Practical issues arising from the € euro

June 2000

Bank of England

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Cartoons by Basil Hone

INTRODUCTION AND SUMMARY

1 This is the thirteenth edition of *Practical Issues*, and the third since the euro was introduced at the beginning of last year. Whereas the editions before the launch were designed to help those preparing to use the euro, the subsequent editions are designed to provide a London perspective on the development of euro-denominated financial markets, financial services and the supporting financial infrastructure, all of which are continuing to evolve rapidly. The planning and preparation for possible future UK entry are also covered. We deliberately do not cover economic aspects of the euro, including the development of the economies of the euro area, or Member States' macroeconomic and structural policies, but confine our scope to practical issues.

Euro markets (Chapter 1)

2 *Eurosystem monetary policy operations* In general, the Eurosystem operational framework to implement monetary policy is widely considered to have functioned well. However, two technical issues in particular are still under discussion in the market place and at the ECB. First, the extent of overbidding by banks at the ECB's weekly fixed-rate tenders has led to a risk that banks cannot cover their bids with sufficient collateral; and uncertainty about the actual allotment ratio has made it difficult for banks to know how much to bid to cover their genuine needs. There is a partially-related question whether the ECB should publish its forecasts of the overall liquidity situation in the euro area, to help market participants in their liquidity management. Second, there is a question in the medium term whether the lists of eligible collateral in the Eurosystem should be rationalised into a single common list of only marketable, high-quality paper.

3 *Money market* An integrated unsecured euro money market has already developed: virtually identical short-term market rates are observed in both those financial centres within the euro area and outside, including London. There are still forces inhibiting the development of a cross-border repo market, but steps are being taken to address these. The EONIA swaps market is flourishing. And over 97% of EURIBOR futures contracts on the three main futures exchanges in Europe are now traded on LIFFE.

4 *Foreign exchange market* The euro has continued this year to depreciate in the foreign exchange market against other major currencies. This further euro weakness is puzzling and no wholly convincing explanation has yet been put forward. London market firms have offered a number of *ex post* rationalisations. However, a very considerable consensus has developed that the euro is currently significantly undervalued in relation to economic fundamentals. And despite the recent attention focused on euro weakness, there have been a number of quite recent historical periods of much sharper movement in the dollar against the Deutsche mark and the yen, which were subsequently largely or wholly reversed.

5 *Debt capital markets* Liquidity, as opposed to credit, considerations have become the dominant factor differentiating sovereign issuers within the euro area. Smaller euro-area sovereign issuers are seeking ways to broaden their appeal to investors beyond their national

boundaries. Non-financial company bond issuance in euro has increased sharply, though from a low base, and remains a much lower proportion of company financing in the euro area than bank borrowing.

6 *Equity capital markets* The gross supply of new equity by euro-area companies has remained historically high, though there are limits to the usefulness of gross figures, and net figures are not available. The London Stock Exchange has continued to have the largest share of foreign equity trading in Europe. Much the largest share of turnover in European equity index futures consists of futures using euro-area and continental European indices.

Euro financial services (Chapter 2)

7 *Banking consolidation* The financial landscape in Europe is being transformed by banking consolidation, with the launch of the euro acting as a catalyst, though not the only cause. There is a variety of reasons for the increasing number of large-scale banking mergers in Europe. Most have so far been domestic rather than cross-border, though this may change. It seems likely that the growth in internet banking will complement, rather than replace, further consolidation in future. Consolidation and the growth of internet banking raise new issues for supervisory authorities. There is broad agreement that the institutional structure of financial supervision in Europe does not need to change at present, though cross-border co-operation between supervisors needs to be enhanced.

8 *Fund management* By eliminating exchange risk within the euro area, the introduction of the euro has created deeper and more liquid markets in which to invest, and redefined the concept of 'domestic' investment for clients in the euro area, from national markets to the euro area as a whole. This has implications both for the benchmark indices against which fund managers' investment performance is measured, and for the weighting of the investment portfolios they manage on their clients' behalf. In the longer term, the requirement for fund management services across Europe is expected to grow substantially, in response to increased personal wealth and demand for private sector pension provision. Fund managers based in the UK offer a variety of approaches about how best to meet the growing demand, and the potential competition for mandates.

Euro infrastructure (Chapter 3)

9 *Payment systems* There is a consensus among major participants that euro payment systems are functioning well. Liquidity management is improving generally, and problems in TARGET are reducing. But when there are problems in TARGET, information can still be patchy; management of collateral cross-border is still difficult; guidelines and compensation agreements need wider dissemination; contingency arrangements require additional work; and there is further scope for enabling straight-through processing. The timing and direction of new payment developments are important to banks when making their own payment management and investment decisions. A number of major changes are due to be completed by the final quarter of 2001. There is a risk of project bunching in the intervening period.

10 *Trading, clearing and settlement systems* Users, including the major market firms based in London, are contributing fully to the debate over the evolving market structure (eg through

the European Securities Forum). There have been a number of significant new developments this year involving consolidation of existing systems and the launch of new initiatives. The proposed merger between the London Stock Exchange and Deutsche Börse, which remains subject to shareholder and regulatory approval, is a key step in the consolidation of the European exchange infrastructure, and likely to encourage further consolidation of clearing and settlement services. The parties consider that a full merger is likely to be more effective than an alliance.

11 *Regulatory and legal issues* Progress in implementing the *Financial Services Action Plan* will be helpful in removing the remaining barriers to the Single Market. For example, there is still legal uncertainty about the cross-border use of collateral.

Preparations for possible UK entry (Chapter 4)

12 *The Second Outline National Changeover Plan* The new Plan, published in March, reiterates that Government policy on the single currency remains unchanged. A key focus on this occasion is planning in the public sector. The Bank will continue to take the lead in co-ordinating, where necessary, preparations in the City.

13 *Planning in the City* Since January, the Bank has made available on its website a Q&A of technical wholesale market issues. Preparatory work is being organised under the auspices of the City Euro Group, which the Bank chairs. The main technical issues currently under discussion relate to: interconnections between wholesale market and retail financial preparations; CRESTCo's plans for the changeover; and fund management, and insurance, preparations. In addition, the Bank will continue its own internal preparations.

14 *The changeover experience in first-wave countries* The Bank intends to continue learning as much as possible about the changeover experience of financial institutions in the euro area. The major issues currently under discussion in the euro area include: extending the acceptance and use of the euro beyond the financial markets into the wider euro-area community, where there has not been much euro use to date; and planning the end of the transition, including the changeover of notes and coin, at the end of 2001.

15 *EMU preparations in Greece, Denmark and Sweden* Greece aims to join EMU on 1 January 2001, and to introduce euro notes and coin at the same time as the first wave on 1 January 2002. Denmark is proposing to hold a referendum on joining EMU on 28 September. Sweden's policy is now best characterised as 'yes-but-later'.

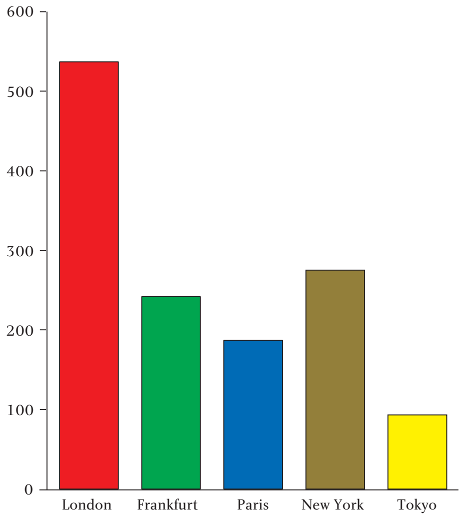
Accession countries' exchange rates in transition (Chapter 5)

16 Accession countries will have to make difficult exchange rate policy choices in transition to EMU.

17 *Practical Issues* is available on the Bank's website (www.bankofengland.co.uk), and copies may be obtained from the Bank's Public Enquiries Group (tel no: 020-7601 4012; fax no: 020-7601 5460). Comments are also welcome, and should be addressed to John Townend, Director for Europe, Bank of England, Threadneedle Street, London EC2R 8AH (fax: 020-7601 5016 or e-mail: john.townend@bankofengland.co.uk).

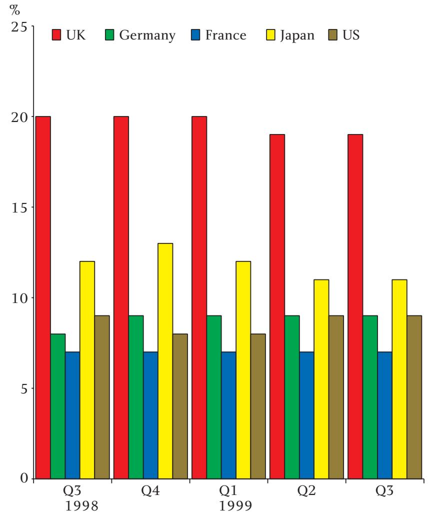
LONDON AS AN INTERNATIONAL FINANCIAL CENTRE

NUMBER OF FOREIGN BANKING INSTITUTIONS



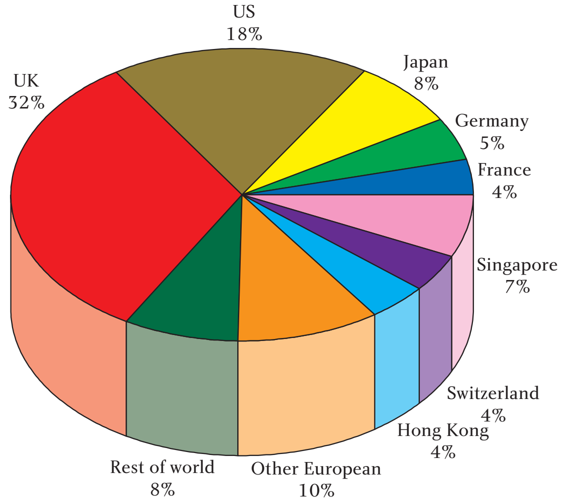
Source: individual country supervisory authorities (1999)

MARKET SHARE OF CROSS-BORDER LENDING



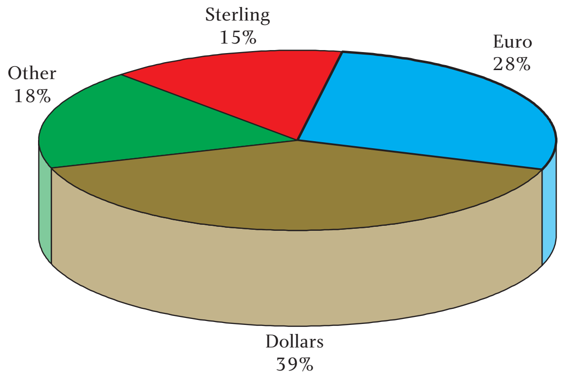
Source: Bank for International Settlements, Quarterly Review (International Banking Market Developments)

MARKET SHARE OF GLOBAL FOREIGN EXCHANGE TURNOVER



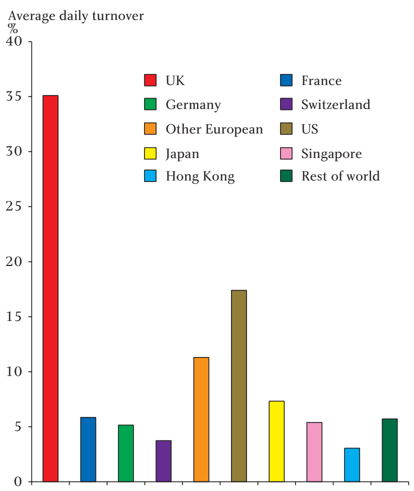
Source: Bank for International Settlements, Triennial Survey (April 1998)

UK BANKS' BUSINESS WITH NON-RESIDENTS



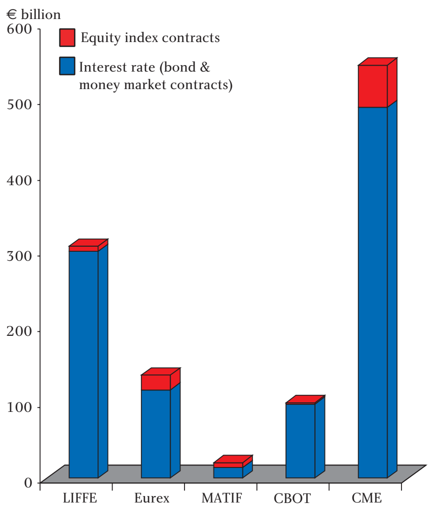
Source: Bank of England (end-March 2000)

SELECTED OTC DERIVATIVES MARKET ACTIVITY: COUNTRY SHARES



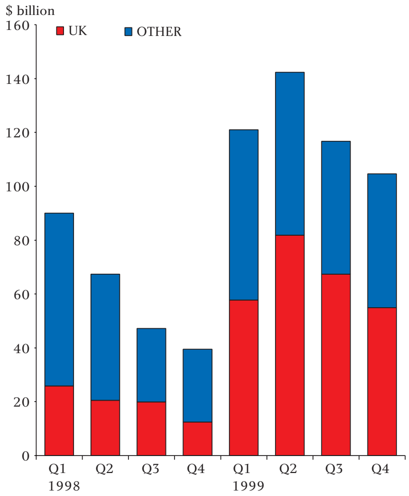
Source: Bank for International Settlements, Triennial Survey (April 1998)

AVERAGE DAILY NOTIONAL VALUE OF TURNOVER OF INTEREST RATE & EQUITY INDEX DERIVATIVES CONTRACTS



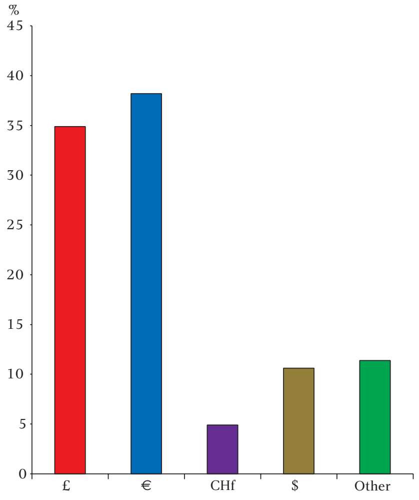
Note: excludes commodities contracts and contracts on individual equity options
Source: Bank of England (November 1999-March 2000 inclusive)

EURO-DENOMINATED EUROBOND ISSUANCE



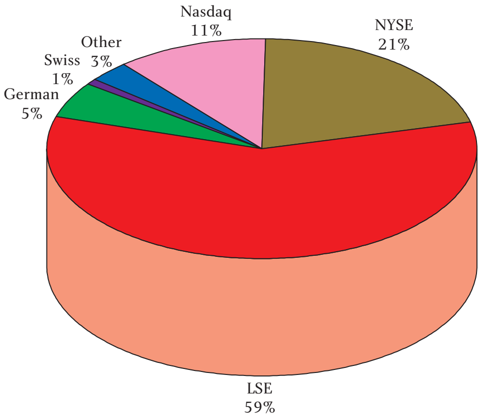
Note: approximation based on bookrunner location
Source: Capital DATA Bondware

VALUE OF EQUITY TRADING ON LONDON STOCK EXCHANGE BY CURRENCY



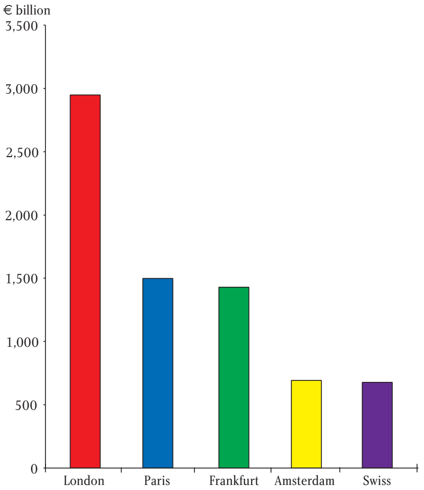
Source: London Stock Exchange (1999 Q1 - Q4)

MARKET SHARE OF FOREIGN EQUITY TURNOVER ON EXCHANGES



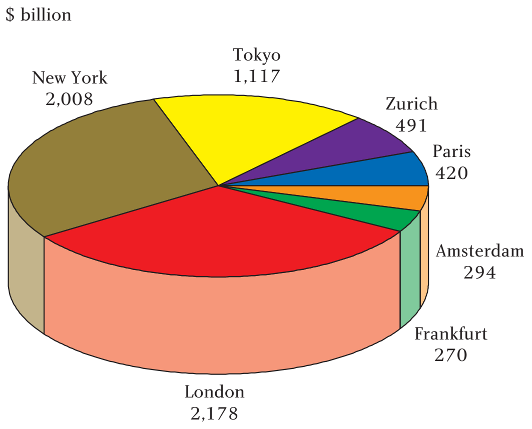
Source: London Stock Exchange (end-1999)

MARKET CAPITALISATION ON SELECTED EUROPEAN EXCHANGES



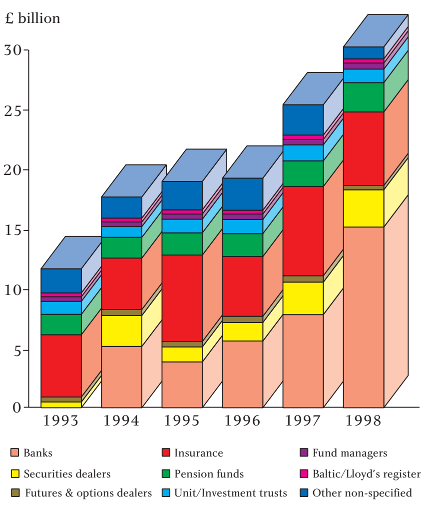
Source: Federation of European Stock Exchanges (end-1999)

HOLDINGS OF INSTITUTIONAL EQUITIES IN LEADING FINANCIAL CENTRES



Source: Thomson Financial 'International Target Cities Report' (1998)

NET OVERSEAS EARNINGS OF UK FINANCIAL INSTITUTIONS



Source: British Invisibles' 'City Table'

SOME INTERNET ADDRESSES

UK institutions	
Bank of England	www.bankofengland.co.uk
Bank of England: euro	www.bankofengland.co.uk/euro.htm
Bank of England: *Practical Issues*	www.bankofengland.co.uk/euro/piq.htm
Bank of England: practical preparations Q&A	www.bankofengland.co.uk/euro/qanda.htm
HM Treasury	www.hm-treasury.gov.uk
HM Treasury: euro	www.euro.gov.uk
The Financial Services Authority (FSA)	www.fsa.gov.uk
Investment Management Regulatory Organisation (IMRO)	www.imro.co.uk
The Securities and Futures Authority (SFA)	www.sfa.org.uk
Corporation of London	www.cityoflondon.gov.uk
European Union institutions	
European institutions (general)	europa.eu.int/index.htm
European Commission	europa.eu.int/comm/index_en.htm
European Parliament	www.europarl.eu.int
Economic and Financial Committee	europa.eu.int/comm/economy_finance/
First-wave Member States' euro information	
Austria	www.bmwa.gv.at
Belgium	euro.fgov.be
Finland	www.bof.fi
France	www.finances.gouv.fr/euro
Germany	www.bundesfinanzministerium.de
Ireland	www.irlgov.ie/finance
Italy	www.tesoro.it
Luxembourg	www.etat.lu/FI/
The Netherlands	www.euro.nl or www.minfin.nl
Portugal	www.dgep.pt
Spain	www.euro.meh.es
Central banks	
Banca d'Italia	www.bancaditalia.it
Banco de España	www.bde.es
Banco de Portugal	www.bportugal.pt
Banque Centrale du Luxembourg	www.bcl.lu
Banque de France	www.banque-france.fr
Banque Nationale de Belgique	www.bnb.be
Danmarks Nationalbank	www.nationalbanken.dk
De Nederlandsche Bank	www.dnb.nl
Deutsche Bundesbank	www.bundesbank.de
European Central Bank (ECB)	www.ecb.int
Central Bank of Ireland	www.centralbank.ie
Bank of Greece	www.bankofgreece.gr

Oesterreichische Nationalbank	www.oenb.co.at
Suomen Pankki	www.bof.fi
Sveriges Riksbank	www.riksbank.se
Swiss National Bank	www.snb.ch

Exchanges

Amsterdam Exchanges	www.aex.nl
Athens Stock Exchange	www.ase.gr
Brussels Exchanges	www.bxs.be and www.bourse.be
Copenhagen Stock Exchange	www.xcse.dk
Deutsche Börse	www.exchange.de
Eurex	www.eurexchange.com
Helsinki Exchanges	www.hex.fi
Irish Stock Exchange	www.ise.ie
Italian Stock Exchange	www.borsaitalia.it
LIFFE	www.liffe.com
Lisbon Stock Exchange	www.bvl.pt
London Stock Exchange	www.londonstockexchange.co.uk
Luxembourg Stock Exchange	www.bourse.lu
MATIF	www.matif.fr
Madrid Stock Exchange	www.bolsamadrid.es
MEFF	www.meff.es
Paris Stock Exchange	www.bourse-de-paris.fr
Stockholm Stock Exchange	www.xsse.se
Swiss Exchange	www.bourse.ch
Tradepoint	www.tradepoint.co.uk
Vienna Stock Exchange	www.wbag.at

Payments, clearing and settlement

Association for Payment Clearing Services (APACS)	www.apacs.org.uk
CHAPS Euro	www.apacs.org.uk/chapseuro.htm
Clearstream International (previously Cedelbank and DBC)	www.clearstream.net
CRESTCo	www.crestco.co.uk
CREST/SIS Settlement Network	www.thesettlementnetwork.com
EAF	www.eaf.de
EBA/EURO1	www.abe.org
Euroclear	www.euroclear.com
London Clearing House (LCH)	www.lch.co.uk
Sega/Intersettle	www.sega.ch
Sicovam	www.sicovam.com
S.W.I.F.T.	www.swift.com
SWX Swiss Exchange	www.swx.ch

Market associations

Association of British Insurers (ABI)	www.abi.org.uk
Association of Unit Trusts and Investment Funds (AUTIF)	www.investmentfunds.org.uk
British Bankers' Association (BBA)	www.bba.org.uk
Belgian Bankers' Association	www.abb-bvb.be/euro
EMX (AUTIF subsidiary, promoting electronic messaging)	www.emx.co.uk
European Banking Federation (EBF)	www.fbe.be
EBF information on EURIBOR	www.euribor.org
European Bond Commission	www.ukbc.org.uk
European Committee for Banking Standards (ECBS)	www.ecbs.org
European Securities Forum (formerly ESIUG)	www.esiug.com
Federation of European Stock Exchanges (FESE)	www.fese.be
Financial Information Services Division (FISD)	www.fisd.net
French Banking Association	www.afb.fr
FTSE International	www.ftse.com
Fund Managers' Association (FMA)	www.ifma.org.uk
Futures Industry Association (FIA)	www.fiafii.org
German Banking Association	www.bankenverband.de
Institute of Investment Management and Research (IIMR)	www.iimr.org.uk
International Securities Market Association (ISMA)	www.isma.co.uk
International Swaps and Derivatives Association (ISDA)	www.isda.org
Italian Banking Association	www.abi.it
Securities Industry Association	www.sia.com
Swiss Bankers' Association	www.swissplus.ch

Accounting

Fédération des Experts Comptables Européens (FEE)	www.euro.fee.be
International Accounting Standards Committee (IASC)	www.iasc.org.uk
Institute of Chartered Accountants in England and Wales (ICAEW)	www.icaew.co.uk

Information providers

Bloomberg	www.bloomberg.co.uk
Bridge Information Systems Telerate	www.bridge.com and www.telerate.com
Datastream/ICV	www.datastream.com
Financial Times Information	www.info.ft.com
Reuters	www.reuters.com
	www.ims.reuters.com/waverunner
Telekurs	www.telekurs-financial.com

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CHAPTER 1: THE EURO MARKETS

A MONETARY POLICY OPERATIONS OF THE EUROSYSTEM

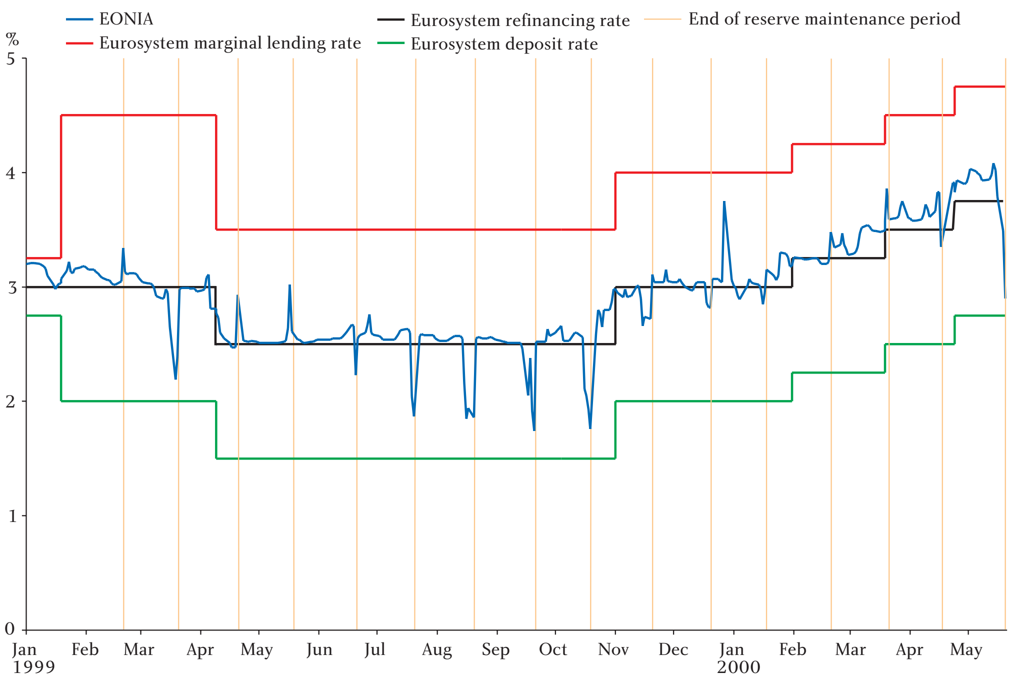
1 This section provides an overview of the monetary policy operations of the Eurosystem so far this year, and sets them in the context of trends observed in 1999. The Eurosystem comprises the European Central Bank (ECB) in Frankfurt and the 11 euro-area national central banks (NCBs).

Eurosystem operations during 2000

Official rates and short-term market interest rates

2 *Official rates* The ECB Governing Council announced 25 basis point increases in its main refinancing and standing facilities rates on three occasions this year: on 3 February; 16 March; and 27 April (Chart A). The rate on the main refinancing operations (MROs) now stands at 3.75%. The rates on the deposit and marginal lending facilities are now 2.75% and 4.75% respectively. The ECB's decisions were taken in the light of its concern about the upside risks to price stability in the euro area which, given the confident prospect of robust economic expansion, arose mainly from strong growth in monetary and credit aggregates, as well as from the depreciation in the euro exchange rate and higher oil prices.

EUROSYSTEM RATES AND EONIA **CHART A**



Source: ECB and EBF

3 *Overnight interest rates* Last year, very short-term interest rates, measured by the Euro Overnight Index Average (EONIA), remained generally close to the Eurosystem main refinancing rate (Chart A). The recent noteworthy developments are as follows.

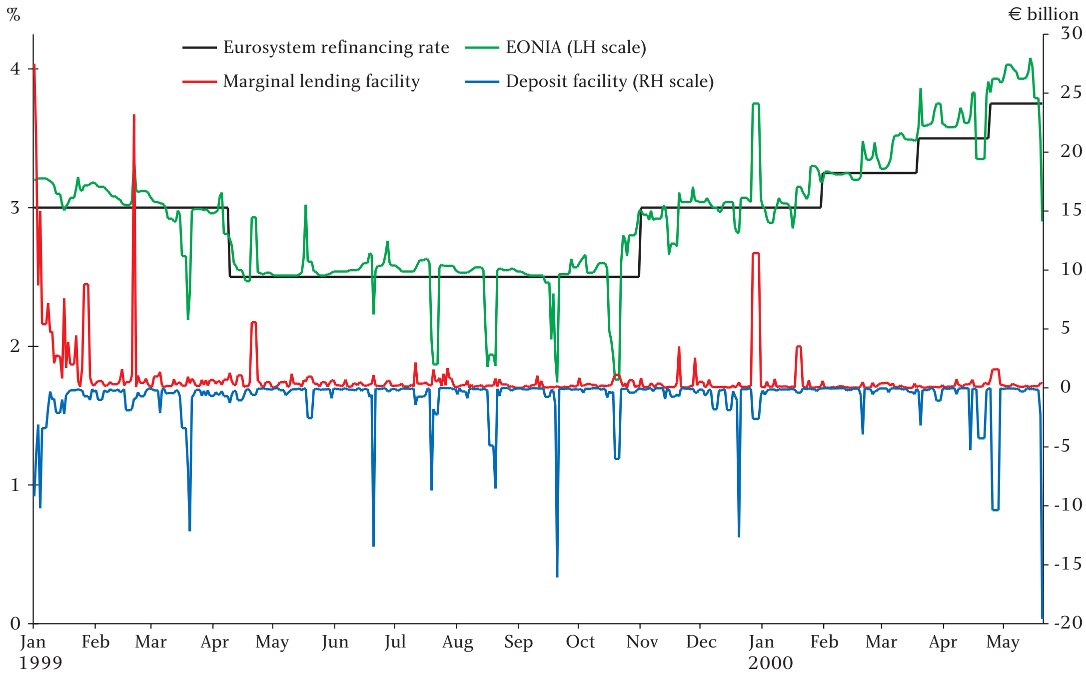
- Spikes in overnight rates, which typically occur at the end of reserve maintenance periods, have become smaller in absolute size since the start of this year, and have also occurred in both directions, in contrast to the second half of 1999 when they were mainly downwards. The smaller spikes may imply better liquidity management by credit institutions. This is also borne out by the smaller use of standing facilities at the end of reserve maintenance periods (Chart B). But the ECB has also probably helped through improved liquidity forecasting. In addition, the pattern of liquidity provision by the ECB appears to have altered this year. In the second half of 1999, the ECB appeared to provide ample liquidity at the end of maintenance periods (resulting in mainly downward spikes in EONIA), whereas liquidity management has been more neutral so far this year.
- Last year, as a result of the ECB's liquidity management, EONIA mostly lay just above the MRO rate. However this year, and especially since end-February, the positive differential between EONIA and the MRO rate has been markedly higher (17 basis points on average between late February and early May, against 1 basis point in 1999). This is hardly surprising given market expectations of higher official Eurosystem rates, which have tended to cause market rates to lead the actual increases. These interest rate expectations have been influenced in part by indications about the direction of future monetary policy decisions in ECB press releases and *Monthly Bulletins*. In addition, the ECB attributed the relatively high EONIA rates which developed during April to the long Easter weekend at the end of that particular maintenance period, which encouraged credit institutions to build up their average reserves relatively early.

4 Normally, spikes in EONIA and the use of standing facilities at the end of reserve maintenance periods go hand-in-hand: an upward movement of EONIA and recourse to the marginal lending facility both occur when the market is short of liquidity, whilst a downward movement in EONIA, together with use of the deposit facility, tend to develop when the market has abundant liquidity at the end of a maintenance period (Chart B). However, this has not been universally true. For example, on the last day of the maintenance period on 23 March, EONIA peaked at 3.86%, a margin of 36 basis points over the official MRO rate, despite a final liquidity surplus that day of €3 billion (placed on deposit under the standing facility). The ECB has attributed such exceptions to some remaining inefficiencies in the distribution of the available liquidity among market participants. This suggestion is further supported by the simultaneous use of both standing facilities on a significant scale towards the end of maintenance periods (Chart B).

Reserve requirements and standing facilities

5 *Reserve requirements* Credit institutions in the euro area are required to hold minimum reserve balances with NCBs (set at 2% of all deposits and debt issued with a maturity of less than two years, excluding repos and interbank liabilities, but with a *de minimis* threshold applied). The requirement must be met on average during each maintenance period, which runs from the 24th of one calendar month to the 23rd of the next. For the latest period, ending on 23 May, the requirement for the system as a whole amounted to €111.5 billion. Aggregate financial sector data indicate that credit institutions make heavy use of the flexibility provided by averaging (Chart C). Actual daily reserves have fluctuated this year between €90 and €125 billion, with peaks up to €135 billion, and troughs down to

SPIKES IN OVERNIGHT RATES AND USE OF STANDING FACILITIES — CHART B



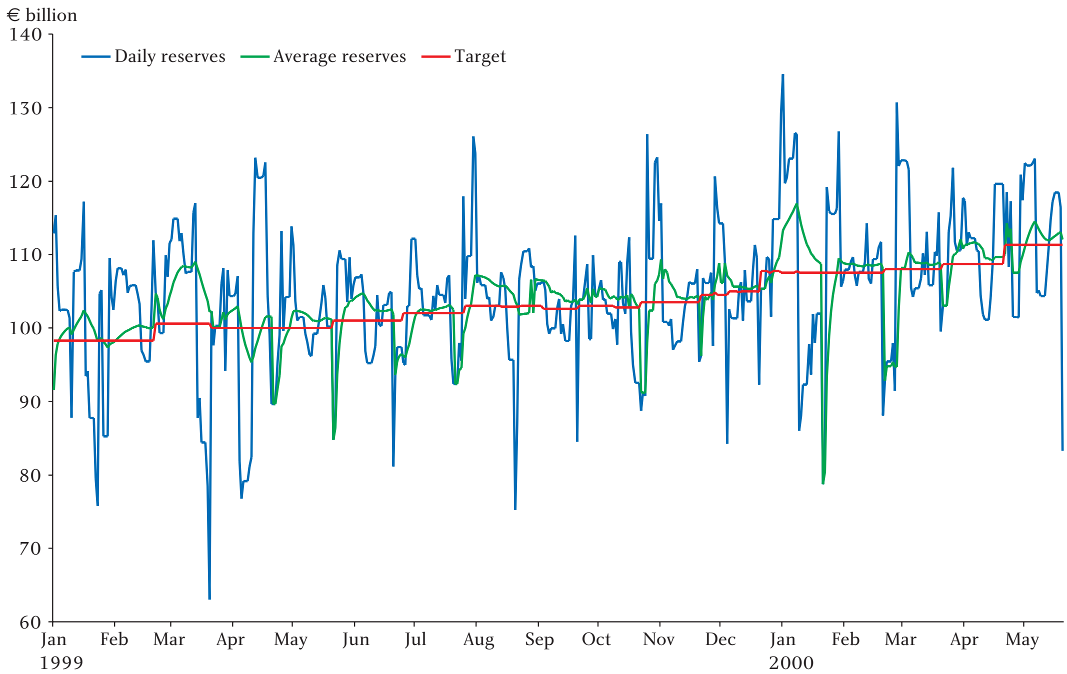
Source: ECB and EBF

€80 billion, around the end of maintenance periods. This feature of the framework has helped to keep the volatility in overnight rates limited without the need for Eurosystem fine-tuning operations, since credit institutions can adjust their reserve holdings to compensate for temporary liquidity fluctuations. There are, however, also indications that not all credit institutions actively manage their minimum reserves. Some, particularly smaller, institutions tend to keep their reserve account at the requisite level constantly through the maintenance period, although some might use the relevant amounts intraday to meet their need for payment system liquidity.

6 A typical monthly reserves pattern within maintenance periods has emerged, influenced particularly by a large market liquidity drain associated with Italian tax payments, normally on the final day of each maintenance period. As a result of this drain, the market normally begins each reserve maintenance period in deficit, with daily reserve holdings below the requirement. The ECB then provides sufficient liquidity at the first MRO of the maintenance period to enable credit institutions to return their daily reserve holdings to slightly above the target, where they remain. This brings the average holdings over the period to a sufficient level to absorb the drop in the daily reserves on the last day of the period, as the Italian tax payments are made. However, special factors such as the exact timing of the end of the maintenance period, or unforeseen liquidity shocks, can dominate this pattern (and result in recourse to the standing facilities).

7 *Standing facilities* The use of Eurosystem standing facilities has generally been low (Chart B). Peak usage remains towards the end of reserve maintenance periods, although the peaks observed so far this year have been smaller than last year. During much of each maintenance period, there has been as much use of the borrowing, as of the deposit, facility. But the end-of-period use has more often been concentrated on the deposit facility. Over the 15 maintenance periods since February 1999, the average use of the deposit facility on

RESERVES WITH THE EUROSYSTEM CHART C



Source: ECB

the final three days of the period was €3.7 billion, compared to €0.8 billion for the marginal lending facility. This indicates that the Eurosystem's liquidity management policy has been geared to providing credit institutions with ample liquidity towards the end of maintenance periods, especially in the second half of 1999. Around the end of 1999, much greater use than normal was made of the marginal lending facility, largely because of concerns relating to the millennium change. The greater use of the deposit facility in April was associated with the timing of Easter this year. The end of the relevant maintenance period fell on the long Easter weekend (21-24 April), during which TARGET and most national RTGS systems were closed. There was a similar effect on 1 May, which was also a TARGET non-business day.

Refinancing operations

8 *Y2K* In anticipation of the millennium change, the ECB provided additional liquidity in its longer-term refinancing operations (LTROs) and made a number of technical changes to the timing of its refinancing operations (both MROs and LTROs). In each of the monthly LTROs between October and December 1999, the ECB provided €25 billion, an increase of €10 billion compared with earlier such operations.

