

BANK FOR INTERNATIONAL SETTLEMENTS

PAYMENT SYSTEMS
IN
ELEVEN DEVELOPED COUNTRIES

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Prepared by the Group of Computer Experts
of the Central Banks of
the Group of Ten Countries and Switzerland

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FOREWORD

This manual is the fruit of joint work by automation experts from the central banks of the Group of Ten countries*1) and Switzerland, who have been looking into the payment systems in operation in their own countries and the possible changes these systems may undergo with the increased use of automated data-processing techniques. It was felt that the material collected for the purpose of this study may be of interest to students of the subject of money, and in particular its use as a means of payment. Since it was at the Bank for International Settlements (BIS) that the initiative for the study first took shape and its results were presented and discussed, it is to this institution that the publication of the main findings has been entrusted.

Indeed, the BIS considers one of its special functions to be the provision of a suitable forum in which the central banks can examine and discuss matters of common interest. The increasing interrelationship since the end of the 1960s between the central banks' main object of concern and responsibility - money - and the use of electronic computers for long-distance transmissions and funds transfers was bound to arouse the interest of the central banks and to invite examination.

In recent years research and studies on payment systems have been carried out by various bodies, both private and public; in some cases the results have been published, in others they have been made available only to a restricted circle of individuals or organisations. But the majority of these projects, some of them international in scope, were either designed to meet specific market-orientated requirements, were limited to particular aspects or payment media or were intended as a means of evaluating the future demand for new monetary instruments.

In this context, it is important to point out that the material presented in this manual is also subject to certain limitations, some of our own choosing but others due to a lack of statistical data, incomplete knowledge of the subject matter or other external factors.

The first of the self-imposed limitations relates to the number of countries whose payment systems were examined and arose from the fact that the contributors to the study were the representatives of eleven countries (the Group of Ten countries and Switzerland). It therefore covers the major industrialised countries of the West, which are probably those with the most highly developed money and capital markets.

A second automatic limitation derives from the fact that the study was carried out in the main by experts and senior personnel from the

departments responsible for automated data processing in the various central banks. It is thus quite conceivable that more emphasis was placed on certain aspects of payment systems that are of greater significance and interest from their point of view. In short, the focus of the contributions will necessarily differ from what might have been produced by a comparable group of economists.

A further built-in constraint that should be mentioned here springs from the desire to present the work essentially in the form of a descriptive manual for consultation and comparison. Accordingly, it falls into two distinct parts.

After an introduction prepared by the BIS, the first part gives a brief outline of the payment systems in each of the eleven countries. The brevity of these texts and the concentration on salient facts with only the barest details make them broadly comparable. Cross-country comparisons should be made with great caution, however, as it is difficult to produce comparable figures or even unambiguous definitions in this area. They could thus be misleading, particularly as there is the possibility of a margin of error where estimation has taken place.

In the second part more detailed descriptions of the respective payment systems are given. Here it was left to the central banks concerned to place emphasis on those features of their systems which they felt to be of particular note; no narrow strait-jacket for these descriptive essays was applied, as this would have deprived the user of information which he may hope to find in them.

One final point needs to be clarified here before turning to the study itself. The term "payment system" denotes the institutional and historic settings in which the various means of payment are used in a national context. Even though the expression has come to be replaced in recent years by other terms, such as "funds transfer system", we consider that for the purpose of this study no change is required in an expression that has served well in the past.

Footnote

- *1) The Group of Ten is made up of the participants in the General Arrangements to Borrow within the IMF: Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom and the United States. The automation experts concerned are the heads of the Organisation or EDP Departments of the respective central banks. Their meetings are chaired by the Assistant General Manager of the Bank for International Settlements, Basle, Dr. Günther Schleiminger.

AN INTRODUCTION TO PAYMENT SYSTEMS

For the purposes of this manual, the term "payment system" is taken to mean the instruments, rules and procedures that enable users to meet payment obligations. A choice may be made between two or more available instruments - indeed, such a choice should normally exist - or of passing from one to another in the course of the payment operation, as not infrequently occurs. Each payment system should, however, be designed as an entity so that once a payment operation has been initiated it can reach completion without any need to switch from one instrument to another.

If one looks at the entire range of payment means currently used in any country, the general picture is one of chronological stratification. At the bottom are the relatively declining, more ancient and more stabilised cash media, coins always being a technical subsidiary to notes. In the middle are the cashless media, first those still relying on paper instruments and next those which are paperless or, in other words, which do not rely on the circulation of tangible means among the public. At the top are the more sophisticated and intangible media for payments through electronic and more or less automated messages.

Two of the practical elements that distinguish one payment instrument from another are, first, the speed with which a payment is executed and, secondly, the direct and indirect cost of obtaining the payment service. These two factors differ markedly from instrument to instrument; they thus largely determine which instrument a customer will use to meet each of his payment requirements and which category of user will most frequently employ each instrument, leading in the final analysis to instrument specialisation.

1. The user

It may be said that the kind of user of an instrument and the type of payment it is used to transact generally form a characteristic pair, although in the course of his activities the same user may need to execute two or more types of payment. For example, an individual normally uses cash payments for small current transactions in his rôle as a consumer of goods and services, but turns to cashless payments, through the use of bank cheques, giro transfers or other equivalent forms of payment, in his rôle as wage-earner, saver or capital investor or for making

recurrent payments for services provided continuously, such as public utility charges, or contractual fees or rent.

Payment habits resulting from traditions and local preferences together with the above-mentioned speed and cost considerations influence the choice of payment instrument for each particular transaction. In the case of cash, for example, when the user himself is the bearer of the means of payment (bank-notes and coin), attribution of the status of legal tender makes it possible to effect payment by an immediate physical transfer of monetary tokens from debtor to creditor. Naturally, the larger the amount to be paid and the greater the distance between debtor and creditor, the greater the extent to which cost and security considerations will make the cash payment seem inconvenient, and the more the payer will be prompted wherever possible to turn to more rapid and relatively less costly instruments.

These considerations normally assume paramount importance for firms and official bodies disbursing private or public funds; such entities execute few, if any, payments in cash, but make extensive use of payment media that do not give rise to cash movements (cheques, funds transfers, payment orders, bills and promissory notes, etc.).

2. Banks

The banks and other financial institutions - since their business revolves around the administration of financial assets - play a very special rôle in the execution of payments. Besides using payment instruments for funds management on their own behalf, they also become the focal point of a number of important payment instruments whenever their liabilities to customers can be used as a means of settlement (deposit money is at present legally recognised in several countries as a means of settlement of a claim, although not yet as legal tender. However, there are signs of a move in this direction).

The banks and other financial institutions - whether considered individually, in groups or in their entirety as an integrated "system" - meet the public's payment needs in a wide variety of ways, which can easily be classified and evaluated by users in terms of the time and cost of executing payment transactions. Bank customers can give instructions for payments to be made out of funds previously deposited or out of available credit lines. The most widely used forms are bank cheques, bankers' drafts, payment and credit orders, transfer and giro services; each follows its own procedural path towards settlement and it is this path which determines the time, manner and cost of execution. The cost includes not least the differences in interest that may occur as a result of switching funds from time to sight accounts for the actual or agreed number of days required for the movement of funds, the so-called "float" phenomenon.

It is mainly in connection with payment media requiring the intermediation of a bank or financial institution that operators and theorists sometimes prefer to speak of "funds transfer systems". In the last twenty years various factors, such as the growth in the number of operations and associated processing procedures, have, for reasons of speed and cost,

necessitated the increasingly widespread use of machines for automated document handling, electronic data processing and teleprocessing. The equipment and procedures employed in making payments vary widely, depending on the size and location of the banks and other financial institutions that participate in operating cashless payments.

There is on the one hand the large commercial bank with numerous branches managing hundreds of thousands or millions of accounts. Such an institution can take advantage of its position to carry out a substantial proportion of the payment orders and transactions between its own customers in a single internal process also involving its other activities (book-keeping, credit-granting, investment, sight accounts and time deposits, securities and foreign exchange transactions, collection services, etc.). On the other hand there is the small or medium-sized local bank with few branches but a large share of the local market, which manages a few tens of thousands of accounts but nonetheless functions as an indispensable channel even for the large and very large banks which, by virtue of their dense networks of bank correspondents, serve as the welding agent for the market, interlinking bank customers, wherever they may be situated.

3. Post Office

In very many cases, and in some to the extent of accounting for a substantial proportion of the total market, the post offices are depositaries for funds received from the public, from the corporate sector and from bodies that disburse public and private funds; as a corollary, they also provide their own payment media and transfer services, which supplement those of the banks and the other financial institutions. With their extensive branch networks and existing distributive and telecommunications capacities, it is easy to see how the postal administrations were able to engage in and expand these banking and payment activities.

4. Clearing and settlement

Beside this somewhat rough breakdown, there are many other vertical and horizontal breakdowns that can be made (for example, affiliated and associated banks, public and private banks, banks with the legal status of a company, a co-operative or a non-profit-making body, etc.). This situation and the territorial and temporal distribution of payments make it very apparent that, for the systematic execution of payments made on behalf of customers of different banks, the banking system has need of a specific mechanism through which it can clear the resulting credit and debit transactions or at least settle the final balances of any intermediate clearing.

This need calls for a system with highly specialised instruments and procedures, and one to which only a restricted circle of users has access. It is worth mentioning that at this level the means of settlement must be acceptable to all participants and must also be freely and readily acceptable to the central banks. For this reason the central

bank, which in other payment mechanisms plays a marginal or very specific rôle (e.g. as the issuer and supplier of bank-notes), in many cases is encouraged to take a leading part in interbank relations, acting as the organiser or administrator of the clearing mechanism (clearing houses or similar services) for interbank transactions.

The payment and settlement media used among the banks are usually also accessible, either directly or via the central bank or other banks entrusted with the management of their funds, to the national Treasury, local-authority treasury offices, the agencies providing centralised management of the official foreign exchange reserves and sometimes also the postal administrations and stock exchange intermediaries.

5. International differences in the hierarchy of payment instruments

Before payment systems emerged in their present form, all the countries considered went through a transitional period of varying duration in the course of which solutions were found to basic problems which today no longer seem to be a matter for discussion. Typical issues were the choice of a national monetary unit, the introduction of paper money side by side with coin, the attribution of the status of legal tender to bank-notes and of the note-issuing monopoly to a single central institution, the separation of that institution's activities from those of the rest of the banking system, the accessibility of banking services to the public, the creation of an organisation for handling interbank transactions and, in many cases, the regulation of its operation.

Residual elements of some of the problems resolved in that period still linger on, as regulatory and technological innovations can make it necessary for previous approaches to be adapted and improved, or possibly even to be thoroughly modified. This is the case with the new automated data-processing techniques, which have brought data recording on carriers that cannot be read by the human eye and, more particularly, developments in telecommunications. The desire to reduce costs is plainly one reason for the considerable changes that the new technologies have brought to payment systems and their organisation; it would not, however, suffice to explain all that has happened in the past twenty years were there not at least one other powerful factor in terms of functional efficiency, namely that the economic phenomenon of payments is, by nature, essentially an information process and, as such, convertible into suitable material for electronic processing.

The present-day scale and structure of the payment systems found in the more developed countries are the result of an almost uninterrupted evolution, which has generally speaking gone on for over a century. A broad similarity can be seen in the development of the range of payment media available, with diversification and specialisation in response to the growing needs of advancing economies; there are, however, quite marked differences and preferences, reflecting the disparate influence of factors such as territorial area, population and demographic shifts, the upheavals of war, the degree of labour specialisation, the rural/urban structure, transport and communication facilities and, last but not least, tradition and custom.

The payment patterns as they emerge from the country chapters can be briefly summarised as follows:

a) The rôle of cash

Cash, which in all countries is administered by the central bank, remains a convenient instrument for the general public for the settlement of small day-to-day transactions, and it is still the most widely used payment medium, although it is impossible to gauge precisely the number of transactions in which it changes hands. The information available shows that the value threshold above which cash is displaced by another means of payment is very low in countries where use of the cheque is widespread, and substantially higher in those where giro transfers predominate, but that everywhere there is a similar ratio between notes and coin.

The decrease in the ratio of currency in circulation to gross national product between 1950 and 1978 and the increase in that of sight deposits shows that cash is losing ground to cashless payment media, although its elimination is not foreseen even in the long term.

In all countries the use of cash is confined to a relatively small though not identical proportion of the global value of payments, although it seems to account for the largest number of them, that is to say the mass of small day-to-day retail exchanges involving households and individuals. Cashless systems are, however, already eroding the position of cash in areas of payments which were until recently effected only by that means.

The participation of central banks in cash payments is everywhere characterised by their almost exclusive competence with respect to the supply of such payment instruments and the maintenance of their efficient circulation. As far as distribution and redistribution are concerned, central banks normally play only the rôle of primary source and storage; the channelling of instruments to and from the market is performed by the banking system, and sometimes also by the postal system, as the basic link between the central bank and the general public.

Indeed, the very emergence of central banks as banking institutions is related to their deep involvement with cash (principally notes, because coins are generally still the preserve of the Treasuries). Central banks - the modern version of the old banks of issue - have retained the public monopoly on the supply of notes, a right they acquired in different ways during the long period in which the strong increase in the demand for money induced by economic and social development was primarily satisfied by superimposing the use of bank-notes on the system in which specie had been the sole legal tender for a very long time.

b) The rôle of cashless payments

In contrast to their involvement in the cash payments area, the participation of central banks in cashless payments is very diverse and generally indirect in all countries. The problems of monetary control and banking supervision sometimes are paramount, being governed by regulations and instructions given to the institutions which act as intermediaries in cashless payments, but intervention by central banks in the

functioning of the latter is in most countries limited to the last and highest stage: that of the clearing of items and settlement of final balances, for which a generally acceptable means of settlement, such as primary money or monetary base, is the indispensable means.

