

# Central Moneymarkets Office

*Transactions in negotiable instruments in the London money markets have until very recently had to be settled by messenger delivery of paper securities in exchange for payment, normally in the form of Town cheques. This note<sup>(1)</sup> describes the new settlement facilities for sterling money-market transactions provided by the Central Moneymarkets Office—a new service, inaugurated on 1 October, which allows transfers to take place by means of computerised book entries instead of physical delivery.*

## Introduction

The Bank of England has developed a new service to enable settlement of transactions in sterling money-market bearer securities<sup>(2)</sup> to be carried out by electronic book-entry transfer. The Central Moneymarkets Office (CMO), launched on 1 October, operates alongside its sister computerised settlement system in the gilt-edged market, the Central Gilts Office (CGO), which the Bank has been running since 1986.

The desirability of a book-entry transfer system for money-market securities has been apparent for some time and attempts were made by the market itself to develop a system in 1986-88. When these attempts did not come to fruition, the Bank decided that it would examine the possibility of developing a system. A decision was taken in principle in the autumn of 1988 and, having consulted the principal participants in the money markets to determine the nature of the facilities to be provided, the Bank put forward detailed plans for the CMO in August 1989. Recruitment of participants in the new service began immediately thereafter.

## Reasons for development

The Bank has wished for some time to improve the efficiency and security of clearing and settlement systems in City financial markets, so as to enhance London's attraction as a financial centre.

CMO will contribute to this aim by improving security, avoiding the risks and expense of moving paper physically around the City. These risks were well illustrated last summer when £292 million of Treasury bills and certificates of deposit were stolen from a City messenger in King William Street. In addition, the CMO will increase the speed and efficiency of settlement and provide the opportunity for a greater volume of trading during the day.

## Design

The Bank undertook the design, programming and testing of the computer system and was also responsible for the

management of the installation of the hardware.

Development of the security system and software in the terminals was sub-contracted to The International Stock Exchange who were the Bank's partners in the development of the CGO service. The total development cost, including hardware, software and the marketing effort, was £11 million. As many as seventy of the Bank's staff have been involved at different stages in determining the service's requirements, system design and testing, marketing the service, training the members, service trialling, and implementing office procedures.

In order to connect users of the CMO service to the system's computer, the Bank is using The International Stock Exchange's communications network—the Integrated Data Network (IDN)—which also carries electronic messages between the CGO terminals and the CGO central computer. One hundred and thirty-eight terminals are connected with the CMO central computer. The IDN is well-established in the securities industry, providing a communications network for a number of other information, trading and settlement services offered by The International Stock Exchange.

## Membership

By the launch, on 1 October, forty-four institutions had joined CMO as direct members; three more have joined subsequently. A direct member has a book-entry account in CMO in its own name. It arranges for a settlement bank to make and receive payments on its behalf for instruments transferred from and to any other direct member. A large number of other firms are participating indirectly through agency arrangements: one hundred and nine firms have indicated that they will be lodging bills and CDs into CMO by this route. Settlement is conducted on their behalf by an agent which itself has to be a direct member and may provide similar facilities for a number of indirect participants.

## Key features

In designing the CMO, the Bank drew on its experience in building and running the CGO service. Although the

(1) Written by R J Walton in the Bank's Banking Department.

(2) At present, CMO is designed to handle Treasury and local authority bills, eligible and ineligible bank bills, trade bills, bank and building society certificates of deposit, and commercial paper.

systems are similar, the instruments are rather different in nature. At present, each instrument in CMO is unique and preserves its identity as a paper instrument held within CMO. Gilt-edged stock in CGO, on the other hand, is interchangeable—transactions between CGO members are settled by debiting the CGO account of the transferor and crediting that of the transferee; no stock transfer forms or paper certificates are involved. Legislation currently defines money-market instruments in terms of pieces of paper or documents, and there is no provision for the instruments to be issued and traded in purely electronic form. To eliminate the need for paper in CMO would require amendment of legislation to preserve the advantages of negotiable instruments in paper form. Work is in hand on the legal issues involved.

Until the end of the role of paper as evidence of ownership, instruments will still need to be prepared and brought in for lodgement into CMO. The lodging member guarantees the validity of these paper instruments. Once lodged, they are immobilised in a safe-custody vault at the Bank of England, where, provided they are not subsequently sold to a non-participant, they can remain until maturity. Meanwhile a detailed description of each of the individual instruments and a record of ownership is maintained by the central computer system.

