

BANK FOR INTERNATIONAL SETTLEMENTS

PAYMENT SYSTEMS  
IN  
ELEVEN DEVELOPED COUNTRIES

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Prepared by the Group of Experts on Payment Systems  
of the Central Banks of the Group of Ten countries

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## TABLE OF CONTENTS

	<u>Page</u>
FOREWORD .....	1
INTRODUCTION: Developments in 1978-83 .....	3
LIST OF TERMS AND ABBREVIATIONS .....	7
NOTES ON COMPARATIVE AND STATISTICAL TABLES .....	9
 PART I - COMPARATIVE TABLES	
1. Comparison of the relative importance of deposit-taking industry .....	13
2. Comparison of the relative importance of payment instruments other than cash .....	14
3. Comparison of the number and use of cash dispensers, ATMs and EFT POS terminals ....	15
 PART II - OUTLINES OF THE ELEVEN NATIONAL PAYMENT SYSTEMS REVIEWED	
1. Belgium .....	19
2. Canada .....	27
3. France .....	33
4. Germany .....	41
5. Italy .....	47
6. Japan .....	55
7. The Netherlands .....	63
8. Sweden .....	71
9. Switzerland .....	79
10. United Kingdom .....	85
11. United States .....	93
 PART III - PAYMENT SYSTEMS IN INDIVIDUAL COUNTRIES	
1. Belgium .....	103
2. Canada .....	119
3. France .....	149
4. Germany .....	171
5. Italy .....	189
6. Japan .....	207
7. The Netherlands .....	219
8. Sweden .....	235
9. Switzerland .....	249

10. United Kingdom .....	267
11. United States .....	287
SELECTED BIBLIOGRAPHY .....	317
SUBJECT INDEX .....	327

## FOREWORD

This manual is the first revised edition of the study on payment systems carried out by representatives from the central banks of the Group of Ten countries\* on the basis of end-1978 observations and published in 1980. The ever increasing interrelationship, already greatly in evidence in 1978, between the central banks' main object of concern and responsibility - money - and the use of electronic systems for long-distance transmissions and funds transfers both domestically and internationally continued to arouse the interest of the central banks and was bound to invite re-examination.

Since 1980 a number of other bodies have undertaken similar studies. While many of these studies have been carried out in the framework of specific national projects, a growing number are being undertaken with the aim of facilitating international comparison, particularly in the area of credit card use. The heightened awareness of the importance of statistical data has brought a corresponding increase in the amount of such data available. A number of sources have been called upon for drawing up the tables throughout the book, and the contributors wish to express their thanks to all who assisted them in this regard.

Nevertheless, this edition, like the first, is subject to the limitations imposed by the fact that the statistical data are still not in all cases complete or uniform. The reader should also bear in mind that the study was carried out in the main by central bankers. Inevitably, therefore, it tends to focus on certain aspects of payments that are of particular significance and interest from a central-bank point of view.

Like its predecessor, this edition presents the findings essentially in the form of a descriptive manual for consultation and comparison. Accordingly, it falls into three distinct parts.

After an introduction, which attempts to pinpoint and summarise the major developments in payment systems during the period covered by the study (1978-83) and where possible to identify the forces for change, the

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\* 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, Switzerland, the United Kingdom and the United States. The central-bank representatives concerned are the members of the central banks' Group of Experts on Payment Systems which meets under the auspices of the Bank for International Settlements and is chaired by Dr. Hans Meyer of the Swiss National Bank.

first part presents a new series of comparative tables illustrating the relative importance of the different payment instruments in the eleven countries. While these tables are based on the data contained in the second part of the book, the reader is warned that there may be a margin of error where estimation has taken place. However, the purpose is to document the universal trends that have become apparent.

The second part of the book presents a brief outline of the payment systems in each of the eleven countries, together with data on population size, per capita GNP, territorial area, etc. The purpose of this part is to assist the reader in making further comparisons, should he wish to do so.

In the third part more detailed descriptions of the respective payment systems are given. While it was left to the central banks concerned to place emphasis on those features of their respective payment systems which they felt to be of particular note, all the authors followed a generally agreed framework, again so as to facilitate comparative analysis.

The wide interest aroused by the first edition of this book has prompted the authors of the current edition to include a list of commonly used terms and abbreviations with a view to assisting readers who might not be familiar with them. As with the selected bibliography, however, no attempt has been made to present a full or definitive list.

One final point needs to be clarified here before turning to the study itself. The term "payment system", as used throughout the book, denotes the institutional and historical setting in which the various means of payment are used in a national context.

## INTRODUCTION

### DEVELOPMENTS IN 1978-83

The use of new techniques by financial institutions has accelerated in recent years in virtually all developed countries. The reasons for this differ from country to country and have to be seen in the light of the specific characteristics of each national payment system. While there were a number of contributing factors that accounted for these changes, the authors of this edition have focused primarily on the rapid strides that are being made in applying technological advances to payment systems.

This factor is probably destined to have a markedly increasing impact on the changing nature of financial activity. Computers have, of course, been used in banking for many years to execute banks' internal operations. In fact, the use of means of payment based on paper forms, and especially cheques, has increased to such an extent during the past twenty years that, had it not been for automation, the banks would have been overwhelmed by a mass of repetitive and costly paperwork. All the biggest national banking systems have now taken steps to automate interbank transfers. Internationally, the growth of S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunication) and of various proprietary networks has also played an important part in improving the speed and efficiency of banking business.

However, until some time ago banks' use of new technologies had only a limited impact on their customer services. During the past five years, the wider use made of electronic data processing has made it possible in certain countries for large corporate customers to establish direct links between their own accounting procedures and those of the banks, and to make direct transfers to other customers and other banks via telecommunication links.

For smaller business customers and individuals, banking automation has had less of an impact, direct telematics links having been set up and operated primarily on an experimental basis only. In contrast, as shown in the comparative tables, developments in the automatic dispensing of banknotes have been much more extensive and ATMs are now proliferating rapidly. It could thus be assumed that the overall rate of change in the area of electronic payment systems available to these customers will probably become even faster in all developed countries.

With the quantity of paper-based payments continuing to rise at a significant rate - something which is encouraged in many countries by the practice of keeping down the customer's cost of such payments by subsidising

them out of income from other banking services - and with steadily climbing personnel and other costs, the banks have become increasingly keen on finding alternatives to the cheque as a means of payment. This has led to a variety of trials, using new forms of electronic payment. Probably the most extensive venture overall has been staged in France, where various trials are being carried out with a number of automated systems. In time the further development of automated transfer networks may also result in a considerable expansion of home banking services.

Advances have also been achieved in recent years towards the automation of interbank transfer systems. In some cases, these currently comprise networks for the transmission of messages, which give rise to an overall netting of positions carried out by an autonomous interbank institution and with settlement being effected on the following day by the central bank. In the United States, however, where several clearing systems are operational, same-day settlement was initiated in October 1981 with the CHIPS system. Similarly, since the beginning of 1984, the CHAPS system has been operational in the United Kingdom. The advantages for banks operating in an automated same-day settlement system are substantial.

Although technological advances facilitate a greater use of electronic means of payment, there remains a considerable degree of uncertainty about the rate at which this change will come to pass. There is a widespread view that the main stimulus to change is the wish of the banks themselves to move towards cheaper systems and towards recouping their costs more directly. In some countries (e.g. France) this stimulus comes on top of government encouragement to utilise new technology. However, there is little evidence that retailers and personal customers are dissatisfied with the instruments available under existing payment systems, and the banks might have to overcome considerable resistance for the launch of new instruments to be completely successful.

Technological developments in funds transfer systems raise their own grounds for concern. The banks have reached a stage in which they rely extensively on computers to perform a variety of tasks and in which a reversion to manual procedures would in many cases be impossible. As a result, they are confronted with several technical/operational risks, such as hardware malfunctions, power-supply failure, and loss or breakdown of automatic data files. In addition, problems arising from industrial action (strikes, etc.) could bear heavily on banks' ability to carry out their own commitments. The cost of adequate protection against all these hazards - and the cost of measures to combat fraud and misuse - is high, but necessary.

The links between the electronic hardware of individual banks - especially with regard to payment and settlement systems - have compounded all the above risks. Each bank depends on the effective behaviour of other participants in the various systems. But during the past five years a new risk has emerged, that of the speed with which the effects of a breakdown may spread; as a result, any bank linked to a given system could become technically incapable of meeting its commitments owing to malfunctions at another participating bank. With international banks operating in most of the world's banking centres, the technical inability of a bank to fulfil its commitments in one centre may interfere with "final" settlement systems elsewhere.

In addition, payment system developments have affected the market position of the banks and other financial institutions. In virtually all developed economies the number of persons without an account of any sort with a deposit-taking institution has further diminished. The financial sophistication of holders of financial assets - whether firms or individuals - has also increased substantially. The public has become much more sensitive to the terms offered by the various institutions, and in some countries there has been a large-scale shift of funds from bank deposits to bodies managing money-market mutual funds.

Experience in most countries suggests that developments are tending ultimately towards more competitive financial systems. Inroads have been made into the special position of banks as providers of financial services and their market share has been diminishing in many countries as far as the personal savings sector is concerned. On top of the clear increase in competition between established financial institutions, new elements of competition have emerged. In the United States the most striking case has been that of two of the biggest retail chains, which have entered the field of the provision and distribution of financial services directly. The international credit card companies constitute a further potential element of competition for some aspects of domestic banking business, although in many countries they operate in association with banks or national credit card organisations backed by members of the deposit-taking industry.

The developments under way in payment systems may cause certain difficulties for the banking authorities. The new technologies being deployed in funds transfer techniques have raised a number of problems that are outside the normal sphere of the banking supervisory bodies or the monetary authorities, as the use of telecommunication facilities in many countries involves other governmental agencies, i.e. postal and telecommunication authorities.

In conclusion, there is little doubt that, for many reasons, in most of the countries covered in this book, payment systems are undergoing major changes. Some of these changes have come about in response to requests made by users of financial services and are clearly appreciated as such by them. Perhaps the most important conclusion to be drawn is that, in their necessary adaptation to this changing environment, all the participants should seek to be consistent in their various activities. As the markets gradually become more homogeneous, steps taken by the supervisory authorities and the reactions of members of the banking system will interact directly to an increasing extent and will necessitate a fuller and more open dialogue both domestically and internationally. It would also appear that payment system developments in all of the eleven countries covered on the following pages indicate a trend towards a universal acceptance of the new technologies. However, while the change-over to a fully electronic substitute for cheques, bank-notes and coins has been heralded for a long time, cash is not yet dead. Its importance has diminished during the past five years as the new payment methods have grown in relative importance, but the growing number of cash dispensers and ATMs has given a new stimulus to the use of bank-notes.

The descriptions in this book of the various national payment systems are based on the situation at the end of 1983. Since that time the application of these new technologies has spread further in the supply of

many services for both personal and corporate customers. The principal exception is perhaps in the introduction of electronic funds transfer at the point of sale, where practical application continues to be on a limited scale.

The debate is also intensifying on the costs, and the benefits, to the banks and their customers of applying new technologies (and, indeed, on the costs of supplying existing services). In contrast to the first edition of this book, it is apparent from the new conclusions to several of the national chapters, and from discussions in several countries, that the pricing and charging for payment services has become a topic of considerable importance in determining the demand for those services, and the speed with which new facilities should become available to meet that demand.

LIST OF TERMS AND ABBREVIATIONS

Automated teller machine (ATM)

Electro-mechanical device allowing the authorised user not only to withdraw cash from his account but also to access a varying range of other services such as balance inquiry, transfer of funds and acceptance of deposits.

Cash dispenser

Electro-mechanical device allowing the authorised user to withdraw bank-notes and in some cases also coins.

Credit card

Card indicating that the holder has been granted a line of credit. It enables him to make purchases and/or draw cash up to a pre-arranged ceiling; the credit granted can be settled in full by the end of a specific period, or can be settled in part, with the balance taken as extended credit. The holder is not always charged an annual fee, but interest is charged on the amount of any extended credit.

Debit card

Card enabling the holder to draw cash from a retail outlet, an ATM or a cash dispenser and also, in some cases, to have his purchases directly charged to funds on his account at a deposit-taking institution.

Home banking

Services which a customer of a financial institution can access using a telephone, television set or a terminal as a telecommunication link to the institution's computer centre.

Off-line

Pertaining to equipment or a procedure which is operating under local rather than remote central control.

On-line

Pertaining to equipment or a procedure which is operating under remote central control.

Point-of-sale terminal for electronic funds transfer (EFT POS)

A terminal at a retail location which is designed to capture, and in some cases also transmit, payment information by electronic means.

Telematics

Combined use of data-processing and data-transmission techniques.

Travel and entertainment (charge) card

Card indicating that the holder has been granted a line of credit. It enables him to make purchases without any expenditure limit, but does not offer extended credit, the full amount of the debt incurred being settled at the end of a specified period. The holder is usually charged an annual fee.

Truncation

A procedure in which the physical movement of paper items is curtailed, being replaced by the transmission of all or part of their content in electronic form.

Videotex (Viewdata)

A two-way interactive computer system capable of displaying centrally stored pages of text and graphics on adapted television screens using simplified commands.

ACH

Automated Clearing House.

MICR

Magnetic Ink Character Recognition.

OCR

Optical Character Recognition.

S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunication)

An international financial transaction processing network owned by and serving the financial community worldwide.

NOTES ON COMPARATIVE AND STATISTICAL TABLES

- 1 Unless otherwise stated, GNP data refer to 1983 and all other data refer to the end of that year.
- 2 Exchange rates used for the conversion into US dollars were as follows:

		<u>1983</u>	<u>End of 1983</u>
		\$1 =	\$1 =
Belgian franc	(B.fr.)	51.18	55.64
Canadian dollar	(Can.\$)	1.2324	1.2444
French franc	(Fr.fr.)	7.6215	8.3475
Deutsche Mark	(DM)	2.5552	2.7238
Italian lira	(Lit.)	1,519.22	1,666.74
Yen	(Yen)	237.5	232.0
Netherlands guilder	(Fl.)	2.85	3.08
Swedish krona	(S.kr.)	7.682	8.0075
Swiss franc	(Sw.fr.)	2.099	2.20
Pound sterling	(£)	0.659	0.688

- 3 In tables a dot instead of a figure means "data not available" or "data not reported", and "n.a." means "not applicable".

All figures in brackets represent figures for end-1978. For a number of reasons, such as variations in the exchange rate of the US dollar, data for 1978 and 1983 are not always fully comparable.



