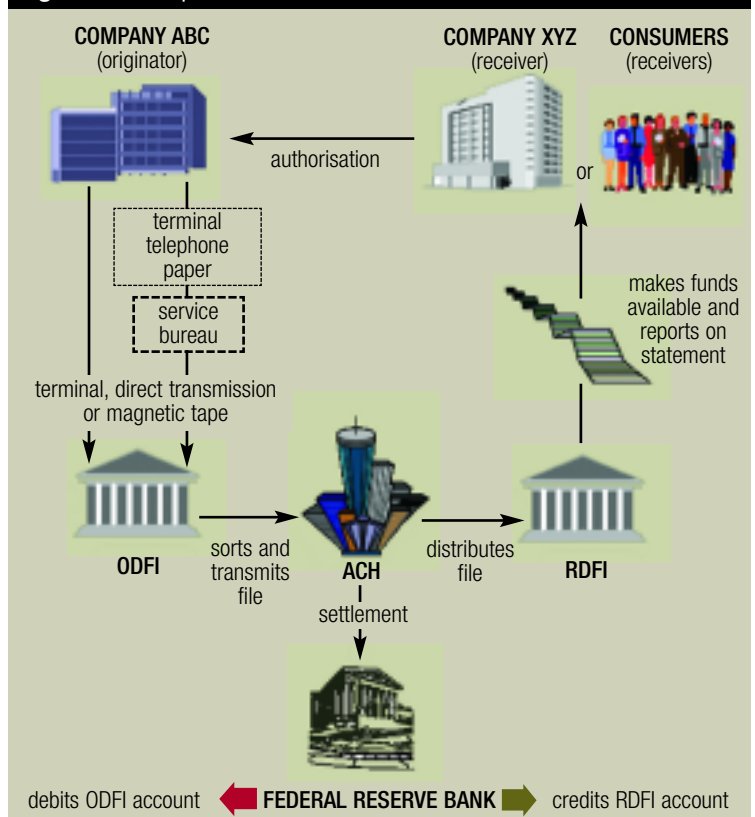
The ACH system is a domestic payment system and banks' fees for ACH payments are a fraction of the cost of a wire transfer. The easiest way for a foreign company to access the US ACH system is to maintain a dollar bank account with a US bank that allows direct access to the ACH cross-border. This may not be possible with all banks, due to concerns with the Patriot Act and Know Your Customer (KYC) regulations.

**THE FEDWIRE SYSTEM** Fedwire is the only true wire transfer system in the US and is run and guaranteed by the Federal Reserve. It has more than 9,500 member institutions, most of which communicate with Fedwire via online terminals, PCs or mainframe-to-mainframe computer links.

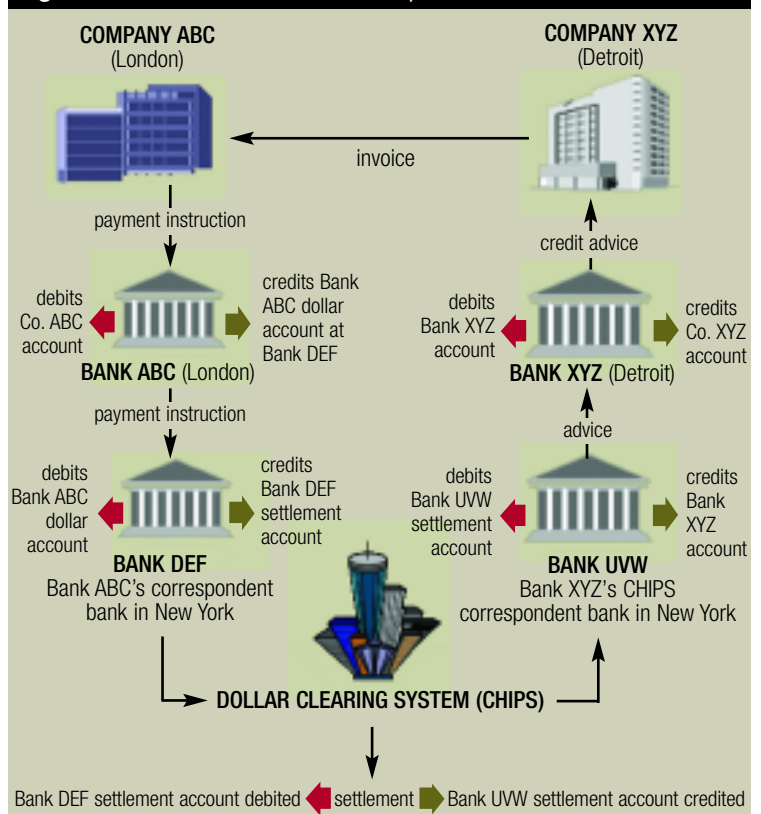
Fedwire provides the primary credit payment system in the US for domestic dollar wire transfers (it compares closely with CHATS in Hong Kong and CHAPS in the UK) and is used for settlement of high-value same-day transactions. It operates on a real-time gross settlement (RTGS) basis. On an average day the system processes around 550,000 payments with a value of three trillion dollars.

