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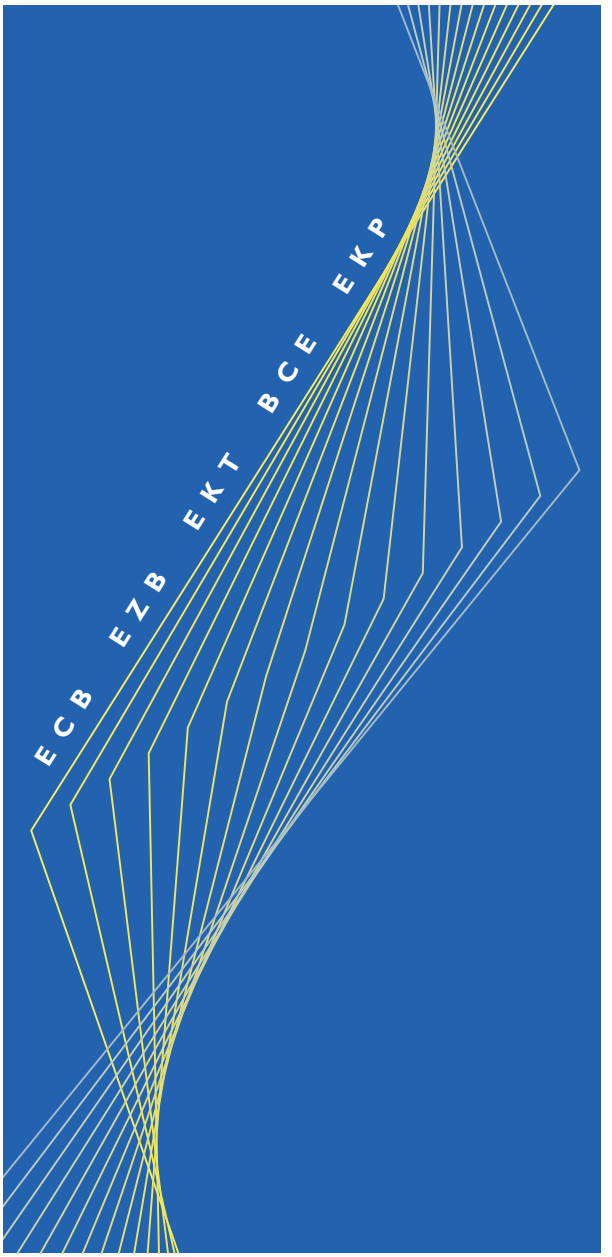

REVIEW OF THE INTERNATIONAL ROLE OF THE EURO

December 2003

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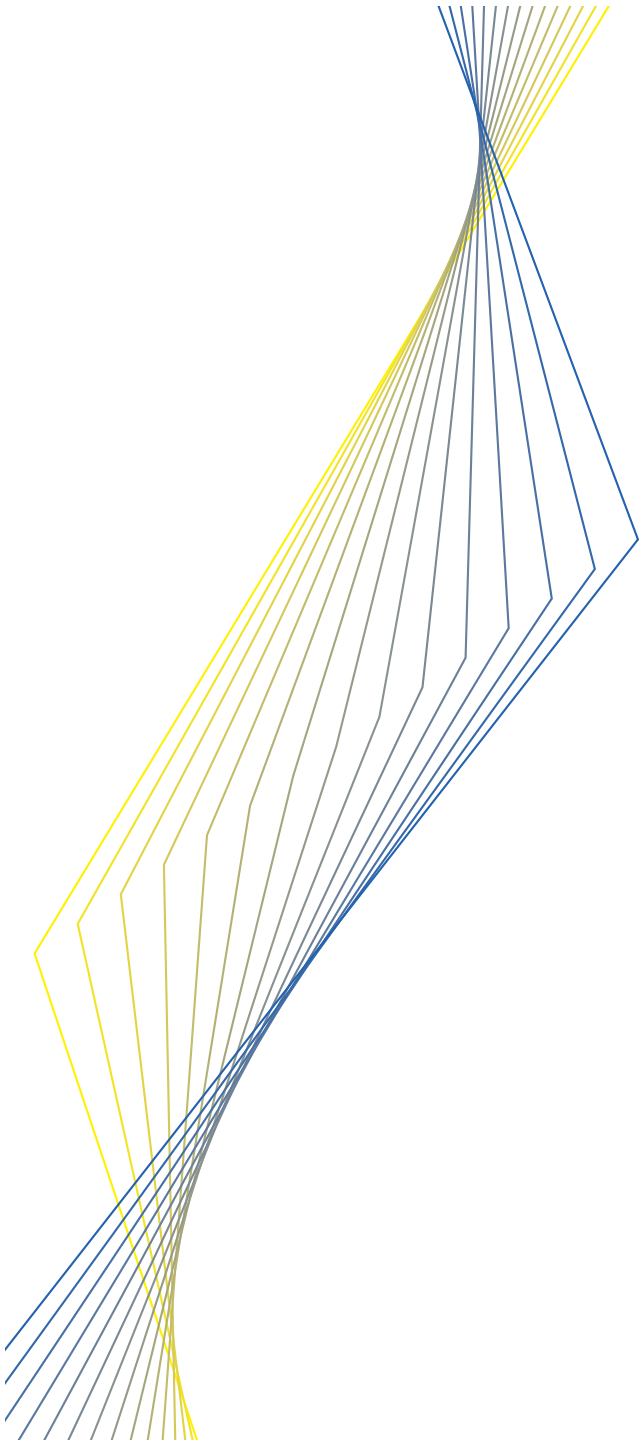

REVIEW OF THE INTERNATIONAL ROLE OF THE EURO

December 2003

Address	**Kaiserstrasse 29**
	D-60311 Frankfurt am Main
	Germany
Postal address	**Postfach 16 03 19**
	D-60066 Frankfurt am Main
	Germany
Telephone	**+49 69 1344 0**
Internet	**http://www.ecb.int**
Fax	**+49 69 1344 6000**
Telex	**411 144 ecb d**

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Foreword

This report constitutes the third annual review of the international role of the euro. As with previous issues, it reflects the ongoing efforts of the ECB to monitor and analyse the role played by the euro in global markets and countries outside the euro area. In so doing, it not only provides information on the international use of the single currency, i.e. its use by market participants and authorities outside the euro area, but also sheds light on ongoing structural developments in the international financial markets and on third countries' policies. The review focuses on developments between mid-2002 and mid-2003. It confirms that the use of the euro by non-euro area residents continues to increase gradually, is most prominent in regions neighbouring the euro area and is driven, to some extent, by the euro area itself, as euro area investors are significant purchasers of euro-denominated international bonds. In addition, the review contains a number of new findings. First, it reports on the recent revisions made by the IMF to its data on global foreign exchange reserves. While the revised data confirm that there has been a gradual increase in the share of the euro over the last few years, they also show that, since the early years of Monetary Union, this share has been higher than previously thought. Second, the review includes a "special focus" section on the role of the City of London with regard to the use of the euro in financial markets outside the euro area. Finally, the review presents evidence that euro area countries are increasingly using the euro when trading goods and services with non-euro area residents, possibly suggesting that the cash changeover has encouraged exporters and importers to review their settlement and invoicing practices. While these developments are the outcome of decisions essentially taken by market participants, the ECB intends to continue monitoring the international role of the euro and to provide regular information to the public on related developments in the international financial arena.

Jean-Claude Trichet

President of the European Central Bank

Executive summary

1. This is the third annual review of the international role of the euro. Similar to previous issues, it examines the role of the euro in global markets and countries outside the euro area, and aims to enhance the Eurosystem's understanding of the current state of the internationalisation of the euro by identifying the main developments and underlying trends.

2. The review builds on work conducted in 2003 to develop the statistical coverage and analytical apparatus of the euro's international role. Accordingly, it covers a number of new datasets as well as new issues.

3. Moreover, this issue includes a "special focus" section on the role of the City of London as a financial centre for the international use of the euro. This special focus follows up on last year's review, which suggested that the City of London plays a pivotal role regarding the use of the euro outside the euro area. In the course of 2003, the ECB researched this topic further to produce this review, which utilises new data as well as information obtained from a number of interviews with market participants who are active in euro-denominated markets in the City of London.[1]

4. The review period extends from mid-2002 to mid-2003. The main findings can be summarised as follows:

International debt markets

5. Over the review period, the role of the euro as an international financing currency continued to grow gradually, with the share of euro-denominated international debt securities issued by non-residents increasing by more than 1 percentage point to more than 30%. Prior to the launch of the euro, the corresponding share for the legacy currencies was below 20%. During the review period, net issuance of euro-denominated debt securities declined in the second half of 2002 in an environment characterised at that time by greater uncertainty about economic prospects and a widening of credit spreads. However, net issuance rebounded strongly in the first half of 2003, as issuers seemingly tried to take advantage of historically low long-term interest rates.

6. In line with evidence available since the start of stage III of EMU, issuers of euro-denominated bonds outside the euro area mostly came from the private sector, with a majority originating in the United Kingdom and the United States. As in previous years, European investors, including those from the euro area and the United Kingdom, accounted for the bulk of demand for these bonds on the primary market. A new development in the review period, however, was the rising level of interest from Asian investors, as well as (to a lesser extent) from investors from the Middle East, which suggests that demand for euro-denominated issues is becoming increasingly international.

International loan markets

7. The euro is the main currency of denomination for loans made by non-euro area banks to non-bank borrowers in the euro area, and accounts for half of such loans. With regard to loans made by euro area banks to non-bank borrowers outside the euro area, the euro is the second currency of denomination, behind the US dollar, with a share of about one-third. Focusing on euro-denominated

1 *The support of the Bank of England in organising meetings with market participants in the City of London, as well as in providing both data and valuable insights, is gratefully acknowledged.*

loans, the United Kingdom is the largest borrower from and lender to the euro area, as well as the largest lender of euro outside the euro area.

Foreign exchange markets

8. In line with evidence collected from the latest BIS triennial survey, which was presented in last year's review, the euro was the second most widely settled currency by Continuous Linked Settlement (CLS) from late 2002 to the first half of 2003, accounting for about one-quarter of all settlements. Moreover, there are indications that spreads in the JPY/EUR market continued to decrease in the review period. Although spreads in USD/EUR quotations also slightly declined in the review period, there are signs that this decrease could have been driven by the appreciation of the euro as well as quoting conventions and therefore not necessarily related to liquidity issues.

International trade

9. Evidence available for a larger number of euro area countries suggests an increase in the use of the euro as a settlement/invoicing currency in these countries' trade with non-euro area residents. About half of their trade in goods and services with non-euro area residents is priced in euro. This increase predates the introduction of euro banknotes and coins, but became more prominent in 2002. It is therefore not excluded that the cash changeover may have encouraged exporters and importers to review their settlement/invoicing practices in favour of the euro.

City of London

10. Outside the euro area, the City of London is the main financial centre which conducts business in euro, underscoring the euro's strong regional focus as an international currency. Depending on the market segment, the share of the United Kingdom typically ranges from one-third to two-thirds of euro-denominated financial activity outside the euro area. The euro is also of significant importance for the City of London itself, and this importance has steadily grown in recent years. The euro now accounts for almost half of UK resident banks' assets and liabilities denominated in foreign currencies. While euro area-owned banks and UK-owned banks are the largest players in euro-denominated financial markets in the City of London, there is evidence that some US and Asian participants tend to use the City as an entry point for their financial activities in the euro. The Bank of England has also played a role, for example by issuing euro-denominated short-term bills and ensuring access to TARGET.

Third countries

11. The role of the euro as an anchor currency in third countries outside the euro area has remained stable overall, while the share of the euro in global foreign exchange reserves has continued to increase gradually, from 16.4% in 2001 to 18.7% in 2002. These data take into account recent statistical revisions made by the IMF which indicate that the share of the euro in global foreign exchange reserves is higher than previously thought. The gradual increase in the share of the euro partly reflects regional patterns in the recent build-up of reserves worldwide, as the build-up mainly originated in Asian countries whose currencies are, either de jure or de facto, linked to the US dollar.

12. Evidence in the review period on the level of currency and asset substitution in countries neighbouring the EU indicates that here the role of the euro as a parallel currency remained stable. This suggests

that developments reported last year, in particular the significant increase in euro-denominated deposits in a number of countries, were – as suggested at that time – indeed dominated by one-off effects related to the euro cash changeover.

Conclusions

13. Over the review period, the euro continued to expand its role as an international financing currency, a settlement or invoicing currency, and a reserve currency. Evidence concerning its role in foreign exchange markets and as a parallel currency suggests that it is basically unchanged compared to last year's review. Overall, this report confirms and substantiates the main conclusions of last year's review, but it does provide a clearer picture of the geography of the users of the euro and of the extent of its role across the globe.

Introduction

This report on the use of the euro outside the euro area has a twofold objective. First, to inform about developments in the period extending from mid-2002 to mid-2003 and second, to enhance the Eurosystem's understanding of the structural factors that underpin the euro's international role, including the main players and markets.

The review builds on work conducted in 2003 in two directions, (i) to refine the statistical framework further, which is crucial given the relative scarcity of data in this field, and (ii) to improve the analytical understanding of the behaviour of market participants.

To this end, the review includes new statistical sources and new areas of study:

- on international debt markets, this review has benefited from the results of a comprehensive study of the main characteristics since 1999 of euro-denominated bonds issued by non-euro area residents, including the location and type of investors;

- on international loan markets, this review includes for the first time data on the euro's role regarding cross-border loans made by the euro area to the rest of the world and by non-euro area residents to the euro area, as well as on loans involving only non-euro area residents;

- on foreign exchange markets, the review integrates data on daily foreign exchange transactions settled in Continuous Linked Settlement (CLS);

- in the area of international trade, the review has been enriched with additional data on the currency breakdown of the external trade of selected euro area countries, coupled with evidence on the role played by the euro in the international trade of the United States, Japan, the United Kingdom and the EU accession countries.

One of the findings of these research activities is the confirmation that the increasing use of the euro outside the euro area is essentially driven by the evolution of private agents' currency preferences. In many respects, a comprehensive analysis of the international role of the euro would therefore require a study of the markets where it is mostly used, including at the microeconomic level. To launch work in this direction, this review includes a "special focus" section on the contribution of the City of London to the role of the euro in financial markets outside the euro area.

Apart from these exceptions, the structure of the review remains broadly unchanged. Section A focuses on topics where *global markets* constitute the environment for the determination of the role of the euro as an international currency. It focuses on international debt markets, international loan markets, foreign exchange markets and international markets for trade in goods and services. The special focus on the City of London as a financial centre for the international role of the euro then follows. Section B turns to the role of the euro in *third countries*, focusing first on authorities' choice of the euro as an anchor, reserve or intervention currency in their exchange rate policies, and second, on private agents' choice of the euro as a parallel currency in the form of cash holdings or foreign currency deposits.[2]

2 *Throughout the review the data are presented in the currency denomination of their original source. Moreover, the review does not explicitly study international equities, whose statistical coverage is more limited (see also BIS, 1997).*

A. The euro in global markets

1 The euro in international debt markets

This section reviews the role of the euro in international debt markets, which comprise both instruments with long-term maturities (bonds and notes) and short-term maturities (money market instruments).[3] The focus of the analysis is on the so-called "narrow" definition of international securities, which comprises only issues in a currency different from the home currency of the borrower (see Box 1 for a discussion of this concept). With a view to analysing the main developments in the international debt securities market from mid-2002 to mid-2003, subsection 1.1 reviews supply trends for debt securities as a whole, subsection 1.2 examines trends across the various financing instruments, and subsection 1.3 assesses available evidence on demand.

3 *Bonds and notes have a maturity at issuance of more than one year, while money market instruments have a maturity at issuance of up to one year.*

Box 1

Benefits and drawbacks of a "narrow" definition of international issuance of debt securities

The international role of the euro refers to the use of the single currency by non-euro area residents. From a financing perspective, this means only those securities issued by residents outside the euro area, which is the "narrow" definition of "international" used in this review. In addition to this narrow definition, a "broad" definition exists, whereby the BIS also considers a debt security issued by a euro area resident to be international if it is targeted at international investors (e.g. through a syndicate of banks comprising non-euro area financial institutions). The narrow definition excludes assets commonly considered by financial market participants to be genuinely international even if they originate from the euro area. However, the broad definition includes those cases where both the issuer and the holder of the securities are resident in the euro area, even if the issuance was originally intended to be truly international. Alongside the narrow and broad concepts, a third one, the so-called "global" measure, exists. The global measure adds to the broad measure all domestic issues, targeted at the domestic market. It is a measure of the total supply in the world of debt securities denominated in a given currency, be it domestic or international. While, in the past, the ECB made reference to the three concepts (ECB, 2001 and 2002), this review focuses on the narrow definition only, not least for the sake of clarity and simplicity. However, the table hereafter reports the latest evidence available on the two alternative measures. Interestingly, under the broad measure, the share of the euro in gross issuance of long-term international debt securities is close to the share of the US dollar. As regards short-term international debt securities, the share of the euro is even greater than the share of the US dollar.

Alternative measures of the major currencies' shares in debt securities supply

	Euro	US dollar	Japanese yen
"Broad" measure, including home currency issuance			
– Net issuance of international debt securities *(Over 2002 Q3 - 2003 Q2, USD billions)*	665.1	290.7	-26.5
including:			
– Share in short-term international debt securities gross issues *(Average value over 2002 Q3 - 2003 Q2, as a % of the total amount)*	44.5	31.3	3.5
– Share in long-term international debt securities gross issues *(Average value over 2002 Q3 - 2003 Q2, as a % of the total amount)*	42.1	42.8	4.1
"Global" measure, including domestic issuance			
– Share in the outstanding amount of debt securities *(End-2002, as a % of the total amount and at 1994 Q1 exchange rates)*	24.1	45.0	18.2

Sources: BIS and ECB calculations.

Table 1

Net issuance of international debt securities

(narrow measure, i.e. excluding home currency issuance, USD billions)

	Pro memoria: 2001 Q3 - 2002 Q2 [1)]	2002 Q3	2002 Q4	2003 Q1	2003 Q2	Review period: total issuance by currency
Euro	27.9	29.2	5.7	60.0	58.6	153.7
US dollar	28.9	16.9	18.0	67.9	51.4	154.1
Japanese yen	-5.9	-11.4	-9.6	-8.4	-5.6	-35.0
Total (incl. other currencies)	63.5	44.6	26.0	145.8	126.3	342.6

Sources: BIS and ECB calculations.
1) Average quarterly amount.