P A R T I

COMPARATIVE TABLES



Comparative table no. 1

Comparison of the relative importance of the deposit-taking industry

	Number of deposit-taking institutions	Number of branch offices of deposit-taking institutions	Inhabitants per office	Number of transferable deposit accounts at deposit-taking institutions per inhabitant
Belgium	120	10,183	968	0.8
Canada	3,504	12,938	1,934	1.6
France	4,065	35,898 <sup>1</sup>	1,524	0.8
Germany	4,848	39,836 <sup>2</sup>	1,541	0.9
Italy	1,087	12,913 <sup>3</sup>	4,398	0.3
Japan	6,942 <sup>4</sup>	42,648 <sup>3</sup>	2,780	n.a.
The Netherlands	1,124 <sup>4</sup>	6,441	2,222	0.9
Sweden	182	3,581	2,318	3.0
Switzerland	431 <sup>5</sup>	4,986	1,300	0.5
United Kingdom	805 <sup>5</sup>	24,574 <sup>6</sup>	2,283	1.8
United States	38,280	102,000 <sup>6</sup>	2,310	0.3

- 1 Including 13 postal giro offices.
- 2 Branches located inside firms or public institutions are not included. The number of such branches was 966 at end-1983.
- 3 Including head offices.
- 4 This figure includes 965 co-operative banks (1 central co-operative bank and 964 independent member banks), which in fact operate as one institution.
- 5 This figure includes 594 recognised banks and licensed deposit-taking institutions, 5 exempted banks and 206 building societies.
- 6 Excluding non-bank deposit-taking offices.

Comparison of the relative importance of payment instruments other than cash

	Cheques	Credit transfers <sup>1</sup>	Direct debits	Payments by credit card
	as a percentage of total volume of transactions in 1983			
Belgium	91.0 <sup>2</sup>	(insignificant)	2.0	7.0
Canada	82.5	9.2	6.2	2.1
France	11.0 <sup>2</sup>	57.0 <sup>3</sup>	32.0 <sup>3</sup>	(insignificant)
Germany	85.3 <sup>4</sup>	12.7 <sup>3</sup>	1.5 <sup>3</sup>	0.5
Italy	18.7 <sup>2</sup>	14.8	56.3	10.3
Japan	22.3 <sup>2</sup>	62.0	15.6	(insignificant)
The Netherlands	20.0	72.0	1.0	7.0
Sweden	10.6	88.0	0.8	0.5
Switzerland	61.0 <sup>5</sup>	23.0	6.0	8.0
United Kingdom	98.6 <sup>5</sup>	0.9	less than 1	7.2
United States				

1 Including interbank transfers.

2 Including postal cheques.

3 Data are for 31 banks accounting for 70 per cent. of the total balance-sheet assets of the banking system.

4 Including bank cheques, bills and promissory notes.

5 Including payments on credit card accounts.

Comparative table no. 3

Comparison of the number and use of cash dispensers, ATMs and EFT POS terminals

	Cash dispensers and ATMs			EFT POS terminals		
	Number of machines installed	Inhabitants per machine	Number of cards issued (in millions)	Number of terminals installed	Inhabitants per terminal	Number of cards issued (in millions)
Belgium	560	17,595	1.6	879	11,209	1.5
Canada	1,960 <sup>1</sup>	12,755	.	n.a.		
France	5,100	10,940	9.9	10,000	5,470	4.2
Germany	1,600	38,500	13.0	12 <sup>2</sup>	25,000 <sup>2</sup>	0.3
Italy	1,500	37,866	1.5 <sup>3</sup>	0		
Japan	37,900	3,127	.	5,000	23,700	1.0
The Netherlands	32 <sup>4</sup>	.	.	0		
Sweden	1,074	7,700	2.4	710	11,900	0.05
Switzerland	1,027	6,329	0.5	0		
United Kingdom <sup>5</sup>	5,653 <sup>6</sup>	9,659	12.3 <sup>7</sup>	27 <sup>8</sup>		
United States	48,118	4,896	80 to 100	800	294,500	.

1 Figures do not include ATMs located in branch lobbies that are available for use only during normal branch hours.

2 In Munich only.

3 Data are for 31 banks accounting for 70 per cent. of the total balance-sheet assets of the banking system. In two small local areas only.

4 In two small local areas only.

5 Data given for cash dispensers and ATMs relate to Great Britain only.

6 Including 127 machines installed by building societies.

7 Excludes credit cards and travel and entertainment cards validated for use in ATMs.

8 25 in Scotland and 2 in the south of England.



P A R T    I I

OUTLINES OF THE ELEVEN NATIONAL  
PAYMENT SYSTEMS REVIEWED



1. Belgium

I. CASH

Bank-notes and coins are the two means of payment that constitute legal tender. The National Bank of Belgium is vested with the legal privilege of issuing bank-notes in denominations of B.fr. 100 and above; it also issues lower-denomination notes and coins, but on behalf of the Treasury. Coins in denominations of B.fr. 20 and less are legal tender only to a limited extent. Belgian currency is also legal tender in the Grand Duchy of Luxembourg, where it accounts - albeit to a decreasing extent - for the bulk of the cash in circulation. However, Luxembourg currency is not legal tender in Belgium. There are currently five denominations of bank-notes: B.fr. 50, 100, 500, 1,000 and 5,000. Seven denominations of coins are in circulation: B.fr. 0.50, 1, 5, 10, 20, 250 and 500.\* The National Bank of Belgium is responsible for designing and printing notes and for "managing" the cash in circulation as a whole (withdrawing worn or damaged notes and coins, detecting forgeries). Coins are designed and struck by the Royal Mint of Belgium. The only formal limit to the issue of cash relates to the notes and coins issued on behalf of the Treasury, for which the legal ceiling is currently fixed at B.fr. 18 billion. Furthermore, a maximum of 10 per cent. of this amount may be held by the National Bank of Belgium. At 31st December 1983 the amount of cash in circulation totalled B.fr. 411.3 billion, comprising B.fr. 395.9 billion in bank-notes and B.fr. 15.4 billion in coins and Treasury notes. Of this amount, an estimated B.fr. 390.3 billion consisted of cash held by non-bank companies and private individuals and B.fr. 21.0 billion of cash held by other economic operators.

II. DEPOSIT MONEY

Belgium is one of the most densely populated countries in Europe (with 9.853 million inhabitants, giving a population density of 323 per square kilometre) and a highly developed economy (in 1983 its gross national product amounted to B.fr. 4,150 billion and its per capita GNP to approximately B.fr. 421,192, or \$81.1 billion and \$8,230 respectively). Deposit money accounted for an average of about 61.2 per cent. of the narrowly defined money stock ( $M_1$ ) in 1983. The broadly defined banking system comprises the commercial banks, the private savings banks, the public credit institutions and the Postal Cheque Office. All these institutions - and only these - are legally entitled to accept sight deposits and to permit their holders to use them to make cashless payments.

Neither the law nor the banking supervisory authority lays down technical or organisational rules with respect to payment services supplied

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\* The last two denominations are in point of fact hoarded.

by the financial system. However, under the auspices of the central bank the financial intermediaries have concluded a series of protocols designed to standardise and facilitate the interbank relationships that result from the use of cashless payment instruments by their customers. The Postal Administration is also very active, since it provides the public with payment services on the basis of the accounts held with its specialist department, the Postal Cheque Office.

At 31st December 1983 there were 7.902 million sight accounts, or 80.2 accounts per 100 inhabitants. This total was made up of 3.564 million accounts with commercial banks, 0.827 million accounts with private savings banks, 2.243 million with public credit institutions and 1.268 million with the Postal Cheque Office.

### III. CASHLESS PAYMENTS

For small payments between individuals or between individuals and traders the use of cash continues to predominate on grounds of convenience and habit. In other cases, cashless, above all paper-based, instruments are chiefly used: cheques, credit transfers, postal drafts and direct debits.

Of every 100 transactions handled by all the clearing houses in 1983 (93.36 per cent. in volume terms was processed in Brussels, the remainder outside), 49.1 were credit transfers, 29.8 cheques, 7.6 ATM-related transactions, 5.5 direct debits and 5.4 postal drafts and cheques, while the remainder was made up of several types of operations (operations at POS terminals, etc.).

The authorities have encouraged the use of deposit money. A statute dating from 1962 obliges tradesmen to have a bank or postal current account, and subsequent legal provisions made cashless payment media legal tender for payments of B.fr. 10,000 and above.

Deposit-taking institutions provide a large proportion of their account holders with cheque cards, which guarantee that any cheque up to a maximum of B.fr. 7,000 will be honoured. They also encourage the substitution of paper-based payment media by new instruments such as magnetic media for credit transfer orders and debit cards that can be used with ATMs and POS terminals.

### IV. PROCESSING OF CASHLESS PAYMENTS

At end-1983 there were twenty-four clearing houses, located at premises of the National Bank of Belgium (at the Brussels head office and at twenty-three provincial branches and agencies). These clearing houses enable the financial institutions to effect the daily clearing of the claims they have on one another as a result, in particular, of certain debit and credit operations initiated by their respective customers. At the close of business in the provinces the various outstanding balances are transmitted

by telex to Brussels, where they are combined with the local data so that full clearing can take place. 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.

The Clearing Centre for the Belgian Financial System (CEC), which has been in existence since 1974, is responsible for organising the exchange and automated processing of data relating to cheques of up to B.fr. 100,000, credit transfers and direct debits for clearing presented in Brussels by the participating institutions. The CEC is chaired by the National Bank of Belgium, which leases the services of its own data-processing centre for the execution of the day-to-day EDP work, together with the personnel and infrastructure that are necessary for the monitoring and maintenance of the system. The ultimate daily balances calculated by the CEC are added to the balances resulting from manual clearing operations in Brussels and the provinces in order to arrive at the final total balance for each financial institution. The institutions participating in the CEC transmit and receive mainly magnetic media, there being no physical exchange of the individual credit and debit documents to be cleared (truncation). In 1983 some 262.2 million items were exchanged via the CEC, equivalent to about 78.34 per cent. of the total number of items exchanged by all the country's clearing houses.

Belgium

A. Basic statistical data

Territorial area	:	30.5 thousand sq.kms.	
Population	:	9.853 million	(9.8)

Gross national product	:	\$81.1 billion	
Per capita GNP	:	\$8,230	

Number of branch offices of deposit-taking institutions	:	10,183 <sup>1</sup>	(7,378)
Inhabitants per office	:	968	(1,328)

Number of branch offices of non-bank institutions offering third-party payments	:	n.a.	
Inhabitants per office	:		

Number of transferable deposit accounts:			
- at deposit-taking institutions	:	7.9 million	
- at non-bank institutions offering third-party payments	:	n.a.	

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> of GNP
Total money supply (M <sub>3</sub> ) <sup>2</sup>	134.8	13,681	180.7 <sup>3</sup> (111.4)
Currency <sup>4</sup>	7.4	750	9.9 <sup>3</sup> (12.4)
Transferable deposits <sup>5</sup>	10.4	1,057	14.0 <sup>3</sup> (17.1)

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- 1 Estimate, excluding independent agents (see footnote 2, Table B).
  - 2 Estimate of all financial assets held by non-financial companies and private individuals.
  - 3 Percentage calculated on the basis of amounts expressed in the domestic currency.
  - 4 Total issued.
  - 5 Deposits held by non-financial companies and private individuals.

B. Payment system structure

Categories of institution	Types of account	Number of accounts <sup>1</sup> (millions)	Share of market (%)	Value of accounts <sup>1</sup> (\$ billion)	Share of market (%)
<u>Postal Cheque Office</u>					
1,836 branch offices					
	Sight	1.268 (1.1)	16.05 (19.2)	1.2	12.00 (19.8)
	Time	0 (0)	0	0	0
<u>Commercial banks</u>					
85, with 3,643 branch offices					
	Sight	3.564 (3.1)	45.10 (52.9)	6.9	67.72 (59.3)
	Time	0.526 (3.7)	.	7.9	66.32 (32.7)
<u>Savings banks</u>					
30, with 20,450 branch offices and independent agents <sup>2</sup>					
	Sight	0.827 (0.5)	10.47 (8.5)	0.7	6.56 (4.6)
	Time	.	.	1.6	13.56 (17.9)
<u>Public credit institutions</u>					
5, with 2,450 branch offices					
	Sight	2.243 (1.1)	28.39 (19.4)	1.4	13.71 (16.3)
	Time	0.413 (1)	.	2.4	20.12 (49.4)
<u>NATIONAL BANK OF BELGIUM</u>					
25 branch offices					
- issues currency;					
- is the Government's fiscal agent;					
- operates the automated clearing house for the financial system.					

- 1 Accounts denominated in Belgian francs held by non-bank companies and private individuals.
- 2 The independent agents, who are self-employed, but not necessarily sole representatives of an institution, far outnumber the branch offices.

C. Relative importance of payment instruments<sup>1</sup>

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion) <sup>2</sup>	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions <sup>3</sup>	99.5 (88)	.	57.7	.
Postal cheques issued <sup>4</sup>	57.2 (63.4)	.	117.6	.
Payments by credit card	.	.	0.2	.
Paper-based giro payments <sup>5</sup>	138.7	.	1,122.5	.
Paperless <sup>6</sup> giro payments	23.6	.	10.1	.
Direct debits <sup>7</sup>	18.2 (23.8)	.	1.9	.
Interbank transfers <sup>8</sup>	.	.	189.2	.
TOTAL	.	.	.	.
<u>CASH PAYMENTS</u>				
	.	.	.	.

- 1 Given that most of the figures are rough estimates, neither their total nor their relative shares are very significant.
- 2 Using the average exchange rate for 1983.
- 3 Non-postal cheques cleared.
- 4 Including postal drafts.
- 5 Except in the case of postal giro payments, instruments cleared only.
- 6 Giro payments cleared.
- 7 Direct debits cleared.
- 8 Estimate.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	.	560
Inhabitants per machine	.	17,595
Number of cards issued (in millions)	.	1.6
Number of transactions per card <sup>1</sup>	.	14.9
Value of withdrawals per card during the year (in \$) <sup>2</sup>	.	960
Number of shared networks	1	2
Percentage of ATMs in shared networks	100	92.32
end-1983		
<u>EFT POS terminals</u>		
Number of terminals installed		879
Inhabitants per terminal		11,209
Number of cards issued (in thousands)		1,500
end-1984		
Number of terminals planned for end-1984 <sup>3</sup> :		
- cash dispensers and ATMs		690
- EFT POS terminals		2,100

1 Estimate for withdrawals and deposits combined.

2 Using the average exchange rate for 1983.

3 Rough estimates.



## 2. Canada

### I. CASH

Although a wide variety of payment media are available to Canadians, it would appear that notes and coin continue to be the most common and frequently used means of effecting everyday transactions. At 31st December 1983 currency outside banks amounted to Can.\$ 12.4 billion (\$10 billion), comprising Can.\$ 11.2 billion (\$9.0 billion) in notes and Can.\$ 1.2 billion (\$1.0 billion) in coin.