One striking contrast between the cashless group of payment media of Canada and the United States and the situation prevailing in other countries as regards cashless instruments is the almost complete absence or relative insignificance of giro transfers in the former. In continental Europe giro payments clearly predominate in a large section of money transfers for which in Canada and in the United States the use of the cheque is normal. In the United Kingdom, too, the proportion of bank and postal giro payments made by individuals is clearly increasing.

It is interesting to look for the reasons, the advantages and the disadvantages of such a predominance of cheques. One reason, apart from the usual historical and traditional motives and the well-known argument of unit banking versus branch banking, is the relative importance of credit and its creation by banks in matching the immense increase in the demand for money which has occurred during the last fifty years or so. Where banks have facilitated credit creation by allowing customers to borrow to cover cheque payments, the use of the cheque (debit transfer) seems to have been stimulated to the utmost; where the availability of money through previous accumulation has been predominant, giro and other means of payment by transfer between bank accounts (credit transfer) have apparently seen the greatest expansion. This could also explain why the Canadian and US economies appear to be relatively less liquid than others, although there is certainly also an element of efficiency in the distribution and utilisation of money stocks to be taken into account.

Another important distinguishing factor is the number of different cashless payment instruments in operation. In Europe and Japan they are more numerous than in North America, for there is normally at least a postal payment service operating side by side with those offered by banks and other financial institutions; the development of a payments organisation utilising from the inside the generally large and geographically widespread network of postal points of sale, associated with the direct availability of telecommunications, seems to be a considerable factor in greater cost effectiveness.

In almost all countries the tendency exists for groups of specific banks, such as thrift institutions, to develop their own separate organisation for cashless payments. It may be noted that this tendency can have a positive effect for the users, although a secondary structure of inter-bank aggregated payments must necessarily operate at a higher level, usually combined with clearing and settlement facilities, which is the point at which central banks normally come onto the scene.

c) The evolving "new" payment instruments

Technological advancement and cost considerations give rise to shifts in the supply of and the demand for payment services. When the status of legal tender was conferred on the bank-note, coins were gradually superseded. There are already indications that some cashless paper means of payment might before long be recognised as enjoying similar privileges as mandatory or recommended payment instruments. The spread of cheque guarantee cards issued by the banks to cover cheques up to a stip-

ulated amount shows that the first tentative steps in this direction are being made. In some countries the law already requires payments between enterprises to be effected by means of bank and giro transfers or by cheque. Cheque truncation and the obligation to deposit wages and salaries in a bank account seem to be in the same organisational line. Should this evolution continue, payment instruments for variable rather than fixed amounts may be established, with the instruments being issued on the initiative of the payer and with the onus on the payee to accept them.

Direct crediting and debiting for bulk and recurrent payments are emerging almost everywhere as a specialised development of ordinary transfer and giro payment systems. Where governments envisage the adoption of such instruments for their needs, it seems generally reasonable to assume that their development will be strongly influenced by automation, reducing the use of cash and cashless paper instruments.

Credit cards as well as debit cards appear to be assured of a future in those countries where transfer and giro organisations are less developed and fewer liquid assets are held available. In continental Europe commercial banks and especially thrift institutions try to keep the credit card business within their domain. Governments seem generally to think that there is no need for the moment to regulate these payment instruments, unless they happen to interfere with credit control and exchange control policies. The consumer protection motive, another stimulus to regulation, is more important in North America than in Europe, because in the latter the availability of cash and giro instruments is generally considered as a sufficient and economic substitute for the use of the credit card.

While cash is undergoing a relative decline, the financial institutions and, in a number of countries, the postal administrations are becoming increasingly competitive in their efforts to attract an ever-growing number of customers. This has resulted in more widespread retail banking and in a profusion of cashless payment media and of bank branches, and a steady increase in overheads. To bring the situation under control, the banks have turned to modern technology, reorganised internal structures and rationalised working methods, but in very few instances so far have they opted for solving their customer-related problems jointly. A different picture emerges with regard to the management of the credit institutions' liquid balances, as in most countries there are automated clearing houses administered either by the central bank or by banks operating jointly.

On the whole, most banking institutions seem to consider that they have not reaped all the benefits they had expected from their past investment in automated procedures; they seem now to be marking time, but are very conscious of the fact that long-term solutions in the field of payments will require a further phase of automation.

PART I - OUTLINES OF THE ELEVEN
NATIONAL PAYMENT SYSTEMS REVIEWED

N.B. Unless otherwise stated, GNP data refer to 1978 and all other data refer to the end of that year.

Exchange rates used for the conversion into US dollars (US\$) were as follows:

		<u>1978</u> US\$ 1 =	<u>End of 1978</u> US\$ 1 =
Belgian franc	(B.fr.)	31.49	29.38
Canadian dollar	(Can.\$)	1.1402	1.17647
French franc	(Fr.fr.)	4.51	4.18
Deutsche Mark	(DM)	2.0084	1.828
Italian lira	(Lit.)	848.65	842.05
Yen	(Yen)	210.47	194.60
Netherlands guilder	(Fl.)	2.1633	1.96775
Swedish krona	(S.kr.)	4.517	4.2925
Swiss franc	(Sw.fr.)	1.78	1.62
Pound sterling	(£)	0.52	0.49

In the statistics given at the end of each national outline, the sign - is used to mean "data not available" or "data not reported".

1. Belgium

I. CASH

Bank-notes and coins are the two media which constitute legal tender for payments in cash. The National Bank of Belgium holds the exclusive legal privilege of issuing bank-notes in denominations of 100 francs and over; lower-denomination notes and coins are likewise issued by the central bank, but on behalf of the Treasury. All bank-notes and coins are unlimited legal tender, except coins in denominations of 20 francs and less, for which limits as to amount are laid down. Belgian currency is also legal tender in the Grand-Duchy of Luxembourg, where it accounts for the bulk of the cash in circulation. Both bank-notes and coins are put into circulation by the National Bank of Belgium through other banks and financial institutions. The currency at present in circulation consists of bank-notes in six denominations (B.fr. 20, 50, 100, 500, 1,000 and 5,000) and coins in seven denominations (B.fr. 0.25, 0.50, 1, 5, 10, 20 and 250). At the end of 1978 the currency issued, including US\$ 0.6 billion of cash on hand at the banks and at the Treasury, amounted to a total of B.fr. 372.5 billion, the equivalent of US\$ 12.7 billion, of which US\$ 12.4 billion was accounted for by notes and US\$ 0.3 billion by coins. In connection with the legal privilege conferred upon it, the National Bank of Belgium is itself responsible for designing and printing the various types of notes, replacing worn or damaged notes and detecting forgeries. There are at present no provisions in force concerning cover requirements or ceilings on the total amount of currency issued.

II. DEPOSIT MONEY

In 1978 just over two-fifths, on average, of the total stock of money available to the economy for payments was accounted for by cash; the remaining three-fifths was held by the public in the form of sight deposits at banks and with the Postal Administration. It may be noted that Belgium is one of the most densely populated countries in Europe and that it is highly industrialised (in 1978 the gross national product amounted to US\$ 98 billion; US\$ 9,922 per head of population). The banking system is composed of three types of institutions: the commercial banks, the savings banks and the public credit institutions; by virtue of the legal provisions in force, all these institutions are entitled to offer current-account facilities, and to effect cashless payments using the funds deposited on current accounts held with them. Neither the law nor the banking authorities lay down organisational or technical requirements with respect to the payment services offered by banks; however, on the initiative of the central bank, the banks have concluded a series of agreements of a technical and organisational nature designed to regulate and facilitate the interbank relationships that result from the development of such services. The Postal Administration is also very active, providing the public with payment services on current accounts held with it. With a population of 10 million, there were at the end of 1978 1.1

million sight accounts administered by the Postal Administration and 4.7 million administered by the credit institutions; in all, there were 5.8 million accounts, more than half of which were held with commercial banks.

III. CASHLESS PAYMENTS

For small payments between individuals or between individuals and retailers, the use of currency is very widespread, on account of its practicality. In all other cases cashless payment media, paper-based or otherwise, predominate, the most important of them being: credit transfers, either bank or postal, cheques, and postal drafts (authenticated by the post office managing the current account). Of 100 bank and postal transactions dealt with in clearing houses in 1978 (85 per cent. of which were handled in Brussels), 52 were credit transfers, 46 were cheques and 2 were postal drafts; other forms of cashless payments that are used, albeit on a lesser scale, are pre-authorized direct debits, credit cards and bankers' drafts. The use of deposit money is encouraged by the authorities; a Law of 1962 obliges tradesmen to open a bank or postal current account, and subsequent legal provisions have granted the status of legal tender to all payments of B.fr. 10,000 and above effected via such accounts. Banks have provided a large proportion of their customers with cheque cards that guarantee payment of amounts of up to B.fr. 5,000, and they also encourage the use of magnetic tape for executing monetary transfers.

IV. HANDLING OF CASHLESS PAYMENTS

The organisation known as the Clearing Centre for the Belgian Financial System (CEC), which has been in operation since 1974, has instituted arrangements for the automated processing of cheques and credit transfers which are exchanged between the banks at the Brussels and provincial clearing houses. The chairmanship of the CEC is assumed by the National Bank of Belgium, which leases the services of its own data-processing centre for the execution of the daily work. The banks and the Postal Administration have their own data-processing centres, and the largest banks also possess a telecommunications network linking their branches with their head office. There are twenty-six clearing houses, located nationwide, which enable the participating banks to clear the claims they have on one another as a result of cashless payments, whether paper-based or otherwise, initiated by their customers; the clearing houses are located at the National Bank of Belgium's Brussels and provincial offices and transfers of interbank money resulting from transactions between banks and other financial institutions can, of course, also be cleared there. After the close of business in the provinces, details of outstanding balances are communicated to Brussels, where they are included in the final clearing that takes place subsequently in the capital; the ultimate balances that result are settled by means of transfers of interbank money (call money) or by means of entries in the books of the central bank. In addition to the traditional clearing, and merging with it at the stage of final settlement, there is the daily clearing

carried out at the CEC by means of the exchange between banks and other financial institutions of magnetic media on which are recorded those transaction details that are standardised for automatic processing. It should be stressed that the automated processing of cheques and credit transfers within the CEC has made it possible to introduce the procedure known as truncation, which is based on the principle that banks do not physically exchange the payment documents the value of which is cleared, the amounts involved being settled on the date on which the magnetic media are presented. There are at present still certain restrictions as to the value of cheques which may be cleared through the CEC; in 1978 the latter handled approximately 90 million items, in addition to those exchanged in the traditional clearing houses.

Belgium

A. Basic statistical data

Territorial area : 30.5 thousand sq.kms.
Population : 9.8 million

Gross national product : 97.7 (US\$ billion)
Per capita GNP : 9,922 (US\$)

Number of bank offices : 9,252
Inhabitants per
bank office : 1,064

Number of sight accounts
per 1,000 inhabitants : 588

Number of time accounts
per 1,000 inhabitants : 810¹

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃) ²	108.8	11,054.6
Currency	12.1	1,229.4
Sight deposits	16.7	1,696.8
Time deposits ³	80	8,128.4

1 Underestimate, as data not available for all financial institutions.

2 Financial assets held by the private and public sector with Belgian financial institutions.

3 Including cash certificates and bonds issued by Belgian financial institutions.

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Post Office</u> 1,845 branch offices				
Sight	1.1	19.2	3.3	19.8
Time	0		0	
<u>88 Commercial banks</u> 3,609 branch offices				
Sight	3.1	52.9	9.9 ¹	59.3
Time	3.7	-	26.2	32.7
<u>31 Savings banks</u> 2,000 branch offices				
Sight	0.5	8.5	0.8 ¹	4.6
Time	3.3	-	14.3	17.9
<u>Others</u> 1,769 branch offices				
Sight	1.1 ₂	19.4	2.7 ¹	16.3
Time	1	-	39.5	49.4
<hr/>				
<u>NATIONAL BANK OF BELGIUM</u>	- Government fiscal agent. - Operates automated clearing house for financial system.			

1 Including cash certificates and bonds issued by Belgian financial institutions.

2 Underestimate, as full data not available for such institutions.

C. Relative importance of payment instruments

	Volume of transactions (millions)	Value of transactions (US\$ bn)
CASHLESS AND HYBRID PAYMENTS		
Cheques ¹	100.2	-
Cheques exchanged in the clearing houses	88	± 209
Postal cheques issued	5.5	130.1
Postal drafts issued	57.9 ²	
Payments by credit card	-	-
Credit transfers on paper medium ³	61	± 906
Paperless credit transfers ³	38	25
Collective credit transfers	22.4 ²	-
Direct debits ⁴	23.8	-
Interbank transfers ⁵	-	162.5
TOTAL CASHLESS PAYMENTS ⁶	396.8	1,432.6
CASH PAYMENTS	-	-

1 Only an estimate of the number of cheques issued by the customers of commercial banks.

2 In 1977.

3 Credit transfers exchanged in the clearing houses.

4 Both domiciled invoices and standing orders; the figure is an estimate and relates to deposit banks and private savings banks only.

5 The value of call-money transactions.

6 Number of cashless payments per inhabitant = 40.

2. Canada

I. CASH

Although a wide variety of payment media are available to Canadians, it would appear that notes and coins continue to be the most common and frequently used means of effecting everyday transactions. As at 31st December 1978 currency outside banks amounted to somewhat less than Can.\$ 9 billion (US\$ 7.6 billion), comprising approximately Can.\$ 8.1 billion (US\$ 6.8 billion) in notes and about Can.\$ 900 million (US\$ 760 million) in coins.