Certificates of deposit and commercial paper which are held in CMO may be produced to standards (in terms of quality of paper and print) that are less exacting than the very high security standards required for instruments transferred by physical, rather than book-entry, delivery. If it is necessary

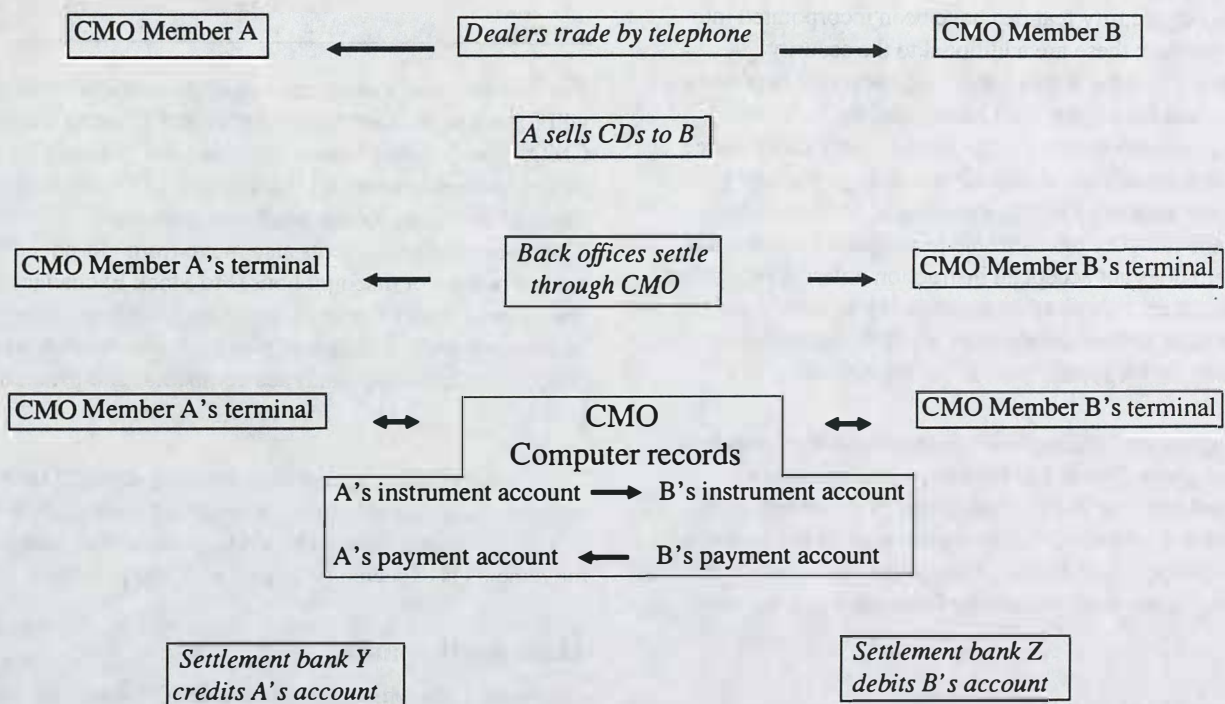
for instruments to be withdrawn, high security paper must be substituted. This procedure enables issuers to avoid the costs of high security printing.

CMO is a settlement system not a dealing system. Trading will continue to be done over the telephone. Once the deal has been completed, the transfer of ownership from seller to buyer and the simultaneous transmission of the payment instruction in the opposite direction are communicated over the CMO's real-time computer system via terminals located in members' offices.

The member offering the instruments enters the details into his terminal. The transfers do not take place until the offer of instruments has been accepted, via the system, by the taking member. The settlement process transfers instruments from the account of member A (as shown in Chart 1) to that of member B, and generates the payment instruction for the amount of the sale to the members' payment accounts in CMO. The payment instructions, as shown in the payment accounts, are provided at 16.00 hours each day to the members' respective settlement banks—Y and Z. This enables the settlement banks to make the necessary credit and debit to their customers' accounts.

Electronic messages between the terminals and the central computer are carried over the IDN. A key feature built into the system is that instruments are not allowed to move from one member's account to that of another until both members have authorised the transfer. This ensures that instruments cannot be removed from a member's inventory without his knowledge and approval. The concept of 'positive

**Chart 1**  
**The settlement process in CMO**



acceptance' ensures that cash and instruments only move between the members; transfer of instruments to a non-member has to take place outside the system.