The sole right to issue paper currency was vested in the Bank of Canada - Canada's central bank - by the Bank of Canada Act of 1934. Notes, which are a liability of the Bank, are or have been issued in ten denominations, 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, Can. cents 1, 5, 10, 25 and 50 as well as Can.\$ 1.

Direct Clearers - i.e. those member institutions of the Canadian Payments Association that participate directly in the clearing and settlement process - 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

At 31st December 1983 approximately 75 per cent. of the stock of money that was available to the economy for payments was held in the form of deposits transferable by order to a third party 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 25 per cent. of this stock of money was held in the form of currency.

Canadian deposit-taking institutions are supervised by either federal or provincial regulatory authorities.

### III. CASHLESS PAYMENTS

Cheques and payment orders drawn on transferable deposits held, respectively, at deposit-taking institutions that are members of the Canadian Payments Association and at non-member deposit-taking institutions are the most widely used cashless payment instruments. For example, during the course of a year some 1.5 billion cheques, payment orders and other payment items with a total value in excess of Can.\$ 6,200 billion (\$5,030 billion), or sixteen times Canada's gross national expenditure, were exchanged between Direct Clearers.

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

It would appear that Canadians rely heavily upon "plastic money" i.e. bank credit cards, proprietary or two-party retail cards as well as travel and entertainment cards. At the end of 1981, the most recent year for which any comprehensive data are available, there were more than 23 million credit cards in circulation.

There has, in recent years, been growing activity in Canada either in the planning or testing of new payment mechanisms, viz. point-of-sale systems, debit cards and home banking services.

#### IV. HANDLING OF CASHLESS PAYMENTS

The effectiveness and efficiency of the Canadian paper-based clearing system is reflected by the fact that deposit-taking institutions give immediate credit for cheques, payment orders and other payment items deposited with them.

The paper-based clearing system is operated by the Canadian Payments Association (CPA). CPA member institutions that are not Direct Clearers and deposit-taking institutions that are eligible to be members of the Association, which are referred to as Indirect Clearers, do not have direct access to the clearing system and must establish correspondent arrangements with Direct Clearers to process their payment items and to represent them in the clearings. The CPA is empowered by law to establish clearing houses and to make regulations and rules for the operation of the paper-based clearing system. The regulations are by-laws of the Association and must be approved by the Federal Cabinet.

Pre-authorized debit and credit payments and bank credit card transactions are processed, cleared and settled in much the same way as cheques, payment orders and other payment items. The legal framework for pre-authorized debit and credit payments as well as for bank credit cards emanates mainly from a series of rules and relationships that have been developed by the private sector.

Canada

A. Basic statistical data

Territorial area	:	9.9 million sq. kms.	
Population	:	25.0 million	(23.6)
Gross national product	:	\$316.7 billion	
Per capita GNP	:	\$12,668.0	
Number of branch offices of deposit-taking institutions	:	12,938	(13,151)
Inhabitants per office	:	1,934	(1,779)
Number of branch offices of non-bank institutions offering third-party payments	:	n.a.	
Inhabitants per office	:		
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	over 40 million	
- at non-bank institutions offering third-party payments	:	n.a.	

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> )*	148.4	5,936	46.8 (64.9)
Currency	10.0	399	3.2 (3.8)
Transferable deposits	30.7	1,229	9.6 (11.6)

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\* Comprises currency, Canadian dollar demand deposits, chequable and non-chequable notice deposits and term deposits at chartered banks plus foreign currency deposits of Canadian residents booked in Canada at chartered banks.

B. Payment system structure

Categories of institution	Types of account	Number of accounts (millions)	Share of market (%)	Value of accounts (\$ billion)	Share of market (%)
<u>Chartered banks</u>					
71 (5 operate nationwide), with 7,091 branches					
	Transferable	.	.	23.2	75.8 (80)
	Savings and notice	.	.	43.6	(59.8)
<u>Local credit unions and caisses populaires</u>					
3,311, with 4,186 branches					
	Transferable	.	.	3.8	12.4 (14.5)
	Savings and notice	.	.	9.5	(12.4)
<u>Trust and mortgage loan companies</u>					
119 (only a few operate nationwide), with 1,393 branches					
	Transferable	.	.	2.9	9.5 (3.8)
	Savings and notice	.	.	6.9	(26.8)
<u>Quebec savings banks</u>					
1, with 117 branches; may now operate nationwide, but has only one branch outside Quebec					
	Transferable	.	.	0.3	1.0
	Savings and notice	.	.	3.4	.
<u>Governmental savings institutions</u>					
2, with 151 branches in Ontario and Alberta					
	Transferable	.	.	0.4*	1.3 (1.7)
	Savings and notice	.	.	0.9	.
<u>BANK OF CANADA</u>		- acts as Federal Government's fiscal agent and assists in the final settlement of balances for the national clearing and settlement system.			
9 agencies					

\* Alberta Treasury branches only.

C. Relative importance of payment instruments

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques and payment orders drawn on transferable deposit accounts	2,000 <sup>1</sup>	91.0 <sup>1</sup>	6,700 <sup>1</sup>	.
Postal cheques issued	0		0	
Payments by credit card	150 <sup>1</sup>	7.0 <sup>1</sup>	.	.
Paper-based giro payments	0		0	
Paperless giro payments	0		0	
Direct debits	50 <sup>1</sup>	2.0 <sup>1</sup>	.	.
Interbank transfers	. <sup>2</sup>	.	.	.
TOTAL	2,200 <sup>1</sup>	100.0 <sup>1</sup>		
<u>CASH PAYMENTS</u>				
	.	.	.	.

1 Estimate.

2 Insignificant.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	250	1,960 <sup>1</sup>
Inhabitants per machine	94,580	12,755
Number of cards issued (in millions)	.	.
Number of transactions per card	.	.
Value of withdrawals per card during the year (in \$)	.	.
Number of shared networks	0	1
Percentage of ATMs in shared networks		2.2
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	n.a.	
Inhabitants per terminal		
Number of cards issued (in thousands)		
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	3,150 <sup>2</sup>	
- EFT POS terminals	.	

- 1 Figures do not include ATMs located in branch lobbies that are available for use only during normal branch hours.  
 2 Estimate.

### 3. France

#### I. CASH

Bank-notes and coins 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 a duty to ensure that the needs of the public are met as regards both quantity and quality.

At the end of 1983 the currency in circulation was made up of five denominations of note (500, 200, 100, 50 and 10 francs) and ten denominations of coin (5, 10, 20 and 50 centimes and 1, 2, 5, 10, 50 and 100 francs).<sup>1</sup> At the same date the currency in circulation, including notes and coin at the banks, totalled Fr.fr. 190.6 billion, the equivalent of \$22.8 billion, of which \$21.6 billion was accounted for by bank-notes and \$1.2 billion by coins. As a result of the sole right of issue vested in it, the Bank of France itself is responsible for printing and designing the bank-notes, for replacing those that are worn or damaged, and for detecting forgeries. At present there are no specific cover requirements or any upper limits on the amount issued.

#### II. DEPOSIT MONEY

About 80 per cent. of the money available to the economy for payments at the end of 1983 was held in the form of sight deposits with banks and post offices, while the remaining 20 per cent. was held in the form of bank-notes and coin. In 1983 economic agents other than banks effected approximately 4.8 billion cashless payments for a total value of \$3.837 billion; in the same year the value of interbank transfers amounted to \$9.108 billion. An estimated 22 billion payments were made in cash, corresponding to a value of Fr.fr. 724 billion (\$86.7 billion).<sup>2</sup> For the purposes of comparison it is pointed out that France, which is less densely populated than other European countries, has a highly developed industrial sector, with agriculture also playing an important rôle. In 1983 the gross national product amounted to \$449 billion (\$8,212 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 laws. Companies and tradesmen are bound by law to use a bank cheque or a credit transfer to a bank account or postal cheque account to effect all payments

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1 The 50-franc and 100-franc silver coins are not used for payments but hoarded by households.

2 Estimates were made solely on the basis of transactions carried out with the retail trade and market services.

in excess of Fr.fr. 5,000 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. At end-1983 France had a population of 55 million, holding 7.7 million postal current accounts and 36.1 million sight accounts at 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 routine 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 1983,\* 78 were cheques (22 per cent. of the total value), 11 were credit transfers (67 per cent. of the total value), 8 were direct debits (1 per cent.) and 3 were commercial bills (10 per cent.). Cheques are the more readily employed because of the criminal sanctions to which any abuse is subject, the centralised recording of cheque defaults and the guarantee that cheques for Fr.fr. 100 or less will be honoured 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 major banks which exchange bank cheques in Paris, whatever the locality on which they are drawn; finally, in Paris, Lyons, Strasbourg, Rennes and Nantes there are automated clearing offices for handling interbank transactions recorded on magnetic tape. Cheques are also handled automatically, by means of machine-readable magnetic ink characters. Some banks are involved in the exchange of cheque records in three centres (Rennes, Strasbourg and Metz).

The settlement of the interbank transactions arising because of cashless payments effected by customers on their accounts naturally presupposes the existence of a network of interbank accounts for handling the

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\* 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, postal cheques and payments by credit card. It is based on clearing house statistics.

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. A teleclearing network called the "Système Interbancaire de Télécompensation" (SIT), which is at an early stage of development, will be the basis of the future payment system.

France

A. Basic statistical data

Territorial area	:	551.2 thousand sq. kms.	
Population	:	54.7 million	(54.8)
Gross national product	:	\$449.2 billion	
Per capita GNP	:	\$8,212.1	
Number of branch offices of deposit-taking institutions	:	35,898	(34,161)
Inhabitants per office	:	1,524	(1,604)
Number of branch offices of non-bank institutions offering third-party payments	:	n.a.	
Inhabitants per office	:		
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	43.8 million	
- at non-bank institutions offering third-party payments	:	n.a.	

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> of GNP
Total money supply (M <sub>3</sub> )*	337.3	6,166.4	75.1 (81.4)
Currency	22.8	416.8	5.1 (7.0)
Transferable deposits	94.1	1,720.3	20.9 (22.6)

\* Includes (in \$ billion as at end-December 1983):

- M<sub>1</sub> monetary assets (bank-notes, cash, sight deposits) ..... 117.7;
- liquid or short-term investments (quasi-monetary assets, investments with savings banks, savings bond and Treasury bills) ..... 219.6.

B. Payment system structure

Categories of institution	Types of account	Number of accounts (millions)	Share of market (%)	Value of accounts (\$ billion)	Share of market (%)
<u>Post Office and National Savings Bank</u>					
17,211 branch offices					
	Sight	7.7 (7.3)	17.6 (20.7)	14.1	15.0 (17)
	Time	18.1 (15.3)	22.3 (26.9)	32.1	14.8 (14)
<u>Commercial banks</u>					
406, with 12,124 branch offices					
	Sight	16.1 (14.4)	36.8 (40.8)	51.1	54.3 (55.2)
	Time	10.3 (5.3)	12.7 (9.3)	61.3	28.3 (30.9)
<u>Savings banks</u>					
467, with 6,370 branch offices					
	Sight	1.8	4.1	1.0	1.1 (0.1)
	Time	32.4 (26.1)	39.9 (46)	64.9	30.0 (28.3)
<u>Co-operative banks</u>					
3,192, with 17,404 branch offices					
	Sight	18.2 (13.6)	41.5 (38.5)	26.8	28.5 (26.1)
	Time	20.4 (10.1)	25.1 (17.8)	52.9	24.5 (22.2)
<u>Treasury</u>					
	Sight	.	.	1.0	1.1 (1)
	Time	.	.	5.2	2.4 (4.6)
<u>BANK OF FRANCE</u>					
234 branch offices					
<ul style="list-style-type: none"> <li>- settles transactions passed through the clearing systems;</li> <li>- manages provincial clearing offices for paper-based transactions;</li> <li>- operates Paris, Lyons, Strasbourg, Rennes and Nantes ACHs;</li> <li>- manages Rennes, Nantes and Metz Regional Cheque Record Exchange Centres (RECRECs).</li> </ul>					

C. Relative importance of payment instruments

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions	3,030.3 (1,709.4)	63.2 (55)	799.5	6.0 (8)
Postal cheques issued	926.1 (964.5)	19.3 (31)	570.4	4.4 (6)
Payments by credit card	102.0 (26)	2.1 (less than 1)	3.2	less than 0.1 (less than 1)
Paper-based giro payments <sup>1</sup>	72.9 (90.4)	1.5 (3)	2,316.1	17.9 (13)
Paperless giro payments <sup>1</sup>	363.3 (137.5)	7.6 (4)	125.4	1.0 (less than 1)
Direct debits <sup>1</sup>	298.1 <sup>2</sup> (169.3)	6.2 (6)	42.3	0.3 (less than 1)
Interbank transfers	3.0 (2.7)	0.1 (less than 1)	9,107.7	70.4 (72)
TOTAL	4,795.7 <sup>3</sup> (3,099.8)	100	12,944.7	100
<u>CASH PAYMENTS</u> <sup>4</sup>	22,000	.	86.7	.

- 1 The figures shown do not relate to the actual volume and value of transactions carried out, but only to the volume and value of instruments exchanged in the official interbank circuits (notably via the clearing houses and computer clearing centres).
- 2 Including banking universal payment orders.
- 3 Number of cashless payments per inhabitant = 87.7 (57).
- 4 Estimates for 1983 were made solely on the basis of transactions carried out with the retail trade and market services.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u> *		
Number of machines installed	1,000	5,100
Inhabitants per machine	54,800	10,940
Number of cards issued (in millions)	2.4	9.9
Number of transactions per card	8.5	10.9
Value of withdrawals per card during the year (in \$)	554.3	601.7
Number of shared networks	0	.
Percentage of ATMs in shared networks		.
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	10,000	
Inhabitants per terminal	5,470	
Number of cards issued (in thousands)	4,200	
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	6,300	
- EFT POS terminals	32,500	

Exchange rates used: average rate against the dollar in 1983 (7.6215) and in 1978 (4.51).

\* The statistics appearing under this heading do not cover cash dispensers and ATMs installed inside banks or the special cards used to access them.