The sole right to issue paper currency was vested in the Bank of Canada by the Bank of Canada Act of 1934. Notes, which are a liability of the Bank, are or have been issued in ten denominations, viz. Can.\$ 1, 2, 5, 10, 20, 25, 50, 100, 500 and 1,000. Subsidiary coins, which are produced by the Royal Canadian Mint, are issued in six denominations, viz. Can.cents 1, 5, 10, 25 and 50 and Can.\$ 1.

Canada's chartered banks, which are analogous to commercial banks in other countries, are the major distributors of notes and coins for the circulation needs of the country, and they have individually established simple but effective systems to perform this function.

II. DEPOSIT MONEY

As at 31st December 1978 approximately 76 per cent. of the stock of money that was available to the economy for payments was held in the form of transferable deposits at Canadian deposit-taking institutions, viz. chartered banks, local credit unions and "caisses populaires", trust and mortgage loan companies, Quebec savings banks and governmental savings institutions. The remaining 24 per cent. of this stock of money was held in the form of currency.

Canadian deposit-taking institutions are supervised by Federal or provincial authorities.

III. CASHLESS PAYMENTS

Cheques and payment orders drawn on transferable deposits held at, respectively, chartered banks and other deposit-taking institutions are the most widely used cashless payment instruments. For example, over the course of a year some 1.6 billion cheques with a total value in excess of Can.\$ 2,000 billion (US\$ 1,700 billion), or ten times Canada's gross national expenditure, are handled by the chartered banks.

Paper-based and non-paper-based systems to effect pre-authorised debit and credit payments are not widely used in Canada at the present time and are restricted mainly to such recurring, fixed-amount payments as insurance premiums, mortgage payments and salaries.

It would appear that Canadians rely heavily upon "plastic money", i.e. bank credit cards, proprietary retail cards, and travel and entertainment cards. The results of a recent survey indicate that: (i) 61 per cent. of Canadians possess at least one credit card; (ii) the typical card user possesses 2.8 cards; (iii) 45 per cent. have three or more cards. Those Canadians who are card-holders use their cards, on average, five times per month.

IV. HANDLING OF CASHLESS PAYMENTS

Deposit-taking institutions give immediate credit for cheques and other payment items deposited with them, which reflects the efficiency of the Canadian paper-based clearing system.

The paper-based clearing system is currently operated by the chartered banks. Other deposit-taking institutions, which are frequently referred to as non-bank financial intermediaries or NBFIs, do not have direct access to the clearing system and must establish a correspondent arrangement with a bank, which processes its items and represents it in the clearings. The Canadian Bankers' Association (the trade association of the chartered banks) is empowered by law to establish clearing houses and to make rules and regulations for their operation, which must be approved by the Federal Treasury Board. The clearing process begins when a cheque, payment order or other payment instrument (all of which are commonly called "items") is deposited at a chartered bank branch. These items are delivered the same day to the bank's demand deposit accounting (DDA) centre, where they are sorted into "on-us" items and items drawn on other banks, including NBFIs. Items drawn on other banks are delivered that evening to the DDA centres of those other banks. "On-us" items received by a DDA centre drawn on the branches of the same bank serviced by other centres are also shipped that evening. (There are 51 bank DDA centres across Canada.) The settlement process begins early on the following day, when each bank provides its clearing clerk with figures relating to its own deliveries to and receipts from the other banks during the previous day for inclusion in the settlement. The clerks meet at the clearing house at the regional settlement point (of which there are ten) and arrive at the balances "due to" and "due from" each bank. When the balances are struck and agreed to, they are communicated to the nearest Bank of Canada agency. After receiving a confirmation from each bank, the agency passes the information to the Bank of Canada's head office in Ottawa, which adjusts the balances of the chartered banks in its own books, thus effecting the ultimate transfer of funds between banks. Final settlement, therefore, takes place on the same day as the clearing sessions, but one day after the exchange of items among DDA centres.

Pre-authorised debit and credit payments as well as bank credit card-holder payments are processed, cleared and settled in much the same way as cheques. Unlike the paper-based clearing system, however, the

legal framework for these payment mechanisms emanates mainly from a series of relationships and rules developed by the private sector.

Canada

A. Basic statistical data

Territorial area : 9.9 million sq.kms.
Population : 23.6 million

Gross national product : 202.1 (US\$ billion)
Per capita GNP : 8,562.8 (US\$)

Number of bank offices : 13,151 ¹
Inhabitants per bank office : 1,779 ¹

Number of sight accounts per 1,000 inhabitants : -

Number of time accounts per 1,000 inhabitants : -

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃) ²	131.3	5,560.6
Currency	7.6	320.3
Sight deposits ³	23.5	995.1
Time deposits ⁴	99	4,196

1 As at the end of 1977.

2 Includes total deposit liabilities of Quebec savings bank in the amount of US\$ 1.2 billion (US\$ 49.2 per capita) which cannot be further disaggregated into sight and time deposits.

3 "Transferable deposits". Comprise demand and chequable savings deposits at chartered banks, local credit unions and "caisses populaires", trust and mortgage loan companies, governmental savings institutions.

4 Canadian dollar "non-transferable" deposit liabilities of the above institutions - i.e., non-chequable savings, notice and term deposits.

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>11 Chartered banks</u> ¹				
7,324 branch offices				
5 operate nationwide				
Sight	-	-	18.8	80
Time	-	-	59.2	59.8
<u>3,926 Credit unions and</u> <u>"caisses populaires"</u>				
4,665 branch offices				
Sight	-	-	3.4	14.5
Time	-	-	12.3	12.4
<u>100 Trust and mortgage</u> <u>loan companies</u> ¹				
937 branch offices				
Only a few operate nationwide				
Sight	-	-	0.9	3.8
Time	-	-	26.6	26.8
<u>1 Quebec savings bank</u> ¹				
106 branch offices				
Sight	-	-	1.2	-
Time	-	-		-
<u>2 Governmental savings</u> <u>institutions</u> ¹				
119 branch offices				
Sight	-	-	0.4	1.7
Time	-	-	0.9	1
<hr/>				
<u>BANK OF CANADA</u>				
9 branch offices				
				- Acts as federal Government's fiscal agent and assists in the final settlement of balances for bank-operated cheque-clearing system.

¹ As at the end of 1977.

C. Relative importance of payment instruments

	Volume of transactions (millions)	Percent. of total	Value of transactions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	-		-	
Postal cheques issued	0		0	
Credit card-holders' payments	-		-	
Paper giro payments	0		0	
Paperless giro payments	0		0	
Direct debits	-		-	
Interbank transfers	-		-	
TOTAL CASHLESS PAYMENTS				
CASH PAYMENTS (estimate)	-		-	

3. France

I. CASH

Bank-notes and coin are the media used for cash payments. They are both legal tender, although the acceptance of coins is compulsory only within certain limits. Responsibility for the minting of coins is vested by law in the Treasury. On the other hand, the law gives the Bank of France the sole right to issue bank-notes; the Bank puts bank-notes and coins into circulation via its 234 branches and has the duty of ensuring that the needs of the public are met as regards both quantity and quality.

At the end of 1978 the cash in circulation was made up of four denominations of note (500, 100, 50 and 10 francs)*1) and eight denominations of coin (5, 10, 20 and 50 centimes and 1, 5, 10 and 50 francs)*2). At the same date the cash in circulation, including cash assets held by the banks, amounted to a total of Fr.fr. 136 billion, the equivalent of US\$ 33.1 billion, of which US\$ 31.7 billion was accounted for by bank-notes and US\$ 1.4 billion by coins. In connection with the sole right of issue conferred upon it, the Bank of France is itself responsible for printing and redesigning the types of notes in circulation, for replacing those that are worn or damaged, and for detecting forgeries. At present the cash that is issued is subject neither to any given obligations as to cover, nor to any upper limits on its value.

II. DEPOSIT MONEY

More than three-quarters of the money available to the economy for payments at the end of 1978 was held in the form of sight deposits with banks and post offices, while the remaining one-quarter was held in the form of bank-notes and coin. In 1978 economic agents other than banks effected approximately 3.1 billion cashless payments for a total value of US\$ 2,900 billion; in the same year the value of interbank transfers amounted to US\$ 7,300 billion. The quantity and value of payments effected in cash are not known. By way of comparison, it may be noted that France is less densely populated than other European countries and that, as well as there being a highly developed industrial sector, agriculture also plays an important rôle; in 1978 the gross national product amounted to US\$ 472 billion (US\$ 8,609 per capita).

The exercise of banking activities and, indirectly, the execution of payments in deposit money are subject to general legislative rules; the Bank of France and the Postal Administration are subject to specific legal norms. Particular provisions oblige companies and tradesmen to use a bank cheque or a credit transfer to a bank account or postal cheque account to effect all payments in excess of Fr.fr. 1,000 made to other firms or tradesmen; wages and salaries in excess of Fr.fr. 2,500 must also be paid in the same way. Payments in deposit money are effected by

all the institutions that manage sight deposits: commercial banks, savings banks, co-operative banks, post offices and the central bank. With a population of 55 million, there were at the end of 1978 7.3 million postal current accounts, and 28 million sight accounts held with banks and other credit institutions.

III. CASHLESS PAYMENTS

While bank-notes and coins are the most convenient medium available to households for settling small items of current expenditure, payments are effected virtually entirely by cashless means in the intermediate stages of production and trade. The media most commonly used for this purpose are the postal cheque (which can be used both as a cheque in the strict sense of the term and as a giro transfer), the bank cheque, the interbank credit transfer, the commercial bill and the direct debit. Of every 100 payment transactions that were handled by the banks' clearing offices in 1978*3), 78 were cheques (30 per cent. of the total value), 10 were credit transfers (54 per cent. of the total value), 7 were direct debits (11 per cent.) and 5 were commercial bills (15 per cent.). Cheques are the more readily employed because of the penal sanctions to which any abuse is subject, the centralised recording of cheque payment incidents and the guarantee that cheques for Fr.fr. 100 or less will be paid by the drawee bank. Bank credit transfers are preferred by the public authorities and by firms.

IV. HANDLING OF CASHLESS PAYMENTS

All credit institutions, whether or not they have a branch network, have their own internal flow of payment settlements effected by means of entries in their customers' accounts. For paper-based movements, relationships between banks are regulated either bilaterally, or multilaterally via the Paris clearing office and the provincial clearing offices; in addition, there is a grouping of nine major banks which exchange bank cheques in Paris, whatever the locality on which they are drawn; finally, in Paris, Lyons and Strasbourg there are automated clearing offices for handling interbank transactions recorded on magnetic tape. Cheques are also handled automatically, by means of a machine-readable line of magnetic ink characters.

The settlement of interbank transactions deriving from cashless payments effected by customers on their accounts naturally presupposes the existence of a network of interbank accounts for handling the resulting movements. Since it manages the provincial clearing offices and the automated clearing offices mentioned above, the Bank of France is at the centre of the system as the institution in whose books the settlement of the debtor and creditor balances ultimately resulting from overall interbank movements is necessarily effected; for this purpose the Bank plans to introduce a telecommunications network called MERCURE.

Footnotes

- *1) It is planned to replace 10-franc notes by coins in the near future.
- *2) The 50-franc silver coin is not used for payments but hoarded by households.
- *3) This analysis of cashless payments in terms of the means of settlement used relates solely to customer transactions (individuals, companies and the Treasury) to the exclusion of interbank transfers of funds. It is based on clearing house statistics, which cover only a portion of postal cheques and transfers.

France

A. Basic statistical data

Territorial area	:	551.2 thousand sq.kms.
Population	:	54.8 million
Gross national product	:	471.8 (US\$ billion)
Per capita GNP	:	8,609.5 (US\$)
Number of bank offices	:	34,161
Inhabitants per bank office	:	1,604
Number of sight accounts per 1,000 inhabitants	:	644
Number of time accounts per 1,000 inhabitants	:	1,036

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃)	383.9	7,007.1
Currency	33.1	605.3
Sight deposits	106.5	1,943.3
Time deposits ¹	246	4,487.8

¹ Including treasury bills and cash certificates.

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Post Office and National savings bank</u> 17,201 branch offices				
Sight	7.3	20.7	18.1	17
Time	15.3	26.9	34.5	14
<u>382 Commercial banks</u> 12,292 branch offices 3 major banks owned by the Government				
Sight	14.4	40.8	58.8	55.2
Time	5.3	9.3	76.1	30.9
<u>480 Savings banks</u> 6,440 branch offices				
Sight	-	-	0.1	0.1
Time	26.1	46	69.5	28.3
<u>3,000 Co-operative banks</u> 15,195 branch offices				
Sight	13.6	38.5	27.8	26.1
Time	10.1	17.8	54.5	22.2
<u>Treasury</u>				
Sight	-	-	1.1	1
Time	-	-	11.4	4.6
<hr/>				
<u>BANK OF FRANCE</u> 234 branch offices	<ul style="list-style-type: none"> - Settles transactions passed through the clearing systems. - Manages provincial clearing offices for paper-based transactions. - Operates Paris and Lyons ACHs. 			

C. Relative importance of payment instruments

	Volume of trans- actions (millions)	Percent. of total	Value of trans- actions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	1,709.4	55	786.8	8
Postal cheques issued	964.5	31	606.4	6
Credit card-holders' payments	26	less than 1	0.2	less than 1
Paper giro payments	90.4	3	1,365	13
Paperless giro payments	137.5	4	71	less than 1
Direct debits	169.3	6	27	less than 1
Interbank transfers	2.7	less than 1	7,359.1	72
TOTAL CASHLESS PAYMENTS ¹	3,099.8	100	10,215.5	100
CASH PAYMENTS	-	-	-	-

1 Number of cashless payments per inhabitant = 57.

4. Germany

I. CASH

Bank-notes and coins are the media used for cash payments. They are both legal tender, although the acceptance of coins by the public is compulsory only below certain limits. The right to issue notes was vested in the central bank by Article 14 of the Law concerning the Bundesbank of 26th July 1957; in accordance with Article 3 of that Law the Bank regulates the money circulation and the supply of credit with the aim of safeguarding the currency, and makes due banking arrangements for the execution of payments within the country and with the rest of the world. The issue of coins is the prerogative of the Federal Government.