1.1 Overall trends in the supply of international debt securities

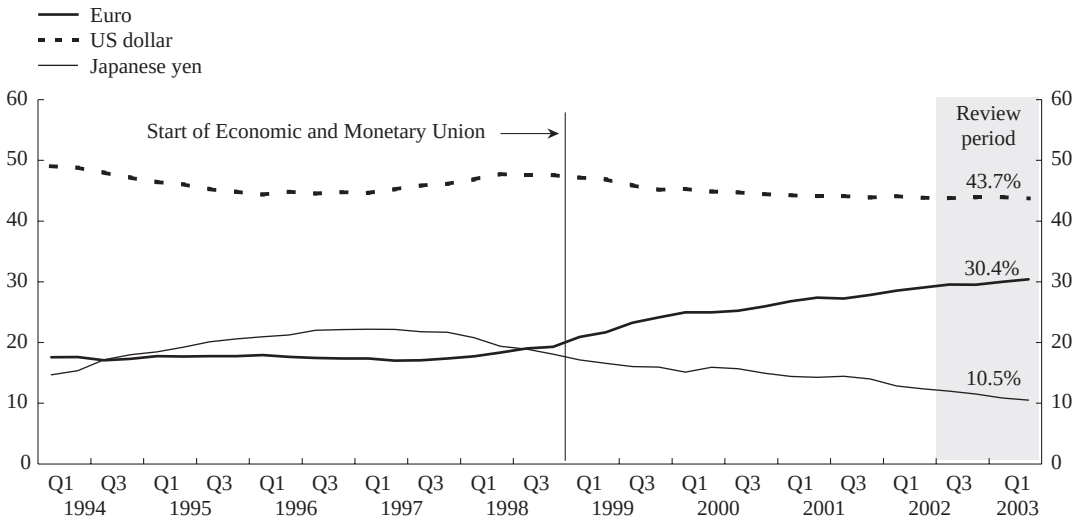
Net issuance of euro-denominated debt securities issued by non-euro area residents amounted to close to USD 154 billion from mid-2002 to mid-2003, which is about one-third higher than the same period one year ago (see Table 1).[4] However, net issuance activity has been markedly uneven across quarters. After having reached approximately USD 29 billion in the third quarter of 2002, net issuance of euro-denominated debt securities by non-euro area residents decreased to less than USD 6 billion in the last quarter of the year. This amount is only USD 4 billion higher than the all-time low reached in the third quarter of 2001 in the aftermath of the events of 11 September, and can be compared with the low reached in the fourth quarter of 1998, when the Russian financial crisis and the near collapse of LTCM led to a severe reduction in issuance. This decline may possibly be explained by three factors: the global slowdown in economic activity, greater uncertainty about economic

4 *Net issuance of debt securities is defined as gross issuance minus repayments. Repayments arise at maturity or, for instance, when borrowers with early redemption options desire to obtain lower borrowing costs and rollover their debt.*

Chart 1

International debt securities stock: currency shares

(bonds and notes and money market instruments, excluding home currency issuance, as a % of the total amount outstanding and at 1994 Q1 exchange rates)



Sources: BIS, ECB calculations.

prospects (partly triggered by heightened geopolitical risks), and widening credit spreads (BIS, 2002b and 2003a). In the first quarter of 2003, net issuance of euro-denominated debt securities by non-euro area residents rebounded strongly to USD 60 billion, a more than three-year high, and remained close to that amount in the second quarter. The rebound in net issuance was accompanied by a decrease in long-term government bond yields in the first few months of the year, as well as by the appreciation of the euro. This may have stimulated investors' appetite for higher-yielding debt securities, thereby lowering credit and emerging market sovereign spreads (BIS, 2003b). Emerging market borrowers, particularly from the acceding countries and from other eastern European countries, have also taken advantage of rising investor demand for higher-yielding assets, as they substantially increased their net issuance of euro-denominated bonds and notes in early-2003. Moreover, financial institutions and other corporations have been encouraged to take advantage of historically low long-term interest rates to lengthen the maturity of their debt and lock in low borrowing costs (BIS, 2003c). Lastly, the appreciation of the euro may have positively impacted the demand for euro-denominated issues as well as investors' expectations of currency gains.

As a result of these developments, the share of the euro in the stock of international debt securities, measured at constant exchange rates, increased over the review period by more than one percentage point to more than 30% (see Chart 1).[5] The share of the US dollar remained stable at approximately 44%, while that of the Japanese yen decreased by 2 percentage points to below 11%.

1.2 Specific trends across financing instruments

In the short-term international debt securities market, the euro's share in gross issuance of international money market instruments increased in the review period, reaching an all-time high of 33.5% in the second quarter of 2003 (see Table 2). This corresponds to a gross amount of euro-denominated issues of approximately USD 84 billion in that quarter.[6] By contrast, the US dollar's share in gross issuance of international money market instruments declined in the review period, reaching an all-time low of 39.6% in the second quarter of 2003. Likewise, the Japanese yen's share in gross issues of international money market instruments decreased in the review period to 4.5% in the second quarter of 2003.

5 As already explained in ECB (2002), currency shares related to debt securities data are calculated (i) at constant 1994 Q1 exchange rates for stock data, and (ii) at current exchange rates for flow data. Although correcting for exchange rate valuation effects may imply some imprecision, the currency valuation effect has been deemed too important for stock data to be neglected, as most stock variables cannot be adjusted by market participants in the face of exchange rate movements.

6 This also marked an all-time high. The amount issued in that quarter was more than three times larger than the average issuance per quarter of euro-denominated money market instruments by non-euro area residents since 1994 Q1 (the first quarter for which this analysis could be performed).

Table 2

Major currencies' shares in short-term international debt securities gross issues

(narrow measure, i.e. excluding home currency issuance, as a % of the total amount issued)

	Pro memoria: 2001 Q3 - 2002 Q2 [1]	2002 Q3	2002 Q4	2003 Q1	2003 Q2	2002 Q3 - 2003 Q2 [1]	(total issuance) [2]
Euro	20.0	25.6	25.3	28.3	33.5	28.2	(271.8)
US dollar	51.4	46.1	46.9	45.2	39.6	44.5	(425.2)
Japanese yen	8.8	6.8	4.8	3.7	4.5	5.0	(46.6)
Total (incl. other currencies)	100.0	100.0	100.0	100.0	100.0	100.0	(959.3)

Sources: BIS and ECB calculations.
Note: Shares at current exchange rates.
1) Average quarterly percentage.
2) Amounts in USD billions.

By contrast with developments in the short-term international debt securities market, the euro's share in the gross issuance of international bonds and notes first decreased in the second half of 2002, before rebounding to 31.3% in the second quarter of 2003 (see Table 3). Over the review period, approximately USD 273 billion-worth of euro-denominated international bonds and notes were issued by non-euro area residents. More than one-third of that amount, around USD 100 billion, was issued in the second quarter of 2003, which marked an all-time high.[7] The US dollar's share in the gross issuance of international bonds and notes rose until the first quarter of 2003, but then decreased to 45.7% in the second quarter. The Japanese yen's share in gross issuance of international bonds and notes decreased over the review period, reaching 7.3% in the second quarter of 2003.[8]

Turning from issuance trends to the characteristics of issues, available sources provide further insight into the main features of euro-denominated bonds issued by non-euro area residents over the review period. A sectoral breakdown indicates that non-euro area issuers originated mostly from the private sector, in line with the evidence available since the start of EMU.[9] Indeed, financial institutions together with other non-financial corporations accounted for about 80% of issuance in the review period, with respective shares of 58% and 20%. Likewise, in line with trends observed since 1999, the majority of issuers in the review period were resident in Anglo-Saxon countries, with shares of 27% and 24% for the United Kingdom and the United States respectively. Security-by-security data are also available from Bondware for a sample of 800 euro-denominated bonds issued by non-euro area borrowers over the review period. They indicate that issues amounted to around €260 million on average, had an average maturity at issuance of 7.5 years, and were almost equally split between fixed and floating rate issues. As in the previous review period, the two largest issuers, which both have a programme of regular issuance in euro, were the European Investment Bank, with three €5 billion bonds, and Freddie Mac, with one €5 billion and one €4 billion bond.[10] A number of private issuers from the United States (e.g. General Electric Capital, Ford Motor Credit, Citigroup) and the United Kingdom (e.g. Abbey National, HSBC, Royal Bank of Scotland) – some of which have activities in the euro area – as well as a number of sovereigns (e.g. Denmark, Poland, South Africa, Turkey), also floated fairly large issues (see Table 4).[11]

7 *This compares with an average gross issuance by non-euro area residents of USD 41 billion of euro-denominated bonds and notes per quarter since 1994 Q1.*

8 *The first and second quarters of 2003 also marked all-time highs for the US dollar, with respectively USD 150 billion and 145 billion-worth of US dollar-denominated bonds and notes issued by non-US residents, against an average of USD 72 billion per quarter since 1994 Q1.*

9 *See Geis and Mehl (2003) for a comprehensive review of the evidence, as well as on subsequent aspects.*

10 *The EIB, although a European institution based in Luxembourg, is considered here as an international organisation, like the World Bank, for example.*

11 *Further to Argentina's default, Latin American sovereigns were much less active in the review period than between 1999 and 2001.*

Table 3

Major currencies' shares in long-term international debt securities gross issues

(narrow measure, i.e. excluding home currency issuance, as a % of the total amount issued)

	Pro memoria: 2001 Q3 - 2002 Q2 [1)]	2002 Q3	2002 Q4	2003 Q1	2003 Q2	2002 Q3 - 2003 Q2 [1)]	(total issuance) [2)]
Euro	27.0	23.9	22.5	28.6	31.3	26.6	(272.6)
US dollar	46.3	49.0	48.7	49.6	45.7	48.3	(477.3)
Japanese yen	11.8	10.4	10.8	6.3	7.3	8.7	(81.8)
Total (incl. other currencies)	100.0	100.0	100.0	100.0	100.0	100.0	(993.4)

Sources: BIS and ECB calculations.
Note: Shares at current exchange rates.
1) Average quarterly percentage.
2) Amounts in USD billions.

Table 4

List of top 40 non-euro area issuers of euro-denominated bonds

Issuer (total amount issued in the review period, € millions)			
European Investment Bank	(23,700)	Danske Bank A/S	(1,600)
Federal Home Loan Mortgage Corp. (Freddie Mac)	(14,500)	Hamburgische LB Finance (Guernsey) Ltd.	(1,576)
General Electric Capital Corp.	(9,161)	Abbey National Treasury Services plc	(1,510)
General Motors Acceptance Corp.	(5,600)	Endesa Capital Finance LLC	(1,500)
Spintab AB	(4,450)	Goldman Sachs Group Inc.	(1,450)
Vodafone Group plc	(3,900)	Permanent Financing No 2 plc	(1,450)
BBVA Global Finance Ltd.	(3,675)	UBS AG (London)	(1,441)
HBOS Treasury Services plc	(3,367)	Alpha Credit Group plc	(1,400)
Citigroup Inc.	(3,250)	Household Finance Corp.	(1,400)
Ford Motor Credit Co.	(3,000)	Lehman Brothers Holdings Inc.	(1,345)
General Motors Corp.	(2,500)	Northern Rock plc	(1,300)
Kingdom of Denmark	(2,300)	National Australia Bank Ltd.	(1,250)
Republic of Poland	(2,300)	Republic of South Africa	(1,250)
HSBC Holdings plc	(2,000)	Republic of Turkey	(1,250)
Toyota Motor Credit Corp.	(2,000)	Granite Mortgages 02-2 plc	(1,194)
Royal Bank of Scotland plc	(1,879)	Province of Ontario	(1,150)
Nationwide Building Society	(1,825)	Swedish National Housing Finance Corp – SBAB	(1,095)
BCL International Finance Ltd.	(1,700)	Holmes Financing (no. 6) plc Series 3	(1,091)
Den norske Bank ASA	(1,700)	Granite Mortgages 03-1 plc	(1,056)
Morgan Stanley	(1,631)	Eksportfinans ASA	(1,003)

Sources: Bondware and ECB calculations.

Box 2

Some stylised facts on the relations of euro-denominated money markets outside and inside the euro area

Euro-denominated money markets exist outside the euro area to ease non-euro area residents' matching of their short-term assets and liabilities denominated in euro. Euro-denominated money market instruments issued outside the euro area accounted for approximately 7% of the amount outstanding of euro-denominated money market instruments in the review period.[1] This share is, however, volatile. Interestingly, about one-third of the total issuance of euro-denominated money market instruments by non-MFIs (monetary and financial institutions), which include corporations, is outside the euro area. Although issuance outside the euro area is overall limited compared with issuance inside the euro area, non-euro area residents' activity in euro-denominated money markets is larger than this share suggests, as they are in most cases involved in about one-third of the total turnover.

According to an ECB study on the results of a survey of EU banks participating in the euro-denominated money markets (ECB, 2003), a significant, albeit non-dominant, share of banks' turnover in the unsecured and secured money market involved a counterpart in a non-euro area EU country (i.e. either in the UK, Denmark or Sweden).[2] Moreover, a majority of banks' transactions in the OTC derivatives market, including forward rate agreements, currency and foreign exchange swaps, as well as ordinary and other interest rate swaps, involved a counterpart in a non-euro area EU country, including in London. This probably reflects the fact that many large banks, including ones from the euro area, have set up derivatives desks in their London branches. The importance of the City of London in euro-denominated money markets outside the euro area is further underscored by the fact that almost all euro-denominated standardised short-term interest rate derivatives contracts are traded on LIFFE in London. Moreover, the euro commercial paper market, i.e. short-term instruments issued by corporations, is largely London-based.

1 *See Table 3.5 of the "Euro area statistics" section of the ECB Monthly Bulletin.*
2 *Data are not available for activity outside the EU.*

1.3 Evidence available on demand trends

Turning to the demand side, a new development over the review period is the rising interest of Asian investors in euro-denominated bond issues, which is documented by converging evidence gained from the specialist press and interviews with market participants. In Japan, there seems to be increasing interest from commercial banks and, in other Asian countries outside Japan, from central banks too. Indeed, in the first half of 2003, the frequency of Asian investors' participation in primary market issues of euro-denominated bonds by non-euro area residents doubled to 30% compared with 1999-2001 (see Chart 2).[12] According to market participants, interest was especially strong for high quality issues, and was perhaps driven by considerations concerning the diversification of reserve holdings and/or with a view to benefiting from the appreciation of the euro.

Market participants also pointed to growing interest in euro-denominated international bond issues from investors in the Middle East, with purchases being channelled through Lebanon in particular.[13]

Conversely, US-based investors showed limited interest in euro-denominated bond issues in the review period, confirming early trends highlighted in last year's review. Evidence from data on bond portfolios surveyed in the eMaxx database by Lipper, a financial information provider, suggests that the euro's share remained negligible in Northern America (i.e. USA and Canada) (see Table 5).[14] In absolute terms, surveyed euro bond holdings in Northern America only amounted to USD 19 billion in June 2003. However, discussions with market participants suggest that some US-based investors manage their portfolios invested in euro from the City of London.[15] Moreover,

12 While the data seem to support the view that Asian investors' interest in euro-denominated bond issues has been growing recently, they could also reveal a relative increase in information reported by the International Financing Review on investments by Asian accounts on the primary market.

13 For instance, according to the International Financing Review, investors from the Middle East purchased on the primary market more than one-half of the amount issued of two issues from Bank Markazi Jomhorui Islami Iran (8.75% 2007, in July 2002, as well as 7.75% 2008, in December 2002), one-quarter of a sovereign issue from Morocco (5% 2008, in June 2003) and 10% of an issue from the EIB (3.25% 2008, in March 2003).

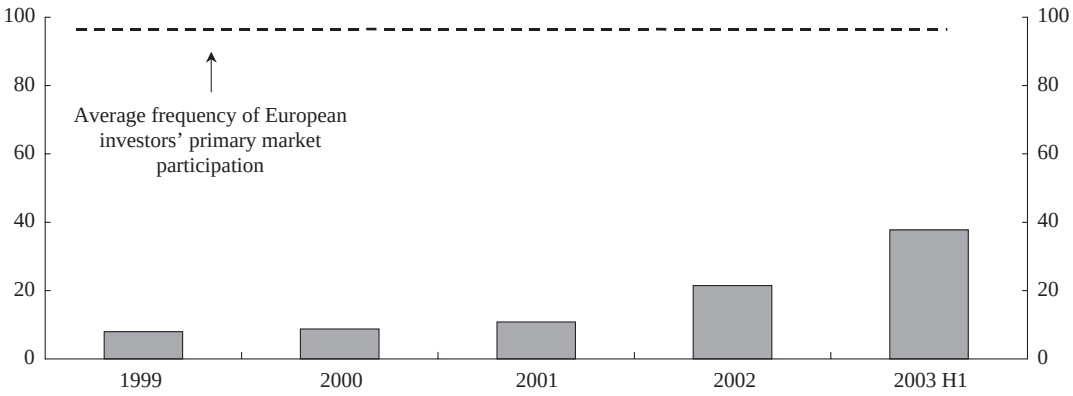
14 See ECB (2002) for earlier evidence. The eMaxx database reports holdings of debt securities managed by a number of mutual funds, pension funds and insurance companies. These holdings are available on a security-by-security basis. The geographical coverage is mainly focused on the United States, Canada and Europe. Data may be entered into the database with a time lag so that the degree of coverage of portfolios may not necessarily be the same at different points of a time series. Data refer to euro-denominated bonds issued by non-euro area residents and euro area residents alike.

15 See the special focus section on the City of London and the international role of the euro in this review.

Chart 2

Euro-denominated bonds issued by non-euro area residents: frequency of Asian investors' primary market participation

(as a % of the total number of bond issues for which information is available)



Source: Geis and Mehl (2003).
Note: Based on information reported by the International Financing Review on 675 bond issues.