#### 4. Germany

##### I. CASH

Bank-notes and coins are the media used for cash payments. They are both legal tender, although coins only up to a certain limit. The right to issue bank-notes is vested in the central bank, while the issue of coin is the prerogative of the Federal Government. The central bank is also responsible for exchanging currency that is no longer fit for circulation.

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 eight denominations (Pfennig 1, 2, 5, 10 and 50 and DM 1, 2 and 5). At the end of 1983 the currency in circulation - including cash on hand at banks - amounted to DM 105 billion (\$39 billion), made up of DM 96 billion (\$35 billion) of bank-notes (91 per cent.) and DM 9 billion (\$3.3 billion) of federal coins (9 per cent.). Cash on hand at banks totalled DM 8 billion (\$2.9 billion). The number and value of cash payments are not known; they are estimated at 35 billion transactions, amounting to less than DM 1,000 billion (\$390 billion). The banks have installed approximately 1,600 cash dispensers for customer use.

##### II. DEPOSIT MONEY

At the end of 1983 over two-thirds of the stock of money available to the economy for payments 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 5.3 billion cashless payments totalling DM 14,000 billion (\$5,480 billion) were made by non-banks in 1983; interbank transfers on the Deutsche Bundesbank's books amounted to DM 4,100 billion (\$1,600 billion). Under the Banking Law the effecting of cashless transfers for third parties (customers) constitutes banking business; this requires a licence from the Federal Banking Supervisory Office, except where authorisation for individual institutions to handle payments derives from special laws (i.e. the Bundesbank Law, the Post Office Law). The organisational and technical aspects of handling cashless payments are regulated largely by means of agreements between the banking associations, the Post Office and the central bank. With a population of 61 million, there were at the end of 1983 almost 54 million giro accounts held at banks and at the Post Office; of this total, about 12 million accounts were held by enterprises and traders and about 42 million by private individuals.

##### III. CASHLESS PAYMENTS

While cash payments represent the vast majority of day-to-day retail transactions of private households, they play hardly any rôle in the case of enterprises and public authorities, whose payments are effected

almost exclusively on a cashless basis. Cashless payments are executed by means of credit transfers, cheques and direct debits. Other payment media, such as receipts, bills and credit and bank cards, play a very small rôle in comparison. Of every 100 payment orders executed in 1983, 57 were credit transfers from the payer's account to the payee's account (79 per cent. of the total value, one-quarter of which were interbank payments), 32 were direct debits made by the payee on the payer's account (6 per cent. of the total value), and 11 were cheques (16 per cent. of the total value), while less than 1 per cent. was accounted for by some other form of payment. Standing orders for credit transfers and direct debits are used extensively for regular payments; pre-prepared credit transfer forms are often sent by payees to the payers to be signed and sent to their own banks for execution. Cheques are not as popular as in other industrialised countries, owing to the preference given by the German banks to credit transfers and direct debits, particularly as they can also be processed electronically.

#### IV. HANDLING OF CASHLESS PAYMENTS

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). Payments on other local banks are transmitted to them through the local clearing centre of the central bank (if any) or exchanged bilaterally through clearing houses. 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. Nearly all intercity payments are processed automatically in the form of magnetic tapes or OCR vouchers. Paid cheques are retained by the paying banks, whereas credit and debit vouchers are sent to the customers together with the statement of account; electronically executed credits and debits generally appear on the statement of account. The claims and liabilities arising from interbank payments are, as a rule, settled directly and finally in the books of the central bank, which holds the liquidity reserves (minimum reserves) of all the banks 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	:	61.4 million	(61.32)
Gross national product	:	\$652 billion	
Per capita GNP	:	\$10,620	
Number of branch offices of deposit-taking institutions	:	39,836 <sup>1</sup>	(37,638)
Inhabitants per office	:	1,541	(1,629)
Number of branch offices of non-bank institutions offering third-party payments	:	0	
Inhabitants per office	:		
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	53 million	
- at non-bank institutions offering third-party payments	:	.	

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> ) <sup>2</sup>	321.2	5,231	53 <sup>3</sup> (56.2)
Currency (excluding banks' cash balances)	35.4	577	6 <sup>3</sup> (7.0)
Transferable deposits <sup>4</sup>	74.2	1,209	12 <sup>3</sup> (13.8)

1 Including postal giro offices.

2 M<sub>1</sub> + M<sub>2</sub> + savings deposits of domestic non-bank institutions at statutory notice.

3 Percentage calculated on the basis of amounts expressed in the domestic currency.

4 Sight deposits of domestic non-bank institutions (including deposits held at the central bank).

B. Payment system structure

Categories of institution	Types of account	Number of accounts <sup>1</sup> (millions)	Share of market (%)	Value of accounts <sup>2</sup> (\$ billion)	Share of market (%)
<u>Federal Post Office</u>					
18,124 post offices, 13 postal giro offices					
	Sight	4.2 (3.7)	8 (7.8)	4.3	6 (5.9)
	Time	. (0)	.	.	.
<u>Commercial banks</u>					
243, with 5,938 branch offices					
	Sight	11.1 <sup>3</sup> (8.8)	21 (18.8)	24.2	33 (34.5)
	Time <sup>4</sup>	0.4 <sup>3</sup> (0.2)	7 (18.5)	31.6	39 (59)
<u>Savings banks</u>					
604, with 17,333 branch offices					
	Sight	23.9 (21.9)	44 (46.7)	28.3	38 (38.8)
	Time <sup>4</sup>	1.7 (0.2)	31 (24.3)	25.6	32 (24.8)
<u>Credit co-operatives</u>					
3,763, with 15,863 branch offices					
	Sight	14.7 (12.5)	27 (26.7)	15.0	20 (19.6)
	Time <sup>4</sup>	3.4 (0.5)	62 (57.2)	20.4	25 (12.2)
<u>Other credit institutions</u>					
238, with 689 branch offices					
	Sight	Insignificant	.	1.2	2
	Time <sup>4</sup>		.	3.0	4
<u>DEUTSCHE BUNDESBANK</u>					
203 branch offices					
	Sight	0.03	.	1.0	1
	Time	.	.	.	.

- 1 Accounts of non-bank institutions.
- 2 Deposits of domestic non-bank institutions.
- 3 Estimate.
- 4 Time balances with a term of less than four years; excluding savings certificates and loans on a trust basis at third-party risk.

C. Relative importance of payment instruments

Instruments	Volume of transactions (millions) <sup>1</sup>	Percentage of total	Value of transactions (\$ billion) <sup>1</sup>	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions	600 (500)	11 (12)	1,170	16 (9)
Postal cheques issued	(7)	(less than 1)	(100)	(1)
Payments by credit card	7 <sup>2</sup> (insignificant)		0.8	
Paper-based giro payments	1,800 (1,650)	34 (38)	3,370	48 (54)
Paperless giro payments	1,200 (950)	23 (22)	510	7 (45)
Direct debits (of which 85 per cent. paperless)	1,700 (1,200)	32 (28)	430	6 (5.5)
Interbank transfers <sup>3</sup>	less than 1 (0.8)	less than 1 (id.)	1,600	23 (26)
TOTAL	5,300 <sup>4</sup> (4,307.8)	100	7,080	100
<u>CASH PAYMENTS</u> <sup>5</sup>	approx. 35,000 (35,000)	.	less than 390	.

1 Partly estimated.

2 Credit card payments initiate credit transfers in favour of the payee and direct debits from the card holder.

3 Deutsche Bundesbank only.

4 Number of cashless payments per inhabitant: 85 (60).

5 Number of cash payments per inhabitant: 570.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	.	approx. 1,600
Inhabitants per machine	.	38,500
Number of cards issued (in millions)	.	13
Number of transactions per card	.	1
Value of withdrawals per card during the year (in \$)	.	88
Number of shared networks	0	1
Percentage of ATMs in shared networks		60
	end-1983	
<u>EFT POS terminals</u> *		
Number of terminals installed		12
Inhabitants per terminal		25,000
Number of cards issued (in thousands)		300
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs		approx. 1,800
- EFT POS terminals		.

\* In Munich only.

## 5. Italy

### I. CASH

The media used for cash payments are bank-notes, state notes and coin, all of which are legal tender. Since 1926 the issue of bank-notes has been the exclusive privilege of the Bank of Italy, which is not obliged to observe any 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 the striking of coin lies with the Treasury. After the Second World War the law conferred on the Bank of Italy the right to issue notes in denominations of Lit. 1,000 or more and the Treasury that to issue paper notes or coin 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 eight denominations (Lit. 5, 10, 20, 50, 100, 200, 500 and 1,000); Lit. 1,000 silver coins do not normally circulate. The procedure for the introduction of new notes requires first a law passed by Parliament establishing the new denomination and then a decree issued by the Treasury Ministry defining the characteristics of the new notes, the quantity to be printed and the date on which they are to be put into circulation. At the end of 1983 the currency in circulation (including stocks held by the banking system) amounted to Lit. 39,336 billion, equivalent to \$23.6 billion, of which \$23.0 billion consisted of bank-notes. As a consequence of its exclusive right of issue, 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

At the end of 1983 about 84 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 16 per cent. was held in the form of notes and coin. According to incomplete statistics, which cover only about 70 per cent. of the banking system, it can be estimated that about 733 million cashless payments were effected in 1983, involving a total of \$1,365 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 and with wide regional disparities; in 1983 its gross national product amounted to \$349.9 billion (\$6,200 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 cheques). The banks are fairly liberal in allowing payments to be made even with funds that are not technically utilisable at sight. The provisions governing payments by public authorities discourage the use of deposit money. Indeed, certain local authorities are now forbidden to hold deposits with the banking system. The population of Italy totals 56.8 million; at the end of 1983 the number of postal current accounts came to around 0.5 million, whereas the number of sight deposits administered by the banks was nearly 16 million.

### III. CASHLESS PAYMENTS

Notes and coin are used in the main by households for making small, routine and recurrent payments. Deposit money is used both by households and 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 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 fifty or so authorized banks. In 1983 85.3 per cent. of the payment instructions received by the Bank of Italy, banks and post offices took the form of cheques, while credit transfers or giro transfers represented 14.2 per cent. of total cashless payments.

### 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 telecommunication network. 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 provided at the Bank's other 84 branches. Automated systems for the transfer of interbank transactions on magnetic tape or by wire have come into operation in recent years: the Automated Telecommunication System between Italian Savings Banks (STACRI - Sistema di Teletrasmissione Automatica tra le Casse di Risparmio Italiane), which is administered by the Central Institute for Italian Savings Banks (ICCRI - Istituto di Credito delle Casse di Risparmio Italiane), and the Electronic Interbank Funds Transfer Service (SETIF - Servizio Elettronico per il Trasferimento Interbancario di Fondi), which is managed by the Interbank Society for Automation (SIA - Società Interbancaria per l'Automazione). 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 set up several years ago a national service for interbank giro transfers and for the centralised clearing of local balances that uses the automated telecommunication 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	(56.8)
Gross national product	:	\$349.9 billion	
Per capita GNP	:	\$6,200	
Number of branch offices of deposit-taking institutions	:	12,913	(12,104)
Inhabitants per office	:	4,398	(4,695)
Number of branch offices of non-bank institutions offering third-party payments	:	14,200	
Inhabitants per office	:	4,000	
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	16 million	
- at non-bank institutions offering <sub>2</sub> third-party payments	:	503,000	

	<u>Absolute</u> <sup>3</sup> (\$ billion)	<u>Per capita</u> <sup>3</sup> (\$)	<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> ) <sup>4</sup>	335.5	5,906	95.9 (105.2)
Currency	22.3	392	6.4 (8.6)
Transferable deposits	120.9	2,128	34.6 (47.6)

- 
- 1 Branches located inside firms or public institutions are not included. The number of such branches was 966 at end-1983.
  - 2 Postal chequing accounts.
  - 3 Yearly average.
  - 4 Comprises: currency, bank and postal deposits, CDs and Treasury bills.

B. Payment system structure

Categories of institution	Types of account	Number of accounts (millions)		Share of market (%)		Value of accounts (\$ billion)	Share of market (%)	
<u>Post Office</u>								
14,200 branch offices								
	Sight <sup>1</sup>	0.5	(0.6)	3.0	(5.1)	10.9	8.0	(3.2)
	Time <sup>2</sup>	64.4	(63.2)	69.2	(65)	20.4	15.5	(18.7)
<u>Commercial banks</u>								
314, with 8,128 branch offices								
	Sight <sup>1</sup>	11.4	(6.6)	69.1	(54.5)	90.3	66.6	(60.8)
	Time <sup>2</sup>	16.3	(13.8)	17.5	(14.1)	71.2	54.2	(41.6)
<u>Savings banks</u>								
87, with 3,627 branch offices								
	Sight <sup>1</sup>	4.6	(3.5)	27.9	(28.8)	31.5	23.2	(24.9)
	Time <sup>2</sup>	12.4	(16.1)	13.3	(16.5)	32.1	24.4	(25.4)
<u>Co-operative and rural banks</u>								
686, with 1,158 branch offices								
	Sight <sup>1</sup>	.	(1.4)	.	(11.6)	2.8	2.1	(11.1)
	Time <sup>2</sup>	.	(4.2)	.	(4.4)	7.6	5.8	(14.3)
<u>BANK OF ITALY</u>								
97 branch offices (of which 3 are in Rome)								

- 1 Chequing accounts.
- 2 Savings deposits.
- 3 Rural banks only.

C. Relative importance of payment instruments

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions <sup>1</sup>	585.0 <sup>2</sup> (612)	79.8 (89)	584.4	42.8 (63)
Cashier's cheques issued by the Bank of Italy	3.1	0.4	9.7	0.7
Postal cheques issued	37.5 (38)	5.1 (5)	100.6	7.4 (less than 1)
Payments by credit card	4.0 <sup>3</sup> (0.9)	0.5 (less than 1)	0.4	less than 0.1 (less than 1)
Paper-based and paperless giro payments <sup>1,4</sup>	93.0	12.7	665.0	48.7
- of which handled by the SIA and STACRI	20.9	2.9	17.7	1.3
Direct debits <sup>1</sup>	10.3	1.5	4.1	0.3
Interbank transfers <sup>5</sup>				
TOTAL	732.9 <sup>6</sup> (691.5)	100	1,364.2	100
<u>CASH PAYMENTS</u>				
	.	.	.	.

