



EUROPEAN CENTRAL BANK

REVIEW OF THE INTERNATIONAL ROLE OF THE EURO

JANUARY 2005

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REVIEW OF THE INTERNATIONAL ROLE OF THE EURO

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FOREWORD

As in previous years, the review of the international role of the euro reflects the ongoing efforts of the ECB to monitor and analyse the role played by the euro in global markets and in countries outside the euro area. In so doing, the annual review not only provides information on the extent of international use of the single currency, i.e. its use by market participants and authorities outside the euro area, but also sheds light on structural developments in the international use of the euro.

This year's review, which focuses on developments between mid-2003 and mid-2004, confirms a number of findings that had already been identified in previous years. First, the use of the euro by non-euro area residents continues to show a significant degree of stability. Second, the review provides additional evidence of the increasing use of the euro in euro area countries' trade with non-euro area countries, as well as in the foreign trade of a number of the countries which joined the EU on 1 May 2004 and EU candidate countries. Third, the international use of the euro is most prominent in regions neighbouring the euro area and has been driven, to some extent, by euro area investors,

who have purchased significant amounts of euro-denominated international bonds. Tapping demand from euro area investors appears to have been one of the key factors in the decision of foreign corporations to issue debt denominated in euro, as shown in the "Special focus" section of the review, which this year studies the choice of currency in international corporate bond issuance.

Developments in the international use of the euro are the outcome of decisions taken by market participants. The ECB continues to monitor 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

This is the fourth annual review of the international role of the euro. Like 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.

The review builds on work conducted in 2004 to develop the statistical coverage and analysis of the euro's international role. Accordingly, it covers a range of new data, as well as new issues. In particular, preliminary results from the BIS Triennial Survey on foreign exchange trading activity are highlighted. In addition, evidence on the use of the euro as a currency in deposits made by non-bank agents in banks located in currency areas other than their own is presented for the first time. Moreover, the review provides information on euro settlement systems located outside the euro area.

The choice of currency of international bond issuance by firms is the "special focus" of the 2004 review. This special focus follows up on the conclusions drawn in previous years' reviews, which indicated that the increasing use of the euro outside the euro area is essentially driven by the evolution of the currency preferences of private agents. The special focus examines in detail the determinants of such preferences within the context of firms' decisions to borrow in foreign currencies. In order to explore this issue, the ECB has conducted an extensive research project based on evidence compiled in previous years and on insights gained in a number of meetings with market participants who are active in euro-denominated bond markets.¹

The period under review extends from mid-2003 to mid-2004. Where appropriate, the review also takes stock of the first five years since the introduction of the euro, drawing comparisons between the situation at the beginning of 2004 and that which characterised the international role of the euro at the

beginning of 1999. The main findings of the review can be summarised as follows:

INTERNATIONAL DEBT MARKETS

Five years after the introduction of the euro, debt securities denominated in euro account for around 31% of the total stock of international issues. An analysis of the geographical breakdown of the outstanding stock of international debt securities issued in euro shows that European entities in the vicinity of the euro area account for the largest share of such issues. Moreover, increases in the use of the euro, relative to other currencies, have also been highest among residents of countries that are neighbours of the euro area. Borrowers in Asia, Latin America and the Middle East, by contrast, have continued to issue only a small fraction of their international bonds in euro.

INTERNATIONAL LOAN MARKETS AND DEPOSITS

As in the case of international debt securities, international lending and deposit-taking in euro takes place predominantly with residents of mature economies and exhibits a strong regional focus. Close to 45% of the non-euro area non-banks borrowing in euro from euro area banks reside in the United Kingdom. Similarly, UK residents account for almost 40% of the euro-denominated deposits of non-euro area non-banks in banks in the euro area.

When borrowing from banks outside the euro area, non-bank residents of the euro area largely borrow in euro, which accounts for around 61% of such borrowing. Deposits from euro area residents held in banks outside the euro area are also largely denominated in euro. By contrast, the share of the euro in cross-border lending or deposit activity conducted outside the euro area is small (around 5% to 6% in the case of both loans and deposits).

¹ Comments and suggestions provided by the International Primary Markets Association are gratefully acknowledged.

FOREIGN EXCHANGE MARKETS

Preliminary results from the 2004 BIS Triennial Survey point towards a notable increase in activity in foreign exchange trading. Based on these preliminary results, the euro was the second most actively traded currency in foreign exchange markets worldwide, and accounted for 37% of foreign exchange transactions, broadly the same as in 2001. Globally, the euro continued to be traded predominantly against the US dollar, as 76% of the total worldwide foreign exchange activity involving the euro was with the US dollar.

Evidence from foreign exchange trades settled via Continuous Linked Settlement (CLS) suggests that during the period under review the euro accounted for around 44% of all settlements. Compared with the period between September 2002, when CLS started to operate, and June 2003, the average share of the euro in daily transactions declined slightly from 48% to 44%. Moreover, on a daily basis, the share of trades accounted for by the euro has become less volatile in the period under review.

INTERNATIONAL TRADE

The share of the euro in international trade has seen a notable increase in a number of euro area countries. For most euro area countries, the use of the euro appears to be more widespread in the case of exports than in the case of imports and, within exports, it is higher for exports of goods than for exports of services.

A notable increase in the share of the euro in international trade was also observed in 2003 for most of the new Member States and candidate countries. In many cases, the increase in the use of the euro exceeded the increase in trade relations with the euro area, suggesting that the euro was increasingly being used in the international trade of those countries with non-euro area trading partners.

CURRENCY OF CHOICE IN INTERNATIONAL BOND ISSUANCE BY FIRMS

The increase in the use of the euro as a financing currency in international bond markets has been one of the key characteristics of the international role of the euro. In order to improve its understanding of the factors that drive the choice of currency – either domestic or foreign – when issuing bonds, the ECB launched a research project based on a new dataset at the single bond issue level for the period from 1999 to 2003. This dataset, covering more than 8,000 bonds issued by about 1,500 companies in the United States, the euro area, Japan and the United Kingdom, was used to analyse econometrically the determinants of currency choice in bond issuance by corporations in developed economies.

The results suggest that the probability of issuing in euro is higher when companies have a large share of subsidiaries resident in the foreign currency area, and there is merger and acquisition (M&A) activity in the foreign currency area up to six months prior to the issuance of a bond – the latter two variables capturing the need to hedge against foreign exchange risk. Moreover, the probability of issuance in a foreign currency correlates positively with the firm size. For issuance in euro, this is in line with views expressed by market participants explaining the increased use of the euro as a currency for bond issuance with companies' attempts to hedge their exposure to the euro area and to broaden their investor base by tapping euro area financial markets.