Table 5

Currency breakdown of funds under management according to the eMaxx database

(based on most recent filings, end-of-period percentage)

	Euro	US dollar	Japanese yen	Others
Funds under management in the United States and Canada				
December 1999	0.2	97.0	0.8	2.0
December 2000	0.3	97.8	0.8	1.1
December 2001	0.4	97.1	0.8	1.7
December 2002	0.4	97.4	0.7	1.5
June 2003	0.4	97.4	0.6	1.5
Funds under management in non-euro area Europe [1]				
December 1999	15.9	26.8	0.7	56.6
December 2000	25.3	23.0	1.4	50.3
December 2001	30.8	17.3	2.9	49.1
December 2002	35.5	21.1	3.0	40.3
June 2003	36.4	20.4	3.3	39.9

Sources: Lipper, a Reuters company, and ECB calculations. Data may be subject to revisions.
1) Denmark, Lichtenstein, Monaco, Norway, Sweden, Switzerland, and the United Kingdom.

as the eMaxx database covers around one-third of all funds under management in Northern America, the magnitude of actual bond holdings may be three times higher.[16]

In line with evidence since the start of EMU, European investors accounted for the bulk of demand for euro-denominated bonds issued by non-euro area residents on the primary market. Indeed, additional evidence gained from the International Financing Review suggests that, for three-quarters of the bonds for which information is available, European investors – including investors from the euro area, the United Kingdom, Switzerland, as well as investors from non-euro area Nordic countries – underwrote more than half the amount issued.[17] Investors from the euro area alone underwrote more than half the amount issued of one-quarter of the bonds in the sample.[18] Turning to volumes purchased, however, there may be signs that demand from the euro area for euro-denominated bonds and notes issued by non-euro area residents could possibly have declined in magnitude in 2002 compared with 2001. In preparing this review, the Eurosystem collected, where available, data from a number of euro area countries on the currency breakdown of net purchases by their residents of debt securities issued outside the euro area.[19] In 2002, residents in Austria, France, Germany, Italy, Portugal and Spain purchased €21 billion (in net terms) of euro-denominated bonds and notes issued outside the euro area, compared with €63 billion in 2001 (see Chart 3).[20] The retrenchment was particularly pronounced in France and Germany. It was accompanied by a decrease in the net issuance of euro-denominated bonds and notes by non-residents of more

16 *The Economist's quarterly portfolio polls of eight to nine major global asset managers, including one or two from the euro area, provide some additional information on the currency distribution of world portfolios. These polls suggest that the share of the euro increased in the review period by 4 percentage points to reach 32% in the second quarter of 2003. Conversely, the share of the US dollar decreased over the review period by 6 percentage points, decreasing from 50% to 44%, while that of the Japanese yen increased by 2 percentage points, up from 14% to 16%.*

17 *The sample includes 114 issues for which information on the location of demand on the primary market is available from the International Financing Review over the review period.*

18 *The interest of European investors outside the euro area, in particular ones from the United Kingdom, in euro-denominated bond issues was once again confirmed this year by the data on bond portfolios surveyed in the eMaxx database. As reported in Table 5, the euro's share in bond portfolios managed in this region remained at around one-third in the review period. However, one caveat is that the eMaxx database covers less than 8% of all funds under management in non-euro area Europe.*

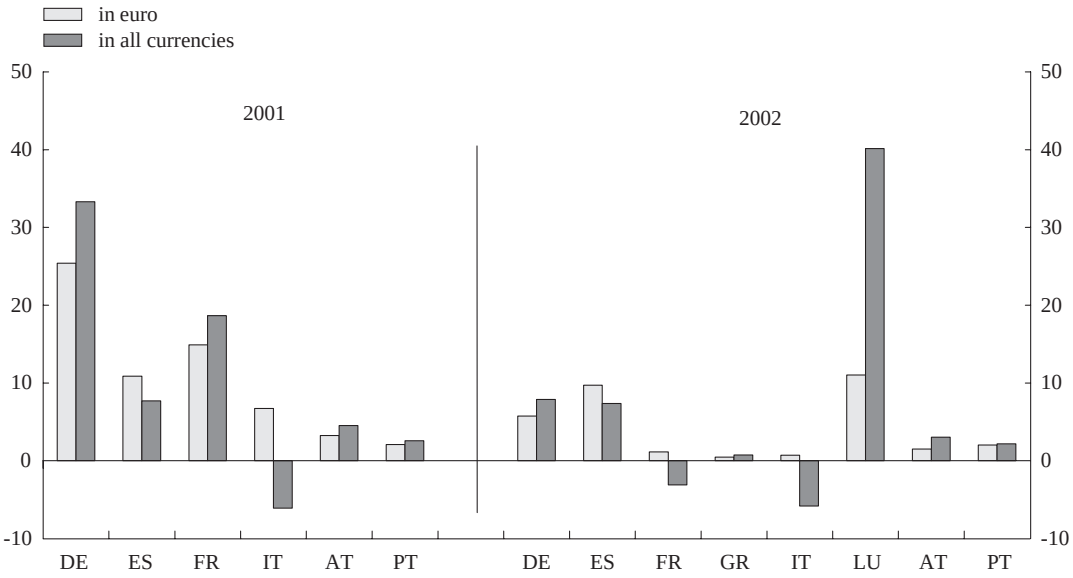
19 *These data are available at a yearly frequency. As a result, 2002 figures overlap with both the previous and current review period, while data for 2003 are not yet available. No currency breakdown is yet available for the euro area as a whole.*

20 *Including Luxembourg and Greece, for which data were not available in 2001, the total amount of net purchases in 2002 by euro area residents of the eight countries was €32.5 billion.*

Chart 3

Net purchases by selected euro area countries of international bonds and notes from non-euro area residents [1)]

(€ billions)



Sources: National central banks of the respective countries.

1) The currency identified is that of the denomination of the securities, except in Luxembourg, Spain and Greece, where it is the currency of settlement of transactions. Positive (negative) amounts represent net purchases (sales) of bonds and notes by euro area residents from (to) non-euro area residents. Data for Greece and Luxembourg are not available for 2001.

than 37%, declining from €171 billion in 2001 to €108 billion in 2002.[21]

This notwithstanding, euro-denominated issues still accounted for the bulk of international bonds and notes purchased by Austrian, German, Greek, Portuguese and Spanish investors from non-euro area residents in 2002, revealing a possible home currency bias. French and Italian investors were also net purchasers of euro-denominated issues from non-euro area residents, although when taking into account issues in other currencies, they were overall net sellers of bonds and notes. Only investors from Luxembourg, for which data are only available for 2002, did not primarily buy euro-denominated issues, with the latter only accounting for one-quarter of their net purchases of international bonds and notes from non-euro area residents.[22]

2 The euro in international loan markets

In their analysis of the euro's role in international financial markets, the first two issues of the annual review of the international role of the euro (ECB, 2001 and 2002) placed particular emphasis on securitised financial instruments. This year's review takes a closer look at non-securitised financial instruments, and describes the use of the euro by non-euro area residents in international loan markets. The data presented exclude interbank loans, given that currency choice in the interbank market may reflect other factors than those corresponding to loans to non-bank borrowers. The role of the euro is analysed

21 See data published in Table 3.5.2 of the "Euro area statistics" section of the ECB Monthly Bulletin.

22 The absence of a home currency bias in Luxembourg can partly be explained by the large number of foreign banks in this country.

at three levels, namely: loans by euro area banks to non-bank borrowers outside the euro area (sub-section 2.1), loans by non-euro area banks to non-bank borrowers in the euro area (sub-section 2.2) and cross-border loans by non-euro area banks to non-bank borrowers outside the euro area (sub-section 2.3). Since data are presented here for the first time, this section provides an overview of the main developments from 1999 to the first quarter of 2003, and is intentionally descriptive.[23]

23 Data for the international loan market are available from the BIS one quarter later than data for debt securities.

Box 3

Technical aspects related to data on international loans

Data used to analyse the euro's use by non-euro area residents in the international loan markets are derived from the BIS international banking statistics, which are based on quarterly data reported by banks from 36 countries on their international financial claims and liabilities. Data are broken down by currency, including into loans in US dollars, euro and Japanese yen.[1]

The data presented here relate to the asset side of banks' balance sheets. They exclude interbank loans, which may be part of complex reciprocal interbank assets and liabilities, where the currency may be chosen regardless of the financing needs of the debtor. Over the period under study, the reporting population has changed marginally at various points in time. In all cases, the data refer to the country of residence of the reporting banks. For instance, "euro area banks" is used for the sake of simplicity but should be understood as "euro area resident banks". The other key points to note are as follows:

- **Loans by euro area banks to non-bank borrowers outside the euro area**

Greece is not included in the euro area as it does not report data to the BIS. Non-euro area residents include both residents outside the euro area and international institutions.

- **Loans by non-euro area banks to non-bank borrowers in the euro area**

Non-euro area banks include banks from countries outside the euro area that report data to the BIS. The euro area comprises the 12 EMU Member States, including Greece, which is encompassed in the loan destination as reported to the BIS. A number of countries do not report data for some quarters or some currencies. When this is the case, missing data are referred to in a residual category. For instance, one country does not report specific data on its Japanese yen-denominated loans (BIS, 2003d, Table G13). However, these loans are implicitly included in the amount of loans in all currencies that this country reports to the BIS. This leads to the share of loans in residual currencies being overestimated. In general, however, distortions are limited as countries and/or currencies for which data are missing account for a small share of the market.

- **Cross-border loans by non-euro area banks to non-bank borrowers outside the euro area**

Non-euro area banks on the lender side include only banks from countries that report to the BIS. The borrower side includes all non-bank borrowers from countries outside the euro area as well as international institutions.

1 Reporting countries include Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, Finland, France, Germany, India, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Taiwan, Turkey, the United Kingdom, the United States and eleven offshore centres.

2.1 Loans by euro area banks to non-bank borrowers outside the euro area

The stock of loans made by euro area banks to non-bank borrowers outside the euro area amounted to USD 619 billion in the first quarter of 2003. Since 1999, the euro has been the second currency of denomination for such loans, with a share of above 37% in the first quarter of 2003, against 46% for the US dollar (see Chart 4). The remaining currencies, including the Japanese yen, played a more limited role, with shares equal to or below 6%.[24]

In terms of the regional destination of loans, non-bank entities in developed, non-euro area countries are the main borrowers from euro area banks, with USD 381 billion outstanding in the first quarter of 2003, an amount that constitutes more than 60% of such loans.[25] For these borrowers, the euro is the second currency of denomination for loans extended by euro area banks, with an average share since 1999 of about one-third, after the US dollar, which has more than 40%. Turning to emerging market countries, the euro was the main currency of denomination for loans extended by euro area banks to non-bank borrowers in developing countries in Africa and the Middle-East, Asia and the Pacific and in Europe, with a share above 50% in the first quarter of 2003 (see Chart 5). Euro area banks mainly lend US dollars to Latin America and the Caribbean as well as offshore centres, with shares ranging between 60% and 80%.

Focusing on individual countries, non-bank entities from the United Kingdom and the United States are the largest borrowers from euro area banks, each accounting in the first quarter of 2003 for close to one-fourth of the amount of such loans (approximately USD 140 billion each). As regards euro-denominated loans only, non-bank borrowers from the United Kingdom were by far the largest borrowers from euro area banks, with a share close to 40% in the first quarter of 2003.

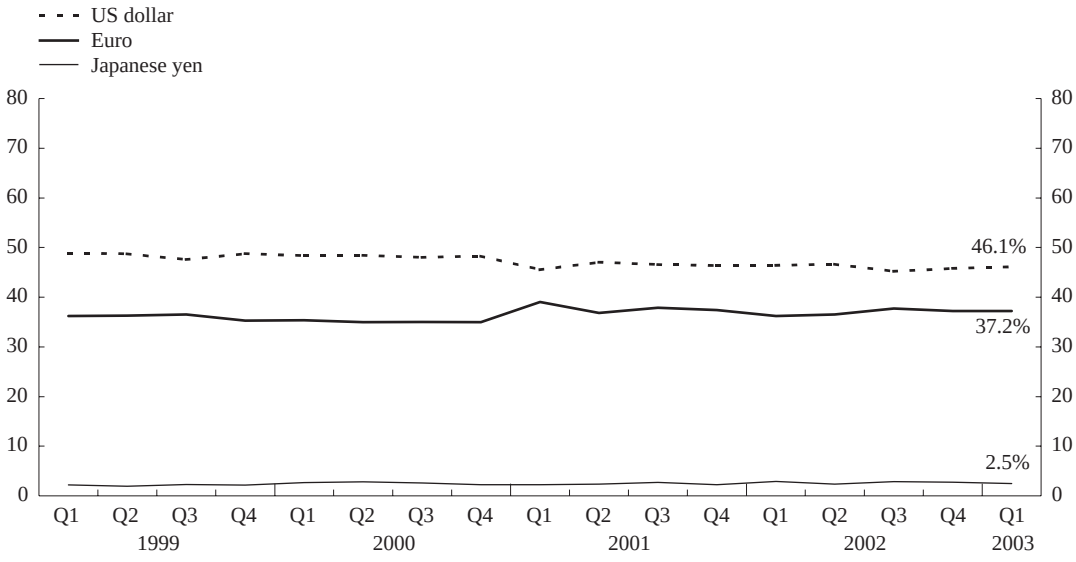
24 Taking data from Table 2.8.5 ("Loans to non-residents of the euro area (non-banks)") of the ECB Monthly Bulletin yields very similar results. The amount of loans outstanding in the first quarter of 2003 reached €594 billion. Moreover, the share of the euro was 38%, compared with the US dollar (47%) and the Japanese yen (2%). However, BIS data are used in this section because they are available with a breakdown of the destination of loans.

25 According to the BIS classification, developed countries include (in addition to euro area countries) Andorra, Australia, Canada, Denmark, Iceland, Japan, Liechtenstein, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, the United States and the Vatican.

Chart 4

Loans made by euro area banks to non-bank borrowers outside the euro area: currency shares

(as a percentage of the total amount outstanding and at constant 1994 Q1 exchange rates)

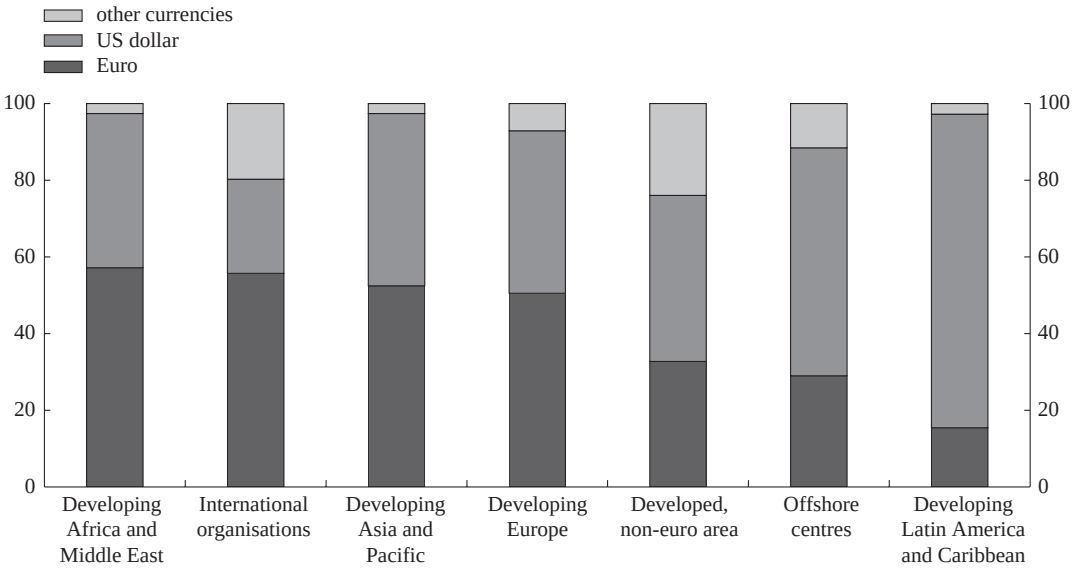


Sources: BIS and ECB calculations.

Chart 5

Loans made by euro area banks to non-bank borrowers outside the euro area: currency shares by region

(as a percentage of the total amount outstanding by region in 2003 Q1 and at current exchange rates)



Sources: BIS and ECB calculations.

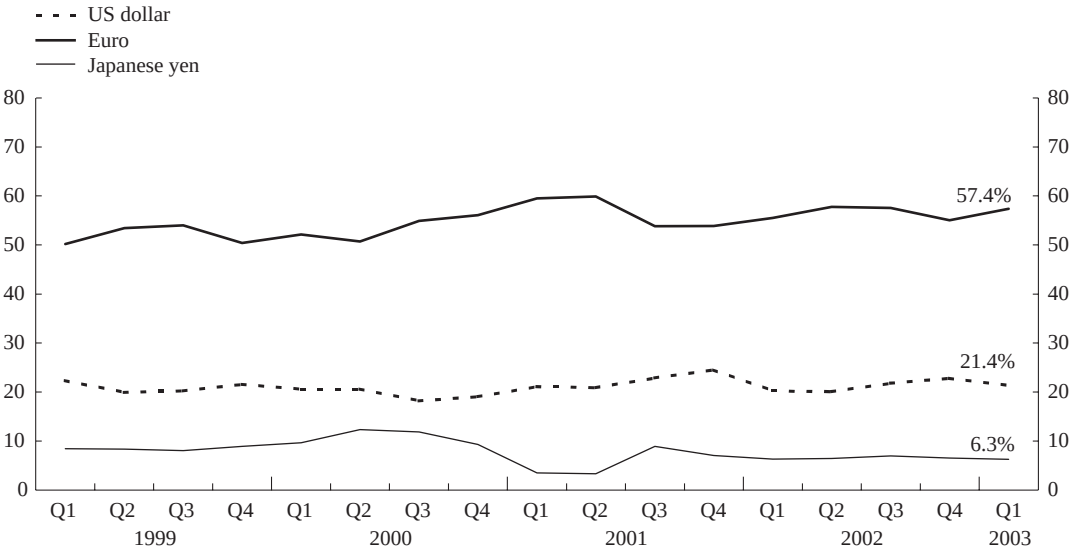
2.2 Loans by non-euro area banks to non-bank borrowers in the euro area

Loans made by non-euro area banks to non-bank borrowers in the euro area are predominantly denominated in euro. With a share between 50% and 60% over the review period, the euro stands ahead of the US dollar, which accounts for around 20% of the total amount of loans outstanding. Other

Chart 6

Loans made by non-euro area banks [1] to non-bank borrowers in the euro area: currency shares

(as a percentage of the total amount outstanding and at constant 1994 Q1 exchange rates)



Sources: BIS and ECB calculations.

1) Excluding data for the US, which are not broken down by currency.

Table 6

Main non-euro area lenders to non-bank borrowers in the euro area

(first quarter of 2003, values at current exchange rates)

	Loans in all currencies		Loans in euro	
Country of residence of reporting banks	Amount outstanding (USD billions)	Share (as a % of the total)	Amount outstanding (USD billions)	Share (as a % of the total)
United Kingdom	149	57.0	102	79.7
United States	35	13.4	1 [1)]	0.8
Offshore centres [2)]	23	9.0	6	4.7
Switzerland	18	6.9	6	4.7
Other reporting countries [2)]	36	13.8	13	10.2
Total	261	100.0	128	100.0

Sources: BIS and ECB calculations.

1) Mid-range estimate calculated by the ECB. Loans denominated in currencies other than the US dollar made by US resident banks to non-bank entities in the euro area amounted to USD 2.5 billion, so that the amount in euro is between 0 and USD 2.5 billion.

2) Corresponding data include some estimates by the BIS.

