

# Financial market developments

- *Bond yields continued to fall in all the major markets during 1993; in the US government bond market, however, this fall was halted in the fourth quarter.*
- *Investors sought ways of increasing returns by: moving out along the yield curve; investing in higher-yielding debt; and investing in equities.*
- *This provided substantial opportunities for financing and refinancing, and record volumes of new issues were raised in many debt and equity markets.*
- *Activity in exchange-traded derivatives markets grew rapidly, and financial markets became increasingly interdependent and accessible to international issuers and investors.*

## Overview

There were rallies in all major government bond markets during 1993, as inflationary pressures were seen to have been dampened by recession. In Japan and Europe, bond yields fell throughout the year. In the United States, however, the earlier rally in US government bonds was brought to a halt in the fourth quarter: signs of quickening economic recovery turned attention to the possibility that the Federal Reserve might begin to tighten monetary policy.

In this context, a record \$485 billion of international bonds<sup>(1)</sup> were issued in 1993. Of this, over \$370 billion was issued in straight bonds, and \$69 billion in floating-rate notes (FRNs)—the highest since the collapse of investor confidence in perpetual FRNs in 1986. Refinancing of maturing debt was important throughout 1993, with \$282 billion of international bonds maturing during the year.

As both market and official short-term rates fell, and with dissipating inflationary pressures leading to falls in long-term bond yields too, investors sought ways to improve returns. The higher returns available from longer-maturity debt and higher-yielding issuers proved attractive. In the United States, the 30-year government bond provided the principal market benchmark throughout the year, and a small number of borrowers were able to issue debt with a maturity of 100 years. In Europe, the Italian and Austrian governments issued 30-year bonds, in US dollars and Deutsche Marks respectively, to exploit historically low yields at this maturity. The German government issued a 23-year bond, followed in early 1994 by a 30-year bond, so providing new benchmarks for the long end of the Deutsche Mark yield curve. Throughout 1993, Asian and Latin American debt was popular with investors: yield premia

over the average yield on OECD debt were driven down as low as 200 basis points for some Latin American borrowers and below 100 basis points for many Asian borrowers. In the United States, 'junk' bonds also returned to favour, with \$54 billion of new bonds issued during the year.

In the sterling debt market,<sup>(2)</sup> the total volume of issues doubled over the year—from £15 billion in 1992 to £30 billion in 1993. There was substantial enthusiasm for sterling paper from both overseas investors and borrowers; the largest issue of the year was the Kingdom of Denmark's £800 million brought in August to replenish the country's foreign currency reserves. Domestic financial institutions remained active in the fixed-rate bond market, taking advantage of the generally favourable conditions to raise £6 billion. Supranationals also found the sterling market increasingly attractive, issuing over £2½ billion. Despite the large volume of bonds which were launched, demand for long-dated sterling paper persisted and the yield curve continued to flatten, particularly as expectations of a further cut in interest rates grew following the November Budget.

Two relatively new approaches towards selling bonds to investors continued to develop during 1993. At one extreme, 'global' bond issues have sought access to deeper and more liquid pools of investors through simultaneous distribution of bonds in Europe, the United States and the Far East. At the other end of the spectrum, some non-Asian borrowers have attempted to target specifically Asian investors by using 'Dragon' bonds, issued only to investors in the Far East. At the same time, international capital raising by Asian entities has gradually evolved, from initial reliance on the syndicated credit market, to equities, equity-linked bonds and finally straight bond issues. This has been assisted by investors' growing awareness of Asian

(1) International bonds include both eurobonds and foreign bond issues.

(2) Excluding UK government debt. For gilt-edged and other government issues, see the article on the Operation of monetary policy (pages 5–11).

borrowers, together with a conscious broadening of portfolios as OECD-based yields declined and investors sought exposure to the rapidly growing Asian economies.

In the buoyant market conditions, issuers of FRNs found it advantageous to adapt their issues to investors' interest rate expectations, in particular using reverse FRNs and collared FRNs. During 1993, over one quarter of FRNs were structured in this way (see the box on page 26). If market optimism starts to decline, however, ordinary FRNs may also become increasingly attractive to investors, since their prices are more stable in a generally rising yield environment than those of fixed-rate bonds.

US and European bank profitability improved during 1993, boosted by profits on foreign exchange and securities trading. Activity in the syndicated credit markets remained strong, with the value of loans in 1993 equalling the previous year's record. Nevertheless, refinancing activity for established borrowers was a significant factor; net new lending was low as banks remained selective in favour of low-risk credits. After a quiet first half of 1993, the euromedium-term note (EMTN) market revived strongly towards the end of the year; at \$92 billion, announcements of new EMTN programmes exceeded 1992's record.

With low inflation and the prospect of economic recovery, falling bond yields and short-term interest rates led to major rises in many equity markets around the world. As equity yields were driven down and earnings per share began to increase in the United Kingdom, the FT-SE 100 rose over 20% throughout the year to a record 3,462 at the year-end. Other European equity markets enjoyed similar rises, but the US market only rose by 6.5% during 1993, and the Japanese market was unable to sustain a recovery from its low levels of 1992, ending the year little higher than it had begun.

UK companies therefore found equity finance relatively cheap and, with companies keen to strengthen their balance sheets with the onset of economic recovery, this led to a record year for rights issues in the United Kingdom. In the fourth quarter, substantial amounts were also raised by companies coming to the UK market for the first time. Large amounts of equity finance were also raised in the US market in 1993. By contrast, the Japanese equity market has, in effect, been closed since 1990.

## International bond markets

European and Japanese government bond yields (see Chart 1), which have declined considerably since their peaks in 1990, continued to fall in the fourth quarter, in the light of weak economic and inflation data. US bond yields, however, rose in October, after data showed US economic growth to be stronger than expected and suggested that the three-year rally might, at least temporarily, have come to an end.

As investors moved out along the yield curve in search of higher returns, borrowers were able to issue at longer maturities in most currency sectors. This was particularly

**Chart 1**  
Ten-year government bond yields



Source: Bloomberg.

evident in domestic and euro Deutsche Mark bonds; in the latter case, the average maturity of bonds issued in the fourth quarter was 10¼ years, four years longer than in the first half of 1993.