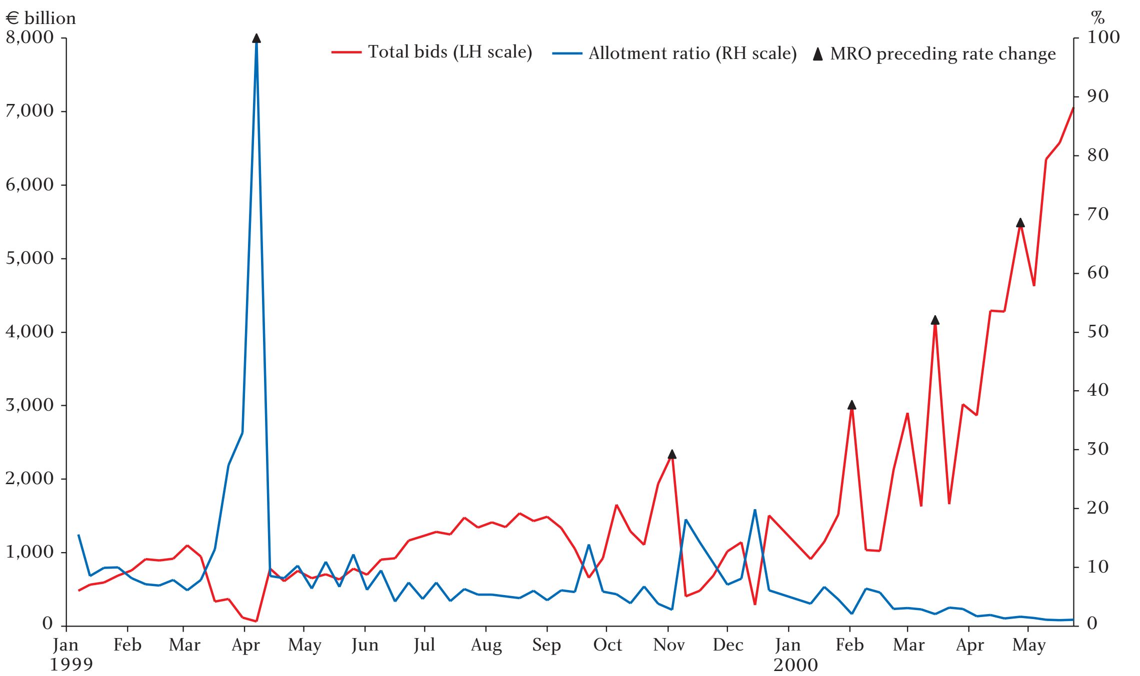
9 In the event, the millennium change passed smoothly with only a fleeting impact on euro-area money markets. EONIA rose briefly to 3.75% on 30 December 1999, but promptly fell back to 3.01% on the first business day in January. The Eurosystem conducted a liquidity-absorbing fine-tuning operation on 5 January, in order to drain some of the ample liquidity that had been provided over the millennium period. The Eurosystem used a variable-rate quick tender for fixed-term deposits, with a pre-announced maximum rate of 3% (the then-prevailing MRO rate). The ECB had announced that it intended to absorb €33 billion, but the actual bids amounted to only €14.4 billion, with the weighted average

rate close to 3%. Counterparties probably considered the maximum rate too low in comparison with prevailing market rates and their assessment of the liquidity situation. Of the 210 eligible counterparties for such fine-tuning operations, 43 actually participated. This was the first occasion on which the Eurosystem had used any of its potential fine-tuning instruments, although in effect the operation could be viewed as a reverse MRO (a possibility which is, however, not contemplated in the *General Documentation*). The remaining necessary adjustment to liquidity levels was made by a lower allotment of funds at the next MRO.

10 *LTROs* On 20 January, the ECB announced that it would fix at €20 billion the absolute amount of liquidity provided through each LTRO in the first half of this year. This is €5 billion more than during most of 1999. The increase reflects the higher liquidity needs of the banking system so far this year, and is intended to maintain unchanged the proportionate liquidity contribution provided by LTROs (25-30%) and MROs (70-75%).

11 *MROs* The main feature of the weekly MROs this year has been the further increase in the amount of overbidding by credit institutions. This has largely been explained by expectations of increases in official interest rates, making bidding for large amounts of Eurosystem liquidity in the fixed-rate tenders very attractive. Successive record total bids were experienced immediately ahead of each Eurosystem rate increase: around €3,000 billion on 2 February; €4,200 billion on 15 March; and €5,500 billion on 26 April. These records were again exceeded in the course of May, peaking at the 24 May MRO, when bids totalled around €7,000 billion. The allotment ratio has thus dropped significantly this year, reaching a record low of 1% on 17 May (Chart D).

TOTAL MRO BIDS AND ALLOTMENT RATIO **CHART D**

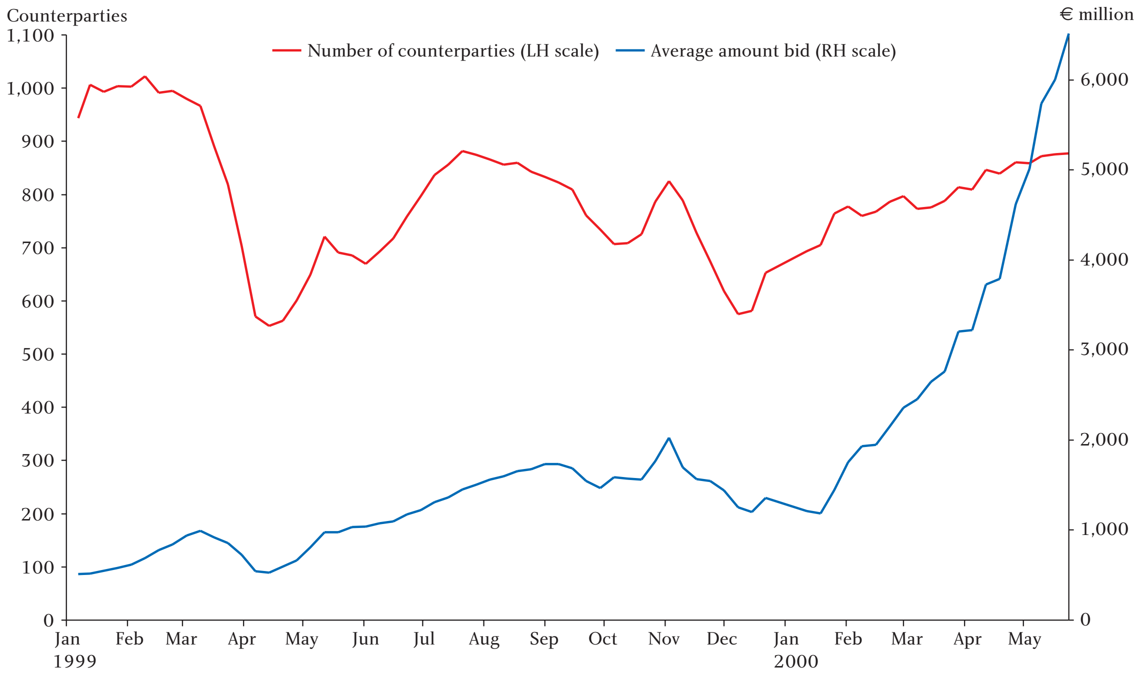


Source: ECB

12 The number of bidders in the weekly MROs has similarly increased over this period (Chart E). Nearly 900 counterparties participated in each of the operations immediately ahead of the three rate increases, but on average the number of active bidders has also been

higher this year than in the last quarter of 1999 (820 against 700). The trend last year of a gradual reduction in the number of active counterparties has thus been reversed so far this year, probably as a result of expectations of interest rate increases. The Eurosystem operational framework has been designed to allow participation by a broad range of counterparties. Out of around 7,900 credit institutions, some 2,500 fulfil the eligibility criteria to be a counterparty in refinancing operations. In practice, between 600 and 900 regularly participate. It has been suggested that collateral risks associated with fixed-rate tenders and overbidding constrain the level of participation, particularly by smaller banks (see below).

MRO AMOUNT BID AND NUMBER OF COUNTERPARTIES: ROLLING AVERAGE (OF 5 MROs) **CHART E**



Source: ECB

Development of the Eurosystem operational framework

13 In general, the Eurosystem operational framework to implement monetary policy is widely considered to have functioned well to date. The combination of the three main instruments – regular refinancing operations (MROs and LTROs), standing facilities (marginal lending and deposit) and reserve requirements (averaged over a maintenance period) – has enabled the ECB to steer short-term interest rates in the desired direction and to keep their volatility limited, without the need for fine-tuning operations. Credit institutions in the euro area also appear to be generally satisfied with the framework. Some aspects are, however, still under discussion in the market place and at the ECB.

Fixed-rate tenders and overbidding

14 With increases in official interest rates expected, banks' bids in the MROs have increased substantially this year, and allotment ratios have consequently fallen to record lows. In recent months, total bids have come close to, or even exceeded, the total amount of eligible collateral defined by the Eurosystem. The Eurosystem requires its counterparties to

have the financial capacity to provide collateral on the date of settlement, although it does not require tender bids actually to be covered by collateral at the time of submission. The uncertainty about the actual allotment ratio has made it difficult for credit institutions to know how much to bid to cover their genuine needs, with considerable associated risks if the allotment ratio turns out to be much greater than anticipated. In such a situation, if a counterparty did not have sufficient collateral available, it would quickly have to mobilise paper or face Eurosystem penalties. Collateral-rich institutions are obviously in a more favourable position than other institutions to make larger bids.

15 There are a number of alternative options available to the ECB, should it become sufficiently concerned about this issue, including the following.

- The ECB could keep fixed-rate tenders but switch to *100% allotment* of all bids. However, the ECB would no longer have direct control over the amount of liquidity it provided. This could lead potentially to interest-rate volatility, especially if the markets had a different forecast of the liquidity situation from that of the Eurosystem. As a result, the ECB might be forced to undertake fine-tuning operations. If the ECB were to follow this course, the publication of its liquidity forecasts would be a natural accompaniment.
- The ECB could introduce *variable-rate tenders*, so that bidding pressure would emerge through higher interest rates. Individual counterparties would be able to bid at a higher rate if they wanted more certainty about receiving central bank liquidity. The ECB would be able to control fully the liquidity provided in each MRO, but it would no longer be the exclusive rate-setter. Fluctuations in the outcome of different MROs due to market developments might be misinterpreted as monetary policy signals. However, the ECB might be able to address this potential problem through explicit announcements of the level of short-term interest rates which it judged appropriate: such an additional signal might help to stabilise market expectations and avoid undue fluctuations in market rates.
- The ECB could maintain fixed-rate tenders and retain its control over the quantity of liquidity allotted but shift to constraining individual bids. This could be done by introducing *maximum bids* for each counterparty, defined for example in absolute terms or in relation to each bank's reserve requirements.

Liquidity forecasts

16 The ECB does not currently publish its forecasts of the overall liquidity situation in the euro area (ie including expected fluctuations in autonomous factors, such as notes in circulation and Treasury accounts with NCBs); it currently provides only daily data on banks' aggregate reserve holdings. The publication of such liquidity forecasts might help market participants in their liquidity management, in particular by giving them a clearer idea of the amount of liquidity the ECB intends to provide in each fixed-rate MRO. However, publication would be less helpful if the forecasts proved inaccurate. Against this background, the ECB has so far refrained from publishing its liquidity forecasts.

Collateral

17 Eurosystem counterparties may provide collateral from one of two lists. Tier 1 consists of marketable debt instruments fulfilling uniform euro-area eligibility criteria specified by the ECB. Tier 2 consists of assets (marketable and non-marketable debt and other instruments) which are of particular importance to national financial markets and banking systems, and for which eligibility criteria are established by the NCBs (subject to ECB approval). In April this year, these two lists of collateral amounted to about €6,300 billion (excluding non-marketable assets for which no data are available). More than 90% of this comprised of Tier 1 assets, although in some particular countries Tier 2 paper is relatively more important. Both categories are theoretically available for cross-border use, although in practice such use of Tier 2 paper is insignificant. The range of Tier 2 assets has been increased in some countries since the start of EMU, especially in those where credit institutions are perceived to have less collateral available than their counterparts in other countries.

18 In the medium term, there is a question about the need for, and value of, the Tier 2 list. In the light of differences in the availability, and possibly the quality, of Tier 2 paper between countries, there is a case to move to a homogeneous list of only marketable, high-quality paper which meets euro area-wide criteria. However, if the need for country-specific lists remains in the medium term, a greater harmonisation of risk-control measures among NCBs (eg valuation 'hair-cuts' and margins) might be warranted.

19 Since the ECB published *The General Documentation on ESCB Monetary Policy Instruments and Procedures* in September 1998, the Eurosystem framework has remained largely unchanged. However, in view of the accumulation of a number of small amendments, the ECB intends to publish an update of this document during the summer.

B MONEY MARKET

20 An integrated unsecured euro money market has already developed: short-term market rates in the euro-area financial centres and outside, including in London, are virtually identical. However, there are still factors inhibiting the full development of a cross-border repo market, although steps are being taken to address these. The EONIA swaps market is flourishing. Over 97% of EURIBOR futures contracts on the three main futures exchanges in Europe are now traded on LIFFE.

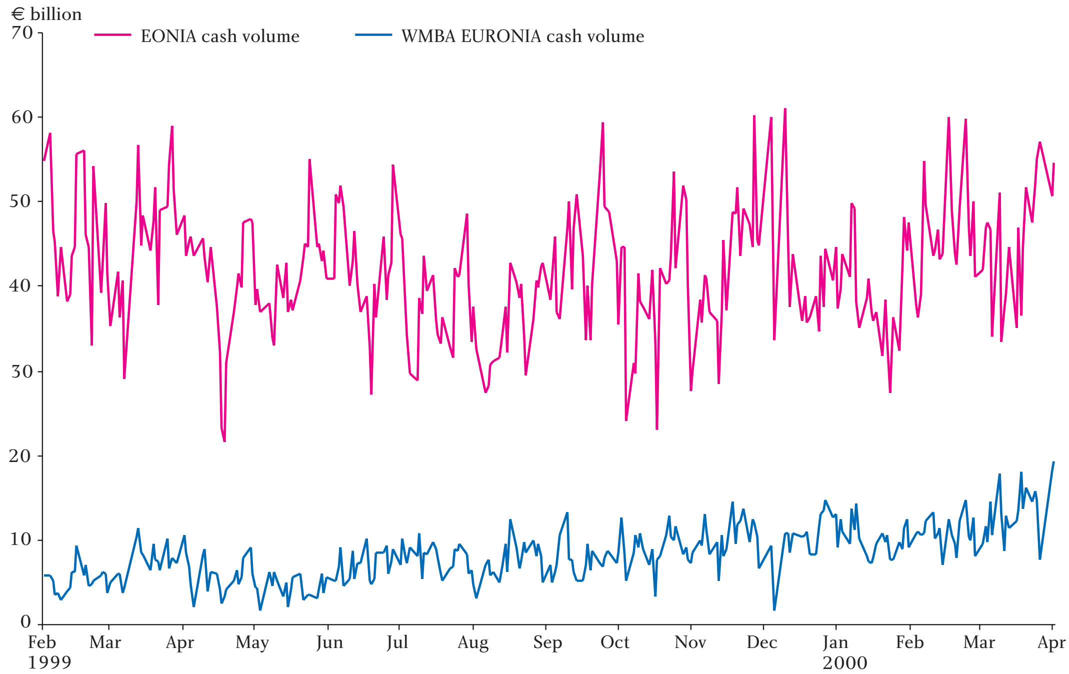
Unsecured money market

21 The main features of the unsecured euro money market can be summarised as follows.

- An estimated 70% of total interbank transactions in euro (excluding foreign currency swaps) are unsecured, with just 30% secured.
- Most unsecured transactions by volume have an original maturity of one week or less.
- Over 50% (by value) of unsecured transactions are estimated to be conducted on a cross-border basis. Large banks with euro area-wide operations naturally dominate this business, with smaller banks continuing to deal mainly on a national basis.

- The main index for euro overnight unsecured cash trades is EONIA (Euro Overnight Index Average), which is calculated daily by the ECB as the weighted average of all overnight unsecured interbank loans, where the transactions are initiated within the euro area by the 54 panel banks. The average daily volume of EONIA transactions – around €41 billion for much of the last year – has been around €43 billion this year to date (Chart F).
- In London, just over half of all overnight unsecured cash transactions are estimated to be undertaken between banks through voice brokers. Transactions broked by members of the Wholesale Markets Brokers' Association (WMBA) with all their counterparties are used to calculate EURONIA, the WMBA's own daily volume-weighted Euro Overnight Index Average (the rate is virtually identical to EONIA). EURONIA daily volumes rose from around €5 billion on average in early 1999 to the current level of around €15 billion (Chart F). In addition, direct lending by non-EONIA panel banks in London is estimated by the WMBA at around €10 billion a day.

EONIA AND EURONIA DAILY CASH VOLUMES **CHART F**



Source: WMBA

Secured money market

22 The spread between unsecured money market transactions and General Collateral (GC) repo transactions is relatively small. One-week Italian GC rates are around four basis points below one-week EURIBOR, and the one-month spread is around two basis points. Equivalent figures for German GC are about ten and seven basis points below EURIBOR, respectively. But growing demand for collateral as financial institutions seek to reduce credit risk, and increased use of repo as they try to minimise the impact of their lending on their capital requirements, may in due course reduce GC rates further below unsecured rates. As yet, despite a declining contribution from sovereign bonds, supranational and corporate bonds are used much less frequently in GC repo or indeed in the 'specials' market.

Interest in Jumbo Pfandbrief issues for GC transactions, especially those which qualify for trading within EuroCreditMTS, may develop.

REPO DEFINITIONS

Repo – a transaction in which one party sells securities to another, and at the same time and as part of the same transaction, commits to repurchase equivalent securities on a specified future date, or at call, at a specified price.

- *General Collateral (GC) repos* are cash-driven, with the cash provider specifying categories of acceptable collateral securities, but the cash taker deciding the exact securities.
- *'Specific' repos* are driven by the cash provider's need for an exact security, for example to cover a short position.
- *'Special' repos* are specific repos where the security in question is in high demand and hence attracts a premium in the market, pushing down the rate which the cash provider receives below GC levels.
- *Triparty repos* involve a third party – eg a custodian bank or an international central securities depository (ICSD) – in acting as agent for one or both of the counterparties and thus sending/receiving cash and receiving/sending collateral on its or their behalf.

Stock loan – a transaction similar in nature to a specific repo, except that the security in demand may be lent against other collateral securities rather than cash, and it is fee rather than interest-rate based.

Buy/sell back – this transaction is similar in nature to a repo, but there are a number of technical differences.

'Repo' is used generically in this section to cover all of the above types of transaction.

23 Market participants report that the most active GC repo markets continue to be in Belgian and Italian Government bonds. Trading in French and German GC is less than in Belgian and Italian GC. The use of French and German GC may increase with the growth of triparty repo in the ICSDs (Clearstream and Euroclear), given the efficiency of the links between both the French and German domestic settlement systems and the ICSDs, and also the relatively high proportion of Bunds held in the ICSDs.

24 Some groups of market participants continue to prefer particular types of GC. In addition, the participants in several markets are primarily domestic, reflecting institutional preferences and local regulatory requirements.

25 The volume of 'specials' trading so far this year has been relatively low, which market participants explain as follows.

- Benchmark sizes have increased. For example, there is €20 billion outstanding of the current German ten-year benchmark, compared with only €14 billion of the equivalent benchmark a year ago.
- Low issuance by Italian corporates has reduced the demand for Italian Government bonds held as an offsetting hedge. Moreover, the large number of MTS members has facilitated access to Italian Government bonds.
- Hedge funds have reduced their activity.

26 The share of cross-border interbank repo transactions has increased and currently accounts for over half of overall repo activity, with banks in London acting as the most important repo counterparties. But the development of an integrated, secured money market cross-border in the EU continues to be inhibited by the lack of an overall legal, regulatory and settlement framework. Recognising this, the Lisbon European Council on 23-24 March concluded that, to accelerate completion of the internal market for financial services, steps should be taken to ensure better functioning of cross-border repo markets.

27 Market participants consider the following as the main remaining practical problems.

- The links between many securities settlement systems are not yet adequate to provide the speed and certainty relating to the movement of bonds and cash required for cross-border short-term repo trading. However, improved links and mergers between systems should help address this problem (see Chapter 3).
- The validity and enforceability of cross-border collateral in securities settlement systems is still not sufficiently certain. However, the European Commission intends to introduce a Directive on Cross-Border Use of Collateral to help provide legal certainty (see Chapter 3).
- Daily marking-to-market of positions and margin transfers are not yet standard in all repo documentation. However, they are becoming increasingly common as documentation becomes more homogeneous.

28 The development of cross-border repo should also be encouraged by the growth of repo trading systems and use of central counterparties. This will provide the possibility of pre- and post-trade anonymity and netting of positions.

29 Improvements in the financial infrastructure should help reduce differentials between GC curves, particularly for short-term (up to one-week) repos. However, differentials are likely to remain for longer maturities, reflecting different perceptions of the credit and liquidity risks attached to such paper as well as continued investor preferences for particular issuers.

Money market derivatives

EONIA swaps

30 EONIA swaps exchange cash flows based on a fixed interest rate and a variable EONIA-based rate. EONIA swaps settle against the EONIA rate averaged over the maturity of the swap, using standard money market conventions (ie interest is calculated on the basis of actual/360 for swaps).

31 EONIA swaps volumes are now estimated to be around two or three times as large as for the previous national currencies in 1998, with particularly rapid growth recorded so far this year. French and German banks with practical experience of similar, albeit smaller, domestic markets before the introduction of the euro, have been able to exploit the increased liquidity generated by the euro market and the standardised contract terms used in ISDA documentation. In addition, significant new players have entered the market, although some others have withdrawn as a result of mergers.

32 Around two-thirds of EONIA swaps transactions (by volume) are undertaken directly, with around one-third via brokers. Notional principal for trades is typically €500 million, up from €100 million or €200 million a year ago, with tickets of €1 billion not uncommon. Maturities typically range from one week to two years, with some 40% up to three months' original maturity, 50% between four and twelve months, and most of the remaining 10% between one and two years. Over the past year, the maximum maturity has increased from two to ten years, and prices are available at even longer maturities. Bid-offer spreads, even for forward/forwards, average only two basis points. For maturities up to one month, rates of 0-4 basis points below EURIBOR are common, rising to 3-6 basis points below EURIBOR for one to three months, and 4-8 basis points below for longer maturities, with significantly wider spreads over the year-end. Liquidity in EONIA swaps was significantly greater than in repo towards the millennium change.

33 There are a number of reasons for the growth of EONIA swaps.

- They enable banks to separate interest-rate decisions from balance-sheet decisions since they enable overnight interest-rate risk to be managed off-balance sheet. This reduces credit risk, capital charges and use of credit lines as the principal never changes hands. Transaction costs are low.
- They are a much more precise instrument for hedging than futures contracts, as they have a wider range of maturities and a flexible start date. As a result, they are used by the market to take positions on interest rates: EONIA swap volumes often increase ahead of ECB Governing Council meetings.
- They can be used to hedge interest-rate risk on repo transactions.

Forward Rate Agreements

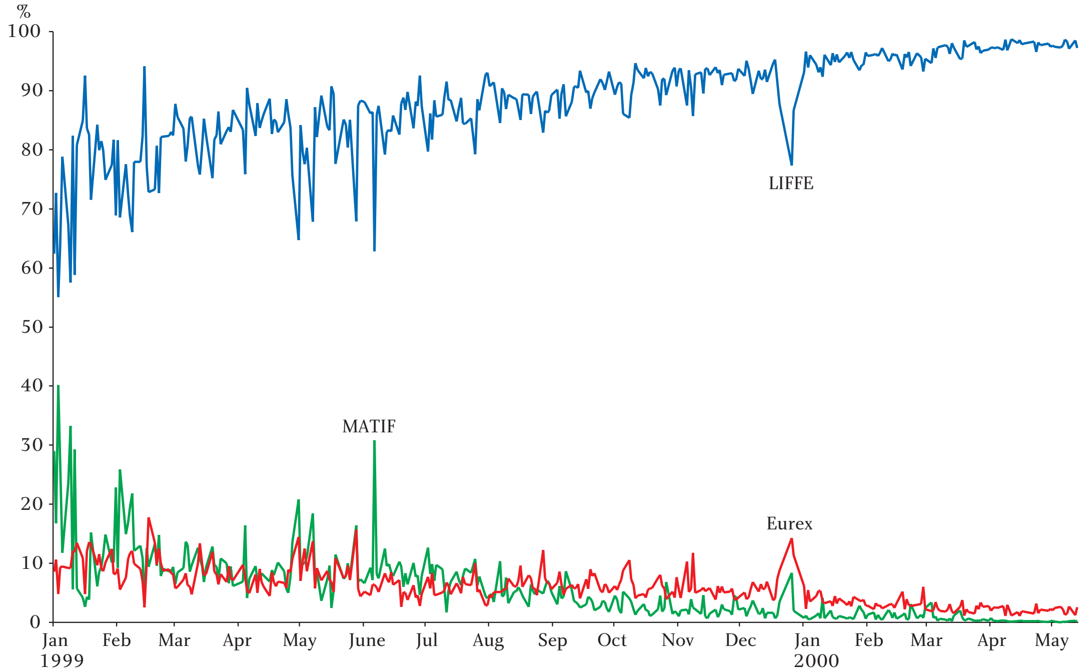
34 The volume of Forward Rate Agreements (FRAs), while significantly smaller than that of EONIA swaps, has grown recently as firms have used them to manage the fixings used for their swaps. The standard market size for FRAs is €1 billion for a one-month FRA, with €500 million, €250 million and €100 million respectively for three, six and twelve-month FRAs.

EURIBOR futures contracts

35 EURIBOR futures contracts on LIFFE continue to be the most actively traded euro short-term interest-rate (STIR) futures contracts. LIFFE's market share in this contract has increased in recent months to over 97% of the combined turnover on LIFFE, MATIF and Eurex. This reflects an increase in the absolute level of turnover in the LIFFE EURIBOR

futures contract: average monthly turnover in the first four months of this year was 53% higher than on average in 1999.

MAJOR EURO STIR FUTURES: PROPORTIONS OF TOTAL TURNOVER ON LIFFE, EUREX AND MATIF **CHART G**



Source: LIFFE

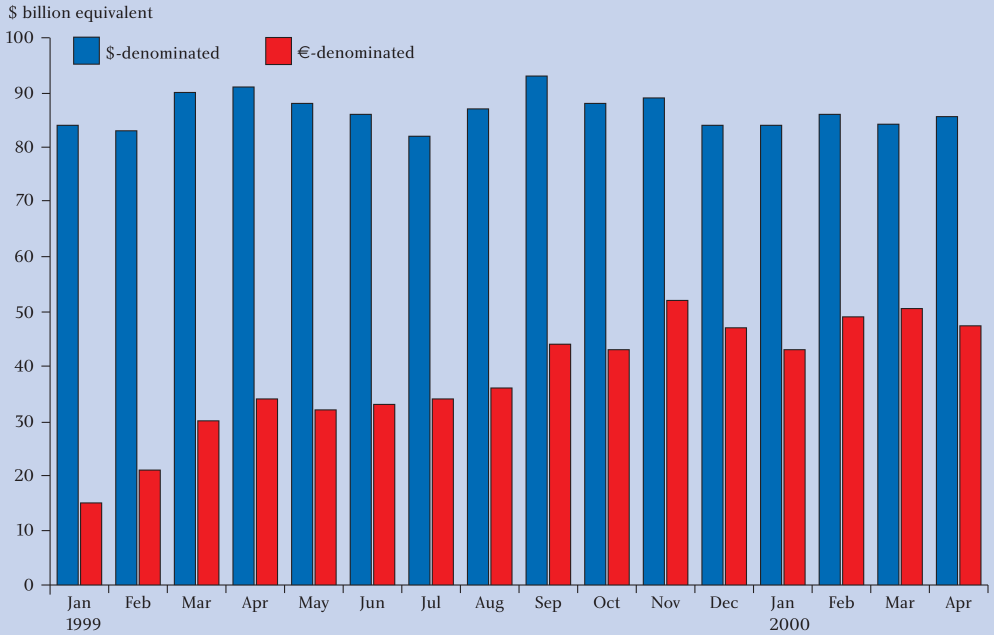
THE EURO COMMERCIAL PAPER MARKET

Prior to 1999, it was predicted that the launch of the euro would encourage corporates to obtain an increasing proportion of their finance from the capital markets, including through the issue of commercial paper, as a partial substitute for bank borrowing. In assessing whether commercial paper issuance has indeed grown sharply, this Box focuses on the euro-denominated component of the Euro Commercial Paper (ECP) market. The ECP market is defined as the international market among institutions for commercial paper, denominated in a wide range of currencies including euro, and normally cleared through Euroclear or Clearstream (Luxembourg). The ECP figures in this Box, from Barclays Capital, exclude those domestic commercial paper markets that exhibit pricing, distribution, investor or tax features which differ markedly from those relating to the ECP market.

The growth of euro ECP outstanding since January 1999, along with that of dollar ECP, is shown in the Chart. Dollar issuance outstanding has been broadly unchanged over this period. The amount of euro ECP outstanding peaked at $52 billion in November as issuers sought to lock in liquidity ahead of the turn of the year. It fell back briefly subsequently, before rising again to $50 billion in March. The amount of euro ECP outstanding in April ($47 billion) compares with market estimates of around €90 billion issuance outstanding in domestic euro commercial paper markets in the euro area, of which the French market accounts for some €55 billion, with the Belgian, Spanish and German markets providing most of the remainder. Of total euro ECP outstanding, around €9 billion is asset-backed. Most euro ECP issues are rated A1+ or P1 (respectively

Standard and Poor's and Moody's highest short-term ratings), though there are now signs of increased issuance by lower-rated issuers. Most euro ECP has an original maturity of one to three months, with relatively few shorter issues.

OUTSTANDING ECP ISSUANCE IN DOLLARS AND EURO



Source: Barclays Capital

The overall amount of euro ECP issuance outstanding remains small (around 3%) relative to dollar commercial paper in the US. Euro ECP also provides only a small proportion of euro-area issuers' financing needs. For example, it amounted to around 2% of Monetary Financial Institutions (MFIs') loans to non-financial corporations. However, market participants expect that the amount will gradually increase, for the following reasons.

- The range of ECP issuers, including sovereign issuers, is still expanding.
- Some large market firms intend to increase their involvement, despite low margins, in an attempt to win issuers' business for their other services (and thus provide them with a 'one stop service').
- Money market funds are expected to grow in consequence of savers' desire for higher yields than those provided by bank deposits, in a stable and low interest-rate environment.
- Significant changes in regulation, in particular proposals for amending the UCITS Directives, are under consideration. At present some Member States classify the ECP market as 'unregulated' under the 1985 UCITS Directive, as a result of which investment funds can only invest up to 10% of their assets in it, unless an issue is listed. It is expected that amendments to the Directive will, by clarifying and expanding the definition of money market instruments, help remove this constraint on such funds.
- Market pressure is mounting to reduce the period for settling ECP transactions from T+2 to T+0. An ECP Association working group is close to finalising an internet-based solution to provide security codes in a timely manner, thus

helping to facilitate shorter settlement periods. If settlement periods could be reduced from T+2 to T+0, ECP could compete more actively with bank deposits in attracting short-term liquidity.

C FOREIGN EXCHANGE MARKET

The euro exchange rate

36 Since the December 1999 *Practical Issues*, the euro has continued to depreciate on balance in the foreign exchange market against other major currencies (Chart H).

THE EURO EXCHANGE RATE **CHART H**

Source: Bank of England

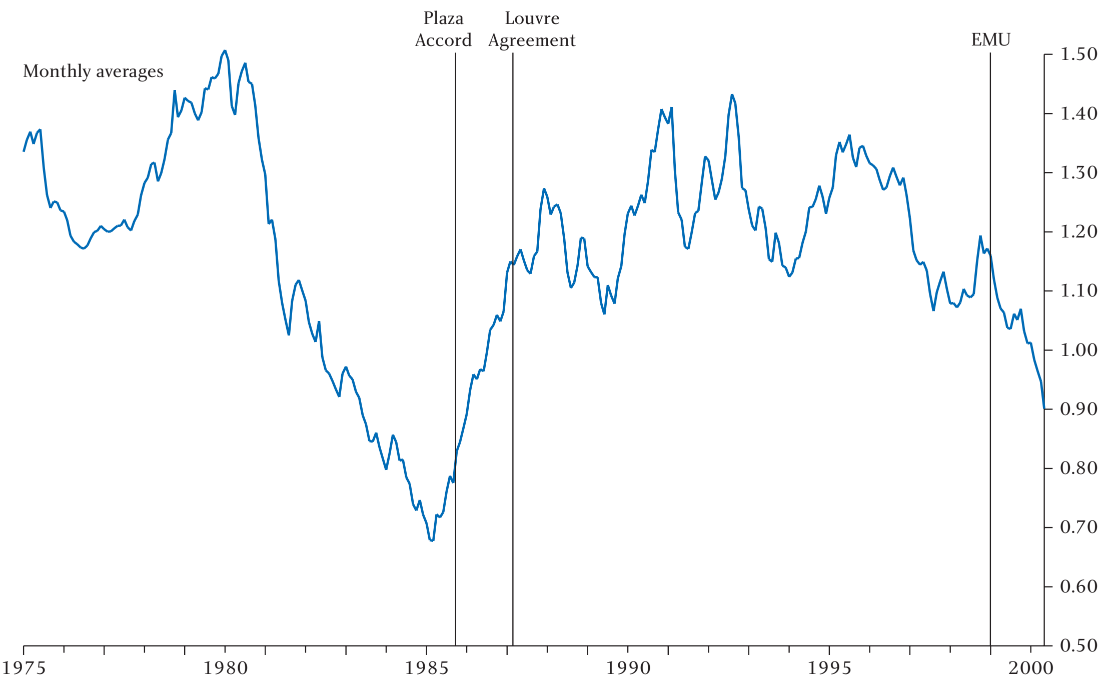
37 This further euro weakness is puzzling and no wholly convincing explanation has yet been put forward. However, London market firms have offered a number of *ex post* rationalisations, including the following.

- Whilst the prospects for encouragingly strong economic growth across the euro area have been confirmed and are already being realised, the long-expected US slow-down has been pushed further into the future. As a result, the consensus forecast is now for stronger US growth this year relative to the euro area than most predictions earlier this year. But whilst this factor may help to explain some of the movement in the euro against the dollar, it cannot explain the movement against sterling. Moreover, whilst it has also been suggested that changes in expected short-term interest rate differentials between the euro and other major currencies may have helped cause the euro to depreciate, systematic analysis generally does not suggest that this has been a major influence.

- Notwithstanding the Lisbon EU Summit in March, and other evidence from for example German tax reforms and the Vodafone acquisition of Mannesmann, markets have yet to be convinced that structural supply-side reforms across the euro area are going to be implemented suffcently quickly. Yet it is widely agreed that these are necessary, in order to reap the benefits both of EMU and the revolution in information and communication technology.
- The euro area is still as a result judged a less business-friendly environment than the US. This is reflected in the evidence of significant net outflows of direct and portfolio capital from the euro area, although these may also to some extent reflect successful euro-area businesses 'catching up' on the globalisation trend.
- The failure of the dollar to weaken, and the euro commensurately to rally, as the Nasdaq and other US equity markets began to shed some of their earlier gains, and as the US current account deficit continued to widen, has caused disappointment in the foreign exchange market from those looking for economic fundamentals to drive exchange rates.
- There is some evidence of reduced market liquidity, partly as a result of the high profile withdrawal of a number of hedge funds, following a number of significant losses. This may recently have increased the influence of M&A flows and momentum traders on exchange rate movements.

38 However, two points on the euro exchange rate are worth noting. First, there is a very considerable consensus that the euro is significantly undervalued in relation to economic fundamentals. Second, despite the recent attention focused on euro weakness, there have been a number of quite recent historical periods of much sharper movement in the dollar against the Deutsche mark and the yen, which were subsequently largely or wholly reversed (see Chart I).

€/$ TRADING HISTORY: 1975-2000 **CHART I**



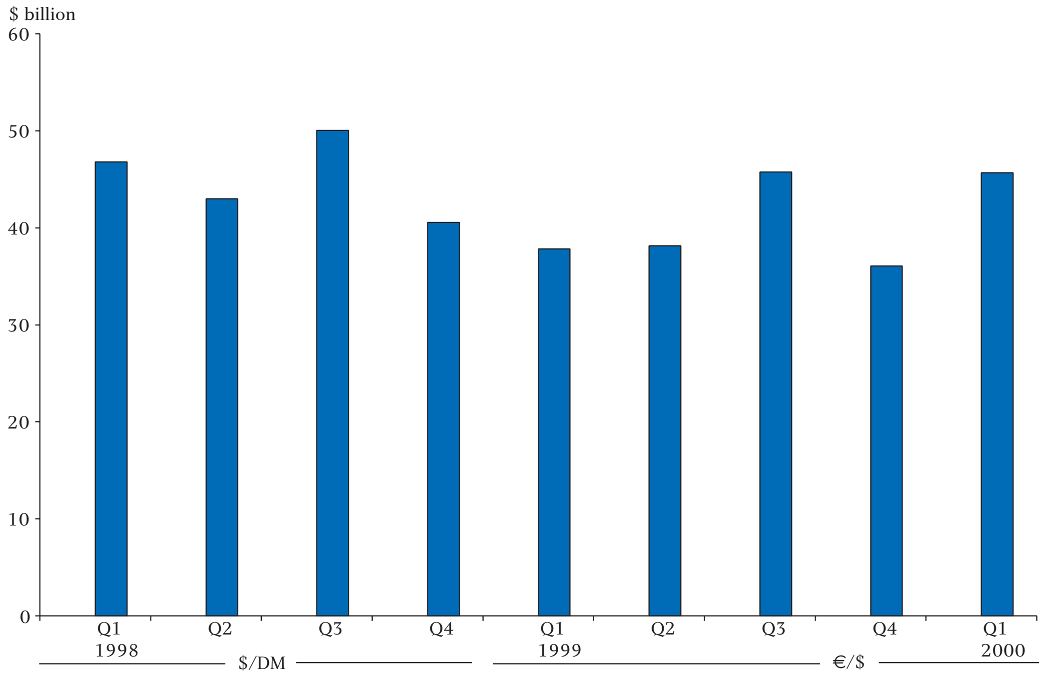
Note: €/$ defined until EMU as dollars per synthetic euro, using a weighted-average of the 11 component currencies (IMF weights)
Source: Bank of England

Trading volumes, liquidity and volatility

39 There have been no major structural changes recently in the functioning of the euro foreign exchange market.

40 As Chart J shows, the average daily volume of €/$ trading on EBS is broadly the same as the 1998 level for $/DM trading (at $45.7 billion in 2000 Q1 compared with an average $45.1 billion in 1998). Given the more general trend in spot foreign exchange business away from voice brokers and bilateral dealing towards electronic broking systems, including EBS, implied overall market volumes in euro are likely to remain lower than the previous national currencies in 1998. By contrast to €/$, daily turnover in €/¥ remains substantially lower than in DM/¥ ($4.9 billion in 2000 Q1 compared with $7.1 billion on average for 1998).