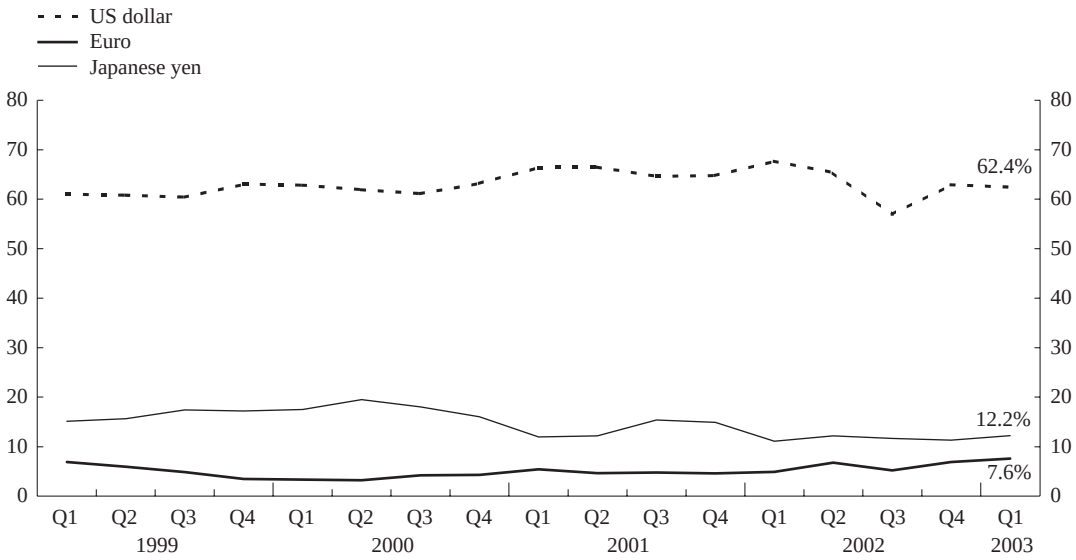
currencies, including the Japanese yen, had shares below 10% (see Chart 6).

The largest lenders to non-bank borrowers in the euro area are UK resident banks, which accounted for more than half of the USD 261 billion-worth of loans outstanding in the first quarter of 2003 (see Table 6). UK resident banks are also the largest lenders of euro to non-bank borrowers in the euro area, accounting for 80% of the USD 128 billion-worth of euro-denominated loans outstanding in the first quarter of 2003. US resident banks are the second lenders to non-bank borrowers in the euro area, accounting for a share of approximately 13%. Other important lenders to non-bank borrowers in the euro area, both in euro and in other currencies, are residents in

Chart 7

Cross-border loans made by non-euro area banks [1)] to non-bank borrowers outside the euro area: currency shares [2)]

(as a percentage of the total amount outstanding and at constant 1994 Q1 exchange rates)



Sources: BIS and ECB calculations.

1) Excluding data for the US, which are not broken down by currency.

2) Including cross-border loans by Japanese banks in Japanese yen.

Table 7

Main non-euro area lenders to non-bank borrowers outside the euro area

(first quarter of 2003, values at current exchange rates)

	Loans in all currencies		Loans in euro	
Country of residence of reporting banks	Amount outstanding (USD billions)	Share (as a % of the total)	Amount outstanding (USD billions)	Share (as a % of the total)
United Kingdom	489	32.5	65	66.3
Offshore centres [2]	481	31.9	21	21.4
United States	263	17.4	3 [1]	3.1
Switzerland	51	3.4	4	4.1
Other reporting banks [2]	223	14.8	5	5.1
Total	1,507	100.0	98	100.0

Sources: BIS and ECB calculations.

1) Mid-range estimate calculated by the ECB. Loans denominated in currencies other than the US dollar made by US resident banks to non-bank entities outside the euro area amounted to USD 6.2 billion, so that the amount in euro is between 0 and USD 6.2 billion.

2) Corresponding data include some estimates by the BIS.

offshore centres and in Switzerland, each with a share equal or below 10%.

2.3 Cross-border loans by non-euro area banks to non-bank borrowers outside the euro area

Outside the euro area, the US dollar is the main currency of denomination in the cross-border loan market, accounting in the first quarter of 2003 for close to 63% of the outstanding amount of cross-border loans by non-euro area banks to non-bank borrowers outside the euro area. The euro is the third currency of denomination, behind the Japanese yen, with respective market shares of 8% and 12% (see Chart 7).

The largest lenders to non-bank borrowers outside the euro area are UK resident banks and offshore centres, which both accounted for about one-third of the USD 1,507 billion-worth of loans outstanding in the first quarter of 2003 (see Table 7). UK resident banks are also the largest lenders of euro outside the euro area, accounting for around two-thirds of the USD 98 billion-worth of such loans outstanding in the first quarter of 2003. US resident banks are the third most important lenders outside the euro area, accounting for a share close to 17%.

3 The euro in the foreign exchange markets

Last year's review showed that the role of the euro in the foreign exchange (FX) markets was broadly similar to that of the Deutsche Mark in the past. The euro is the second currency in FX trading, although the US dollar remains the preferred vehicle currency.[26] Although spreads in USD/EUR quotations were quite surprisingly found to exceed those previously existing between the Deutsche Mark and the US dollar, last year's review reported evidence that this was the result of quoting conventions. This section assesses whether these two conclusions still hold. To this end, it analyses recent developments related to trading volumes (sub-section 3.1) and transaction costs (sub-section 3.2).

26 *A vehicle currency (B) is defined as a currency that is used in the foreign exchange markets as a means to exchange two other currencies, so that currencies A and C are not exchanged directly (AC) but via B in two transactions (AB and BC). In the foreign exchange markets, most transactions between relatively illiquid currencies are effected via vehicle currencies owing to lower transaction costs, and in order to avoid excess intraday volatility.*

3.1 Trading volumes

Data on foreign exchange activity in euro are typically available from BIS surveys, which are published on a triennial basis. More timely data, although with a more limited coverage, have recently become available thanks to Continuous Linked Settlement (CLS), which started operations in September 2002. CLS was created in 1997 at the initiative of a group of major foreign exchange market participants, known as the G20 banks, to address the problem of foreign exchange settlement risk on the basis of the payment-versus-payment principle.[27] By September 2003, 66 major financial institutions located in 17 countries had become CLS shareholders. CLS settles transactions in eleven major currencies, including the euro, the US dollar, the Japanese yen and the pound sterling.[28] With USD 380 billion[29] on average settled daily within CLS in the first half of 2003, the system supposedly covers about one-third of global foreign exchange trading activity – compared to the latest BIS triennial survey (BIS, 2002a).

From the start of CLS until the end of June 2003, the euro was the second most widely settled currency in CLS, accounting for about one-quarter of all settlements. The US dollar was involved in almost one-half of all transactions, which suggests that it had assumed a vehicle currency role. Interestingly, the share of the euro displayed some volatility over the review period, ranging from 20% to 30%. Conversely, the share of the US dollar remained more stable. Both the pound sterling and the Japanese yen had a share of around 10% (see Chart 8). This broadly confirms the results of the latest BIS triennial survey.

3.2 Transaction costs

Based on Detken and Hartmann (2002), last year's review revealed a surprising rise in transaction costs in USD/EUR trading

27 *According to this principle, the two legs of a transaction are settled simultaneously in such a way that the one cannot occur without the other, i.e. the final transfer of one currency only occurs if a final transfer of the other currency takes place.*

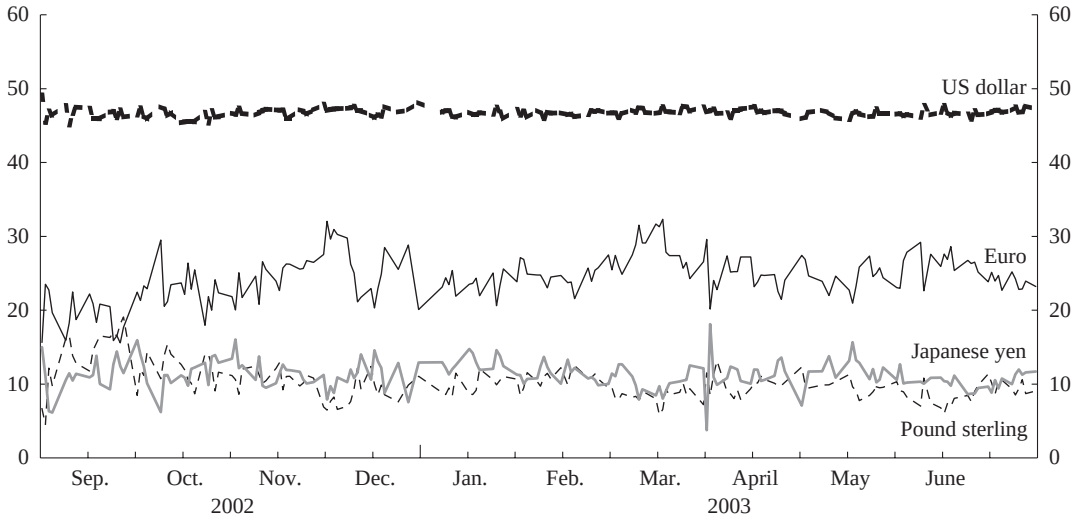
28 *Other currencies settled in CLS comprise the Australian dollar, the Canadian dollar and the Swiss franc. From September 2003 onwards transactions in Danish krone, Norwegian krone, Swedish krona and the Singapore dollar are settled in CLS.*

29 *The value of settled transactions in each currency amounts to double the value of trades because every trade involves two settlements legs, one in each currency.*

Chart 8

Settlement within CLS: currency breakdown [1)]

(as a % of the total amount settled)



Sources: CLS and ECB calculations.

1) Days when all currencies are not actively traded are disregarded.

compared with DEM/USD dollar trading prior to Economic and Monetary Union (EMU). Indeed, data obtained from Electronic Broking Services (EBS) suggest that traded/tradable spreads for the USD/EUR pair from 1999 to early-2002 were consistently 20% to 50% higher than before 1999. One of the most plausible explanations for this increase put forward in the academic literature is Goodhart et al's so-called "pip" or "granularity" hypothesis.[30] This hypothesis states that the rise in transaction costs in USD/EUR trading is due to a simple base effect. At the time of DEM/USD trading, a large share of spreads were quoted at the minimum of 1 "pip", or one-hundredth of a pfennig per US dollar. Inverting the quotation convention to USD/EUR at the start of EMU, the smallest possible spread of 1 pip, now one-hundredth of a US dollar cent per euro, became larger in relative terms, since the level of the USD/EUR rate, about 1.17 at that time, was lower than that of the DEM/USD, i.e. about 1.80.[31] Building on last year's review, the availability of new data extending to July 2003 provides further evidence of the granularity hypothesis.[32] Since February 2002, the last month for which data were available for last year's review, two developments are noteworthy (see Chart 9):

- First, there has been a strong decline in transaction costs measured in basis points in JPY/EUR trading. Indeed, JPY/EUR spreads declined from about 2 basis points in the period September 2001 to February 2002, to

30 *See ECB (2002), Detken and Hartmann (2002) and Goodhart et al (2002).*

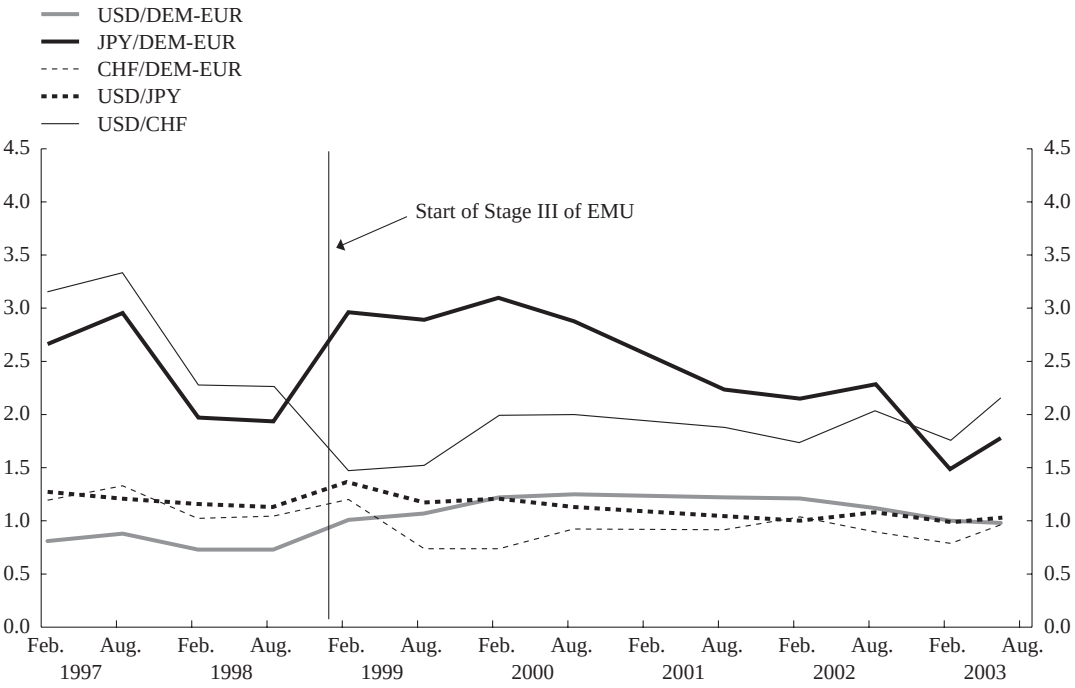
31 *As trivially 1/1.17 > 1/1.80. It is worth noting that, although the convention amongst market participants is to speak of the "euro-dollar" rate, the exchange rate usually quoted refers to the amount of US dollar cents per euro, in line with the notation used throughout the text.*

32 *Updated ultra-high frequency (second-to-second) quoted and traded bid and ask prices were obtained from EBS for August 2002, February 2003 and May/July 2003. As last year's review explains, this spread measure can be regarded as the most reliable for capturing true transaction costs. The absolute spread for each second when a transaction occurred was calculated as the difference between the transacted ask and bid prices. It is worth noting that when the system was hit only by a buy (sell) signal in this second, the spread is calculated by using this price and the latest quoted ask (bid) price or latest transacted price for a seller (buyer) initiated transaction (whichever is closer in time). Then the absolute spread is divided by the midpoint of the resulting spread measure, and multiplied by 10,000 to express it in basis points. Finally, the unweighted average of these spreads is taken over the respective reporting period.*

Chart 9

Traded/tradable spot foreign exchange bid-ask spreads

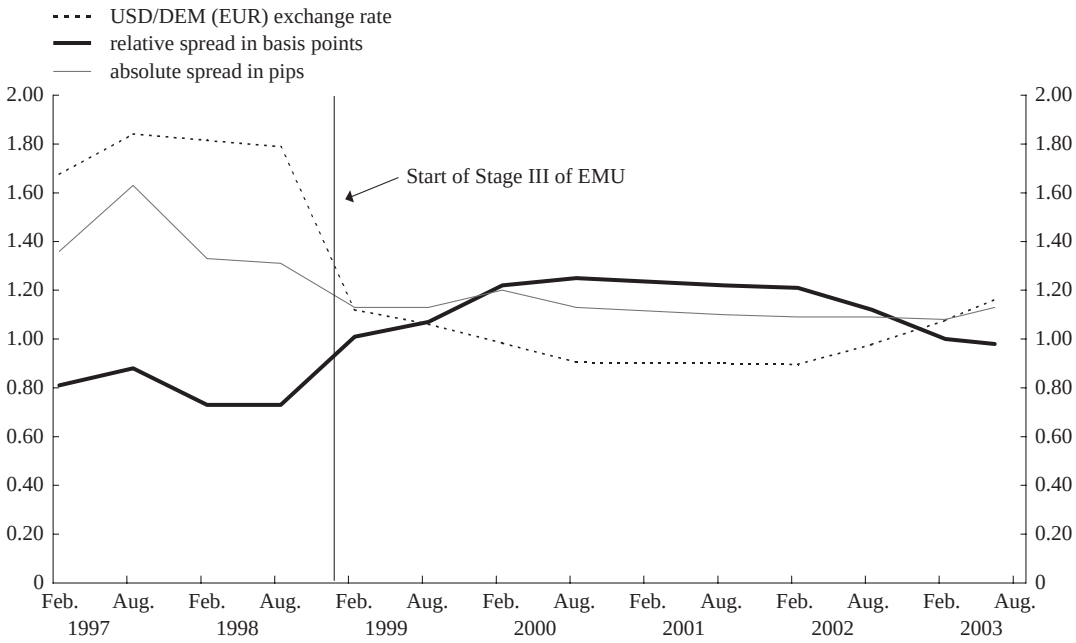
(in basis points)



Sources: Electronic Broking Services, Detken and Hartmann (2002).

Chart 10

USD/DEM (EUR) exchange rate and bid-ask spreads



Sources: Electronic Broking Services, Detken and Hartmann (2002).

roughly 1.5 basis points in February 2003, and remained at about 1.8 basis points in the most recent period to July 2003. Compared with JPY/DEM transaction costs just prior to the start of EMU, spreads seem to have completely normalised.

- Second, there has been a small decline in transaction costs measured in basis points in USD/EUR trading. Indeed, USD/EUR spreads reached about 1.2 basis points in the period September 2001-February 2002, against roughly 1 basis point since February 2003. As a result, they are currently only 10% above the corresponding DEM/USD spreads observed prior to the start of EMU.[33]

Chart 10 suggests that, for the USD/EUR pair, this decline in transaction costs measured in basis points can probably be attributed to a combination of two factors. On the one hand, absolute traded/tradable spreads remained unchanged at a level close to 1 pip, that is, at their lowest possible bound given the quoting convention of four digits after the decimal point. On the other hand, the euro almost continuously appreciated against the US dollar from February 2002 to June 2003. As a result, the combined effect of (i) a constant absolute spread (in pips) in the numerator and (ii) a rising exchange rate in the denominator is likely to explain the decline in the USD/EUR spread measured in basis points. Interestingly, this evidence is in line with the pip or granularity hypothesis.

Overall, although recent developments in transaction costs suggest that there has also been some evolution for the USD/EUR pair, this evolution is not necessarily related to liquidity issues. In particular, it is worth re-emphasising that, since the effect is symmetric for euro and US dollar trading, these developments should in principle have no bearing on the international role of the euro.

33 *It is interesting to note that these conclusions are confirmed by the evolution of indicative spreads available on Reuters, although these spreads do not reflect a real transaction. As regards the JPY/EUR rate, the widest indicative spreads continued to narrow significantly in the review period by about 3 basis points, while the remaining indicative spreads also decreased, albeit to a lesser extent, by 0.5 to 1 basis point. Turning to the USD/EUR rate, indicative spreads also narrowed in the review period, although less than for the JPY/EUR. This improvement was also driven by the widest indicative spreads of the distribution, which narrowed by about 1 to 2 basis points, while the remaining indicative spreads decreased on average by roughly 0.5 basis point.*

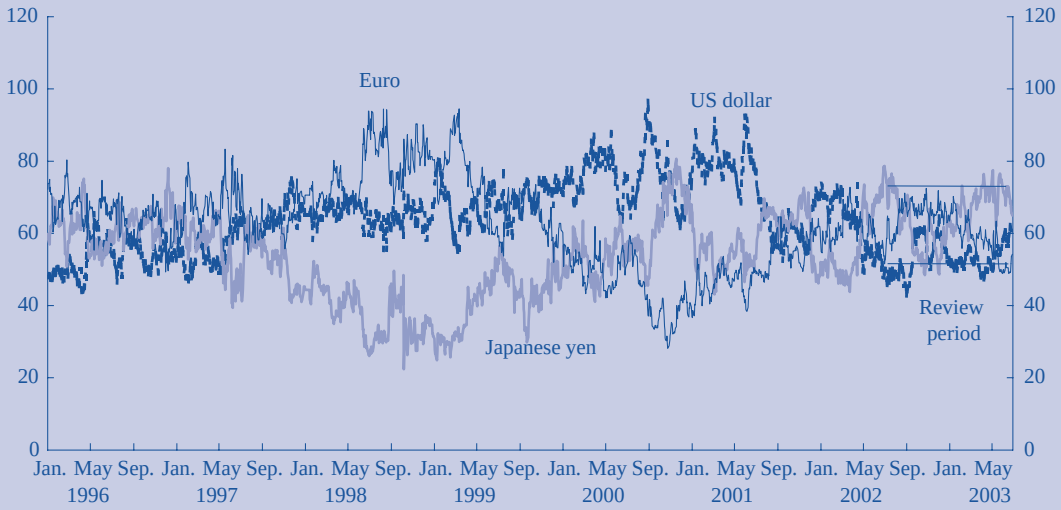
Box 4

FX market participants' perception of the main currency pairs

Last year's review contained a section entitled "Developments in the EUR-JPY market", which used the so-called "geometry of currencies" approach to determine whether the USD/EUR, JPY/USD and JPY/EUR currency pairs were considered by market participants to be autonomous or cross-rates.[1] The review offered evidence that none of these pairs seemed in mid-2002 to be perceived by market participants as a pure cross-rate.