The currency in circulation consists of bank-notes in seven denominations (DM 5, 10, 20, 50, 100, 500 and 1,000) and of Federal coins in nine denominations (Pfennig 1, 2, 5, 10 and 50 and DM 1, 2, 5 and 10 - the latter denomination only for special issues). At the end of 1978 the currency in circulation, including DM 5.2 billion (US\$ 2.8 billion) of cash on hand at banks, amounted to DM 81.4 billion (US\$ 44.5 billion), made up of DM 74.8 billion (US\$ 40.9 billion) of bank-notes (92 per cent.) and DM 6.6 billion (US\$ 3.6 billion) of Federal coins (8 per cent.). In accordance with its note-issuing privilege, the Deutsche Bundesbank is responsible for producing and renewing bank-notes, replacing damaged notes, and recalling and checking the currency in circulation to detect counterfeit money. No legal ceilings on the total note issue are currently in force.

II. DEPOSIT MONEY

Over two-thirds of the stock of money available to the economy for payments at the end of 1978 was held in the form of sight deposits at banks, while just under one-third of it was held in the form of cash. About 4.3 billion cashless payments totalling DM 9,500 billion (US\$ 5,200 billion) were made by non-banks in 1978; interbank transfers on the Deutsche Bundesbank's books amounted to DM 3,300 billion (US\$ 1,800 billion). The quantity and value of cash payments are not known (they may be estimated at 35 billion transactions amounting to DM 1,500 billion (US\$ 800 billion)). It may be noted that the Federal Republic of Germany is a densely populated and highly industrialised country with a relatively large gross national product (US\$ 639 billion in 1978; US\$ 10,421 per capita). Under the Banking Act any bank wishing to handle cashless payments for customers in a manner that constitutes a banking transaction requires a licence from the Federal Banking Supervisory Office, unless it derives authorisation from special laws (i.e. the Deutsche Bundesbank, the Post Office); no specific regulations govern the organisational and technical aspects of handling cashless payments. Cashless payments are performed by all institutions that offer giro accounts and accept deposits which can be utilised at sight, viz. savings

banks, commercial banks, credit co-operatives, the Post Office and the central bank. With a population of 61 million, there were at the end of 1978 about 47 million giro accounts held at the banks and the Post Office; of this total, about 10 million accounts were held by enterprises and about 37 million by individuals.

III. CASHLESS PAYMENTS

While cash payments predominate in the day-to-day retail transactions of private households, they play a minor rôle in the case of enterprises and public authorities, whose payments are principally effected on a cashless basis. Cashless payments are executed by means of credit transfers, cheques and direct debits. Other payment media, such as receipts, bills, money orders and credit and bank cards play a comparatively insignificant rôle. Of every 100 payment orders issued by bank and Post Office customers in 1978, 60 were credit transfers from the payer's account to the payee's account (79 per cent. of the total value), 28 were direct debits on the payer's account (7 per cent. of the total value), 12 were cheques (14 per cent. of the total value) and less than 1 was some other form of payment. Standing orders for credit transfers and direct debits on a specified date are very common for regular payments; pre-prepared credit transfer forms are often sent by payees to the payers to be signed and marked with their bank account details. Cheques are not as popular as in other industrialised countries, owing to the preference given to credit transfers by the savings banks and the Post Office; since 1950, however, the central bank has operated a multilateral collection and clearing system for cheques.

IV. HANDLING OF CASHLESS PAYMENTS

All payment orders are sorted by the banks into internal transfers (on the bank itself), local payments (on local banks) or intercity payments (on banks in other cities). Internal transfers are handled internally by branches, normally through their own electronic processing centres; those on local banks are transmitted to them through the local clearing centre of the central bank, through the accounts that banks maintain in each others' books or through clearing centres in other cities; payments on banks in other cities are passed on to them via the banking group's own giro system or the central bank's system. Most intercity movements are passed on to the computer centres concerned and processed there in the form of magnetic tapes or OCR vouchers; cheques are retained by the paying banks, whereas credit and debit vouchers are sent to the customers together with the statement of account. The net credit or debit balances arising from the payment circuits are, as a rule, finally settled in the books of the central bank, which holds the liquidity reserves of all the banks and which thus provides the link between the various giro systems of the banking industry and the Post Office. In addition to its function as a clearing house the central bank acts as the fiscal agent of the Federal Government, executing its payments.

Germany

A. Basic statistical data

Territorial area	:	248.6	thousand sq.kms.
Population	:	61.32	million
Gross national product	:	639	(US\$ billion)
Per capita GNP	:	10,421	(US\$)
Number of bank offices	:	43,953	
Inhabitants per bank office	:	1,395	
Number of sight accounts per 1,000 inhabitants	:	765	
Number of time accounts per 1,000 inhabitants	:	13	

	<u>Absolute</u>	<u>Per capita</u>
	(US\$ bn)	(US\$)
Total money supply (M ₃)	359.2 ¹	5,857.8 ¹
Currency	44.5	680.1
Sight deposits	88.5	1,443.2
Time deposits	75.2	1,226.4

¹ M₃ is larger than the sum of the three money components shown above because sight and time deposits other than those placed with savings banks are included in Germany's definition of M₃.

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Federal Post Office</u>				
19,321 branch offices				
13 cheques offices				
Sight	3.7	7.8	5.4	5.9
Time	0		0	
<u>249 Commercial banks</u>				
5,840 branch offices				
3 major banks				
Sight	8.8	18.8	30.5	34.5
Time	0.2	18.5	44.4	59
<u>611 Savings banks</u>				
16,893 branch offices				
12 central giro institutions				
Sight	21.9	46.7	34.4	38.8
Time	0.2	24.3	18.7	24.8
<u>4,604 Credit co-operatives</u>				
14,892 branch offices				
10 central credit institutions				
Sight	12.5	26.7	17.4	19.6
Time	0.5	57.2	9.2	12.2
<hr/>				
<u>DEUTSCHE BUNDESBANK</u>	- Private accounts.			
211 branch offices	- Operates interbank giro clearing network.			
	- Settlement.			

C. Relative importance of payment instruments

	Volume of transactions (millions)	Percent. of total	Value of transactions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	500	12	610	9
Postal cheques issued	7	less than 1	100	1
Credit card-holders' payments	insignificant	-	-	-
Paper giro payments	1,650	38	3,790	54
Paperless giro payments	950	22	310	4.5
Direct debits	1,200	28	380	5.5
Interbank transfers ¹	0.8	less than 1	1,800	26
TOTAL CASHLESS PAYMENTS ²	4,307.8	100	6,990	100
CASH PAYMENTS (estimate)	35,000	-	800	-

1 Deutsche Bundesbank only.

2 Number of cashless payments per inhabitant = 60.

5. Italy

I. CASH

The media used for cash payments are bank-notes, state notes and coin, all of which are legal tender, although the amount of coin and state notes that must be accepted is subject to predetermined limits. Since 1926 the issue of bank-notes has been the exclusive privilege of the Bank of Italy, which is obliged to observe no specific cover requirements or upper limits on the amount issued. It does, however, exercise powers of control over the quantity of notes in circulation. Legal responsibility for the issue of state notes and striking of coin lies with the Treasury. After the second world war the law gave the Bank of Italy the right to issue notes in denominations of Lit. 1,000 or more and the Treasury that to issue paper or metallic monetary tokens in smaller denominations. Italian currency is also legal tender in the Vatican City State and in the Republic of San Marino; both of these mint small quantities of coins of their own, which can circulate freely within Italy.

The currency in circulation consists of seven denominations of bank-note (Lit. 1,000, 2,000, 5,000, 10,000, 20,000, 50,000 and 100,000), the 500-lire state notes and coins in ten denominations (Lit. 1, 2, 5, 10, 20, 50, 100, 200, 500 and 1,000); 500 and 1,000-lire silver coins do not normally circulate, and 1 and 2-lire coins are no longer used. The possibility of introducing a new monetary unit with a higher nominal value (equivalent to 100 or 1,000 current lire) has been under discussion for some years. At the end of 1978 the currency in circulation (including stocks held by the Treasury and the banking system) amounted to Lit. 20,125 billion, equivalent to US\$ 23.9 billion, of which US\$ 23.2 billion consisted of bank-notes and US\$ 0.7 billion of state notes and coin. As a consequence of the exclusive right of issue that it enjoys, the Bank of Italy has its own works for designing and printing the authorised types of bank-notes, replacing worn and damaged notes and detecting forgeries. The Treasury also arranges directly for the production of its notes and coin.

II. DEPOSIT MONEY

On 31st December 1978 about 85 per cent. of the stock of money available for payments was held in the form of sight deposits at banks and post offices, while the remaining 15 per cent. was held in the form of notes and coin. According to incomplete statistics, which do not cover debit orders or bank giro transfers carried out for the public, it can be estimated that about 700 million cashless payments were effected in 1977, involving a total of US\$ 660 billion; in the same year the value of interbank transfers came to roughly US\$ 160 billion. The number and value of payments effected in cash are not known. In order to set the figures in perspective, it should be borne in mind that Italy is a country with a high population density, a mixed agricultural and industrial economy and

wide regional disparities; in 1978 the gross national product amounted to US\$ 260 billion (US\$ 4,579 per head of the population).

The performance of banking business and thus indirectly the ability to effect payments in deposit money are governed by the provisions of ordinary law; specific laws govern the activity of the Bank of Italy and the Postal Administration. Payments in bank money are effected by all entities that administer sight deposits - commercial banks, savings banks and pledge banks, co-operative banks, post offices and the central bank - although there are no specific regulations pertaining to such operations (except for the law on bank cheques); the provisions governing payments by public authorities do not, however, encourage the use of deposit money, whereas the banks are fairly liberal in allowing payments to be made even with funds that are not technically utilisable at sight. The population of Italy totals 57 million; at the end of 1978 the number of post-office current accounts came to around 620,000, whereas the number of sight deposits administered by the banks was just under 12 million.

III. CASHLESS PAYMENTS

Notes and coin are used in the main by households for making small, everyday and recurrent payments. Deposit money, on the other hand, is used primarily by companies at the various stages of manufacturing and trade that precede retail selling. The instruments most widely used for effecting payments by means of deposit money are the postal giro, the bank cheque, the bank giro transfer, the bill of exchange, the credit order and the pre-authorized payment. In addition, considerable use is made of pre-covered credit instruments payable at sight - money orders and bankers' drafts issued by the Bank of Italy or one of the sixty or so authorized banks. In 1977 63 per cent. of the payment instructions received by banks and post offices took the form of cheques and 36 per cent. that of credit transfers or giro transfers. Statistics on the other forms listed above are not available, but the number of money orders and bankers' drafts issued every year must be of the order of 50 million and their value must run into several thousand billion lire.

IV. HANDLING OF CASHLESS PAYMENTS

The Postal Administration and most of the banks have branch networks that match the scale of their business; one channel for effecting payments in deposit money and settling cheques operates within the individual institutions themselves and is often based on the bank's own automated telecommunications network (on average about 40 per cent. of all bank cheques drawn in 1978 were settled within the drawn bank). Interbank transactions are sometimes settled bilaterally but more frequently they are handled on a multilateral basis through the clearing houses run by the Bank of Italy in the ten largest cities and by means of the clearing services offered at the Bank's other 84 branches; the operations of all kinds effected between the branches of a group of thirteen large banks are centralised in Rome and Milan. A national automated clearing centre for the transfer of interbank transactions on magnetic

tape will come into operation in 1980. It is a widespread practice for local banks and banks operating in the main cities to hold correspondent accounts with one another.

In order to facilitate the clearing and settlement in its own books of the final balances on interbank transactions originating in payments effected by means of book entries, the Bank of Italy several years ago set up a national service for interbank giro transfers and for the centralised clearing of local balances that uses the automated telecommunications network linking all the Bank's branches with the capital.

Italy

A. Basic statistical data

Territorial area	:	301.3 thousand sq.kms.
Population	:	56.8 million
Gross national product	:	260.1 (US\$ billion)
Per capita GNP	:	4,579 (US\$)
Number of bank offices	:	12,104 ¹
Inhabitants per bank office	:	4,695
Number of sight accounts per 1,000 inhabitants	:	215
Number of time accounts per 1,000 inhabitants	:	1,714

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃)	273.6	4,814
Currency	22.4 ²	394
Sight deposits	123.9	2,180
Time deposits	127.3	2,240

1 Branches operating inside factories, etc. for employees' purposes are not included.

2 Excluding stocks held by the Treasury and the banking system.

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Post Office</u>				
13,459 branch offices				
Sight	0.6	5.1	3.9	3.2
Time	63.2	65	23.8	18.7
<u>161 Commercial banks</u>				
5,420 branch offices				
Sight	6.6	54.5	75.3	60.8
Time	13.8	14.1	53	41.6
<u>92 Savings banks</u>				
3,472 branch offices				
Sight	3.5	28.8	30.8	24.9
Time	16.1	16.5	32.3	25.4
<u>818 Co-operatives and rural banks</u>				
3,212 branch offices				
Sight ¹	1.4	11.6	13.9	11.1
Time ¹	4.2	4.4	18.2	14.3
<hr/>				
<u>BANK OF ITALY</u>	- Clears and settles cheques and interbank transfers.			
97 branch offices (of which 3 are in Rome)	- Operates nationwide communications system.			