DAILY VOLUME OF €/$ TRADING **CHART J**



Source: EBS

41 The proportion of trading in previous EMU-11 national currencies has continued to decrease. By end-April, one major international bank estimated that only 2% of its euro customer business was in the previous national currencies; this compared with almost 25% at the launch of the euro in January 1999.

42 Over the period since the previous *Practical Issues*, implied volatility for €/$ has risen (Chart K). This largely reflects the movement in the spot euro exchange rate, with consequential increased uncertainty about the future level of the exchange rate, rather than any structural change in the market.

IMPLIED VOLATILITY FOR €/$ CHART K

Source: NatWest, Bank of America

D DEBT CAPITAL MARKETS

Euro-area government bond issuance

43 The budgetary positions of euro-area governments have strengthened significantly in recent years, contributing to a decline in general government gross debt to GDP ratios. For the euro area as a whole, this ratio has fallen since 1996, and the European Commission predicts further falls in 2000 and 2001 (Table 1).

TABLE 1: EURO-AREA FISCAL POSITION

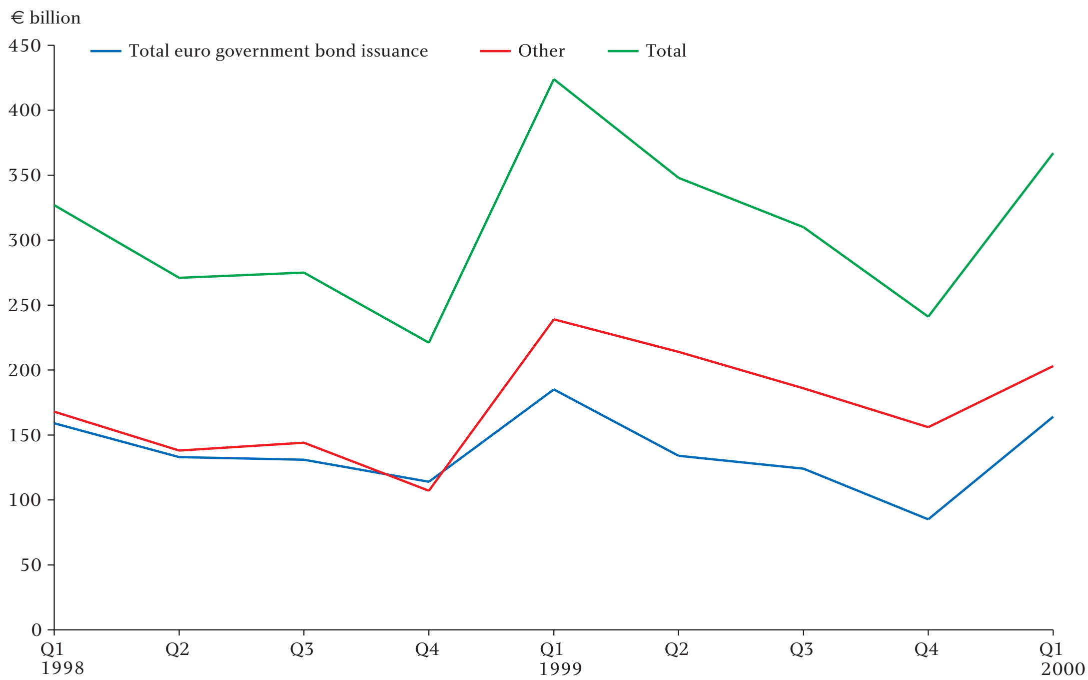
% of GDP	1996	1997	1998	1999	2000	2001
General government surplus (+) or deficit (-)	-4.2	-2.6	-2.0	-1.2	-0.9	-0.8
General government gross debt	74.7	74.5	73.1	72.3	70.5	68.2

Source: European Commission

44 Reflecting this trend, and the keen interest of non-sovereign borrowers to tap the euro bond market, the share of euro-area governments' domestic currency bonds in the total of such issuance fell from 49% in 1998 to 40% in 1999 (Chart L). Forthcoming sales of next generation mobile telephone licences, revenues from which are expected to be substantial, will further reduce the need for governments to raise finance in the bond markets, while increasing the financing requirements of successful licence bidders.

45 Within the government total, the share of auctioned issuance fell slightly from 91% in 1999 to 82% in 2000 Q1. Over the same period, the typical size of auctions increased

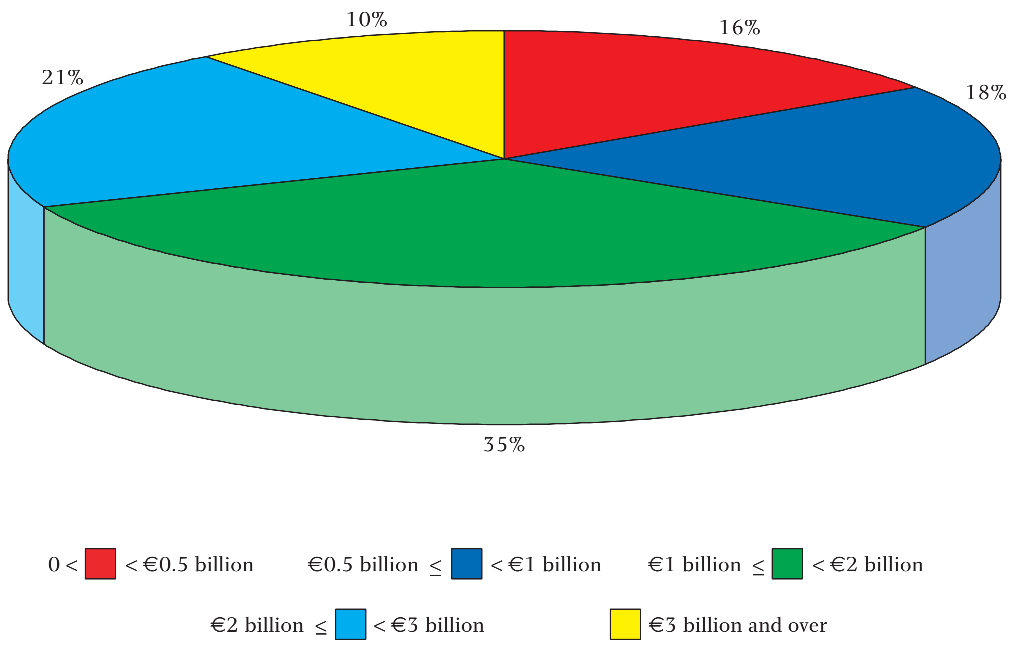
TOTAL EURO BOND ISSUANCE: QUARTERLY — CHART L



Source: Barclays Capital, Capital DATA Bondware

significantly; the number of issues for amounts over €2 billion comprised 31% of the total in 2000 Q1 (Chart M).

SIZE OF EURO-AREA SOVEREIGN BOND AUCTIONS: 2000 Q1 — CHART M



Source: Barclays Capital

Smaller sovereigns: trends in issuing strategies

46 Liquidity (rather than credit) considerations have become the dominant factor differentiating sovereign issuers within the euro area. Investor preference for large, liquid benchmarks has presented new primary and secondary market challenges for smaller euro-area countries with relatively small borrowing needs, as a result of the loss of a captive national investor base. This reflects the removal of national currency restrictions on investment, with the launch of the euro, and an increase in competition from both other government and non-government issuers.

47 These pressures have encouraged the smaller euro-area sovereign issuers to seek ways to broaden the appeal of their issues to investors abroad. A number of methods have been used, including wider-reaching distribution of syndicated primary offerings (with investors able to place orders on dealers' websites), and introducing electronic auction bidding facilities to speed up the allocation and settlement process. Electronic trading platforms have also been more extensively used in the secondary market, as a means of raising visibility, boosting turnover and lowering transaction costs.

48 Many of the smaller sovereign issuers in the euro area have decided to focus new issuance on a few large, liquid benchmarks. For the same reason, they have also implemented exchange programmes, while seeking both to avoid the refinancing risk which would arise from excessive bunching and to satisfy investor demand at different maturities.

49 The desire to create large liquid issues having international appeal has also led to the replacement of some of the smaller government bond auctions with larger syndicated offerings. Portugal, for example, placed 73% of its government bond issuance in 1999 with non-residents, compared to 40% in 1998. Syndicated issuance has also freed those sovereign issuers with relatively low borrowing requirements from the need to adhere to pre-announced auction calendars.

50 However, there are limits to these developments. Some smaller sovereign issuers consider that it is useful to maintain a primary dealer network, and at least a minimal fixed auction schedule. In addition, the use of electronic trading systems may be limited by the preference of some institutional investors for a personalised sales service and, in the case of certain retail investors, by lack of access to, or familiarity with, the new technology.

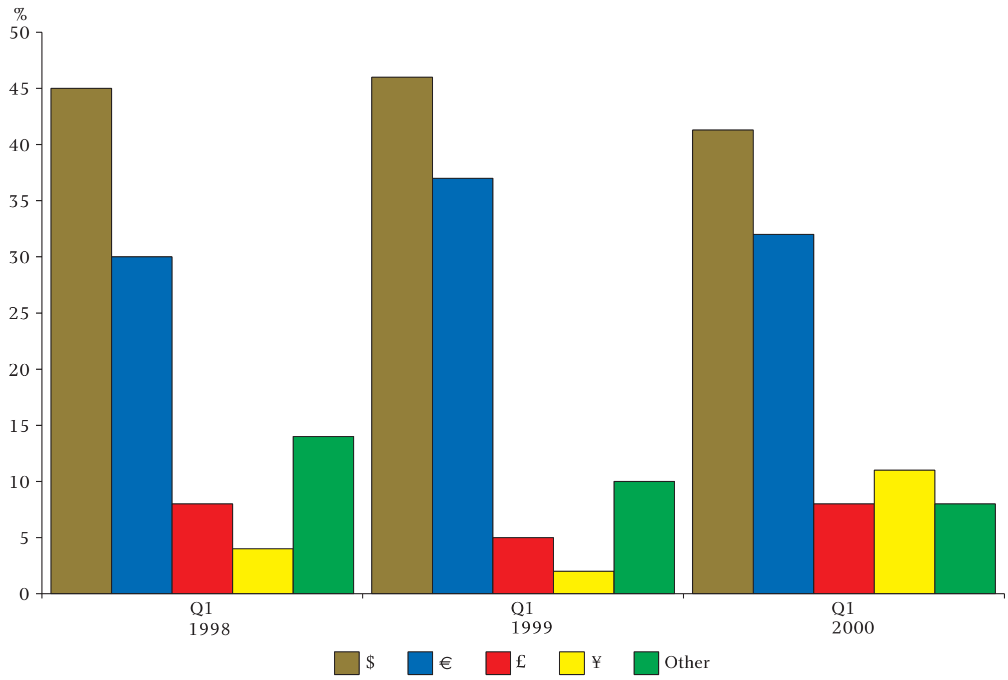
BANK OF ENGLAND EURO NOTE PROGRAMME

HM Treasury announced on 21 March that from January 2001 it would no longer issue 3-year Euro Notes, reflecting the Government's strong funding position. At the same time, the Bank of England announced that it would provide continuity by assuming the programme from that date. This announcement, similar to that made last year when the Bank took over from HM Treasury as issuer of euro Bills, helps to ensure that London's commitment to the development of euro markets is sustained. Except for the change of issuer, the terms and conditions of the Euro Note programme will remain unchanged.

Currency composition of non-sovereign bond issuance

51 The US dollar remains the most popular currency internationally for underwritten non-sovereign bond issuance in non-domestic currency. The euro's market share increased from 30% in 1998 Q1 to 37% in 1999 Q1, but has since fallen back to 32% in 2000 Q1, partly reflecting valuation differences as a result of the weakness of the euro against the dollar in the foreign exchange market (Chart N).

NON-DOMESTIC CURRENCY BOND ISSUANCE — CHART N



Source: Capital DATA Bondware

Growth of non-sovereign euro-denominated bond issuance

52 Table 2 shows underwritten euro bond issuance by non-sovereign issuers. Since most non-sovereign issuers do not use auctions, the vast majority of non-sovereign issues are underwritten.

TABLE 2: NON-SOVEREIGN EURO BOND ISSUANCE

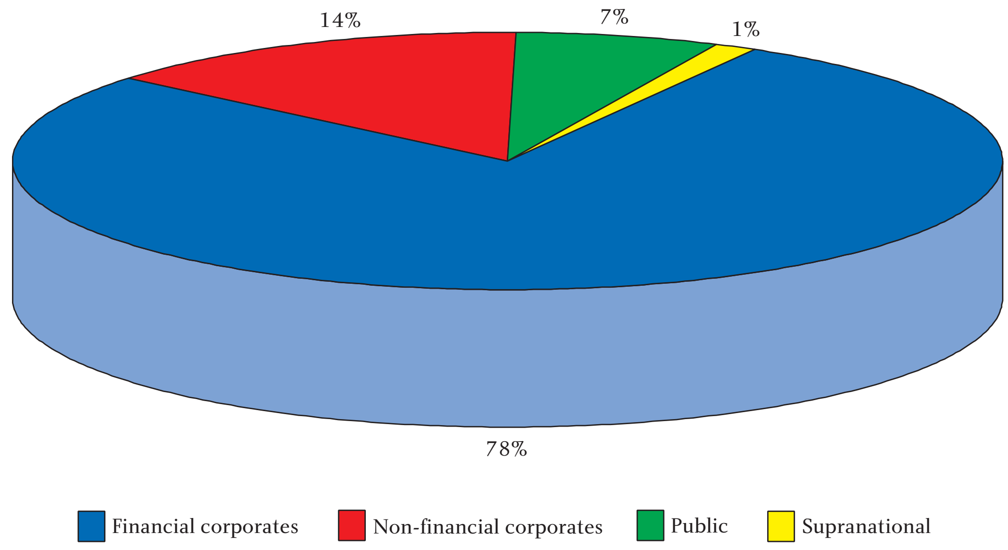
€ billion	1998	1999 Total	1999 Q1	1999 Q2	1999 Q3	1999 Q4	2000 Q1
Total non-sovereign underwritten issuance	558	795	238	214	185	156	203
% of total by financial institutions	85	76	82	71	74	78	78
% of financial institutions accounted for by Pfandbriefe	59	48	56	40	45	50	41

Source: Capital DATA Bondware

53 There was a sharp (43%) increase in non-sovereign euro bond issuance between 1998 and 1999, with continued strong issuance in 2000 Q1. The quarterly path shows a

downward trend through 1999. In the early part of last year, non-sovereign issuance recovered following the emerging economies' financial difficulties in autumn-1998, and issuance was as usual seasonally front-loaded; but issues subsequently moderated, as yields rose from their trough at the beginning of last year and as the millennium change approached. Throughout the period, financial institutions have dominated underwritten non-sovereign issuance, accounting for 78% of the total in 2000 Q1. However, a large proportion (41%) of issuance by financial institutions is accounted for by Pfandbriefe (see Box). The share of non-financial corporate issuance has also increased sharply, from 6% in 1998 to 14% in 2000 Q1, but remains relatively small (Chart O).

NON-SOVEREIGN EURO BOND ISSUANCE: 2000 Q1 **CHART O**



Source: Capital DATA Bondware

PFANDBRIEFE

Pfandbriefe are German collateralised bonds with recourse to the issuing bank, where the underlying collateral remains on the issuing bank's balance sheet. Pfandbrief issuers are either private sector mortgage banks or public sector banks (typically, Landesbanks). They are limited in the scope of their permitted business activities and are subject to a dedicated legal framework and supervisory structure.

Mortgage Pfandbriefe must be fully secured by a pool of residential and/or commercial mortgages, and public Pfandbriefe by public sector loans, respectively. These collateral pools are legally separate from the issuing bank's other operations and obligations. Individual Pfandbriefe do not have a claim on specific assets in the pool. Instead, the collective value of total assets covers the total of all Pfandbriefe. Holders of Pfandbriefe have preferential access to the assets in the pool, in the event that the issuer defaults.

Should there be insufficient registered collateral to meet Pfandbrief liabilities, Pfandbrief holders rank *pari passu* with the issuing bank's other creditors.

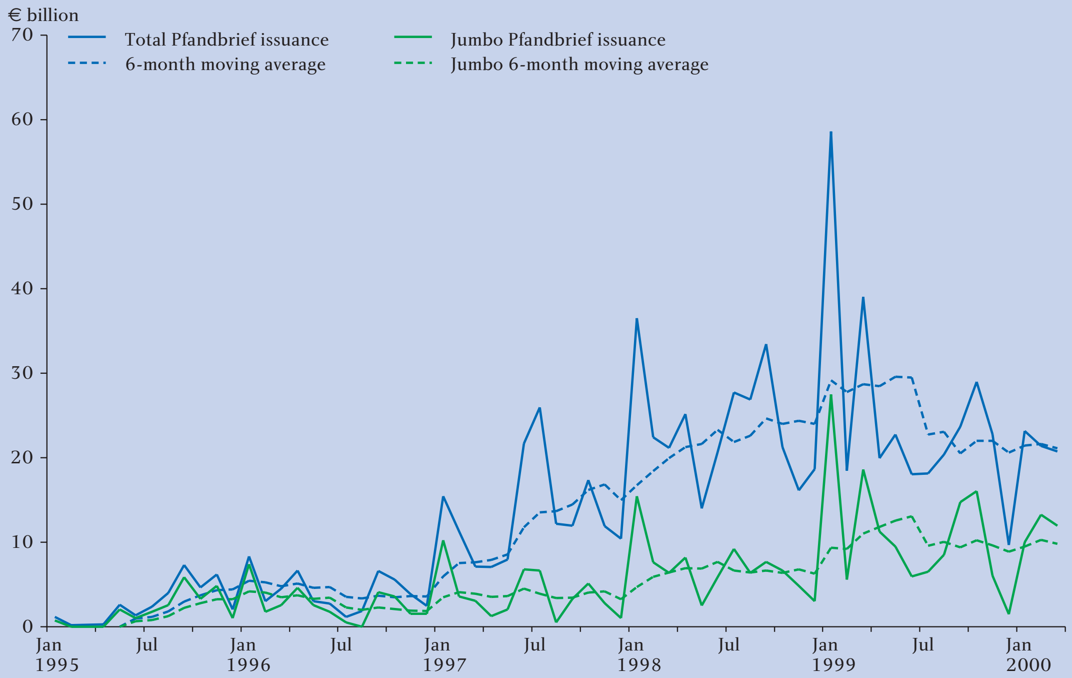
'Jumbo' Pfandbriefe (defined as Pfandbriefe with a minimum size of €500 million) have helped to increase the liquidity of the market, and to broaden its interest to international investors. Pfandbrief issues over €3 billion are becoming increasingly common and, in May, these became eligible to be traded on EuroCreditMTS (a new division created by EuroMTS for non-sovereign bonds). Jumbo issues are traded internationally, including in London.

The Pfandbrief market has benefited from investors' ability to pick up yield relative to Bunds, combined with security, liquidity, low risk-asset weightings of 10% (compared with 20% for other bank bonds), and eligibility as Eurosystem Tier 1 collateral. The market has grown significantly in size over the past five years. There has been an overall decline since May 1999, possibly in reaction to the high levels of issuance straight after the launch of the euro. But the amount of Jumbo issuance has continued to increase. The Jumbo Pfandbrief market is now larger than most continental European government bond markets, although not those of France, Germany and Italy.

As a result of the popularity of Pfandbriefe, some other European countries have reviewed their existing legal structures to enable an equivalent market to develop (particularly 'Obligations Foncières' in France, 'Cedulas Hipotecarias' in Spain and 'Lettres de Gage' in Luxembourg).

Market participants hold differing views about the long-term prospects for the development of the market in Pfandbrief-style instruments. Potential influences include: whether the existing regulatory advantages will continue and what attitude regulators will

PFANDBRIEF ISSUANCE



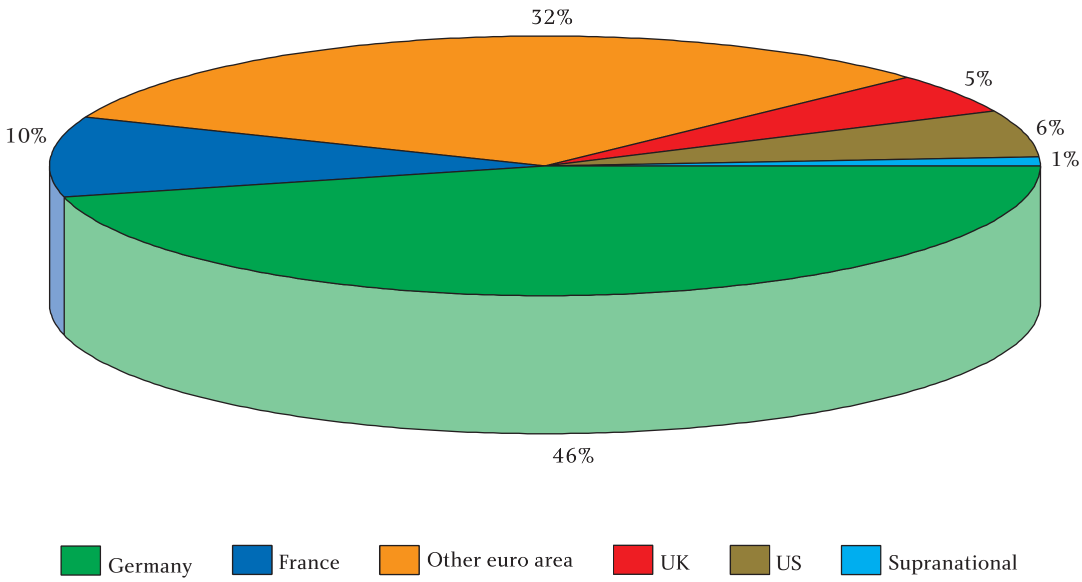
Source: Capital DATA Bondware

take to the other activities in which banks involved in issuing Pfandbriefe are (or become) engaged; whether alternative paper becomes increasingly available, particularly if it offers investors a yield advantage; and whether the issuing banks continue to increase the size of their balance sheets, or shrink them in an attempt to increase their return on equity.

Non-sovereign euro bond issuance by country of issuer

54 In terms of geographical location, non-sovereign issuers in Germany, and to a lesser extent in France, continue to dominate underwritten euro bond issuance. However, US and UK issuers have a significant market share (Chart P).

UNDERWRITTEN EURO BOND ISSUANCE BY NATIONALITY OF ISSUER: 2000 Q1 — **CHART P**



Source: Capital DATA Bondware

Use of bond issuance and bank financing by companies

55 Euro-area companies are much less dependent on domestic debt securities financing than their US counterparts (Table 3).

TABLE 3: BANK AND DEBT SECURITIES FINANCING IN THE US AND EURO AREA, AT END-SEPTEMBER 1999

	Unit	Euro area	United States
Bank loans	€ billion % of GDP	6,204.4 101.5	4,116.7 47.2
Outstanding domestic debt securities	€ billion % of GDP	5,476.3 89.6	14,006.6 160.7
: of which issued by companies	€ billion % of GDP	208.0 3.4	2,486.9 28.5

Source: ECB

56 The launch of the euro was widely expected to encourage non-financial companies in the euro area to meet their external financing requirements increasingly in the capital markets rather than through bank borrowing.

57 The flow data in Table 4 - estimated from stocks data - indicate that this expectation was indeed fulfilled in 1999. These companies' net financing in the euro bond markets grew appreciably (by 9.1%) in 1999, and their short-term (up to one year original maturity) issues of marketable securities (including CP) increased even more substantially (by 43%). Moreover, both their short-term and longer-term financing through securities issuance grew proportionately more than their bank borrowing.

TABLE 4: NET EURO-DENOMINATED FINANCE FOR NON-FINANCIAL COMPANIES: 1999

€ billion % changes in brackets	Bank lending	Securities other than shares	
		Up to and including 1 year original maturity	Over 1 year
Euro area	129.5 (5.7)	20.1 (43.2)	17.2 (9.1)
Other	N/A	3.8 (152)	64.2 (120)

Source: ECB

58 However, the amount of euro bond issuance by companies in the euro area is lower than companies outside the euro area. It is also still a much lower proportion of overall company financing than bank borrowing. This may in part reflect the relative scarcity of large, highly-rated listed companies in the euro area. Large listed companies are better able to absorb the costs involved in establishing and maintaining a bond market presence, which allows them to borrow on more favourable terms than from banks.

59 A significant proportion of non-financial corporate issuance has been in the telecoms sector. This high level of issuance is expected to continue, as telecoms companies seek to finance their purchases of third generation mobile telephone licences. M&A activity has also underpinned issuance in a number of sectors, including telecoms, as bonds are issued to refinance 'bridge facilities' initially provided by banks (typically in the form of syndicated loans).

THE INCREASING ROLE OF THE SWAPS MARKET

The pricing of government debt, including in euro, is increasingly driven by scarcity of supply and sizeable demand for high-quality securities, especially at long maturities. Positive net demand for the most liquid benchmark securities has significantly increased the benchmark premium and, on occasion, the cost of borrowing benchmarks in the repo market. Reflecting this, over the past 18 months, fixed-income exposures hedged with government bonds have incurred considerable spread risk, reflecting the lower correlation between yields on government bonds and other fixed-income products. In the euro area, the problem of valuing bonds, as well as hedging interest-rate risk, has been compounded by the absence of a clearly defined government benchmark yield curve and falling liquidity in non-benchmark issues. These factors have detracted from the efficiency of the government benchmark yield curve in providing a single set of risk-free market references for euro issuance by non-sovereigns.

Faced with these developments, market operators have begun to look for more liquid and homogeneous reference points against which to value non-government bonds, on both an intra and inter-market basis. The swaps market has provided an attractive alternative reference. Already, average daily volume in US swaps has surpassed trading volumes in US bond futures and other non-Treasury fixed-income products. In Europe, the liquidity of the euro swaps market has also often proved superior to that of the government bond market.

Swaps curves show for each maturity the fixed interest rate at which banks can borrow in exchange for making floating rate payments in the same currency. The advantage of the swaps curve as a benchmark is that it is a smooth curve based on the creditworthiness of high-quality banks and therefore does not suffer from the issue-specific distortions associated with sovereign benchmarks. Further, while government debt markets are increasingly supply-constrained, the swaps market benefits from the absence of any natural size limitations, merely depending on the willingness of the banks to commit capital and to accept counterparty credit risk. The growing acceptance of bilateral agreements on collateral should enhance the depth of the swaps market, and ultimately provide a more accurate and stable reference for economy-wide borrowing costs.

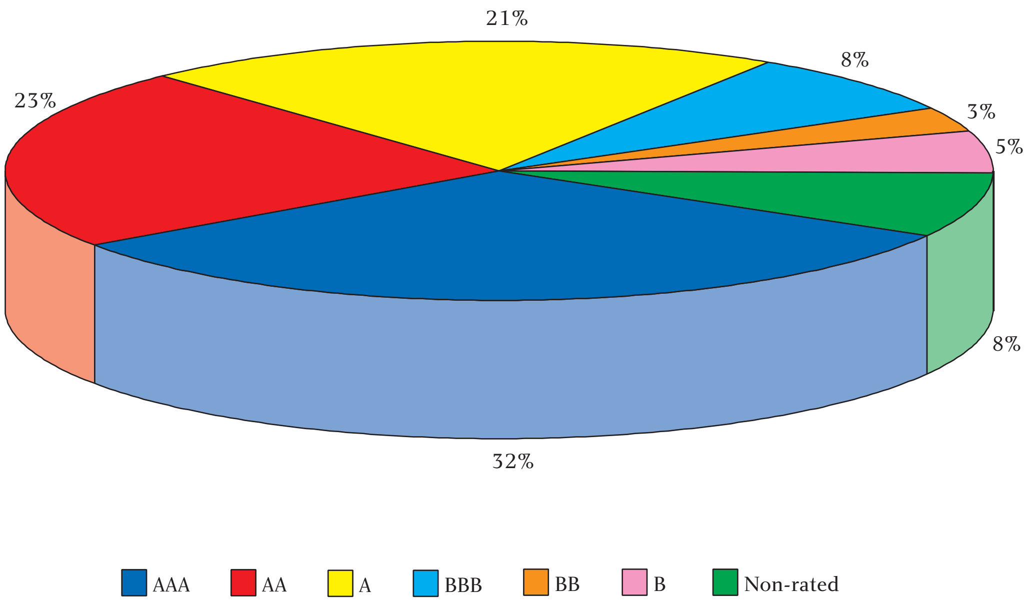
A key feature of the euro swaps market has been that issuers of euro-denominated corporate bonds have historically preferred floating rate liabilities, whereas investors have typically preferred to hold fixed-rate assets. The resulting overall net demand for receiving fixed-rate euro, has tended to reduce the spread between euro swaps rates and government bond yields. However, any cyclical flattening of yield curves could encourage a rise in the proportion of euro-denominated, corporate issuance which is unswapped, as corporate treasurers become more comfortable with the level at which they can issue fixed-rate debt. Increased fixed-rate corporate supply, together with a reduced supply of euro-area sovereign issuance, would in that situation support a widening of euro swaps spreads.

Ratings

60 The vast majority (92%) of fixed-rate, euro-area non-financial corporate issues in 1999 were rated by external agencies (Chart Q). The proportion of AAA-rated issues has fallen sharply over the last two years - from 46% in 1998 to 32% in 1999 - while the proportion of single A and BBB-rated issues has commensurately risen.

61 Sub-investment grade (high-yield) issuance has also increased somewhat, reflecting investors' desire to increase yield. However, the high-yield sector remains small, both in absolute terms and relative to the US. The relatively modest movement to date along the credit curve towards lower-rated companies may in part reflect a relative scarcity of credit analysis expertise in the euro area. In addition, 'brand-name' recognition by retail investors in the euro-area corporate bond market remains important.

FIXED RATE ISSUANCE OF PUBLICLY-PLACED EURO BONDS: 1999 CHART Q



Source: Moody's, Barclays Capital

62 The number of non-financial companies in the EU with a senior unsecured debt rating (reflecting the creditworthiness of the company as a whole) remains far below that in the US. For example, by June last year, in Germany only 12 non-financial companies had been rated by external agencies, as compared to 1,870 in the US. But the incentive for European companies to acquire a rating may increase, as a result of: cheaper funding costs; the explicit role of ratings in the eligibility criteria for ESCB collateral; and the possibility that the June 1999 BIS proposals for revised risk weightings for banks' capital requirements will ultimately result in significantly lower requirements for loans to highly-rated borrowers.

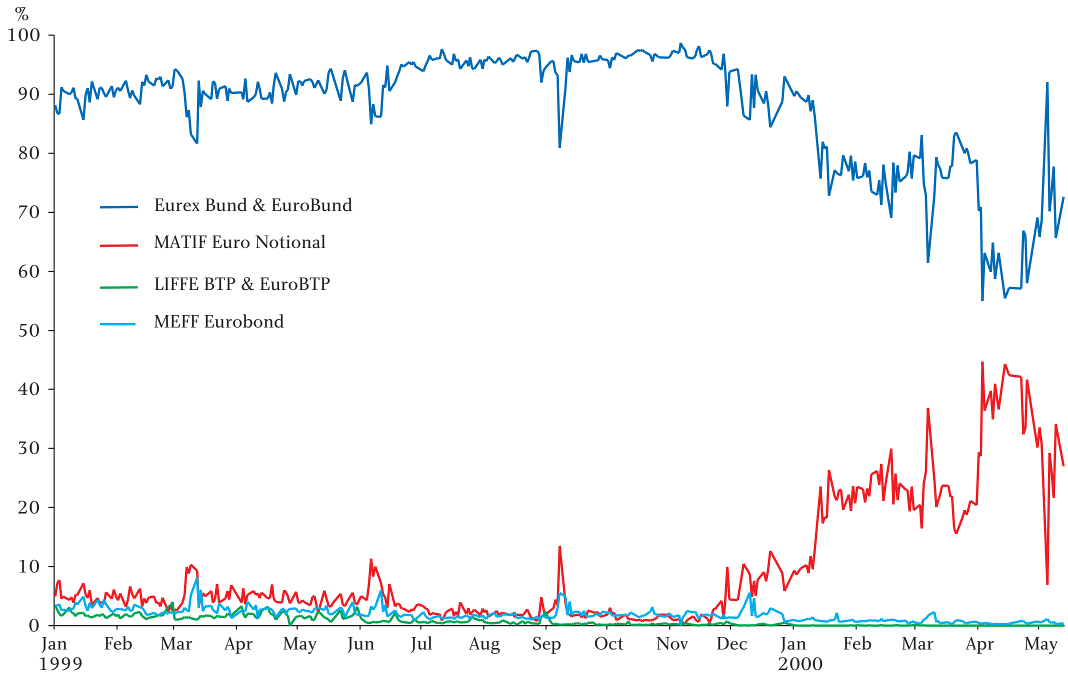
Fixed-rate exchange-traded derivatives

63 The Eurex euro Bund futures contract accounted for around 60% of turnover in the major 10-year euro bond futures contracts in the first four months of this year, a decline from its peak of over 95% in late-1999 (Chart R). There has been an equivalent increase recently in the market share of the MATIF euro Notional futures contract, following the introduction of the MATIF Intervention Bancaire (MIB) market-making scheme, which is supported by nine major French banks. However, the nature of the activity underlying the MATIF data is not entirely clear.

64 Monthly turnover in the Eurex euro-denominated Bund futures contract has increased in the first four months of this year, averaging 8% above the monthly turnover for the contract between April and December 1999. The Eurex euro Bobl (five-year) and euro Schatz (two-year) contracts continue to dominate business in those maturities.

MARKET SHARES OF TOTAL TURNOVER IN MAJOR EURO 10-YEAR FUTURES

CHART R



Source: relevant exchanges

E EQUITY CAPITAL MARKETS

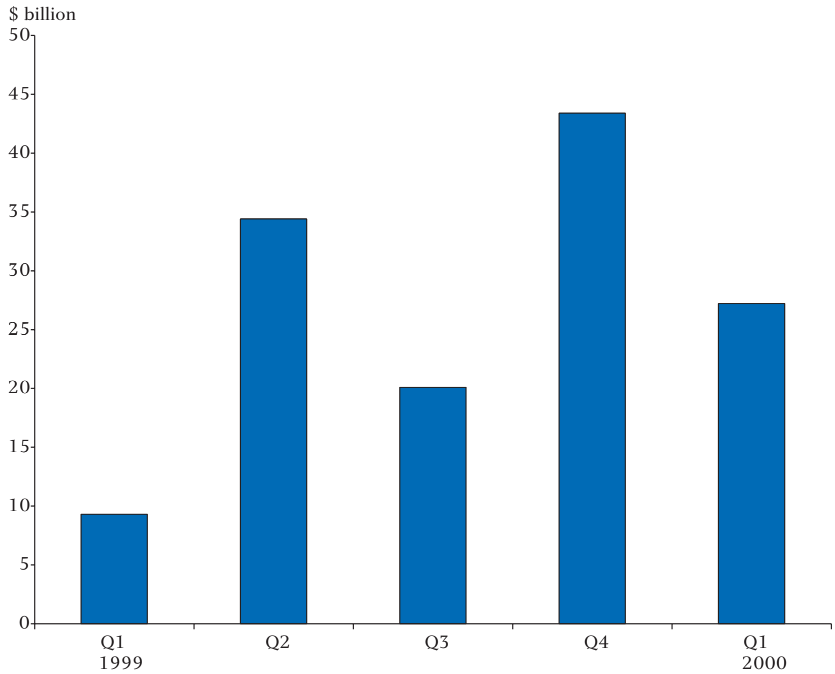
Equity issuance

65 The gross supply of equity by euro-area companies (defined as those with a primary listing in the euro area) rose sharply in 1999 to €107 billion, from an annual average of €56 billion between 1995 and 1998, and remained high in 2000 Q1 (Chart S). 32% of new equity issues by euro-area companies in 1999 comprised telecoms stocks. The growth of issuance in the telecoms, media and technology (TMT) sector has partly offset the reduction since 1993 in new privatisation issues. Overall, gross equity issuance has remained around 1.5% of average market capitalisation during the 1990s.

66 These data for equity issuance cannot be compared directly with the data for bond issuance in the previous section. The bond data are affected by disintermediation, as the European corporate sector replaces some of its bank borrowing with bond issuance. By contrast, although small companies often raise equity capital to finance growth, most mature companies are less keen to raise equity capital, particularly when they are targeting high returns on equity. Indeed, they may arrange share buy-backs, which reduce the net amount of equity outstanding, though data for share buy-backs are not available. Equity issues are, of course, sometimes used by larger companies to finance acquisitions. But while M&A affects gross equity issuance, it does not have any impact on net equity issuance, when it involves an exchange of paper by the acquiring company. Other equity issuance on the capital markets consists of new listings from privatisations and privately-held equity.

GROSS EURO-AREA EQUITY ISSUANCE

CHART S



Source: Schroder Salomon Smith Barney

Equity trading

67 Stock exchange turnover data for 1999 show that the London Stock Exchange continues to have the largest share of domestic equity trading in Europe, and much the largest share of foreign equity trading.