Fedwire operates between the hours of 21.00 the previous day and 18.30 EST on settlement day to ensure an overlap of operating hours with the central banks of other major countries, continuous linked settlement (CLS) and the West Coast. Members settle their obligations with each other across accounts held for the purpose at the appropriate regional Federal Reserve Bank. Under the Monetary Control Act 1980, most financial institutions gained the right to

**Figure 1: ACH process flow for a credit transaction**



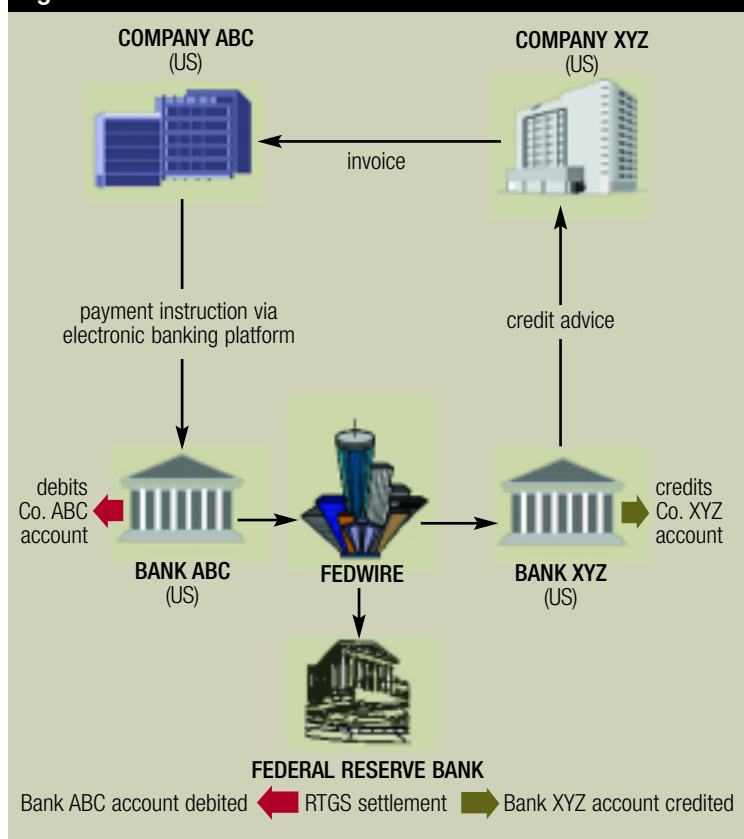
**Figure 2: International wire transfer process**



# cash management

## US SYSTEMS

**Figure 3: US domestic wire transfer service**



maintain accounts with the Fed and to use Fedwire. Similarly, the International Banking Act 1978 enabled access to foreign banks' branches.

There are basically two types of Fedwire transaction, bank-to-bank and third-party transfers. Bank-to-bank transactions consist of settlement transfers and interbank loan settlements. Third-party transfers are often used for the settlement of securities trades, commercial trade payments and some Eurodollar and foreign exchange settlements (the latter mainly for banks outside New York that are not members of CHIPS). The US government also makes extensive use of Fedwire to handle the payment of high-value obligations.

The system settles transactions individually and continuously. Under Federal Reserve regulations a transfer becomes final once Fedwire notifies the receiving bank of the incoming wire. The whole process takes no more than a minute or two, although there may be delays in execution due to a customer or bank reaching a credit limit, or to the need for manual intervention.

Fedwire is linked to both CHIPS and SWIFT (Society for Worldwide Interbank Financial Telecommunications) for automated, straight-through processing. However, the system carries very little information with the payment.