1 Data are for 31 banks accounting for 70 per cent. of the total balance-sheet assets of the banking system.

2 Including 252 million bankers' drafts and 3.9 million special cheques.

3 Estimates.

4 Postal giro transfers and interbank transfers are included.

5 See giro payments.

6 Number of cashless payments per inhabitant = 12.9 (12).

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	.	1,500
Inhabitants per machine	.	37,866
Number of cards issued (in millions)*	.	1.5
Number of transactions per card*	.	6
Value of withdrawals per card during the year (in \$)*	.	130
Number of shared networks	0	2
Percentage of ATMs in shared networks*		60
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	0	
Inhabitants per terminal		
Number of cards issued (in thousands)		
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	1,600	
- EFT POS terminals	0	

\* Based on 31 banks (see footnote 2 of Table C) owning 1,207 ATMs.



## 6. Japan

### I. CASH

Both bank-notes and coins are legal tender for cash payments in the public and 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 they are delivered to the Bank at its head office and branches whenever necessary. Cash is put into circulation by the Bank of Japan's head office and branches (thirty-four offices in all) at the request of the commercial banks and other financial institutions holding reserve claims on it; the banking system thus acts as the main intermediary between the issuers and the end-users of notes and coins.

At the end of 1983 cash in the hands of the public amounted to Yen 23,772 billion, the equivalent of \$102.4 billion, about 94 per cent. of which consisted of notes. There are nine denominations of note (Yen 10,000, 5,000, 1,000, 500, 100, 50, 10, 5 and 1), with the different denominations accounting for the following proportions of the note circulation: Yen 10,000, 84.1 per cent.; Yen 5,000, 4.5 per cent.; Yen 1,000, 9.9 per cent.; Yen 500, 1.2 per cent.; other denominations, 0.3 per cent. Though it continues to accept them, the Bank of Japan has ceased to issue the five smaller note denominations, which have been replaced by coins of the same value. There are six denominations of coin: Yen 500, 100, 50, 10, 5 and 1. The Yen 500 coin began to replace the Yen 500 note in April 1982.

It was decided to replace all Yen 10,000, 5,000 and 1,000 bank-notes currently in circulation with notes of a new design as from the autumn of 1984. Some twenty years have elapsed since the present notes were first issued, so that the anti-counterfeit features which they incorporate needed to be enhanced in response to the advances made in reprographic technology.

A ceiling 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 reserves (comprising gold and silver bullion, foreign exchange, SDRs, bills, government bonds, advances to the Government and secured loans) equivalent to the value of the note issue.

### II. DEPOSIT MONEY

Almost three-quarters of the money stock available to the economy for payments at the end of 1983 took the form of sight deposits with financial institutions, while the remaining quarter was held in the form of cash. It was estimated that about 2.2 billion cashless payment transactions using deposit money, for a value of \$13,600 billion, were made by non-financial

sectors in 1983. The number and value of cash payments are not known. It may be added that in 1983 Japan had a gross national product of \$1,156 billion, or \$9,760 per capita.

The commercial banks are the largest and most innovative providers of payment services in deposit money in the private sector. The Post Office is also expanding its activities in this area. Deposit money is held in current accounts, from which payments may be made by means of cheques and credit transfers, and in ordinary deposit accounts, which offer only credit transfer facilities. The integrated account, which combines the time and ordinary deposit accounts and is used for pre-authorized direct debits, has recently become popular.

### 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 direct credit to the beneficiary's account. Payments in respect of personal consumption expenditure and small business transactions are usually made in cash or by credit card. Cheques are widely used outside the household sector, where other forms of cashless payment, paper-based or otherwise, are also a major means of settlement at the various stages of production and commerce. It is estimated that bank cheques account for the overwhelming proportion, in terms of value of transactions, of cashless payments of non-financial sectors, followed in order of importance by credit cards, postal cheques and postal giro payments; direct credits and debits, on the other hand, account for more than half of cashless payments in terms of volume but only a small proportion of their value. As in other countries, direct debits are used primarily for recurring outpayments, which are credited to the payee's account.

### IV. HANDLING OF CASHLESS PAYMENTS

The Zengin System is a nationwide network for the domestic transfer of funds, in which almost all the private financial institutions participate: 7,400 institutions with more than 40,000 branch offices as from August 1984. In 1983 the average value of remittances between different locations and other cashless payment orders involving business corporations and households amounted to Yen 1,311 billion per working day (\$5.5 billion).

City banks and regional banks (76 banks with some 9,000 branches) handle the largest share of cashless payments and are highly computerised; at the end of 1983 these banks held approximately 60 per cent. of all sight deposits by value, 33 per cent. being held mainly at smaller institutions, such as mutual loan and savings banks, credit associations and agricultural co-operatives (6,856 financial institutions with some 33,033 branches) and the remaining 7 per cent. with the Post Office (22,458 branches).

There are 179 clearing houses throughout the country, which clear cheques, bills and other paper instruments on a local basis. In 1983 the

value of items cleared worked out at an average of Yen 3,233 billion per working day for cheques and Yen 1,758 billion for other paper instruments (at the Tokyo Clearing House, which cleared 73 per cent. of the total). In regions where the Bank of Japan has no branch, banks select a "representative bank" with which they hold accounts 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 Nippon Telegraph and Telephone Public Corporation. The Post Office has 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 and the network of transfers by telex between the financial institutions' current accounts at the Bank of Japan provides the links for interbank funds transfers. The Bank has plans for an on-line network to replace the current telex system by mid-1987.

Japan

A. Basic statistical data

Territorial area	:	372.3 thousand sq. kms.	
Population	:	118.5 million	(115.4)
Gross national product	:	\$1,156.5 billion	
Per capita GNP	:	\$9,759.5	
Number of offices of deposit-taking institutions	:	42,648*	(41,505)
Inhabitants per office	:	2,780	(2,780)
Number of offices of non-bank institutions offering third-party payments	:	n.a.	
Inhabitants per office	:		
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	n.a.	
- at non-bank institutions offering third-party payments	:	n.a.	
		<u>Absolute</u>	<u>Per capita</u>
		<u>(\$ billion)</u>	<u>(\$)</u>
Total money supply (M <sub>3</sub> + CD)		1,738.1	14,667.5
			150.3 (143.2)
Currency		87.8	740.9
			7.6 (8.5)
Transferable deposits		257.0	2,168.8
			22.2

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\* Including head offices.

B. Payment system structure

Categories of institution	Types of account	Number of accounts (millions)	Share of market (%)	Value of accounts (\$ billion)	Share of market (%)
<u>Post Office</u>					
22,458 offices <sup>1</sup>	Sight	64	.	28.6	1.4
	Time	305	.	333.3	16.6
<u>Commercial banks</u>					
86, with 9,615 offices <sup>1</sup>					
13 city banks, 63 regional banks, 3 long-term credit banks, 7 trust banks	Sight <sup>2</sup>	158	.	308.9	15.3
	Time <sup>2</sup>	.	.	708.5	35.2
<u>Financial institutions for small businesses</u>					
1,043, with 14,070 offices <sup>1</sup>					
71 mutual loan and savings banks	Sight	35 (27)	.	30.6	2.2
	Time	46 (32)	.	104.6	5.2
456 credit associations	Sight	47 (34)	.	38.8	1.9
	Time	78 (51)	.	154.3	7.7
1 Shoko Chukin Bank (central bank for commercial and industrial co-operatives)	Sight and time	.	.	7.3	0.4
468 credit co-operatives	Sight	.	.	9.4	0.5
	Time	.	.	40.8	2.0
47 labour credit associations	Sight	.	.	2.3	0.1
	Time	.	.	15.8	0.8
<u>Financial institutions for agriculture, forestry and fishery</u>					
5,813, with 18,963 offices <sup>1</sup>					
1 Norinchukin Bank (central co-operative for agriculture and forestry)	Sight	.	.	8.0	0.4
	Time	.	.	52.4	2.6
4,121 agricultural co-operatives	Sight	.	.	29.1	1.4
	Time	.	.	120.8	6.0
1,691 fishery co-operatives	Sight	.	.	2.0	0.1
	Time	.	.	4.8	0.2
<u>BANK OF JAPAN</u>					
34 offices			- issues notes; - provides settlement services for financial institutions; - is government fiscal agent.		

1 Excluding 381 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<sup>1</sup>

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques <sup>2</sup> issued by deposit-taking institutions	418	18.7	11,466	84.0
Postal cheques issued	1	0	21	0.2
Payments by credit card	230	10.3	58	0.4
Paper-based giro payments	33	1.5	9	0.1
Paperless giro payments	8	0.4	3	0
Direct debits	1,260	56.3	16	0.1
Interbank transfers <sup>3</sup>	288	12.9	2,071	15.2
TOTAL	2,238 <sup>4</sup>	100	13,644	100
<u>CASH PAYMENTS</u>				
	.	.	.	.

1 All figures are estimated.

2 Including bank cheques, bills and promissory notes.

3 Including remittances, transfers and direct credits, but excluding transactions between the Bank of Japan and banks.

4 Number of cashless payments per inhabitant = 19.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	12,800	37,900
Inhabitants per machine	8,465	3,127
Number of cards issued (in millions)	.	.
Number of transactions per card	.	.
Value of withdrawals per card during the year (in \$)	.	.
Number of shared networks*	1	5
Percentage of ATMs in shared networks	.	39
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	5,000	
Inhabitants per terminal	23,700	
Number of cards issued (in thousands)	1,050	
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	.	
- EFT POS terminals	.	

\* Number of interbank on-line cash dispenser networks.



## 7. The Netherlands

### I. CASH

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

At the end of 1983 the currency in circulation consisted of six denominations of bank-note (Fl. 1,000, 100, 50, 25, 10 and 5) and seven denominations of coin (Fl. 50, 10, 2.50 and 1, and 25, 10 and 5 cents). The Netherlands Bank is not authorised to issue notes of a face value of less than Fl. 5. Coins in denominations of less than Fl. 1 are put into circulation by the Post Office. Bank-notes and coins in denominations of Fl. 1 and more are put into circulation by the central bank (head office and fifteen branches) through the intermediary of banks and post offices; the often large amounts taken up by these institutions are debited to their current accounts with the central bank. Cash in excess of the public's needs is returned to the central bank, which is responsible for checking and replacing used notes and detecting counterfeits.

At the end of 1983 the currency in circulation amounted to Fl. 26.5 billion, the equivalent of \$8.6 billion, of which Fl. 25.0 billion was accounted for by bank-notes. These figures exclude notes and coins at banks, which totalled Fl. 1.5 billion. The bank-notes in circulation - and third-party guilder credit balances on current account at the Netherlands Bank - are subject to a statutory reserve ratio, to be covered by gold, convertible foreign currency holdings and net claims on the IMF. The statutory minimum ratio is 50 per cent., but there is no upper limit.

### II. DEPOSIT MONEY

Two-thirds of the money available to the economy for payment transactions at the end of 1983 was held in the form of sight deposits with banks and the Postal Cheque and Giro Services, while the remaining one-third was held in the form of bank-notes and coin. Some 1,223 million cashless payments using deposit money, for a total value of Fl. 1,544.5 billion (\$501.4 billion), were made by bank customers in 1983; transfers on the Netherlands Bank's books, mainly by banks, totalled approximately 0.6 million for a value of Fl. 3,917.2 billion (\$1,271.8 billion). The number of cash payments made is unknown; their value in 1983 has been estimated at about Fl. 424 billion (\$137.7 billion).

The banking system is made up of 90 commercial (universal) banks, 965 banks organised on a co-operative basis, which operate as one institution, and 69 savings banks; together they operate 6,441 branch offices, all offering sight account facilities and the related payment

services via the Bank Giro Centre. In addition to the banks, there are some 20 security credit institutions and the Postal Cheque and Giro Services with a total of 2,731 offices.

There is no general legislation governing transfer payments, which are the most important cashless payment medium using deposit money; 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 transfer payment is equivalent in law to a payment in cash.

To set the figures reported in 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 1983 the gross national product amounted to Fl. 376.0 billion (\$131.9 billion)). With a population of 14.3 million, there were at the end of 1983 8.23 million sight accounts administered by banks and 4.95 million administered by the Postal Cheque and Giro Services.

### III. CASHLESS PAYMENTS

Apart from cash, essentially two instruments are used for making payments: the guaranteed cheque and the transfer; others, such as the ordinary cheque and the credit card, are insignificant. Cash payments are used mainly in the personal sector for small day-to-day household purchases; as the value of the payment increases, and for all transactions in trade and industry, cashless instruments are preferred. Wages and salaries are paid 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 1983, 78 were transfers (99 per cent. of the total value) and 22 were cheques (less than 1 per cent. of the total value); the proportion accounted for by payments by holders of credit cards and other minor instruments is insignificant. The guaranteed cheque was introduced for domestic use in 1967 by the banks, followed in 1969 by the Postal Cheque and Giro Services; the guaranteed eurocheque, which can be used in a number of other countries, was introduced in 1973. The guarantee cards are made available on request to all account holders, and the cheques are guaranteed by the issuing institutions up to a certain amount (at present Fl. 200 for postal cheques, Fl. 100 for bank cheques and Fl. 300 for eurocheques). In 1983 about 119.6 million guaranteed cheques were processed by the banks and about 153 million by the Postal Cheque and Giro Services.

Three transfer circuits were in operation in 1983: the banks' circuit, the postal circuit and the Netherlands Bank's circuit. It is estimated that in 1983 approximately 1,223 million cashless payments were effected through the banks and the Postal Cheque and Giro Services. The banks handled 51 per cent. of transfers by volume and 53 per cent. by value, mainly on behalf of enterprises and institutions, while the Postal Cheque and Giro Services effected 49 per cent. of transfers by volume and 47 per cent. by value, primarily on behalf of private individuals.

IV. HANDLING OF CASHLESS PAYMENTS

All cashless payment instruments, both paper and non-paper-based, are dealt with in each of the transfer circuits: ordinary credit transfers, pre-prepared transfers, direct debits, cheques and a few other types of instrument. Ordinary credit transfers and cheques are initiated by the debtor for the sum indicated in the payment order. Pre-prepared transfers fall into two categories, the regular transfer and the inpayment transfer. Inpayment transfer orders are prepared in advance by the creditor and sent to the debtor together with the bill. The debtor has only to sign the order and send it to his bank. The direct debit is initiated by the creditor. Regular transfers are initiated by the debtor's bank.

The Postal Cheque and Giro Services are marked by a high degree of centralisation, all payment items being processed in three central offices. The banks' transfer circuit, on the other hand, is a basically decentralised organisation; the Bank Giro Centre, founded by the banks to facilitate the collection and processing of transfer orders among themselves and between their own and the other transfer circuits, is merely an intermediary between the participating banks. The Centre receives debit items and converts them into credit items, sorted by bank and account number; it makes no entries in the accounts, nor does it print customer statements, this being done by the individual banks in their own electronic data-processing centres. However, the Bank Giro Centre does effect the daily clearing and final settlement of the aggregated net balances on the participating banks' accounts at the Netherlands Bank.