CMO provides a comprehensive range of settlement functions. Participants in the service may:

- settle sales and purchases;
- settle sale and repurchase agreements;
- deliver securities as collateral and exchange or return collateral;
- receive and make presentations at maturity; and
- split Treasury bills, certificates of deposit and commercial paper into smaller denominations without withdrawing the instruments.

In addition, a comprehensive set of on-line terminal enquiry facilities enables the direct members to monitor their settlement positions at all times during the day. End-of-day printed reports provide comprehensive data on all aspects of business transacted, from issues of new instruments to maturities.

The design of CMO is intended to replicate in electronic form most of the present arrangements for money-market settlement, including payments. One feature is that for any transaction, payment instructions are delivered to each member's settlement bank for payment that day. The status of a CMO payment is the same as a banker's payment: an instruction to the buyer's settlement bank to make payment. It is not, however, a guaranteed payment and, in exceptional circumstances, a settlement bank may refuse it.

A number of security features have been incorporated into the new service; these are additional to the security characteristics of the IDN system. All messages between the members and the central CMO computer are authenticated—to ensure receipt from an authorised source and prevent unauthorised alteration—and encrypted—to conceal the meaning for the protection of privacy. This ensures the integrity of electronic messages and means that the system does not accept an instruction unless it recognises its source as an authorised operator, using an authorised terminal in an authorised member's office, and unless it recognises the encrypted form of the instruction.

So far as possible, reassurance of continuous live operation of the computer system has been provided by rigorous testing and trialling of the system, and by expenditure on dual sourcing of the individual components of the system to avoid single points of failure. Hence, the Bank has invested in back-up mainframe processing equipment at a separate site.

### Volume of business

The stock of sterling money-market paper is large—at present around £100 billion (Table A), and it is expected that

**Table A**  
**Sterling money-market paper**

£ billions, amounts outstanding at end-September 1990

CDs issued by banks	51.1
CDs issued by building societies	7.6
Holdings of Treasury bills (outside public sector and Bank of England)	13.8
of which:	
Discount houses	0.8
Other UK banks	4.7
Building societies	1.4
Other UK private sector	2.2
Overseas	4.7
Holdings of bank bills	21.2
of which:	
Bank of England	4.7
Discount houses	7.0
Other UK banks	8.3
Building societies	0.9
Other UK private sector	0.3
Issues of commercial paper	5.7
<b>Total</b>	<b>99.4</b>

a large proportion of these instruments, particularly those which are actively traded, will come to be held in CMO.

There are no comprehensive figures for secondary market turnover in the sterling money markets, but Table B provides data on trading by the discount houses. Settlement of primary market purchases and secondary market sales will be handled by CMO.

**Table B**  
**Purchases and sales of money-market paper by discount houses**

£ billions

	1990				
	May	June	July	Aug.	Sept.
Treasury bills					
Purchases	3.2	3.0	3.6	3.1	1.8
Sales	2.8	2.7	3.3	3.4	1.7
Eligible bank bills					
Purchases	17.4	14.3	16.3	16.6	13.9
Sales	16.5	11.5	16.2	16.4	11.5
CDs issued by banks and building societies					
Purchases	9.6	6.3	9.0	7.3	6.7
Sales	5.2	5.0	4.5	5.0	3.1

The movement of money-market instruments as collateral will form a significant part of settlement volumes across CMO. The discount houses use collateral to secure money-market borrowing, including from the Bank of England during its money-market operations. Money-market instruments also move from gilt-edged market makers or discount houses to Stock Exchange money brokers as security for stock borrowing. In turn, the money brokers use such instruments to collateralise lenders of stock which include banks, insurance companies and pension funds.

The system will be capable of processing some 75,000 instrument movements a day, with peak rates of 5,000-6,000 in a single quarter-hour. The average number of instrument movements is expected to be about 25,000 per day.

### Main participants

The institutions which have joined CMO include all the discount houses (the main market makers in bills), the Stock Exchange money brokers (the intermediaries for collateralised stock borrowing and lending) and the major

**Table C**  
**Membership of CMO**

	Direct members	Offering agency facilities
Discount houses	9	3
Clearing banks	11	9
Merchant banks	6	1
Other banks	10	4
Bank of England	1	1
Stock Exchange money brokers	8	—
Others	2	—

banks that issue and trade actively in certificates of deposit (Table C).

Eighteen members have announced their intention to provide agency facilities; others are confining their offer of these facilities to their existing clients.