**Table A**  
Total financing activity:<sup>(a)</sup> international markets by sector

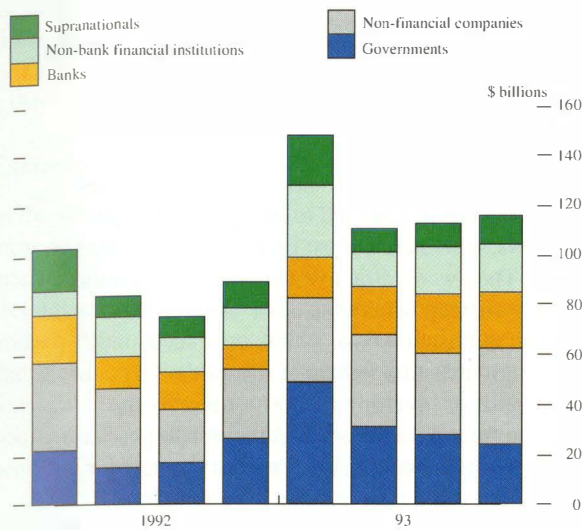
\$ billions: by announcement date

	1992 Year	1993 Year	1992 Q4	1993 Q1	Q2	Q3	Q4
<b>International bond issues</b>							
Straights	281.5	375.8	73.6	122.8	88.1	82.2	82.6
Equity-related	24.0	39.6	8.8	8.6	8.3	10.6	12.1
of which:							
Warrants	18.3	20.8	6.3	6.2	3.7	5.5	5.3
Convertibles	5.7	18.8	2.5	2.4	4.6	5.1	6.8
Floating-rate notes	43.2	68.5	6.2	15.6	13.6	19.0	20.3
Bonds with non-equity warrants (currency, gold, debt)	1.2	1.5	0.2	0.8	0.4	0.2	0.1
<b>Total</b>	<b>349.9</b>	<b>485.4</b>	<b>88.8</b>	<b>147.8</b>	<b>110.4</b>	<b>112.0</b>	<b>115.1</b>
<b>Credit facilities (announcements)</b>							
Euronote facilities	113.2	117.1	37.9	15.2	14.9	31.1	55.9
of which:							
CP	21.5	24.2	11.6	5.7	3.4	2.9	12.2
MTNs	90.8	92.2	26.3	9.5	11.2	27.9	43.6
NIFs/RUEs	0.9	0.7	0.1	—	0.3	0.3	0.1
Syndicated credits	221.4	221.1	47.1	42.4	69.4	54.6	54.7
<b>Total</b>	<b>334.6</b>	<b>338.2</b>	<b>85.0</b>	<b>57.6</b>	<b>84.3</b>	<b>85.7</b>	<b>110.6</b>
<b>Memo: amounts outstanding</b>							
All international							
Bonds(b)	1,686.4	1,847.9	1,686.4	1,741.8	1,774.9	1,843.6	1,847.9
Euronotest(c)	173.1	255.8	173.1	182.6	199.3	234.6	255.8
of which, EMTNs	61.4	146.6	61.4	77.8	94.8	124.6	146.6

- (a) Maturities of one year and over. The table includes euro and foreign issues and publicised placements. Issues which repackage existing bond issues are not included. Figures may not add to totals because of rounding. Bond total includes issues from MTN programmes.  
 (b) BIS-adjusted figures, including currency adjustment. Includes issues of fixed-rate bonds and floating-rate notes.  
 (c) Euroclear figures.

Borrowing in the international bond markets therefore remained strong in the fourth quarter (see Table A). At \$115 billion, the volume of issues was almost one third higher than in the same quarter of 1992 and, despite the Christmas lull, exceeded the third quarter's volume. Non-financial companies accounted for \$39 billion of the total (see Chart 2), the highest since 1991. Encouraged by

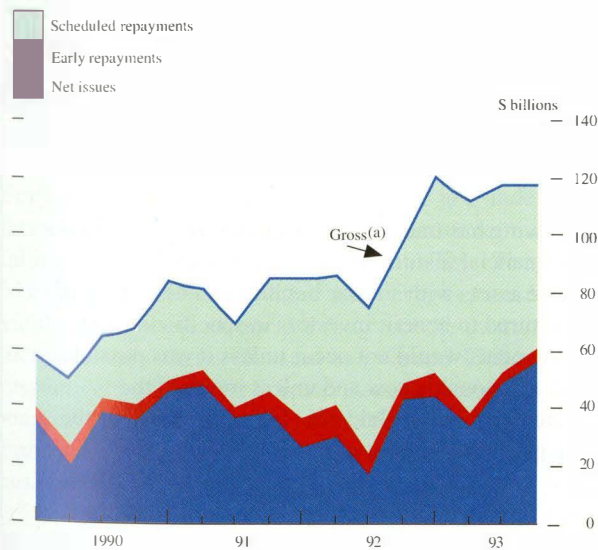
**Chart 2**  
Borrowers in the international bond market



Source: Bank of England ICMS database.

historically low bond yields, refinancing of maturing debt was a significant influence: the value of international bonds maturing in the fourth quarter of 1993 amounted to \$60 billion. Despite the continuing high value of repayments, the figure for total net bond issues during the fourth quarter (net of redemptions and early repayments) was almost two fifths higher than a year earlier (see Chart 3). Non-financial companies, however, were net repayers of principal over the year as a whole.

**Chart 3**  
International bond issues



Source: Bank of England ICMS database and BIS.

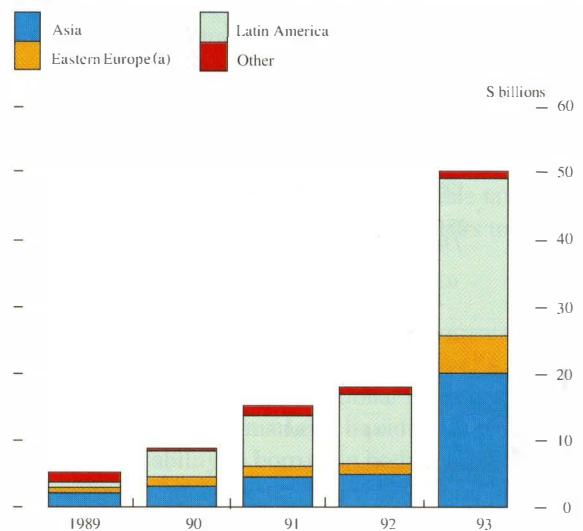
(a) Gross issuance is measured at date of completion rather than announcement, and may therefore differ from the figures given in Table A.

National and regional governments, which had issued substantial amounts of international bonds in the first three quarters of 1993, reduced their international borrowing in the fourth quarter. The reduction reflected a degree of pre-funding of their financing requirements which had occurred earlier in the year, as well as a fall-off in the

number of countries using the international bond markets to replenish foreign exchange reserves. Scandinavian governments and Canadian provinces remained the heaviest borrowers, although Hungary also borrowed across a wide range of currency sectors to fund its current account deficit.

Issues by non-OECD borrowers (see Chart 4) rose to \$22 billion in the fourth quarter, with amounts raised by Asian borrowers (primarily Hong Kong and South Korean companies) exceeding those of Latin American entities for the first time in recent years. Asian issuers achieved yield premia in the US dollar sector of, on average, less than 100 basis points above OECD borrowers. Latin American borrowers fared somewhat worse, with yield premia over OECD debt remaining more than 200 basis points for most

**Chart 4**  
International bond issues by non-OECD borrowers



Source: Bank of England ICMS database.

(a) 1990 figure excludes \$15.3 billion of East German borrowing.

borrowers, though one Latin American supranational was able to issue at 185 basis points over US Treasuries in September. Perceptions of the improving creditworthiness of Latin American borrowers, and investors' demand for yields above those available from OECD issuers, are likely to maintain significant demand for such issues.