The individual banks and the Postal Cheque and Giro Services are all highly computerised, both for the automated processing of paper items such as cheques and for the handling of payment data recorded on magnetic data carriers.

At the end of 1983 no ATMs or POS terminals were in operation. Some thirty-two cash dispensers had been installed.

The Postal Cheque and Giro Services do not hold any accounts with the banks, so that transfers between the bank and postal circuits tend to be relatively slow, while the execution and clearing of payments inside each circuit are normally effected one day after receipt. Under Section 9 of the 1948 Bank Act, in 1975 the Minister of Finance invited the Governor of the central bank to chair a Steering Committee to study the integration of the three domestic transfer circuits; the Committee's investigations were oriented towards a national transfer system characterised by decentralised processing of payment orders and large-scale use of electronic data communication. Work on the establishment of this system is still in progress.

In addition to providing the final settlement of clearing balances, the Netherlands Bank acts as payment agent for the Government (transfers effected in that capacity in 1983 amounted to approximately Fl. 319 billion (\$104 billion)); its own transfer 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.

The Netherlands

A. Basic statistical data

Territorial area	:	37.3 thousand sq. kms.	
Population	:	14.3 million	(14)
Gross national product	:	\$131.9 billion	
Per capita GNP	:	\$9,224	
Number of branch offices of deposit-taking institutions <sup>1</sup>	:	6,441	(5,753)
Inhabitants per office	:	2,222	(2,434)
Number of branch offices of non-bank institutions offering third-party payments	:	.	
Inhabitants per office	:	.	
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	13.18 million	
- at non-bank institutions offering third-party payments	:	.	
		<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)
			<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> ) <sup>2</sup>		90.2	6,306 68.4 (71.8)
Currency		8.6	602 6.5 (7.3)
Transferable deposits		17.3	1,209 13.1 (16.0)

1 Includes Postal Cheque and Giro Services and Post Office Savings Bank.

2 Includes: Money supply (M<sub>1</sub>)  
Quasi-money  
Genuine savings deposits  
Bearer savings certificates (two years or longer)  
Liquid assets with savings banks.

B. Payment system structure

Categories of institution	Types of account	Number of accounts* (millions)	Share of market (%)	Value of accounts* (\$ billion)	Share of market (%)
<u>Postal Cheque and Giro Services, including Post Office Savings Bank</u>					
2,731 branch offices					
	Sight	4.95 (4.32)	37.5 (37.7)	4.9	28.5 (34.9)
	Time	7.20 (5.90)	27.6 (27.2)	6.7	15.3 (11)
<u>Commercial banks</u>					
90, with 2,366 branch offices					
	Sight	3.52	26.7	7.7	44.7 (43.1)
	Time	4.13 (3.10)	15.9 (14.3)	11.7	26.7 (39.5)
<u>Savings banks</u>					
69, with 1,035 branch offices					
	Sight	1.21 (0.82)	9.2 (7.2)	0.7	4.1
	Time	5.61 (5.10)	21.5 (23.5)	7.7	17.5 (15.6)
<u>Co-operative banks</u>					
965, with 3,040 branch offices					
	Sight	3.50	26.6	3.9	22.7 (22)
	Time	9.18 (7.60)	35.1 (35)	17.8	40.5 (33.9)
<u>THE NETHERLANDS BANK</u>					
15 branch offices		<ul style="list-style-type: none"> <li>- produces, circulates and destroys notes;</li> <li>- provides settlement services for the Government and for large private enterprises, including financial institutions.</li> </ul>			

\* Estimates.

C. Relative importance of payment instruments

Instruments	Volume of transactions <sup>1</sup> (millions)	Percentage of total	Value of transactions <sup>1</sup> (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions	119.6 (100)	9.8 (9)	4.0	less than 1 (id.)
Postal cheques issued	153.0 (150)	12.5 (14)	4.6	less than 1 (id.)
Payments by credit card	insignificant (5)	(less than 1)	(0.4)	(less than 1)
Paper-based giro payments	508.2 (550)	41.6 (49)	245.0	13.8 (36)
Paperless giro payments	250.0 (150)	20.4 (14)	178.1	10.0 (10)
Direct debits	191.2 (150)	15.6 (14)	69.7	3.9 (2)
Interbank transfers	0.6 (0.4)	less than 1 (id.)	1,271.8	71.7 (51)
TOTAL	1,222.6 <sup>2</sup> (1,105.4)	100	1,773.2	100
<u>CASH PAYMENTS</u>				
	.	.	137.7	.

1 Estimates.

2 Number of cashless payments per inhabitant = 85 (79).

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	15	32*
Inhabitants per machine	.	.
Number of cards issued (in millions)	.	.
Number of transactions per card	.	.
Value of withdrawals per card during the year (in \$)	.	.
Number of shared networks	0	0
Percentage of ATMs in shared networks		
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	0	
Inhabitants per terminal		
Number of cards issued (in thousands)		
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	46	
- EFT POS terminals	.	

\* In two small local areas only.



## 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 set a ceiling on the value of the total note issue; however, the Act still contains a note cover regulation, although it imposes no restrictions on the composition and value of the covering assets. According to the Bank of Sweden Act, notes are required to be issued in denominations of S.kr. 10, 100, 1,000 and 10,000 and may be issued in denominations of S.kr. 5, 50 and 500. Notes have so far been issued in all these denominations except for S.kr. 500. Since the autumn of 1983, however, S.kr. 5 notes are no longer issued, and it has also been decided that in late 1985 the Bank of Sweden will start to issue a S.kr. 500 note. 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 coin are put into circulation by the Bank's head office and eight regional branches together with their fourteen sub-branches via banks and post offices. The Royal Mint is responsible for minting metal coins in four denominations, namely S.kr. 5 and 1, and 50 and 10 öre; 25 and 5 öre coins are no longer minted and will cease to be legal tender at the end of June 1985. At the end of 1983 the amount of currency outstanding totalled S.kr. 44,961 million, the equivalent of \$5.62 billion, 95 per cent. of which was in notes and 5 per cent. in coin.

### II. DEPOSIT MONEY

A fundamental change in the banking sector during the last few years has been the abolition of many types of deposit account. In consequence, most banks today offer only one - a so-called combination account - on which the interest paid is related to the length of time the funds have been on deposit in the bank and the size of the balance. Partly for this reason, it is no longer possible to measure  $M_1$  in Sweden.

Approximately 580 million cashless payments, amounting to \$845 billion, were made by non-banks in 1983. The value of interbank transfers reported for the same year amounted to \$240 billion. Credit card payments amounted to \$3 billion, while the amount for direct debits was so little that it was not measurable. The total value of cash payments has been estimated at \$30 billion. 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 (\$90.5 billion in 1983; \$10,866 per capita). Deposit money is used in two main circuits: the banks and the Post Office. The banking system is made up of

fifteen commercial banks, some 155 savings banks and twelve co-operative banks; a whole range of money transfers are made by the banks through their 3,600 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. Most payments of salaries, wages, pensions, dividends, government child allowances, etc. are today made by transfer to bank accounts. For many years it has been possible to use accounts with the government-owned PK-Bank as giro accounts. Mainly with a view to retaining deposit balances, the savings banks offered the same service to their customers in 1982, and shortly afterwards the other banks followed suit. As a result, almost every household in Sweden now has a giro account.

Two different ATM systems have been established. The Bankomat system is marketed jointly by the commercial and co-operative banks, while the Minuten system is marketed by the savings banks. The services offered include withdrawals and balance inquiries. There is no need for a deposit function because salaries, etc. are transferred to bank accounts automatically. Most ATMs are installed in branch offices or located in or near shopping centres, and most transactions are made during peak hours, when the banks are open.

So far, about 1,074 ATMs have been installed and 2.4 million cards have been issued. In 1983 nearly 70 million withdrawals were made and the amount withdrawn exceeded \$4 billion.

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 1983, there were at the same date almost 4.1 million accounts with giro facilities.

### 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 basic payment services offered by the 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 number of credit cards has grown substantially in Sweden lately. In 1983 there were 42 cards per 100 inhabitants, and more than 2 million cards had been issued in total. There are something like one

hundred different cards on the market, of which about ten can be used everywhere in Sweden. Two of these cards are travel and entertainment cards. All the other cards are selective or exclusive cards in the sense that they can only be used in particular bank branches, stores, etc.

POS debit cards are marketed by a number of oil companies. There is a general feeling today - reflected in opinion polls - that consumers are not yet ready to accept debit cards as a payment instrument, except, perhaps, payments at petrol stations. There is also discussion about who is to bear the cost of running a debit card system; the consumer will not want to unless he gets credit in the process.

The use of cheques is relatively limited. Of every 100 payment transactions recorded in 1983, 72 were made by giro transfers (\$ 830 billion in value), 20 by bank cheques (\$12 billion in value), 7 by credit cards (\$3 billion in value) and 1 by direct debit. Bank cheques for any amount can be cashed at any bank nationwide; 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; in fact, they charge a fee for cashing cheques for S.kr. 100 or less.

Sweden

A. Basic statistical data

Territorial area	:	411.6 thousand sq.kms.	
Population	:	8.3 million	(8.3)

Gross national product	:	\$90.5 billion	
Per capita GNP	:	\$10,866	

Number of branch offices of deposit-taking institutions	:	3,581	(3,804)
Inhabitants per office	:	2,318	(2,812)

Number of branch offices of non-bank institutions offering third-party payments	:	2,223	
Inhabitants per office	:	3,734	

Number of transferable deposit accounts:			
- at deposit-taking institutions	:	25.05 million	
- at non-bank institutions offering third-party payments	:	1.2 million	

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> )*	54.27	6,538	60.0 (60.9)
Currency	5.62	677	6.0 (7.0)
Transferable deposits	48.84	5,884	54.0 (53.9)

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\* Comprises: total deposits by the public with banks, purchases by the public of CDs issued by banks, and notes and coins in circulation outside the banking sector.

B. Payment system structure

Categories of institution	Types of account	Number of accounts (millions)	Share of market (%)	Value of accounts (\$ billion)	Share of market (%)
<u>Postal Giro</u>					
2,223 branch offices		1.2	4.6	2.08	4.2
	Sight	.	.	.	.
	Time	.	.	.	.
<u>Commercial banks</u>					
15, with 1,465 branch offices		13.20 (14.14)	50.3	29.28	59.8
	Sight	.	.	.	.
	Time	.	.	.	.
<u>Savings banks</u>					
155, with 1,420 branch offices		10.06 (10.85)	38.3	14.12	28.8
	Sight	.	.	.	.
	Time	.	.	.	.
<u>Co-operative banks</u>					
12, with 696 branch offices		1.79 (1.53)	6.8	3.5	7.2
	Sight	.	.	.	.
	Time	.	.	.	.
<u>BANK OF SWEDEN</u>					
8 branch offices with 14 sub-branches					
					- provides facilities for the exchange and settlement of cheques among the major financial institutions.

C. Relative importance of payment instruments<sup>1</sup>

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions	120 (125)	20 (25)	12	1 (1)
Postal cheques issued	0 (0)		0	
Payments by credit card	40 (15)	7 (3)	3	1 (less than 1)
Paper-based giro payments	416 (371)	72 (72)	830	76 (77)
Paperless giro payments				
Direct debits	5	1	insignificant	.
Interbank transfers	.	.	240	22 (22)
TOTAL	581 <sup>2</sup> (511)	100	1,085	100
<u>CASH PAYMENTS</u>				
	2,000	.	30	.

1 All figures are estimates.

2 Number of cashless payments per inhabitant = 70 (62).

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	483	1,074
Inhabitants per machine	17,000	7,700
Number of cards issued (in millions)	0.9	2.4
Number of transactions per card	5	29.5
Value of withdrawals per card during the year (in \$)	43.7	65
Number of shared networks	0	0
Percentage of ATMs in shared networks		
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	710	
Inhabitants per terminal	11,900	
Number of cards issued (in thousands)	50	
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	25	
- EFT POS terminals	.	



## 9. Switzerland

### I. CASH

Bank-notes and coins 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 100 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, in part, 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 eight denominations: 1, 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 other metals were subsequently substituted because of the rise in the price of silver. At the end of 1983 the currency in circulation outside banks and post offices amounted to Sw.fr. 22 billion (\$10 million). No pre-established legal ceilings on the total note issue are currently in force.

### II. DEPOSIT MONEY

Two-thirds of the stock of money ( $M_1$ ) available to the economy for payments at the end of 1983 was held in the form of sight deposits at the banks and post offices, while one-third of it was held in cash. About 530 million cashless payments were made by non-banks in 1983. It may be noted that the Swiss Confederation is one of the more highly industrialised countries in Europe; in 1983 the gross national product stood at Sw.fr. 212 billion (\$101 billion). Sight-account facilities are offered by all banks, viz. the five larger commercial banks with nationwide branch networks, the numerous groups of savings, regional, cantonal and small private banks and the co-operative banks; besides the 4,900 bank offices, there are just under 4,000 post offices also providing 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 6.5 million, at the end of 1983 there were an estimated 1.5 million sight accounts held at banks and 1 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 1983, 88 were giro transfers (99 per cent. of the total value), 10.6 were bank cheques, 0.5 were payments by holders of credit cards and 0.8 were direct debit transfers. Taking the number of giro transactions (530 million) in 1983, 60 per cent. were effected by the postal giro and 39 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.