This Box presents updated results on this issue. Implied angles for the euro, the US dollar and the Japanese yen have been calculated from daily implied volatilities on one-month at-the-money options for the three currency pairs (USD/EUR, JPY/USD and JPY/EUR) in the review period (see Chart).[2] The angles at the three currencies from July 2002 to June 2003 evolve in a narrow 50 to 70 degree range, thereby confirming last year's conclusions that none of the three pairs seemed to be perceived by market participants as a pure cross-rate.

Correlations between the JPY/EUR, JPY/USD and USD/EUR as measured by implied angles
(in degrees)



Sources: Deutsche Bank, ECB calculations.

1 *As explained in last year's review, the geometry of currencies approach has been used since the mid-1990s by dealers in foreign exchange option markets to price particular derivatives products (ECB, 2002). The approach can also be used to assess the part played by currencies in the foreign exchange market, and runs as follows. Let A, B, C be three currencies traded in the foreign exchange market. When two currency pairs, e.g. AB and BC, are autonomous rates, liquidity is concentrated in these pairs rather than in the AC pair. They evolve independently of each other, because foreign exchange dealers tend to specialise in either the AB or BC segment, which are affected differently by chartist strategies, released news or released figures. In statistical terms, this should mean that the two pairs are not correlated. This also means that the angle at currency B is a right angle (90 degrees) as, in Euclidian geometry, orthogonality is a synonym for non-correlation. In this case, the third currency pair, AC, which is relatively less liquid, becomes a cross-rate whose value is determined by the two autonomous rates. Conversely, if the angle measured at currency B is the same as the angles at currencies A and B (60 degrees), all currency pairs are equally correlated and symmetrical, thereby meaning that none of the rates are cross-rates determined by the other two. Against this background, it is possible to discover whether markets perceive an exchange rate to be an autonomous or a cross-rate by using option prices. Indeed, markets have expectations about the volatility of these three currency pairs. It can be shown that the correlation between these pairs is algebraically related to their relative implied volatilities. Therefore, implied correlations between three currency pairs can be calculated from these pairs' implied volatilities and ultimately converted into implied angles between the three currencies. It is worth noting, however, that correlations between currency pairs can also be affected by common shocks to the pairs.*

2 *At-the-money options are the most liquid and, as such, most relevant in terms of information content. One-month options, as opposed to options with other maturities, are typically used to construct the GHI (global hazard index), which is a standard risk measure used by market professionals.*

4 The euro in international trade

This section reviews the role of the euro as an invoicing or settlement currency in international trade in goods and services, with a particular emphasis on the euro area's external trade. This is the dimension of the euro's international role for which data are most scarce, despite the progress described in Box 5. An important caveat relates to the use of either the "invoicing" or the "settlement" concept. The academic literature mainly focuses on the former, i.e. the currency of denomination of contracts, as a determinant of the pricing behaviour of international corporations. However, in many cases available data do not refer to the invoicing currency but to the settlement currency, which is the currency in which the corresponding payments are made through the banking system. These two concepts need not match. To the extent that there is full contractual freedom, two counterparts may agree that trade is invoiced in a given currency but settled in another currency. With this caveat in mind, this section provides an overview of the use of the euro in international trade of a number of euro area countries, (sub-section 4.1) and of third countries (sub-section 4.2).

4.1 The role of the euro in international trade of selected euro area countries

The use of the euro as a currency of settlement or invoicing for international trade transactions in selected euro area countries has continued to increase. In 2002, the share of the euro in exports with non-euro area residents was above 50% for both goods and services in most euro area countries for which data are available, reaching levels close to 60% in a few cases (see Table 8).[34]

34 *An exception is Greece's exports of services, for which the share of the euro has remained limited. This may be attributable to the important role played by maritime transportation in Greece, a sector traditionally characterised by extensive use of the US dollar.*

Box 5

The statistical framework for assessing the euro's role in international trade

In 2003 significant efforts have been made to enhance the available statistical coverage of the use of the euro in international trade in goods and services. To this aim, three different avenues have been pursued:

1. With the assistance of the Eurosystem's national central banks, the number of countries for which statistics on extra-euro area trade in goods and services are available has increased from five (Belgium and Luxembourg, whose data are now available separately, plus France, Portugal and Spain) to eight with the inclusion of Germany, Greece and Italy. All data – with the exception of those from Germany – are extracted from the national databases for the compilation of balance of payment statistics, and refer to trade settlements. The new German data were obtained from ad hoc surveys commissioned by the Deutsche Bundesbank and conducted by an independent research institute. These data are based on a sample of corporations, and refer to trade invoicing.

2. Data on the role of the euro in international trade of two of the EU's largest trade partners, Japan and the United Kingdom, as well as in international trade of the acceding and accession countries, have been now included in the review. Some evidence is also now available for the US.

3. The Eurosystem plans to further develop its statistical sources regarding transactions between the euro area and non-euro area residents. A systematic collection of a currency breakdown of several balance of payment items is currently under discussion among European compilers of balance of payment statistics.

Table 8

Share of the euro as a settlement/invoicing currency in extra euro-area exports of goods and services of selected euro area countries

(as a % of the total)

	Goods			Services		
	2000	2001	2002	2000	2001	2002
Belgium [1)]	...	...	53.4	...	...	57.6
Belgium/Luxembourg [1)]	42.0	46.7	53.4	45.4	50.5	54.6
France	48.0	49.2	55.3	57.3	60.4	56.9
Germany	...	...	49.0	...	...	...
Greece	...	23.5	39.3	...	11.3	13.3
Italy	...	52.7	54.1	...	50.7	57.0
Luxembourg [1)]	...	...	51.6	...	...	48.3
Portugal	40.1	43.5	48.5	37.4	37.4	46.4
Spain	49.0	52.0	57.6	50.5	52.9	59.7

Sources: National central banks and ECB calculations.
Notes: (...) stands for "not available". Data for 2000 and 2001 include trade settled in euro and in legacy currencies. Data refer to the use of the euro as a settlement currency, except for Germany. For Germany, data on trade in goods reflect the average value of data collected in surveys carried out in the first and third quarters of 2002 on behalf of the Deutsche Bundesbank. Data on services for Greece, Portugal and Spain exclude travel.
1) Separate data for Belgium and Luxembourg were not available in 2000 and 2001.

On the imports side, as reported in Table 9, the share of the euro remains lower than for exports, with the exception of Portugal (both in terms of goods and services) and Greece and Belgium (only with regard to trade in services). The lower share of the euro in imports than in exports is in line with the so-called Grassman's Law, whereby exporters are typically in a better position to set their currency preferences over those of importers.[35] It may also reflect the

35 Grassman, studying the currency denomination of Swedish exports and imports in 1973, found that exporters tended to invoice in their own currency (Grassman, 1973). Other empirical studies in the 1970s confirmed this pattern.

Table 9

Share of the euro as a settlement/invoicing currency in extra euro-area imports of goods and services of selected euro area countries

(as a % of the total)

	Goods			Services		
	2000	2001	2002	2000	2001	2002
Belgium [1)]	...	...	53.3	...	...	58.7
Belgium/Luxembourg [1)]	43.6	47.2	52.8	44.4	50.0	53.3
France	35.0	39.8	46.8	47.6	54.6	54.7
Germany	...	...	48.0	...	...	...
Greece	...	29.3	35.8	...	15.3	16.8
Italy	...	40.8	44.2	...	49.9	56.1
Luxembourg [1)]	...	...	35.3	...	...	38.1
Portugal	47.0	53.6	57.6	53.7	55.6	59.2
Spain	44.0	49.7	55.8	42.4	45.3	48.7

Sources: National central banks and ECB calculations.
Notes: (…) stands for "not available". Data for 2000 and 2001 include trade settled in euro and in legacy currencies. Data refer to the use of the euro as a settlement currency, except for Germany. For Germany, data on trade in goods reflect the average value of data collected in surveys carried out in the first and third quarters of 2002 on behalf of the Deutsche Bundesbank. Data on services for Greece, Portugal and Spain exclude travel.
1) Separate data for Belgium and Luxembourg were not available in 2000 and 2001.

weight of certain commodities that are usually priced in US dollars on the imports side (such as raw materials, including oil).

Nevertheless, it is difficult to draw any general conclusions, given that the share of the euro in exports and imports seems to be similar in some countries (e.g. Germany).[36] In 2002, the share of the euro in exports and imports of goods increased in most countries by 5 to 6 percentage points with the exception of Greece's exports, which rose by as much as 16 percentage points.[37] With regard to services, the share of the euro also increased in most cases, although to a lesser extent.[38] Insufficient data availability for 2000 and 2001 makes it difficult to ascertain whether this rising trend had already started in 1999, or whether 2002 was exceptional.[39] It is however not excluded that the cash changeover may have encouraged exporters and importers to review their settlement/invoicing practices in favour of the euro.

4.2 The role of the euro in international trade of third countries

Data on the currency breakdown of international trade of two of the euro area's largest trade partners, namely Japan and the United Kingdom, broadly confirm the same picture as the one obtained from the statistics of selected euro area countries. Data on the share of the euro as an invoicing/settlement currency is available for both total trade and trade vis-à-vis the European Union.[40] Surprisingly, Japan is the country with the highest share of exports to the European Union invoiced or settled in euro, possibly suggesting that Japanese exporters are relatively less reluctant to carry a portion of the exchange rate risk. As reported in Table 10, 54% of Japan's exports to the European Union in 2002 were invoiced/settled in euro, against 36% for the United Kingdom (figures from 2001).

36 In some countries (Luxembourg, Portugal, Spain) the difference between exports and imports is more pronounced for trade in services than in goods, which may be attributable to specific national factors.

37 This is possibly a lagged effect of the entry of Greece into the euro area in 2001.

38 Simulations on the effects of exchange rate fluctuations confirm that results are not distorted by the appreciation of the euro in 2002.

39 One interpretation in favour of the second hypothesis is the need to change bookkeeping, accounting and other administrative procedures from the legacy currencies to the euro, which might have induced small and medium-size enterprises to revise their pricing policies for international trade, thereby generalising the use of the euro at the expense of other foreign currencies.

40 Specific data for the euro area are only available for the United Kingdom.

Table 10

Share of the euro in international trade of Japan and the United Kingdom vis-à-vis the European Union

(as a % of the total)

	Exports to the EU	Imports from the EU
1999		
Japan	...	...
United Kingdom [1)]	19	22
2000		
Japan [1)]	44	17
United Kingdom	26	25
2001		
Japan [1)]	47	22
United Kingdom	36	35
2002		
Japan	54	31
United Kingdom	...	...

Sources: Ministry of Finance for Japan; HM Customs and Excise for the United Kingdom.
Note: (…) stands for "not available".
1) Combined share of the euro and the Deutsche Mark only.

It is worth noting that the share of the euro – which is relatively high when only bilateral transactions with the European Union are considered – decreases substantially when trade with the rest of the world is examined. For instance, the euro is the first currency used by Japan to export to the European Union, yet the euro's share falls to below 10% when all exports are considered. The share of the euro is not significant in exports and imports of either Japan or the United Kingdom vis-à-vis the United States, standing at less than 1%. Nevertheless, available data suggest overall that the role of the euro as an invoicing or settlement currency has developed in international trade, especially when one of the counterparts is resident in the euro area.

Moreover, this does not exclude the possibility of the euro having become an important settlement/invoicing currency for international trade in goods and services in non-euro area countries that have strong ties with the euro area. In this respect, the euro indeed plays a dominant role in some of the

Box 6

Evidence of the role of the euro as an invoicing currency in US trade in goods with euro area countries

As regards the US, there is some evidence available from the Bureau of Labor Statistics (BLS) on the role of the euro as an invoicing currency in US trade in goods with euro area countries. However, the BLS data are not directly comparable with data on the currency breakdown of international transactions shown for other countries in this review. They refer to the (unweighted) share of items that are invoiced in euro in a representative basket of goods traded between the US and euro area countries, i.e. not to all transactions. According to these data (see table below), in September 2003, the share of the euro in euro area countries' exports to the US ranges from virtually zero (Greece, Luxembourg, Portugal) to about 30% (Austria, Germany).[1] In line with Grassman's law, the share of the euro in euro area countries' imports from the US is lower, ranging from zero (Finland, Greece, Luxembourg, Portugal) to about 10% (France, Germany).

Share of the euro as an invoicing currency in a representative basket of goods traded between euro area countries and the US
(%, in September 2003)

	Euro area countries' exports to the US	Euro area countries' imports from the US
Austria	38.3	4.2
Belgium	8.4	4.7
Finland	5.0	0.0
France	7.1	11.0
Germany	26.7	9.8
Greece	0.0	0.0
Ireland	4.7	1.4
Italy	13.2	2.9
Luxembourg	0.0	0.0
Netherlands	7.4	2.5
Portugal	0.0	0.0
Spain	12.4	4.0

Source: Bureau of Labor Statistics.
Notes: Goods items are not weighted to calculate the respective shares.

1 A zero-share does not necessarily imply that the euro is not actually used in international transactions between the corresponding euro area country and the US, as estimates may be based on a small number of items in the basket of goods.

EU's smaller regional trading partners, as evidenced by data on the EU accession countries compiled by the Secretariat of the Committee on Economic and Monetary Affairs the of European Parliament (2003). As reported in Table 11, in most of these countries, the share of exports or imports invoiced/settled in euro ranges from approximately 60% to 80%. In Cyprus, Latvia and Malta, which also use the US dollar (and, in the case of Cyprus, the pound sterling) to a significant extent, the share of the euro is lower. Interestingly, in the Czech Republic, Estonia, Slovakia and Slovenia, the share of the euro as an invoicing/settlement currency of international trade surpassed the share of these countries' trade with the EU. This may imply that at least part of their trade with non-EU countries is settled or invoiced in euro.

Table 11

Share of the euro in international trade of the acceding and accession countries

(as a % of total exports/imports, in 2002)

	Share of exports		Share of imports	
	invoiced/settled in euro	to the EU	invoiced/settled in euro	from the EU
Bulgaria	51.0	56.1	59.0	50.5
Cyprus	21.8	50.7	45.5	53.0
Czech Republic [1]	70.4	68.4	67.7	60.2
Estonia [2]	70.4	68.0	61.7	57.9
Hungary	83.1	75.1	73.1	56.2
Latvia	40.1	60.4	51.5	53.0
Lithuania	...	49.6	...	45.2
Malta	...	46.1	34.7	67.4
Poland	60.2	68.8	59.6	61.7
Romania	63.5	66.1	67.6	64.0
Slovakia	73.9	60.6	60.5	50.3
Slovenia	86.9	59.4	82.8	68.0

Sources: Compilation by the Secretariat of the Committee on Economic and Monetary Affairs of the European Parliament (2003), based on data provided by the statistical offices of the respective countries, with the exception of Bulgaria (for which the source is the National Bank of Bulgaria); Eurostat and IMF (DOTS).

1) January-September 2003.

2) January-August 2003.

Special focus: The City of London and the international role of the euro

This chapter elaborates on the role of the City of London as a financial centre for the international use of the euro.[41] A few features of this role were highlighted in a Box entitled "The euro in the City of London" in last year's review (ECB, 2002). This Box presented data on the share of the euro in the assets and liabilities of banks operating in the United Kingdom, which suggested that the City of London plays a pivotal role regarding the euro's international use. In the course of 2003, the ECB undertook further research into this topic, the main findings of which are contained in this "special focus" section. This section relies on new data as well as on a number of interviews with financial market participants who are active in euro-denominated segments in the City of London.

It should be noted that the data presented in this section must be interpreted with caution, as in many instances they do not refer directly to the City of London but to the United Kingdom as a whole. The bias is, however, unlikely to be large as, perhaps with the exception of Edinburgh and Glasgow, foreign currency-denominated financial activity in the United Kingdom is almost entirely located in the City of London. Moreover, it is sometimes difficult to measure accurately whether financial activity in euro is genuinely located in the City of London, as some financial operations cannot easily be assigned to a particular territory. Indeed, as financial markets become increasingly integrated, financial institutions based in London often maintain close relations with participants located elsewhere. In some cases, London-based institutions may be assigned only one part of a more complex financial operation, the remainder being carried out by head offices or other offices and institutions outside the UK. Moreover, technological innovations have enhanced the possibilities for financial institutions to operate remotely from the City of London.

With these caveats in mind, this chapter reviews (1) the City's contribution to the role of the euro outside the euro area, (2) the euro's contribution to financial market activity in the City, and (3) the use of the City by non-UK market participants to undertake business denominated in euro. A final section (4) presents some conclusions.

1 The contribution of the City of London to the euro's role outside the euro area

Outside the euro area, the City of London is the main financial centre undertaking business denominated in euro, well ahead of the next-largest non-euro area European financial centre, i.e. Zurich, and far ahead of Stockholm, Copenhagen or Oslo. Euro-denominated financial activity in London is also significantly higher than in any other financial centre of the world, including in the United States or Asia.

The contribution of the City of London to the international role of the euro can be measured in a number of market segments, in particular international debt securities (sub-section 1.1), international loans (sub-section 1.2), foreign exchange (sub-section 1.3), as well as international banking assets and liabilities (sub-section 1.4).

1.1 Euro-denominated international debt securities

The City of London plays a significant part in the euro-denominated debt securities market, both with regard to bonds and notes and money market instruments issued by borrowers inside, and more generally outside, the euro area.

In the market for euro-denominated bonds issued by non-euro area residents, the City of London is a significant component of supply and demand, as well as an important intermediary.[42]

41 *The City of London is broadly defined here as including the Square Mile, Canary Wharf and the rest of London.*
42 *See Geis and Mehl (2003) for additional details.*

- On the supply side, UK resident borrowers have been the largest issuers of euro-denominated bonds outside the euro area since 1999, accounting for about 30% of total issuance by non-euro area residents, ahead of US residents who have a 20% share, according to BIS data. Data available from Bondware show that over 60% of euro-denominated bonds issued by non-euro area residents were governed by English law, while more than one-quarter of these were UK-listed.