In the fourth quarter of 1993, issues of global bonds (issued simultaneously in the European, US and Far East markets, and which can be settled through both domestic and international clearing systems) fell to \$7 billion. Nevertheless, the range of currencies in which such bonds were issued expanded to include the Deutsche Mark, when the World Bank launched a DM 3 billion 10-year bond in October. In addition, the Kingdom of Sweden became the first issuer of a US dollar global FRN.

A quite different product, seeking access specifically to Asian investors, is the 'Dragon' bond. Although technically no different from eurobonds, Dragon bonds are syndicated and traded in Asia (outside Japan), issued to Asian investors and listed in Hong Kong, Singapore or Taiwan. First launched by the Asian Development Bank in 1991, 13 bonds

## Structured floating-rate notes

Floating-rate note issues (FRNs) revived sharply over the last two years, as expectations grew that dollar short-term interest rates were reaching their trough and that European rates would fall. In 1991, only \$22 billion was raised from issues of FRNs, but by 1993 the amount exceeded \$68 billion, of which \$19 billion was structured in some way to meet investors' interest rate expectations. FRNs are attractive to investors as interest rates rise, but commit the issuer to potentially higher funding costs in the future. Structured FRNs are designed to respond to investors' views of future interest rate trends and yield curve patterns, but without exposing the issuer to all of the concomitant interest rate risk. The shift in borrowing patterns from straight bonds to structured and ordinary FRNs therefore reflects expectations of changing short-term interest rates.

### Issues of structured floating-rate notes

\$ billions

	1988	1989	1990	1991	1992	1993
FRNs	25.0 <i>138</i>	27.3 <i>157</i>	57.9 <i>219</i>	21.8 <i>146</i>	43.2 <i>312</i>	68.5 <i>505</i>
of which:						
Structured	0.3 <i>2</i>	0.7 <i>7</i>	1.3 <i>12</i>	0.3 <i>5</i>	2.8 <i>27</i>	19.1 <i>167</i>
by currency:						
US dollar	0.3	0.3	—	—	2.1	11.5
Sterling	—	—	0.1	—	—	1.6
Deutsche Mark	—	—	1.1	0.1	0.1	3.0
French franc	—	—	—	—	0.4	1.1
Canadian dollar	—	—	—	0.1	0.1	0.9
Other	—	0.4	0.1	0.1	0.1	1.0

Note: Figures in italics relate to number of issues.  
Source: Bank of England ICMS database.

There are three principal types of structured FRNs:

**Reverse FRNs** are structured to produce rising coupons as a floating reference rate falls. The coupon is calculated as a fixed rate less a floating reference rate (eg 12% less DM six-month Libor). The notes contain an implicit interest rate cap with a strike price equal to the fixed-rate element, as well as non-negativity clauses to prevent rates falling below zero. In rare cases, the notes may be denominated in one currency, while the coupon may be linked to Libor based in another currency, so providing exposure to yields in the second currency without the currency risk.

**Collared FRNs** contain caps and floors, thereby generating maximum and minimum returns (eg minimum coupon of 5% and maximum of 8% for dollar FRN). They contain two embedded options and, in effect, the issuer purchases a cap from the investor and sells them a floor.

**Step-up recovery FRNs (SURFs)** pay coupons linked to yields on comparable longer-maturity bonds. With a positive yield curve they therefore provide the higher yield available at the longer maturity (eg the coupon on a five-year dollar FRN might be set equal to half the yield

on a 10-year Treasury plus a margin of 150 basis points). The bond yield contains an implicit floor.

### Investor demand in 1993

Investors' perceptions that US short-term interest rates were bottoming out in 1993 led to heavy demand for collared FRNs, which are almost entirely denominated in US dollars. They were attractive to investors when the yield curve was steep, where the 5¼% average floors paid a premium of almost 200 basis points over six-month Libor, although investors remain at risk of the yield curve shifting upwards or inverting if short-term rates rise sharply in the future. Investors' willingness to purchase debt with interest rate ceilings of 9½% on average for maturities of ten years suggests that investors think it unlikely that US interest rates will rise beyond this band. Investors with views on the shape of the US yield curve could, alternatively, purchase SURFs. Common in the US capital markets, but rare in the euromarkets, SURFs allow investors to take views on the shape of the yield curve over the duration of the security to enhance their return.

Investors in European currencies found traditional FRNs unattractive, given expectations that short-term rates in many European currency sectors had further to fall, but were keen to invest in reverse FRNs. Issues of reverse FRNs were confined to European currencies, and were concentrated in the first quarter of 1993, when there were 32 Deutsche Mark, French franc and sterling issues. There were no further issues of sterling reverse FRNs beyond the first quarter (sterling interest rates having fallen to 6% by February), although modest issuing of Deutsche Mark and French franc reverse FRNs later in the year reflected continued expectations of interest rate cuts.

### FRN issuers

FRN borrowing has traditionally been dominated by banks and other financial institutions wishing to match floating-rate assets with similar liabilities. The issuing of FRNs structured to benefit investors in specific interest rate environments would not occur unless it was possible to issue at a reasonable cost and unless much of the interest rate risk could be laid off. For reverse FRNs, the issuer can eliminate interest rate risk entirely by swapping the reverse interest stream with a counterparty; in effect, returning to conventional floating-rate funding (although they will retain some additional credit risk). Similarly, the options which the issuer has purchased and sold embedded within collared FRNs can be eliminated by offsetting purchases of over-the-counter options. Indeed, high demand for structured FRNs by investors may lead to overvaluation of embedded options compared with discrete OTC options (particularly in the valuation of floors set above the current short-term rates), and enable issuers to reduce their overall funding costs.

totalling \$3.5 billion have been issued to date—mainly by non-Asian borrowers. The Dragon bond, however, has yet to establish a completely separate identity from eurobonds, since trades are still settled through European settlement systems and because there has been considerable evidence of a flow-back of bonds to European and US investors.

### Currency sectors

In the fourth quarter, US dollar issues again accounted for more than one quarter of all fixed-rate issues in the international bond markets (see Table B). Reversing the recent trend, long-term US bond yields rose from mid-October, and this may have persuaded some companies that yields had bottomed out, encouraging them to lock into fixed-rate funding. Almost half of issues were by non-financial companies, many of which had refinancing needs. The average maturity of US dollar straight eurobonds

**Table B**  
Currency composition of fixed-rate bond issues<sup>(a)</sup>

Percentage of total issues announced

Currency denomination	1992	1993	1993			
	Year	Year	Q1	Q2	Q3	Q4
US dollar	32	30	30	33	29	28
Ecu	7	3	5	2	2	2
Deutsche Mark	10	13	16	7	13	16
Swiss franc	5	4	3	5	6	5
Sterling	7	8	9	10	8	6
Canadian dollar	6	8	11	5	8	5
Yen	14	13	13	9	16	16
French franc	8	10	7	15	8	12
Italian lira	2	3	1	5	4	2
Other	9	8	5	9	6	8
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

(a) Excluding equity-related issues.

lengthened to 7½ years in the fourth quarter, as issuers were able to take advantage of the low yields even on longer-dated debt; at the extreme, ABN Amro Bank launched the first 100-year foreign bond in the US domestic market.