Switzerland

A. Basic statistical data

Territorial area : 41 thousand sq. kms.  
 Population : 6.5 million (6.3)

Gross national product : \$101 billion  
 Per capita GNP : \$15,540

Number of branch offices of  
 deposit-taking institutions : 4,986 (4,781)  
 Inhabitants per office : 1,300 (1,318)

Number of branch offices of  
 non-bank institutions<sup>1</sup> offering  
 third-party payments : 3,900  
 Inhabitants per office : 1,600

Number of transferable deposit  
 accounts:  
 - at deposit-taking : 3 million<sup>2</sup>  
 institutions  
 - at non-bank institutions  
 offering<sup>1</sup> third-party  
 payments : 1 million

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> ) <sup>3</sup>	113 <sup>4</sup>	17,500	117 <sup>5</sup> (132.2)
Currency	10 <sup>4</sup>	1,545	10 <sup>5</sup> (14.4)
Transferable deposits <sup>6</sup>	18.7	2,877	19 <sup>5</sup> (31.3)

1 Post offices.

2 Of which 1.5 million of wage/salary accounts.

3 Comprises currency plus time deposits and domestic sight deposits in foreign currency and savings deposits.

4 At the end of 1983.

5 Percentage calculated on the basis of amounts expressed in the domestic currency.

6 Including balances on postal cheque accounts.

B. Payment system structure

Categories of institution	Types of account	Number of accounts* (millions)	Share of market (%)	Value of accounts (\$ billion)	Share of market (%)
<u>Postal giro system</u>					
3,902 branch offices					
	Sight	1.0 (0.81)	25 (45)	5.0	27 (25)
	Time	0 (0)		0	
<u>Commercial banks</u>					
5, with 903 branch offices					
	Sight	1.6 (0.52)	40 (29)	6.5	35 (50)
	Time	.	.	12.8	54 (32)
<u>Savings, regional and cantonal banks</u>					
424, with 2,839 branch offices					
	Sight	1.4 (0.45)	34 (25)	6.9	37 (24)
	Time	.	.	9.8	41 (63)
<u>Co-operative banks (loan banks and agricultural credit co-operatives)</u>					
2, with 1,244 branch offices					
	Sight	0.02 (0.02)	1 (1)	0.2	1 (1)
	Time	.	.	1.2	5 (5)
<u>SWISS NATIONAL BANK</u>					
2 head offices		- is responsible for the design and production of notes, their distribution, withdrawal and destruction;			
8 branch offices					
		- handles 1 per cent. of giro services;			
		- acts as the clearing house of the privately operated giro clearing centres and performs settlements.			

\* All data, except those relating to the postal giro system, are estimates.

C. Relative importance of payment instruments<sup>1</sup>

Instruments	Volume of transactions <sup>2</sup> (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions	64 <sup>3</sup> (6)	10.6 (4)	.	(less than 1)
Postal cheques issued <sup>4</sup>	0 (0)		0	
Payments by credit card <sup>5</sup>	3 (4)	0.5 (3)	.	(less than 1)
Paper-based giro payments	323 (130)	53.6 (84)	.	99 (11)
Paperless giro payments	207 (14)	34.4 (9)	.	
Direct debits	5 (0.03)	0.8 (less than 1)	.	(less than 1)
Interbank transfers <sup>6</sup>	.	.	.	(89)
TOTAL	602 <sup>7</sup> (155.03)	100	11,818	100
<u>CASH PAYMENTS</u>				
	.	.	.	.
	(10.4)			

1 All figures are estimates.

2 Each credit or debit entry is counted as one transaction, i.e. eurocheque = 2 transactions.

3 Eurocheques (40) + Swiss Bankers' travellers' cheques (24).

4 Postal cheques were first issued in September 1984.

5 Card holders in 1982 (only American Express, Diners' Club, Eurocard, VISA): 336,000; in 1983: 385,000 (+ 15 per cent.).

6 Interbank transfers: unknown, included under giro transfers.

7 Number of cashless payments per inhabitant = 93 (24).

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed	100	1,027
Inhabitants per machine	64,000	6,329
Number of cards issued (in millions)	0.07	0.5
Number of transactions per card	13	22
Value of withdrawals per card during the year (in \$)	3,409	3,127
Number of shared networks	1	2
Percentage of ATMs in shared networks	.	90
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	0	
Inhabitants per terminal		
Number of cards issued (in thousands)		
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	1,200	
- EFT POS terminals	20	

## 10. United Kingdom

### I. CASH

The Bank of England has the sole right of note issue in England and Wales. The Bank currently prints and issues notes of five denominations - £1, £5, £10, £20 and £50. These notes circulate freely throughout the United Kingdom and all are legal tender in England and Wales. However, in Scotland and Northern Ireland only the £1 note is legal tender. Three banks in Scotland and four banks in Northern Ireland each retain the right to issue their own sterling notes but, apart from a very small fiduciary issue, these must be fully covered by holdings of Bank of England notes, or of coin. The clearing banks draw the notes they need from the head office and seven branches of the Bank of England and distribute them through their own cash centres. Soiled notes and those surplus to requirements are returned to the Bank and taken out of circulation; alternatively surplus notes can be held at the clearing banks' cash centres for reissue.

The Royal Mint is responsible for the production and issue of coins throughout the United Kingdom. Coins are currently in issue in eight denominations: 1/2, 1, 2, 5, 10, 20 and 50 pence and £1, and coins equivalent to 5 and 10 pence issued prior to decimalisation in 1971 are still in circulation. In January 1984 it was announced that the 1/2 penny coin would not be issued after 29th March 1984 and would cease to be legal tender within a year.

At mid-December 1983 the currency in circulation, including the cash held by banks (£1,164 million on average at mid-months during 1983), amounted to £13,484 million. It has been estimated that some 12 billion payments of £1 or more are made each year in cash and that cash accounts for some 90 per cent. of all payments in the economy. However, in real terms there has been a decline in the use of cash in recent years because of a significant growth in the use of bank media for the payment of wages and salaries and for consumers' expenditure.

### II. DEPOSIT MONEY

Cash accounted for 10 per cent. of  $M_2$  at mid-December 1983.  $M_2$  is a relatively new monetary aggregate, designed to measure the transactions balances available to the economy. A further 17 per cent. was held in the form of non-interest-bearing sight deposits with banks, whilst the remainder was on interest-bearing terms, but within one month of maturity, with banks or building societies, or in the National Savings Bank Ordinary Account.

Almost all individual transactions depend in some way on the services provided by the banking system. Altogether at end-1983 there were 594 recognised banks and licensed deposit-taking institutions operating in the United Kingdom together with five exempted banks and 206 building societies. It is, however, the ten London and four Scottish clearing banks,

together with the five clearing banks operating in Northern Ireland, that provide the basis for the domestic payment system. These banks play a major rôle in the provision of cash throughout the country and also handle the bulk of all cashless payments, although in recent years some building societies have begun to offer certain money transmission services to their investors, whilst depositors of the National Savings Bank Ordinary Account can also make regular payments from their accounts.

The nature of the payment system and the speed with which it is developing are dictated largely by the institutions themselves; the Government has no specific legal powers as such to regulate the system. With a population of 56 million, there were at the end of 1983 about 65 million accounts held at the banks, 15 million Ordinary Accounts with the National Savings Bank and 35 million accounts with the building societies.

### III. CASHLESS PAYMENTS

Over 4 billion cashless payments were made in 1983 for a total value of \$12,800 billion. Out of every 100 cashless payments made 61 were by bank cheque, 23 were giro credits (paper and electronic), 8 were by means of a credit card and 6 were direct debits. Interbank transfers (cheques and bankers' drafts) accounted for 86 per cent. of the total value of cashless payments, whilst other cheques accounted for a further 10 per cent.

The use of electronic giro credits and direct debits and of credit cards has increased sharply in recent years. Since 1978 the volumes of electronic giro payments and direct debits have grown, on average, by 19 per cent. and 14 per cent. per annum respectively: in contrast, the number of paper giro credits contracted in 1981 and 1982 and grew by only 3 per cent. in 1983, after increasing by an average of 7 1/2 per cent. per annum in 1979 and 1980. At end-1983 there were 15 3/4 million bank credit cards in issue as well as just over 1 million travel and entertainment charge cards and 4 3/4 million charge or budget cards issued by retailers. One adult in three now holds at least one such card, and since 1978 the number of card-based transactions has increased on average by over 23 per cent. per annum.

### IV. HANDLING OF CASHLESS PAYMENTS

Apart from the internal circuits for the handling and settling of transactions between accounts held with a single bank, the majority of paper-based payments in the economy need to be exchanged between clearing banks, through their membership of the Bankers' Clearing House in London or through the separate clearing arrangements in Scotland and Northern Ireland. The Bank of England is a member of the London Clearing House, and is the ultimate 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 debit items, and Credit Clearing for credit transfers. Items dealt with in the Town Clearing, for which a minimum value and other criteria are 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 1983 about 1.9 billion items were passed through the Clearing House, of which 1.7 billion were in the debit clearings. A bank which is not a member of the Clearing House has to have an agency arrangement with a member in order to gain access to the clearings; such facilities are not available in the Town Clearing.

The clearing banks have extensive computerised branch networks, which enable them to carry out intrabank transfers (including those of their correspondent banks) with the minimum use of paper. Interbank electronic debits and credits are exchanged through Bankers' Automated Clearing Services Ltd., which is owned by five of the London clearing banks. Banks in the United Kingdom and their sponsored customers all pass transactions through this automated clearing house: in 1983 it processed some 600 million items. Settlement for these transactions, and for items exchanged in the paper clearings, takes place daily by means of transfers between the clearing banks' accounts at the Bank of England.

For several years the English and Scottish clearing banks have been developing an electronic interbank payment system known as the Clearing House Automated Payment System (CHAPS). This additional clearing system, which became operational on 9th February 1984, enables each of the thirteen Settlement Banks to transmit guaranteed same-day sterling payments on its own behalf or its customers' to any other Settlement Bank or its customers, via British Telecom's Packet SwitchStream Service, and to settle its transactions electronically over its account at the Bank of England.

United Kingdom

A. Basic statistical data

Territorial area	:	244.1 thousand sq. kms.	
Population	:	56.1 million	(55.9)
Gross national product <sup>1</sup>	:	\$457 billion	
Per capita GNP	:	\$8,140	
Number of branch offices of deposit-taking institutions <sup>2</sup>	:	24,574	(21,795)
Inhabitants per office	:	2,283	(2,565)
Number of branch offices of non-bank institutions offering third-party payments	:	n.a.	
Inhabitants per office	:	n.a.	
Number of transferable deposit accounts:			
- at deposit-taking institutions <sup>3</sup>	:	115 million	
- at non-bank institutions offering third-party payments	:	n.a.	
		<u>Absolute</u>	<u>Per capita</u>
		<u>(\$ billion)</u>	<u>(\$)</u>
Total money supply (£M <sub>3</sub> ) <sup>4</sup>		148	33
			(32)
Currency		17	4
			(5.6)
Transferable deposits <sup>5</sup>		131	29
			(26.5)

1 GNP at market prices.

2 "Deposit-taking institutions" comprise recognised banks, licensed deposit-taking institutions, exempted banks and building societies. The 22,300 post offices, through which National Savings Bank and some National Girobank facilities are offered, have been excluded.

3 Estimate for sterling retail accounts. Figure includes estimates for accounts with National Girobank and National Savings Bank Ordinary Account, and for ordinary share and deposit accounts with building societies.

4 Includes: (a) notes and coin with general public;  
(b) sight and time deposits of UK private sector with members of the monetary sector in sterling.

5 The institutional coverage of this item differs from that of the sterling retail accounts shown above and in Table B.

B. Payment system structure

Categories of institution / Types of account	Number of accounts <sup>1</sup> (millions)	Share of market (%)	Value of accounts <sup>1</sup> (\$ billion)	Share of market (%)
<u>National Savings Bank</u> <sup>2</sup> 22,300 agency offices Sight Time	15	13	3	2
<u>Clearing banks</u> <sup>3</sup> 18, with 15,400 branch offices (excluding post offices) Sight Time	60	52	73	45
<u>Other recognised banks</u> 275, with 760 branch offices Sight Time	5	4	5	3
<u>Licensed deposit-takers</u> 304, with 1,770 branch offices Sight Time				
<u>Building societies</u> 206, with 6,644 branch offices <sup>4</sup> Sight Time	35 (26)	31 (26)	83	50 (41)
<u>BANK OF ENGLAND</u>				
7 branch offices	- 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 Sterling retail accounts.
- 2 National Savings Bank Ordinary Accounts only. National Savings Bank facilities are available at post offices on an agency basis.
- 3 Comprises the nine banks other than the Bank of England which are members of the London Bankers' Clearing House, the four Scottish clearing banks and the five clearing banks operating in Northern Ireland. The number of branch offices excludes post offices at which some National Girobank services are provided on an agency basis.
- 4 In addition to their branch offices, the building societies have some 22,000 agents (e.g. solicitors, estate agents) where depositors can pay into or withdraw from their accounts. One society has established an agency arrangement with the Post Office.

C. Relative importance of payment instruments

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions <sup>1</sup>	2,494 (2,200) <sup>2</sup>	61 (69)	1,216	10 (19)
Postal cheques issued	69 (170)	2 (5)	less than 1	less than 1 (id)
Payments by credit card <sup>3</sup>	313 (110)	8 (4)	12	less than 1 (id)
Paper-based giro payments	474 (300)	12 (9)	273	2 (2)
Paperless <sup>4</sup> giro payments	443 (248)	11 (8)	165	1 (2)
Direct debits	254 (131)	6 (4)	71	1 (1)
Interbank transfers (cheques and bankers' drafts)	6 (4)	less than 1 (id)	11,028	86 (77)
TOTAL <sup>5</sup>	4,053 <sup>6</sup> (3,163)	100	12,765	100
<u>CASH PAYMENTS</u> (estimate)	62,000 <sup>7</sup> (50,000)			

- 1 Excluding an estimated 440 million cashed cheques, valued at \$35 billion.
- 2 Including 400 million cashed cheques.
- 3 Excluding transactions by holders of 4.7 million charge and budget cards issued by retailers, but including transactions by holders of just over 1 million travel and entertainment cards.
- 4 Including standing orders.
- 5 Excluding government payments in cash from post offices against order-book foils.
- 6 Number of cashless payments per inhabitant = 72 (57).
- 7 Including 50,000 million cash payments of less than fl.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u> <sup>1</sup>		
Number of machines installed <sup>2</sup>	2,189	5,653
Inhabitants per machine	24,852	9,659
Number of cards issued (in millions) <sup>3</sup>	2.4	12.3
Number of transactions per card	11	19
Value of withdrawals per card during the year (in \$)	290	780
Number of shared networks	0	3
Percentage of ATMs in shared networks	.	47
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed	27 <sup>4</sup>	
Inhabitants per terminal		
Number of cards issued (in thousands)		
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs	6,770	
- EFT POS terminals	100 <sup>5</sup>	

1 Details relate to Great Britain only.

2 Including, for end-1983, 127 machines installed by building societies.

3 Excludes credit cards and travel and entertainment cards validated for use in ATMs.

4 25 in Scotland and 2 in the south of England.