**CHIPS** The US has a second high-value clearing system, the bank-owned Clearing House Interbank Payments System (CHIPS), which competes with Fedwire. Originally developed in 1970 to clear dollar cheques that originated overseas, it now processes up to 95% of the value of dollar cross-border wire payments. Settlement is across a member's dedicated CHIPS account with the New York Federal Reserve Bank. It is, however, a clearing system and not, strictly speaking, a transfer system.

The main features of CHIPS are:

- It is run by The Clearing House in New York, has 47 members and processes approximately 350,000 transactions per day by volume and \$1.9 trillion by value.
- Members are major banks, branches of foreign banks, or Edge Act offices of US banks located in New York.
- Operating hours are 21.00 (the previous day) to 17.00 settlement day, with final positions closed out at 17.15 EST. These hours enable all three major international time zones to participate.
- The system operates as a message switching centre and a recorder of transactions between members.
- A real-time multilateral netting system, CHIPS matches and settles payments on a continuous basis using a patented algorithm.
- Participants are required to prefund their payment activity.
- Once released into the system a payment cannot be recalled and is, therefore, final upon release.
- The amount of prefunding is determined on the basis of the banks' activity in CHIPS.
- Prefunding occurs between 21.00 the previous day to 9.00 settlement day.
- Because payments are prefunded, the bulk of them can be processed at the beginning of the working day.

**Figure 4: Comparison of US payment systems**

|                | Payor debited | Payee value | Notes  |
|----------------|---------------|-------------|--|
| <b>Fedwire</b> | Same day      | Same day    | <ul style="list-style-type: none"> <li>■ wire transfer system</li> <li>■ run by the Federal Reserve</li> <li>■ national system</li> <li>■ guaranteed by the Fed</li> <li>■ funds final immediately</li> <li>■ gross settlement</li> <li>■ limited information</li> </ul>                                 |
| <b>CHIPS</b>   | Same day      | Same day    | <ul style="list-style-type: none"> <li>■ clearing system</li> <li>■ run by The Clearing House in New York</li> <li>■ New York City system</li> <li>■ funds final immediately</li> <li>■ prefunding required</li> <li>■ net settlement</li> <li>■ accommodates 9,000 characters of information</li> </ul> |
| <b>ACH</b>     | 1 to 2 days   | 1 to 2 days | <ul style="list-style-type: none"> <li>■ finality 0 (credit) or 2 (debit) days after settlement day</li> <li>■ direct debits can be returned unpaid up to 60 days for consumer debits</li> <li>■ CTX envelope can accommodate large amounts of remittance data</li> </ul>                                |
| <b>Cheques</b> | 0 to 3 days   | 0 to 3 days | <ul style="list-style-type: none"> <li>■ depends on location</li> <li>■ bank float is limited by processes used and regulations</li> </ul>   |



- There are two types of participants: settling members and non-settling members. The latter use settling members and settle across correspondent accounts.
- As settlement is real-time there is no risk of daylight overdraft exposure.
- Settlement banks use proprietary links to communicate with CHIPS.
- CHIPS offers a high degree of straight-through processing and has interfaces with both Fedwire and SWIFT.
- CHIPS uses a constantly updated universal identifier database (UID) to verify and match banks' corporate customers with their account information. The UID is similar in concept to International Bank Account Numbers (IBANs).

Although originally developed to clear international transactions, CHIPS can also be used for domestic transfers. One of the big advantages that it has over Fedwire is that electronic data interchange (EDI) features allow corporate end-users to send up to 9,000 characters of additional

## CORPORATIONS USE THE ACH SYSTEM BECAUSE IT PROVIDES A LOW-COST AND CONVENIENT ALTERNATIVE TO CHEQUES OR STANDARD ELECTRONIC FUNDS TRANSFERS.

information (remittance details, product specification, etc) with the payment.

**ACCESS TO CHIPS AND FEDWIRE FROM OUTSIDE THE US** Payments to the US from other countries already access Fedwire or CHIPS. If a company does not maintain a dollar account in the US, the transfer is effected as shown in

Figure 2 using the CHIPS clearing system. If a company maintains a dollar account, then the transfer is effected using the electronic banking platform supplied by the bank as if it was a domestic wire transfer, as illustrated in Figure 3.

This latter method is much cheaper on a per item basis than the former method, but the disadvantage is that an additional account in the US needs to be maintained.

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