European currencies raised their share to just under half of fixed-rate bonds issued in the fourth quarter, stimulated by falling yields and renewed currency stability. The Deutsche Mark and French franc, whose 10-year government bond yields were almost identical throughout the quarter, increased their shares of issues to 16% and 12% respectively. Domestic borrowers were dominant in both markets: German banks and other financial institutions and French state-owned companies remained the principal issuers in their respective currency sectors.

The euroyen and Samurai markets accounted for 16% of international bond issues during the fourth quarter. Governments and supranationals borrowed heavily in the Samurai market; this may change from the beginning of 1994, however, as the 90-day 'seasoning' restriction on the sale of euroyen bonds in Japan has been removed for sovereign issuers, thereby allowing them improved access to investors in euroyen bonds. This development is likely to add to pressures for further deregulation of bond markets in Japan.

Less debt was issued in the sterling market in the fourth quarter than in previous quarters of 1993. After an active October, when 16 issues were brought totalling £3 billion, borrowers were hesitant to bring new issues in the run-up to the November Budget, and the market remained quiet in December. The largest volume of issues during October and November came from the financial sector; building societies were particularly active in November, when they made three issues totalling £400 million. Some innovative issues included a £500 million 10-year bond backed by German mortgages, and a 25-year debenture issued by a special purpose vehicle representing ten housing associations.

In May 1993, the Italian Ministry of Finance announced plans to reimburse withholding tax on Italian government bonds to foreign investors within 35 calendar days of the coupon payment. This accelerated reimbursement is intended to take effect from the December coupons. In October, the Portuguese Ministry of Finance followed suit by announcing that, at some point in early 1994, it would in effect abolish the 20% withholding tax imposed on foreign holders of government bonds. Foreign investors would automatically receive an immediate tax refund, rather than (for those whose governments have a double taxation treaty with Portugal) having to wait up to two years to claim back a portion of the tax.

The acceleration of withholding tax repayments to foreign investors will make both Italy's and Portugal's government bonds more attractive to international investors: this is likely to improve their markets' liquidity, as well as their governments' ability to borrow in both domestic and international bond markets. The acceleration of repayments will also remove certain market imperfections which had been created by the discrepancy between the taxation treatment of foreign holders of domestic government bonds and eurobonds. Investors had, for instance, been willing to purchase lira eurobonds at yields below those of equivalent Italian government debt.

Turnover and new issues in the Ecu bond and money markets increased towards the end of 1993. In part, this was attributable to Ecu securities' composite character, offering exposure to a range of European markets with reduced currency risk. In the last quarter of 1993, in addition to its regular monthly Ecu Treasury bill auctions, the Bank of England held a tender in October to reopen the 1996 Ecu Treasury note. This was followed, in January 1994, by the launch of a new three-year Ecu note maturing in January 1997.

The monthly Ecu Treasury bill auctions were oversubscribed at all three maturities on offer (ECU 200 million one-month, ECU 500 million three-month and ECU 300 million six-month bills), with overall cover of more than two times at each auction at up to 20 basis points below ECU Libid. Ecu Treasury bill turnover was around ECU 1.5 billion per month, falling to ECU 1 billion in December. There are currently ECU 3.5 billion worth of bills outstanding.

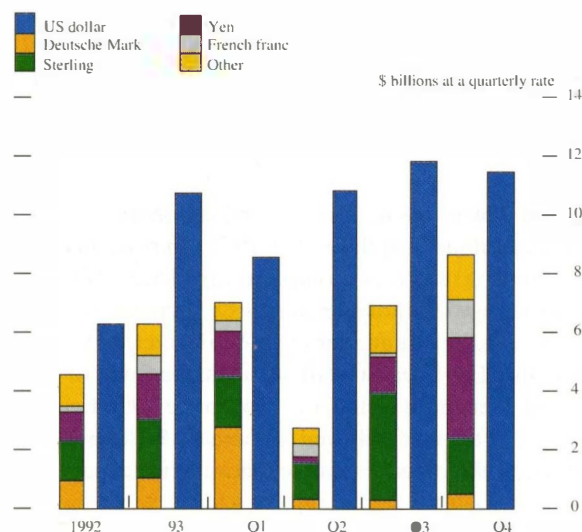
On 18 January 1994, the Bank held the first tender for HMG's Ecu note maturing in January 1997 (the third three-year note in the series). ECU 1 billion was sold at the tender, which was over three times covered. Bids were allotted at yields in a tight range of 5.28% to 5.31%, around 27 basis points below the theoretical yield of the composite basket. The oversubscription at the tender reflects the benchmark status of the debt in the Ecu market. Turnover in the 1995 and 1996 notes has remained steady at around ECU 2 billion per month over the last quarter.

On 20 December, the Chancellor announced that the Treasury intended to repay in advance of final maturity the ECU 5 billion revolving bank credit arranged in September 1992. Tranches of the credit, which was currently fully drawn, would be repaid over the following four months at their respective rollover dates. Of the United Kingdom's other foreign currency debt, the DM 5 billion five-year and \$3 billion 10-year bonds, launched in 1992 to complete HMG's ECU 10 billion currency borrowing programme, have continued to trade well since their launch. Over the last quarter, they remained among the top ten most actively traded eurobond issues settled through Euroclear and Cedel.

**Floating-rate notes**

Issues of floating-rate notes (FRNs) rose to more than \$20 billion in the fourth quarter (see Chart 5), bringing issues in 1993 to \$69 billion—the highest since the collapse in investor confidence in perpetual FRNs in 1986. FRNs, whose coupons are reset half-yearly, maintain greater price

**Chart 5**  
Currency composition of floating-rate issues



Source: Bank of England ICMS database.

stability than fixed-rate bonds when yields are generally rising (since yields adjust through increased coupons, rather than simply falling prices) and, with expectations of rising US short-term interest rates, this may have been one factor which attracted investors to these instruments. For issuers, direct FRN issuance became preferable to swapping a

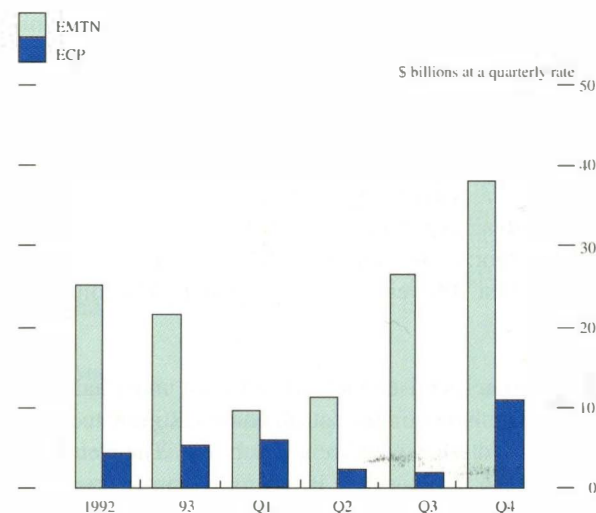
fixed-rate bond. Banks and other financial institutions accounted for two thirds of issues, with central and regional governments providing a further fifth. Issues of structured FRNs fell slightly in the fourth quarter to \$2.5 billion (see also the box on page 26).