5 In different parts of the country.



## 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 by the twelve Federal Reserve banks and distributed to depository institutions (commercial banks, mutual savings banks, savings and loan associations and credit unions), 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 Bureau of Engraving and Printing and coins are produced by the United States Mint, both a part of the Department of the Treasury. Twelve denominations of bank-notes have been authorised since 1862: \$1, 2, 5, 10, 20, 50, 100, 500, 1,000, 5,000, 10,000 and 100,000. However, notes of \$2, 500 and 1,000 are currently not printed and notes of \$5,000, 10,000 and 100,000 are no longer used. Coins are issued in six denominations: 1, 5, 10, 25 and 50 cents, and \$1. At 31st December 1983 the currency in circulation - outside the Treasury Department, the Federal Reserve System and the vaults of commercial banks and other depository institutions - amounted to \$148.0 billion, of which approximately 92 per cent. was accounted for by notes and 8 per cent. by coins.

### II. DEPOSIT MONEY

Over 65 per cent. of the money used for 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. In addition, other interest-bearing deposit accounts offered by commercial banks, savings and loan associations, mutual savings banks and credit unions are increasingly used by consumers for payment transactions. Notes and coins satisfy most of the public's remaining payment needs. The transfer of demand deposit balances by cheque is the prevailing method used for paying bills, disbursing wages and salaries and settling business transactions. In 1983 debits to demand deposit accounts of individuals, partnerships, corporations and state and local governments totalled \$129,200 billion and accounted for over 98 per cent. of all money payments. Most of these payments were effected by cheque. However, electronic payments - wire transfer of funds and automated clearing house (ACH) transfers - are increasing in importance for both interbank and consumer payments.

### III. CASHLESS PAYMENTS

Most cashless payments are made by cheque; in 1983 about 38 billion cheques were written in the United States. Because neither cash nor cheques are suited to every type of payment transaction, several intermediate methods of payment have been adopted. For example, credit cards and travellers' cheques 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 consumers to avail themselves of credit when purchases are made. Over 70 per cent. of US households possess credit cards of some type. At the end of 1983 there were about 600 million credit card accounts outstanding, 115 million of which were accounts of the two major bank card issuers. Money orders, cashiers' cheques and similar instruments are used infrequently as substitutes for cheques mainly by persons who do not have accounts with depository institutions. In contrast to many European countries, the postal service in the United States plays a minor rôle in providing payment services (it sells money orders).

The use of electronic funds transfers as a substitute for cheques, cash or other means of payment is still in an early but growing stage. However, it is expected that electronic funds transfers will grow rapidly in the near future. A recent study predicts a decline in the number of cheques written by individuals beginning in 1989 and forecasts that roughly half of the nation's personal payments from chequing accounts will be made using electronic substitutes for cheques by 1994.\*

Several systems offer the potential for expanding the use of electronic payments. Wire transfer of funds is a mature service that is expanding, the ACH offers credit and debit transfer services, shared ATM networks are becoming more widespread, and POS and home banking systems are undergoing intensive development.

### IV. HANDLING OF CASHLESS PAYMENTS

The decentralised structure of the commercial banking system and the nation's size have exerted a strong influence on the procedures used for clearing deposit transfers. There are 14,759 commercial banks in the United States, with 40,349 branch offices. In addition, there are 23,460 thrift institutions (savings and loan associations, mutual savings banks and credit unions), with over 46,000 offices. This diversity, among other reasons, led Congress to assign a cheque clearing responsibility to the Federal Reserve in 1913. The Federal Reserve has also become involved in the two other primary methods for exchanging cashless payments - wire transfer of funds and the ACH.

It is estimated that 30 per cent. of all cheques written are deposited in the depository institution on which they are drawn, 35 per

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\* "Displacing the Check", Economic Review (Federal Reserve Bank of Atlanta), August 1983.

cent. are cleared through Federal Reserve facilities and the remaining 35 per cent. are exchanged through bank-operated clearing houses or cleared through correspondent banks. In a cheque clearing house, at a designated time each day, members exchange cheques drawn upon each participating institution. The value of the cheques presented to each institution is recorded, as well as the value of the cheques that each institution presents to other members of the clearing house. After all the cheques have been exchanged, each member's net debit or credit position is calculated. When all entries among the participants are in balance, that is, the sum of the debits and credits equals zero, the clearing house presents the settlement information to the local Federal Reserve office. The Federal Reserve then posts each institution's net debit or credit to its account. Millions of cheques are exchanged at local clearing houses every day, and all transactions are settled through an entry in each participating institution's account.

Correspondent banks, which are banks that provide services to other banks, also play a major rôle in the clearing of interbank cheques in the United States. Correspondent banks clear millions of cheques every day on behalf of smaller depository institutions by sending them to local clearing houses, the Federal Reserve or another correspondent bank. Cheques cleared by correspondent banks are settled through accounts maintained at the correspondent or at the Federal Reserve.

At present, the Federal Reserve maintains forty-eight cheque clearing centres that process an average of 55 million cheques each working day. The centres clear cheques and cheque-like instruments deposited by depository institutions and drawn on any other depository institution in the United States. On receiving cheques for collection, including those in package form, the Federal Reserve credits the account of the depositing institution on the basis of an availability schedule, and charges the account of the institutions on which the cheques are drawn on the day the cheques are presented to these institutions. The majority of cheques are collected on the day they are presented or within one or two days thereafter.

There are three major wire funds transfer services available to depository institutions: the Federal Reserve's fund transfer system (FedWire); the Clearing House Interbank Payments System (CHIPS), operated by the New York City Clearing House Association; and the Payment and Telecommunications Service Corporation (BankWire and CashWire). FedWire is used for large dollar interbank payments, such as the sale of reserve account balances, as well as for the transfer of bank and corporate balances. It is also used to transfer Treasury and Federal agency securities. During 1983 FedWire handled 38 million funds transfers valued at \$84,000 billion and about 5.5 million security transfers with a value of about \$35,000 billion. CHIPS, which processes most international payments in the United States, handled 19 million transactions valued at \$57,000 billion in 1983. BankWire, which serves 180 commercial banks, handled about 1.8 million payment messages resulting in funds transfers of about \$8,000 billion on correspondent accounts.

Thirty-three Federal Reserve offices currently process ACH transactions. In addition, there are three privately operated ACHs, the New York Automated Clearing House Association and two local ACHs - Arizona and Hawaii

-- affiliated to the Cal-Western Automated Clearing House Association.\* In 1983 approximately 397 million ACH transfers were processed. Since its inception in 1973, the ACH has been oriented towards consumer payments, such as salaries, insurance premiums and mortgage payments. However, in 1983 corporations began to use the ACH mechanism for trade payments.

By the end of 1983 there were 48,118 ATMs in the United States, over 40 per cent. of which were part of a shared network. These ATMs handled 3.75 billion transactions (excluding balance inquiries), including \$105.5 billion in withdrawals and \$213.9 billion in deposits. Most ATMs offer cash withdrawals, deposits, transfers between accounts, cash advances from bank credit card accounts, bill payments and balance inquiry services.

While there was still only a small number of direct debit POS systems in the United States at the end of 1983, with about 800 terminals in operation, it is apparent from the number of projects planned for 1984 that POS systems will expand rapidly. This is particularly true of the large oil companies, convenience grocery stores, supermarkets and large retailers. While POS will be an added service for supermarkets and convenience grocery stores, the objective of the debit card is to replace cash or cheques. When used by oil companies and retailers, a debit card will also to some extent substitute for credit cards.

In 1983 over 5 billion credit card transactions of all types valued at over \$208 billion were handled. While card processors' and funds transfer networks' internal operations differ from those of a cheque clearing house, the results of their operations are the same - the determination of each participant's net position and the posting of a corresponding entry to the account of the depository institution at a correspondent bank or the Federal Reserve.

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\* The Cal-Western Automated Clearing House Association draws its members from the States of Arizona, California, Hawaii and Nevada.

United States

A. Basic statistical data<sup>1</sup>

Territorial area	:	9.1 million sq. kms.	
Population	:	235.6 million	(218.4)
Gross national product	:	\$3,310.5 billion	
Per capita GNP	:	\$14,047.0	
Number of offices of deposit-taking institutions	:	102,000 <sup>2</sup>	(90,215)
Inhabitants per office	:	2,310	(2,398)
Number of offices of non-bank institutions offering third-party payments	:	.	
Inhabitants per office	:	.	
Number of transferable deposit accounts:			
- at deposit-taking institutions	:	83.2 million	
- at non-bank institutions offering third-party payments	:	12.3 million <sup>3</sup>	

	<u>Absolute</u> (\$ billion)	<u>Per capita</u> (\$)	<u>Percentage</u> <u>of GNP</u>
Total money supply (M <sub>3</sub> ) <sup>4</sup>	2,495.4	10,591.7	75.4 (67.9)
Currency	140.3	595.5	4.2 (4.4)
Sight deposits	1,056.7	4,485.0	31.9 (35.9)
Time deposits	1,024.8	4,349.7	30.9 (27.6)

1 As of June 1983; not seasonally adjusted. Federal Reserve Statistical Release H6.

2 Excludes non-bank deposit-taking offices, but includes head offices of deposit-taking institutions.

3 Money-market mutual fund (MMMF) data only.

4 See following page.

Footnote 3 to Table A

Derivation of US M<sub>3</sub> for June and December 1983

(in billions of US dollars)\*

	<u>June 1983</u>	<u>December 1983</u>
M <sub>1</sub>	<u>508.3</u>	<u>535.3</u>
<u>Composed of:</u>		
Currency	140.3	148.0
Travellers' cheques	4.9	4.6
Demand deposits	242.1	251.4
Other chequable deposits	121.0	130.7
 M <sub>2</sub>	 <u>2,114.1</u>	 <u>2,191.3</u>
<u>Composed of:</u>		
M <sub>1</sub>	508.3	535.3
Overnight Euro-dollars and RPs	56.0	56.1
Money-market mutual funds (general purpose and broker dealer only)	139.7	138.0
Money-market deposit accounts	367.3	372.4
Savings	326.3	308.5
Small time deposits	723.9	788.6
 M <sub>3</sub>	 <u>2,495.4</u>	 <u>2,706.8</u>
<u>Composed of:</u>		
M <sub>2</sub>	2,114.1	2,196.1
Large time deposits (over \$100,000)	301.0	329.6
Term RPs and Euro-dollars	134.3	148.4
Money-market funds (institutions only)	39.2	40.2

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\* Not seasonally adjusted.

B. Payment system structure<sup>1</sup>

Categories of institution / Types of account	Number of accounts (millions)	Share of market (%)	Value of accounts (\$ billion)	Share of market (%)
<u>Postal Service</u> <sup>2</sup> 39,445 offices	0		0	
<u>Commercial banks</u> 55,108 offices				
<u>Sight deposits</u>	171.2	52.3	689.3	33.1
Net demand (in M <sub>1</sub> )	83.2		242.1	
Other chequable (in M <sub>1</sub> )	.		90.7	
Savings	88.0		141.5	
MMDA (in M <sub>2</sub> )	.		215.0	
<u>Time deposits</u>	.		547.2	26.3
Small			321.0	
Large			226.2	
<u>Thrift institutions</u> 46,550 offices				
424 mutual savings banks, with 2,870 branches				
3,833 savings <sup>4</sup> and loan associations, with 20,220 branches				
19,203 credit unions				
<u>Sight deposits</u> <sup>5</sup>	150.2	46.6	367.4	17.7
Other chequable (in M <sub>1</sub> )	1.1		30.3	
Savings (in M <sub>2</sub> )	149.1		152.3	
MMDA (in M <sub>2</sub> ) <sup>2</sup>	.		184.8	
<u>Time deposits</u>	.	.	477.6	22.9
Small (in M <sub>2</sub> )	.		402.8	
Large (in M <sub>3</sub> )	.		74.8	
<u>FEDERAL RESERVE SYSTEM</u> 49 offices <sup>6</sup>				
		- is government regulator of the payment mechanism;		
		- operates cheque and ACH clearing and settlement systems;		
		- serves only depository institutions, not the public;		
		- acts as Federal Government banker.		

1 As of June 1983; not seasonally adjusted. Federal Reserve Statistical Release H6.

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

3 Money-market deposit accounts.

4 Data only for institutions insured by the FSLIC.

5 Includes NOW, super NOW and share drafts.

6 12 Federal Reserve banks, 25 branches, 11 off-site regional cheque-processing centres (RCPCs) and 1 non-processing facility.

C. Relative importance of payment instruments

Instruments	Volume of transactions (millions)	Percentage of total	Value of transactions (\$ billion)	Percentage of total
<u>CASHLESS PAYMENTS</u>				
Cheques issued by deposit-taking institutions	40,000 <sup>1</sup>	98.6	36,000 <sup>1,2</sup>	27.9
Postal cheques issued <sup>3</sup>	115	0.3	8	less than 1
Payments by credit card <sup>4</sup>	2,900	7.2	208	less than 1
Paper-based giro payments		n.a.		
Paperless <sup>5</sup> giro payments	397	1.0	888	0.7
Direct debits	.	less than 1	.	less than 1
Interbank and corporate transfers <sup>6</sup>	40	less than 1	89,700	69.4
TOTAL	40,552 <sup>7</sup>	100	129,200	100
<u>CASH PAYMENTS</u> <sup>8</sup>	112,000	.	2,800	.

- 1 Includes payments on credit card accounts.
- 2 Does not include wire transfer value as in previous edition.
- 3 US postal money orders only. 4 Included in cheque statistics.
- 5 Statistics are total ACH debit and credit payments.
- 6 The number and value of actual interbank transfers by cheque is unknown, but it is believed to be very small. The figure cited is for FedWire (38 million transfers valued at \$84,000 billion), which constitutes almost all of the domestic US interbank volume plus domestic CHIPS transfers, which is estimated at 10 per cent. of CHIPS totals of 19 million transfers valued at \$57,000 billion.
- 7 Number of cashless payments per inhabitant = 163 (159).
- 8 David B. Humphrey, The U.S. Payments System: Costs, Pricing, Competition and Risk, Monograph Series in Finance and Economics, New York University, 1984.

D. Cash dispensers, ATMs and EFT POS terminals

	end-1978	end-1983
<u>Cash dispensers and ATMs</u>		
Number of machines installed <sup>*</sup>	9,750	48,118
Inhabitants per machine	22,513	4,896
Number of cards issued (in millions)	.	80 to 100
Number of transactions per card	49	55
Value of withdrawals per card during the year (in \$)	.	.
Number of shared networks	10	250
Percentage of ATMs in shared networks	negligible	40
	end-1983	
<u>EFT POS terminals</u>		
Number of terminals installed		800
Inhabitants per terminal		294,500
Number of cards issued (in thousands)		.
	end-1984	
Number of terminals planned for end-1984:		
- cash dispensers and ATMs		60,000
- EFT POS terminals		6,000

\* Source: Linda Fenner Zimmer, Payments Services Correspondent (Marlborough, Connecticut) 1984.