THIRD COUNTRIES

The role of the euro as an anchor currency in third countries outside the euro area has remained stable overall. Changes in exchange rate regimes involving the euro mainly involved the new EU Member States, three of

which joined the exchange rate mechanism II (ERM II) at the end of June 2004. The global build-up of reserves continued at a rapid pace, with Japan and other emerging economies in Asia again accounting for the largest share in the total increase. Benefiting from the appreciation against other international currencies, the share of the euro in official foreign exchange reserves has increased from 19.3% in 2002 to 19.7% in 2003. As an intervention currency, the euro was predominantly used in euro area neighbouring countries.

Evidence on the level of currency and asset substitution in countries that are neighbours of the EU in the period under review indicates that the role of the euro as a parallel currency has stabilised. The outstanding stock of euro cash in non-euro area countries, accounted for by net shipments of euro area banks, continued to increase gradually, while monthly net shipments followed similar seasonal patterns as last year. Surveys conducted by the Oesterreichische Nationalbank in Croatia, Hungary, the Czech Republic, Slovenia and Slovakia also indicate an increased demand for euro cash, even if this increase has not made up for the decline in the demand for Deutsche Mark and Austrian schilling prior to 2002. By contrast, euro-denominated deposits in a number of euro area neighbouring countries remained stable, whereas the share of the euro in foreign exchange deposits of the respective countries increased somewhat in many countries, in line with the appreciation of the euro against other international currencies in the period under review.

Overall, this report confirms and substantiates the main characteristics of the international role of the euro that have featured prominently over the past few years: (1) a significant degree of stability, (2) a slight increase as an international invoicing currency, (3) a strong regional focus and (4) an important contribution of the euro area itself, as a significant share of supply and demand for euro-denominated international bond issues can be linked to euro area borrowers and investors.

CONCLUSIONS

In the period under review, the euro's role in international capital and foreign exchange markets as well as an international financing currency anchor and reserve currency has remained largely stable. At the same time, there have been signs of an increasing use as an international settlement or invoicing currency.

INTRODUCTION

This report on the use of the euro outside the euro area has two objectives. It is aimed, first, at informing about developments in the period from mid-2003 to mid-2004 and, second, at enhancing the Eurosystem's understanding of the factors that underpin the euro's international role.

As in previous years, the review builds on work conducted to further refine the statistical framework and also to improve the ECB's 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, the analysis has benefited from the results of in-depth research on the determinants of the currency of issuance by large private firms, an issue that is the subject of this year's "special focus";
- the review also takes stock of the first five years since the introduction of the euro, comparing the currency breakdown of the stock of international debt securities in early 1999 and in early 2004 both globally and for different regions;
- on international deposits, the review includes for the first time data on the euro's role regarding cross-border deposits;
- on foreign exchange markets, the review provides an overview of the preliminary results of the 2004 BIS Triennial Survey, and also presents information on the euro settlement systems located outside the euro area;
- on international trade, the review benefits from additional data on the currency breakdown of the external trade for a number of countries; and
- on the use of the euro in third countries, the review provides a summary of results from a survey of the use of the euro as a parallel currency in central and southeast Europe

prepared by the Oesterreichische Nationalbank.

These exceptions aside, the structure of the review remains broadly unchanged. Section A focuses on *global markets* that constitute the environment for the role of the euro as an international currency. It deals with international debt markets, international loan and deposit markets, foreign exchange markets and international trade. This section is followed by the special focus on the choice of currency denomination in bond issuance by private firms. Section B turns to the role of the euro in *third countries*, focusing, first, on authorities' choice of the euro as anchor, reserve or intervention currency in their exchange rate policies and, second, on the choice of private agents to use 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 with the currency denomination of their original source. Moreover, the review does not study international equities, statistical coverage of which is more limited.



A THE EURO IN GLOBAL MARKETS

I THE EURO IN INTERNATIONAL DEBT MARKETS

This section reviews the role of the euro in international debt markets, which comprise instruments with both long-term maturities (bonds and notes) and short-term maturities (money market instruments).³ As in previous years, the focus of the analysis is on the so-called “narrow” definition of international securities, which comprises only issues in a currency other than the currency of the country in which the borrower resides (see Box 1 for a discussion of alternative definitions of “international” issuance). With a view to analysing the main developments in the international debt securities market from mid-2003 to mid-2004, Sub-section 1.1 reviews supply trends for debt securities as a whole,

Sub-section 1.2 covers trends across the various financing instruments and Sub-section 1.3 presents the evidence available on demand.

1.1 OVERALL TRENDS IN INTERNATIONAL DEBT SECURITIES SUPPLY

Net issuance of euro-denominated debt securities by non-euro area residents amounted to close to USD 207 billion between mid-2003 and mid-2004, i.e. to about 34% more than in

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

ALTERNATIVE DEFINITIONS OF THE “INTERNATIONAL” ISSUANCE OF DEBT SECURITIES

For the sake of clarity and simplicity, a single “narrow” concept of international issuance of debt securities (i.e., bonds and notes, as well as money market instruments) is used throughout this review. That “narrow” measure of international issuance is defined as issuance in a currency other than the currency of the country in which the borrower resides.

Other possible definitions of an international bond exist and the ECB has in fact made reference in the past to these alternative measures (ECB, 2002 and 2001). In particular, the “broad” measure adds to the “narrow” measure the issuance of debt securities denominated in the home currency of the borrower, provided that this issuance is targeted at the international financial market. While it is a measure of the total supply of debt securities available to a non-resident investor, the “broad” measure also includes bonds for which both the issuer and investors originate in the euro area, even if they were initially targeted at non-euro area investors. The “global” measure of debt securities 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. For illustrative purposes, the table hereafter reports the latest evidence available on these two alternative measures.