TABLE 5: TURNOVER ON EUROPEAN STOCK EXCHANGES IN 1999

	Equity turnover	
£ billion	**Domestic**	**Foreign**
Amsterdam	275	2
Athens	111	-
Brussels	32	3
Copenhagen	36	-
German	810	104
Helsinki	65	-
Irish	29	-
Italian	313	2
Lisbon	24	-
London	874	1,211
Luxembourg	1	-
Madrid	432	1
Paris	449	4
Stockholm	144	45
Vienna	7	1

Source: London Stock Exchange

European equity index derivatives

68 As market participants have, since the launch of the euro, increasingly sought exposure to the pan-European equity market, a number of exchanges have listed equity index derivatives based on pan-European, euro-area or continental Europe indices.

69 Turnover in pan-European equity index futures is much smaller than in euro-area and continental Europe equity index futures. Over the period from November 1999 to March 2000 inclusive, 94% of average monthly turnover in European equity index futures was traded in euro-area and other continental European indices (notably the Eurex EURO STOXX 50 future).

SHOULD I PAY IT IN FRANCS AND TIP HIM IN EUROS?

CHAPTER 2: EURO FINANCIAL SERVICES

A BANKING CONSOLIDATION

1 The financial landscape in Europe is being transformed by banking consolidation, with the launch of the euro acting as a catalyst, though not the only cause. This section summarises the main banking mergers that have recently taken place in Europe, examines the rationale for them, explores the growth of internet banking as a possible alternative to merger, and considers the supervisory implications.

Recent banking mergers

2 Banking consolidation is not a new phenomenon in Europe, any more than it is in the US or Japan. The banking sector in the EU has been consolidating for some time, in response in particular to global competitive pressures arising from deregulation across the Single European Market, technological change and the growth of institutional investment. The number of credit institutions in the EU fell from around 12,400 in 1990 to 8,800 in 1998, and the average size of mergers increased ten-fold. In the UK, domestic (though not international) banking is already relatively highly concentrated. On the European Continent, consolidation is further advanced in some countries than in others. The five largest banks represent over 70% of total bank assets in Denmark, Finland, Greece, the Netherlands, Portugal and Sweden; between 40% and 60% in Austria, Belgium, France, Ireland and Spain; and below 30% in Germany and Italy. Until recently, most of the consolidation has involved small-scale mergers.

3 While most bank mergers in Europe have involved the acquisition of a small firm, an increasing proportion of the most recent bank mergers has involved two larger firms. They include the following.

- Royal Bank of Scotland has acquired NatWest. Banco Santander Central Hispanoamericano has a stake of around 10% in the combined group. NatWest's fund management subsidiary, Gartmore, has been sold to Nationwide Mutual Insurance of the US.
- HSBC has made an offer to acquire Crédit Commercial de France (CCF). The offer has been recommended by the CCF Board.
- Schroders has sold its investment banking arm to Salomon Smith Barney, part of Citigroup, but retained its fund management arm as a separate entity.
- Chase has made an offer to acquire Flemings.
- Lazard has merged its London, Paris and New York operations into a single independent private investment bank.
- After the first contested bank takeover in France, BNP has acquired Paribas, but failed to acquire Société Générale.
- Deutsche Bank has acquired Bankers Trust; but the proposed merger between Deutsche and Dresdner Bank was called off.

- Following the merger between UBS and SBC in Switzerland, UBS has recently integrated its fund management businesses, Phillips & Drew and UBS Brinson, into UBS Asset Management, and renamed Warburg Dillon Read, its investment banking business, as UBS Warburg.
- In Spain, Banco Santander has acquired Banco Central Hispanoamericano to form BSCH, and Banco Bilbao Vizcaya has acquired Argentaria to form BBVA.
- In Italy, there has been a widespread restructuring of the banking sector. For example, Banco di Roma has acquired Mediocredito Centrale, and Banca Intesa has acquired 71% of Banca Commerciale Italiana.
- In the Benelux countries, ING has acquired BHF Bank (in Germany); Générale de Banque has merged with ASLK/CGER Bank within the (Belgian-Dutch) Fortis Group; and Crédit Communal de Belgique has merged with Crédit Local de France within the Dexia Group.
- In Scandinavia, Nordic Baltic Holding, which was created out of the merger between Merita and Nordbanken, has merged with Unidanmark to create the largest bank in the region.

Chart A ranks the current top ten European banks by asset size, and shows their market capitalisation.

4 While the focus in this section is on consolidation in banking, the insurance sector is consolidating as well (eg the merger between CGU and Norwich Union), and financial conglomeration is taking place between banks and insurance companies (eg Credit Suisse's acquisition of Winterthur, and Lloyds TSB's acquisition of Scottish Widows). There are already close links between banks and insurance companies in many parts of the EU, and the number of *bancassurance* (ie bank and insurance company) mergers has increased significantly since 1997, when restrictions were removed by the Second Banking Co-ordination Directive (2BCD).

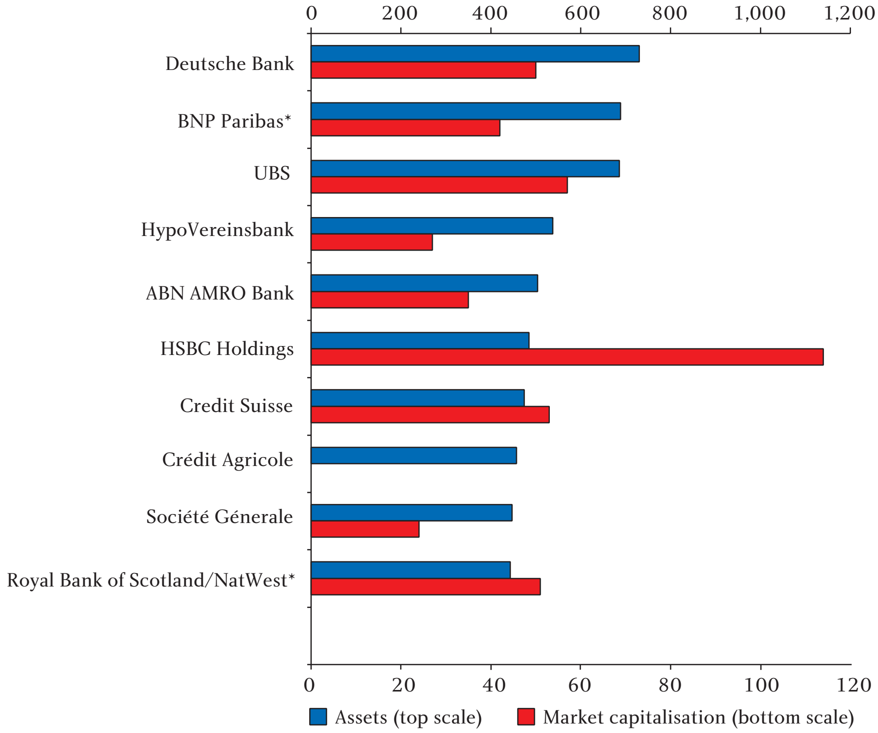
The rationale for recent banking mergers

5 There is a variety of reasons for the increasing number of large-scale banking mergers in Europe.

- In investment banking, critical mass is of particular importance to profitability. This is not just a function of capital strength and global reach, though in some lines of business these are prerequisites. To win mandates for new business on a substantial scale, investment banks need good client relationships, and they also need to be able to demonstrate a track record, as measured by ranking in the investment banking league tables. (Chart B shows the top ten investment banks in European M&A last year.) The sale by Schroders of its investment banking arm to Salomon Smith Barney is designed to improve the combined group's chances of competing globally with Goldman Sachs, Merrill Lynch and Morgan Stanley Dean Witter. But there is still a role for niche players in particular lines of business (eg M&A). The decision by Lazard to integrate its London, Paris and New York operations into a single independent investment bank is evidence of this niche approach.

TOP TEN EUROPEAN BANKS BY ASSET SIZE AND THEIR MARKET CAPITALISATION

CHART A

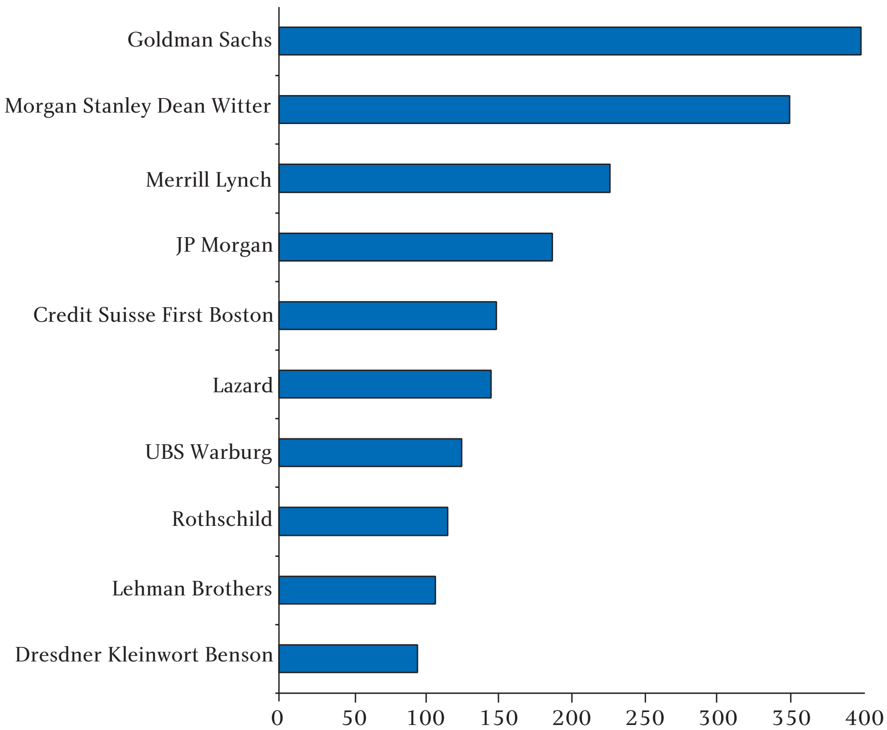


Notes: assets ($ billion), from *The Banker* September 1999 survey (top scale); market capitalisation ($ billion) at 4 January 2000 (bottom scale) *Combined figures

Source: *The Banker, Financial Times*

TOP TEN INVESTMENT BANKS IN EUROPEAN M&A

CHART B



Note: value of transactions completed with European target or acquirer in 1999 ($ billion)

Source: Thomson Financial, Primark Datastream

- In commercial banking, cost savings in response to competitive pressure are clearly a strong motive for merging. On the wholesale side, some banks have found that foreign exchange, custody services or correspondent banking have not been sufficiently profitable, or that there is scope for back-office cost savings. On the retail side, the need to reduce excess capacity is a much bigger issue. Cost pressures and changes in the pattern of business have obliged banks to close unprofitable branches. In parts of the EU, retail banks' cost-income ratios remain at over 70%. Some UK retail banks have driven down their cost-income ratios to below 50%. But new competitors can enter the market more cheaply than ever before through banking on the internet, though the range of services they currently offer across the internet is not as wide as they offer through traditional channels.
- Revenue and risk diversification are often important factors in persuading banks to merge. In some cases, diversification is geographical (as with HSBC's proposed acquisition of CCF). In other cases, it is functional (eg involving diversification into private banking, fund management and *bancassurance*), though banks and insurance companies have also found other ways, short of merger, of cross-selling each other's products to their retail customer base. In addition, in response to competitive pressure, many banks have shifted the focus of their business from interest-bearing net income on the balance sheet to non-interest bearing income off the balance sheet. Disintermediation of this kind arises when bank clients are able to raise finance through issuing securities more cheaply than through bank borrowing, or investors can earn a higher return by switching deposits into mutual funds. Non-interest income has increased from around 30% to just over 40% of EU bank revenues over the past five years.
- In all contested takeovers, the performance of the management, as reflected in the target bank's return on equity and relative share price, is a major consideration for institutional investors. Contested takeovers in the banking sector are still rare. But share price underperformance over a long period was one explanation for the hostile bid for NatWest, and for the vote by institutional investors in favour of a takeover. The outcome turned in large measure on the respective track records and future vision of the management of RBS, Bank of Scotland and NatWest itself, which brought in new management to increase the credibility of its defence, though ultimately unsuccessfully.
- The size and pace of recent bank mergers have created their own momentum. Many commercial banks which previously thought they were in a strong competitive position now find that they are dwarfed on the international stage by the scale of recent mergers. If they look at their market share, not just in their national market but increasingly in the Single European Market as a whole, they may conclude that a merger represents one way of attempting to maintain their competitive edge.

6 Most EU bank mergers have so far been domestic (ie within the same Member State). There are a number of possible reasons why there have not been more cross-border mergers in the EU.

- In investment banking, activity is already heavily concentrated on a relatively small number of major players whose European business is based in London and a very few other European financial centres. This limits the scope for cross-border mergers.
- In commercial banking, the potential scope for cross-border mergers is much greater. A few cross-border mergers have already taken place: for example, Fortis (Belgium and the Netherlands); and Dexia (Belgium and France). Nordic Baltic Holding, which was itself created out of the merger between Merita (Finland) and Nordbanken (Sweden), has merged with Unidanmark (Denmark). And HSBC is proposing to acquire CCF (France). But there are still some significant hurdles for cross-border bidders to overcome.
- Some of these hurdles are cultural. Local franchises are often very strong, as local customers identify with local bank brands. There may be local opposition to foreign takeovers, as in the case of BSCH's acquisition of Champalimaud in Portugal, where initially there was concern about the protection of minority interests.
- Some of the hurdles are legal and regulatory. Significant differences remain between consumer and competition laws in different EU countries, so a pan-European product range is not yet practicable. There are restrictive labour laws in some EU countries, which limit the scope for cost savings. Accounting and reporting requirements differ. Retail payment systems also vary significantly. Customers in some countries are used to making payments by cheque; in others by giro.
- And some of the hurdles are financial. While cross-border mergers may provide scope for revenue diversification, the scope for cost savings is often not as great as in the case of domestic mergers. This makes it more difficult for a cross-border bidder to justify paying a significant premium over net asset value, with a proportion of the purchase price being written off as goodwill. In most cases, the market also still expects cross-border bank bidders to offer cash as an alternative to an exchange of shares (even though paper bids have been accepted across borders in other market sectors, and the euro is a 'cross-border' currency).
- Cross-border mergers do not yet take place on a level playing field in all EU countries. Whereas in the UK there is no discrimination against foreign banks, the creation of national champions does appear to be important in some other countries.
- In addition, some banks' mutual status protects them against takeover, and state guarantees (eg for the Landesbanks and Sparkassen) enable the banks concerned to raise funds more cheaply than they otherwise could. Concern about the resulting lack of profitability of retail banking in Germany is reported to have been one of the reasons for the attempted merger between Deutsche and Dresdner. As a consequence of the merger, Allianz was to have taken a substantial stake in their retail banking arm. This was ultimately to have been separately floated.

7 As an alternative to full-scale mergers across borders, some banks have concentrated on building up a network of minority stakes and joint ventures. For example, BSCH has taken minority stakes in RBS in the UK, Société Générale in France, Commerzbank in Germany, and San Paolo IMI in Italy, and established a number of joint ventures with Société Générale. Besides BSCH, Commerzbank has cross-shareholdings with Generali, and stakes in Crédit Lyonnais and Banca Intesa. In other cases, minority stakes are taken in banks by insurance companies. CGU has minority stakes in both RBS and Société Générale. Allianz has minority stakes in both Deutsche and Dresdner.

8 Although cross-border mergers in Europe have so far been limited, there is little scope in some smaller EU countries like the Netherlands for further expansion by banks of the size of ABN Amro and ING through domestic acquisition; and there are a number of indications that the market for corporate control across Europe is beginning to open up. In particular, in Germany the Government is proposing to abolish capital gains tax on the sale by banks and other institutions of their cross shareholdings in each other. Vodafone's contested takeover of Mannesmann is widely seen as a catalyst for change, though there have not yet been any large foreign acquisitions of German banks, and the prospects may depend on the outcome of proposals in Germany for new takeover rules. In France, HSBC's friendly takeover of CCF is the first foreign acquisition of a publicly-listed French bank. However, CCF is already majority foreign-owned, with substantial stakes owned by ING, KBC and Swiss Life.

9 Finally, whether or not banking mergers improve shareholder value in the long run is not straightforward. The alleged poor track record of previous bank mergers was one of the planks in NatWest's defence against takeover by RBS or Bank of Scotland. Bidders have in the past sometimes had difficulty in living up to the revenue and cost-cutting projections made in the heat of a bidding war. And integration is rarely a smooth process. Mergers often give rise to large restructuring costs, as well as advisory fees. Culture clashes between merging investment and commercial banks, or between two previously competing investment banks, often prove more difficult to manage than hoped. Disagreements over investment banking appear to have been one of the main reasons why the proposed merger between Deutsche and Dresdner was called off. In investment banking in particular, the people provide most of the added value in the business, and there is no guarantee of being able to retain them.

Banking on the internet

10 Banking on the internet may provide a cost-effective alternative to merger for some banks by enabling them to gain access to new, or to retain existing, corporate and retail customers. In the US, major firms like Chase and Citigroup have been making a substantial investment in financial services on the internet for some time. In Europe, a number of large firms have also recently announced substantial investments. The approach taken varies.

- Some internet banks are 'standalone' facilities owned by non-banks (like Prudential's Egg). In other cases, on-line services, such as at Barclays, BNP Paribas, Crédit Suisse, and Deutsche Bank 24, are owned by the banks themselves. They tend in most cases either to be fully integrated into the bank's operations, or alternatively to take the form of a separate in-house internet bank. But Halifax has retained a stock market quote for its internet venture in order to provide stock incentives for its management. Whatever the structure, the internet bank forms another distribution channel to customers. 'Channel management' involves the ability to communicate with the customer through whichever channel (eg the local branch, telephone banking or the internet) the customer prefers.

- While some banks see the internet primarily as another channel to their domestic customer base, others see internet banking as a way of building market share abroad (eg across the EU) without having to invest in 'bricks and mortar'. This is one of the objectives of Lloyds TSB's internet banking plans on the European Continent.
- Some banks see the internet as an alternative to a retail branch network. Others think the two are complementary, because customers often sign up to a bank's on-line services at a branch (ie 'clicks and bricks').
- Some internet banking facilities are being developed by banks on their own. Others are being developed in partnership. Merrill Lynch and HSBC are proposing to form a 50/50 partnership to create an international on-line banking and wealth management company, based in London, to serve individual customers around the world, except in the US. Partnerships are also being developed by banks with software companies and other specialists: eg Deutsche Bank with America OnLine Europe; ABN Amro with Trade.com; and BNP Paribas' partnership with France Telecom to provide banking services on mobile 'phones.
- Some banks offer only their own products and services over the internet. Others like Unofirst, which is a merger between BBVA's on-line bank (Uno-e) and First-e, are reported to be planning to act as a financial 'supermarket' as well.
- While some banks are focusing on internet banking for retail customers, others aim to provide a full-service internet bank for their corporate clients too. For example, Barclays and Freeserve have formed a joint venture to develop a web portal for small businesses.

11 It is not clear how quickly internet banking will expand. But whatever the pace of expansion, it seems more likely that internet banking will complement and provoke, rather than replace or remove the need for, further consolidation of the banking sector in Europe.

Supervisory implications

12 Responsibility within the EU for the supervision of individual financial institutions rests at national level, though national institutional arrangements for the supervision of both banks and other financial institutions vary. National supervisors also have different powers and responsibilities for mergers and takeovers, beyond those set out in EU Directives. In the case of a cross-border acquisition, the supervisor responsible for the bank to be acquired would have responsibility for ensuring that the foreign bidder met the requirements of the 2BCD. This would involve prior consultation with the supervisor responsible for the acquiring bank, who would also have to ensure that the acquisition did not raise supervisory concerns (eg in relation to capital, management, systems and controls) in its own jurisdiction.

13 The consolidation of the banking sector taking place in Europe, together with the prospect of more cross-border mergers in future and the growth of internet banking, raise new issues for supervisors in the EU.

- One question for supervisors is whether bank mergers increase risk or reduce it through diversification. Each merger needs to be considered on its merits. But part of the policy dilemma for supervisors is that, while consolidation can reduce the probability of failure, it can increase the impact of failure, should it occur. This leads potentially into the problem of moral hazard, if merged banks are regarded as 'too big to fail'. Moral hazard is a systemic issue of concern, in the UK case, to the Bank of England as well as the FSA. The task for supervisors is made more complex, as mergers take place across borders, and between sectors (eg banking, securities and insurance). And while the introduction of the euro has made financial markets more liquid, it has also increased the risk that financial instability in one part of the euro area could be transmitted across the euro area as a whole and beyond.
- A second question concerns the public's understanding of the regulatory framework. 2BCD provides a clear framework for the allocation of responsibility in EU banking regulation. But it is not clear that consumers and depositors properly understand the position. The problem may worsen as the scale and scope of cross-border mergers increase, and with the development of internet banking. The question for supervisors is what can be done to clarify matters.
- A third question arises as a result of the tendency for internet banks to start with fairly straightforward deposit-taking, but then to diversify their activities into more complex investment products (as Egg has done). The issues that arise for supervisors include: what constitutes investment advice on the internet; and, where the service is provided cross-border, how internet providers will cope with the different host-country schemes in the EU for conduct-of-business rules.

14 ECOFIN concluded in April, on the basis of a study by EU national experts, that there is no need to change the institutional structure of financial supervision in Europe at present, although this conclusion is to be kept under review. There is already considerable co-operation between national supervisors across borders, and between sectors. Increasing attention is also being given to the supervision of international financial conglomerates, with banking, securities and insurance operations in a number of countries both inside and outside the EU.

15 However, it is accepted that co-operation in practice, both between national supervisors themselves and between national supervisors and central banks, needs to be enhanced. The focus of enhanced co-operation is likely to be in four main areas: making more use of 'co-ordinating supervisors' for large financial groups operating across borders and between sectors; exchanging more information between central banks and other supervisors across borders and within them; trying to ensure that, if there is a risk that problems in a major financial group in one EU country will be transmitted elsewhere, this is reported to the authorities concerned; and improving the degree of convergence between supervisory practices in different countries, where this would make sense.

B FUND MANAGEMENT

16 The fund management business is changing, in response to the launch of the euro, new technology, the development of the financial markets in which fund managers invest, the growth of their client base, and competition between fund managers themselves. Apart from

the euro, all of these influences are global, not just European, in scope. But the focus here is on the contribution that fund managers based in the UK are already making, and have the opportunity increasingly to make in future, across Europe.

17 The section is in five parts, covering: first, the state of the fund management business in the UK at present; second, the impact of the launch of the euro; third, the impact of longer-term structural changes in continental Europe; fourth, the approach which fund managers are taking in response to these developments; and finally, the competitiveness of the UK fund management business internationally.

The fund management business at present

18 Fund managers in the UK either act for a fee on behalf of external clients, with discretion within guidelines (and, in the case of authorised investment funds, regulations) about where to invest, or they provide a service to a parent organisation (such as an insurance company or self-managed pension fund). Their activities include: asset allocation and stock selection, based on investment analysis; dealing; cash management; transactions settlement; reporting on investment performance to existing clients; and marketing for new clients and through new products. All firms also require a compliance officer, who is responsible for ensuring that the firm fulfils its regulatory responsibilities.

19 The main features of the fund management business in the UK at present can be summarised as follows.

- Funds under management in the UK amount to £2,527 billion (1998), of which 36% represent occupational pension funds, 37% insurance, 3% investment trusts, 9% mutual funds (ie unit trusts and open-ended investment companies) and 14% private clients.
- Investment banks and insurance companies manage over three-quarters of institutional funds under management, independent firms a sixth and a small number of employers continue to manage their own pension funds. Institutional funds under management are estimated to have grown over eight times in real terms since 1965.
- 85% of funds under management in the UK are managed in London, and 14% in Scotland (mainly in Edinburgh and Glasgow).
- Fund management employs 40,000 people directly. The overall number employed is much higher, if those employed by retail stockbrokers in the management of private client funds, and others indirectly involved in the business, are included.

20 There is a strong international flavour to fund management in the UK, in terms of:

- the fund management firms themselves, many of which are foreign owned;
- the funds which they manage: £571 billion (23% of total funds under management in the UK in 1999) is managed on behalf of overseas clients (four times higher than in 1992);
- the proportion of their portfolios which are invested internationally (about 23% in the case of UK pension funds, and mainly in equities), with the result that fund

managers in the UK have substantial stakes in many publicly-quoted companies in the euro area; and

- overseas earnings generated by fund management services (as opposed to the underlying investments), which are estimated to amount to £500 million (1998).

TABLE 1: FUNDS UNDER MANAGEMENT IN THE UK

£ billion	UK clients[a]	Overseas clients[a]	Total
Pension funds	699	208	907
Insurance	875	60	935
Unit trusts and 'oeics'	172	49	221
Investment trusts	51	11	62
Other	0	193	193
Adjustment[b]	-132	0	-132
Institutional total	1,665	521	2,186
Private clients	291	50	341
All clients	1,956	571	2,527

Notes: (a) Broad estimates of identified assets, at December 1998 for UK clients and June 1999 for overseas clients. The figures should be treated with caution, but give a broad indication of the magnitudes involved. (b) An adjustment made to remove double counting (of investment by one group in another).
Source: British Invisibles

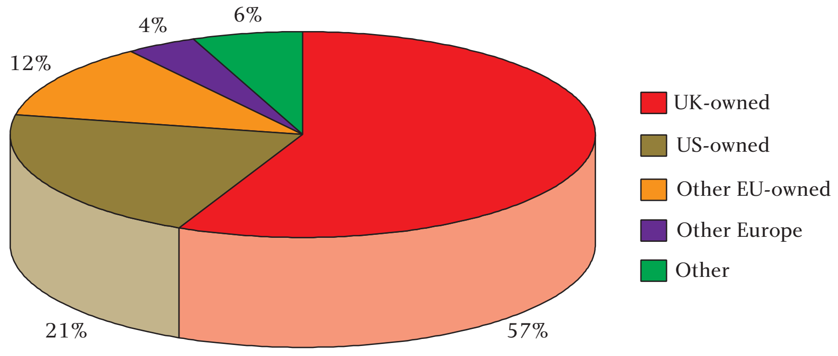
Table 1 gives overall figures for funds under management in the UK. More up-to-date figures from a survey of FMA members, and for AUTIF, are shown in Charts C-F.

TABLE 2: EUROPEAN FINANCIAL CENTRES: INSTITUTIONAL EQUITIES UNDER MANAGEMENT

Financial centre	World ranking	1998 $ billion
London	1	2,178
Zurich	6	491
Paris	8	420
Amsterdam	11	294
Frankfurt	12	270
Edinburgh	14	239
Milan	15	187
Geneva	18	172

Source: Thomson Financial, *International Target Cities Report*

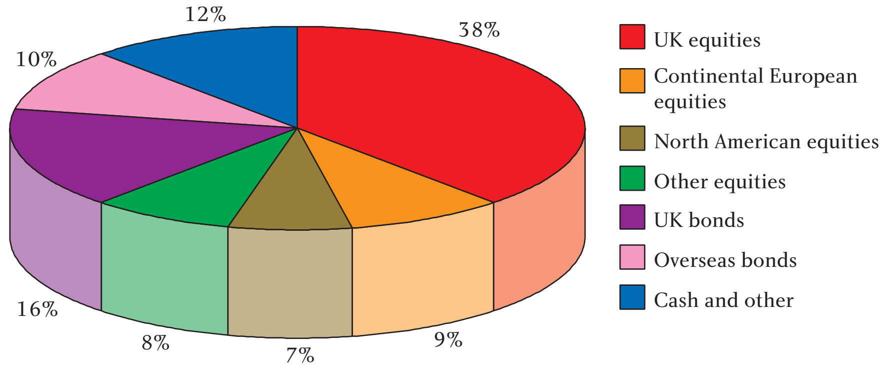
OWNERSHIP OF FUND MANAGERS IN THE UK — CHART C



Note: calculated on the basis of funds under management of FMA member firms with £2,170 billion under management at 30 June 1999

Source: FMA Survey

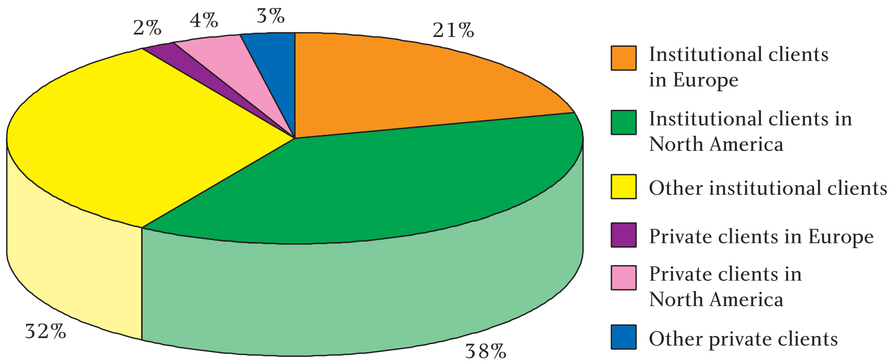
ASSET ALLOCATION OF UK FUND MANAGERS — CHART D



Note: based on FMA member firms with £1,946 billion under management at 30 June 1999

Source: FMA Survey

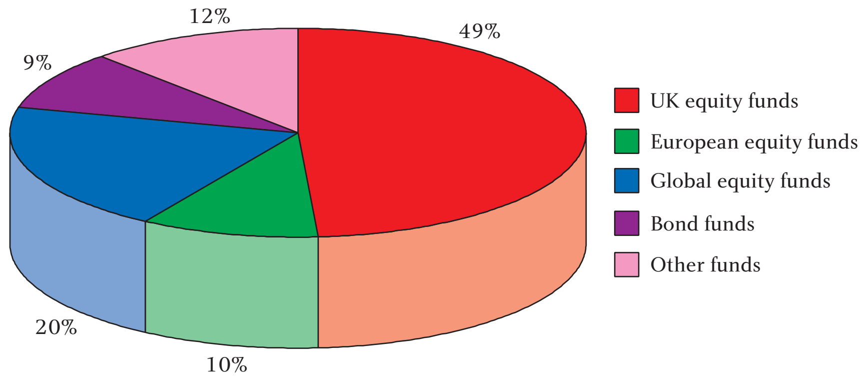
GEOGRAPHICAL ANALYSIS OF OVERSEAS CLIENTS — CHART E



Note: based on FMA member firms with £566 billion under management from overseas clients at 30 June 1999

Source: FMA Survey

MUTUAL FUNDS MANAGED IN THE UK — CHART F



Note: based on total net assets of £262 billion at 31 March 2000

Source: AUTIF

21 The UK fund management industry is the largest in Europe, and London has more than $2,000 billion of institutional equity holdings under management (1998): more than any other financial centre in the world (Table 2).

The impact of the introduction of the euro

22 By eliminating exchange risk within the euro area, the introduction of the euro has created deeper and more liquid markets in which to invest, and redefined the concept of 'domestic' investment for clients in the euro area from the national market to the euro area as a whole. This has implications both for the benchmark indices against which fund managers' investment performance is measured, and for the weighting of the investment portfolios they manage on their clients' behalf (see December 1999 *Practical Issues*).

23 The launch of the euro has created a demand from euro-area clients and their fund managers for new benchmark indices against which to measure investment performance, instead of their old 'domestic' benchmarks. There has for some time been fierce competition between index providers to supply them.

- In the bond market, the main suppliers include Barclays Capital, Bloomberg, Datastream, ISMA, Lehman Brothers International, Merrill Lynch, JP Morgan, MSCI, Reuters and Schroder Salomon Smith Barney.
- In the equity market, they include Dow Jones STOXX, FTSE Eurotop, MSCI, Schroder Salomon Smith Barney and S&P.

24 Market firms think it unlikely that a single dominant benchmark for Europe will emerge in either the bond or equity markets.

- Some investors measure performance against euro-area indices, and others against pan-European indices, depending on the client mandate, which may in turn depend on the currency in which the client's liabilities are denominated.
- Indices also vary in the range of bonds or stocks they cover, because of differing user requirements. In the bond market, different indices measure narrow and broad ranges of bonds in issue, and issuers of varying quality. In the equity market, institutional fund managers tend to use a wider benchmark, on the grounds that it is representative of the market as whole, whereas creators and users of derivatives products tend to use an index narrowly focused on a small number of blue chip stocks, because of their liquidity. Narrow indices may also be more attractive in the retail market.

25 Where funds have traditionally been weighted heavily towards investment in a particular national market, the introduction of the euro naturally encourages a shift (or 'rebalancing') from investment in the national market to investment across the euro area as a whole, because of the removal of exchange risk. However, rebalancing has so far been slower than expected, within both bond and equity portfolios.

- Within bond portfolios, diversification away from national government AAA-rated to other government AAA-rated bonds, or even bonds with a lower rating, has been less than expected. In general, this is because fund managers have not considered there to be a sufficient yield or risk diversification advantage, given tight yield spreads and high correlations between the investment performance of different bonds.

- Within equity portfolios, rebalancing is in many cases taking place through the investment of incremental new funds rather than a once-for-all switch in existing assets. This is because fund managers often know their national market best; changes in client mandates can be cumbersome; some investors are less influenced by benchmarks than others; and taxable investors with large unrealised capital gains may be reluctant to realise them.
- In both cases, there are still some constraints on cross-border investment in Europe (see below).

26 However, cross-border mergers and takeovers may help to speed up the process of rebalancing, by creating pan-European stocks and broadening the perception among fund managers that there will increasingly be a pan-European market for corporate control. Where a merger or takeover leads to a significant change in the weight of a stock in an index, funds which closely track the index follow suit, unless limits on individual stock holdings (typically 5-10% of a portfolio) force them to be under weight. That in turn increases the demand for broader-based (and capped) indices.

27 The question of rebalancing would also arise between investments in the UK and the euro area, if the UK were to enter EMU. In that event, fund managers have different views about the pace and significance of the rebalancing they would expect to occur.

The impact of longer-term structural changes in Europe

28 In the longer term, the requirement for fund management services across Europe as a whole is expected to grow substantially. Externally managed pension fund and insurance assets, and mutual funds, are expected by market sources to have doubled over the five year period to 2001. Leaving aside valuation changes, market firms expect growth to continue, as a result of increased personal wealth and the investment of a higher proportion in bonds and equities (eg via mutual funds); increased demand for private sector pension provision; and a higher proportion of assets being allocated for external fund management, because of the superior investment performance this generally brings.

29 There has already been a substantial increase in investment through European mutual funds. The European Federation of Investment Funds and Companies (FEFSI) estimates that they grew by 31% in 1999 to €3,109 billion, of which 43% was invested in equity funds, 29% in bond funds, 12% in money market funds and 16% in balanced funds. But this is still significantly less as a proportion of GDP than in the US. Market firms see considerable potential for further growth in mutual fund assets in Europe, and competition among fund managers is also growing, in response. Several Member States encourage or require fund managers to establish fund management subsidiaries locally. Amendments are being considered to the UCITS Directives in an attempt to overcome the remaining obstacles to cross-border management and investment.

30 The other focus of attention for fund managers with international expertise in continental Europe is the private sector pension fund market, for the following reasons.

- Birth rates in the EU are falling, early retirement is more common and life expectancy is increasing. The Commission estimates that the proportion of people over 65 will rise from 23% in 1995 to 40% in 2025. Equally, the proportion of people in the workforce is expected to fall. Currently, there are four people in work for every pensioner; by 2040, the ratio is expected to be two to one. The increasing cost of supporting 'pay-as-you-go' state pension schemes is making governments in the euro area look at alternative ways of reducing the burden on the taxpayer, including increasing the retirement age, reducing state benefits, and encouraging a shift to funded private sector provision. (The problem is much less acute in the UK, the Netherlands and Ireland, which already have well developed funded pension schemes. In the UK, pension fund assets are estimated at over 90% of GDP, compared to an average of 10% in Germany, France and Italy (1998). Even so, a stakeholder pension initiative is being introduced in the UK to encourage greater take-up of private pension provision among low to medium earners.)
- A shift to private sector funding is not a cost-free option because, for a transitional period, employees have through taxation to contribute to the pensions of the previous generation (who are still covered by 'pay-as-you-go'), while also making provision for their own future retirement (through funded occupational pension schemes or personal pension plans). But the other options are not cost-free either. It may well be possible for the same level of pensions to be provided through a funded system at a lower cost than an unfunded one, though this depends on the assumptions made about rates of return.
- The combination of good investment management and favourable market conditions make a considerable difference to the cost of funded pension provision. The European Federation for Retirement Provision has estimated that the expense of providing for a fixed pension of 35% of final salary over a career span of 40 years would be 19% of annual salary based on a projected real return of 2% per annum, compared with just 5% of annual salary based on a projected real return of 6%.
- The real return on funded schemes in European countries without government constraints (eg on the proportion of funds which can be invested in equities) has been considerably greater over the long term than the real return on funded schemes with constraints (eg in the form of a minimum proportion which has to be invested in government bonds). The real return on pension fund portfolios in countries without constraints on investment was 9.5% annually between 1984 and 1996, against 5.2% for portfolios in countries with constraints.

31 In an attempt to remove the remaining obstacles to cross-border investment, the Commission has been considering how best to ensure, *inter alia*, that pension fund investment strategy should in future be based on the 'prudent man' principle; that a fund manager authorised in one Member State should be able to manage funds on behalf of pension funds throughout the EU; and that pension fund liabilities should be covered by assets. (In the UK, the minimum funding requirement (MFR) aims to ensure that each

pension scheme is financially viable, so as to protect members if the employer becomes insolvent. The operation of the MFR is currently under review.)