Despite continued demand for fixed-rate sterling bonds, in the latter half of the year investors' appetite gradually switched away from these increasingly expensive instruments towards sterling FRNs (including floating-rate medium-term notes). Although often similarly priced to fixed-rate bonds, sterling FRNs were considered by many investors to be more secure against the risk of rising interest rates over the term of the instrument. Borrowers therefore began issuing more FRNs, swapping back into fixed-rate payments where necessary.

**Euromedium-term notes and eurocommercial paper**

The recent strength of the euromedium-term note (EMTN) market continued in the fourth quarter of 1993, with \$38 billion of new programmes announced (see Chart 6). Nine tenths of new EMTN facilities were in US dollars, although the multicurrency nature of most programmes

**Chart 6**  
EMTN and ECP programme announcements



Source: Bank of England ICMS database.

meant that only two fifths of outstandings were denominated in dollars. New eurocommercial paper (ECP) programmes of \$11 billion were announced in the fourth quarter, after two quarters of low announcements. Despite the rise in new programmes, low amounts issued from these and existing facilities meant that the stock of ECP outstanding contracted slightly to \$80 billion.

Although OECD borrowers remain dominant in the EMTN and ECP markets, Mexican borrowers are becoming established in the ECP markets, and raised \$2¼ billion in the fourth quarter. In addition, Venezuelan and Philippine entities made debut issues in the EMTN market during the fourth quarter. In 1992, Hungary inaugurated the first

## The Financial Law Panel's Guidance Notice on netting of counterparty exposures

The Financial Law Panel (FLP), established in February 1993 and chaired by Lord Donaldson, recently produced its first Guidance Notice, on the subject of netting of counterparty exposures.

The FLP's Guidance Notice was timely, in that the G10 supervisors (including the Bank of England) have been discussing whether or not to extend the recognition of netting agreements (covering instruments such as swaps, forwards and similar derivatives) for capital adequacy purposes. Each supervisor's satisfaction as to the legal enforceability of a particular netting agreement is likely to be a key criterion for recognition of these agreements. The Bank of England views the FLP's Guidance Notice as a helpful step in this process.

In recent years, trading volumes in the foreign exchange markets have increased substantially, and derivatives trading has grown exponentially. London is one of the principal centres of these financial markets, where banks, securities houses and other financial institutions (referred to simply as banks in what follows) from around the world participate. In the nature of trading in these markets, two counterparties will tend to enter into a large number of individual transactions with each other. In order to calculate and control exposures to individual counterparties, as well as to calculate how much capital to allocate to the business activities concerned, banks therefore need to know under which circumstances they may calculate their exposures on a net rather than gross basis.

### Statement of law

Where a company goes into insolvent liquidation in England and there have been mutual credits, mutual debts or other mutual dealings between the company and another party prior to liquidation, set off applies. An account must be taken of the mutual dealings and the ultimate net balance only is required to be paid to the liquidator or proved for in the liquidation.

This rule of English Law is now contained in Rule 4.90 of the Insolvency Rules 1986. The object of the rule is to achieve substantial justice between the parties having regard to the whole of their mutual dealings. The rule achieves this result by imposing a requirement for a complete set off in respect of all the mutual dealings between the parties.

All obligations in respect of the mutual dealings are required to be brought into account.

The set off applies whether or not there is any contractual entitlement to the same. The requirement for set off in respect of all mutual dealings is mandatory and cannot be excluded by agreement between the parties.

Where a bank and its corporate customer enter into various transactions with each other prior to the customer's insolvent liquidation and the customer goes into liquidation before the transactions are closed mandatory set off applies. The bank will have a claim (or obligation) on a net basis only to receive from (or pay to) the liquidator the net amount in respect of the transactions taken as a whole.

The primary calculation of a bank's exposure to a counterparty should consider a 'worst case' scenario, in which the counterparty goes into a liquidation which yields no dividend for unsecured creditors. The basic exposure in this situation is the maximum amount due to the bank from the counterparty. Crucial to this calculation is whether the bank must consider every transaction with the counterparty in isolation (ie its exposure being the sum of those amounts owed to it) or whether the bank may net the results of individual transactions, setting off obligations which it has to the counterparty against those sums which are due to it. It is prudent for banks to calculate their exposure on a net basis only if the relevant legal rules will, on the liquidation of the counterparty, lead to the net result derived from the method of calculation.

The FLP's Guidance Notice<sup>(1)</sup> provides a clear statement of what is widely agreed by lawyers to be the basic rule of English Law on netting of counterparty exposures. The Statement of Law contained in the Guidance Notice represents a consensus view of City law firms practising in this field of English Law within the context set out in the Guidance Notice, and the FLP has expressed its opinion that business may properly be conducted on this view of the law.

However, no general explanation of law, in any jurisdiction, can provide a complete prediction of the legal effect of all transactions or circumstances which might fall within its ambit. The FLP's Guidance Notice does not relieve banks from the need to form a view of their legal relationships, nor from taking appropriate legal advice. Furthermore, the Statement of Law reflects the law as it is today; the accuracy of the Guidance Notice may be affected by future developments.

Although expressed in general terms, the Statement of Law has been formulated to cover those situations which most banks will experience arising from contracts for forward and spot foreign exchange, cross-currency and interest rate swaps, currency and interest rate options (including caps, floors and collars), forward-rate agreements and similar commodity and equity-related derivatives, as well as loans by and deposits with the bank. It does not take account of transactions outside this field, nor does it apply to non-standard situations, where:

- (a) the counterparty's insolvency is not governed by English Law;
- (b) the bank or counterparty was acting outside the scope of its legal powers, or was otherwise behaving unlawfully or improperly;
- (c) one or both of the parties was acting as an agent for a third party;
- (d) the transactions concerned are affected by the rules of an organised market or clearing system, or by some other form of multilateral netting arrangement;
- (e) the bank was aware of the counterparty's insolvency when, or the liquidation of the counterparty had commenced before, a transaction was concluded;
- (f) the circumstances giving rise to the transactions do not involve mutuality between the bank and its counterparty.

<sup>(1)</sup> Copies of the Guidance Notice can be obtained from the Financial Law Panel.

domestic CP market in Eastern Europe; it followed this in the fourth quarter of 1993 by becoming the first Eastern European country to have domestic MTN programmes.

### Syndicated credits activity

\$55 billion of syndicated credit facilities were announced in the fourth quarter of 1993. Non-financial companies, especially those from the United States and the United Kingdom, accounted for four fifths of borrowings. Although this may be closely linked to corporate activity in these two economies, the heavy borrowing by US and UK companies in the late 1980s will also have stimulated substantial refinancing of loans, with existing borrowers now keen to renegotiate the terms of their loans at the current low interest rates.