Alternative measures of debt securities supply and major currencies’ shares

(first quarter of 2004, values at current exchange rates)

	Amounts outstanding (USD billions)	Shares (%)		
		Euro	US dollar	Japanese yen
“Narrow” measure, excluding home currency issuance	5,042	31.2	42.4	9.0
“Broad” measure, including home currency issuance	12,054	43.2	40.1	4.3
“Global” measure, including domestic issuance	52,995	25.6	43.1	17.3

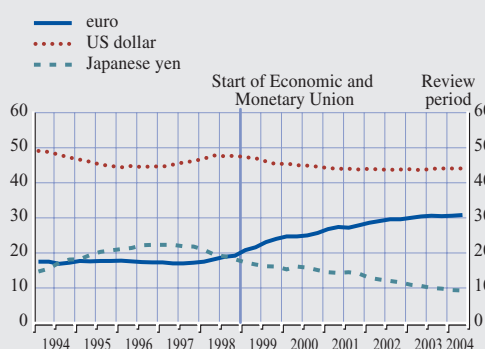
Sources: BIS and ECB calculations.

the same period a year ago (see Table 1) and the highest figure recorded so far.⁴ In addition, and in contrast to the experience in previous years, net issuance activity was relatively stable across quarters. Quarterly net issuance of euro-denominated debt securities by non-euro area residents hovered between around USD 40 and USD 60 billion in the four quarters covered in the period under review. This is in sharp contrast to the developments seen in the previous four quarters, in which net issuance fluctuated from a low of less than USD 6 billion in the last quarter of 2002 to a high of USD 61 billion in the first quarter of 2003. In fact, the very low net issuance in the fourth quarter of 2002 is the main factor that gives rise, through base effects, to the increase in net issuance seen during the period under review. Underlying this increase in net issuance was the strengthening of the global recovery in economic activity.

While net issuance of euro-denominated debt securities by non-euro area residents increased noticeably, international issuance in US dollars increased even more sharply. This increased preference of non-US nationals for issuing US dollar-denominated debt securities may be possibly explained by the perception of a continued dollar depreciation, leading entities whose base currency is not the US dollar to shift to dollar-denominated borrowing (BIS 2003). In addition, a series of rating upgrades for a number of large emerging countries, such as China, Russia and Turkey, led to heavy borrowing, mainly in US dollars, by both sovereigns and private entities. More

Chart 1 Stock of international debt securities: currency shares

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



Sources: BIS, ECB calculations.

generally, and despite specific moments of turbulence such as those in the summer of 2003 and in January 2004, the compression of emerging market bond spreads remained notable, supporting strong issuance of debt securities denominated mainly in US dollars. Many corporate borrowers, particularly those enjoying lower ratings, appear to have also rushed to take advantage of the low-yield environment ahead of the uncertainty that, in the last months of the period under review, accompanied the expected tightening of US monetary policy (BIS 2004c).

As a result of these developments, the share of the euro in the stock of international debt

⁴ Net issuance of debt securities is defined as gross issuance minus repayments.

Table 1 Net issuance of international debt securities

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

	Memory item: 2002 Q3-2003 Q2 ¹⁾	2003 Q3	2003 Q4	2004 Q1	2004 Q2	2003 Q3-2004 Q2 (total issuance)
Euro	39.2	41.1	47.1	59.5	58.9	206.6
US dollar	38.8	67.0	76.9	72.6	68.6	285.1
Japanese yen	-8.7	-7.5	3.4	-1.3	7.9	2.5
Total (incl. other currencies)	86.9	115.7	159.1	174.5	169.9	619.2

Sources: BIS and ECB calculations.

1) Average quarterly amount.

securities, measured at constant exchange rates, stabilised at around 31% in the period under review (see Chart 1).⁵ The share of the US dollar also remained stable at around 44%, while that of the Japanese yen continued to decrease, with its share falling by close to 2 percentage points to around 9%.

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 period under review, to reach a high of 36.2% in the fourth quarter of 2003, although it subsequently declined slightly (see Table 2). For the review period as a whole, the share of the euro in gross issuance of international short-term securities stood at around 35%, which corresponds to a gross amount of euro-denominated issues of roughly USD 405 billion (compared with USD 272 billion in the previous year). By contrast, the US dollar's share in gross issuance of international money market instruments continued to decline, reaching 40.5% in the period under review, down from 44.5% in the previous year. Likewise, the Japanese yen's share in gross issues of international money market instruments continued to decrease, reaching 2.7% during the period under review, down from 5% in the previous year.

In the long-term segment, the share of the euro in international issuance of bonds and notes increased to around 32% in the period under review, up from 28% in the previous four quarters. Across quarters, the share of the euro in international gross issues of bonds and notes was more volatile than in the case of short-term securities. International issuance of euro-denominated bonds and notes was particularly high in the first half of 2004 when, after having decreased in relative terms, euro-denominated issues accounted for around 36% of all international bonds and notes issued, the highest share recorded thus far. In the first half of 2004, around USD 257 billion's worth of euro-denominated international bonds and notes were issued, close to the USD 282 billion issued in US dollars during the same quarter.

Looking at issues' characteristics allows further insight to be gained regarding the main features of euro-denominated bonds and notes issued by non-euro area residents. In line with the evidence available in previous years, the majority of non-euro area issuers were from the private sector, accounting for around 85% of total issuance in the period under review.

5 As has already been explained in ECB (2002), currency shares related to debt securities data are (i) derived 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 for stock data has been deemed too important to be neglected, as most stock variables cannot be adjusted by market participants in the face of exchange rate movements.

Table 2 Major currencies' shares in gross issuance of short-term international debt securities

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

	Memory item 2002 Q3-2003 Q2 ¹⁾	2003 Q3	2003 Q4	2004 Q1	2004 Q2	2003 Q3-2004 Q2 ¹⁾ (total issuance) ²⁾
Euro	28.1	33.0	36.2	34.7	35.7	34.9 (404.6)
US dollar	44.5	41.3	39.7	41.7	39.4	40.5 (468.7)
Japanese yen	5.0	3.1	2.7	2.2	2.9	2.7 (31.5)
Total (incl. other currencies)	100.0	100.0	100.0	100.0	100.0	100.0 (1,157)

Sources: BIS and ECB calculations.

Note: Shares at current exchange rates.

1) Average quarterly percentage.

2) Amounts in USD billions.

Box 2

THE EURO IN INTERNATIONAL MONEY MARKET INSTRUMENTS – THE CASE OF ASSET-BACKED EURO COMMERCIAL PAPER

A segment of the short-term euro-commercial paper market which has been growing rapidly since the introduction of the euro is the asset-backed euro-commercial paper (ABECP).¹ Asset-backed commercial paper is a form of senior secured short-term borrowing,² in contrast to corporate commercial paper, which is senior unsecured short-term corporate debt. Asset-backed issues are structured in such a way that repayments are to be obtained from an identifiable and specific pool of assets and are generally issued by a conduit sponsored by a bank. These issuance programmes offer low-cost off-balance-sheet financing, allowing issuers to warehouse assets prior to issuing bonds to accommodate variable funding needs and providing investors with the possibility to select rated securities for arbitrage profit or higher leverage.