The approach which fund managers are taking in response

32 Fund managers have to decide how best to meet the growing demand across Europe for international fund management services, and the growing potential competition from other fund management centres. Fund managers in the UK offer a variety of approaches. The main ingredients are: their business structure; investment strategy; marketing of new services and products; and use of new technology.

33 As regards business structure, most large fund managers are part of an insurance group or commercial or investment bank, with 'Chinese walls' between the bank and the fund management arm, though some large fund managers are independent. There is also fierce competition between large established firms and smaller firms. Some of the smaller firms have a relatively short track record, but can demonstrate good recent investment performance. The largest UK-based fund managers include the following.

TABLE 3: FUNDS UNDER MANAGEMENT BY A SELECTION OF UK-BASED FUND MANAGERS

End-1998	$ billion
Barclays Global Investors	615
Amvescap (including Invesco)	285
Merrill Lynch Mercury Asset Management (part of Merrill Lynch)	243
Axa Investment Managers (part of Axa Group)	224
Prudential Portfolio Managers	212
Morley Fund Management (part of CGU Group)	200
Schroder Investment Management	198
Morgan Grenfell (now Deutsche) Asset Management	171
Legal & General Investment Management	132
Robert Fleming Holdings	114
Standard Life Assurance Co	109
Lloyds TSB Group	105
Royal & Sun Alliance Group	96
Phillips & Drew (part of UBS)	89
Gartmore Group	83
Norwich Union Investment Management	82
HSBC Holdings	78
Henderson Investors (owned by AMP)	77
JP Morgan Investment Management	73
Threadneedle Asset Management (part of Zurich Financial Services)	68

Note: in contrast to Table 1, which consists of an estimate of total funds managed in the UK, Table 3 includes all funds managed by the selected UK-based firms
Source: extract from *Institutional Investor, 'Euro 100'*

34 As regards investment strategy, all fund managers with international expertise take a view, in the light of the liabilities and other requirements of each fund that they manage, on the appropriate balance to strike between cash, bonds, equities (and sometimes property), by currency. Within a risk framework (in the form of investment guidelines) agreed with the client in each case, investment strategy varies from one fund manager to another.

- Some fund managers compete for 'balanced' mandates covering the investment of an entire fund, while others compete for 'specialist' mandates (eg in high-tech stocks). Many large firms do both. Clients, such as pension fund trustees, have increased the allocation of specialist mandates recently, in response to good relative investment performance.
- Some fund managers put more emphasis on an 'active', and others on a 'passive', approach to investment. 'Passive' fund managers generally track stock indices. The client has to choose the index, and the fund manager needs the technical capability to track it. The weight of funds tracking a particular stock index is sometimes sufficient to influence the relative market price of stocks in the index. Derivatives are also sometimes used to hedge exposure to market risk.
- 'Active' fund managers use different approaches to equity investment. Some tend to analyse markets 'top down', starting from country risk and sector risk, which they often assess globally. Others put more emphasis on stock selection 'bottom up'. Some focus on 'value' (ie stocks that fundamental analysis suggests are cheap), while others focus on the potential for 'growth' (eg high-tech companies). Many large firms have a mix of different products incorporating a variety of approaches to equity investment.
- Fund managers' approach to stock selection is an important influence on their investment performance. While the volatility of individual stocks varies from year to year, it increased sharply last year, leading to much greater over or underperformance, in comparison with the median, than in the past.
- Fund managers also compete on fees. Fees are generally set on a sliding scale of the value of a client's funds under management, but fund managers are also being pressed by some clients to take an additional element of performance risk.

35 Fund managers generally agree that the best marketing strategy is based on a strong brand image and a track record of good investment performance, both over the short and long term. But marketing for new clients in the euro area is different, in the sense that many of the benchmarks are new, so the barrier for new entrants is comparatively low, though marketing across borders is subject to local rules. Effective marketing is needed across the euro area to help win new institutional mandates there, and effective distribution is needed to build up a retail franchise (eg through mutual fund sales).

36 The use of new technology is both a potential opportunity for fund managers and a competitive threat. It is an opportunity in the sense that on-line links enable fund managers to reach clients and *vice versa* more quickly, and the growth of electronic trading and settlement is helping to reduce transactions costs. But new technology is also a threat to established fund management practice: competitors are constantly trying to develop and sell new products through the internet. The best fund managers will turn this competitive threat into an opportunity.

The competitive position of UK fund managers internationally

37 Competition across Europe in fund management is already intense, and is likely to grow more so, as existing firms build up their capabilities and new firms are established in an attempt to win a share of the growing market.

38 The main strengths of the fund management business in the UK are:

- its reputation and professional skills, including its track record in investment performance over the long term, especially in the equity markets, and in most cases an innovative approach to marketing and new products;
- a regulatory structure that sets freedom in investment decision-making within a framework that gives protection to consumers, and treats UK and foreign-owned firms on a level playing field; and
- its size and strong international orientation, both as regards the number of foreign-owned firms represented in the UK, and the proportion of investment committed internationally.

39 Against this, fund managers in the UK also have to overcome some potential weaknesses.

- London is regarded as an expensive location in which to do business, though much of the talent in international fund management is based in London.
- In addition, the potential for new client mandates may be larger outside than inside the UK.

40 London is generally regarded as being well placed as an international fund management centre, so long as it continues to encourage innovation and remain competitive. In particular, fund managers based in the UK need to have a pan-European approach to win and retain business across the euro area. That may also be a factor in helping to keep some of their existing client base in the UK as well.

CHAPTER 3: EURO INFRASTRUCTURE

A PAYMENT SYSTEMS

1 The general consensus is that euro payment systems are functioning well, and that, over the past year or so, there has been a notable reduction in problems, particularly in TARGET. There has not as yet been a major change in euro payment patterns post Y2K: decisions on routing taken in 1999 are largely being left in place for the moment – in part because banks are aware of the need for more substantial reorganisation in the medium and long term. In the medium term, several projects due to be implemented by the second half of 2001 or early 2002 will prompt a number of changes, and some rationalisation of the use of payment systems can be incorporated at that time. In the longer term, the prospect of the next stage of TARGET (at some point after 2005), and the potential impact on payment flows and relationships of prospective mergers in European securities clearing and settlement systems could involve substantial changes in payment management.

2 The main themes of this section are as follows.

- There is still little evidence of a migration of cross-border payment traffic from correspondent banking into TARGET and EURO1.
- Liquidity management is improving, but there is further to go.
- Cross-border customer traffic in TARGET and EURO1 is growing, as is pressure to automate processing and reduce costs.
- The ESCB is considering the medium-term development of TARGET: it is necessary in the process to reconcile the desire by some for an upgrade with the business case for spending money on enhancements, as well as the different requirements of international banks and those which operate primarily in a domestic context.
- The next release of CHAPS (NewCHAPS) is due to go live in 2001.
- DvP and the cross-border use of collateral pose new challenges both to systems operators and users.
- There is a risk of project bunching in the second half of 2001, which could be ameliorated by undertaking some work earlier – notably relating to the conversion of previous national currencies.

Payment flows through different systems, and performance

3 Table 1 shows that the growth experienced by EURO1 and TARGET cross-border payments (in volume terms) during 1999 is continuing. Precautionary adjustments by financial institutions throughout Europe to reduce transactions, and hence payment flows, over the Y2K period resulted in a dip in wholesale payment volumes over the year-end; but since then most systems have seen a notable upturn in volume growth.

4 The rate of growth of cross-border payment volumes through TARGET and EURO1 has been broadly similar since early-1999.

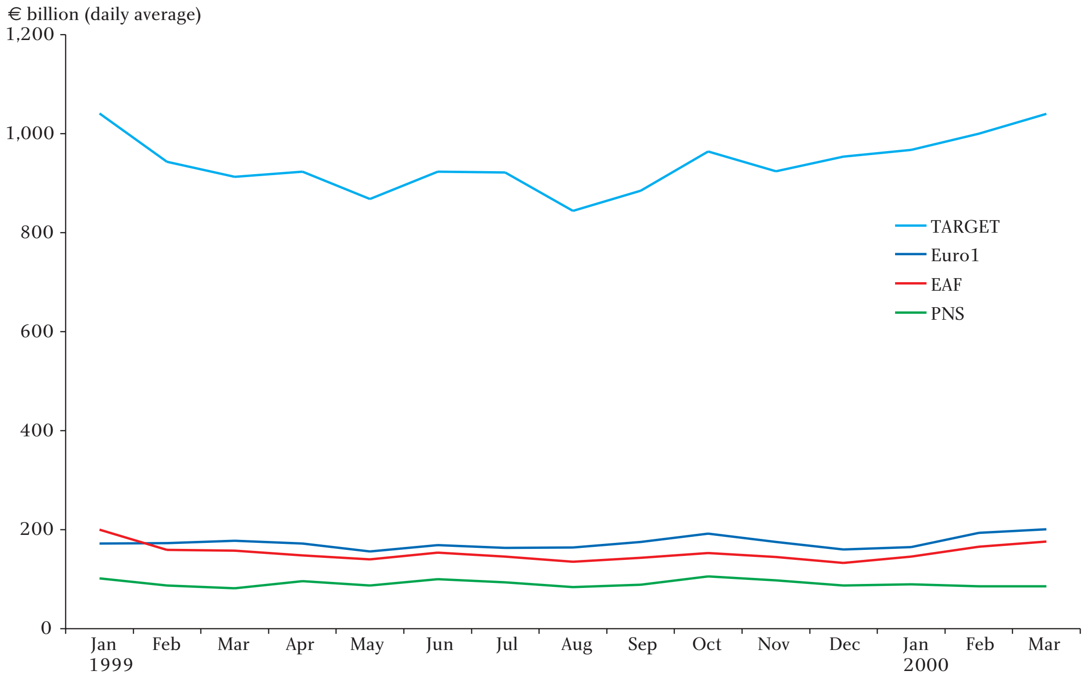
TABLE 1: TOTAL VOLUME OF DOMESTIC AND CROSS-BORDER EURO PAYMENTS SENT

Number of payments (daily average)	1999								2000	
	Q1	% of total	Q2	% of total	Q3	% of total	Q4	% of total	Q1	% of total
RTGS										
TARGET: cross-border	24,646	9	28,248	10	30,004	10	31,908	10	36,249	11
: domestic	130,012	47	130,002	45	133,019	44	144,217	44	139,288	42
Total TARGET	154,658	56	158,250	55	163,023	54	175,945	54	175,536	53
Non-RTGS										
EURO1	52,091	19	65,362	22	71,617	24	82,509	25	86,915	26
EAF (Germany)	47,544	17	45,340	16	46,022	15	47,914	15	49,491	15
PNS (France)	21,767	8	20,264	7	18,920	6	19,381	6	18,935	6
Total	276,060	100	289,182	100	299,582	100	325,749	100	330,876	100

Source: ECB

- The overall volume of cross-border *interbank* euro payments has fallen; in combination, TARGET and EURO1 now dominate these. There has been a commensurate decline in related correspondent banking transactions.
- The overall volume of cross-border *customer* payments has probably grown slightly, but within this the volume of correspondent transactions appears to be stable, with growth in traffic being routed through formal payment systems or individual bank's internal systems. Correspondent banking may still account for around half of cross-border customer payments.

USE OF EURO PAYMENT SYSTEMS BY VALUE **CHART A**



Source: ECB

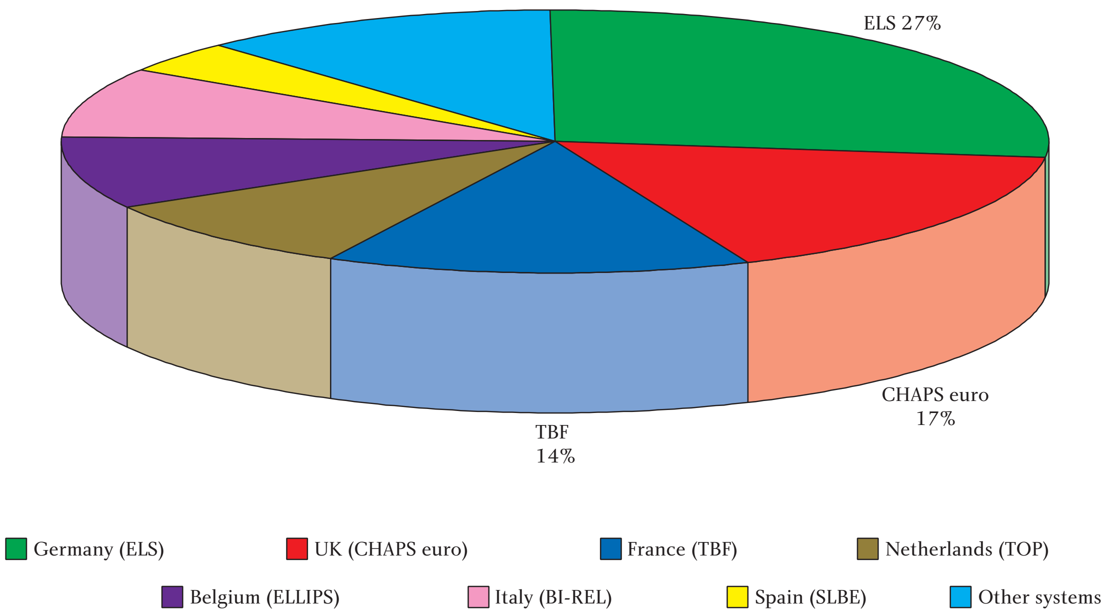
5 Chart A shows the value of payments sent through the main euro payment systems. Absolute payment values are now in excess of €1,000 billion per day in TARGET, and

approximately €200 billion in EURO1. The relatively stable value data, compared with the volume growth, reflect the fact that interbank and financial market payments – which account for most of the value – made substantial use of these systems from the start, whereas lower-value commercial payments have moved more gradually from correspondent banking routes to the formal payment systems.

6 Currently, the average payment value in the domestic RTGS systems is €4 million, and €11 million for TARGET cross-border (CHAPS euro averages €7 million domestic and €15 million cross-border). The average EURO1 payment size has continued to fall, dropping below €2 million during December 1999, implying that additional relatively low-value customer payments provide the most significant contribution to the growth in its volume. Average payment sizes for EAF and PNS have also fallen, but they remain higher than EURO1, at about €3 million for EAF and just under €4 million for PNS (excluding liquidity transfers). These higher average sizes reflect the greater proportion of foreign exchange transactions in EAF and PNS.

7 Chart B shows the share by value of individual systems in the aggregate cross-border euro RTGS payments in 2000 Q1. Cross-border payments have continued to increase as a proportion of total TARGET payments, both in volume and value; and CHAPS euro continues to account for 17%.

AGGREGATE CROSS-BORDER EURO RTGS PAYMENTS BY VALUE: 2000 Q1 **CHART B**



Source: ECB

8 In TARGET, the frequency of 'stop sends' in recent months has been similar to mid-1999. There have been no late closings this year to date. The system functioned with the fewest interruptions so far during the Y2K software freeze (from September 1999 to early March 2000). A subsequent increase in the frequency of 'stop sends' may point to a need in some centres to tighten procedures ahead of the introduction of software changes.

Outstanding payment issues

9 The ECB holds regular meetings with the commercial banks to discuss outstanding payment issues, which currently include the following.

- Liquidity management is improving generally, and problems in TARGET are reducing; but information on TARGET problems can still be patchy.
- Management of collateral cross-border still poses problems.
- Market guidelines and compensation agreements need wider dissemination.
- Contingency arrangements require further work.
- There is further scope for enabling straight-through processing (STP), in particular using IBANs and the MT103+.
- More automation of low-value cross-border payments is warranted.

Liquidity management

10 In TARGET, intraday liquidity should be plentiful, at least in aggregate: the amount of eligible collateral pledged to the ESCB (around €1,000 billion), in addition to liquidity available to banks from the reserve averaging facility (around €110 billion), far exceeds the requirement. RTGS systems typically require intraday liquidity of up to 10% of the daily turnover, which for TARGET (including domestic transactions) would imply an intraday liquidity requirement of around €100 billion or less. The occasional payment delays, despite the potential availability of liquidity, may in part reflect efforts by some banks to operate using lower levels of liquidity than currently available, and occasionally a reluctance to put in 'more than a fair share' of liquidity, rather than its marginal cost.

11 Most payments move through TARGET within a few minutes, but can – exceptionally – take up to 30 minutes. At the start or end of the day, and prospectively when CLS starts to operate, this can be too long. It can either lead to missing the deadline for time-critical payments, or force banks to consider alternative liquidity management plans.

12 Some larger banks with multiple RTGS memberships (as well as membership of other non-RTGS systems) are now considering reducing the number of their memberships, as this will both cut costs and simplify liquidity management. But most expect to maintain at least two RTGS memberships, in part for contingency reasons. Some banks have found they can reduce the amount of intraday liquidity required as liquidity management has improved; others are maintaining the same volume of liquidity as their payment throughput increases.

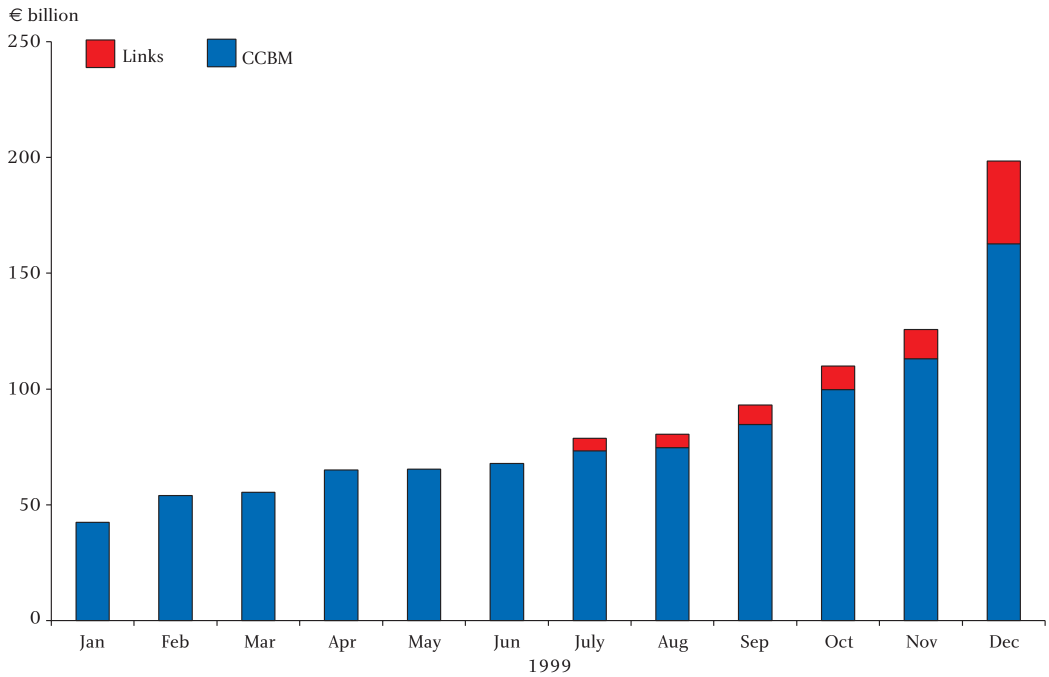
13 The latter approach may effectively also be occurring in EURO1, where a substantial increase in transactions volume (though not value) has been accommodated within existing debit and credit limits. While some EURO1 members have stopped using inter-system swaps (ISSs) altogether – most obviously those banks whose centralised systems allow them easily to re-route payments during the day – others still make active use of ISSs. These latter banks tend to know which EURO1 members make use of the bulletin board indicating liquidity positions, and find that 75% of ISSs undertaken settle within 15 minutes.

14 Liquidity management can be hampered by lack of knowledge about any system problems within TARGET. Information on 'stop sends', slowdowns and component failures remains patchy. Apart from variable speed in communicating information, there is a perceived lack of clarity as to when a 'stop send' should be called; and an occasional tendency by some system operators to underestimate the likely down-time. Banks are still pressing for 'the same information, at the same time' across Europe, and preferably very quickly. Existing information chains are too long and diverse to ensure this. This requirement could involve centralised dispersion of information to users (ie from the ECB to banks), and the use of different routes: treasurers tend to use wire services (like Reuters), while payment teams use S.W.I.F.T.

CCBM, approved links and cross-border collateral

15 Banks wishing to post collateral on a cross-border basis to conduct credit operations with the ESCB can make use of the CCBM (with varying degrees of automation) or of ECB-approved inter-SSS links (with varying ease and speed). Chart C shows usage of the CCBM and these links up to December 1999. Use of the CCBM increased during 1999, reaching a peak of €162.7 billion in December – equivalent to nearly two-thirds, by value, of outstanding Eurosystem open market operations. Italy, Belgium and Germany remain the three main sources of collateral chosen for use in CCBM transactions (together accounting for over 75% in December). Use of direct links grew more rapidly, from 7% of total cross-border collateral held by the ESCB in July to 18% in December, and is likely to continue to increase over time, as more links are approved and the links themselves become more efficient (only a few currently allow for rapid intraday transfers). The ECB has so far approved 65 links (12 were added in May). Mergers between settlement systems will reduce the number of, but also the need for, such links.

TOTAL COLLATERAL HELD IN CROSS-BORDER CUSTODY WITHIN THE ESCB **CHART C**



Source: ECB

16 It is likely that the step change in the use of the CCBM and direct links during December was largely due to preparations for Y2K. Credit institutions were reluctant to lock up domestic collateral in longer-term operations at that time, preferring to keep it available to cover any unexpected domestic liquidity needs.

17 The UK remains the only 'out' country involved in lending using the CCBM; usage increased strongly in 1999 Q4 to reach 12% of total CCBM lending in December. This coincided with the extension of the Bank of England's list of collateral eligible for its repo operations to include securities denominated in euro issued by EEA governments and central banks (where they are eligible for use in ESCB monetary policy operations), together with the Bank of England's Y2K-related repo facility, introduced in October.

Guidelines and compensation arrangements

18 The two main euro payment guidelines are the EBF guideline on liquidity management (last updated in September 1999), and the Heathrow Group compensation guidelines (April 1999). The EBF website provides: the EBF/Heathrow Group guidelines themselves; minutes of the Heathrow Group meetings; and a contact list for banks regarding liquidity management guideline issues. The list is being actively used by banks to provide names and telephone numbers; some 150 banks currently post details. A number of banks say they would like the guidelines to be enforceable. But they recognise that the ECB and NCBs cannot assume this role: the guidelines need to be market, rather than central bank, determined; and they apply to other payment systems as well as TARGET. That said, ECB and NCB endorsement of the guidelines wherever possible is welcomed.

19 Most banks indicate that payment behaviour – routing, speed of throughput, use of the last hour – is stable. However, the following particular issues have been raised in relation to timing.

- Some banks request customer cut-off times well in advance of TARGET times.
- Some payments frequently arrive late in the day.
- Large late payments are not always pre-notified.

20 *Cut-off times well in advance of TARGET times* Some beneficiary banks want customer transfers to be made significantly in advance of the 17:00 CET cut-off time, and will not always give same-day value for payments made later than early afternoon. Some sending banks are prepared, where possible, to accommodate this behaviour, making allowance for the beneficiary's relative slowness in adapting to the implications of the euro for pan-European payments. But other banks clearly find this frustrating, as such non-standard behaviour unnecessarily complicates the handling of customer business.

21 This problem is probably best dealt with bilaterally. If beneficiary banks, because of their particular liquidity management arrangements, cannot cope with payments late in the afternoon, they should make this clear to sending banks and seek a workable solution. Such banks may face a trade-off between the costs of upgrading their liquidity management and potentially losing business. However, reluctance or refusal to accept payments late in the day is sub-optimal, and should not be condoned by payment system operators or banking associations.

22 UK banks have endeavoured to educate their customers on the need to give payment instructions as early as possible, and in any case not later than 16:00 CET (to give the sending bank time to input instructions). While some large banking customers may still assume that exceptions can be made for them, most customers now accept the standard timetable. There will, however, be occasions when payment instructions cannot be given early in the day – for instance, if some details of the routing instructions are not available – but such occasions should be relatively rare.

23 Where RTGS operators do not pass on to beneficiary banks the precise timing of debits, disputes can be harder to resolve. The EBF's liquidity management guidelines define a late payment as one with a debit timestamp of 17:00 CET or later (other than for own account or pre-advised transactions); but as payments can – exceptionally – take up to 30 minutes to pass through the system, a payment sent before 17:00 (with sufficient covering funds) may be credited to the beneficiary's account some time after 17:00.

24 *Some payments frequently arrive late in the day* Some, normally smaller, banks regularly make payments late in the day, on the grounds that they in turn have received funds similarly late – perhaps linked to securities market transactions at the end of the securities settlement system's day – and so cannot remit funds any earlier. For larger institutions, better able to manage liquidity flows, that may be less of an issue; and the introduction of central clearing counterparties (such as LCH and Clearnet) in bond and equity settlement, with the benefit of netting of cash flows, may make end-of-day flows easier to manage. In some cases, better co-ordination of end-of-day timings between securities settlement and payment systems may be required.

25 *Late payments not always pre-notified* While the EBF liquidity management guidelines have led to a major improvement in late payment behaviour, and in general the incidence of unexpected late payments is very low, banks do not always pre-notify or pre-agree late payments. This does not normally cause a liquidity management problem, as most such payments are quite small; but occasionally large payments are made late and with no warning. While the receiving bank can refuse to give same-day value in these cases, that can damage relationships and carry an administrative cost.

26 This problem, of behaviour, raises some tricky issues. Banking associations in all 15 EU countries have accepted the concept of the EBF and Heathrow Group guidelines, but:

- local implementation (eg by banking associations) of the detail of the compensation guidelines varies from country to country, complicating cross-border claims;
- the guidelines may be adopted only for RTGS systems in some countries, so that payments sent via EURO1 or correspondent accounts may be subject to different rules;
- there is no arbitrator where disputes arise; and
- not all banks accept the guidelines, even where banking associations have done so, and the guidelines cannot be enforced unilaterally.

27 The compensation guidelines are currently being revised, to clarify how they should apply to different situations and gain wider acceptance. The EBF hopes to involve the other major European banking associations, as well as its own members. The revised version should be available by the autumn. Some feel that the impetus in early-1999 to reach agreement on revised guidelines has now weakened – perhaps because the problems are now far less severe – implying that it may be more difficult to obtain agreement to revisions, or wider acceptance of the guidelines.

28 The EBF circulated recently a guideline on 'direct + cover' payments. This aims: to reinforce best practice in routing payments (with immediate effect); to encourage immediate passing on of MT100 payments (by the end of June this year, as this will require systems and procedures changes for some banks); and to require the use of ERI where appropriate in transactions involving previous national currencies (by the end of March this year, again to allow for system changes). While most banks' head offices make direct payments where possible, small branches and subsidiaries may still split the message and the funds transfer, causing reconciliation problems for the beneficiary banks.

Contingency arrangements

29 Contingency arrangements vary between banks. For most large banks, membership of an alternative payment system is the primary contingency for euro payments. This may be membership of more than one RTGS system, or a non-RTGS system, or the maintenance of correspondent accounts. In some cases, banks aim to minimise the risk of having to switch systems by inputting payments as early in the day as possible, thus reducing the volume that might have to be dealt with if a problem arises later.

30 If a problem in an individual bank's systems is identified early in the day, the first step is normally to aim to fix it quickly; but if this proves impossible, or if the problem occurs so late that a fix that day may not be possible – TARGET extensions are not normally permitted to accommodate a single bank – re-routing may be considered. This may involve manual processing. In the case of a problem with an RTGS system, a few banks would be able to redirect all their payment business to another RT system during the day; but in most cases re-routing would involve an element of manual processing. If TARGET itself were not functioning, correspondent banking relationships could be used, although this would depend on the availability of funds, might cause payment delays, and would separate the payment instruction from the funds transfer.

31 Where contingency arrangements require manual processing – this probably applies to most contingency scenarios in most institutions, and is almost certainly the case where reliance is placed on correspondent accounts – same-day settlement might only be possible for large-value payments, as the contingency arrangements could not cope with large volumes. Low-value, less urgent payments might then have to be delayed a day until the damaged system has been repaired.

32 Some banks suggest that a problem with a major bank should quickly be communicated to the local NCB, and if appropriate passed on to other NCBs for communication to the banking community more widely. While banks may not welcome such widespread

advertising of problems, in the case of a major payments bank this may be the only alternative to unwelcome surprises at the end of the day.

33 Contingency arrangements in the component RTGS systems of TARGET are also reviewed periodically. The ECB judges that recovery times can be too long, and that more work is needed to reduce maximum expected recovery times to under two hours (even two hours during the CLS pay-in times would be extremely disruptive).

STP, IBANs, and IPIs

34 Straight-through processing (STP) of commercial and retail payments relies on standardisation, and customers' provision of the necessary information. Two important elements in standardisation are IBANs and the MT103+ message format.

35 International Bank Account Numbers (IBANs) have been promoted by the European Committee on Banking Standards (ECBS). The standard – EBS204 – was first published in 1996, and the implementation guideline most recently updated in August 1999 (details are available on the ECBS website). Since they are standardised, the account number format can be validated by the payment system, if used in the appropriate fields, and this should help to facilitate STP. Companies need to communicate their IBANs to those sending payments to them. In some EU countries it has for some time been common practice for companies to supply account information with invoices, in order to facilitate payment; in others – including the UK – there is a greater need for customer education if IBANs are to become widely used.

36 Different countries have adopted different plans, with varying timescales, for the introduction of IBANs. The Heathrow Group is currently recommending that the EBF and other European banking associations encourage the distribution of IBANs to customers which need them – ie companies involved in making and receiving significant volumes of cross-border payments – by end-2001. The process is already advanced in some countries, notably France. In the UK, most banks plan to introduce IBANs for those customers with significant cross-border business from April 2001, depending in part on the timing of other systems changes: where possible, these are being co-ordinated to reduce upheaval. But most banks say it would be neither possible nor necessary to give all corporate customers IBANs by end-2001.

37 The ECBS is also promoting International Payment Instructions (IPIs – EBS 206, latest version dated November 1999), which includes a field for balance of payments reporting as well as for account information. This may be helpful in some countries. IPIs are currently paper-based, and do not meet all the payment instruction requirements of all banks. Work is being undertaken on developing an electronic version, which would support STP.

STP and MT103s

38 Banks are required to be able to receive MT103 and MT103+ messages from this November. (The MT103 is an upgrade of the MT100 customer transfer message; the MT103+ is a restricted version facilitating STP.) This involves a lot of work – perhaps more

than had originally been recognised – and many banks will not be in a position to send MT103s, or to pass them on, by that date.

39 The MT103+ facilitates STP by removing optional fields; but its benefit to banks varies. Some banks claim STP rates of 80-90%, achieved by rigorous systems and controls development, using the current MT100 format; the possible additional gains to STP rates may not justify the costs to them of implementation. But the STP rates of most European banks are substantially lower – probably well below 50% – and some have suggested that the MT100 is sub-optimal for STP. The tighter formatting requirements of the MT103+ (designed largely for EU usage) may offer greater benefits here. In addition, the MT103 and 103+ will make it easier to carry information on fees, which need to be sufficiently transparent to meet the requirements of the Directive on Cross-Border Credit Transfers, and to communicate old national currency information (until this disappears early in 2002).

40 Competitive pressures could force some banks to move more rapidly to use the MT103+ for sending payments than currently envisaged. If beneficiary banks seek a higher fee where the payment formatting does not allow for STP, banks with low STP rates will have an incentive to adopt the MT103+.

41 Some banks would like to see the MT100 phased out reasonably soon. Outside Europe, there is some resistance to this, as some of the features of the MT103 have a specific EU benefit. But there may also be problems in parallel running of two broadly similar payment instructions over too protracted a period.

42 One possible element of the TARGET 2001 upgrade is an MT102+ (a multi-payment version of the MT103+). A number of banks, particularly on the Continent, welcome this – possibly as an alternative form of cross-border ACH-type payment. Others question its business case and view it as a compromise solution to local needs, not the sort of payment for which TARGET is designed. Nevertheless, as with the MT103+, if it is introduced, all banks will be required at least to be able to receive it.

LOW-VALUE PAYMENTS

There is a political imperative in the euro area to provide a low-cost system for low-value/retail cross-border payments. Such transactions are relatively small in number, although they represent an increasing proportion of turnover. Many are ‘own account’ payments, possibly because it is easier to move funds cross-border and make payments locally. The same-day value payment systems – TARGET, EURO1, EAF, PNS – are essentially high-value payment systems, because they are too expensive to use for low-value payments. (Some argue that the most useful distinction is therefore not ‘high/low-value’, but ‘urgent/non-urgent’, as the cost of using existing systems may be justified for low-value payments which are urgent.) The Commission/ECB approach tends to define low-value as ‘up to €50,000’, broadly equating this with ‘retail’.

The ECB published in September 1999 a document listing seven objectives for cross-border retail payments. These can be met only with a high degree of automation, and therefore of standardisation, of such payments. STP (for instance by using the

MT103+ and IBANs – see above) and a standardised interchange fee (see below) should both speed up payments and reduce their cost. A low-value payment system (see STEP1, below) will operate from November this year.

Commercial banks have argued that balance of payments reporting requirements also present a significant obstacle – they introduce additional costs and make STP more difficult – and have suggested there is an inconsistency between the €50,000 threshold definition of a low-value payment, and the exemption from reporting requirements only of payments below €12,500. Across Europe, many banks and banking associations are suggesting that the collection of balance of payments data within the EU does not fit well with the concept of a Single Market.

The December 1999 *Practical Issues* noted proposals by the EBA to create a low-value payment system to help meet the need for low-cost rapid (though not real-time) transactions. This system, known as STEP1, is designed as an interim solution to the longer-term needs of cross-border payments, and aims to provide a cost-effective same-day settlement service using existing systems, but with a cut-off the day before settlement for inputting instructions.

Transparency and the interchange fee

The Cross-Border Credit Transfers Directive requires that fees for cross-border low-value payments be transparent before the payment is sent. But practice on customer charging varies widely from country to country, and between banks. In some cases, the recipient is currently expected to pay for a cross-border receipt; but unless the sending bank knows exactly what the beneficiary banks will charge – and with, potentially, several thousand beneficiary banks, this cannot be possible in all cases – it cannot provide the required fee transparency without delaying the payment and adding to its cost.

It is now generally, though not universally, accepted that the first step in resolving this issue is that – unless otherwise agreed in advance – fees for cross-border credit transfers should be borne by the originator of the payment only (known as 'our' payments – this practice already prevails in the majority of domestic arrangements). The beneficiary bank may expect a share of the fee charged – the so-called 'interchange' fee – and the sending bank needs to make allowance for this. The EBF, together with the European Savings Banks Group and the European Association of Co-operative Banks, is working on a standardised agreement – a Multilateral Interchange Fee (MIF) – although determining the appropriate, uniform level is difficult for the following reasons.

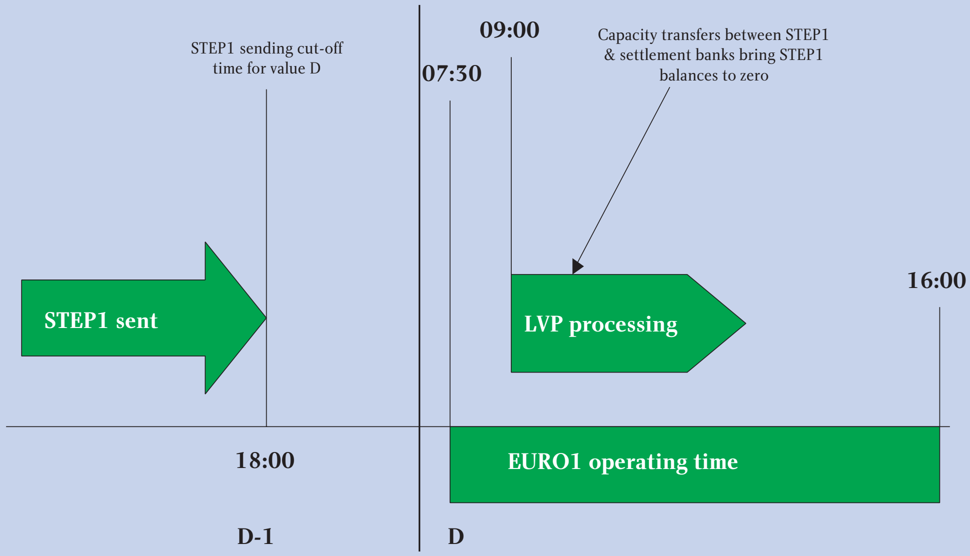
- There may be a number of banks in the chain; the MIF cannot define how the fee should be shared out between intermediary and beneficiary banks.
- STP and non-STP transactions are treated separately, with a higher MIF for the latter as more work is involved; but this requires a tight definition of STP, and should not subsidise inefficiencies in the beneficiary bank. The Heathrow Group is working on definition of STP, which should be published by the summer.

- Some banks accept that low-value payments to individuals should not be subject to a receiver fee; but argue that charges to commercial accounts are a different matter. Banks may seek to distinguish between transaction processing fees, and other account-related fees.
- It is not always clear how to define cross-border. This is an issue particularly for international banks which centralise their payment business – sometimes to enhance STP.

A few London-based (predominantly wholesale) banks would like to see the interchange fee set at zero, judging that the administrative costs involved in managing it are disproportionate. But the interchange fee is more important for retail banks, and they note that the process can be automated once an MIF is agreed.

STEP1

STEP1 is a new low-value payment system being developed by the EBA, and is scheduled to be launched on 20 November, to complement the existing EURO1 system. It will allow banks, which do not meet the financial and other criteria to become EURO1 clearing members, to access that system direct, subject to certain conditions.



- STEP1 payment instructions must be entered by 18.00 CET the day before settlement, giving settlement banks time to plan for net liquidity flows.
- The total value of payments through STEP1 is likely to be small, as a maximum individual amount of €50,000 is envisaged. If 200 STEP1 members each sent 1,000 payments a day – and this would be a large number, given that TARGET and EURO1 together account for fewer than 150,000 cross-border payments a day – of €5,000 each, the total value of these payments would be €1 billion, or an average of some €15 million per EURO1 member bank, before netting.