CMO is open to all, irrespective of the scale of business. The Bank is encouraging the holding and settlement of instruments within CMO through maximum participation in the service. Acceptors of bills, issuers of certificates of deposit and commercial paper, investors in sterling money-market securities and takers of collateral in this form against cash or stock lending are participating in CMO, either directly or indirectly.

Non-participation means that a counterparty who is a member of CMO has to institute arrangements to take or make physical delivery of the paper. In addition, any paper issued by a non-participant who does not have an agency arrangement with a member cannot be transferred through the system, even when held by a member.

### Tariff

The Bank's financial objective is to break even, taking one year with another, seeking to recover costs by the application of a simple tariff which charges direct members for the various facilities provided according to usage. The initial development costs of the system were financed by the Bank. The tariff takes into account only the Bank's operating costs of the system, ie all running costs and the amortisation of the cost of computer hardware.

There are four elements of the tariff:

#### Fees:

Membership	£17,500 per annum
Terminal	£ 7,500 per annum

#### Transaction charges per instrument:

Sales/sale and repurchase (seller pays)	25p
Collateral (pledgor pays for securing borrowing and for the return or exchange of collateral)	15p

**Depository charge per £1 million nominal value:**  
£12.50 per annum

**Withdrawal fee:**  
£10 per instrument

There are no charges levied on lodgement of new instruments or presentation at maturity. Institutions which are members of both CMO and CGO, and which use a terminal through which access to both services can be obtained, will pay only one fee per terminal connection. The membership fee will not be payable until 1 March 1991 and the fee for withdrawing instruments has been waived during the first two months of the service.

The tariff will be reviewed at the end of the first year, in the light of experience and of such future enhancements as may be by then agreed.

Set against the costs for the users of the system are savings which in due course must accrue from having fewer messengers, and the removal of mountains of paper from back offices, with consequent reductions in handling, checking and record-keeping, and in security and insurance cover.

### Entry of instruments

To ensure a smooth transition from the existing arrangements, the Bank and the market agreed that the entry of instruments into CMO should be phased. New issues have, therefore, been phased in by category of instrument, starting with new issues of Treasury bills during the week beginning 1 October. Some three quarters of the £650 million tender of Treasury bills on 28 September were allotted for holding in CMO, and were the first securities to be lodged into the system. New issues of certificates of deposit followed in the week beginning 8 October. During the week 8-12 October, one hundred and ninety-three separate issues of bank and building society CDs were lodged. Thereafter, commercial paper, local authority bills and eligible bills followed in quick succession and admittance of new issues was completed with new issues of ineligible bank bills and trade bills in the week beginning 12 November. 16,000 instruments are now held in CMO.

Instruments issued after the admittance date of the relevant category, which are not lodged into CMO at issue, may be admitted at any time subsequently. Much of the paper issued before the launch of CMO will mature outside the system, but arrangements are being made for outstanding instruments to be brought in over the next few months.

### Future enhancements

The Bank has set up a consultative group which is reviewing the ways in which CMO might be extended and enhanced so as to continue to improve the efficiency of settlements in the London money market. The group will develop and put forward recommendations on the timing and priority of various enhancements, bearing in mind the costs involved. The group consists of seven members each of which represents a particular constituency of participant.

Work is already in hand on two further phases, to be implemented during the course of 1991, which will:

- simplify the procedures for setting up the computer record of an issue, and the transfer of the instruments to the primary purchaser; and
- automate the presentation of maturing items.

Other possible enhancements include:

- allowing payment of interim interest;
- the inclusion of other instruments—for example, ECU Treasury bills;
- automatic amalgamation of instruments into 'parcels' of instruments according to specified values and maturity dates for delivery across the system; and
- a fully automated link between members' back-office computer systems and the CMO's central computer.

There are two important facilities where work is continuing to evaluate the precise details of how improvements might be developed. The Bank recognises that in a subsequent phase it would be highly desirable to enhance the payment arrangements so as to provide an assured payment system. In CGO, security against the guaranteed payments liability of a settlement bank is taken by that bank in the form of a floating charge over the securities held in CGO and of a fixed charge over moneys due and receivable in respect of CGO-settled sales. The Bank's arrangements for CMO have been so designed that, in due course, some form of assured payments could be brought in. Second, a long-term objective is to facilitate the change in the nature of an instrument from a paper certificate to a computer record, since this would reduce significantly the costs of business for issuers. There are some possibilities for paperless instruments which might be acceptable without the need for legislation; these are currently under consideration by the Bank.