Issuance in the ABECP market takes place largely outside the euro area. Around 80% of the 67 issuers of euro-denominated ABECP included in the CP Ware database by Dealogic are registered as special-purpose vehicles. Around half of the issuers of euro-denominated ABECP are domiciled in Jersey, around a quarter are issued by US entities and 10% by issuers established in the Cayman Islands. Data on the nationality of the sponsor remains limited, but market estimates suggest that German sponsors may account for around 35% of the market, while Dutch and UK sponsors are estimated to account for 25% and 20% respectively of the total amount outstanding of ABECP.³

Euro-commercial paper market

		As of June 2003	As of June 2004
Outstanding	EUR bn	357	373
...of which denominated in			
euro	%	49	48
US dollar	%	27	29
British pound	%	14	15
Asset-backed euro-commercial paper			
Outstanding	EUR bn	67	86
...of which denominated in			
euro	%	61	65
US dollar	%	17	12
British pound	%	21	22

Source: Dealogic.

According to the same CP Ware database, the ABECP market accounted for €86 billion in June 2004, and constituted a growing subset of the total euro-commercial paper market. As regards the currency of denomination of ABECP, the information available points to an increase

1 ABECP can be considered the short-term-maturity equivalent of a securitised Eurobond.

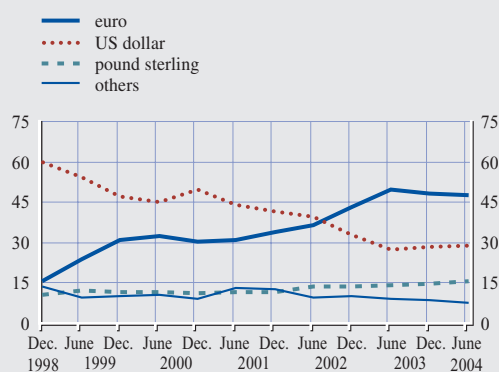
2 An asset-backed commercial paper could be “fully supported” if backed by a financial guaranty or “partially supported” if backed only by liquidity and credit enhancement (e.g., over-collateralisation, credit insurance).

3 Banks often establish conduits as independent companies which are therefore not owned by the bank. Typically, the sponsor of the conduit is also the administrator and may also act as the liquidity agent, lead liquidity bank, credit enhancement provider and hedge counterparty. The assets sold to or financed by the conduit are often originated by companies that are clients of the sponsoring bank under other lending facilities.

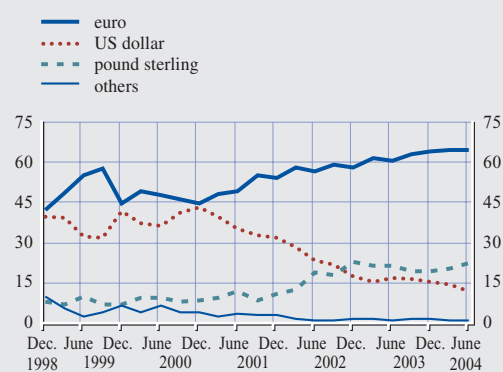
in the share of the euro, from 61% of ABCEP outstanding in June 2003 to 65% in June 2004. This contrasts with the evolution for the euro-commercial paper market as a whole, where the share of the euro declined slightly, as shown in the table above.

Taking a longer-term perspective, there was a notable increase in the share of euro-denominated euro-commercial paper and, in particular, in the share of ABCEP, as shown in the charts below.

Euro-commercial paper, share by currency



ABCEP, share by currency



Within the private sector, financial institutions increased their share of total issuance from 56% to 73%, while the share of non-financial private corporations declined from 20% to 13%. Likewise, in line with trends observed since 1999, the majority of issuers in the period under review were resident in the United Kingdom and in the United States, accounting for 41% and 21% respectively of total international issuance of bonds and notes in

euro. In the case of UK residents, this in fact represented a noticeable increase, up from 28% and 27% respectively in the previous two review periods. By contrast, the share accounted for by US residents decreased somewhat from 23% and 27% respectively in the previous two review periods.

Security-by-security data from Thomson-Financial are also available for a sample of

Table 3 Major currencies' shares in gross issuance of long-term international debt securities

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

	Memory item: 2002 Q3-2003 Q2 ¹⁾	2003 Q3	2003 Q4	2004 Q1	2004 Q2	2003 Q3-2004 Q2 ¹⁾ (total issuance) ²⁾
Euro	26.2	29.1	27.4	35.4	36.1	32.0 (408.3)
US dollar	48.7	48.1	46.0	39.6	38.6	43.1 (533.5)
Japanese yen	8.8	8.1	7.0	5.4	7.3	7.0 (85.6)
Total (incl. other currencies)	100.0	100.0	100.0	100.0	100.0	100.0 (1,255.4)

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

(total amount issued in period under review, EUR millions)

Issuer			
European Investment Bank	(14,368)	International Lease Finance	(2,350)
HBOS Treasury Services Plc	(7,350)	Northern Rock PLC	(2,340)
Federal Home Loan Mortgage (Freddie Mac)	(7,050)	Abbey National Treasury Svcs	(2,250)
HBOS PLC	(6,550)	Morgan Stanley	(2,141)
Merrill Lynch & Co Inc	(5,450)	Denmark	(2,100)
Goldman Sachs & Co	(5,187)	AIG Sun America Institutional	(2,000)
General Motors Acceptance Corp	(5,050)	British American Tobacco PLC	(2,000)
Spintab	(4,291)	Hungary	(2,000)
Bank of America Corp	(4,250)	SLM Corp	(2,000)
Citigroup Inc	(4,100)	Nationwide Building Society	(1,940)
Bradford & Bingley PLC	(3,850)	Japan Bank for International Development	(1,750)
GE Capital Europe (GE Capital)	(3,750)	Svenska Handelsbanken AB	(1,700)
Network Rail Ltd	(3,750)	Commonwealth Bank of Australia	(1,600)
Ford Motor Credit Co	(3,700)	Granite Mortgages 2004-2	(1,575)
DaimlerChrysler North America	(3,500)	Barclays Bank PLC	(1,550)
Royal Bank of Scotland Group	(3,338)	Kaupthing Bunadarbanki hf	(1,545)
ANZ Banking Group Ltd	(3,150)	Czech Republic	(1,500)
Household Finance Corp	(2,900)	Union Bank of Norway AS	(1,400)
Poland	(2,700)	HSBC Capital Funding (Euro 2)	(1,400)
Permanent Financing No. 4	(2,398)	Chalet Finance 2 PLC	(1,354)

Sources: Thomson Financial – Thomson ONE-Banker Deals and ECB calculations.