Some banks currently use internal systems to make cross-border payments (these banks are normally already members of EURO1), but are examining STEP1 to see whether there is a business case for participation. Membership and transaction costs will be deciding factors (transactions costs are fixed at €0.48; this compares with €0.80-1.75 in TARGET).

The future for low-value payments

In the longer-term, there may be a case for developing a purpose-built system to carry low-value payments with next-day settlement, and to include a larger number of banks than STEP1; but the business case will not become clear for some time. Likewise, an ACH-type system for cross-border euro retail payments, whether from a new provider such as WATCH, or linking existing ACH systems (this raises complex legal and IT issues) could be built to provide a cheap means for making cross-border payments; but only when there is a strong business case.

STEP1 and any future ACH system are likely to attract traffic which currently goes through correspondent banking routes, rather than through TARGET, though it could see some migration from EURO1 itself.

The European Parliament and Council are considering two Directives covering the prudential regulation of electronic money institutions. These Directives set out a regulatory regime for e-money issuers which are not already credit institutions. Two effects of the Directives will be to extend the definition of 'credit institution' to cover these e-money institutions and to apply the European 'passport' to electronic money institutions. They should end a long period of uncertainty for potential e-money issuers and, by setting out a harmonised regulatory regime, make it easier for electronic money institutions to offer cross-border services within the EU.

New payment system developments

43 The timing and direction of developments are important to banks when making decisions about their own payment system management, or investing in existing or new systems. Since banks will, ultimately, have to pay for system developments in existing RTGS and other payment systems of which they are members, they need to have some idea of the expected lifetime of the relevant system in order to gauge the business case for any changes. This is true for NewCHAPS (see below) and RTGS^{plus}, where major developments are already in train. Substantial changes to the architecture of the main cross-border payment systems, TARGET and EURO1, seem very unlikely in practice in the next five years, although this may be too short a time horizon for some investment decisions. The ECB has indicated that the Governing Council will give some indication by this autumn of the likely future evolution of TARGET. Meanwhile, EURO1 is upgrading workstations, and EBA is developing STEP1, but no fundamental changes are envisaged at present to the EURO1 system.

TARGET and RTGS systems

44 The large international commercial banks would in principle appreciate further payment system harmonisation within TARGET – whether via a centralised or cloned system, or simply a move to a common messaging format (presumptively S.W.I.F.T.) – and more co-ordination in the introduction of any changes to individual systems or components of TARGET. This would minimise the cost to them of such changes – and therefore of membership of more than one TARGET RTGS system – and harmonisation would simplify contingency arrangements (by facilitating automated re-routing). By contrast, for the

smaller banks engaged primarily in domestic payment markets, the question of cross-border harmonisation and centralisation is far less important.

45 The key issues for both large international and smaller domestic banks, as noted earlier, remain robustness and efficiency, both of which would allow a reduction in long-term costs. Developments which do not support these goals are unlikely to be welcomed. A business case needs to be made for any improvements: a preference for a harmonised or centralised system may not be accompanied by a readiness to pay for it. To this end, commercial banks need to be involved in system changes. This itself tends to lead to greater harmonisation, since the major payment banks have an important presence in most countries, and are likely to argue for the same developments in each system. But there may be a tension between the large, international banks which would benefit most from harmonisation, and the smaller banks which are likely to be less supportive of incurring the related costs.

46 The main enhancements under consideration are: queue management and liquidity saving; greater queue visibility; and timestamps. The ECB has made clear that national enhancements will not determine the future direction of TARGET, and that they must remain compatible with the fundamental RTGS principle.

- *Queue management and liquidity saving features* are commonly requested by banks, and are included in the developments under consideration by a number of RTGS systems for upgraded functionality. The planned developments in NewCHAPS, described in detail in the Box, and in RTGS^{plus} reflect this. A separate Box discusses the debate around some proposed liquidity management functions.
- There is still a question about what degree of inward *queue visibility* is desirable, as banks might credit some clients' accounts ahead of the receipt of funds if they could see the inward transfer in the queue, even though queued transfers might still be cancelled; but some judge this risk to be little different to that of granting customers unsecured intraday credit. While inward queue visibility is possible within some individual RTGS systems, the current structure of TARGET does not allow it to be provided for the system as a whole.
- *Timestamps* are also requested by banks. Debit timestamps are needed for compensation claims, and credit timestamps will be needed for the CLS environment, so that paying banks can ensure funds have reached their destination in time. Some RTGS systems (Ireland, Luxembourg and the UK) can already provide the necessary information on debit timestamps via the S.W.I.F.T. header; and the November 2001 S.W.I.F.T. upgrades will allow timestamps to be carried in the payment message. Most other RTGS systems plan to use a message ('/SNDTIME/' in field 72, where this is not otherwise used) to convey this information – in most cases from November.
- Other changes which have been considered include TARGET Free Format Messages (TFFMs; although this may not progress as the business case for the non-payment message is not strong); the MT102+ (a multi-payment commercial message supported by some countries); and debit transfers (potentially very useful, but raising difficult cross-border legal issues). A business case needs to be established before any of these projects is taken further.

NEWCHAPS

The first phase of NewCHAPS (RTGS Release 4) is expected to go live in 2001 Q3, after a period of testing from April 2001. The project will not result in any changes to TARGET interfaces. The principal reasons for change include:

- technological cost efficiencies;
- preparations for possible UK entry into EMU;
- provision of central scheduling facilities, which will help banks manage liquidity after the implementation of full DvP in the UK by 2002; and
- the desirability of promoting wider access to direct membership of the system.

NewCHAPS will have the following features:

- CHAPS sterling will migrate to the CHAPS euro platform (S.W.I.F.T. FIN-copy based), which will become a multi-currency system; and
- the establishment of a central scheduling facility at the Bank of England, broadly replicating some of the scheduling facilities which individual banks currently have in their in-house schedulers.

All payments will be routed via a central scheduler, and be forwarded to the RTGS processor for settlement immediately they meet the conditions contained in certain filters in the central scheduler. There will be three filters, as follows.

- *Value threshold:* set in respect of payments which banks initiate. Payments equal to or greater than this amount will be held with a status of 'blocked by value'. Banks may vary the value threshold at any time.
- *Individual payment filter:* a bank may submit payments with a status of 'held'. Such payments are held within the scheduler until this status is removed by that bank.
- *Individual domestic counterparty switch:* an on/off switch enabling banks temporarily to hold in the scheduler all payments to another member of NewCHAPS. This filter cannot be applied to counterparties which are not members of NewCHAPS.

Once released by the central scheduler to the RTGS settlement process, payment requests will either be queued awaiting funds, or settle immediately if funds are available. Banks will be able to allocate a priority to a payment; this determines the queuing order once payments are forwarded to the RTGS processor. Priorities can be amended at any time up to settlement. To enable banks to make time-critical payments such as those to CLS Bank, a bank will be able to reserve part of its liquidity. Certain priorities will indicate payments which may use this reserved balance.

Banks will be able to track the status of individual payments intraday as they progress through the central scheduler and the RTGS settlement process. This will be done via the EnquiryLink.

RTGS Release 5 – DvP in central bank money – is expected to be implemented in 2001 Q4; and RTGS Release 6 – still under discussion within CHAPS – is not expected to be implemented any earlier than summer-2002.

LIQUIDITY MANAGEMENT FUNCTIONS: ISSUES UNDER DISCUSSION

Even where central banks do not charge for intraday liquidity, there is a cost to the banks of holding eligible assets. The major payments banks in particular are consequently interested in reducing the general need for liquidity (through efficient systems and the promotion of 'good behaviour'); and minimising their individual need (through efficient liquidity management and enforcement of good behaviour by other banks).

- Some systems – EAF, PNS, prospectively the RTGS^plus 'slow lane' and the new CHIPS system in the USA – operate on the basis of frequent batched gross settlement, where an algorithm identifies offsetting bilateral and multilateral queued payments, requiring liquidity only for net positions. Such systems can potentially transmit payments faster than standard RTGS systems, for a given level of liquidity. But it is important that the process should not interfere with the ability to make payments requiring the pure RTGS mode by pre-empting liquidity.
- Good behaviour is promoted by market-determined guidelines (see EBF/Heathrow Group guidelines, above).
- Queue management systems (schedulers) – such as the filters and prioritisation in NewCHAPS, described in the above Box – help banks to optimise the throughput of their own payments, for instance by reserving liquidity for time-critical payments, advancing commercial or interbank payments, or holding back payments to a bank whose systems are down. Centralised schedulers allow banks to maintain control over queued payments submitted to a system, while in-house schedulers allow banks to control the routing of payments to different systems, and possibly also manage payments within them.
- Enforcement of good behaviour may involve both the monitoring of throughput guidelines (this is a feature of CHAPS), and the use of bilateral limits. The latter are a somewhat crude measure and can reduce settlement efficiency (bilateral flows will rarely be in balance). Limits risk being disruptive if applied on a block basis, or where more than one payment system is available.
- A block limit (eg on a group of banks) would be inequitable, and would not support the aim of encouraging good behaviour, since individual banks in a blocked group might be net senders of liquidity (both to the blocking bank, and to the system in general).
- If payments between two banks could go through a number of routes – RTGS, EURO1, EAF or PNS – a bilateral limit applied within any one system might fail to capture all bilateral flows. For sterling payments within NewCHAPS, where there is no alternative route, this is not an issue; but for euro payments it could be disruptive.

DvP and the cross-border use of collateral

47 The planned introduction of delivery-versus-payment (DvP) across the EU by end-2001 will increase banks' liquidity requirements, and there is some concern over peaks in liquidity requirements from timed payments. Where self-collateralisation is possible, or where banking systems hold a large amount of eligible collateral, there should be less of a problem generating the additional amount of liquidity needed. The planned introduction of central clearing counterparties for bond and equity transactions may reduce the volume of payments, where payment and settlement netting are available, but this will not be the case for all systems from the start of DvP. In preparing for DvP, however, a number of banks say that it can be difficult to obtain full and accurate information on exactly what is going to be introduced where, and over what timescale.

DvP IN THE UK

Progress has continued towards the introduction of full DvP in central bank money in CREST by 2002. In February, the report of the DvP Steering Group was published. The group comprised representatives from the Bank, CRESTCo, APACS, DMO, the London Stock Exchange and industry associations. The report reflects the consensus reached in the group on the broad model for DvP. A number of high-level design principles have been proposed, which will be developed and implemented by a group of 'project owners', comprising representatives from the Bank, CRESTCo, APACS and the Central Bank of Ireland. It has been agreed that:

- the settlement banks' CREST sterling and euro payment accounts in the Bank's RTGS system will be located alongside their existing CHAPS payment accounts;
- the ready transfer of funds will be facilitated between the two sets of accounts, thereby enabling efficient liquidity management via the creation of a 'virtual' single pot of liquidity; and
- there will be provision, through self-collateralisation, of sufficient central bank sterling balances to ensure continued settlement efficiency (a practitioner-led sub-group is considering how best to minimise the amount of liquidity required, and thus the extent of any self-collateralisation).

48 Banks wishing to post collateral on a cross-border basis in operations with the ESCB can make use of the CCBM or of approved inter-SSS links. In both cases, securities may move 'free of payment', so that the ESCB takes possession of assets before releasing cash/securities. The ESCB requirement that SSSs should be able to offer full DvP in central bank money for domestic transactions by January 2002, highlights the continued absence of cross-border DvP.

49 An EBF paper (*Remote Access for Collateral Management*, November 1999) notes that at present 'banks either centralise their assets where settlement efficiency of trading activity is the highest, but where TARGET collateral transfer is less efficient', or vice versa. For instance, an Italian bank might hold bunds in Euroclear for trading purposes; but, when using them for operations with the ESCB, it would need to move them into Clearstream

Germany and then use the CCBM; or via the approved link to Monte Titoli. In both cases, the collateral has to be moved into a different SSS, often requiring instructions a day before funds are required, and thus loss of use of the securities for a day.

50 There are two possible innovations which could remove the need for such a transfer of securities, and which might facilitate the introduction of cross-border DvP. One is remote access, whereby NCBs could open accounts in several SSSs. (This is not currently permitted for ESCB operations, although cross-border SSS mergers may force a review of the prohibition on remote access.) Whether this could offer DvP (ie securities and cash settling simultaneously in different countries) would depend on the efficiency of the interface built between the NCB and the foreign SSS.

51 The second would involve NCBs opening cash accounts for all bank members of their national SSSs, whether or not those members had local banking operations, so capitalising on the DvP system, and allowing operation within a single jurisdiction. This option already exists in principle (though not with full access to NCB facilities), but it could put pressure on small RTGS systems. And it is reportedly opposed by some market participants even when the NCB is willing. Moreover, some banks may not want to manage accounts in all relevant NCBs, both because of costs and complications for liquidity management.

52 Some believe that infrastructure developments, and market behaviour, are moving too fast for it to be clear whether either of these routes should be taken. They suggest that there is a strong case for maintaining the CCBM in any event: it acts as a contingency against problems in an SSS link or TARGET component; and it serves the needs of banks using SSSs where efficient direct links have not been established. The ECB and the EBF continue to discuss this issue.

CLS

53 Steps are being taken to address a number of issues which have been raised in relation to CLS. Banks point to the need to manage intraday liquidity more tightly than hitherto; and some have suggested that the introduction of CLS could lead to a more lumpy profile of payments intraday. This may be because of banks reserving liquidity ahead of timed CLS payments, and so not releasing others until they have been made; or because some of them – perhaps encouraged by providers of 'just-in-time' technology – will make payments as close to the CLS deadlines as possible, though the CLS timetable does spread payments through the (CET) morning.

54 It is possible that the introduction of new functionality in RTGS systems (and, in the case of NewCHAPS at least, a more powerful enquiry tool), at the same time as DvP and CLS, could have a major impact on the way that payments are organised; and liquidity management will certainly become more time-dependent.

55 One possible solution to liquidity constraints imposed by CLS involves location swaps (sometimes referred to as 'in-out' swaps, which are in some ways similar to the ISSs between EURO1 and TARGET, and also involve a bulletin board where banks may indicate their currency positions). The aim of the 'in/out' foreign exchange swap proposal is to allow a settlement member to trade down a large short position in one CLS currency against a long

position in another. For example, where Bank A is short of sterling and long of dollars in CLS, and Bank B has the opposite position, the two banks could conduct an intraday foreign exchange swap. The 'inside leg' would be settled in CLS, reducing Bank A's sterling and Bank B's dollar pay-in schedule. The 'outside leg' would be settled later in the settlement day, outside CLS (ie through the normal payment mechanisms). There should normally be zero net cost to these swaps.

56 It is possible that a market in intraday funds may develop once CLS is operational. If CLS balances were to be provided not by bilateral location swaps, but instead were one-way transfers – if, in the above example, Bank B were long of sterling but not short of dollars – there might be a need for some mechanism for charging. (Without a charge, individual banks might have no incentive to provide CLS balances.) At present there is no intraday interbank market in the US, despite the Fed's fee; but some banks charge non-bank customers for intraday liquidity. Similarly in Europe, where all banks can access the central bank, there is no intraday market, but some banks make a charge to customers. In a CLS world, where an individual bank might not have access to central bank liquidity in all relevant currency areas, there may be more of a need for an intraday market.

Size of payments and routing

57 Once CLS is operating, the euro leg of the multilaterally-netted funding flows to and from CLS will largely be channelled through TARGET. Only a very small number of very large (over €500 million) payments – some related to 'in-out' swaps – will continue to go through other payment systems. Even now, the number of such payments is small; and if ISS payments, and equivalent liquidity switch payments in EAF and PNS are excluded, the number is insignificant. But it may be more difficult to require very large payments, other than those conducted with the ESCB, to go through TARGET – not because of any impact on other payment systems, but because it might require manual intervention by commercial banks to ensure compliance.

58 On the other hand, low-value payments may be transmitted through TARGET. A number of low-value payments, both domestic and cross-border, are already made through TARGET. In some cases this is because there is a requirement for same-day settlement, and there is no alternative payment system to deliver this direct to the beneficiary's bank. In others, it may be cheaper to use TARGET than to distinguish between high and low-value payments (because of administrative costs).

Correspondent accounts and previous national currencies

59 Some banks rationalised their correspondent banking relationships early in 1999 and have made only limited changes since. Others keep them under constant review. Those banks that maintained such accounts for Y2K-contingency purposes may now reduce their number. But since correspondent accounts will be needed for the non-euro area, and for non-European banks needing access to the euro area, the marginal cost of maintaining intra euro-area correspondent accounts may be small enough to justify their continued existence even by the larger banks. In addition, correspondent relationships need to be maintained by those banks in the euro area which are not members of one of the payment systems, though these banks see very little cross-border business. In general, there does not appear to be any

substantial post-Y2K movement of payments from correspondent accounts to the formal payment systems; but anecdotal evidence and payment systems data point to a slow but steady migration away from correspondent banking.

60 The ability of a bank's systems to cope with multi-currency accounts, and with the use of TARGET for previous national currency transactions, is another factor influencing the continued use of correspondent accounts. Many banks offer multi-currency accounts; these may be new accounts, denominated in euro but capable of handling national currencies (as non-decimal denominations of the euro), or they may be an existing national currency account converted into euro (whether now or at end-2001). For customers with a number of previous national currency accounts, this may reduce costs, both because of the reduction in the number of accounts needed, and because liquidity across previous national currencies can now be pooled. In both cases, there is a need to ensure that transactions reach the correct account. Account closure can take several months – before all items linked to the old accounts are redirected appropriately. There is a case for undertaking this work sooner rather than later, to meet the end-2001 deadline.

61 But for some banks, the system changes required to allow multi-currency accounts, and to convey previous national currency information through TARGET, would be substantial. Since the need for some such changes should fall away after 1 January 2002, some banks have opted to maintain separate euro and previous national currency accounts, and this may require more correspondent banking relationships than would otherwise be the case. There may still be a need to amend payment instructions from 2002, although this could be handled earlier.

62 A small number of banks are concerned that converting a previous national currency account to a euro account could create problems for account history purposes: the interest rate history (eg for €/ECU, DM etc) would be different before 1 January 1999. However, most banks take the view that this is not a major problem, as very few cases require reference to interest rates pre-1999.

63 There are mixed views as to the likely impact on the use of correspondent accounts of the end of previous national currencies from the end of 2001: some banks expect this to be a key stage in the demise of correspondent banking within the euro area, while others expect it to make no difference, as the accounts form only a part of correspondent relationships that may be important for other business.

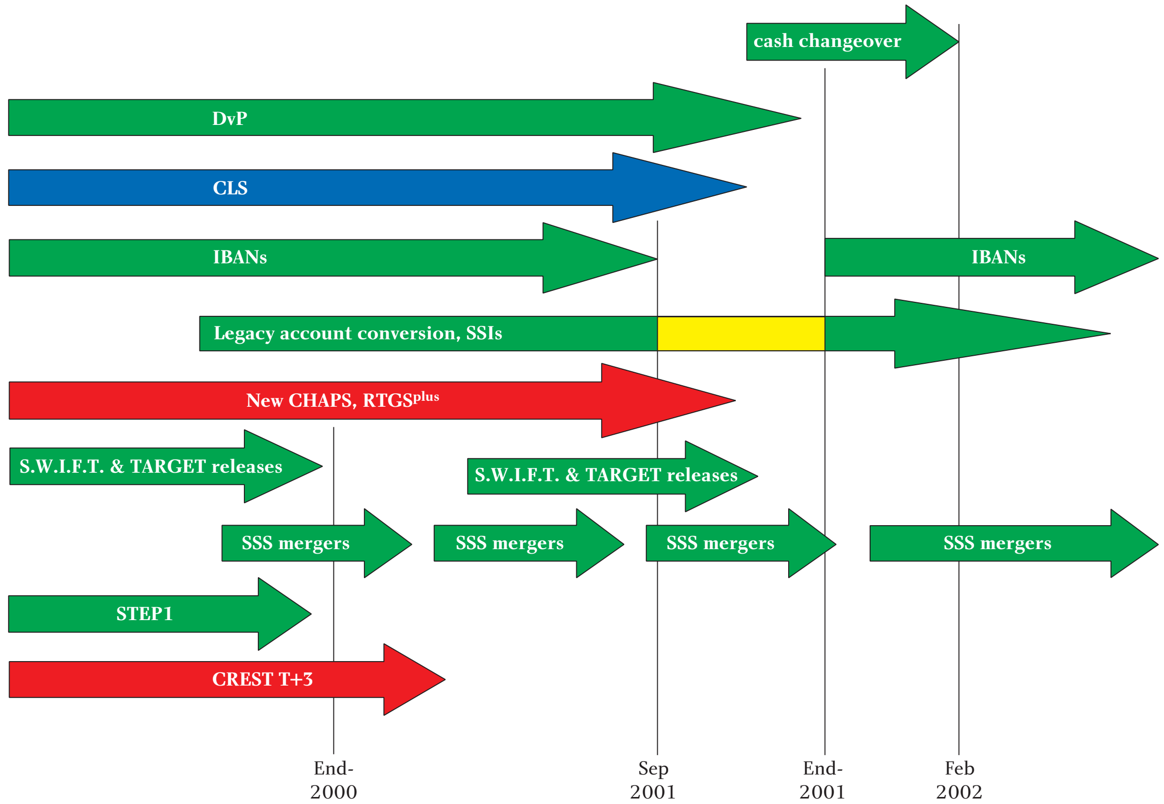
Project bunching in 2001

64 A number of major changes to payment and payment-related systems are due to be completed by the final quarter of 2001. The main developments are summarised in Chart D. Some banks have indicated that it will be difficult to cope with all these changes at the same time, both because of potential shortages of skilled IT staff and because a number of the projects are interconnected, increasing the operational risks. The number and range of projects will require good communication by the project teams of all the initiatives.

65 Some changes involve centralised systems, where it may be difficult to complete the necessary work much before (or even by) the current deadlines. Individual banks have no

PROJECT BUNCHING

CHART D



choice about the timing of these changes, and little choice about when to conduct the related work in their own systems. These include CLS (where the project is worldwide), some previous national currency-related issues, and DvP.

66 In some cases, developments are national rather than international, such as NewCHAPS and RTGS^{plus}, or relatively localised, such as planned mergers between some exchanges and SSSs. Here, the timing is a matter for agreement between banks and the systems providers. But decisions should be taken in the light of other payment and security market infrastructure developments which will affect the same institutions.

67 In other cases, banks have a degree of choice as to the extent of change, and its timing. This is notably true for the introduction of IBANs, where some banks are already well advanced, while others plan only partial implementation before end-2001. It is also largely true for the closure of some previous national currency accounts and notification of new SSIs where necessary.

68 The S.W.I.F.T. message-type MT293, which allows banks to communicate SSIs to other banks as necessary, is restricted to subscribers to the S.W.I.F.T. Treasury Directory. This could in principle be used more widely; non-subscribers are exploring with S.W.I.F.T. whether the message-type might be usable outside the Treasury Directory service. From 1 January 2002, payments in previous national currencies will not have legal value. S.W.I.F.T. is expected to reject messages with previous national currencies in the reimbursement fields, although they can still be used in information fields, including ERI. It will still be possible, therefore, for previous national currency payments to be re-sent, once redenominated in euro, to the wrong address unless the appropriate SSI is in place to be acted upon. It is

important that notification of new SSIs, and tidying up of previous national currency correspondent accounts, should be completed well in advance of end-2001.

69 Where it is possible for changes to be implemented, or at least planned, well in advance, there is a good case for undertaking work as early as possible in order to clear the way for those projects whose timing cannot easily be moved.

B TRADING, CLEARING AND SETTLEMENT SYSTEMS

Introduction

70 A number of major factors are driving changes in the European trading, clearing and settlement environment. They include: pressure from users, particularly large market firms and institutional investors, for further integration in euro capital markets, and for a reduction in the costs of using the securities infrastructure in Europe, which are still said to be much higher than in the US; technological advances that widen access and lower entry barriers; and longer-term changes to the legal and regulatory structure. System providers in Europe have been responding to these challenges by changing their governance structure, upgrading their services, entering into vertical and horizontal alliances with other service providers, and moving into new markets. In particular, they have begun to offer pan-European trading in bonds and equities.

71 This section describes the key developments over the past six months. It starts by setting out the principles that are guiding users participating in the European Securities Forum, and recent work by the Financial Services Authority. It goes on to describe new initiatives for the development of pan-European markets in bond and equity trading, including the proposed merger between the London Stock Exchange and Deutsche Börse. Market participants do not want to retain counterparty exposures that arise from their trading activities and, in response, they are making growing use of central counterparty clearing houses. Finally, this section records new steps towards a more integrated process for settlement.

The European Securities Forum

72 Users are contributing fully to the debate over the market structure that is evolving in Europe. In April, the European Securities Industry Users' Group, composed of 24 major investment banks and custodians[1], renamed itself the European Securities Forum (ESF), and appointed, as Executive Chairman, Pen Kent, a former Executive Director of the Bank of England and the first Chairman of CREST. In its original form, ESF was set up to encourage in Europe the following principles for clearing and settlement.

- 'A single integrated process in Europe for clearing and settlement of equity and debt transactions.

1 ABN AMRO Bank, Banca d'Intermediazione Mobiliare IMI, Banco Santander Central Hispano, Bank of New York, Banque Paribas, Barclays Bank, Bayerische Hypo und Vereinsbank, Chase Manhattan, Citigroup, Credit Suisse, Deutsche Bank, Donaldson, Lufkin & Jenrette International, Dresdner Bank, Fortis Bank, Goldman Sachs, HSBC, ING, JP Morgan, Lehman Brothers, Merrill Lynch, Morgan Stanley Dean Witter, Nomura International, State Street Bank & Trust and UBS.

- The process should deliver the following key objectives: reliability, integrity and scalability; risk reduction; and a significant reduction in investment and running costs.
- The solution should incorporate the most appropriate technology, capitalise on existing systems where possible, and be capable of processing an exponential increase in transaction volumes. The industry is not prepared to pay directly or indirectly for duplicate developments.
- A single clearing and settlement process will require strong governance. No individual organisation should have undue influence. Clearing/settlement should have a separate governance process from trading or payments. The process should be largely owned and directed by securities industry users.'

73 ESF plans to complement its earlier work on principles for clearing and settlement by raising in public other issues currently affecting the market infrastructure. Two working groups have been set up. One will consider the development of clearing and netting on a pan-European basis. The other will consider market operations and infrastructure, including issues relating to message standards. The ESF has also been given a specific brief to foster co-operation between existing market associations.

The Financial Services Authority (FSA)

74 Regulators too have been discussing how best to respond to changes in the marketplace. For example, in January, the FSA released a discussion paper and launched a debate on how it might develop its approach to the regulation of market infrastructure providers. At the same time, the FSA issued a consultation paper on the rules it applies to Recognised Investment Exchanges (RIEs) and Recognised Clearing Houses (RCHs). The consultation period concluded at the end of March, and the FSA is currently collating market responses. Further consultation will take place during the second half of the year on any concrete proposals arising from these reviews.

Money and bond trading

EMID

75 The Italian electronic trading platform for the unsecured interbank market (EMID) has 225 members, including 35 foreign banks. (Outside Italy, interbank trades are largely bilateral or undertaken via voice-brokers.) EMID is directly linked to the Italian RTGS system (BI-REL), allowing for real-time settlement of trades via debit transfers. Foreign banks with no BI-REL link have the option of making cash transfers via the EURO1 system; the possibility of direct links to other TARGET RTGS systems is being explored. However, the maximum size of trades – typically €2 million to €3 million – reflects its current use predominantly for domestic rather than for cross-border business: most of its €15 billion daily turnover is between members based in Italy – around 90% of the Italian deposit market trades in EMID. Liquidity in EMID is concentrated in the overnight to two-week range.

Euro-MTS and national MTSs

76 The MTS Group, which already includes EuroMTS (the pan-European electronic trading system for euro-denominated benchmark government bonds), MTS Italy and MTS Amsterdam, has announced the formation of MTS France, MTS Portugal, and MTS Belgium (as well as MTS Japan). These will provide trading facilities, with a market-making function, for the relevant government securities. EuroMTS, which is an Inter-Dealer Broker (IDB) authorised in the UK by the FSA, incorporated Finnish issues from February, and now trades benchmark bonds for all euro area sovereigns other than Ireland and Luxembourg (where stocks outstanding fall below the €5 billion threshold for 'benchmark' bonds). A separate division of EuroMTS, EuroCredit MTS, has been created for the trading of non-government bonds. This sets a lower threshold, of €3 billion, and will initially trade a number of German and French mortgage-backed bonds (Pfandbriefe and Obligations Foncières).

COREDEAL

77 COREDEAL is a screen-based, order-driven system developed by ISMA, and was launched in May. It provides anonymous trading and straight-through settlement for over 5,000 international debt securities. All trades execute against a central counterparty, TradeGO (provided by Euroclear). COREDEAL is recognised by the FSA as an RIE.

BrokerTec

78 BrokerTec, an electronic fixed-income trading system covering both Europe and the US, is scheduled for launch at end-June. BrokerTec, also an FSA-authorised IDB, provides an order-driven platform, and will initially trade Belgian, French and German government bonds (both cash and repo); to this extent it will be in direct competition with the MTS group, although the majority of sovereign bond trading is still OTC. BrokerTec has been developed by a consortium of 12 large firms in the bond market (CSFB, Goldman Sachs, Lehman Brothers, Morgan Stanley Dean Witter, Citigroup, Deutsche Bank, Merrill Lynch, ABN AMRO, Dresdner Bank, BSCH, Barclays Capital and UBS Warburg). The system's technology provider will be OM Group, and trades conducted on the system will be cleared by LCH and Clearnet. BrokerTec is also in the process of developing a global electronic exchange platform for futures trades.

Equities trading

Merger between the London Stock Exchange and Deutsche Börse

79 The Boards of the London Stock Exchange and Deutsche Börse announced on 3 May their intention to merge as iX-international exchanges. The merger has been approved at Board level, but is conditional on approval by the shareholders of the London Stock Exchange and Deutsche Börse, with a 75% majority vote required by both. Regulatory consents in the UK and Germany are also required. Formal completion is expected this autumn. The main features of the proposed merger are as follows.

- iX-international exchanges will be owned 50% by Deutsche Börse (with distribution to Deutsche Börse's shareholders as soon as practicable) and 50% by London Stock Exchange shareholders; with the exception of Deutsche Börse's initial holding, a limit of 4.9% will apply to any individual holding or group of connected shareholders. iX-international exchanges will consist of all the London Stock Exchange's and Deutsche Börse's businesses, except for Deutsche Börse's 50% stake in Clearstream.

- iX-international exchanges will have a single Board comprising executive and non-executive directors. The London Stock Exchange and Deutsche Börse will be equally represented on the Board. Candidates for the role of Chairman and Chief Executive have already been announced.
- iX-international exchanges will be headquartered in London, and English will be the management and operating language of the Group. iX-international exchanges will be subject to FSA regulation.
- Nasdaq Europe and iX-international exchanges have agreed to form a joint venture to develop a market for pan-European, high-growth equities. The joint venture will be owned 50% by Nasdaq Europe and 50% by iX-international exchanges. It will be incorporated in England, headquartered in and managed from London, carry the brand 'Nasdaq' and operate in Frankfurt under German regulation.
- Trading will be provided by the Xetra platform, rather than by SETS. The new single platform will support multiple currencies, and in particular both sterling and euro.
- Companies currently listed on Europe's national markets will be admitted to trading on the new iX-international exchanges markets.
- Existing companies will not be required to give up their home market listing to be admitted to trading on the new iX-international exchanges markets. New companies will be listed and admitted to trading by iX-international exchanges through the regulatory structures it operates in London and Frankfurt.
- Domestic markets in the UK, Germany and other Member States will continue to serve companies which do not qualify or do not wish to be traded on the new pan-European markets.
- Deutsche Börse's 50% holding of Eurex and Eurex Clearing will transfer to iX-international exchanges.
- iX-international exchanges intends to use a single central counterparty for clearing.
- Settlement of trades on iX-international exchanges will initially remain in CREST and Clearstream. The London Stock Exchange and Deutsche Börse consider that settlement should ultimately be delivered on a consolidated pan-European basis. Migration towards this is likely to be driven by market pressure.
- iX-international exchanges intends to develop a unified strategy for a family of relevant securities' indices for the securities traded on its markets.

80 The position on the use of the euro is as follows.

- First, iX-international exchanges has made clear that it is entirely a matter for a company, in conjunction with its shareholders, to determine the currency in which it raises capital, states its accounts and pays dividends; and that iX-international exchanges will not, and cannot, force companies to report in any particular currency, nor oblige shareholders to take currency risks.

- Second, iX-international exchanges has stated that the currency in which the shares of a company is traded is a separate issue: iX-international exchanges will need to offer trading in a company's shares in the currency which best meets the needs of investors and other users in the market. The London Stock Exchange's criteria have already been set out (see December 1999 *Practical Issues*, page 54).
- Third, it has been confirmed that, in the event that the primary currency of trading for a UK company was not sterling, the London Stock Exchange would ensure that sterling prices were still available for private investors, newspapers and indices.

81 As the proposed merger between the London Stock Exchange and Deutsche Börse currently consists of a high-level agreement, inevitably there are a number of important details still to be resolved. The main outstanding questions raised by market firms include: how iX-international exchanges' shareholding structure will work in the period before the distribution of Deutsche Börse's 50% stake to Deutsche Börse's shareholders; how UK regulation of iX-international exchanges will co-exist with German regulation of the Nasdaq joint venture; how the transition from SETS to Xetra will be managed and who will pay for it; and how in detail it will be decided where shares will be listed, whether they will be traded on iX-international exchanges, its other exchanges or the Nasdaq joint venture, and where they will be settled. Further details for shareholders and customers will be set out in an information document which is expected to be available in a few weeks' time.

82 The proposed merger is a key step in the consolidation taking place in the trading, clearing and settlement infrastructure in Europe, and is likely to encourage further consolidation of clearing and settlement services. The parties consider that a full merger is likely to be more effective than an alliance. The resulting exchange, iX-international exchanges, will be the third largest stock exchange in the world, and much the largest stock exchange in Europe. Other exchanges may join in due course. Discussions have begun with Madrid and Milan.

Trading enhancements at the London Stock Exchange

83 At the end of May, the London Stock Exchange introduced a number of enhancements to SETS, which may help to ally the UK and German trading models ahead of the proposed merger with Deutsche Börse. Closing auctions are being introduced to SETS to complement the opening auction already in operation. New order types, known as 'market orders', will be available for use in the auctions to facilitate trading at the auction price and should serve to increase traded volume in the auctions. Intraday blind auctions for some SEAQ stocks will be piloted to complement the existing market-maker obligations, which remain unchanged. The London Stock Exchange is also requiring AIM stocks to be eligible for electronic settlement, which should serve to minimise the settlement problems that have been experienced.

Euronext

84 On 20 March, the Paris, Amsterdam and Brussels Stock Exchanges announced their intention to merge to form a single entity, Euronext, which will offer listing and trading in bonds, equities and derivatives for all of the instruments currently traded on the three national exchanges. The partners have stated that they intend that Euronext should merge with other European exchanges in the future. Luxembourg (which had previously set up a

cross-listing arrangement with the Brussels and Amsterdam Exchanges) has expressed its intention to join at a later stage, although the Luxembourg Exchange primarily trades fixed-income securities rather than equities.

85 The merged entity will provide single membership, a single order book and a single rule book. Equity trading will be based on the NSC system currently used in Paris and Brussels, with technical harmonisation by early-2001. All three exchanges currently use central clearing for equity trades, and this function will be centralised on Clearnet. Settlement will continue to be at the choice of the traders, whether in national CSDs or Euroclear/Sicovam. While there could be a move to a single settlement system, the pace and direction of any such move will be left to the market.

86 Euronext has not yet decided which derivatives system to use, but is reported to have expressed interest in the LIFFE CONNECT system.

Tradepoint

87 Elsewhere, the move towards pan-European equity trading has continued apace. Tradepoint, a London-based RIE recognised by the FSA, and designated as a regulated market across the EU under the Investment Services Directive (ISD), has announced a start date of 10 July for its pan-European trading platform, initially trading the top 300-400 European equities. Its pan-European rulebook is due to be implemented in June, initially for UK equities. LCH will provide the central counterparty, and settlement will take place in CREST (for UK equities) and Euroclear (for other equities). This should allow for STP and both pre and post-trading anonymity. On 23 May, Tradepoint announced a three-month period of exclusive negotiations with SWX Swiss Exchange, with a view to collaborating on a pan-European blue-chip equity platform.

Jiway

88 Another pan-European equity trading initiative, with a particular focus on retail investors, is Jiway, developed by Morgan Stanley Dean Witter and OM Group. Jiway will be a screen-based electronic market for around 6,000 US and European equities. It is scheduled to be launched in September, and will at first be made available to brokers in the UK, Sweden and Germany, followed by France, Switzerland, Italy and Holland in 2001. Settlement will take place in existing national CSDs. Jiway is seeking recognition from the FSA as an RIE.

E-Crossnet

89 E-Crossnet, which went live on 23 March, is a crossing network for equities, used exclusively by intermediaries. The system covers 14 markets in Europe. There are currently 32 participating institutions. The system takes prices from other markets and provides pre-trade anonymity for users. It formalises the bilateral crossing that is already taking place between large-scale intermediaries, while providing functionality for multilateral crossing. There are four daily matches, and the matching algorithm operates on a *pro rata* basis. Orders must be entered electronically. Members enter trades either as single orders, downloads of lists or by linking their order management system to E-Crossnet.

Other developments

90 There have been a number of other significant moves towards the consolidation of the stock exchange infrastructure in Europe.