1 Co-operatives only.

C. Relative importance of payment instruments

	Volume of transactions (millions)	Percent. of total	Value of transactions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	612	89	515.4	63
Postal cheques issued	38	5	7.7	less than 1
Credit card-holders' payments	0.9	less than 1	0.05	less than 1
Paper giro payments	40.4	6	137.1	17
Paperless giro payments	-	-	-	-
Direct debits	-	-	-	-
Interbank transfers	0.2	less than 1	159.8	19
TOTAL CASHLESS PAYMENTS ²	691.5	100	820	100
CASH PAYMENTS	-	-	-	-

1 As at the end of 1977.

2 Number of cashless payments per inhabitant = 12.

6. Japan

I. CASH

Both bank-notes and coins are legal tender for cash payments, whether in the public or the private sector. The Bank of Japan has been the sole note-issuing institution since 1885; it is now responsible for the whole life cycle of the notes in circulation, including their production, distribution, examination, destruction and replacement. The issue of coins is the responsibility of the Government (Mint Bureau) and the Bank is supplied with them at its head office and branches whenever necessary. Cash is put into circulation by the head office and branches of the Bank of Japan (thirty-four in all) at the request of the commercial banks and other financial institutions holding free reserve claims on it; the banking system thus acts as the main intermediary between the issuers and the end-users of notes and coin. At the end of June 1979 cash in the hands of the public amounted to Yen 14,455 billion, the equivalent of US\$ 66.6 billion, about 94 per cent. of which consisted of notes. Paper currency is made up of nine denominations (Yen 10,000, 5,000, 1,000, 500, 100, 50, 10, 5 and 1). The five smaller note denominations are accepted only by the Bank of Japan, since their production and issue have been suspended and they have been replaced by coins of the same denominations (Yen 100, 50, 10, 5 and 1). A maximum limit for the note issue is fixed by the Minister of Finance subject to approval by the Cabinet, but it is frequently adjusted upwards in line with Bank of Japan forecasts of future public demand; the Bank is required to maintain a reserve against the amount of the note issue.

II. DEPOSIT MONEY

A little more than four-fifths of the money available to the economy for payments at the end of 1978 was held in the form of sight deposits with banks and post offices, while the remaining one-fifth was held in the form of cash. The number and value of cash payments are not known. By way of comparison it may be noted that Japan is a very densely populated and highly industrialised country, although primary production continues to play an important rôle; in 1978 the gross national product amounted to US\$ 980 billion (US\$ 8,494 per capita).

The performance of banking activities and the execution of payments in deposit money are subject to general and specific laws and regulations. The Banking Law is the legal basis of the financial system and defines a precise code of conduct for banking operations and thus for the provision of payment services. Special laws and regulations govern the activities of the Postal Administration, the central bank and various long-term and specialised credit institutions. In addition to the Bank of Japan and the post offices, all private financial institutions which offer sight-account facilities, primarily commercial banks located both in the major cities and elsewhere, effect payments in deposit money;

deposit money is held in current accounts, from which payments may be made by means of cheques and credit transfers, and in ordinary accounts, for which only credit transfer facilities are offered. Apart from cheques and credit transfers, other instruments used for cashless payments are bills and promissory notes, direct debits, inpayments and "domestic exchanges"; there are government, bank and postal cheques, mostly used for payments by public authorities and companies.

III. CASHLESS PAYMENTS

It is not customary for individuals or households to receive their income by cheque. Wages and salaries are normally paid in cash or by automatic credit to the recipient's account. Payments for personal consumption and small business transactions are usually made in cash or by electronic funds transfers. As already mentioned, cheques are widely used outside the household sector, where other forms of cashless payments, paper-based or otherwise, are also a major means of making payments in the various stages of production and trade. It is estimated that bank cheques account for an overwhelming proportion of cashless payments, followed in order of importance by direct debits, giro transfers and payments by means of credit cards. There is no figure available for credit transfers via bank and postal sight accounts, but they are presumed to play a considerable rôle in payments. As in other countries, direct debits are used mainly for recurring outpayments, as are the so-called "inpayments", which are credited to customers' accounts by automated means; "domestic exchanges", in the form of interbank remittances, are generally used as the instruments for out-of-town payments, the vehicle being the Data Telecommunications System of All Banks (the Zengin System).

IV. HANDLING OF CASHLESS PAYMENTS

The Zengin System is a nationwide network for the domestic transfer of funds, in which almost all private financial institutions participate: 708 banks with more than 18,000 business offices in all. During 1979 the average value of remittances between different locations and of other cashless payment orders involving corporations and households amounted to Yen 892 billion per working day (US\$ 4.2 billion). In addition to this payments flow initiated by the banks, the average value of in and outpayments made through postal transfer accounts during fiscal 1978 stood at Yen 38 billion per working day (US\$ 0.2 billion).

City banks and regional banks (76 banks with more than 8,000 branches) have the greatest share in cashless payments and are highly computerised; the amount of sight deposits outstanding at these banks at the end of 1978 was approximately 70 per cent. of the total, the remaining 30 per cent. being held mainly at smaller institutions such as mutual loan and savings banks and credit associations (537 banks with about 8,800 branches).

There are 172 clearing houses throughout the country, which clear cheques, bills and other paper instruments on a local basis. In 1978 the volume of articles cleared worked out at an average of Yen 2,500 billion for cheques and Yen 576 billion in other paper instruments per working day (60 per cent. of the total at the Tokyo Clearing House). In the regions where the Bank of Japan has no branch, banks select a "representative bank", and hold accounts with that bank in order to clear balances arising from transactions among themselves. The Zengin System is centrally managed by the Bankers' Association of Tokyo in collaboration with the Telegraph and Telephone Public Corporation. The Postal Administration plans to have its own on-line telecommunications system for the financial and money transfer business of the post offices.

The Bank of Japan plays a central rôle in the payment system as the ultimate settlement organisation for the Government and for all the major financial institutions which hold current accounts with it ; the method of settlement by the clearing houses is based on net credit balances throughout the country and the network of transfers by telex on the financial institutions' current accounts at the Bank of Japan provides the links for interbank funds transfers at all intermediate stages and at the final one.

Japan

A. Basic statistical data

Territorial area	:	377.6 thousand sq.kms.
Population	:	115.4 million
Gross national product	:	980.2 (US\$ billion)
Per capita GNP	:	8,493.9 (US\$)
Number of bank offices	:	41,505 ¹
Inhabitants per bank office	:	2,780
Number of sight accounts per 1,000 inhabitants	:	-
Number of time accounts per 1,000 inhabitants	:	-

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃)	1,403.4	12,161.2
Currency	83.6	724.4
Sight deposits	-	-
Time deposits	-	-

¹ Including 812 offices of government financial institutions and foreign banks in Japan.

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Post Office</u> ¹				
21,884 offices				
Sight and time	-	-	224.1	-
 <u>86 Commercial banks</u>				
8,372 offices ¹				
13 City banks				
63 Regional banks				
3 Long-term credit banks				
7 Trust banks				
Sight ²			202.2	
Time ²			472.5	
 <u>1,071 Financial institu- tions for small business</u>				
11,810 offices ¹				
71 Mutual loan and savings banks				
Sight	27	-	30.6	-
Time	32	-	75.6	-
 466 Credit associations				
Sight	34	-	33	-
Time	51	-	106.6	-
 1 Shoko Chukin Bank (Central bank for commercial and indus- trial co-operatives)				
Sight	-	-	2.1	-
Time	-	-	3.4	-
 486 Credit co-operatives				
Sight and time	-	-	35	
 47 Labour credit associations				
Sight and time	-	-	11.8	-

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>6,378 Financial institu- tions for agriculture, forestry and fishery</u> 20,477 offices ¹ 1 Norinchukin Bank (Central co-operative bank for agriculture and forestry)				
Sight	-	-	2.7	-
Time	-	-	0.5	-
4,629 Agricultural co-operatives				
Sight and time	-	-	114.5	-
1,748 Fishery co-operatives				
Sight and time	-	-	5.2	-
<hr/>				
<u>BANK OF JAPAN</u> 34 offices				
				- Issuing of notes.
				- Provides settlement services for financial institutions.
				- Government fiscal agent.

1 Excluding 812 offices of government financial institutions and foreign banks in Japan, for which money-supply statistics are not compiled.

2 Including trust accounts.

C. Relative importance of payment instruments

	Volume of trans- actions (millions)	Percent. of total	Value of trans- actions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	-		-	
Postal cheques issued	-		-	
Credit card-holders' payments	-		-	
Paper giro payments	-		-	
Paperless giro payments	-		-	
Direct debits	-		-	
Interbank transfers	-		-	
TOTAL CASHLESS PAYMENTS				
CASH PAYMENTS (estimate)	-		-	

7. Netherlands

I. CASH

Bank-notes and coin are the media used for cash payments. They are both legal tender, although the acceptance of coin by the public is compulsory only up to certain maximum amounts. All coins are produced by the Mint, an institution supervised by the Ministry of Finance, under the terms of the 1948 Coinage Act. As to paper currency, the 1948 Bank Act provides that the Netherlands Bank has the sole right to issue bank-notes.

At the end of 1978 the currency in circulation consisted of five denominations of note (1,000, 100, 25, 10 and 5 guilders) and seven denominations of coin (10, 2.5 and 1 guilders and 25, 10, 5 and 1 cents). The Netherlands Bank is not allowed to issue notes having a face value below Fl. 5. Coins of denominations lower than Fl. 1 are put into circulation by the Post Office. Bank-notes and coins of denominations of Fl. 1 and higher are put into circulation through the central bank's circuit (head office and 16 branches), by the intermediation of banks and post offices; the often large amounts taken up by these institutions are debited to their giro current accounts with the central bank. Cash in excess of the public's needs is returned to the central bank, which is responsible for the renovation of notes, their checking and the detection of counterfeits.

At the end of 1978 the cash in circulation amounted to Fl. 19.7 billion, the equivalent of US\$ 10 billion, of which US\$ 9.5 billion was accounted for by bank-notes. These figures include the notes and coin at banks, which totalled \$0.5 billion. The bank-notes in circulation - and third-party guilder credit balances on current account at the Netherlands Bank - are subject to a legal reserve ratio, to be covered in gold, convertible foreign currency holdings and net claims on the IMF. The legal minimum of this ratio is 50 per cent., whereas no upper limits on its value exist.

II. DEPOSIT MONEY

Two-thirds of the money available to the economy for payments at the end of 1978 was held in the form of sight deposits with banks and post offices, while the remaining one-third was held in the form of bank-notes and coin. About 1.1 billion cashless payments using deposit money, totalling US\$ 480 billion, were made by non-banks in 1978; transfers on the Netherlands Bank's books, mainly by banks, were approximately 1 million for an amount of US\$ 1,150 billion. The quantity of cash payments is unknown; their value for 1978 has been estimated at about US\$ 130 billion. The banking system is made up of 65 commercial (universal) banks, 5 banks organised on a co-operative basis, some 20 security credit institutions and more than 80 savings banks; together they operate about

5,750 branch offices, all offering sight account facilities and the related payment services, by participating fully in the banks' giro organisation. In addition to the banks, there are the Postal Cheque and Giro Services, with a total of more than 2,700 offices. As regards the giro transfers, which are the most important instrument used for cashless payments by means of deposit money, no general legislation is in force; regulations are, however, contained in the 1966 Postal Giro Decree and in the General Terms and Conditions set in 1971 by the Netherlands Bankers Association. The Government envisages including in the new Civil Code a provision to the effect that a giro payment is legally equivalent to a payment made in currency.

To set the figures reported here in due perspective, it may be noted that the Netherlands is a densely populated country and draws its high level of income from both industry and agriculture (in 1978 the gross national product amounted to US\$ 130.7 billion; US\$ 9,336 per head of population). With a population of 14 million, there were at the end of 1978 7.1 million sight accounts administered by banks and 4.3 million administered by the Postal Administration.

III. CASHLESS PAYMENTS

Apart from cash, there are basically two instruments used for making payments: the guaranteed cheques and the giro transfers; others, like the ordinary cheque and the credit card, are insignificant. Cash payments are mainly employed in the family sector for small day-to-day household purchases; as the amounts to be paid become larger and for all the transactions in trade and industry, payments are almost exclusively made by cashless instruments. The payment of wages and salaries takes place mainly by transfers into the earners' accounts. Transfers are also used on a large scale by public administrations. Of every 100 payments dealt with by banks and post offices in 1978, 76 were credit transfers (99 per cent. of the total value) either within the banks' giro or the Post Office giro organisation, 23 were cheques (less than 1 per cent. of the total value), the remaining 1 per cent. being accounted for by payments by holders of credit cards and other minor instruments. The guaranteed cheques were introduced for domestic use in 1967 by the banks, followed in 1969 by the Postal Administration; the guaranteed eurocheque, which can be used in a number of other countries, was introduced in 1973. The guaranty cards are made available to all account-holders and the cheques are guaranteed by the issuing institutions up to a certain amount (presently Fl. 200 for postal cheques, Fl. 100 for bank cheques and Fl. 300 for eurocheques). In 1978 over 95 million guaranteed cheques were processed by the banks and about 138 million by the postal giro services. Four giro circuits for transfer payments were in operation in 1978: the banks' circuit, the postal circuit, the Netherlands Bank's circuit and the Municipal Giro Service of Amsterdam; the latter recently merged with the Postal Cheque and Giro Services; it is estimated that in 1978 approximately 1,040 million giro transactions were effected through the banks and postal circuits. The banks handle mainly the payments on behalf of enterprises and institutions (45 per cent. of the quantity and 53 per cent. of the value), while the post offices especially take care of the payments of private persons (55 per cent. of the quantity and 47 per cent. of the value).