Note: Non-euro area issuers whose parent companies are resident in the euro area are not reported in this list. The EIB is included in this list as it is also included in the BIS data reported in Tables 1 to 3.

euro-denominated bonds issued by non-euro area borrowers in the period under review. As in the previous review period, the largest issuer was the European Investment Bank (EIB), which raised around 41% of its total funding in euro in 2003 (see Table 4).⁶ The US agency Freddie Mac, which also has a regular programme of issuance in euro, likewise remained one of the largest issuers. Among private issuers, those from non-euro area EU countries such as the United Kingdom (e.g. HBOS, Bradford & Bingley and the Royal Bank of Scotland) and Sweden (e.g. Spintab), as well as those from the United States, remained among the largest issuers. The prominence of UK issuers is all the more significant given that a number of asset-backed securities, which appear as separate issue in Table 4, are issued by UK banks.⁷ A notable development among issuers from the United States is the increasingly prominent position gained by investment banks such as Merrill Lynch, Goldman Sachs and Morgan Stanley. Among sovereign issuers, non-euro area EU countries such as Poland, Denmark, Hungary and the Czech Republic also floated fairly large

issues. Among the new entrants in this list of top 40 non-euro area issuers of euro-denominated bonds is the Japan Bank for International Development, which issued its first euro-denominated bond in an amount of €500 millions in 2003 and has since issued only in euro in the international market, a situation that contrasts with the previous four years in which its international issues had been denominated in US dollars or Japanese yen.

1.3 EVIDENCE AVAILABLE ON DEMAND TRENDS

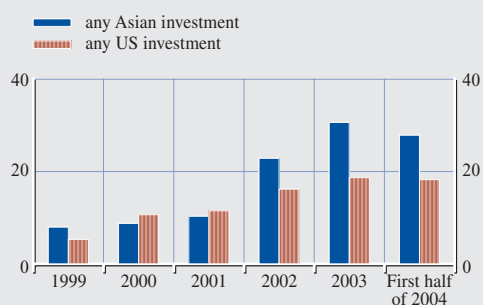
As in previous years, an analysis of the location of issuance and of the investor base helps explain the main characteristics of the demand for euro-denominated bonds issued by non-euro area residents. A review of the available

⁶ The EIB, although a European institution based in Luxembourg, is considered an international organisation here, as is the World Bank, for instance. For details on the EIB's borrowing activity and programme of regular issuance in euro see the EIB Annual Report 2003.

⁷ For example, Permanent Financing No. 4 is issued by HBOS and Granite Mortgages 2004-2 by Northern Rock.

Chart 2 Euro-denominated bonds issued by non-euro area residents: frequency of Asian and US investors' primary market participation

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



Sources: Thomson Financial – Thomson ONE Banker-Deals, International Financing Review (various issues) and ECB calculations.

Note: Based on information reported by the International Financing Review on 835 bond issues.

evidence appears to confirm that euro-denominated bonds issued by non-euro area residents have been targeted mainly at European investors. Nevertheless, there has been an increased interest from Asian and, to a lesser extent, North American investors in euro-denominated issues in the period under review, although it has levelled off or decreased slightly in the first half of 2004 (see Chart 2).⁸

Despite the increased participation by US-based investors in euro-denominated bond issues, the share of the euro in bond funds in North America (the United States and Canada) remains negligible (see Box 3 below for an analysis of the reasons underlying this feature). Evidence from data on bond portfolios surveyed in the eMaxx database by Lipper, a financial information provider, suggests that

the euro's share in North America stayed stable at only 0.6% of bonds under management (see Table 5).⁹ In absolute terms, surveyed bond holdings in euro in North America only amounted to USD 28 billion in June 2004, up from USD 19 billion in June 2003. However, as reported in last year's review, market participants suggest that US-based investors mostly manage their portfolios invested in euro from the City of London (ECB, 2003b). Moreover, given the limited coverage of the eMaxx database, the magnitude of actual bond holdings may be significantly higher.

Additional evidence from *The Economist's* quarterly portfolio polls suggests that the share of euro-denominated bonds in the portfolios of major global asset managers decreased in the period under review, from 32% in the second quarter of 2003 to 26% in the second quarter of 2004.¹⁰

Turning to the volumes purchased, available evidence points to an increase in net purchases by euro area residents of euro-denominated

⁸ While the data seem to support the view of a recently rising interest of Asian investors in euro-denominated issues, they could also reveal a relative increase in information reported by the *International Financing Review* on investments by Asian accounts on the primary market.

⁹ 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 and the degree of coverage of portfolios may not necessarily be the same throughout time. Data refer to euro-denominated bonds issued by non-euro area residents and euro area residents alike.

¹⁰ *The Economist* polls on a quarterly basis eight to nine major global asset managers, including one to two from the euro area. The polls include questions regarding the currency distribution of bondholding.

Box 3

NEW EVIDENCE ON THE CHARACTERISTICS OF DEMAND FOR EURO-DENOMINATED INTERNATIONAL BONDS

The demand side of the market for euro-denominated bonds issued by non-euro area residents is an area where evidence has thus far been particularly scarce. For instance, early ECB or ECB staff work (including ECB, 1999, 2001, 2002, 2003; Detken and Hartmann, 2000; Hartmann and

Issing, 2002) used *The Economist's* quarterly portfolio polls to gain some insights. However, these polls are subject to limitations, not least due to the small size (possibly not representative), of the asset managers sample. More recently, Geis, Mehl and Wredenburg (2004) have provided more comprehensive evidence on the role of the euro as an international investment currency by constructing a new database which draws from security-by-security information available from articles published in the *International Financing Review* (IFR), a specialist magazine, on primary market purchases. In so doing, they have obtained new evidence, both quantitative and qualitative, on demand trends since the advent of the euro, such as the geographical location of investments on the primary market, the types of investors, the existence and location of roadshows, the influence of sales restrictions and the use of currency swaps by issuers.

According to their data, from 1999 to 2003, European investors, including those in both the euro area and the United Kingdom, “dominantly” bought 80% of the euro-denominated international bond issues for which information is available from the IFR.¹ More importantly, a quarter of these bond issues were “dominantly” bought by euro area investors, although – due to data treatment challenges – the actual share could even be far higher.² In any case, this confirms that the international role of the euro has, to some extent, been driven by the euro area itself, as euro area investors have been significant purchasers of euro-denominated bonds issued by non-euro area residents, providing finance in euro to the rest of the world.