- On the demand side, UK resident investors were the largest non-euro area purchasers on the primary market of euro-denominated bonds issued by non-euro area residents, according to data compiled by the ECB from the International Financing Review (IFR). Since 1999 they have participated in the primary sale of more than half the sample of bonds for which information is available from the IFR. For 10% of these bonds, they purchased more than one-fifth of the amount issued. The significant interest of UK resident investors is clearly known to issuers, who frequently organise roadshows in the City of London to advertise their issues. Although there are no data available on secondary trading in the euro-denominated international bond markets, it can be safely assumed that the City of London plays a central role.[43]

- As intermediaries, market participants in the United Kingdom are highly influential, since they act as bookrunners for 60% of euro-denominated bond issues by non-euro area residents, taking on activities that range from the preparation of roadshows to the execution of final sales through syndicates of financial institutions.

In addition, the City of London plays an important role regarding short-term instruments, as UK resident borrowers account for half the amount of announced issues of euro-denominated money market instruments issued by non-euro area residents.[44] Since the launch of the euro in 1999, euro-denominated money markets in the City of London have indeed developed substantially. The estimated value of unsecured overnight loans in euro brokered each working day in the City of London averaged GBP 16.5 billion in June 2003, according to data published by the Wholesale Markets Brokers' Association, which represents an almost threefold increase compared with January 1999. Furthermore, according to the International Securities Market Association's latest survey (ISMA, 2003), around one-half of cross-border repos in the European repo markets were with counterparts outside the euro area. These counterparts are thought to be mainly market firms in the City of London (Bank of England, 2002). The City of London is also the dominant financial centre for hedging short-term interest rate risk arising from activity in the euro-denominated money markets. According to the latest BIS triennial survey (BIS, 2002a), the United Kingdom is the leading trading centre for OTC single currency interest rate derivatives involving the euro outside the euro area, with a market share of 92%. Turning to standardised contracts, the City of London's role with regard to short-term interest rate (STIR) contracts was also dominant. In April 2003, almost all euro STIR contracts in Europe were traded on LIFFE, the London-based financial derivatives exchange.

1.2 Euro-denominated international loans[45]

According to the BIS international banking statistics, the following features characterise the UK in the euro-denominated international loan market (excluding interbank loans):

43 Indeed, the share of the City of London in secondary trading of Eurobonds, which also includes issues in currencies other than the euro, is estimated at 70% (International Financial Services, London, 2002).

44 However, euro-denominated money market instruments issued by non-euro area residents accounted for about 7% of the outstanding amount of money market instruments denominated in euro in the review period.

45 See Section A.2 for additional details.

- Non-bank borrowers in the United Kingdom are the largest borrowers in euro from the euro area, accounting in the first quarter of 2003 for close to 40% (USD 88 billion) of the outstanding amount of euro-denominated loans made by euro area resident banks to non-bank entities outside the euro area;

- UK resident banks are the major lenders in euro from outside the euro area to non-bank borrowers in the euro area, accounting in the first quarter of 2003 for around 80% (USD 102 billion) of the outstanding amount of such loans;

- UK resident banks are also the largest lenders in euro to non-banks outside the euro area, accounting in the first quarter of 2003 for about two-thirds (USD 65 billion) of the outstanding amount of such loans.

1.3 Euro foreign exchange markets

In the foreign exchange markets, the euro is to a very great extent traded in the City of London. According to the latest BIS triennial survey (BIS, 2002a), total daily foreign exchange trading in euro amounted to about USD 600 billion in April 2001, of which roughly USD 440 billion were transacted in financial centres outside the euro area (see Table 12). Outside the euro area, the United Kingdom was the largest financial centre for foreign exchange trading in the euro, accounting for 47% of daily trading. Similar results hold for the USD/EUR currency pair, the most liquid in the foreign exchange market, suggesting that trading in euro in the City of London is larger than in the US, even when the US dollar is the counterpart currency. Lastly, BIS data indicate that the euro was more traded in the UK foreign exchange market (approximately USD 207 billion per day) than in the euro area (approximately USD 165 billion per day), thereby confirming the leading role of the City of London as a foreign exchange trading centre. This leading position predates the start of EMU, as documented in previous BIS triennial surveys.

In line with its leading role in the foreign exchange markets, the United Kingdom is the principal trading centre for OTC foreign exchange derivatives involving the euro, accounting for one-half of the activity outside the euro area (out of a turnover of approximately USD 300 billion per day, see Table 12). More OTC FX derivatives

Table 12

Foreign exchange (FX) average daily turnover in euro: country breakdown as at April 2001

	FX markets		OTC FX derivatives	
	USD millions	As a % of the total	USD millions	As a % of the total
United Kingdom	207,268	46.4	151,292	50.5
United States	100,111	22.4	58,423	19.5
Switzerland	31,571	7.1	24,371	8.1
Singapore	28,549	6.4	18,019	6.0
Japan	25,934	5.8	19,156	6.4
Rest of the world	53,278	11.9	28,352	9.5
Total (excl. euro area)	446,711	100.0	299,613	100.0
Pro memoria:				
Euro area	165,098		121,332	
Total (incl. euro area)	611,809		420,945	

Sources: BIS (2002a), table E.4, p. 58 and ECB calculations.
Note: Data are net of local inter-dealer double counting.

Table 13

Share of UK resident banks in international banking assets and liabilities

(excluding amounts in domestic currencies[1])

	International banking assets			International banking liabilities		
	Euro	US dollar	Japanese yen	Euro	US dollar	Japanese yen
1999	61.6	21.3	21.3	59.1	19.5	31.7
2000	61.5	21.6	24.9	58.2	20.4	35.1
2001	61.8	22.5	22.7	59.0	21.7	34.6
2002	59.4	22.1	24.4	57.0	21.3	36.8

Sources: BIS and ECB calculations.

1) The share of the UK in euro-denominated amounts is calculated as the ratio of UK banks' euro-denominated international assets/liabilities to all euro-denominated international bank assets/liabilities, excluding euro area banks' euro-denominated international assets/liabilities. Likewise, the share of the UK in US dollar and Japanese yen-denominated amounts are calculated by excluding from the total US banks and Japanese banks' international assets/liabilities that are respectively US dollar and Japanese yen-denominated.

denominated in euro were traded in the United Kingdom (USD 151 billion) than in the euro area (approximately USD 121 billion). According to the 1998 BIS triennial survey, the City of London was by then already the dominant trading centre for OTC foreign exchange derivatives in the legacy currencies.

1.4 Euro-denominated international banking assets and liabilities

Excluding banks resident in the euro area, banks resident in the United Kingdom account for the largest share of approximately 60% of euro-denominated international banking assets and liabilities reported to the BIS (see Table 13).[46] Interestingly, the share of UK resident banks in US dollar-denominated and Japanese yen-denominated international banking assets and liabilities (excluding respectively US and Japanese resident banks) is almost three times lower. This pattern does not seem to be related to the advent of the euro, as results prior to 1999 are similar, and partly reflect the presence of euro area-owned banks in the City of London, which are very active in euro-denominated markets.

2 The euro's contribution to financial market activity in the City of London

The relation between the euro and the City of London is one of mutual significance: not only is the City of London pivotal to the international role of the euro, but the euro is also of considerable importance for the City of London itself, an importance that has steadily grown in recent years. For example, the share of the euro in the assets and liabilities of banks resident in the United Kingdom has increased, rising from about 19% in 1999 to about 26% in 2003. Moreover, the euro has recently surpassed the US dollar in importance in UK banks' balance sheets, perhaps also partially reflecting the euro's appreciation in the review period. Focusing on banks' foreign currency-denominated assets and liabilities, i.e. excluding those denominated in pound sterling, the euro's share has increased even more strongly, rising by about 10 percentage points since 1999 to reach close to 50% in March 2003. The euro also recently surpassed the share of the US dollar, which has steadily declined since end-2001.

46 International banking assets and liabilities include foreign currency-denominated as well as cross-border assets and liabilities. An important caveat is that the United States does not provide the BIS with a full currency breakdown of international bank assets and liabilities. As a result, the value mentioned is an upper estimate of the share of UK resident banks.

Table 14

Assets and liabilities of banks operating in the UK: currency shares

(as a percentage of the total amount outstanding, at end-month exchange rates)

	Assets		Liabilities	
	Euro	US dollar	Euro	US dollar
	In assets and liabilities denominated in all currencies			
January 1999 [1)]	19.1	23.1	18.5	24.3
December 1999	17.6	22.7	16.5	23.4
December 2000	19.3	24.6	17.3	25.7
December 2001	20.0	26.3	18.9	26.7
December 2002	22.8	22.7	21.5	23.9
March 2003	26.6	21.9	25.5	22.8
	In assets and liabilities denominated in foreign currencies			
January 1999 [1)]	36.5	44.7	35.8	47.8
December 1999	35.0	45.1	32.9	46.8
December 2000	36.1	46.0	32.7	48.5
December 2001	37.4	49.0	35.2	49.7
December 2002	43.3	43.1	40.4	44.9
March 2003	47.7	39.2	45.4	40.6

Source: Bank of England.
1) US dollar figures relate to end-December 1998.

Alongside the contribution of the City of London to euro-denominated markets outside the euro area, a number of specific factors have underpinned the increasing use of the euro in London:

- Almost one-fifth of euro area companies are, in addition to being listed on their domestic exchanges, also listed on the London Stock Exchange (LSE). This creates demand for euro in the City, as trading is typically conducted in the currency of the company's nationality. Against this background, equity trading statistics reported by LSE members suggest that about one-third of these are euro-denominated.[47] In comparison, trading in US dollars reported by LSE members is estimated at around 10%.

- The Bank of England itself has contributed to improving liquidity in the euro-denominated debt securities markets by regularly issuing – initially on behalf of the UK Treasury, but now on the Bank's own account – short-term bills and medium-term notes in euro. Each month, the Bank of England issues a total of €600 million in 3-month bills and €300 million in 6-month bills; currently, there are €3.6 billion bills outstanding. In addition, the Bank issues annually a €2 billion 3-year note, with €6 billion notes currently outstanding.

- The City of London has also recently become an important financial centre for euro-denominated credit derivatives.[48] According to data provided by one leading institution in this market, referring only to its own activity, three-quarters of all the credit derivatives it trades in the City of London are euro-denominated, while only one-quarter are US dollar-denominated. However, an important caveat is that the currency denomination of credit derivatives does not necessarily imply that actual financial flows are necessarily denominated in this currency, which may be tailored to the evolution of customers' desired currency exposure.

47 *While euro area shares are traded on the LSE, liquidity is often concentrated in the domestic market. Therefore, equity trading in euro reported by LSE members is likely to reflect, at least partly, transactions on euro area stock exchanges, although these may be carried out remotely from London. Moreover, in early-2003 the euro was surpassed by the pound sterling as the leading currency for equity trading reported by LSE members. This development is probably attributable to changes in reporting rules, as some members now report their activity to virt-x, a pan-European exchange wholly owned by SWX, the Swiss exchange.*

48 *According to market participants, the total nominal amount outstanding of credit derivatives totalled approximately USD 2,000 billion in 2002, with default credit swaps accounting for 70%.*

3 The use of the City by non-UK market participants for their business in euro

In addition to UK nationals, other participants from the euro area, US and Asia are, among others, active in the euro-denominated markets in the City of London. A breakdown of euro-denominated assets and liabilities in the City of London by nationality of bank ownership at the end of March 2003 suggests that the bulk of these are held by euro area and UK-owned banks, accounting for approximately 63% of the total (see Table 15). By contrast, business in euro by US-owned and Japanese-owned banks is smaller in magnitude, accounting for approximately 12% of the total.[49]

Interestingly, assets and liabilities in euro of euro area-owned banks as at the end of March 2003 are 50% to 70% larger than their assets and liabilities in US dollars, implying that they mostly operate in the City in euro. This contrasts with UK, US and Japanese-owned banks, whose activities in euro are smaller in magnitude than those in US dollars[50], although this discrepancy has declined markedly since the start of EMU.

While euro area banks seem to account for the largest share of euro-denominated financial activity in the City of London, available data may not capture in full all euro-denominated activity of US and Asian market participants. In particular, the data capture only part of the activity of large US investment banks. Interestingly, discussions with market participants suggest that, in their view, the City of London is used by non-EU residents as a hub for their business denominated in euro. They indicated, for instance, that banks or hedge funds located in the City of London can be used by US (and also continental European) investors to purchase euro-denominated bonds on their behalf, albeit to an extent difficult to estimate. They additionally considered the City of London to be an "entry point" whereby non-euro area residents can purchase euro area equities.

49 Financial activity captured in the reported data only pertain to traditional commercial banking activity.

50 Euro-denominated liabilities of Japanese-owned banks reported in December 2002 and March 2003 are an exception to this trend.

Table 15

Total amount outstanding of euro and US dollar-denominated assets and liabilities: breakdown by nationality of ownership

(GBP millions)

		Assets		Liabilities	
		Euro	US dollar	Euro	US dollar
UK-owned banks	January 1999	74,475	128,255	74,073	144,043
	December 2002	197,014	251,225	182,663	297,953
	March 2003	237,130	265,067	221,369	311,114
Euro area-owned banks	January 1999	275,970	186,730	268,845	190,389
	December 2002	351,344	252,091	330,954	258,108
	March 2003	446,867	262,387	423,278	271,687
US-owned banks	January 1999	66,071	87,716	64,964	94,781
	December 2002	90,909	85,643	87,005	95,983
	March 2003	85,763	91,596	83,981	99,410
Japanese-owned banks	January 1999	22,470	65,495	21,688	62,686
	December 2002	47,325	61,328	45,320	35,341
	March 2003	43,958	57,212	42,572	30,716
All banks	January 1999	506,857	594,611	489,759	623,607
	December 2002	827,535	824,566	779,729	866,684
	March 2003	1,075,145	883,296	1,028,446	920,101

Source: Bank of England.
Note: US dollar figures for January 1999 relate to end-December 1998.

Table 16

Share of the euro in selected assets and liabilities of UK resident banks

(as a % of the total amount outstanding)

	Loans to non-residents	Sight and time deposits of non-residents	Loans to non-residents	Sight and time deposits of non-residents
	UK-owned banks		Euro area-owned banks	
January 1999	20.2	14.7	35.5	42.5
December 2000	30.5	15.2	36.1	31.1
December 2002	31.0	18.3	33.7	40.2
March 2003	31.7	19.0	38.3	42.8
	US-owned banks		Japanese-owned banks	
January 1999	27.5	28.1	8.9	5.7
December 2000	28.2	23.5	18.9	6.4
December 2002	32.1	27.1	25.6	11.5
March 2003	34.3	27.7	27.8	6.1

Source: Bank of England.

Turning to activities with non-residents, substantial differences emerge across bank nationalities (see Table 16). With regard to euro area-owned banks, the euro is the currency of denomination of a high share of non-residents' deposits (about 40%). When it comes to loans to non-residents, the share of the euro is similar. Conversely, regarding UK, US and Japanese-owned banks, the share of the euro is lower for non-residents' deposits than for loans received by non-residents. This could suggest that non-euro area-owned banks tend to refinance their euro-denominated loans relatively more in the City of London than with non-residents, either by wholesale market borrowing or by using the swap market.

These data can be complemented by statistics available on the financial relations of UK resident banks with their non-resident offices, which include head offices (for non-UK-owned banks) and other branches (see Table 17). As may be expected, euro area banks tend to some extent to refinance themselves with their headquarters in the euro area, as the euro's share has been steadily higher for their liabilities than for

Table 17

Share of the euro in assets and liabilities of UK resident banks with non-resident offices

(as a % of the total)

	UK-owned banks		Euro area-owned banks		US-owned banks		Japanese-owned banks	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
September 2002	38.4	17.3	37.4	44.2	29.2	26.1	25.4	4.4
October 2002	36.0	16.2	37.4	43.8	28.5	24.8	29.2	4.3
November 2002	33.7	12.6	38.6	45.9	28.4	23.1	30.1	3.8
December 2002	33.6	15.4	34.8	43.5	26.9	25.0	32.4	10.1
January 2003	35.6	15.0	37.5	45.1	30.1	24.8	32.3	7.5
February 2003	37.3	14.5	39.4	50.7	28.2	23.8	34.5	4.5
March 2003	37.9	15.6	38.8	45.0	29.1	23.7	36.5	1.6
April 2003	38.3	14.1	39.4	47.4	29.6	24.9	38.3	2.5

Source: Bank of England.

their assets in recent months, with an 8 percentage point differential in April 2003. This does not apply to UK and Japanese-owned banks, for which the converse always holds, perhaps confirming that they refinance themselves in the City of London itself.

4 Conclusions

The United Kingdom accounts for an important share of euro-denominated financial activity outside the euro area, the bulk of which is undertaken in the City of London. Depending on the market segment, its share typically ranges from one-third to two-thirds of euro-denominated financial activity outside the euro area (e.g. respectively in total issuance of euro-denominated bonds by non-euro area residents and in total international bank assets and liabilities outside the euro area, respectively). In the market for OTC single currency interest rate derivatives involving the euro outside the euro area, the United Kingdom's market share reaches as high as 90%.

Euro-denominated financial activity in the City of London has grown in recent years, lately surpassing activity in US dollars, with the euro accounting for the largest share, almost 50%, of UK resident banks' assets and liabilities denominated in foreign currency. Financial activity in euro in the City of London not only stems from private market participants – the Bank of England itself has contributed to money and bond market liquidity, issuing short and medium-term debt securities in euro, for example.

Euro area-owned banks account for the largest share of euro-denominated financial activity in the City of London. They tend to some extent to act as lenders of euro and to refinance themselves with their headquarters in the euro area. Discussions with market participants suggest that non-EU market players may also use the City as a hub for their business denominated in euro.

The significant contribution of the City of London to the international role of the euro in financial markets may be partly explained, on the one hand, by its close links with the euro area. The United Kingdom itself, as an EU member, is obviously deeply integrated into the euro area. The United Kingdom is also connected to the euro area money market through TARGET. Moreover, in the last few decades, the City of London has developed specific expertise in continental European markets, playing a substantial role as a financial centre for the legacy currencies well before the start of EMU.

On the other hand, the contribution of the City of London to the international role of the euro in financial markets is highly significant in percentage terms, especially given that euro-denominated activity has expanded relatively less in other financial centres outside Europe, in particular in the United States and in Asia. For instance, the interest of market participants based in the United States in euro-denominated financial activity seems to have remained limited, with the important exception of bond issuance, although they may also resort to London as a hub to do business denominated in euro. As a result, any analysis of the role of the euro in financial markets outside the euro area is, to a great extent, also an analysis of its role in the City of London.