IV. HANDLING OF CASHLESS PAYMENTS

Any kind of cashless payment instruments, paper or non-paper based, are dealt with in each of the giro organisations: normal transfers, pre-prepared transfers, direct debits, cheques and a few other types of payment. Normal transfers and cheques are initiated by the debtor for the sum indicated in the payment order; pre-prepared transfers, either periodically for fixed amounts or for each payment transaction, and direct debits are initiated by the creditor. The Postal Cheque and Giro Services are marked by a high degree of centralisation, since all payment items are processed in two central offices. The banks' giro circuit is instead a basically decentralised organisation; the Banks' Clearing Institution (BCI), founded by the banks to facilitate the collection and processing of transfer orders among themselves and with the other giro circuits, is merely an intermediary of the participating credit institutions. The BCI receives debits and converts them into credits, sorted by bank and account number; it makes no entries in the accounts nor prints the statements for the customers, which are produced by the individual banks in their own electronic data processing centres. On the other hand, the BCI is entrusted by the participating banks to effect the daily clearing and final settlement of the aggregated net balances on their accounts held at the Netherlands Bank. The individual banks and the two giro organisations are all highly computerised, both for the automatic processing of paper items like cheques and for the information on payment transactions recorded on magnetic data carriers. The Postal Giro does not hold any accounts with the banks, so that transfers between the two giro organisations tend to take relatively long while the execution and clearing of payments inside each giro organisation are normally effected one day after receipt. According to Section 9 of the 1948 Bank Act, in 1975 the Minister of Finance invited the central bank's President to chair a steering committee for the integration of the giro organisations; the committee's investigations are presently orientated towards a national giro system characterised by decentralised processing of payment orders and large use of data communications. In addition to serving as the institution for the final settlement of the clearing, the Netherlands Bank acts as payment agent for the Government (transfers effected in that capacity in 1978 amounted to about US\$ 75 billion); its own giro circuit, which serves only a limited number of banks, public authorities and financial institutions, is centralised and executes all transfer orders on the day of receipt.

Netherlands

A. Basic statistical data

Territorial area	:	36.9 thousand sq.kms.
Population	:	14 million
Gross national product	:	130.7 (US\$ billion)
Per capita GNP	:	9,335.7 (US\$)
Number of bank offices	:	5,753
Inhabitants per bank office	:	2,434
Number of sight accounts per 1,000 inhabitants	:	819
Number of time accounts per 1,000 inhabitants	:	1,550

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃)	93.9	6,707.1
Currency	9.5	678.5
Sight deposits	20.9	1,492.9
Time deposits	63.5	4,535.7

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Postal giro incl.</u>				
<u>giro service of Amsterdam</u>				
2,727 branch offices				
Sight	4.32	37.7	7.3	34.9
Time	5.90	27.2	7	11
<u>65 Commercial banks</u>				
2,322 branch offices				
Sight	*	*	9	43.1
Time	3.10	14.3	25.1	39.5
<u>80 Savings banks</u>				
884 branch offices				
Sight	0.82	7.2	-	-
Time	5.10	23.5	9.9	15.6
<u>5 Co-operative banks</u>				
2,530 branch offices				
Sight	*	*	4.6	22
Time	7.60	35	21.5	33.9
<hr/>				
<u>NETHERLANDS BANK</u>	- Produces, circulates and destroys notes.			
16 branch offices	- Provides settlement services for the Govern- ment and for large private enterprises, including financial institutions.			

* A total of 6.32 million accounts are held at commercial banks and co-operative banks (55.1 per cent. of overall total). Breakdown not available.

C. Relative importance of payment instruments

	Volume ¹ of trans- actions (millions)	Percent. of total	Value ¹ of trans- actions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	100	9	4	less than 1
Postal cheques issued	150	14	6	less than 1
Credit card-holders' payments	5	less than 1	0.4	less than 1
Paper giro payments	550	49	350	36
Paperless giro payments	150	14	100	10
Direct debits	150	14	20	2
Interbank transfers	0.4	less than 1	500	51
TOTAL CASHLESS PAYMENTS ²	1,105.4	100	980.4	100
CASH PAYMENTS (estimate)	-	-	130	-

1 All figures are estimates.

2 Number of cashless payments per inhabitant = 79.

8. Sweden

I. CASH

In 1903 the sole right to issue bank-notes was vested in the Bank of Sweden, which had been established by Parliament in 1668, and all issues by private banks had to cease. The issuing of coin is a long-standing central-government prerogative. Both bank-notes and coin are legal tender for cash payments, although there are certain limits on the compulsory acceptance of coins by the public. Since 1st January 1975 the Bank of Sweden Act has no longer laid down a ceiling on the value of the total note issue; the Act still contains a note-cover regulation, however, although it imposes no restrictions on the composition and value of the covering assets. According to the Bank of Sweden Act, notes may be issued in seven denominations: S.kr. 1, 5, 10, 50, 100, 1,000 and 10,000, but the S.kr. 1 denomination is currently not used; the Bank of Sweden has also proposed a S.kr. 500 note, on which no decision has been taken as yet. All bank-notes are produced directly by the Bank of Sweden in its printing works; the Bank is responsible for the design of new notes, the substitution and destruction of worn and damaged notes and the detection of forgeries; notes and coins are put into circulation by the Bank's head office and twenty-three branches via the banks and post offices. The Royal Mint is responsible for the coinage of metal money in six denominations, namely: S.kr. 5 and 1, and 50, 25, 10 and 5 öre; until June 1972 coin was also issued in denominations of 2 and 1 öre, but these are no longer legal tender (which means that all cash payments have to be rounded to the nearest 5 öre). The S.kr. 2 coin, produced up to 1971, is still legal tender. At the end of 1978 the amount of currency outstanding totalled S.kr. 29,174 million, the equivalent of US\$ 6.8 billion, 95 per cent. of which was in notes and 5 per cent. in coin.

II. DEPOSIT MONEY

Almost half of the money stock available for payments to the economy at the end of 1978 consisted of currency, the other half being held in the form of sight deposits with banks and post offices. Approximately 510 million cashless payments amounting to US\$ 810 billion were made by non-banks in 1978. The value of interbank transfers reported for the same year amounted to US\$ 230 billion. No data are available on direct debits and credits and cash payments. In evaluating this information it has to be borne in mind that Sweden is a sparsely populated but economically highly developed country, with a relatively large gross national product (US\$ 91.9 billion in 1978; US\$ 11,072 per capita). Deposit money is used in two main circuits: the banks and the Post Office. The banking system is made up of fourteen commercial banks, some 180 savings banks and twelve co-operative banks; a whole range of money transfers are made by the banks through their 3,800 branches. In fact, all the banks participate in the so-called "Bank Giro" organisation, an integrated system for transferring funds from one bank account to another

irrespective of the customer's bank. Two separate systems of automated on-line cash dispensers also exist (BANKOMAT operated by the commercial and co-operative banks, and MINUTEN operated by the savings banks), which might be linked together in the near future. Although the Post Office does not perform any banking activity of its own, its rôle in the payment system is actually more important than that of the banking system. The Postal Giro co-operates closely with one of the large commercial banks - the government-owned PK-Bank (Post and Credit Bank) - and also offers certain payment services to other banks. However, no formal direct link exists between the two giro organisations and the Government is currently studying the question of whether a connection would increase the efficiency of the whole payment mechanism.

The functioning and the development of the payment system are not governed by any kind of special legislation, nor has the central bank sought to exert any influence. Under general civil law, the banks' giro services are managed independently by the banks themselves, in the form of a consortium. The Postal Giro at present constitutes an autonomous unit within the Post Office. All banking business is subject to supervision by the banking authorities under special legislation, but no particular regulations are in force as to the organisation and technical aspects of payments. With a population of 8.3 million at the end of 1978 and a population density similar to that of the United States, there were at that same date almost 5.6 million sight accounts, of which about 2.5 million accounts with giro facilities. Of the 2.5 million accounts with giro facilities about 1.5 million belonged to individuals and one million to enterprises.

III. CASHLESS PAYMENTS

The giro transfer is a well established form of payment and by far the most widely used in Sweden. Companies, public agencies and local and central-government authorities have virtually ceased making payments in cash; wages and salaries are paid directly into bank accounts and the bulk of cash payments are connected with individuals' transactions for the purchase of goods and services. The relatively large amount of currency held by the household sector is attributable to a constant expansion in the number of small cash transactions and a decreasing velocity of circulation.

The basic payment services offered by the two giro organisations are in and outpayments and credit transfers; even if the procedures are much the same, the Postal Giro dominates, especially as far as government payments and payments by individuals are concerned. The Postal Giro's share of all giro transactions effected in 1978 was 85 per cent. of their number (totalling 370 million) and 87 per cent. of their total value (US\$ 800 billion).

The use of cheques is therefore relatively limited. Of every 100 payment transactions recorded in 1978, 37 were made by paperless giro transfers (US\$ 553 billion in value), 25 by bank cheques (postal cheques are hardly used at all), 35 by paper giro transfers (US\$ 246 billion in value) and 3 by payments of holders of credit cards (US\$ 0.6 billion in value). Bank cheques for any nationwide amount can be cashed at any bank;

the Post Office has, however, imposed certain limits concerning the cheques it is prepared to cash. The use of small cheques is not favoured by the banks, they, in fact, charge a fee for cashing cheques for S.kr. 100 and less.

IV. HANDLING OF CASHLESS PAYMENTS

The book-keeping, the crediting and debiting of accounts, and the printing of account statements for the customers are all done by automatic data processing in both the giro organisations. Only the initiating of payment transactions by smaller enterprises and by private persons is normally paper-based; for larger companies and public administrations it has become usual for payment orders to be sent on magnetic tapes; on-line direct data transmission is also beginning to be used. At the other end, suitably equipped companies and public administrations can likewise receive the pertinent output information on magnetic tape, on optically readable supports or by on-line links. Pre-authorized debit transfers are used in some cases but are not frequent. A payment transaction at the Postal Giro is effected on the same day if the order is received by the Data Processing Centre in Stockholm by 9 a.m., unless the giro account is not adequately covered. Payment transactions at the Bank Giro are effected through the ordinary current accounts held in a bank and the updating of the accounts is done by the account-holding bank where the credit transfer originates; paper documentation is handed over to the system at the local bank office, whereas payers using automated input information can refer directly to the nearest data processing centre. The data processing centres sort and check all giro transactions, update the relevant account files, notify the beneficiaries and, in the case of the Bank Giro, supply the participating banks with book-keeping material, usually recorded on magnetic tape.

The Bank Giro Centre also performs the clearing of gross debit and credit balances between the banks. A bank giro order handed over to the local bank on day 1 is processed and cleared at the centre on day 2 and the beneficiaries are notified during the morning of day 3. The Swedish banking system is highly computerised. Since 1975 the processing of cheques has been effected automatically at the bank centres and the settling between banks is then done through the Bank Giro system; the latter establishes global net positions against each bank, including the PK-Bank, and reports them to the central bank, where they are finally booked on each bank's current account, thus closing the settlement circuit.

Sweden

A. Basic statistical data

Territorial area	:	411.6 thousand sq.kms.
Population	:	8.3 million
Gross national product	:	91.9 (US\$ billion)
Per capita GNP	:	11,072 (US\$)
Number of bank offices	:	3,804
Inhabitants per bank office	:	2,182
Number of sight accounts per 1,000 inhabitants	:	672
Number of time accounts per 1,000 inhabitants	:	2,627

	<u>Absolute</u> (US\$ bn)	<u>Per capita</u> (US\$)
Total money supply (M ₃)	55.97	6,743
Currency	6.41	772
Sight deposits	7.05	849
Time deposits	42.51	5,122

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value of accounts (US\$ bn)	Share of market (%)
<u>Postal giro</u>				
2,300 branch offices 2,700 rural postmen				
Sight	0.86	15.4	2.44	34.6
Time	-	-	-	-
<u>14 Commercial banks</u>				
1,523 branch offices				
Sight	2.59	46.4	3.71	52.6
Time	11.55	53	24.55	57.8
<u>185 Savings banks</u>				
1,548 branch offices				
Sight	1.94	34.8	0.48	6.8
Time	8.91	40.9	14.79	34.8
<u>12 Co-operative banks</u>				
733 branch offices				
Sight	0.19	3.4	0.42	6
Time	1.34	6.1	3.17	7.4
<hr/>				
<u>BANK OF SWEDEN</u>	- Provides facilities for the exchange and			
23 branch offices	settlement of cheques among the major			
	financial institutions.			

C. Relative importance of payment instruments

	Volume ¹ of trans- actions (millions)	Percent. of total	Value ¹ of trans- actions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	125	25	12	1
Postal cheques issued	0		0	
Credit card-holders' payments	15	3	1	less than 1
Paper giro payments	181	35	246	24
Paperless giro payments ²	190	37	553	53
Direct debits	-		-	
Interbank transfers	-		228	22
TOTAL CASHLESS PAYMENTS ³	511	100	1,040	100
CASH PAYMENTS	-		-	

1 All figures are estimates.

2 Including direct debits.

3 Number of cashless payments per inhabitant = 62.

9. Switzerland

I. CASH

Bank-notes and coin are the media used for cash payments. They are both legal tender in the Swiss Confederation and in the Grand Duchy of Liechtenstein; in every payment transaction coins are legal tender in quantities of up to one hundred at a time. Exclusive coinage rights have been vested in the Federal Government since 1850, now under the terms of the 1970 Coinage Act. The issue of bank-notes was monopolised in the hands of the Swiss National Bank in 1906 and is now regulated by the 1953 Act, by which the Bank is also required to contribute to the development of an efficient national payment system.

The circulation of currency is ensured by the central bank, which supplies banks and post offices, through its two head offices and eight branches, with the amounts required against claims on its liabilities; the banks and the Postal Administration meet the needs of enterprises, households and, partly, public administrations, mainly for the payment of wages and salaries; banks and post offices place excess cash with the central bank. The National Bank is responsible for the whole life cycle of bank-notes from their design and production to their withdrawal and destruction, and also for the detection of forgeries.