- The Vienna Stock Exchange and Deutsche Börse have announced that they are jointly to establish NEWEX, a new exchange for Central and Eastern European securities. Settlement will be handled by Clearstream.
- The Vienna Stock Exchange has begun to use Xetra, Deutsche Börse's trading system (as will the Irish Stock Exchange).
- The Norwegian and Icelandic Stock Exchanges have announced plans to join Norex, the Nordic exchange alliance. Discussions are being held with the Estonian, Latvian and Lithuanian Stock Exchanges.
- The French, German and Italian Stock Exchanges have all introduced longer trading hours in the evenings to allow more overlap with the US markets. This decision implements the agreement reached by the alliance of eight European exchanges in September to harmonise trading hours from 09:00 to 17:30 CET.

Derivatives trading

LIFFE

91 LIFFE is to restructure. It is to create two businesses, grouping its technology-based activities together under the name of LIFFE.com, and is currently negotiating partnerships with other entities in support of this venture. LIFFE.com will enable the Exchange to realise the full potential of LIFFE CONNECT and LIFFE's other technology assets in their application to electronic trading and e-business opportunities.

92 Separately, LIFFE recently received further 'No Action' letters from the Commodity Futures Trading Commission (the US regulator). As a result, five LIFFE contracts, based on the FTSE Eurotop and MSCI Euro families of indices, will be available to US investors. Direct access from the US to LIFFE CONNECT has been permitted since July 1999; but the large US and Japanese trading firms have been represented in London for a long time, and tend to trade on LIFFE from their London base.

93 On 2 May, LIFFE's financial options began trading on its electronic trading platform, CONNECT. This completed the migration of all its financial derivatives contracts from floor to screen. Financial options volumes have since increased, indicating a successful transition in terms of quality of market, and breadth and type of user. In addition to adding to CONNECT's functionality, LIFFE's principal aim has been to expand distribution of the system. 209 firms from 17 different countries are now connected.

SwapsWire

94 Six major derivatives dealers (Chase Manhattan, Citigroup, Deutsche Bank, JP Morgan, Morgan Stanley Dean Witter and UBS Warburg) announced in April plans to facilitate the electronic negotiation of the OTC derivatives market. SwapsWire will be used for the electronic exchange of trade information, although transactions will continue to be

conducted on a private, bilateral basis. In the first instance, the system will be used for US dollar and euro interest rate swap transactions, although the partners intend it subsequently to be extended to other types of derivatives. The network provider and standard message protocol have not yet been decided.

Clearing

LCH/Clearnet merger

95 Consolidation has also continued in clearing. At the beginning of April, LCH and Clearnet, the ParisBourse subsidiary, announced their intention to merge. Stage 1 of a two-stage process will involve the formation, at the beginning of 2001, of a joint venture company into which the business of the two entities will flow. Stage 2, following as soon as possible thereafter, will involve the establishment of a single legal entity. This company (as yet unnamed) is designed to meet the requirements of global market users, and to complement the consolidation occurring between both European exchanges and European securities settlement systems. It will be member owned and governed, will be independent of both trading and settlement systems, and will offer the market the choice of UK or French jurisdictions, irrespective of trading location. Clearnet currently provides counterparty services to Euronext, LCH in London, and both provide services for certain classes of OTC trades. The company will also be open to collaboration with other euro-area central counterparties that have a similar structure and are prepared to operate on common systems. This would add to the number of legal jurisdictions under which trades could be cleared.

RepoClear

96 Last November, LCH announced the establishment of the European Securities Clearing Corporation, a governance vehicle formed together with Euroclear (Belgium) and the Government Securities Clearing Corporation (USA) to oversee the development of the LCH RepoClear fixed income business. Now with 14 members, RepoClear has itself experienced considerable expansion. Belgian Government bond repos were added last December to the German Government bond repos originally covered; and cash bonds for these markets will be included from June. Cash bond and repo feeds will also be accepted from EuroMTS, eSpeed (Cantor) and BrokerTec (for cash bonds initially). Italian Government repo and cash bonds are scheduled to be added later this year, and UK gilts at a later stage.

Central counterparty for SETS

97 LCH, the London Stock Exchange and CREST have been working together to build a central counterparty for trades executed on SETS, the London Stock Exchange's electronic order book, but with the flexibility to provide services to other trading systems in the future. The service is expected to be introduced during the first quarter of 2001. In the first instance, it will provide only exposure netting, but consultation on settlement netting will begin shortly. (A central counterparty by definition allows the multilateral netting of exposures, since a firm has a relationship with only one counterparty for all trades that have reached the point of novation. But the fact that the clearing house nets exposures does not dictate that settlement should take place on either a gross or a net basis.)

LIFFE-CME cross-margining

98 In March, LCH, together with the Chicago Mercantile Exchange and LIFFE, initiated a cross-margining programme for proprietary trades of members trading the CME Eurodollar contract and LIFFE EURIBOR and euro LIBOR contracts. This will allow members of each exchange using these contracts to post lower margin, wherever there is an offsetting reduction in risk between two contract positions. The partners consider that this is the first example of cross-margining on an international basis.

Integration in Italy

99 In March, the Italian system providers Monte Titoli (an Italian CSD), Cassa di Compensazione e Garanzia (the central counterparty clearing house for Italian derivatives), MTS, Borsa Italiana and EMID signed a memorandum of understanding aimed at integrating the functions of Monte Titoli and Cassa. This is expected to be concluded by 30 September. The new entity will be jointly owned by the signatories to the memorandum of understanding. CAT, the settlement system for Italian government securities currently managed by the Banca d'Italia, is expected to merge with Monte Titoli later this year.

Securities settlement

Merger between Cedelbank and Deutsche Börse Clearing

100 The merger of Cedelbank and Deutsche Börse Clearing (DBC), first announced in May 1999 and now re-branded as 'Clearstream', was confirmed in January. The first stage of Clearstream's new platform, 'Creation', is to be launched this summer, but it will be some time before the Cedelbank and DBC systems can be fully integrated. Clearstream Banking will run banking operations in Luxembourg and Frankfurt. Investors will be able to choose individually which securities are held where.

Merger between Euroclear and Sicovam

101 On 24 March, Euroclear and Sicovam provided details of the full merger originally announced last November. Sicovam will become a wholly-owned subsidiary of Euroclear, and its shareholders given representation on the Euroclear Board. Euroclear itself will have the option to take a 20% stake in Clearnet. An agreement is expected to be signed in June, and implemented by early-2001. The merged entity will be in a strong position to provide settlement for trades conducted on Euronext – with delivery versus payment in either central bank or commercial bank money – though other CSDs can provide settlement for Euronext trades.

102 Separately, Euroclear has signed, and shareholders have approved, a definitive agreement with JP Morgan on the replacement of Morgan Guaranty Trust as operator of, and banker to, the Euroclear system by a new, market-owned Euroclear Bank (to become operative in early-2001). Other initiatives announced by Euroclear in recent months include:

- the creation of FundSettle, an internet-based platform for high-volume, cross-border order processing and custody operations in investment funds; and

- the transfer of the settlement of Irish government bonds to Euroclear from the Central Bank of Ireland, providing a single settlement location for both domestic and cross-border Irish government bond transactions.

CRESTCo

103 CRESTCo has continued to expand the range of international securities available through the CREST system. In March, CREST and SegaInterSettle (SIS), the Swiss settlement system, launched The Settlement Network. This is an initiative to deliver a single integrated settlement process for cross-border business in Eurotop 300 securities. The Settlement Network formalises the co-operation between SIS and CRESTCo, which will share services and co-operate on future developments. It is open to other national and international settlement systems; participants will co-operate on the development of a single, 'next generation', settlement system.

104 In April, CREST launched an automated link with its US counterpart, the Depository Trust Company, allowing members access to the main Nasdaq and S&P 500 index securities. There is potential to expand the range of securities available across the link. CRESTCo is to open an account in Euroclear in the near future, creating the possibility for CREST members to hold Euroclear-eligible securities using their accounts in CREST. This complements the existing direct Euroclear link with CRESTCo, established in October 1999. Separately, CRESTCo is co-operating with Clearstream to see how they can best support the iX-international exchanges merger.

105 CRESTCo has continued to work with the investment fund industry to develop a model for the electronic settlement of unit trusts and open-ended investment companies. EMX, a subsidiary of AUTIF, is developing an electronic order-collection and valuation mechanism for investment funds for launch in June.

C REGULATORY AND LEGAL ISSUES

The European Commission's *Financial Services Action Plan* (FSAP)

106 The primary aim of the FSAP, launched in May 1999, is to overcome the remaining barriers to business in the Single Market, following the introduction of the euro. The FSAP contains nearly 40 measures affecting all aspects of the financial services sector. It is a major component of the Commission's objective to liberalise product and capital markets in the EU, and was subject to review at the Helsinki and Lisbon Councils.

107 Progress was initially quite slow, as the Commission reported at the first review date (last November). More recently, the signs have been somewhat more favourable, particularly since the Commission has given priority to the development of pan-European securities markets, and since a number of, nearly finalised, proposals have now been unblocked by agreement between the UK and Spain over the status of Gibraltar (see Table 2).

TABLE 2: SELECTED FINANCIAL SERVICES ACTION PLAN MEASURES

Measure	Timeframe	Current status
Legal framework for integrated securities and derivatives markets		
Communication on distinction between sophisticated and retail investors	Originally by end-1999	Draft in internal Commission consultation being finalised, with FESCO and industry help. Adoption now expected in the summer.
Directive on market manipulation	Proposal by end-2000	Discussions in forum group and FESCO being finalised.
Green Paper on ISD	Mid-2000	Further forum group, FESCO and industry consultations. Now expected in November.
Amending Directives on UCITS	Adoption by mid-2000	Discussions continue in Council. Commission preparing amended proposal.
Single set of financial statements for listed companies		
Fair value accounting amendment to Company Law Directives	Adoption by 2001	Commission proposal issued on 24 February 2000. Discussions under way in Council.
Legal certainty for cross-border securities trades		
Implementation of Settlement Finality Directive	11 December 1999	Commission monitoring implementation in working group. Review due in 2002.
Directive on cross-border use of collateral	Proposal by end-2000	Forum group discussions finalised. A draft working document being discussed in June.
A secure and transparent environment for cross-border restructuring		
Directive on take-over bids	Adoption in 2000	Political agreement achieved. Gibraltar issue now resolved. Final Council adoption now expected.
European Company Statute	Adoption in 2000	Political agreement achieved. Gibraltar issue now resolved. Final Council adoption now expected.
Open and secure retail markets		
Directive on distance selling of financial services	Adoption by end-2000	Discussions continue in Council. Information from questionnaire being studied.
Communication on clear and comprehensible information for purchasers	Mid-2000	Discussions in forum group being finalised.
Communication on freedom to provide services and the general good in insurance	Issued on 8 February 2000	
Communication on retail payments in the single market	Issued on 4 February 2000	Industry roundtable in November 2000.
Prudential rules and supervision		
Directive on winding-up and liquidation of banks	Adoption by 2001	Gibraltar issue now resolved. Political agreement on text now expected.
Directive on winding-up and liquidation of insurance undertakings	Adoption by 2001	Gibraltar issue now resolved. Political agreement on text now expected. European Parliament second reading to begin.
E-money Directive	Adoption by 2000	Second reading in European Parliament complete. Final Council adoption imminent.
Revision of capital framework for banks and securities firms	Directive by 2001	Consultation paper issued in November 1999.

Towards a pan-European securities market

108 The Commission's overall approach was endorsed by the meeting in February of the Financial Services Policy Group (FSPG), consisting of the personal representatives of EU Finance Ministers. The FSPG particularly stressed the need for simplified and comparable market information (for prospectuses, listing requirements and company accounts), notably harmonised financial reporting, as well as adequate investor protection, while noting that the dominance of official exchanges and markets is being challenged by developments such as new trading platforms in the shape of ECNs. The FSPG is due to submit a further progress report to the June ECOFIN meeting.

109 To help consider the technical issues involved, the Commission initially established four forum groups, composed of representatives of the private sector across the EU, covering:

- the cross-border use of collateral (as a follow-up to the Settlement Finality Directive);
- market manipulation;
- a Green Paper on the ISD; and
- a Communication on codifying and clarifying information requirements for purchasers.

110 The discussions in the forum groups on market manipulation and the ISD have been complemented by work undertaken by the Forum of European Securities Commissions (FESCO), which involves EU securities supervisors. FESCO has undertaken a review of all measures in place in national jurisdictions combating market manipulation, and has been examining the feasibility of distinguishing between 'professional' (institutional) and retail investors and thus tiering supervisory and other requirements.

111 The first stage of the work of these four forum groups is now complete. A fifth forum group has been set up to look at how to overcome market obstacles in retail financial services. One idea under consideration is whether, in addition to service providers, financial products themselves should benefit from a European passport. The current status of the work in all the forum groups is shown in Table 2.

Cross-border use of collateral

112 Following the publication of the FSAP, a forum group has been considering the cross-border use of collateral within the EU. The group's discussions have focused on areas of uncertainty regarding collateral arrangements in EU Member States, including the applicable law governing collateral arrangements, and the creation and enforcement of collateral agreements. In response to these discussions, proposed elements of the draft Directive include:

- clarification of the applicable law governing collateral arrangements, such as by extending the principle contained in Article 9(2) of the Settlement Finality Directive;
- harmonisation of minimum formalities for the creation and realisation of collateral arrangements;

- recognition in law of transfer of title as an effective collateral arrangement;
- recognition of the right of a collateral taker to re-use collateral held; and
- protection of top-up collateral and substitution arrangements from insolvency procedures, at least in certain circumstances.

113 Measures along these lines should in principle help to reduce legal uncertainty, and so reduce risk arising from the use of collateral within the EU. The Commission intends to prepare a proposal for a draft Directive before the end of this year, with a view to possible adoption by end-2003.

ECB legal instruments

114 On 13 April, the ECB Governing Council decided to publish all non-confidential legal instruments governing the relationship between the ECB and the euro-area NCBs in the *Official Journal of the European Communities*. The release of these legal instruments, in all 11 official Community languages, is intended to give interested parties an opportunity to gain first-hand knowledge about the internal operation of the Eurosystem.

EBF Master Agreement

115 The European Banking Federation is continuing to obtain legal opinions on the enforceability of the European Master Agreement (EMA) in various European jurisdictions, and to translate it into other European languages (at present, it is only publicly available in English). However, until this process is completed, it is difficult to make any assessment of the likely take-up of the EMA by counterparties within the euro area and other European countries.

Currency of share capital

116 In the UK, the DTI is hoping soon to consult the market on draft legislation to facilitate changing the currency of share capital. This would allow a company to decide to convert the nominal value of some or all of its share capital into an equivalent value denominated in a different currency, including euro.

CHAPTER 4: PREPARATIONS FOR POSSIBLE UK ENTRY

A THE OUTLINE NATIONAL CHANGEOVER PLAN

1 A second Outline National Changeover Plan (NCP) was published on 9 March. The Plan reiterates that Government policy on the single currency remains unchanged: if, on the basis of an assessment of five economic tests (set out by the Chancellor in October 1997) the Government recommends entry, the decision will be put to Parliament and to the people in a Referendum. The Government has said that it will produce an assessment of the tests early in the next Parliament; and that the public sector and business should make active preparations now, in order to give the UK a genuine option to join the euro. The NCP confirms that these preparations are on track, co-ordinated under the umbrella of the structure of working groups described in the December 1999 *Practical Issues*.

2 A key focus of the NCP is planning in the public sector. Each Government Department has produced its own outline changeover plan. These plans identify what euro services would be provided during a changeover, together with lead times and critical paths for the preparations. As a result, the public sector is on track to be ready for any UK decision early in the next Parliament in favour of membership. By end-February, the public sector as a whole had spent around £6.3 million on planning. Legislation has been passed to allow the Departments on the critical path to invest in preparations. The Inland Revenue, Customs and Excise and the Department of Social Security are planning to invest around £20 million in total during 2000/01.

3 The illustrative timetable for a UK changeover to the euro remains as set out in the first NCP. However, there is now a clearer idea of what the various stages of that changeover might involve.

4 A key influence on the nature of the changeover would be the likely level of demand for euro services and the pace at which it built up during a transition period. On the basis of current estimates and evidence so far from the first wave, it is judged probable that the demand for euro services outside the wholesale financial markets and larger companies could be quite low in the early part of the period after entry. Smaller businesses and personal customers would not be likely to make much use of the euro until nearer to the introduction of UK euro notes and coin. If this proved to be the case, it might not be necessary for the public sector and the financial sector to make the full range of euro facilities available from the entry date. Rather, they could offer limited facilities, and adopt a phased approach to the introduction of full facilities. Further work will be carried out to develop a better understanding of the likely demand for euro services, examining both the UK position and the continued experience of the first wave.

5 The NCP identifies a series of further steps in the planning process, including the following.

- Discussions on likely demand will continue, and the Revenue Departments will produce proposals to consult on the tax services they would offer during a changeover. This work, alongside continued monitoring of the first wave, will improve the current understanding of how long the period between a Referendum and UK entry would need to be.

- Government Departments will draw up strategies for the internal conversion of systems and consider how best to involve external stakeholders in the next phase of their planning. Changeover planning will be extended to local authorities and NHS bodies in 2000.
- The Euro Preparations Unit at HM Treasury will set up a series of working groups to look at technical issues affecting all sectors. It will also continue to monitor the success of different approaches to managing the changeover in the first wave and develop options for possible planning structures for the UK.
- The Notes and Coin Working Group will continue to develop a distribution plan for euro cash, alongside considering how sterling might be withdrawn.
- The Bank of England will continue to take the lead in co-ordinating, where necessary, preparations in the City.

USE OF THE EURO IN THE UK OUTSIDE THE FINANCIAL SECTOR

The Bank of England, in co-operation with HM Treasury, continues to monitor use of the euro in the UK corporate sector through its regional Agents. The aim is to discover the extent to which firms' business with the euro area is denominated in euro or the previous national currencies, and the extent to which the euro is displacing other currencies such as sterling or the dollar.

The main results from the past six months can be summarised as follows.

- The proportion of total purchases and sales (in the UK and abroad in aggregate) invoiced in euro or previous national currencies remains low, at 5% and 8% respectively.
- A large, and increasing, proportion of firms expect the euro (including its constituent currencies) to displace currencies, including sterling, in invoicing. However, the expected timing of such a switch has been postponed from around end-2000 to end-2001.
- There has been little change in the expected ultimate level of euro invoicing; the latest responses indicate 14% for both sales and purchases.
- The proportion of respondents expecting an increase in UK-owned companies' invoicing in the euro is naturally lower than that for all companies, and has slightly decreased to 20% (for both suppliers and customers).

APACS To date, the volume of retail payments made in euro within the UK remains very small. During the first quarter this year, over 10,000 euro cheques were cleared per month, with a monthly value in excess of €85 million. The majority of these cheques were made by companies. This is still tiny compared with the overall volume of sterling cheques cleared. An increasing number of businesses have experience of making or receiving euro payments to and from the euro area. APACS' regular market research on business attitudes to the euro indicates that, by March, the number of businesses handling payments in euro had doubled in comparison with figures for the first quarter of last year. Many corporates in the euro area have been slow to adopt pricing, invoicing and payment in euro, although there are increasing signs that this change is starting and will accelerate during 2001. Survey respondents still expect significantly higher cross-border retail and corporate euro payment volumes in future.

According to the survey, over 40,000 businesses have opened euro accounts (this figure is one-third higher than in 1999). Overall, this figure represents around 4% of UK businesses, but the proportion varies markedly by size of business: only 1% of small businesses (with turnover under £1 million) have euro accounts, compared to over 20% of larger businesses.

Visa Visa published a report, *Euro Traffic Report: January – December 1999*, which reveals that, excluding France (where there are a significant number of Visa transactions at tollbooths), the UK has the highest use of euro payments made by Visa card, in value terms. This can probably be explained by the high proportion of euro Visa card payments over the internet (58% of euro payments in value terms are made using the internet) and the high proportion of internet payments in the UK. In terms of euro payments made using Mastercard, statistics produced by Europay indicate that the UK ranks fourth in value terms.

British Chambers of Commerce survey The BCC published, on 30 March, its survey of business opinion on the single currency. The results suggested that nearly 18% of UK businesses have made payments in euro and 17% have received payments in euro. Not surprisingly, the majority of this euro activity took place with suppliers and customers in the euro area. The survey also found that the larger the company, the more likely it was to have conducted some business in euro.

B PLANNING IN THE CITY

6 The Bank continues to work with the wholesale financial markets to clarify the remaining issues for the City in planning for its potential changeover to the euro. A good deal of basic material has already been reported in previous editions of *Practical Issues*. The ongoing work is organised through the auspices of the City Euro Group (CEG), which has met twice so far this year. Much of the detailed work is being taken forward through a number of specialised sub-groups. In addition, the Bank has, since January, made available a Q&A of technical wholesale market issues on its website. This is being continually updated and expanded as further information becomes available.

Possible interconnections between wholesale market and retail financial preparations

7 When the initial work was undertaken to identify lead times for City preparations for possible UK entry into EMU, it became clear that there would be significant interconnections between the wholesale financial markets and retail financial services. Implementation of the system and other changes required for wholesale financial markets to operate predominantly in euro from the date of entry was estimated at around one year. But if implementation of retail financial preparations started at the same time, they would not be complete by entry. In addition, the evidence currently available suggests that many small businesses and individuals would wish to continue operating principally in sterling for much of the transition period after entry. Consequently, financial market firms with retail customers would need to be able to handle both euro and sterling for a period.

8 A sub-group of the CEG has been set up: to identify the extent to which the critical paths in the preparations of the retail and wholesale financial sectors are linked, and whether the streams of work in the two sectors can proceed largely in parallel; to determine whether the two streams of work need to have either the same start, or the same end, date; and to consider the implications for the wholesale sector if, at entry, the preparations in the retail sector are not complete. In particular, the sub-group is investigating how, during the transition period after entry, market firms could operate in wholesale financial markets in euro, while their retail customers continued to require access to financial information and prices, and to make and receive payments, in sterling. The elaboration of these issues will be key to an understanding of whether a phased approach to the changeover after entry would be practicable for market firms and the financial infrastructure.

Issues for CRESTCo

9 The Bank asked CRESTCo to establish a small CEG sub-group to look at two issues affecting CREST's preparations for possible UK entry into EMU. The first is whether there should be central conversion of the consideration relating to open bargains over a UK entry date; and the second whether new ISINs should or should not be issued for redenominated debt and equity securities. Following the meetings of the sub-group, a paper setting out the issues has been prepared, which will be used at an appropriate future date for a broad market consultation.

Fund management preparations

10 A further sub-group of the CEG has been examining the preparatory issues for fund managers in the UK. The sub-group has produced a preliminary version of a general changeover checklist for fund managers. This is reproduced in Table 1. The checklist consists only of high-level steps common to all types of fund. This general list may provide a base for fund managers to prepare further lists of issues specific to particular types of fund (eg mutual funds or pension funds).

Preparations in the insurance sector

11 The Association of British Insurers (ABI) has been engaged since early 1999 on a programme of work to assist its members in their preparations for the euro. It hopes to develop a guide for insurance companies, which may be adopted under the proposed National Consumers' Code of Conduct.

The changeover for sterling financial instruments

12 The Bank has undertaken under the NCP to set out in detail, during the course of this year, the way in which the changeover might be handled for each of the different sterling financial instruments. The Bank will develop through bilateral contacts a practitioner guide which will be published in the next *Practical Issues*.

Planning in the Bank of England

Project planning

13 The Bank now has a more complete understanding of the developments to its own systems (as well as legal and other changes) which would be necessary for EMU entry. To assist its planning, four project categories have been distinguished:

- projects that are necessary anyway, irrespective of UK entry, including technical improvements in the RTGS and accounting systems: completion of these projects on the current planning schedule would also have the benefit of putting the Bank in a better starting position to meet the requirements of the Eurosystem;
- specific EMU-related projects, including studies relating to the operational or legal framework which can be undertaken anyway without diverting significant resources from other tasks;
- EMU-related projects which are resource-intensive but which could be implemented between a decision to join and entry itself, assuming a reasonable time-period; and
- resource-intensive EMU-projects with longer lead-times, for which implementation would probably have to start before a Government entry decision in order for the Bank to be ready on time.

14 There are relatively few projects in the last category. The Bank has estimated that, as a result of its work to date, most of the necessary changes could be completed within 12 months. By undertaking intensive internal planning in this way, like commercial banks,

TABLE 1: GENERAL CHANGEOVER CHECKLIST FOR FUND MANAGERS

	Planning	Preparation and testing	Conversion weekend	After the conversion weekend
Suppliers	● Check that third party suppliers can operate in both denominations ● Consider impact of conversion on round fixed £ fees and charges ● Discuss denomination of fees with custodians and clients	● Test all systems will work and are compatible with trustees, custodians and third party administrators ● Test price feeds from suppliers and clients ● Test with third parties that systems can operate in € ● Prepare for changes to fixed £ fees and charges	● Check and reconcile £ and stock closing positions, and € and stock opening positions, with custodians and third party administrators ● Run price feeds from suppliers ● Make changes to fixed fees and charges to reflect new € amounts	● Process fees in new denominations agreed with custodians ● Make reconciliations in € ● Use price feeds in €
Conventions	● Check methodology for redenomination and odd lots ● For each fund, check timing of conversion of assets and base currency ● For each security, check timing of changeover in price and par value ● Check treatment of open settlements that straddle T date ● Check dates for changes in settlement instructions ● Check impact of day-count changes on income accruals ● Check methodology for changes in derivatives/futures lots ● Assess impact of changeover on performance measurement ● Assess impact of accounting changes (ie book values/tax values)	● Test conversion process ● Make pre-reconciliation of assets and cash balances with clients and custodians ● Prepare for settlements that straddle T date ● Change settlement instructions when appropriate ● Test that income accruals run correctly ● Test conversions to new derivatives/futures lots ● Test new performance measurement procedures and systems ● Test that accounting changes run correctly	● Redenominate where appropriate ● Run conversion process changing price and/or par value where appropriate ● Monitor new income accruals that result from the conversion process ● Run changes to derivatives/futures lots to reflect new holdings ● Run new book values where changes are agreed	● Continue changeover of assets and funds ● Ensure previously planned conventions for dual pricing and reporting in dual denominations are in place and functioning ● Use (and monitor) new settlement instructions, where amended ● Run and monitor new performance measurement criteria ● Conform to accounting changes
Customers	● Consider changes in customer statements from pre-T to post-E day ● Set up programme for advising customers on the changeover plan ● Consider changes to marketing literature ● Consider sending clients pre/post-T statements ● Consider changes to valuations ● Review fund management reporting	● Prepare changes to customers' statements and valuations ● Prepare changeover plan for customers ● Prepare changes to marketing literature ● Prepare any changes to fund management reporting requirements	● Run customers' valuations and statements and send out ● Carry out agreed changeover plan for customers	● Continue to send out valuations/statements in the new form ● Distribute new marketing literature

	Planning	Preparation and testing	Conversion weekend	After the conversion weekend
Legal	● Consider impact of change in base currency ● Review trust deeds and all other contracts for ongoing validity ● Check need for trustee, shareholder or unit holder approvals ● Agree how to monitor PEP, ISA and other regulations ● Consider information required by National Statistics Office returns	● Follow up any legal implications of change in base currency ● Prepare any changes required to trust deeds and contracts ● Set up new monitoring for PEPs and ISAs, if needed by change in regulations ● Prepare any changes to information required by NSO returns	● Confirm that legal work required is ready	● Implement any contractual changes required ● Implement any changes in disclosure rules ● Review impact of disclaimers
Internal	● Identify systems requirements ● Plan staff training ● Consider impact of changeover on funds run by overseas offices ● Produce conversion weekend plan, including for overseas offices ● Plan changes required by funds/ products, including documentation ● Review cash requirements (eg closure of duplicate accounts) ● Review impact of € on fund management reporting	● Test for the conversion weekend using model portfolio etc ● Set up new post-T valuations ● Make contingency plans ● Consider investment changes ● Consider suspension of non-essential trading prior to T ● Conduct staff training ● Liaise with overseas offices ● Prepare documentation required by funds/products ● Prepare procedures for closure of duplicate accounts ● Prepare reporting changes	● Run conversion weekend plan ● Implement communication plan, including overseas offices ● Run closing valuations and full custody prints for stock/cash ● Run opening € valuations and full custody prints for stock/cash ● Consider need for suspension of dealing	● Monitor outstanding trades and cash balances to check successful settlement ● Close duplicate accounts

the Bank is aiming further to reduce the lead-times for actual implementation of EMU-specific projects, so that it can begin in due course at the appropriate time. The Bank will continue its preparations and periodically review its overall strategy with respect to internal EMU preparations, as the external environment evolves.

Monetary policy operational framework

15 If the UK joined EMU, a number of changes would be required in the Bank's monetary policy operations. Unlike the Eurosystem, the Bank does not impose reserve requirements or provide standing facilities (Table 2). So, given the Bank's current requirement for the settlement banks' accounts on its books to balance each day, it has to be much more active in the money markets (typically conducting market operations twice daily) than the Eurosystem (where standing facilities, together with the requirement to meet the minimum reserves on average over a defined maintenance period, imply no need for frequent official intervention). The qualifying criteria for Bank of England counterparties are more narrowly defined than in the Eurosystem, including a requirement to be an active participant in the money market, and institutions other than credit institutions can apply for counterparty

TABLE 2: EUROSYSTEM AND BANK OF ENGLAND MONETARY POLICY OPERATIONS

	Eurosystem		Bank of England
Reserve requirements	Yes (2%), with averaging facility		No
Standing facilities	Deposit facility Marginal lending facility		None
Refinancing operations			
Frequency	Low		High
	Weekly (MRO)	Monthly (LTRO)	Twice daily
Maturity	Two weeks	Three months	Two weeks[1]
Tender technique	Fixed rate or variable rate[2]	Variable rate	Fixed rate
Counterparties - eligible	Approximately 2,500[3]	Approximately 2,500[3]	18
- active	On average around 800	On average around 300	All
Liquidity forecasts	Not published		Published four times daily
Other operations	Wide range of fine-tuning operations and structural operations to provide or absorb liquidity (which have not to date been used, apart from a quick tender to absorb liquidity on 5 January 2000)		Foreign exchange swaps to provide liquidity, and sale of gilts for subsequent repurchase to drain liquidity
Eligible assets	Tier 1 and Tier 2 eligible assets (in total around €6,300 billion, of which €5,600 billion Tier 1; total figures exclude non-marketable assets)		In total around €3,700 billion (of which €3,100 billion euro-denominated EEA government securities included on the Eurosystem Tier 1 list)

1 In addition, the Bank purchases bills outright with a maturity of up to 14 days
2 Variable-rate MRO tenders not used so far (see Chapter 1, section A)
3 All 7,900 credit institutions are subject to reserve requirements and could potentially be counterparties; some 2,500 of them meet the eligibility criteria set by Eurosystem NCBs

status. The Bank's framework is nevertheless less distinct from the Eurosystem approach than it used to be, and any further operational changes ahead of any decision on EMU entry will take into account the requirements of the Eurosystem.

Statistical reporting

16 In April, the Bank issued a Statistical Notice to banks on the additional reporting forms necessary to meet its statistical obligations on money and banking statistics if the UK were to join EMU (including the data necessary for the calculation of minimum reserves). These forms reflected discussion with the BBA. They are now included in the Bank of England's Statistical Returns folder to enable banks to plan for their introduction. But banks would not be required to provide these data until after a Government decision to join EMU. The exact timing would depend on the length of time between a Government decision and the date of entry. The Bank would wish to begin collection of the data shortly before any date for UK entry, in order to allow time for the series to be compiled and analysed. Reporting banks will want to draw their own conclusions on when it is necessary for them to begin internal preparations to provide these data. If the ECB's statistical reporting requirements change, the Bank will discuss with the BBA how this may affect the forms and when amendments should be issued to reporting banks. The Building Societies Commission is also aware of current additional data needs.

17 Last December, the Office for National Statistics began to send the ECB its experimental estimates of the Monthly Key Items for *Balance of Payments* statistics.

C THE CHANGEOVER EXPERIENCE IN FIRST-WAVE COUNTRIES

18 The NCP stresses the importance of learning as much as possible from the first wave in preparing for potential UK entry to EMU. The Bank is contributing through its regular contacts with the ECB and first-wave NCBs, as well as financial sector firms and financial service providers. Some information about the changeover experience of first-wave countries was included in *Practical Issues* last year, and more recent information is reflected in this edition in the sections on ECB operations, the euro money market and the euro infrastructure. Some further issues identified during the Bank's most recent contacts are set out here.

Wholesale financial markets

19 Market firms are generally satisfied with the technical functioning of the Eurosystem and the euro wholesale financial markets. Banks, as well as the official sector, are now focusing on the work required to complete the transition at end-2001, most of which is outside the wholesale financial markets.

Retail banking

20 First-wave countries have adopted different approaches to introducing the euro into their retail payment infrastructures, as well as the provision to retail customers of euro banking facilities (June 1999 *Practical Issues,* pages 111-114). However, in all countries, customers can make and receive at least some categories of euro payments, even though most retain accounts denominated in the previous national currencies. The banking

community is now considering how much work remains to convert to euro, before the end of the transition, the remaining central payment infrastructure, internal banks' systems and individual bank accounts.

21 The exact amount of work that remains will vary between countries and between banks. In some countries (like Germany, Italy and Spain), the payment infrastructure was fully adapted for the euro at the start of EMU. This necessitated major work ahead of 1 January 1999, but has limited the further work on the infrastructure required during the transition period and has allowed banks more flexibility in deciding when to convert their internal systems. However, other countries (like France and the Netherlands) will need to enhance further their infrastructure (to increase the capacity for euro payments or introduce forms of payment currently not available in euro). For individual banks, the situation differs in several ways. Some banks have yet to perform the necessary euro conversion in their internal systems (accounting, salaries etc), whilst others have already done so. Some banks do not yet provide the full range of banking facilities in euro, whilst others do. But the conversion of the bulk of the bank accounts, from previous national currency to euro denomination, remains to be effected in all countries. In some countries, concern about the scale of this task means that banks would prefer to avoid a 'big bang' conversion of accounts on 31 December 2001. However, an earlier conversion would at present require customer consent under the ('no compulsion, no prohibition') principle enshrined in the EU Regulation. On 25 May, the ECB Governing Council announced that TARGET and national RTGS systems will be closed on 31 December 2001, in order to safeguard the smooth conversion of retail payment systems and internal bank systems. It is for individual countries to decide whether that date will be a Bank Holiday.

22 Separately, banks are considering how to treat payments denominated in previous national currencies beyond 1 January 2002. Under the Regulation, payments in old national currency made before 31 December 2001 will be valid for settlement for a period in 2002 (for example such cheques may be valid for settlement until 30 June 2002). It is, however, not yet clear how banks will treat payments denominated in national currency made beyond the beginning of 2002. This is not an issue exclusive to the first wave: it will also affect the UK, since five first-wave national currencies are settled in the London Currency Clearings.

USE OF THE EURO INSIDE THE EURO AREA

Although reliable data are scarce, until recently all the evidence available indicated very low euro usage across the euro area. This remains generally true, but the most recent European Commission quarterly survey (using a particularly small sample) indicates increasing euro use in some areas.

- In particular, over 25% of payments by value made by large firms in the first quarter of this year were said to be in euro (compared with under 2% in the final quarter last year). Nevertheless this represents just 2.4% of transactions by volume. The Commission attributes the increase to the large wave of mergers and acquisitions (involving cross-border shares denominated in euro). Not surprisingly, large firms appear to be adopting the euro much more quickly than SMEs.
- Commission data also show about 10% of newly-opened bank accounts within the euro area to be denominated in euro.

- The use of the euro in transactions with the public sector remains significantly lower than within the private sector.
- Payments in euro by individuals are said by the Commission now to account for almost 10% of all euro-area payments in value terms.

Euro notes and coin

23 The production, storage and distribution of euro notes and coin, together with the simultaneous withdrawal of the previous national currencies, represents a considerable logistical challenge for first-wave banks, NCBs and Mints in particular. The key issues currently being addressed include the following.

- *Production of euro notes and coin* Banknote production is currently under way in the first-wave countries, with all but the highest denominations now being printed. Minting of all eight denominations of euro coins is also under way throughout the euro area, with production broadly on track to achieve the stock of 56 billion coins required by 1 January 2002.
- *Test runs* Euro note testing under centralised supervision began in early May, permitting machine manufacturers to perform tests for adapting machines and sensors to euro banknotes. Further testing under the supervision of Eurosystem NCBs will take place early in 2001.
- *Front-loading* Following the ECOFIN decision not to allow any distribution of euro notes to the general public ahead of 1 January 2002, Eurosystem NCBs are considering how to maximise the extent of low-denomination euro cash circulation in the first few weeks of 2002. Some 9 billion euro notes need to be put into circulation to ensure that the bulk of cash transactions can be made in euro by the end of the first two weeks. It is likely that notes with very low denominations will be distributed through ATMs in many countries, but that may not be sufficient. This area will need further elaboration.
- *Debiting model* During the cash changeover, commercial banks will need to hold both previous national currency and euro note stocks. Discussion in the Eurosystem continues on the precise details of banks' payment for these notes during the early-2002 changeover.

24 Besides the practical challenges for the financial community, a smooth changeover in notes and coin will require the general public to be familiar with the new currency. The ECB is co-ordinating a Europe-wide information campaign with the following main objectives:

- to enable citizens to recognise euro notes and coin and, in particular, their security features;
- to familiarise citizens with the different denominations; and
- to inform citizens how and when the new physical currency will be introduced.

25 In the period ahead, the Eurosystem will continue to help train and inform those in the euro area working in banks, retailers, educational establishments and governments. Later, from mid-2001, an intensive media campaign will target the general public in the euro area.

D EMU PREPARATIONS IN GREECE, DENMARK AND SWEDEN

Overview

26 The December 1999 *Practical Issues* described preparations under way in the three other EU countries which did not participate in EMU at its launch. In planning for possible UK entry into EMU, lessons can be learnt from these countries as well as from the first wave.