B. The euro in third countries

This chapter reviews the role of the euro in countries outside the euro area (so-called "third countries"), distinguishing between official and private use. Official use mainly refers to the euro's role in third countries' monetary and exchange rate policies, in the form of an anchor or reference currency, a reserve currency or an intervention currency. Private use refers to the use of the euro by private agents in third countries, mainly as a parallel currency to complement national currencies as a tool for accumulating financial assets or in the denomination of specific transactions and contracts.

1 Official use: the euro in third countries' exchange rate policies

1.1 The euro as an anchor currency

Choosing the appropriate exchange rate regime is one of the key policy choices for monetary authorities, with additional implications for the size and composition of foreign reserves and interventions. The IMF lists about 150 countries with exchange rate regimes not classified as independently floating (i.e. thus having an anchor or reference currency). In 41 of them[51], the euro is involved in their exchange rate regime (see Table 18) – either as the sole anchor or reference currency (approximately 30 countries), or as part of the SDR[52] or another currency basket that includes the euro (the remainder).

As mentioned in last year's review, the use of the euro in third countries' exchange rate regimes has a strong geographical and institutional underpinning, with many of these countries being close to the euro area and/or having established special institutional arrangements with the European Union. Acceding and accession countries as well as countries of the western Balkans, northern Africa and the CFA Franc Zone are the main countries using the euro as their sole anchor. In the rest of the world, however, the euro only plays a very limited role as an anchor currency. In each case, the decision to use the euro as an anchor currency is a unilateral decision and does not involve any commitment from the Eurosystem.

Developments in the review period

The choice of an anchor currency is a fundamental one, changes to which are infrequent. In the period under review, the main changes involving the euro as an anchor currency took place in the countries of the Gulf Cooperation Council (GCC) and Russia.

At the beginning of 2003, four of the GCC countries that still had an official peg to the SDR switched to a US dollar peg, as a first step towards monetary union, scheduled to come into existence by 2010. However, since these countries were already pegging their currencies de facto to the US dollar, this change basically merely adjusts form to substance. In Russia, the authorities announced a shift from a tightly managed float based exclusively on the US dollar to a managed float focusing on the real exchange rate, based on a basket giving a 60% weight to the US dollar and a 40% weight to the euro.[53]

51 *Other entities linking their exchange rate regime to the euro include the French territorial communities and overseas territories (Saint-Pierre et Miquelon, Mayotte, French Polynesia, New Caledonia and Wallis and Futuna), the European microstates that are not IMF members (the Vatican City, and the principalities of Monaco and Andorra), as well as Kosovo and Montenegro, all by means of official euroisation (see Table 18). As a result, a combined total of 51 countries and territories have an exchange rate regime involving the euro.*

52 *Effective from 1 January 2001, the weight of the euro in the SDR basket (29%) is based on the importance of the euro area as a single economic entity. The amount of the euro in the SDR valuation basket is €0.426. As the values of the amounts of each currency fluctuate along with the exchange rate, the euro's share in the SDR fluctuates as well, at around 32% over the review period.*

53 *In addition, Table 18 takes account of exchange rate regime reclassifications by the IMF concerning the Czech Republic (from independent to managed floating) and FYR Macedonia (explicitly named as a conventional peg arrangement). However, de facto exchange rate regimes in both countries did not change over the review period.*

Table 18

Countries with exchange rate regimes linked to the euro

(as at 30 June 2003)

Region	Exchange rate regimes	Countries
European Union (non-euro area)	ERM II	Denmark
	Pro memoria: Independent floating	Sweden, United Kingdom
Accession countries	Euro-based currency boards	Bulgaria, Estonia, Lithuania
	Unilateral shadowing of ERM II	Cyprus, Hungary
	Peg arrangements based on a basket involving the euro	Latvia (SDR[1)]), Malta (euro share: 70%)
	Managed floating with the euro as reference currency	Czech Republic, Romania[2)], Slovak Republic, Slovenia
	Pro memoria: Independent floating	Poland, Turkey[3)]
Western Balkans	Unilateral euroisation	Kosovo, Montenegro
	Euro-based currency boards	Bosnia and Herzegovina
	Peg arrangements or managed floating with the euro as reference currency	Croatia, FYR Macedonia, Serbia
Other regions	Euroisation[4)]	European microstates[5)], French territorial communities[6)]
	Peg arrangements based on the euro	CFA Franc Zone[7)], French overseas territories[8)], Cape Verde, Comoros
	Managed floating with the euro as reference currency	Tunisia
	Peg arrangements and managed floats based on the SDR and other currency baskets involving the euro (share of the euro)[10)]	Israel (24.5%)[9)], Seychelles (37.7%), Russia (40%), Botswana, Morocco, Vanuatu, Jordan, Socialist People's Libyan Arab Jamahiriya

Sources: IMF and ECB compilation.

1) The SDR is a basket of currencies, including the US dollar, the euro, the Japanese yen and the pound sterling.
2) With an informal reference to a currency basket, involving both the US dollar and the euro.
3) Turkey is a candidate country; negotiations for accession have not yet started.
4) In the case of Andorra: unilateral euroisation. The other countries and jurisdictions are entitled to use the euro as their official currency.
5) Republic of San Marino, Vatican City, Principality of Monaco, Andorra.
6) Saint-Pierre et Miquelon, Mayotte.
7) WAEMU (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo) and CAEMC (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea, Gabon).
8) French Polynesia, New Caledonia, Wallis and Futuna.
9) Peg with automatically and asymmetrically widening band (currently about 50%), data on weight and band refer to end-2002.
10) Russia: real exchange rate target based on a basket comprising the US dollar and the euro. Botswana: weighted basket of currencies comprising the SDR and the South African rand. Morocco: weighted basket in accordance with the distribution of Morocco's foreign trade and the pattern of currencies of settlement. Vanuatu: weighted (trade and tourism receipts) basket of currencies of Vanuatu's major trading partners. Jordan: while officially pegging its currency to the SDR, has in practice tightly linked its exchange rate to the US dollar.

1.2 The euro as a reserve currency

In 2002, the trend of rapidly growing global foreign exchange reserves continued. In total, global foreign exchange reserves rose by USD 350 billion to reach approximately USD 2,400 billion.[54] Emerging market and developing countries accounted for about 70% of this increase (USD 244 billion). Thus, their share in global foreign exchange reserves rose to 63% (see Chart 11).

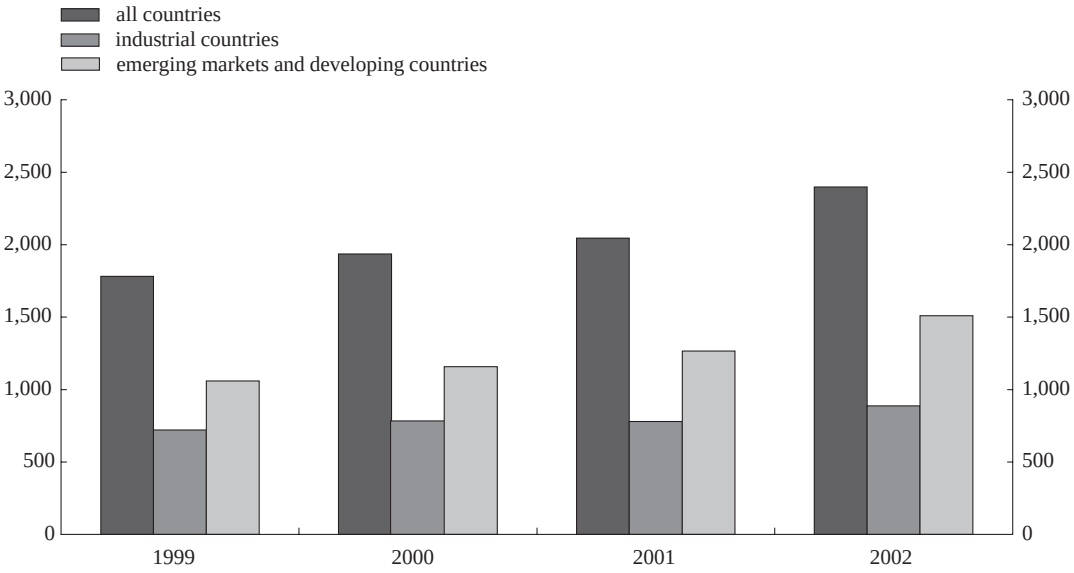
Since the beginning of 1999, global foreign exchange reserves have increased by USD 759 billion, with approximately 85% of this increase originating in seven countries, namely China, India, Japan, Hong Kong, Mexico, Russia and South Korea.

54 The information on aggregate reserve holdings is taken from IMF (2003a), with SDR values converted into US dollar values using end-year exchange rates.

Chart 11

Global foreign exchange reserves

(USD billions)



Sources: IMF (2003a) and ECB calculations.

In November 2003, the IMF revised its statistics on the currency composition of international foreign exchange reserves on the basis of improved country data (IMF, 2003c). These revisions have had a substantial "level effect" on the share of the euro, which

Table 19

Official foreign exchange reserves: currency shares

(as a percentage of total identified holdings, end-of-year values)

	2000		2001		2002	
All countries	original	*revised*	original	*revised*	original	*revised*
US dollar	67.6	*67.5*	67.7	*67.5*	64.8	*64.5*
Euro	13.0	*15.9*	13.2	*16.4*	14.6	*18.7*
Japanese yen	5.2	*5.2*	4.9	*4.8*	4.5	*4.5*
Pound sterling	3.8	*3.8*	4.0	*4.0*	4.4	*4.4*
Swiss franc	0.7	*0.7*	0.6	*0.6*	0.7	*0.7*
Unspecified currencies	9.7	*6.9*	9.7	*6.6*	11.0	*7.3*
Industrial countries						
US dollar	72.7	*72.7*	73.3	*73.4*	70.1	*70.0*
Euro	10.4	*17.2*	9.7	*17.5*	11.3	*21.3*
Japanese yen	6.3	*6.3*	5.6	*5.6*	4.8	*4.7*
Pound sterling	2.0	*2.0*	1.8	*1.8*	2.2	*2.2*
Swiss franc	0.2	*0.2*	0.3	*0.3*	0.6	*0.6*
Unspecified currencies	8.3	*1.6*	9.2	*1.3*	11.1	*1.2*
Developing and emerging market countries						
US dollar	63.8	*63.7*	63.8	*63.5*	61.3	*60.8*
Euro	14.9	*15.0*	15.6	*15.6*	16.8	*16.9*
Japanese yen	4.4	*4.4*	4.3	*4.3*	4.3	*4.3*
Pound sterling	5.2	*5.2*	5.5	*5.5*	5.8	*5.9*
Swiss franc	1.0	*1.0*	0.9	*0.9*	0.8	*0.8*
Unspecified currencies	10.7	*10.8*	9.9	*10.2*	10.9	*11.3*

Source: IMF (2003a, 2003c).

has increased by more than four percentage points compared with the data published in the latest IMF Annual Report (IMF, 2003a). Indeed, the share of euro-denominated assets in global foreign exchange reserves held at the end of 2002 is now reported to have reached 18.7%, compared with 14.6% prior to the revisions (see Table 19).

The level effect was most pronounced for the group of industrial countries. As regards these countries' reserve holdings, the share of the euro at the end of 2002 has been revised substantially, from 11.3% to 21.3%, at the expense of the share of reserves held in "unspecified currencies", which has decreased from 11.1% to 1.2% (see Table 19). By contrast, the currency composition of foreign exchange reserves held by the group of developing and emerging market countries remained essentially unchanged following the revisions.

According to the revised data, the evolution of the share of the euro over time is similar to the evolution suggested by previous data. Since 2000, the share of the euro in global foreign exchange reserves has been growing gradually from 15.9% to 18.7%. Both industrial and developing and emerging market countries have increased their holdings of euro-denominated reserve assets. Moreover, in 2002, the increase in the share of the euro was related for the first time to both a quantity (+ SDR 29.6 billion) and price effect (+ SDR 26.7 billion). Symmetrically, the share of reserve holdings in US dollars decreased in 2002. This decrease, in relative terms, occurred in spite of an increase, in absolute terms, of central banks' US dollar-denominated reserves of more than SDR 109 billion, as the depreciation of the US dollar had a negative impact on the value of US dollar-denominated reserves (by - SDR 82 billion).

The gradual increase in the share of the euro can be partly explained by historical evidence suggesting that the currency composition of reserves changes only gradually. Moreover there is a strong regional pattern in the recent build-up of foreign exchange reserves. As mentioned above, the euro is mainly an anchor currency for the EU's neighbouring countries. This reflects a general trend whereby the currency composition of foreign exchange reserves is closely linked to the choice of an anchor currency as well as to trade and financial flows (Eichengreen and Mathieson, 2000).[55] In contrast, the use of the US dollar in third countries' exchange rate regimes is more widespread and not only limited to countries in the Western

55 Moreover, risk management considerations seem to have gained in importance when countries decide on the currency composition of their reserves (Pringle and Carver, 2003a).

Table 20

Trade and financial links between the EU/the US and emerging markets, breakdown by region

(%)

	Share of EU/US in total trade[1] of the respective regions			Share of EU/US banks in total foreign claims[2] by BIS reporting banks on the respective regions	
	EU	US		EU banks	US banks
Africa	45.5	11.9	Africa & Middle East	67.6	7.5
Emerging Asia	13.8	16.7	Emerging Asia	47.5	16.8
Emerging Europe	51.1	4.8	Emerging Europe	81.4	6.4
Middle East	26.8	12.6			
Western Hemisphere	13.6	51.3	Western Hemisphere	60.4	24.5

Sources: IMF, BIS and ECB calculations.
1) Average over 1999-2002.
2) End-2002.

Table 21

Regional patterns in the recent build-up in foreign exchange reserves

Region	Reserve holdings	As a % of total reserves	Variation in reserves	Contribution to total variation	Reserve holdings	As a % of total reserves
	End-1998 (USD billions)	End-1998	1998-2002 (USD billions)	1998-2002 (%)	End-2002 (USD billions)	End-2002
Industrialised countries	670.0	43.7	217.8	32.0	887.8	40.1
Excluding Japan	466.8	30.4	-30.4	-4.5	436.3	19.7
Japan	203.2	13.2	248.2	36.5	451.5	20.4
Developing and emerging market countries	864.7	56.3	462.1	68.0	1,326.8	59.9
Africa	39.9	2.6	29.3	4.3	69.1	3.1
Asia	482.2	31.4	319.3	47.0	801.6	36.2
Europe	100.9	6.6	85.8	12.6	186.7	8.4
Middle East	83.7	5.5	28.3	4.3	112.0	5.1
Western Hemisphere	158.0	10.3	-0.6	-0.1	157.4	7.1
Total	1,534.7	100.0	679.9	100.0	2,214.6	100.0
Pro memoria:						
Japan and other Asian countries	685.4	44.6	567.5	83.5	1,253.1	56.6

Sources: IMF and ECB calculations.

Hemisphere. In addition to the latter, the US dollar is used – either de jure or de facto – as an anchor currency for some countries in Asia and the Commonwealth of Independent States (CIS). However, the trade and financial flows of these countries with the US and the EU are more equally split. Indeed, when focusing on financial flows, the share of EU banks in total foreign claims on various regions is always substantially higher than that of US banks (see Table 20).

Against this background, it is important to note that the countries of emerging Asia account for almost 50% of the total reserve build-up in 1999-2002, measured in US dollar terms (see Table 21).[56] In the same period, Japan more than doubled its foreign exchange holdings, whereas reserves of the remaining industrial countries decreased both in absolute amounts and as a share of total reserves. Moreover, the increase in foreign exchange reserves by countries in European emerging market countries stems largely from Russia.[57] Excluding Russia, the share of European emerging market countries in total reserves was basically stable between end-1998 and end-2002 at about 6%. The combined share of countries in the Middle East and Africa also did not change.

While a country or regional breakdown of the currency composition of foreign exchange reserves is not available, the evidence suggests that Asian countries hold the bulk of their reserves in US dollar-denominated financial assets. For example, the Hong Kong Monetary Authority, which accounted for about 5% of total foreign exchange reserves in US dollar terms at end-2002, has the following benchmarks for the asset allocation of its Exchange Fund: 80% for the "US dollar bloc", 15% for the "European bloc" and 5% for the Japanese yen (Pringle and Carver, 2003a).

56 *Figures for total reserves in Table 21 slightly differ from those reported in Chart 11, as Table 21 data are based on country-by-country data as reported in the IMF's International Financial Statistics.*

57 *There is a debate on whether the recent reserve build-up in emerging Asia, Mexico and Russia has been faster than warranted by the fundamentals, i.e. economic size, current and capital account vulnerability, exchange rate regime choice and the opportunity costs of reserve holdings (IMF, 2003b).*

Table 22

Currency holdings as a percentage of reserves by region – survey results

Region	Range of holdings of US dollars	Average holdings of US dollars	Range of holdings of euro	Average holdings of euro
Africa	40–100	62	0–30	18
Emerging Asia	24–85	60	0–16	6
Emerging Europe	1–80	39	11–98	50
Western Hemisphere	0–100	77	0–50	14
Total	0–100	57	0–98	29

Source: Pringle and Carver (2003b).

A similar picture emerges from a recent survey of central bank reserve asset management carried out in summer 2002 (Pringle and Carver, 2003b). 54 central banks holding about USD 1.1 trillion, i.e. just below one-half of the world's total, participated, with 36 of them providing data on the currency composition of their reserves. The regional breakdown reveals that the share of the euro seems indeed low in Asia, reaching at most 16% in the Asian central banks that provided information. By contrast, European countries hold as much as 98% of their reserves in euro-denominated financial assets, against 50% for countries in the Western Hemisphere and Africa (see Table 22).[58]

Data provided by the few central banks that publish the currency breakdown of their reserves also support the view that marked regional differences exist. For a number of non-Asian G20 countries as well as for some of the EU's neighbours, the share of the euro ranges from 40% to 65% (see Table 23). Moreover, at the beginning of 2003, Russian officials announced that the share of euro-denominated assets in total Russian reserves would rise over the year from 20% to 30%.

In short, regional patterns in the recent build-up of reserves worldwide have not favoured the euro, as these developments have mainly

58 *In addition, the survey results seem to confirm that diversification into the euro is gradual. 21 (out of 50) central banks reported that they had increased their share of euro-denominated financial assets in their foreign exchange reserves over the last twelve months, while eight (out of 40) declared their intention to increase their euro share in the next twelve months.*

Table 23

Currency breakdown of total foreign exchange reserves of selected countries

(%)

	Euro		US dollar		Japanese yen		Other currencies	
	June 2002	June 2003	June 2002	June 2003	June 2002	June 2003	June 2002	June 2003
G20 countries								
Australia	37	40	42	40	8	9	13 [1)]	11 [1)]
Canada	39	46	58	51	3	3	0	0
United Kingdom	53	52	32	32	15	16	0	0
United States	51	56	...	...	49	44	0	0
EU neighbouring countries								
Croatia	66	65	32	32	...	...	2 [2)]	3 [2)]
Latvia [3)]	36	43	51	43	3	3	10	11
Slovak Republic	59	63	31	33	2	0	8 [1)]	4 [1)]
Switzerland	49	51	38	37	0	0	13	12

Sources: Websites of countries' authorities and ECB calculations.
1) Including SDRs and gold.
2) Including any holdings of Japanese yen.
3) Latvia pegs its currency to the SDR.

originated in countries whose currency is de jure or de facto oriented towards the US dollar. By contrast, regions where the euro plays a more prominent part as an anchor currency and where financial and trade links with the EU are strong have accumulated foreign reserves to a lesser extent.