Bank-notes are issued in six denominations: Sw.fr. 10, 20, 50, 100, 500 and 1,000; coins exist in nine denominations: 1, 2, 5, 10, 20 and 50 centimes, and Sw.fr. 1, 2 and 5. Until 1969 coins had a silver content of 835/1,000, but this was subsequently substituted by other metals because of the rise in the price of silver. At the end of 1978 the currency in circulation outside banks and post offices amounted to Sw.fr. 20.6 billion, the equivalent of US\$ 12.1 billion in bank-notes and of US\$ 0.6 billion in Federal coins. No pre-established legal ceilings on the total note issue are currently in force.

II. DEPOSIT MONEY

Over two-thirds of the stock of money available to the economy for payments at the end of 1978 was held in the form of sight deposits at banks and post offices, while just under one-third of it was held in cash. About 155 million cashless payments, totalling US\$ 247 billion, were made by non-banks in 1978; interbank transfers (about 1 million) amounted to an estimated value of US\$ 2,000 billion in the same year. Cash payment transactions have been estimated for the same year at 10.4 billion, with a value of US\$ 140 billion. It may be noted that the Swiss Confederation is one of the more highly industrialised countries in Europe; in 1978 the gross national product stood at US\$ 88 billion (US\$ 14,000 per capita). Sight-account facilities are offered by all banks, viz. the five larger commercial banks with nationwide branch networks (65 per cent. of the amount outstanding at the end of 1978), the

numerous groups of savings, regional, cantonal and small private banks (33 per cent.) and the co-operative banks (2 per cent.); besides the 4,700 bank offices, there are just under 4,000 post offices also providing very important giro transfer services. The payment services in deposit money provided by the banking community are virtually exempt from regulation by the public authorities; special legislation exists only in the case of cheques. By contrast, the Postal Administration is subject to strict rules: for instance, post offices are not allowed to open savings accounts or to grant overdraft facilities on the giro accounts they open; charges on transfer instruments and interest rates are also strictly regulated. With a population of 6.3 million, at the end of 1978 there were an estimated 1 million sight accounts held at banks and 0.8 million giro accounts held at post offices.

III. CASHLESS PAYMENTS

Cashless payments take place mainly in the form of giro credit transfers, cheques and both credit and debit automated bank transfers. The participants in cash payments are wage and salary-earners, consumers, retailers and the post offices; for various reasons the velocity of circulation of the currency is relatively lower than in other economically developed countries. The giro transfer is the main instrument used for making cashless payments. Of every 100 payment orders issued by bank and post-office customers in 1978, 84 were paper-based giro transfers (91 per cent. of the total value), 9 were paperless giro transfers (8 per cent. of the total value), 4 were bank cheques, 3 were payments by holders of credit cards and less than 1 per cent. direct debit transfers. Taking the number of giro transactions (145 million) in 1978, 90 per cent. were effected by the postal giro and 9 per cent. by the bank giro, the remaining 1 per cent. being the share of the National Bank's own giro, mainly used by financial institutions and the Government. The postal current accounts (so-called postal cheque accounts) are the smallest element in the postal payment organisation, but they have increased rapidly during recent years with the introduction of direct crediting of wages and salaries to the accounts held by individuals on the initiative of business and trade associations. More important are postal giro services, which take the form of credit transfers and in and outpayments in cash whenever the household sector is involved in the transformation of cash into deposit money or vice versa. The bank giro organisation is based on the banks' clearing centres and on the Automated Clearing House, the Swiss National Bank acting as the clearing and settlement intermediary of the banks' clearing centres.

IV. HANDLING OF CASHLESS PAYMENTS

In the postal giro system an important rôle is played by in and outpayments effected by private households on their giro accounts at post offices; unlike the banks, the post offices do not issue cheques to be used as a payment instrument, the only cashless way of using deposits being the giro transfer; all book-keeping is performed in twenty-five district centres, largely by semi-automatic data processing. Bank

branches, on the other hand, are concerned mainly with sight deposit accounting (in contrast to the post offices where no accounts are kept); this means that bank giro transfers are normally initiated at the bank branch where the payer holds a sight account and are transmitted through the clearing centres to the bank branch where the payee has an account. The clearing centres, through which all giro transfers are channelled, are the processing and accounting sites of the banks' clearing house organisation; each of the three largest commercial banks, as well as the Schweizerische Volksbank and the Kantonalbank von Bern possesses its own clearing centre; the Zürcher Kantonalbank is the clearing centre for all other cantonal banks and the Swiss National Bank centre serves 190 other institutions. The SNB centre also acts as the clearing house for the five other clearing centres, all but one of which are located in Zurich. The bank giro organisation also comprises the Automated Clearing House, where optically readable material and other magnetic data carriers of cashless payments are electronically processed before being sorted according to bank and cleared (about 10 per cent. of all cashless transactions). The final settlement is made in the central bank's books since all the clearing centres have an account at the bank's Zurich office and net credit and debit positions originating from the clearing operations can thus be offset against each other. After the sorting and exchanging of items, debit and credit positions arising from bank cheques and other minor bank-based payment instruments are fed into the clearing centre circuit, where they become part of the general clearing procedure. The Postal Administration also participates in the clearing sessions. According to a survey carried out in mid-1974, the daily turnover of the bank giro organisation consisted of 215,500 payment transactions, of which 45 per cent. were items exchanged between banks and post offices, 35 per cent. bank giro transfers, 10 per cent. interbank payments and 6.5 per cent. bank cheques. The bank giro organisation is managed by a private company, to which all banks participating in the clearing belong. The banks have also set up a Commission for the Payment System under the aegis of the Swiss Bankers Association; the central bank is a member of the Commission.

Switzerland

A. Basic statistical data

Territorial area	:	41 thousand sq.kms.
Population	:	6.3 million
Gross national product	:	88.2 (US\$ billion)
Per capita GNP	:	14,000 (US\$)
Number of bank offices	:	4,781
Inhabitants per bank office	:	1,318
Number of sight accounts per 1,000 inhabitants	:	284
Number of time accounts per 1,000 inhabitants	:	-

	<u>Absolute</u>	<u>Per capita</u>
	(US\$ bn)	(US\$)
Total money supply (M ₃)	116.6	18,427
Currency	12.7	2,008
Sight deposits	27.6	4,360
Time deposits	76.3	12,058

B. Payment system structure

	Number ¹ of accounts (millions)	Share of market (%)	Value ¹ of accounts (US\$ bn)	Share of market (%)
<u>Post Giro</u>				
3,935 branch offices				
Sight	0.81	45	6.9	25
Time	0		0	
<u>Commercial banks</u>				
752 branch offices				
Sight	0.52	29	13.8	50
Time	-	-	24.42	32
<u>Savings, regional and national banks</u>				
2,796 branch offices				
Sight	0.45	25	6.62	24
Time	-	-	48.1	63
<u>Co-operative banks</u>				
1,220 branch offices				
Sight	0.02	1	0.28	1
Time	-	-	3.8	5
<hr/>				
<u>SWISS NATIONAL BANK</u>	- Responsible for design and production of notes, distribution, withdrawal and destruction.			
2 head offices	- Handles 1 per cent. of giro services.			
8 branch offices	- Acts as the clearing house of the privately operated giro clearing centres and performs settlement.			

1 All data are estimates except those relating to the Post Giro.

C. Relative importance of payment instruments

	Volume ¹ of trans- actions (millions)	Percent. of total	Value ¹ of trans- actions (US\$ bn)	Percent. of total
CASHLESS PAYMENTS				
Bank cheques issued	6	4	1.2	less than 1
Postal cheques issued	0		0	
Credit card-holders' payments	4	3	0.3	less than 1
Paper giro payments	130	84	225	10
Paperless giro payments	14	9	20	1
Direct debits	0.03	less than 1	0.03	less than 1
Interbank transfers	1	-	2,000	89
TOTAL CASHLESS PAYMENTS²	155.03	100	2,246.53	100
CASH PAYMENTS (estimate)	10.4	-	140	-

1 All figures are estimates.

2 Number of cashless payments per inhabitant = 24.

10. United Kingdom

I. CASH

The right of note issue in England and Wales has gradually been concentrated on the Bank of England through the operation of the Bank Charter Act of 1844. The provisions that Act made for the separation of the Bank's note-issuing function from its other activities do not affect the organisation of the Bank; the Banking Department operates like any other central bank in issuing notes to its customers, mainly other banks, while the accounts of the Issue Department are related solely to the production, issue and redemption of bank-notes and the portfolio of securities with which the note issue is backed. The Bank of England may issue notes of such denominations as the Treasury approves, which are currently £1, £5, £10 and £20. These notes circulate freely throughout the United Kingdom, although in Scotland and Northern Ireland only the £1 notes are legal tender. The three Scottish clearing banks and the four banks operating in Northern Ireland each retain the right to issue their own notes, which, apart from their very small fiduciary issues, must be fully covered by holdings of Bank of England notes, or coins.

The Royal Mint is responsible to the Treasury for the production and issue of coins throughout the United Kingdom. Coins are currently issued in six denominations: 1/2, 1, 2, 5, 10 and 50 pence, but coins issued prior to decimalisation which are the equivalent of 2 1/2, 5 and 10 pence are still in circulation.

At the end of 1978 the currency in circulation, including the cash holdings of the London clearing banks (£779 million on average in 1978), amounted to £9,277 million, the equivalent of US\$ 17,842 million of bank-notes and of US\$ 1,092 million of coins. The clearing banks draw the notes they need from the Bank of England's head office and seven branches, and distribute them to their branches through their own cash centres. Old notes and those that are surplus to requirements are returned and are taken out of circulation by the central bank.

II. DEPOSIT MONEY

Almost three-quarters of the money stock available to the economy for payments at the end of 1978 took the form of sight deposits, while the remaining quarter was held in the form of cash. More than 3 billion cashless payments, for a total value of US\$ 5,205 billion, were made in 1978. It has been estimated that some 50 billion payments are made each year and that about 90-95 per cent. are effected in cash. By way of comparison, it may be noted that the United Kingdom is a densely populated and highly industrialised country, with a relatively large gross national product (US\$ 274 billion in 1978; US\$ 4,902 per capita).

Almost all payments depend in some way on the services provided by the banking system. Altogether there are some 360 banks operating in the United Kingdom, about half of which are branches of foreign banks. It is, however, the six London and three Scottish clearing banks with their large branch networks, together with the Co-operative Bank and the Trustee Savings banks, that provide the basis for the domestic banking system. The clearing banks play a major rôle in the provision of cash throughout the country and also handle the bulk of all cashless payments. The nature of payment systems and the speed with which they have been developed have been dictated largely by the banks themselves; no legal regulations have been imposed by the Government in this field. With a population of 56 million, there were in 1978 about 34 million sight accounts held at the banks and 21 million held with the National Savings Bank.

III. CASHLESS PAYMENTS

The payment services provided over the Post Office counters account for some 10 per cent. of all cashless payments; these include postal orders, order-book foils and National Girobank transfers. The payment services supplied by the clearing banks account for almost all the remaining cashless payments; these comprise bank cheques, direct debits, paper-based and paperless giro transfers, payments by credit cards and certain other instruments. Of every 100 payment orders issued by bank and Post Office customers in 1978, 69 were bank cheques (19 per cent. of the total value), 10 were direct debits (and standing orders, etc., 2 per cent. of the total value), while all other types (giro, credit card payments and postal orders) accounted for about 21 per cent. of the total number and 2 per cent. of the total value. Standing orders and direct debits have gained in popularity over recent years, but cheques continue to be the preferred payment instrument for enterprises as well as for individuals, a preference reinforced in the latter case by the widespread issue of cheque guarantee cards to bank customers (10 million in 1978).

IV. HANDLING OF CASHLESS PAYMENTS

Apart from the internal circuits that exist for the handling and settling of payment orders on accounts held with a single bank, the majority of paper-based payments are exchanged between banks at the Bankers' Clearing House in London. The Bank of England participates directly in the exchanges in the Clearing House and also acts as the settlement bank, but it does not control the clearing operations. The paper passing through the London Clearing House is divided into three categories: Town Clearing and General Clearing for the debit items, Credit Clearing for credit transfers.

Items dealt with in the Town Clearing, for which a minimum value is laid down, are settled on the same day, while items in the General and Credit Clearing are settled the day after exchange in the Clearing House. In 1978 about 1.4 billion items were passed through the Clearing House

thanks to the high degree of automation achieved by the banks in the debit clearing (over 1.2 billion items). Separate clearing arrangements exist in Scotland and Northern Ireland. All non-clearing banks are now required to have an agency arrangement with a member of the Clearing House, in order to gain access to the exchanges.

The clearing banks have extensive computerised branch networks, which enable them to carry out intra-bank transfers (including those of their correspondent banks) with the minimum movement of paper. In 1968 the Inter-Bank Computer Bureau was established for the exchange and automated processing of payment orders recorded on magnetic tapes; in 1971 a separate company, Bankers Automated Clearing Services (BACS), was set up to further the work of the original Bureau. BACS has since become a large automated clearing house, through which banks in the United Kingdom and their sponsored customers may pass transactions; in 1978 it processed 338 million items. Settlements between banks are effected in the books of the Bank of England.

United Kingdom

A. Basic statistical data

Territorial area	:	244.1 thousand sq.kms.
Population	:	55.9 million
Gross national product	:	274 (US\$ billion)
Per capita GNP	:	4,902 (US\$)
Number of bank offices	:	17,200 ¹
Inhabitants per bank office	:	3,250
Number of sight accounts per 1,000 inhabitants	:	984 ²
Number of time accounts ³ per 1,000 inhabitants	:	322 ²

	<u>Absolute</u>	<u>Per capita</u>
	(US\$ bn)	(US\$)
Total money supply (M ₃) ⁴	106.3	1,901.6
Currency	18.2	325.6
Sight deposits	45.8	801
Time deposits	62.7 ³	112.2

1 Including Trustee Savings banks and excluding post offices.

2 35 per cent. of adult individuals hold an account (current or savings/ deposit account) with a commercial bank only, 10 per cent. with the National Savings Bank only and 5 per cent. with a building society only. 25 per cent. of adult individuals hold more than one type of account, while 20 per cent. hold none.