Despite the large amounts of new syndicated credit facilities in 1993, banks have remained cautious about extending new credit. Competition between banks for the best-quality credits has therefore led to a fall in spreads for the highest-rated borrowers. Borrowing by non-OECD entities was also significant, despite the fact that many Asian borrowers are now turning increasingly to bond markets. With its \$4 billion revolving credit facility, Canada added to the number of sovereign borrowers making use of this market.

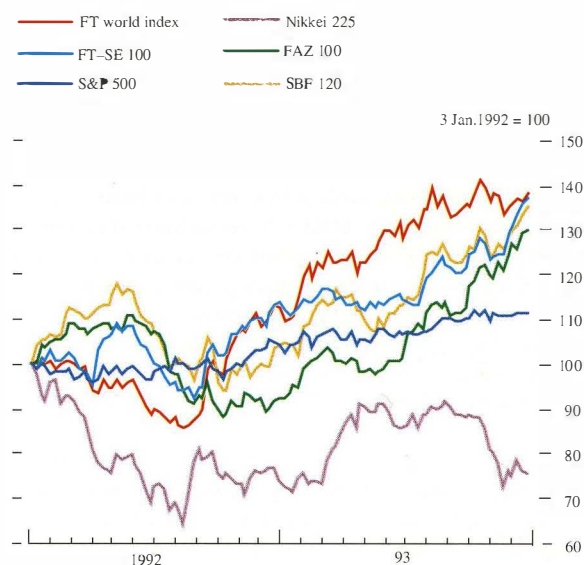
### Equity-related bonds

Issues of equity-related bonds by Japanese companies remained low in the fourth quarter of 1993, as falls in Japanese equity indices, to which most such issues are linked, deterred investors. The paucity of issues by Japanese borrowers in 1993, coupled with high repayments, meant that the stock of equity-related bonds by Japanese issuers contracted by \$64 billion over the year. Almost 90% of issues in the fourth quarter were in US dollars or Swiss francs; there were no sterling equity-related issues, despite the strong demand earlier in the year. Over one third of issues in the fourth quarter were by Asian borrowers, who raised significant amounts of equity-related bonds for the first time. Issues ranged from small offerings by Pakistani and Chinese entities to \$3½ billion raised by major Hong Kong and Thai companies.

### Equity markets

The FT-Actuaries world index rose by nearly 3% in local currency terms during the fourth quarter of 1993 (see Chart 7). US equity prices rose modestly, with the benefit of firmer prospects for economic growth offset by the rise in US bond yields in October and expectations that short-term interest rates might soon rise. Japanese equity prices fell sharply over the quarter, the Nikkei 225 index ending the quarter below 17,500 (one contributory factor was the sale of those stocks in the Nikkei 225 which were not included in the new Nikkei 300, launched in October). Despite the fall, the Nikkei 225 still stands at a price:earnings ratio of over 70—similar to its peak during the 1989 boom. In Europe, interest rate cuts helped boost share prices and the German, French and UK indices all reached new peaks.

**Chart 7**  
Equity indices (a)



(a) End-week prices.

In the United States, substantial amounts of equity finance were raised by companies coming to the market for the first time. In 1993, US initial public offers raised \$42 billion, 70% more than in 1992. By contrast, the Japanese primary market has in effect remained closed since April 1990, in an attempt to restrict the supply of new equity to the market. In October 1993, the listing of Japan Railways East immediately preceded the market's fall to its lowest point during the year, and the suggestion that the listing may have contributed to the Nikkei's fall could deter further new issues.

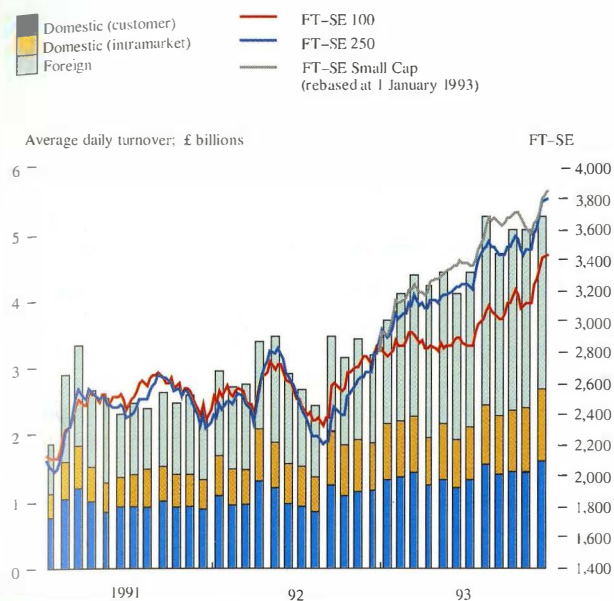
In the UK equity market, the FT-SE 100 rose over the quarter to a record high of 3,462, only briefly halted by nervousness ahead of the November budget. Against such a background, equity finance became increasingly cheap for UK companies. This helped boost issues during the year to over £17 billion, nearly £10 billion more than in 1992. Of this, nearly £11 billion comprised rights issues, more than the previous record of £10.1 billion in 1991. By contrast, £6 billion was raised by new companies coming to the market for the first time.

The fourth quarter was not, however, typical of the year as a whole. Rights issues declined from their earlier high levels, raising only £1.4 billion, while new issues raised substantial amounts between the summer break and the November budget. Eighty-one new companies came to the market during the fourth quarter, raising a total of £3.2 billion. This is in sharp contrast to the low levels of new issue activity seen in recent years. A number of the issues were related to the insurance sector, in which over £1 billion was raised through 6 insurance company share issues and the establishment of 11 insurance-related investment trusts.

With UK equity prices reaching new peaks, secondary market turnover in the fourth quarter maintained the record



## Chart 8 Equity turnover and prices on the London Stock Exchange



levels reached in the third quarter (see Chart 8). Daily turnover in UK stocks averaged £2.5 billion, of which customer business represented £1.5 billion. Record turnover was also achieved on SEAQ; daily turnover in overseas equities traded in London averaged £2.6 billion during the quarter.

A new industry classification system for FT-SE Actuaries Share Indices was introduced in January 1994. In the first comprehensive review since 1970, the London Stock Exchange, the Financial Times and the Institute and Faculty of Actuaries updated the old system to reflect more accurately the current activities of UK companies, so that users have an improved basis on which to monitor and compare market sectors.