Conversely, the data also confirm that interest from US investors has been relatively limited over most of the period, as they participated in about 10% of the primary market sales of euro-denominated international bonds. The seemingly limited US interest may partly be explained by legal considerations. Almost all euro-denominated bonds issued by non-euro area residents (90%) were subject to selling restrictions in the United States. In particular, most bonds issued by US companies were probably considered “offshore” issues under US law (in compliance with Regulation S of the Securities and Exchange Commission (SEC)), sales of which are restricted in the United States.³ In addition, small non-US issuers may have been reluctant to bear the costs related to the registration and disclosure of information required by the SEC to sell securities in the United States. These standard requirements, which aim to protect US investors, could indeed have been considered “expensive and cumbersome” (Wood, 1995). By contrast, only a minority of bonds (less than 5%) fall under the provisions of SEC Regulation 144A, which allows offshore US and non-US issuers alike – subject to lighter requirements – to place their bonds in the United States, but only with “informed” institutional investors. Available evidence suggests that most euro-denominated international bonds bought by US investors were either bonds falling under the provisions of Regulation 144A or bonds purchased via offshore accounts (probably to circumvent Regulation S). This aside, US investors perhaps also buy euro-denominated bonds via their UK branches. There are often selling restrictions in the United Kingdom as well, but they are more of a procedural nature and do not prevent UK residents from buying, as is the case with SEC regulations.

1 An issue is considered to have been “dominantly” purchased by investors if they account for more than 50% of the primary market purchases or are reported as such by the IFR.

2 Information gained from the IFR is sometimes only qualitative data or unavailable, making it difficult with respect to many bonds to identify whether euro area investors purchased the majority of the amount floated.

3 Under the SEC's Regulation S, a “designated offshore securities market” is explicitly defined to include, in particular, the Eurobond market. To the extent that these bonds are not registered with the SEC, underwriters are legally prohibited from selling new issues to the US public.

Table 5 Currency breakdown of funds under management as given in the eMaxx database

(based on most recent filings; end-of-period percentages)

	Euro	US dollar	Japanese yen	Other
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
December 2003	0.6	97.3	0.7	1.4
June 2004	0.6	97.1	0.8	1.5
Funds under management in non-euro area Europe¹⁾				
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
December 2003	33.8	18.9	3.1	44.2
June 2004	32.1	18.2	2.3	47.4

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.

bonds and notes issued by non-residents. Like last year, in the preparation of this review, the Eurosystem has collected data, when available, on the currency breakdown of net purchases by residents of debt securities issued outside the euro area from a number of euro area countries.¹¹ In 2003, residents of the eight euro area countries for which data are available, purchased a total of €74 billion (in net terms) of euro-denominated bonds and notes issued outside the euro area, doubling the €37 billion recorded in 2002 (see Table 6). The increase in

net purchases of international euro-denominated bonds was particularly pronounced in the case of France, Luxembourg and Italy. Net purchases of international bonds denominated in other currencies by these eight euro area countries also increased notably, more than tripling from €18 billion in 2002 to

¹¹ These data are available at a yearly frequency. As a result, 2002 and 2003 figures overlap with both the previous and the current review period, while data for 2004 are not yet available. No currency breakdown is as yet available for the euro area as a whole.

Table 6 Net purchases by selected euro area countries of international bonds and notes from non-euro area residents¹⁾

(EUR billions)

	2001		2002		2003	
	in euro	in other currencies	in euro	in other currencies	in euro	in other currencies
Austria	3.3	1.3	1.6	1.5	3.3	0.9
France	14.7	2.0	2.2	-3.9	18.4	10.3
Germany	25.4	7.9	5.7	1.9	7.8	7.2
Greece	...	...	0.5	0.3	0.9	1.2
Italy	6.7	-12.8	4.9	-10.7	14.5	-3.3
Luxembourg	...	...	9.8	30.4	16.2	45.4
Portugal	2.1	0.5	2.4	0.2	3.2	0.6
Spain	10.9	-3.2	9.7	-1.8	9.8	1.2

Sources: National central banks and ECB calculations.

Notes: (...) stands for "not available".

1) The currency identified is that of the denomination of the securities, except in Greece, Luxembourg and Spain, 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.

€64 billion in 2003. Despite this, purchases of euro-denominated issues exceeded those of issues in other currencies in all euro area countries for which data is available, except in the case of Greece and Luxembourg, a feature that is consistent with the possible existence of a “home currency bias” among euro-area investors.¹²

1.4 STOCKS OF INTERNATIONAL DEBT SECURITIES, BROKEN DOWN BY CURRENCY AND REGION, FIVE YEARS AFTER THE INTRODUCTION OF THE EURO

The fifth anniversary of the introduction of the euro provides a fitting opportunity to present an overview of the situation regarding the currency breakdown of the stock of international debt securities issued in different regions, and to compare it with the situation in early 1999 (see Table 7 below). Such a stocktaking exercise shows that European entities remain the largest issuers of international debt securities, accounting for USD 2,050 billion, or around 44%, of the total stock of international debt securities in the second quarter of 2004. In fact, European issuers account not only for a larger stock of total outstanding international securities than any other region but have also increased their share in the total stock of international debt securities outstanding. Outside Europe, issuance by international organisations and by US residents account for the second and third largest stock of issues respectively. Overall, issuers from mature economies account for most of the global stock of international debt securities issued.

A similar pattern also applies to the distribution of international issues denominated in euro, which accounted for around 31% of the total stock of international issues in the second quarter of 2004. Issuance in euro is most prominent in European countries and mature market economies, such as the United States and Japan.

The largest stock of international debt securities in euro is accounted for by Denmark, Sweden and the United Kingdom. Of the combined stock of international debt securities issued by residents in those three countries, around 53% are denominated in euro, amounting to around USD 508 billion. Moreover, for these countries, the share of the euro has increased by around 20 percentage points since the launch of the euro. In terms of changes in the relative shares of currencies, the euro’s role as an international financing currency has advanced most strongly in the new Member States. Indeed, the share of the euro in the stock of international debt securities issued in those countries has risen by around 35 percentage points and now accounts for more than three-quarters of all international debt securities issued by them. Next in terms of the relative increase in the share accounted for by the euro is the case of US issuers, where the euro’s share has increased by 20 percentage points and now accounts for around two-thirds of the total stock of international securities issued by US residents. Notably, the share of US dollar-denominated debt securities in the total international debt securities issued by euro-area residents accounted for around 53% in the first quarter of 2004.