27 During the last six months, the most significant developments in these countries have been as follows.

- Greece officially applied for euro membership on 9 March and a European Council decision is expected in June. Preparations are under way for EMU entry on 1 January 2001, with euro notes and coin to be introduced on 1 January 2002.
- In Denmark, a Referendum will be held on 28 September. In the event of a positive result, the most likely date for EMU entry might be 1 January 2002, with euro notes and coin introduced some two years later.
- In Sweden, at a special Congress in March, the ruling Social Democratic Party decided to change its stance towards EMU membership from 'wait-and-see' to 'yes-but-later'. Sweden will in principle join the euro if a number of economic conditions are met, and if the people vote in favour in a Referendum. However, no date for such a Referendum or any timetable for entry has yet been set.

Greece

National context

28 Greece applied officially on 9 March to become the first 'second-wave' entrant to EMU. On 3 May, the Commission and ECB published *Convergence Reports* and the Commission also submitted a 'Proposal for a Council Decision' to abrogate the derogation of Greece from the adoption of the euro. A decision by the European Council on Greece's application is expected during the European Council on 19-20 June.

29 Assuming a positive decision, Greece will join EMU on 1 January 2001. Euro notes and coin will be introduced one year later, simultaneous with the first wave. This compressed timetable means that all sectors in Greece must work very efficiently in order to make the necessary preparations. This is particularly true of those preparations which cannot formally begin until the decision on Greece's application has been made. The timetable is especially tight for the production of euro notes and coin and for the technical preparations in the banking sector.

30 National elections were held on 9 April which did not result in a change in Government. Widespread political, public and business support remains in Greece for joining the euro.

31 Early in 1998, a National Co-ordinating Committee for the euro was established. A National Changeover Plan was published under its auspices in July 1998. This set out technical details and timing of the proposed introduction of the single currency in the

various sectors of the Greek economy. Since then, this Plan has been supplemented by a series of circulars on specific topics. In April 1998, the Ministry of Finance set out plans for the changeover in the public sector. During the transition period, Government expenditure and tax receipts will in general continue in drachmas. However, certain Government accounts and the Budget will be expressed in both drachmas and euro. Both business and the general public will be able to submit tax declarations in both denominations from entry.

Preparations in the financial sector

32 Preparations in the banking sector are co-ordinated by the Hellenic Banks' Association, in conjunction with the Bank of Greece. There is no uniform approach among Greek banks to the extent of the services each will provide in euro during the transition period. Some large Greek banks are likely to have all their systems in place by 1 January 2001, while other banks are likely to catch up during the course of 2001. Retail banking products will be offered in euro depending on demand. All bank statements will express amounts in both drachmas and euro.

33 On entry, monetary policy by the Bank of Greece will be conducted in euro and credit institutions' accounts at the Bank of Greece will be converted to euro. As in first-wave countries, new issues of Government securities will be denominated in euro from entry; and outstanding issues will be redenominated into euro. Redenomination will be based on individual investor holdings, with rounding to the nearest cent. Securities will retain existing ISIN codes. The common euro market conventions will be adopted, at least for debt issued after 1 January 2001. As from 1 January 2001, the money market, foreign exchange market and bond and equities markets will change over to the euro.

Preparations in the central bank

34 Since the start of this year, the pace of EMU preparations in the Bank of Greece has increased. The timetable is tight, since most of the work has to be finished by 1 January 2001 at the latest, while in some areas testing with the Eurosystem has to take place this autumn. The most difficult projects relate to internal IT work in the area of foreign exchange transactions and reserve management and accounting, and to the introduction of euro notes and coin.

- *Production and distribution of euro notes and coin* The Bank of Greece has compiled a detailed euro cash 'masterplan', including a quantification of likely demand. Given the long lead times, production of euro cash has to begin immediately after a decision on Greek entry has been made. New machinery necessary to produce euro cash has been acquired and a test-run for coin production will take place soon. Bank branches have been assigned specific duties for the withdrawal of drachma notes and coin, while facilities for the destruction of drachma notes are considered to be adequate.
- *Foreign reserves management* The Bank of Greece is developing a new application system for foreign reserves management. This will handle front, middle and back-office functions for both its share of ECB foreign reserves and its own reserves. This project needs to be finished in the autumn and is naturally making heavy demands on the Bank's internal IT resources.

- *Accounting system* The Bank of Greece's internal management accounting system is being revamped to enable it to submit a balance sheet consonant with Eurosystem accounting principles and techniques. This is also a complicated project, given the interfaces with other applications in the operational areas of the Bank.
- *Legislation* The Statute of the Bank of Greece has recently been amended in order to ensure full legal integration of the Bank of Greece into the Eurosystem. Central bank independence was achieved in 1997, but the latest amendments have also dealt with some remaining imperfections, partly identified in the *1998 Convergence Report* by the European Monetary Institute. The new Statute, as adopted by the Bank's Annual General Meeting at end-April, is expected to be ratified by law in Parliament soon. The changes will enter into force on 1 January 2001. Moreover, the revision of a number of other Statutes (eg the Coin and Foreign Exchange Act and the Monetary and Company Law), in the light of the introduction of the euro, is currently in progress.
- *Money market operations* The Bank of Greece has gradually adapted to the Eurosystem operational framework in recent years. As a result, most of the necessary elements are already in place, including standing facilities, reserve requirements based on averaging, and weekly and monthly tenders with maturities of 14 days and 3 months respectively. Most recently, in March, further changes were made, including to allow Eurosystem fine-tuning operations, the abolition of the previous quotas on the marginal lending facility, and to provide uniform remuneration on required reserves balances of credit institutions. Before EMU entry, the reserve ratio – which is currently set at 12% because of a sizeable structural surplus in the Greek money market – will need to be reduced to the Eurosystem 2% level. To absorb the resulting liquidity injection, the Bank of Greece will issue securities to, and/or collect fixed-term deposits from, credit institutions. The Greek list of eligible assets for monetary policy operations, which currently only include Greek Treasury bills and bonds, will be extended to include Eurosystem eligible assets. At present, the Bank of Greece does not envisage any need to establish Greek Tier 2 paper. The valuations, 'hair-cuts' and margins currently applied in the Bank of Greece's electronic trading system of Government securities are all Eurosystem-compliant. The Statutes of the Bank of Greece have been amended to allow for the formation of pools of predeposited collateral.
- *RTGS* Since early March, a new drachma RTGS system has become operational alongside the HERMES-euro system (which is linked to TARGET and has existed since 4 January 1999). The new system operates in drachmas, and already handles larger volumes and has a larger membership than HERMES-euro. In practice, the new HERMES will handle domestic payments in drachmas until the end of this year. After Greece joins EMU, a new version will be implemented. It will operate solely in euro for both domestic and cross-border payments. This new release of HERMES will be based on HERMES-euro, from a technical point of view. The opening hours of the domestic interbank market have already been extended to coincide with TARGET opening hours.
- *Statistics* Credit institutions already report data to the Bank of Greece in accordance with the ESCB reporting standards, but EMU entry will require that the data distinguish between domestic, EMU and non-EMU transactions. It has been

agreed that the Bank of Greece should start providing monthly money and banking statistics to the ECB from October.

- *Information provision* The Bank of Greece is providing information to the general public about the euro. It also participates in the ECB-led public information campaign about euro notes and coin.

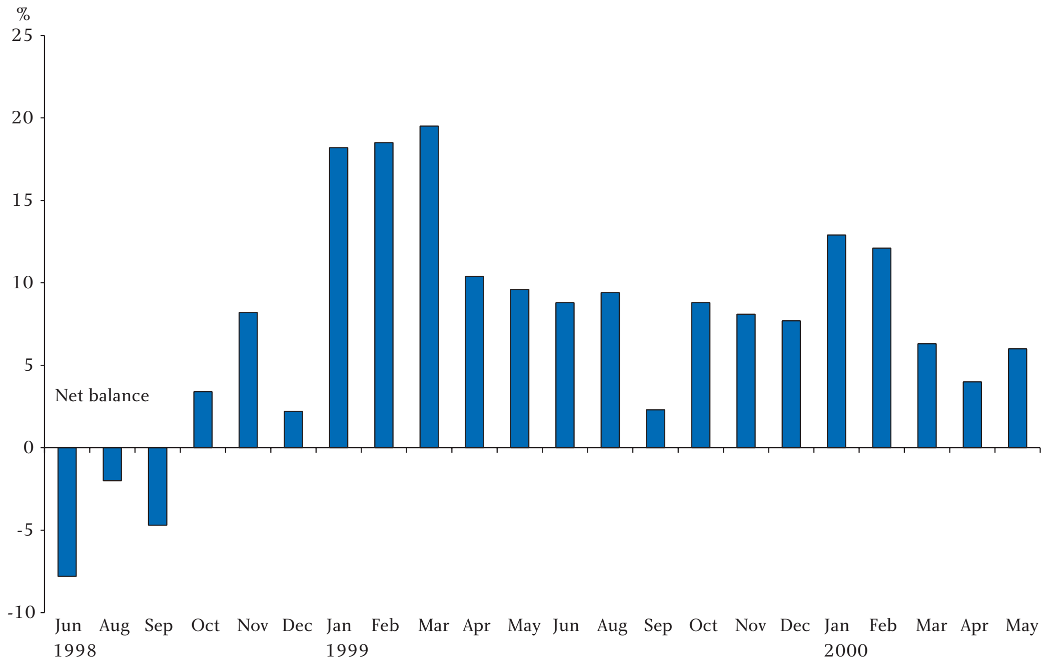
Denmark

National context

35 On 9 March, the Danish Prime Minister announced that a Referendum on the adoption of the euro would be held on 28 September. The country's ruling Social Democratic Party voted in favour of Danish membership of EMU at a special party conference in April. Against this background, preparations in the country are intensifying. In early May, the Government submitted to Parliament a Bill on the adoption of the euro, which will provide the legal basis for the Referendum. If the Referendum outcome is positive, the Danish Government will notify formally the EU Council of the intention to waive its exemption from Stage 3 participation.

36 According to opinion polls, public opinion in Denmark on balance still favours entry, but with a smaller margin than when the Referendum date was announced. Voting intentions seem to be polarising, with the number of undecided voters falling, but the last few weeks of campaigning in September will no doubt be key to the result. On 7 April, the Ministry of Economic Affairs released a report titled *Denmark and the Euro* setting out the possible pros and cons for Denmark of EMU membership.

DANISH OPINION POLL RESULTS ON EMU PARTICIPATION **CHART A**



Source: Green's Institute of Market Research, Denmark

37 If the Referendum outcome is positive, the likely date for adoption of the euro would be 1 January 2002. The current understanding of how Denmark would approach a transition to the euro is set out in the *Outline National Changeover Plan*, published in December 1999. As preparations for all parts of the country are expected to last at least three years, euro notes and coin would not be likely to be introduced in Denmark until early-2004.

Preparations in the financial sector

38 The Danish banking sector has estimated a lead-time of one and a half to two years before all banks would be able to treat the euro as the domestic currency. This is primarily because of the work involved to adjust IT systems to provide euro accounts for all customers, and to process larger volumes of payments. The *Outline National Changeover Plan* suggests therefore that it is possible that some euro banking facilities may not be available on a large scale on the entry date. The decision about when to begin practical preparations for EMU entry (including whether to begin ahead of the Referendum) is a commercial one, to be taken by institutions individually. As with the other 'out' countries, Danish banks are trying to gauge the likely demand for euro services, including how that demand might be affected by the existence of euro notes and coin in surrounding first-wave countries.

39 In 2001, a new S.W.I.F.T.-based RTGS system, KRONOS, will be launched in Denmark. This will replace the current krone system and offer more up-to-date systems and functionality to the Danish banks. KRONOS will be adapted to link to TARGET, to allow euro payments to migrate from the current Danish TARGET component, DEBES. The completion of this project will facilitate a smooth changeover should Denmark decide to join EMU. A working group chaired by the Danmarks Nationalbank is currently examining the consequences of a possible introduction of the euro for other payment and settlement systems, and their interface to the Danmarks Nationalbank. A report is expected to be published during the third quarter of this year.

40 On 31 January, a working group chaired by the Danmarks Nationalbank published a report: *Consequences for the Danish Bond Market if Denmark Decides to Adopt the Euro. Technical considerations*. The report focuses in particular on redenomination of bonds in the event of Danish entry. The working group recommended that redenomination of Danish Government securities and mortgage bonds should take place immediately at entry, at the level of investor holding with rounding to the nearest euro cent.

Preparations in the central bank

41 The Danmarks Nationalbank has estimated that it would require approximately one year to prepare itself for entry after a positive Referendum result. Thereafter a further year would be needed to establish the necessary stocks of euro notes and coin, provided the Danmarks Nationalbank's own production capacity would be supplemented by the printing works in first-wave countries. In order to become a fully participating member of the Eurosystem, the Danmarks Nationalbank would need to make a number of adjustments to its areas of responsibility and to its systems, including monetary policy operations, statistics and accounting (as set out in the December 1999 *Practical Issues*).

Sweden

National context

42 The Swedish Government has made clear that the option of joining the euro in future should be kept open, both by pursuing the appropriate economic policies and by carrying on with practical preparations. The Swedish Government policy on EMU is now characterised as 'yes-but-later'. At a special Congress in March, the ruling Social Democratic Party decided to adopt a favourable stance towards Swedish EMU membership, if certain economic conditions are met. When those economic conditions are fulfilled, a Referendum will be held to assess popular support for EMU entry.

43 No date has been set for the Referendum, nor have any other decisions been announced since the SDP Congress on the timetable for possible future EMU entry. Previously, 1 January 2002 had been mentioned as the earliest possible entry date, but the prospect of entry then has become more remote. Sweden will hold the EU Presidency in the first half of 2001, followed by national elections in September 2002. Commentators thus see a Referendum on EMU entry before autumn 2002 as very unlikely. Even if a Referendum were held soon after the election, the long lead-times for the necessary technical and legal adjustments imply that entry before 2004 would be unlikely.

44 Opinion polls during most of 1999 showed public opinion for and against EMU entry to be more or less evenly balanced. However, the latest polls show a slight negative net balance.

45 On 3 May, the ECB and the Commission published their convergence reports on Greece and Sweden. Such reports are required under the Treaty at least once every two years, for those countries that do not have an 'opt-out'. Both reports indicate that Swedish legislation is not compatible with the Treaty and the ESCB Statute, and that Sweden does not fulfil the exchange rate criterion.

Preparations in the financial sector

46 Since 1996, the Sveriges Riksbank has been responsible for the co-ordination of all the financial sector's euro preparations, within the overall planning framework of the Ministry of Finance. The Riksbank chairs a *Steering Committee* which published its fifth progress report in March, *The Euro in the Swedish Financial Sector*, distinguishing the normal four phases in the potential changeover (before a Government decision to apply for EMU membership is taken, from then to entry, from entry to euro notes and coin, and finally to the sole use of the euro).

47 The report provided a more thorough analysis of the lead-times for the EMU preparations in the financial sector. As for the first-wave, a large part of the financial infrastructure would have to be fully euro-compliant by the entry date, whilst other sectors could adjust subsequently. The report concluded that while the Swedish Stock Exchange and CSD, together with some market players, had already completed most of the necessary adaptation, and would therefore need only a short time to complete the final changes before EMU entry, many other market firms still need to make major adjustments.

48 Several firms would need up to 18 months to complete their preparations, whilst the Swedish National Debt Office would need about one year. The Riksbank would also need around one year to complete its internal adjustments, provided that some of the necessary work could be carried out before the decision on EMU entry was taken. The Swedish Banking Association is working on the basis that the banking community would have to provide complete euro functionality in all product and service areas from entry, and estimates that the preparatory work for this would be around 18 months. Banks would use 'wrappers' (conversion facilities) to deal with euro transactions. This would make it possible for banks to convert internal central systems from krona to euro at a time of their own choosing.

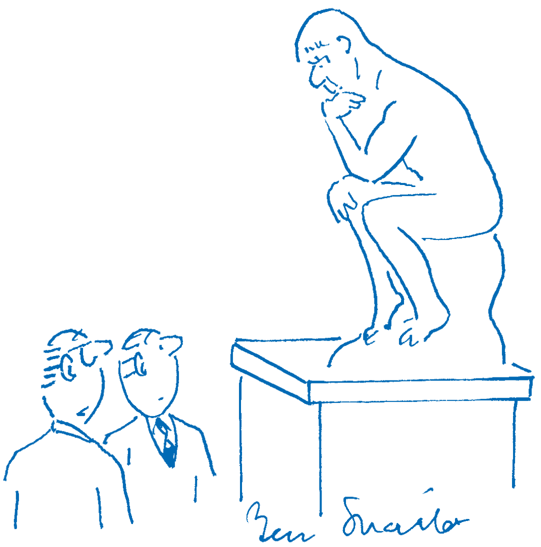
49 In the light of these lead-times, the report indicates that the transition could in total take over five years. However, this can be seen as a maximum scenario. First, it includes a transition period of 36 months, in line with the first wave, which is not very likely in the case of Sweden. The report states that even when the longer lead-times for the production of euro notes and coin are taken into account, the financial sector in Sweden would in practice not need a transition period of more than two years. Second, the length of the period between a Government decision and actual EMU entry is put at 18 months. However, this estimate is based on the longest lead-times for financial sector firms. If some of these preparations could start ahead of the decision to apply for EMU membership, the preparatory period could be shortened.

Preparations in the central bank

50 Most of the Riksbank's EMU preparations could be completed within one year from a decision to join. The progress report describes the main changes necessary, including in the monetary policy operational framework. Beyond the issues set out in the December 1999 *Practical Issues*, the following areas are worth mentioning.

- *Notes and coin* The Riksbank's analysis indicates that the preparations for the introduction of euro bank notes would take about two years. If, however, some of the work could be carried out before the decision is taken, this period might be reduced to about 18 months. On coin, the Riksbank has analysed two alternatives. In a fast track scenario, preparation and production of the necessary quantities could be completed in two years. This would require some work ahead of the entry decision, and also some use of foreign production capacity. In a more conventional scenario, the necessary work could take up to 42 months.
- *Legal tender status* The Riksbank has stated in the progress report that it expects that during the transition, only Swedish notes and coin would be legal tender. Swedish citizens wanting to pay with euro notes and coin originating from euro area countries might be able to do so, but this would entirely depend on the willingness of potential recipients to accept such payments. Only when the Riksbank itself introduced euro notes and coin, would euro cash assume legal tender status in Sweden.
- *Legal changes* New central bank legislation came into effect at the start of 1999, *inter alia* to increase the independence of the Riksbank. However, further changes would be necessary, as indicated by the Riksbank in the progress report and

confirmed by the ECB and Commission in their recent convergence reports. Some of the changes have to do with the integration of the Riksbank into the Eurosystem. Other changes include those to deal with the introduction of the euro. The Government has stated that the provisions related to the Riksbank's exclusive right to issue notes and coin in Sweden will not have to be changed until the euro is introduced. However, a draft Bill will have to be presented to Parliament in connection with entry into EMU. Overall, the Riksbank estimates that the legislative changes will take up to 18 months to complete ahead of EMU entry, and amendments to the Constitution Act could take longer.

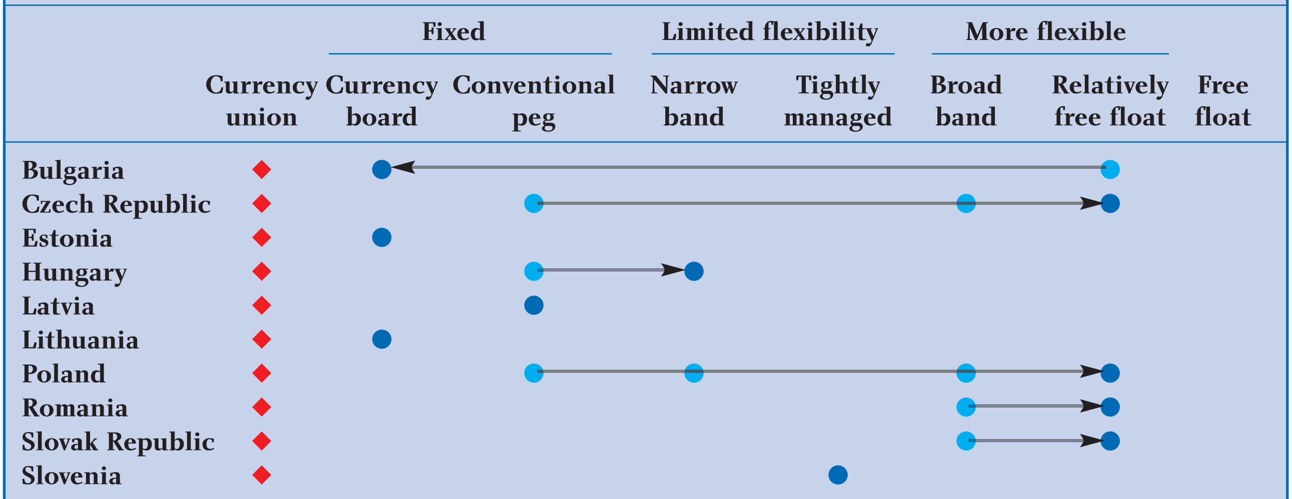


HE'S PROBABLY THINKING ABOUT END-2001

CHAPTER 5: ACCESSION COUNTRIES' EXCHANGE RATES IN TRANSITION

1 The central and eastern European countries in the process of EU accession (CEEACs) will have to make choices regarding their exchange rate regimes when they approach EMU. They currently use a remarkably wide variety of exchange rate regimes, from currency boards to free floats (Chart A). But all are expected eventually to join EMU. Given these beginning and end points, what factors need to be considered in choosing an optimal exchange rate regime for the transition period? The choices CEEACs make will affect their capacity to deal with the challenges involved in rapid integration into global capital markets, and the speed and success of their integration with the EU. This Chapter analyses the main structural characteristics of the CEEACs, the key challenges facing them in the short-term, and the costs involved in switching between different exchange rate regimes.

EXCHANGE RATE REGIMES IN THE CEEACS: APRIL 2000 **CHART A**



◆ Regime at time of EMU membership
● Current regime
● Previous regimes
Source: Deppler (2000), central bank reports

Structural characteristics of the accession countries

2 While there are significant differences, the CEEACs share many common structural characteristics.

- In comparison to the euro-area members, the *CEEAC economies are very small*. The GDP of six CEEACs is close to or below that of Luxembourg, and the population of eight is close to or below that of Portugal. Poland is the only large country with a GDP about Denmark's size and a population about Spain's size.
- They have a *high degree of openness*, with trade accounting for on average 45% of GDP. The extent of openness is significantly higher than in the euro area (average

26% of GDP). Poland and Romania are the least open CEEAC countries, but their trade shares are still around the average for the euro area.

- Nearly 60% of trade in the CEEACs is with the euro area, *indicating very strong trade integration with the EU*.
- Converging production structures and growing diversification in most CEEACs are *lowering their susceptibility* to shocks that would cause business cycles with the euro-area to diverge (so-called asymmetric shocks). The average share of services in the CEEACs is only slightly lower than the average for the euro area (65% against 68%, in 1998). The share of agriculture in GDP is still high in three countries. Excluding these, the average is not far from that of Portugal (5% against 4%). The small share of commodity exports in CEEACs further suggests that exposure to asymmetric shocks from differential terms of trade movements is not very high. Recent empirical evidence shows shocks in the more advanced CEEACs to be correlated with those of the EU, and business cycles to be synchronised.

3 Literature on optimal currency areas argues that small, open economies with strong trade integration and limited susceptibility to asymmetric shocks tend to derive net benefits from currency union. As CEEACs meet many of these conditions, they could benefit significantly from joining EMU.

TABLE 1: SIZE, OPENNESS AND PRODUCTION STRUCTURES OF CEEACS

	1998 GDP ($ billion)	1998 Population (million)	% of trade in GDP 1998[1]	% of trade with euro area 1998[2]	% share of agriculture in GDP 1998	% share of services[3] in GDP 1998
Bulgaria	12.3	8.3	36.3	46.2	18.7	55.8
Czech Republic	56.4	10.3	50.2	59.9	5.0	58.4
Estonia	5.1	1.5	76.3	70.1	5.6	76.3
Hungary	47.7	10.1	50.9	69.5	5.8	69.2
Latvia	6.4	2.4	39.3	54.9	4.5	71.2
Lithuania	10.7	3.7	44.4	46.0	10.1	66.3
Poland	163.9	38.7	22.5	67.4	5.7	66.2
Romania	38.1	22.5	26.4	57.8	16.0	52.3
Slovak Republic	20.4	5.4	59.6	49.5	4.4	68.9
Slovenia	20.1	2.0	47.6	67.6	3.8	68.7
CEEAC average	**38.1**[4]	**10.5**	**45.4**	**58.9**	**8.0**	**65.3**
EU-11 average	594.3	26.4	26.2	-	2.6	67.8
Portugal	108.3	9.9	28.3	-	3.9	60.9
Luxembourg	16.7	0.4		-		

1 Exports plus imports divided by 2 as a share of GDP
2 Exports plus imports with the EU as a share of total imports and exports
3 Non-agriculture and non-industry
4 Weighted by 1998 GDP

Sources: EBRD *Transition Report* 1999, IMF-WEO, Weber and Taube (1999), Bank of England calculations

Key short-term challenges facing the CEEACs

4 In the next few years, as they approach EMU, the CEEACs are likely to be confronted by a number of challenges which will have a bearing on the exchange rate choices open to them

and which would generally argue against any premature fixing to the euro. The most important challenges are likely to be: the elimination of capital controls; large capital inflows; extended fiscal pressures; and continued trend exchange rate appreciation.

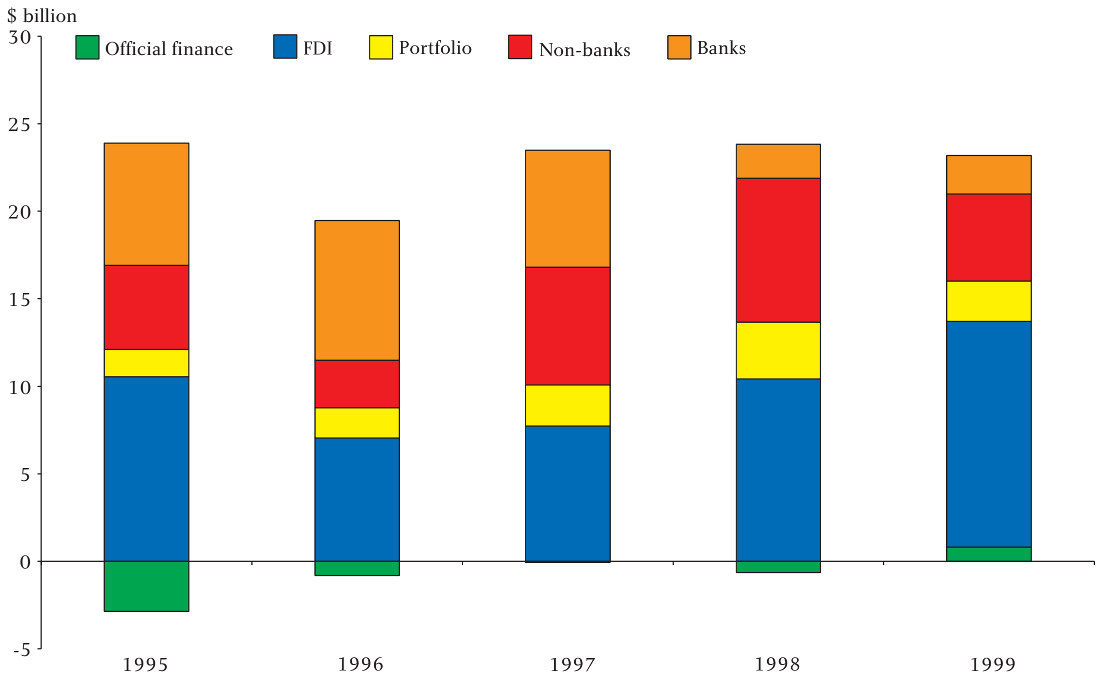
Capital account liberalisation

5 The CEEACs have made significant, but uneven, progress in liberalising their capital accounts. The Baltic countries all liberalised very early in the reform process. The Czech Republic, Hungary, and Poland have also progressively reduced capital controls as part of the process of becoming OECD members, with generally only some restrictions remaining on short-term inflows. Liberalisation has facilitated strong capital inflows to the region, but also placed countries at greater risk to shifts in investor sentiment. Since EU Regulations require the removal of the remaining capital controls by the time of EU membership, this vulnerability is likely to increase in future and will have to be taken into account by the CEEACs when deciding on their exchange rate path to the euro.

Managing large capital inflows

6 Capital flows to the CEEACs increased strongly during the early 1990s, albeit from a very low base. Since 1995, capital flows to the region have been virtually stable at around $23 billion per annum, the equivalent of 6% of regional GDP (Chart B). This stability is in sharp contrast to the experience of emerging markets generally where, during the recent crises, private flows halved. The distinct patterns are mainly due to large-scale withdrawals by commercial banks from emerging markets generally, while the CEEACs relied heavily on more stable FDI inflows. Thus the effects of recent crises were comparatively mild. This suggests some resilience to capital flow shocks, but this abstracts from significant country differences.

CAPITAL FLOWS TO CEEACs **CHART B**



Source: Institute for International Finance, Bank of England calculations

7 The CEEACs are currently expected to attract further large capital inflows, driven by continuing structural reforms and the prospect of EU accession. These will be difficult to manage under any exchange rate regime, and will be made even more difficult by the elimination of remaining capital controls and by likely convergence plays that could increase volatility in the prospective run-up to EMU. The recent economic literature suggests that fixed exchange rates tend to be particularly risky by providing targets for speculators (currency boards excepted, due to their greater credibility). More flexible exchange rate regimes are consequently advocated for countries integrating into global capital markets, although this route is not free of difficulties. Under flexible exchange rate regimes, large capital inflows are likely to entail upward exchange rate pressure, lower competitiveness, and increased current account deficits, which in turn increase vulnerability to shifts in investor sentiment.

8 On the whole, the CEEACs' recent exchange rate choices have been in line with those arguments. Those operating largely successful currency boards have decided to maintain them; others already have, or are in the process of moving towards, more flexible exchange rate regimes (Chart A). None, however, has opted for a completely free and unfettered float. The structural characteristics of most CEEACs would argue against this on account of the likely excessive costs that high exchange rate volatility would entail.

Remaining fiscal pressures

9 The CEEACs have for the most part avoided the large fiscal imbalances that have typically plagued other countries during the early phases of transition (Table 2). They experienced some set-backs following the Russian crisis, with only two of them succeeding in keeping fiscal deficits below 3% in 1999. Public debt has been contained at generally low levels. Both debt levels and budget balance trends suggest that most CEEACs have attained a significant degree of fiscal stability, with remarkable resilience during recent domestic and external crises. However, fiscal performance is not uniform.

TABLE 2: CEEACS' FISCAL PERFORMANCE

	General government balance (% of GDP)			Government debt (% of GDP)		
	1997	**1998**	**1999**	**1997**	**1998**	**1999**
Bulgaria	-4.6	0.9	-1.0	102.7	87.4	85.0
Czech Republic	-2.0	-2.3	-5.3	12.9	13.0	18.1
Estonia	2.2	-0.3	-3.8	7.6	6.6	7.9
Hungary	-5.1	-4.8	-3.9	63.7	61.2	61.0
Latvia	0.1	-0.8	-4.0	12.0	9.9	12.8
Lithuania	-1.6	-4.6	-6.6	20.4	21.7	27.4
Poland	-3.3	-3.1	-3.2	44.7	43.1	42.5
Romania	-4.6	-5.7	-4.1	25.6	24.1	41.2
Slovak Republic	-5.2	-5.9	-4.4	23.4	28.4	31.8
Slovenia	-1.2	-0.8	-0.7	24.3	27.2	29.8
CEEAC average	**-2.5**	**-2.7**	**-3.7**	**33.7**	**32.3**	**35.8**
EU-11 average	-2.5	-2.0	-1.2	75.3	73.5	
Portugal	-2.5	-2.2	-1.8	61.7	57.8	

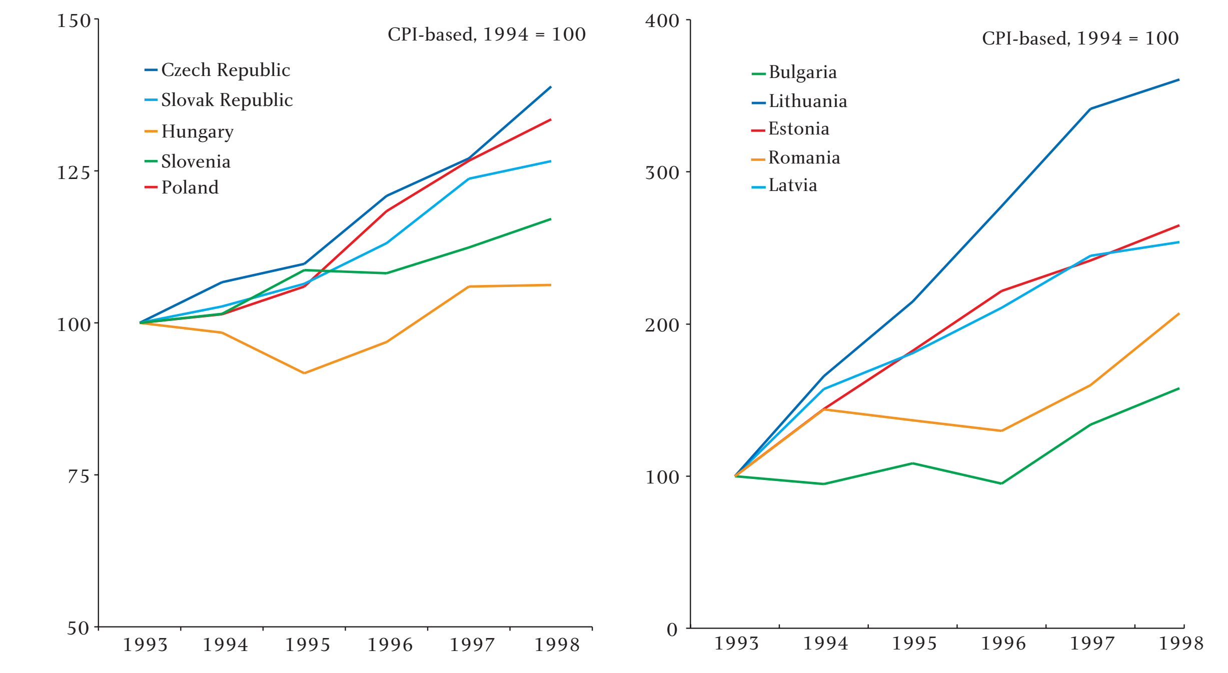
Sources: Fitch-IBCA, January 2000; ECB *Monthly Bulletin*, February 2000

10 The list of structural reforms that all CEEACs still have to implement to qualify for EU and EMU membership is long. Many entail significant fiscal costs (pension and health-care reform, banking reform, and enterprise restructuring). Estimates of these costs amount to about 2% of GDP annually over the next six years, even in the more advanced CEEACs. Privatisation revenues will help finance part of these costs, but will not uniformly be available as some countries have already completed much of the restructuring process. On the whole, remaining fiscal pressures from structural reforms can be expected to affect a number of CEEACs and would generally be easier to accommodate under more flexible exchange rate regimes.

Trend appreciation

11 Largely as a result of the profound structural transformation in the CEEACs since the early 1990s, productivity growth has been exceptionally high. It is likely to have been a key factor behind the strong trend real exchange rate appreciation (Chart C). Much of the appreciation took place during 1993-97, before gradually levelling off in recent years – average appreciation in 1998 was 9%. The most frequently discussed cause of the appreciation in transition countries is *differential productivity growth*. The argument is based on the Balassa-Samuelson effect, whereby rapid increases in productivity in the traded goods sectors (spurred by structural reforms and FDI inflows) drive up wages and prices economy-wide and result in an appreciation of the real exchange rate. Empirical evidence of this in the CEEACs is limited, but suggests that it could have driven up consumer prices by up to 3% per annum in the more advanced countries.

REAL EXCHANGE RATE INDEX TO THE DM **CHART C**



Source: EBRD Transition Report 1999, Bank of England calculations

12 Slowing rates of productivity growth in recent years suggest that the initial rapid catch-up phase in many CEEACs may be over. If productivity growth continues to slow, upward

pressure on inflation and the real exchange rate will lessen as a result. Even so, trend appreciation will pose a challenge for the CEEACs, and suggests caution in moving too soon towards hard exchange rate pegs where misalignments could result.

Switching costs

13 In choosing an exchange rate path to the euro, the CEEACs also need to consider the costs of regime switches. Moving from one type of exchange rate regime to another is generally not free of costs, and the CEEACs potentially need to face this issue at least twice, when they switch to a transition regime and again when they adopt the euro. Absent a crisis, switching costs may reflect the time and political effort needed to agree legislation and supporting policies; the starting up of a new agency and/or training staff to implement the new regime; developing, testing and refining new policy instruments; acquiring a reputation and credibility; and the risk of an adverse market reaction.

14 Switching costs for most countries with different forms of both intermediate and more flexible exchange rate regimes are likely to be moderate – facilitated by relatively sophisticated and independent central banks and a significant amount of policy experience. In the currency board countries, in contrast, regime switching costs can be expected to be significant in terms of both institutional investments and potential market instability. Moreover, given the transitory nature of a switch to a more flexible regime before the adoption of the euro, there would appear to be significant merit in maintaining existing and well-functioning currency boards during the transition to the euro. The ECB appears to be supportive of this view, stating that accession countries which have successfully operated a euro-based currency board deemed to be sustainable, might not be required to go through a double regime shift in their strategies to adopt the euro.