1.3 The euro as an intervention currency

The functions of anchor, reserve and intervention currency are intricately intertwined. Countries that are characterised as independently floating and that conduct monetary policy by setting short-term interest rates usually intervene infrequently, most often to calm disorderly market conditions. This description fits all non-euro area industrial countries, apart from Denmark. Hence, foreign exchange interventions are mostly typical of developing and emerging market economies.

Japan is an exception, however. Authorities there have intervened regularly and extensively in foreign exchange markets, as reflected in the reserve build-up discussed in the previous section.[59] In the period under review, such interventions amounted to about USD 60 billion. Japan is one of the few countries to publish the currency composition of its interventions. The data indicate that only 2.5% of purchases were in euro, whereas the bulk of interventions purchased US dollars.

By contrast, foreign exchange interventions are conducted much more regularly by central banks and the monetary authorities of developing and emerging market economies.[60] Similar to reserves, the currency composition of interventions is mostly unknown, thereby making it difficult to assess the euro's role as an intervention currency. Nevertheless, given the close link between anchor and intervention currencies, it can be assumed that countries using the euro as an anchor probably also conduct the bulk of their interventions in euro.

Press reports and publicly available statements by selected national banks indicate that several acceding countries, including the Czech Republic, Hungary, Slovakia and Slovenia, intervened to stabilise their currency against the euro in the review period. Moreover, Romania gave the euro the status of reference currency, announcing that it would only intervene in euro. Finally, the authorities of some western Balkan countries were this year again active in the foreign exchange market in managing their exchange rate vis-à-vis the euro.

2 Private use: the euro as a parallel currency in third countries

In many developing and transition economies, residents hold a significant share of their financial assets in the form of foreign currency-denominated assets, mostly in foreign cash or foreign currency-denominated bank deposits. As already documented in ECB (2002), holdings of euro banknotes and euro-denominated deposits outside the euro area can be considered as one of the facets of the international role of the euro, in particular in regions that neighbour the EU. Recent information suggests that developments reported last year were, as suggested at the time, indeed dominated by one-off effects related to the euro cash changeover. The level of euro-based currency and asset substitution observed in these countries has since then remained broadly stable.

2.1 Currency substitution – the use of euro cash outside the euro area

Given the anonymity of banknotes, the geographical holding structure is generally

59 *Information on foreign exchange interventions by Japanese authorities can be found on the website of the Ministry of Finance, http://www.mof.go.jp/english/e1c021.htm.*

60 *For an in-depth analysis of foreign exchange interventions by developing and emerging market countries, see Canales-Kriljenko (2003).*

unknown. Data on euro banknotes in circulation outside the euro area are scarce. The most reliable, albeit incomplete, information on the amount of euro banknotes circulating abroad is provided by data on shipments by banks of euro banknotes to destinations outside the euro area (see Chart 12).[61] In total, €36 billion were provided to non-euro area residents via this channel from December 2001 to June 2003, accounting for around 10% of the total amount of euro currency in circulation.

It is safe to assume that in the first months of 2002, shipments were the main source of euro banknote outflows. However, since then transfers of euro banknotes to and from the euro area by other means, such as tourism, workers' remittances or related to activity in the grey economy, have also affected holdings of euro banknotes abroad.

Assigning euro banknotes circulating abroad to specific regions is complex and can only be done for a small proportion of the amount mentioned above. For some countries, namely the former Yugoslav republics, estimates by national authorities suggest that amounts of euro banknotes held are non-negligible, e.g. in Croatia (approximately €1.6 billion) or Slovenia (approximately €450 million). By contrast, euro-based currency substitution seems to be lower in the EU's remaining neighbouring countries. For example, estimates put the amount of euro banknotes in circulation in Hungary at approximately €150 million. Finally, in Kosovo and Montenegro, where the euro has been introduced as legal tender, euro cash in circulation is believed to amount to approximately €440 million and €250 million respectively.

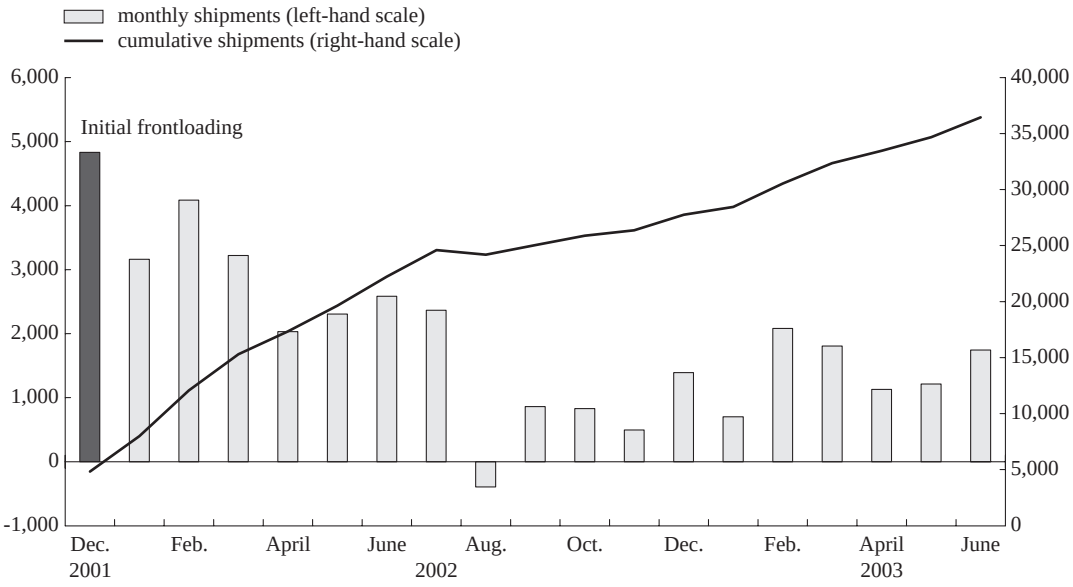
Turning to evidence available from press reports or of a more anecdotal nature, euro banknotes seem to be used as a medium of exchange and as a store of value in regions bordering the euro area, or in places which receive euro area tourists. Symmetrically, tourism to destinations in the euro area may have become an important source of demand for euro banknotes outside the euro area. For example, data on foreign exchange cash

61 The information has been compiled in cooperation with the national central banks of the Eurosystem.

Chart 12

Net shipments [1] of euro banknotes to destinations outside the euro area

(€ millions)



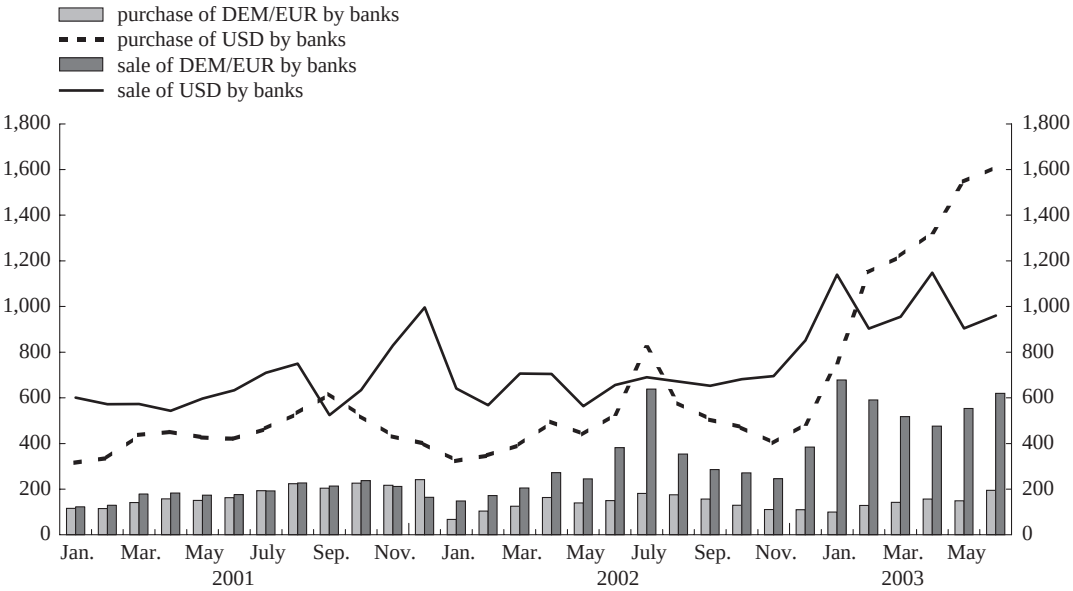
Source: Eurosystem.

1) Net shipments = Euro banknotes sent abroad minus euro banknotes received.

Chart 13

Volume of cash transactions in US dollars and euro in Russia [1)]

(USD millions)



Source: Central Bank of Russia and ECB calculations.
Notes: Bank purchase = customer sale; bank sale = customer purchase.
1) Between authorised banks and individuals.

transactions by authorised Russian banks suggest that customer purchases of euro banknotes have increased substantially in recent months. Moreover, such purchases seem to follow a seasonal pattern linked to the main tourism season (see Chart 13).

This may indicate that Russian tourists travelling to Europe formerly used the US dollar as a vehicle currency, but now – to a more important extent than before with legacy currencies – directly exchange their roubles into euro when they travel to euro area countries.

2.2 Asset substitution – the use of euro-denominated bank deposits

As reported in last year's review, the euro cash changeover was accompanied in many countries neighbouring the EU by a strong increase in euro-denominated deposits estimated at approximately €13.5 billion. On this occasion, households deposited "under the mattress" legacy currency cash holdings with banks rather than exchanging them directly for new euro banknotes. The countries of former Yugoslavia experienced the largest increase in euro-denominated deposits in 2001 (€4.4 billion), closely followed by acceding and accession countries (€4.0 billion).

The latest data[62] (Table 24) confirm that this discrete jump was indeed a by-product of the cash changeover, as in 2002 total holdings of euro-denominated deposits increased by only

62 *The data presented here were collected in 2003 by the ECB in a survey of central banks of countries neighbouring the EU. The following countries or territories participated in the data collection: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, the Czech Republic, Egypt, Estonia, Hungary, Israel, Jordan, Kosovo, Latvia, Lebanon, Lithuania, the Former Yugoslav Republic of Macedonia, Malta, Moldova, Morocco, Poland, Romania, Russia, Saudi Arabia, Serbia and Montenegro, Slovakia, Slovenia, South Africa, Turkey and Ukraine. Their cooperation is gratefully acknowledged. The ECB also obtained data from a number of industrialised economies that neighbour the euro area (e.g. Norway, Switzerland), which are disregarded in this sub-section, as developments in these countries are likely to be explained by reasons very different from those relevant for the first group of countries or territories.*

Table 24

Outstanding euro-denominated bank deposits in selected countries

	Absolute amounts (€ millions)		As a % of total deposits		As a % of foreign deposits	
	End-2001 [1]	End-2002	End-2001 [1]	End-2002	End-2001 [1]	End-2002
Cyprus	1,066	1,762	5.0	7.9	13.5	23.4
Czech Republic	3,522	3,564	7.4	6.7	50.9	59.6
Estonia	603	1,017	19.2	26.2	50.4	62.7
Hungary	3,029	2,686	11.2	9.4	41.0	58.1
Latvia	592	879	11.6	14.4	15.7	19.4
Lithuania	53	...	1.9	...	4.5	...
Malta	547	749	6.6	8.8	17.7	24.9
Poland	4,034	3,557	4.6	4.7	27.2	28.3
Slovak Republic	1,121	1,686	8.5	9.2	43.3	59.6
Slovenia	3,006	...	37.9	...	83.6	...
Bulgaria	739	872	15.3	15.8	29.3	32.3
Romania	779	...	9.3	...	18.9	...
Turkey	12,509	12,831	15.2	15.5	25.6	27.0
Albania	283	260	18.3	12.4	37.8	37.9
Bosnia	839	884	49.5	46.1	82.4	88.0
Croatia	8,116	8,118	72.3	56.8	82.6	83.7
Kosovo	478	708	100.0	100.0	100.0	100.0
Macedonia (FYR)	409	400	44.0	55.1	91.0	85.5
Montenegro	56	170	100.0	82.9	100.0	82.9
Serbia	304	663	81.8	81.2	87.3	88.9
Moldova	6	19	2.4	6.4	5.4	12.4
Ukraine	101	159	1.9	2.3	5.8	7.2
Egypt	922	1,059	1.2	1.4	4.2	5.1
Israel	6,451	7,354	4.5	6.0	15.3	19.5
Jordan	...	24	...	0.5	...	2.3
Lebanon	1,829	1,650	4.0	3.8	5.7	5.5
Morocco	85	93	0.3	0.4	35.4	38.8
Saudi Arabia	...	1,186	...	1.2	...	6.9
South Africa	246	540	0.4	0.6	6.0	13.3

Sources: National central banks and ECB calculations.
1) For the Czech Republic and FYR Macedonia, data refer to end-January 2002. Data may be subject to revisions.

€3.5 billion.[63] However, supported by the appreciation of the euro against the US dollar, the share of euro-denominated deposits in total foreign deposits increased in most countries, while their share in total deposits was by and large stable.[64] Regional patterns remained unchanged, with the bulk of deposits being held in the acceding, accession and western Balkan countries.

63 This amount includes 24 countries for which data on euro-denominated deposits are available for both end-2001 and end-2002. Data at the country level should be interpreted with care, as methodological changes in compiling the respective statistics might have caused some of the rather substantial changes observed when comparing data for 2001 and 2002.

64 An exception is Croatia, where demand for deposits in domestic currency increased significantly, translating into a substantial decrease in the share of foreign exchange deposits in total deposits.

Conclusions

This review has taken stock of new information that became available on the international role of the euro in the period extending from mid-2002 to mid-2003. It confirms and substantiates the three main conclusions of last year's review. The international role of the euro continues to grow gradually, is characterised by a strong regional focus and is driven, to a certain extent, by the euro area itself. The review builds on these conclusions and provides a clearer picture of the geography of the users of the euro and of the extent of its role across the globe.

In countries that are geographically remote from Europe, agents have so far mostly used the euro either to borrow or, obviously, in foreign exchange transactions. Indeed, large US corporations have been very active issuers of euro-denominated bonds since the start of EMU, in particular to diversify their investor base, while financial centres in the US and in Asia have overall accounted for a significant share of foreign exchange activity in euro. More generally, there are indications that financial market participants from some of these countries tend to use the City of London as an entry point for their euro-denominated financial activities. In the review period, according to market participants, demand from Asian investors for euro-denominated bonds increased, which can be contrasted with the first years of EMU, when demand for euro-denominated bonds originated mostly from Europe. This suggests that demand for euro-denominated bond issues is becoming increasingly international.

Nevertheless, the use of the euro as an international currency remains most prominent in countries neighbouring the euro area, for example central and eastern Europe. In financial markets outside the euro area, the City of London plays a prominent role. This review analyses this role in detail, and shows that the City's total share typically ranges from one-third to two-thirds of euro-denominated financial activity outside the euro area. This result suggests that any analysis of the euro's role in financial markets outside the euro area is, to a great extent, also an analysis of its role in the City of London.

Lastly, this review has provided additional evidence that the euro area itself is an important determinant of the international role of its currency, as can be expected from a large and open economy. The review confirms in particular that since the start of EMU, euro-denominated bonds issued outside the euro area have to a significant extent been targeted at and purchased by euro area investors. Furthermore, the review has found that euro area-owned banks are among the largest players in euro-denominated markets in the City of London, thereby contributing substantially to the euro's role in financial markets outside the euro area.

Key data sheet

	2003 Review (latest data available) (in %)	2002 Review (in %)
The euro in international debt markets		
Share of the euro in:		
– globally defined stock of debt securities [1]	2002 Q4: 24.1	2002 Q1: 24.2
– broadly defined stock of international debt securities [1]	2003 Q2: 41.7	2002 Q2: 38.9
– narrowly defined stock of international debt securities [1]	2003 Q2: 30.4	2002 Q2: 29.0
– narrowly defined issues of international bond and notes	2003 Q2: 31.3	2002 Q2: 31.4
– narrowly defined issues of international money market instruments	2003 Q2: 33.5	2002 Q2: 19.6
– bond portfolio sample surveyed by *The Economist*	mid-2003: 32	mid-2002: 28
– portfolios of funds under management in the United States and Canada compiled by *Capital Access International*	mid-2003: 0.4	mid-2002: 0.3
– portfolios of funds under management in non-euro area Europe compiled by *Capital Access International*	mid-2003: 36.4	mid-2002: 31.4
The euro in international loan markets		
Share of the euro in:		
– loans from euro area banks to non-bank borrowers outside the euro area [1]	2003 Q1: 37.2	…
– loans from non-euro area banks to non-bank borrowers in the euro area [1]	2003 Q1: 57.4	…
– cross-border loans from non-euro area banks to non-bank borrowers outside the euro area [1]	2003 Q1: 7.6	…
The euro in foreign exchange markets		
Share of the euro in:		
– total global spot turnover	…	April 2001: 43.0 [2]
– total swap turnover	…	April 2001: 33.7 [2]
– total foreign exchange turnover	…	April 2001: 37.6 [2]
– daily settlement with CLS	30 June 2003: 23.2	…

Notes (…) stands for not available.

1) At constant 1994 Q1 exchange rates.

2) Given the convention of accounting for both sides of each trade in foreign exchange markets, percentages add up to 200%, meaning that the euro's actual share in total turnover is half the percentage reported in this key data sheet.

	2003 Review (latest data available) (in %)	2002 Review (in %)
The euro in trade in goods and services		
Share of the euro in:		
– settlement/invoicing of exports of goods to non-euro area residents of a number of euro area countries	2002: 39 to 58	2001: 24 to 53
– settlement/invoicing of imports of goods from non-euro area residents of a number of euro area countries	2002: 35 to 58	2001: 29 to 54
– settlement/invoicing of exports of services to non-euro area residents of a number of euro area countries	2002: 13 to 60	2001: 11 to 60
– settlement/invoicing of imports of services from non-euro area residents of a number of euro area countries	2002: 17 to 59	2001: 15 to 56
The euro in third countries		
– number of countries or territories whose exchange rate regimes were linked to the euro	mid-2003: 51	mid-2002: 53
– share of the euro in global foreign exchange reserves	end-2002: 18.7	end-2001: 16.4
– cumulative net shipments of euro banknotes to destinations outside the euro area	June 2003: €36 billion	June 2002: €22 bn
– total stock of euro-denominated bank deposits in regions neighbouring the EU	end-2002: €53 billion	end-2001: €52 billion

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