By contrast, borrowers from non-European emerging market economies have made comparatively little use of the euro as an international financing currency. Sovereign bond issuance in euro is relatively small in those regions where exchange rate regimes are oriented towards the US dollar. In the Asian-Pacific region, the euro’s share in the total outstanding stock stands at 17%, even though it has more than doubled over the last five years. No change in the share of the euro has taken place in Latin America, while the share of the euro has actually declined in the Middle East.

¹²The large number of foreign banks in Luxembourg could partly explain the absence of home currency bias in this country.

Table 7 Currencies' shares in the stock of outstanding international debt securities in selected regions

(narrow measure, i.e. excluding home currency issuance, as a percentage of the total amount outstanding and at constant 1994 Q1 exchange rates)

	Total amount outstanding of which denominated in:									
	All currencies (USD billions)		US dollar		Euro		Japanese yen		Other currencies	
			(%)	Percent. point change vis-à-vis	(%)	Percent. point change vis-à-vis	(%)	Percent. point change vis-à-vis	(%)	Percent. point change vis-à-vis
	2004 Q2	1999 Q1	2004 Q2	1999 Q1	2004 Q2	1999 Q1	2004 Q2	1999 Q1	2004 Q2	1999 Q1
Africa	21	10	53.3	-10.1	27.7	17.4	10.7	-12.3	8.2	4.9
Asia and Pacific	395	268	68.9	2.0	16.8	8.0	5.5	-7.4	8.8	-2.5
<i>of which:</i>										
Japan	54	84	59.0	-1.1	32.0	14.7	...	...	9.0	-13.6
Europe	2,050	944	44.0	-4.2	28.7	14.3	9.1	-11.4	18.3	1.3
<i>of which:</i>										
Euro area	916	513	52.9	1.3	...	...	13.5	-10.6	33.6	9.3
Pre-Ins ¹⁾	967	349	37.1	-4.5	52.6	19.9	5.2	-12.0	5.1	-3.3
New Member States	44	21	13.2	-15.5	75.4	34.8	7.1	-19.7	4.3	0.4
EU25	1,927	882	44.0	-3.1	28.1	14.2	9.2	-12.3	18.6	1.1
Non-EU developed Europe ²⁾	85	37	31.2	-23.4	41.5	20.0	9.1	-0.3	18.2	3.6
Non-EU developing Europe	38	24	68.0	-7.0	28.4	6.9	3.6	0.3	0.0	-0.2
International Organisations	492	377	37.3	8.6	27.6	-11.0	7.7	-3.8	27.4	6.2
Latin America	270	165	76.0	3.0	19.8	-0.1	3.2	-2.1	0.9	-0.8
Middle East	47	20	74.5	30.5	22.6	-10.3	2.6	-19.6	0.3	-0.6
North America	688	362	22.5	-10.9	50.4	19.9	10.6	-5.6	16.5	-3.3
<i>of which:</i>										
Canada	215	172	72.2	1.7	12.5	0.7	5.6	-4.5	9.7	2.1
United States	473	190	...	...	67.6	20.1	12.8	-8.9	19.6	-11.2
Offshore centres	671	375	41.0	-1.8	32.2	11.7	17.9	-10.5	8.9	0.6
Total	4,635	2,522	43.8	-2.1	30.6	9.5	9.7	-8.2	16.0	0.8

Source: BIS, ECB calculations.

1) Denmark, Sweden and the United Kingdom

2) Iceland, Norway, Switzerland and European microstates.

Overall, the regional breakdown provides further evidence for the geographical pattern of the international role of the euro, which can also be found in other market segments and in the use of the euro by third countries: the internationalisation of the single currency is strongly focused on the euro area's neighbouring regions, in particular non-euro area EU Member States, and mature market economies.

2 THE EURO IN INTERNATIONAL LOAN AND DEPOSIT MARKETS

This year's review continues to deepen the reporting on non-securitised financial instruments by describing developments in the use of the euro by non-euro area residents in international loan markets and, for the first time, presenting data on the use of the euro in international deposits. The data presented exclude interbank activity, given that the currency choice in interbank markets may reflect other factors than those corresponding to loans to/deposits by non-bank borrowers/depositors. For both loans and deposits, the role of the euro is analysed at three levels, namely activity between euro area banks and non-bank agents outside the euro area (Sub-section 2.1), activity between euro area non-banks and banks outside the euro area (Sub-section 2.2) and activity between non-euro area banks and non-bank agents outside the euro area (Sub-section 2.3). Given that data on deposits is presented for the first time here, this section provides an overview of the main developments from 1999 to the first quarter of 2004.¹³

2.1 LOANS AND DEPOSITS BETWEEN EURO AREA BANKS AND NON-BANK AGENTS OUTSIDE THE EURO AREA

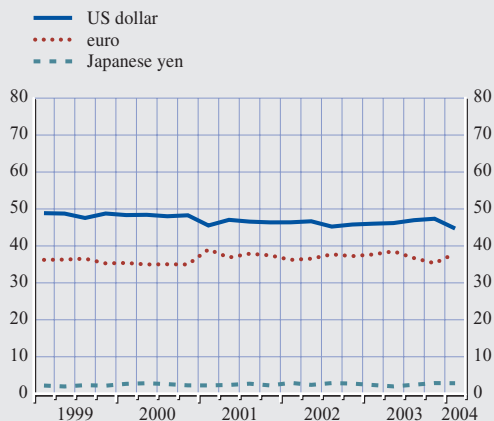
The total stock of loans granted by euro area banks to non-bank borrowers outside the euro area amounted to around USD 740 billion in the first quarter of 2004. The share of the euro has remained relatively stable since 1999, amounting to around 38% at constant 1994 Q1 exchange rates in the first quarter of 2004, against 45% for the US dollar (see Chart 3). Despite this longer-term stability, during the last four quarters covered by the period under review the share of the euro has seen first a slight decline and then a moderate increase in the first quarter of 2004.¹⁴

¹³ Data for the international loan market are available from the BIS one quarter later than data for debt securities. See also the discussion of the limitations of the data reported in last year's review (Box 3, ECB 2003b).

¹⁴ Throughout this section, BIS data are used since they are available with a breakdown of the destinations of loans and deposits. Similar figures, without the regional breakdown outside the euro area, are reported in the ECB's Monthly Bulletin (e.g. loans to non-MFI non-euro area residents amounted to €642.7 billion at the end of the second quarter of 2004 – see Table 2.8.3 in the statistical section of the Monthly Bulletin).