## Derivatives

### Over-the-counter warrants

The volume of public over-the-counter (OTC) warrants issued in 1993 rose sharply from the previous year (see

**Table C**  
Public OTC warrant issues

\$ millions (number of issues in italics), by type

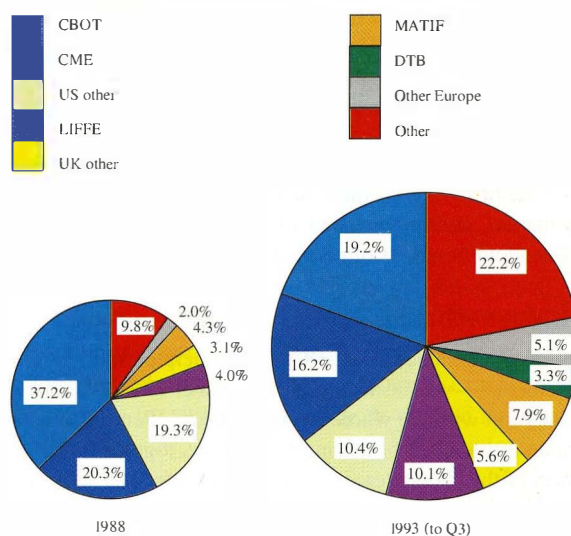
	1992		1993		1993		1993	
	Year	Year	Year	Year	Q3	Q4	Q3	Q4
Currency	9,418	<i>591</i>	17,390	<i>728</i>	2,702	223	5,370	<i>330</i>
Stock index	4,699	<i>351</i>	6,203	<i>508</i>	2,347	182	3,200	<i>227</i>
Interest-linked	1,270	<i>155</i>	4,024	<i>464</i>	1,900	180	1,655	<i>167</i>
Oil	5	<i>2</i>	—	—	—	—	—	—
Precious metals	45	<i>6</i>	2,214	<i>81</i>	1,462	44	57	<i>8</i>
Other	235	<i>25</i>	129	<i>7</i>	63	4	66	<i>3</i>
Covered and baskets	4,681	<i>267</i>	5,172	<i>409</i>	2,702	180	2,437	<i>181</i>
<b>Total</b>	<b>20,353</b>	<b><i>1,397</i></b>	<b>35,132</b>	<b><i>2,197</i></b>	<b>11,176</b>	<b><i>813</i></b>	<b>12,785</b>	<b><i>916</i></b>

Table C), with announced premium income<sup>(1)</sup> rising to \$35 billion. Currency fluctuations and falling European interest rates led to a doubling in the volume of related warrant issues, and the rise in gold prices in the third quarter triggered a spate of warrant issues linked to precious metals. By contrast, the growth in warrants linked to equities or stock indices was more muted.

### UK derivative exchanges

London's share of global exchange-traded futures and options business more than doubled between 1988 and

**Chart 9**  
Share of exchange traded world derivatives



Source: Futures industry association.

1993, rising to 15.7% for the first three quarters of 1993 (see Chart 9). Within this, both the financial futures (LIFFE) and the commodities (LME, IPE and LCE) exchanges consistently increased their share. Despite growing competition from Paris's MATIF and Frankfurt's DTB, LIFFE remains the leading futures exchange in Europe and the third biggest in the world behind the two Chicago exchanges, the CBOT and CME.

Turnover of exchange-traded derivatives in London continued to grow in the fourth quarter of 1993 (see Chart 10). Three of the exchanges—LIFFE, LME and IPE—achieved record annual volumes in 1993; LIFFE, by far the largest of the four London exchanges (trading 66% of London's turnover), achieved a 42% increase in turnover over 1992.

The main reasons for LIFFE's continued success have been its international membership, its ability to offer hedging and trading opportunities across a broad range of bond and interest rate products, and London's strong cash markets (in international bonds and money-markets products). Like the Chicago exchanges, LIFFE is becoming a mature market.

(1) Announced premium income measures the supply of warrants announced by issuers as available for sale. No data are available, however, on the actual take-up of available warrants. The low marginal cost of creating warrants means that announced supply is likely to exceed identified demand.

## CREST—an update

The project to modernise equity settlement in the United Kingdom—CREST—is now two thirds of the way through the detailed requirements phase which started last August. This followed the Report of the Task Force on Securities Settlement which reported to the Governor of the Bank of England at the end of last June.

There has been intense consultation, to tight deadlines, to establish what facilities CREST should offer: although detailed consultations will continue, the formula for CREST is now fixed. The Bank's computer team is now preparing a thorough background analysis as a basis for a firm estimate of the time and cost involved in building the CREST system. This must be completed by the end of March so as to allow time for an independent assessment of the Bank's estimates and of the design as a whole, before publication (at the start of May) of the complete design package.

The final—and vital—stage will be to assess (in April) whether the proposal has the broad support of the users of the equity market, so that work on CREST itself can proceed quickly and without loss of momentum or credibility.

### *The design work*

An outline design document—'CREST: Principles and Requirements'—was issued on 24 November 1993 as a basis for discussion with the whole equity industry. Pen Kent, Chairman of the CREST Steering Committee, together with members of the CREST team, launched the paper at a series of open meetings in London, Edinburgh and Manchester. The CREST team has since discussed the paper with a range of industry user groups, as well as many individual firms, and has received a large number of written responses.

The November paper offered a minimalist assessment of which business functions should be provided within the CREST system, in order to provide a clear basis for discussion while recognising the importance of keeping the project to a manageable scale. The team accepted, however, that there could, in some areas, be a case for adding functions to CREST, where those functions were valuable to a range of members and could most economically be provided centrally. The CREST team's discussions with industry representatives have therefore focused on where the lines should be drawn to reconcile these objectives in the most generally acceptable way.

In order to provide a basis for this discussion, on 7 January, the CREST team produced a number of annex papers to the Principles and Requirements, looking at: the interface with investors who continue to hold physical certificates; stock lending; rights issues; matching and trade confirmation; and agent brokers. These were followed by further papers covering other important stock events and claims.

The CREST team's next major publication will be a revised version of the Principles and Requirements paper, setting out the design which has resulted from the discussions with the

industry. This will be available by the end of February.<sup>(1)</sup> The CREST team is also currently working with lawyers and the Treasury on those legislative changes which will be required for dematerialisation of securities in CREST. A description of the legal background and the necessary legislation (drawn up in conjunction with the Treasury) will be published in May, following a consultation paper to be issued shortly.

### *Ownership, management and construction of CREST*

The revised Principles and Requirements paper will provide the background for the debate on how to build and finance CREST. It is intended that a decision will have been reached on these questions by the end of March. In principle, the ownership of the system, its project management, construction and eventual operation could all be in different hands, though some structures would clearly risk being unworkable.

When the construction of the new system begins, it will comprise three important components: that of the core system itself; the network development; and development of members' systems to interface with CREST and CREST-appointed networks. Network development will not be part of the central build; the CREST operator will not operate lines between the members and the dual sites of CREST's core processors. Instead, we expect there to be a number of competing suppliers of network services. These suppliers will be able to provide their own value-added services to customers in addition to the basic CREST communications functions.