3 Excluding building society accounts.

4 M₃ does not equal the sum of the aggregates because deposits with building societies and certain other financial institutions are excluded from the M₃ measurement.

B. Payment system structure

	Number of accounts (millions)	Share ¹ of market (%)	Value of accounts (US\$ bn)	Share ¹ of market (%)
<u>National Savings Bank</u> 21,000 branch offices ²				
Sight	21	22	3,670	3
Time	1		2,457	
<u>Commercial banks</u> (inc. National Girobank) ³ 15,600 branch offices				
Sight	23	37	37,822	50
Time	14		54,286	
<u>Trustee Savings banks</u> 1,600 branch offices				
Sight	11	14	4,268	6
Time	3		5,935	
<u>Building societies</u> ⁴ 4,500 branch offices	26	26	76,415	41
<hr/>				
<u>BANK OF ENGLAND</u> 7 branch offices	<ul style="list-style-type: none"> - Acts as banker to the Government on whose behalf it manages the Note Issue and the National Debt. - Keeps accounts, inter alia, of major British banks over which settlement of the clearing systems is effected. 			

- 1 Column does not add up to 100 due to rounding.
- 2 Post offices and sub-post offices.
- 3 Excluding post offices at which National Girobank services are offered.
- 4 Building societies are not considered part of the banking section in the United Kingdom and do not provide payment services. Although in legal terms these are time deposits, in practice almost all funds are sight deposits.

C. Relative importance of payment instruments

	Volume of transactions (millions)	Percent. ¹ of total	Value of transactions (US\$ bn)	Percent. ¹ of total
CASHLESS PAYMENTS				
Bank cheques ²	2,200	69	1,000	19
Postal orders	170	5	1	less than 1
Credit card-holders' payments	110	4	4	less than 1
Paper giro payments	300	9	80	2
Paperless giro payments	70	2	40	1
Direct debits	325	10	80	2
Interbank transfers (cheques & bankers drafts)	4	less than 1	4,000	77
TOTAL CASHLESS PAYMENTS ³	3,179	100	5,205	100
CASH PAYMENTS (estimate)	50,000+	-	-	-

1 Totals do not agree due to rounding.

2 Including 400 million cashed cheques.

3 Excluding 1 billion government payments in cash from post offices using order-book foils.

Number of cashless payments per inhabitant = 57.

11. United States

I. CASH

The official media for cash payments are bank-notes and coins, both of which are legal tender for all debts, public and private. The Federal Government is, by law, the sole issuer of coins and notes; it is also entrusted with the constitutional power to control and regulate the quantity and character of all money. Notes and coins are stored and distributed by the twelve Federal Reserve banks to commercial banks, which in turn make them available to the public; surplus or unfit currency is returned to the Federal Reserve banks for recirculation or destruction. Notes are printed by the Federal Bureau of Printing and Engraving and coins are produced by the Bureau of the Mint. Twelve denominations of bank-notes have been authorised since 1862, these being US\$ 1, 2, 5, 10, 20, 50, 100, 500, 1,000, 5,000, 10,000 and 100,000, but those of US\$ 500 and 1,000 are currently not printed and those of US\$ 5,000, 10,000 and 100,000 are no longer used. The US\$ 2 denomination was discontinued in 1966 and re-issued in 1976. Coins are issued in six denominations: 1, 5, 10, 25 and 50 cents, and US\$ 1. As at 30th June 1978 the currency in circulation - outside the Treasury and the Federal Reserve System - amounted to US\$ 106.9 billion, of which US\$ 95.9 billion was accounted for by notes and US\$ 11.0 billion by coins. Bank-notes and coin in the vaults of commercial banks and in transit totalled US\$ 12 billion, making the amount in the hands of the public US\$ 94.9 billion. The number of cash payments is not known, but their value in 1978 has been privately estimated at between US\$ 3,500 and 4,000 billion. The Federal Reserve Act requires Federal Reserve banks to maintain collateral security in an amount equal to the amount of Federal Reserve notes issued. At present, there are no legal ceilings on the total note issue, but there are practical limits fixed by the total amount of eligible security that Federal Reserve banks hold at any given time. The note issue assumes a passive rôle with respect to monetary control, which the Federal Reserve exercises by controlling bank reserves and deposit money.

II. DEPOSIT MONEY

Three-quarters of the money used for 90 per cent. or more of all payment transactions takes the form of demand deposits in commercial banks, which are accessed by cheque or converted into cash through various means of withdrawal. Notes and coins satisfy almost all the remaining part of the public's payment needs. The transfer of demand deposit balances by cheque is the prevailing method used for paying bills, disbursing wages and salaries, and settling transactions between firms. In 1978 debits on demand deposit accounts of individuals, partnerships and corporations totalled US\$ 40,372 billion, most of them initiated by an estimated number of 32 billion cheques. In the same year Federal Reserve wire transfers (interbank transactions and payments

charged to customers' accounts) numbered 29 million and their value amounted to US\$ 50,500 billion.

Commercial banks provide most of the processing and accounting services for demand deposit transfers, although the Federal Reserve banks provide interbank clearing facilities for almost one-half of the cheques written; such facilities are of paramount importance because of the very large number of commercial banks (14,500 in all) in the banking system. The proliferation of banks in the United States reflects the prohibition of interstate branching and the fact that the legislation of twelve States allows unit banking operations only while that of a further sixteen limits branch banking. In recent years, moreover, non-bank depository institutions, savings banks, savings and loan associations and credit unions (co-operative banks) have begun to offer money transfer services into and out of savings accounts, and therefore need clearing facilities. NOW (negotiable order of withdrawal) accounts and share draft accounts are the means used for that purpose in much the same manner as chequing deposits in commercial banks.

Regulatory requirements and supervisory surveillance, to which banks and other depository institutions are subject, have specific influences on cashless payment transactions. Law, regulation and supervision come into the picture if payment techniques seem likely to jeopardise the safety of the banking system or to threaten the rights of the payment system's users. At the end of 1978 the number of sight accounts totalled about 310 million, of which 115 million were held with commercial banks. In appraising these figures, it should be borne in mind that the United States is one of the largest countries in the world and has the most developed economy (in 1978 its gross national product amounted to US\$ 2,107 billion; US\$ 9,647 per capita; its population was 218.4 million as at 1st July 1978).

III. CASHLESS PAYMENTS

Cheques are the predominant means for making payments; 32 billion are estimated to have been written in 1978. ACH debit and credit transfers numbered 150 million. An unknown proportion of the 29 million Fed Wire transfers were for bank customers. Because neither cash nor cheques are suited to every type of payment transaction, several intermediate methods for payments have been adopted; credit cards and travellers' cheques, for example, are used by many consumers because they are more secure than cash and are more widely acceptable than cheques for payments made at the point of purchase; credit cards, moreover, enable retailers to offer credit to customers. At the end of 1978 there were 68 million accounts outstanding against the two major bank card issuers; over 60 per cent. of Americans possess cards of some type (35 per cent. being bank cards). Money orders, cashiers' cheques and similar instruments are used, not very frequently, as substitutes for cheques by persons who do not have a bank account. In contrast to many European countries, the postal service plays a minor rôle in providing payment services (it does, for example, sell money orders); several private firms also sell money orders and issue travellers' cheques. The use of electronic funds transfers is still in an early stage as a substitute for cheques, cash and other means of payment. The EFT Act, which will become

fully effective on 1st May 1980, establishes rights and liabilities for consumers and institutions using electronic transfer services. The instrument with the greatest potential seems to be the automated clearing house (ACH), which offers credit and debit transfer services for use by all financial institutions; the Federal Reserve operates thirty-five separate clearing and settlement facilities for the ACHs (one is operated in New York by the commercial banks). Early expectations that POS systems would become widespread have not been realised; few such systems are in operation today and several have been discontinued.

IV. HANDLING OF CASHLESS PAYMENTS

The legal constraint of the dual chartering principle (unit or branch banking at the State level) has affected the structure of the commercial banking system and has exerted a strong influence on the evolution of the procedures for clearing deposit transfers. The Federal Reserve System was assigned cheque clearing responsibility in the Federal Reserve Act of 1913; by virtue of the same legal provision it has also become involved in the two primary methods for the exchange of funds other than the distribution of notes and coins and the clearing and collection of cheques and drafts, these two methods being wire transfers and the clearing of payment information recorded on magnetic tape (in this connection, sub-parts B and C of Regulation J were issued in 1977 and 1979).

At present, the principle of centralising electronic data processing has been adopted by nearly all large banks; in the states where branch banking prevails, large banks have also installed telecommunications networks, thus satisfying their needs for the in-house collection and clearing of payment items. It is estimated that, at present, 30 per cent. of all cheques written are deposited in the bank on which they are drawn, 40 per cent. are cleared through Federal Reserve facilities, and the remaining 30 per cent. are exchanged locally or are cleared through correspondent banks. The Federal Reserve at present maintains forty-eight cheque clearing centres, which process over 50 million items per working day; the centres clear cheques and cheque-like instruments deposited with the member banks and forwarded to the Federal Reserve for collection; large items are frequently handled by special procedures outside the Federal Reserve circuit, but the prevailing inter-city method of collection for all cheques is the one provided by the central bank, since its value-dating rules encompass any two institutions, large or small, on the entire continent in a maximum range of two days. In the final stage, the Federal Reserve credits the depositing banks on the basis of a pre-determined availability schedule, and charges the institutions on which the items were drawn on the day the cheques are presented to paying banks; the delivery of cheques between Federal Reserve offices is accomplished mainly by air transport. Cheques and other items that are cleared are settled through the reserve accounts of member banks or through correspondent bank accounts.

At present, there are three specialised wire funds transfer services available to banks: the Federal Reserve Communications System (Fed Wire), the Payment and Telecommunication Services Corp. (Bank Wire) and the so-called CHIPS system operated by twelve New York City Clearing

House banks for the handling of international payments. The Fed Wire principally handles transfers of reserve account balances in large amounts from one member bank to another, and transfers involving government and Federal agency securities; the larger commercial banks have direct computer-to-computer links with the Fed Wire. The Bank Wire serves 175 commercial banks in seventy-five cities, including some Canadian financial centres; in 1978 it handled 4.5 million payment messages relating to banks and their customers, resulting in transfers of about US\$ 6,700 billion on correspondent accounts.

United States

A. Basic statistical data

Territorial area : 9.1 million sq.kms.
Population : 218.4 million

Gross national product : 2,106.9 (US\$ billion)
Per capita GNP : 9,647 (US\$)

Number of bank offices : 90,215
Inhabitants per
bank office : 2,398

Number of sight accounts
per 1,000 inhabitants : 1,420

Number of time accounts
per 1,000 inhabitants : -

	<u>Absolute</u>	<u>Per capita</u>
	(US\$ bn)	(US\$)
Total money supply (M ₃)	1,429.8	6,546.7
Currency	92.8	424.9
Sight deposits	756.2	3,462.5
Time deposits	581.6	2,663

B. Payment system structure

	Number of accounts (millions)	Share of market (%)	Value ¹ of accounts (US\$ bn)	Share of market (%)
<u>Postal service</u> ²				
40,377 branch offices				
<u>14,500 Commercial banks</u>				
33,000 branch offices				
<u>Sight</u>	202.9	-	484.6	63.7
Net demand	106.8		258.6	
Savings	96.1		226	
<u>Time</u>	-	-	365	53.6
<u>Thrift institutions</u> ³				
15,016 branch offices				
470 Mutual savings banks				
4,850 Savings and loan associations				
22,446 Credit unions				
<u>Sight</u>	105.3	-	274.6	36.3
Net demand	1.1		1.8	
Savings				
S&L's	63.6		144.6	
MSB's	6.7		77.9	
CU's	33.9		52.1	
<u>Time</u>				
S&L's	-		315.5	46.4
MSB's	-		255.6	
CU's	-		59.9	
			-	
<hr/>				
<u>FEDERAL RESERVE SYSTEM</u>	- Government regulator of the payment			
49 branch offices	mechanism.			
	- Operator of interbank cheque and ACH clear-			
	ing and settlement systems.			
	- Serves <u>only</u> banks, not the <u>public</u> .			
	- Acts as Federal Government banker.			

1 As at the end of June 1978.

2 Other than selling postal orders to the public, has no other rôle in the payment mechanism.

3 Excluding credit unions.

C. Relative importance of payment instruments

	Volume of transactions (millions)	Value of transactions (US\$ bn)
CASHLESS PAYMENTS		
Bank cheques issued	32,000	40,372 ¹
Postal cheques issued	0	0
Credit card-holders' payments	2,500	150 ²
Paper giro payments ³	150	51.5 ²
Direct debits	very small	very small
Interbank transfers ⁴	-	-
TOTAL CASHLESS PAYMENTS ⁵	34,650	40,372
CASH PAYMENTS (estimate)	-	3,500 - 4,000

1 Debits to bank accounts of individuals, corporations, partnerships, local governments and other entities made by cheque, ACH, direct debit or wire transfer.

2 Included in the value of bank cheques issued.

3 ACH payments.

4 The number and value of actual interbank transfers by cheque or by wire is unknown. Wire transfers for which data are available from Fed Wire, Bank Wire and CHIPS are made up of bank and customer transfers in unknown proportions.

5 Number of cashless payments per inhabitant = 159.