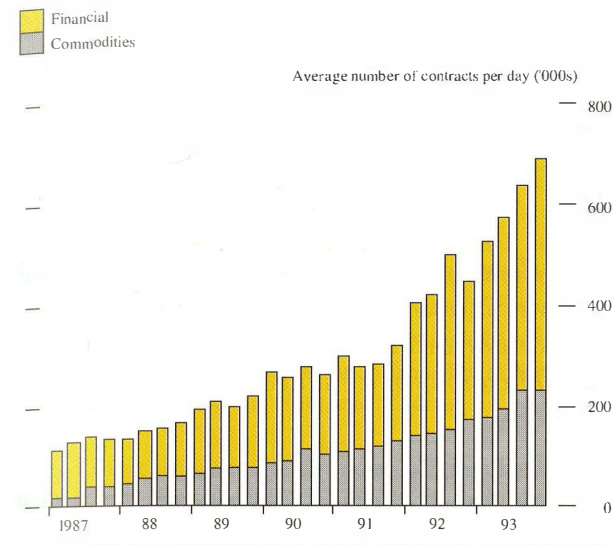
Members will want to develop their own internal systems to take advantage of the new CREST environment. In particular, members may wish to be able to interact with the system throughout the day, thereby benefiting from CREST's continuous processing. It will, of course, still be possible to operate more passively, taking output from the system only once a day in a similar manner to present systems. Any lower development costs of using the system in this fashion would, however, have to be judged against limitations on members' ability to benefit from the full potential of the system. And since CREST will not replicate all of the functions in Talisman, members will also need to consider whether there are 'missing' functions which they need to replace. Service providers may offer some of these functions; others might have to be provided internally in members' own systems.

### *Rolling settlement*

The CREST team has also been seeking to identify and develop measures to ease the transition from the current two-week account settlement to rolling settlement, ie daily settlement a fixed number of days after trading. This transition will occur in two stages: a 10-day settlement cycle will become the norm from July this year, followed (if this is judged practicable) by a five-day cycle from early 1995. The actual transition itself is being managed by the Stock Exchange, but some associated changes of behaviour by the market will be necessary; the CREST team will publish, in the near future, a report setting out its assessment of the necessary changes.

(1) Contact number, 071-601-3353.

**Chart 10**  
**Turnover on the London derivatives exchanges**



The major contracts have now been listed and, though further product innovation may come from areas such as flex options, it is likely that future increases in trading volumes will be derived more from deepening the market in existing contracts than from broadening the product range.

Activity on the LME rose by 43% in 1993, boosted by the price volatility experienced by its two flagship contracts, aluminium and copper. During the copper squeeze in the third quarter of 1993, volumes increased dramatically; in September, the exchange's monthly volume record was broken by over one million contracts. IPE activity was 29% higher than in 1992, with activity in Brent Crude driven by a continuing oversupply of oil, the Russian political unrest and uncertainty regarding OPEC's quotas.

Turnover on the LCE was 18% up on 1992, with both cocoa and coffee being heavily traded. As a result of a strategic

review, the exchange reverted to its former name (having been called London Fox) and decided to concentrate on its core soft commodity and agricultural contracts. These changes, along with large operating cost cuts and improved trading conditions, have returned the exchange to profitability.

With the development of screen-based trading, London is becoming a major centre for the trading of derivatives contracts listed overseas, and applications continue to be received from overseas investment exchanges seeking recognition in the United Kingdom in order to site trading screens in London. The two Spanish exchanges, Meff RV and Meff RJ, are the latest to be granted recognition by the Treasury. The New York Mercantile Exchange became a Recognised Overseas Investment Exchange in June 1993, just as it was launching its after-hours electronic trading system, ACCESS, in the United States. ACCESS screens began operating in London in November. The two largest Chicago exchanges (the CME and CBOT) were recognised in 1989 and 1992, and a growing number of their contracts can now be traded on GLOBEX screens in London. Applications from the French exchanges, MATIF (whose contracts have been listed on GLOBEX since March, but which have not been available on London screens) and MONEP (which trades equity options) are being considered by the Treasury. DTB, the German futures and options exchange, is also seeking recognition. LIFFE has meanwhile re-opened negotiations to join GLOBEX.

The Futures and Options Association began operating on 1 October 1993, after 18 months of preparatory work. Membership of the Association has grown to around 150 and, being drawn from a wide range of individual trading firms, UK and overseas exchanges and specialist law firms, it now represents a large section of the futures industry. Since its inception, the Association has established several committees to examine particular issues relating to the futures industry and it would appear to have a full agenda.

# Fixed and floating-rate finance in the United Kingdom and abroad

By David Miles of the Bank's Economics Division.

*This article analyses the different risks associated with fixed and floating-rate debt contracts, and how the importance of those risks varies depending on whether the borrower is a firm or a household. It also examines the current structure of UK personal and company sector borrowing, compares this with debt contracts in other industrialised economies, and discusses the implications of a change in the debt structure for the monetary transmission mechanism.*

## I Introduction

In a world of certainty, it would be of limited importance to households and companies whether they borrowed at rates of interest which were fixed for long periods or at rates which could vary frequently over time. Arbitrage would ensure that there was little, if any, difference between the fixed interest rate and the average of the short-term rates that would determine payments on variable-rate borrowing. And although the size of current interest payments on fixed and variable-rate debt might differ from time to time, the present value of the total payments on fixed and variable-rate debt contracts would be the same. Furthermore, because lenders would be willing to extend credit to all solvent borrowers, the timing of repayments on debt contracts would be unimportant; only their present value would matter.

In practice, however, uncertainties about short-term nominal interest rates, about the prices of goods produced by companies and consumed by households, and about the profits of corporations and the incomes of consumers, make decisions between debt with fixed and variable interest rates of economic significance. Different types of debt contract allocate risks differently between lenders and borrowers. And the possibility of limits to future borrowing makes the timing of payments matter.

## II The risks of fixed and floating-rate debt contracts

### (a) Distinguishing between fixed and floating-rate debt

There is, in practice, no clear distinction between fixed and variable-rate debt. In the United Kingdom, for example, changes in the Bank of England's money-market dealing rates feed through rapidly to the cost of funds in the wholesale money markets, and to the base rates on which banks set the mark-ups that determine the cost of bank borrowing for many corporate and personal customers. But it often takes longer for the interest rates charged on other types of variable-rate debt to respond. For example, interest

rates set by banks and building societies for mortgages often respond with a significant lag—and sometimes hardly at all—to changes in rates set by the authorities ('official rates'). This is in part because financial institutions would face a huge administrative burden if they recalculated the mortgage payments for variable-rate borrowers and notified them every time short-term money rates changed. So even the cost of mortgage debt which is not fixed in advance is not completely variable.

Conversely, debt which is commonly called 'fixed-rate' is often *not* fixed for the life of the contract. For example, in many countries where the rate of interest on mortgage debt is set in advance, it is often fixed for only a part of the life of the loan.

Conceptually, however, it helps to draw a sharper distinction between various types of debt than exists in practice. It is useful to compare debt contracts on which the nominal interest rate is adjustable each period (ie variable-rate debt) with contracts where the nominal rate is set at the outset for the full period of the loan (ie fixed-rate). On this definition, the nominal value of all payments on fixed-rate debt would be known. But because future producer and consumer prices are uncertain, as are the real incomes of households and profits of companies, the *real* value of debt repayments and the ability to service those payments would be unsure. With variable-rate contracts, both the nominal *and* (generally) the real value of future payments are uncertain. If the short-term real rate of interest were constant then, of course, the real value of total repayments *would* be known. But with uncertainty about price inflation, the time-profile of payments may still be highly volatile and hard to predict (a point to which we shall return below).

### (b) The risks

It is the uncertainties referred to above that create the differing types of risk to borrowers associated with fixed and variable-rate debt contracts.