Chart 3 Loans granted 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 4 Loans granted 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 2004 Q1 and at current exchange rates)



Sources: BIS and ECB calculations.

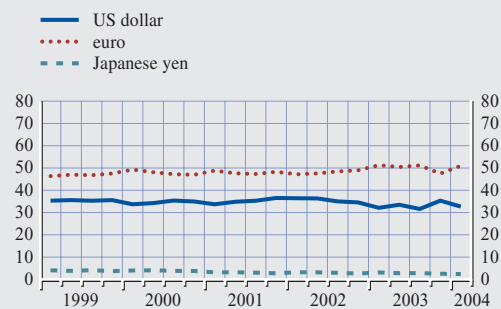
Looking at the regional destination of loans, a similar pattern as that observed in the case of international debt securities can be seen. Non-bank entities in developed countries outside the euro area constitute the main borrowers from euro area banks, with an outstanding amount of USD 482 billion in the first quarter of 2004, around 65% of such loans.¹⁵ For these borrowers, the euro is the second currency of denomination of loans granted by euro area banks, with an average share of around 36% as of the first quarter of 2004, after the US dollar, with around 38%. In emerging market countries, the euro was the main currency of denomination of loans granted 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 2004 (see Chart 4). By contrast, lending by euro area banks to Latin America and the Caribbean, as well as to offshore centres, took place mainly in US dollars.

Focusing on individual countries, non-bank entities from the United Kingdom and the United States are the largest borrowers from euro area banks, and together accounted in 2004 for around half of the amount of such loans (about USD 218 billion and USD 161 billion respectively) in the first quarter. As regards euro-denominated loans only, non-bank borrowers from the United Kingdom continued to be the by far largest borrowers from euro area banks, with a share of around 45% in the first quarter of 2004, up from close to 40% at the end of the same period in 2003.

Turning to deposits in euro area banks made by non-banks outside the euro area, the total stock amounted to USD 781 billion in the first quarter of 2004. The euro is the most widely used currency of denomination of deposits by non-euro area non-banks with banks in the euro area, accounting for USD 401 billion or around 51% of the total deposits in the first quarter of 2004. Of this amount, almost 60%, or USD 235 billion, were held by residents of developed countries other than the euro area. The euro's

Chart 5 Deposits of non-euro area non-banks with banks in the euro area

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



Sources: BIS and ECB calculations.

share has been relatively stable since 1999, although it has seen first a slight decrease in recent quarters and a subsequent rise (see Chart 5).

From a geographical perspective, the largest share of deposits was held by residents from the United Kingdom, followed by those from offshore financial centres, each accounting for around a quarter of all deposits from non-euro area non-banks with euro area banks in the first quarter of 2004. Deposits held by US non-banks took third place with around a fifth of all such deposits. Looking at euro-denominated deposits only, the largest share was also held by residents from the United Kingdom, which accounts for almost 40% of euro-denominated deposits held with euro area banks by non-euro area non-banks residents. Residents in offshore financial centres accounted for around a quarter of such deposits. By contrast, the share of US entities in such deposits was much lower at around 10%.

¹⁵ 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 Vatican City.

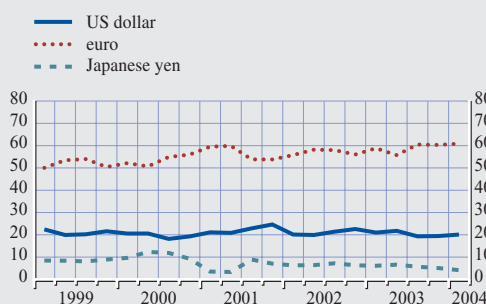
2.2 LOANS AND DEPOSITS BETWEEN EURO AREA NON-BANKS AND BANKS OUTSIDE THE EURO AREA

Loans made by non-euro area banks to non-bank borrowers in the euro area are predominantly denominated in euro. With a share of between 50% and 60% since 1999, and one that has seen a slight increase over time, the euro stands ahead of the US dollar, which accounts for around 20% of the total amount of loans outstanding. Other currencies, including the Japanese yen, had shares of below 10% (see Chart 6).

By far, the largest non-euro area lenders to non-bank borrowers in the euro area are UK banks, which account for more than half of the USD 372 billion's worth of loans outstanding in the first quarter of 2004 (see Table 8). UK banks are also the largest lenders of euro to non-bank borrowers in the euro area, accounting for more than 80% of around USD 190 billion's worth of euro-denominated loans outstanding in the first quarter of 2004. However, as reported in last year's review, only a range of estimates for US banks is available, as the split between interbank loans/and non-interbank loans reported by them to the BIS refers only to domestic currency

Chart 6 Loans granted by non-euro area banks¹⁾ 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.

positions and is therefore not available for currencies other than the US dollar.

Turning to deposits of euro area non-banks in banks outside the euro area, the stock of euro-denominated deposits amounted to USD 263 billion as of the first quarter of 2004 and accounted for around 61% of the total stock.¹⁶

¹⁶ This calculation, however, excludes data from the United States, which are not broken down by currency. In addition, minor data limitations, particularly on the availability of the currency split for the Japanese yen, the Swiss franc and the pound sterling, also affect the reporting of a number of other countries.

Table 8 Main non-euro area lenders to non-bank borrowers in the euro area

(first quarter of 2004, values at current exchange rates)

Country of residence of reporting banks	Loans in all currencies		Loans in euro	
	Amount outstanding (USD billions)	Share (as a % of the total)	Amount outstanding (USD billions)	Share (as a % of the total)
United Kingdom	219	59.0	156	82.1
United States	64	17.3	2 ¹⁾	1.1
Offshore centres ²⁾	28	7.5	7	3.7
Japan ²⁾	27	7.2	14	7.1
Other reporting countries ²⁾	34	9.0	11	6.1
Total	372	100.0	190	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 4.5 billion, so that the amount in euro is between 0 and USD 4.5 billion.

2) Corresponding data include some estimates by the BIS.

70% of all deposits denominated in euro by euro area non-banks held in banks outside the euro area are held with UK banks. At constant 1994 Q1 exchange rates, the share of the euro in such deposits has actually increased slightly over time, from 55% at the beginning of 1999 (see Chart 7), which may be the result of a certain “home currency bias” by euro area residents when depositing in banks outside the euro area.

2.3 LOANS AND DEPOSITS BETWEEN BANKS OUTSIDE THE EURO AREA AND NON-BANKS OUTSIDE THE EURO AREA

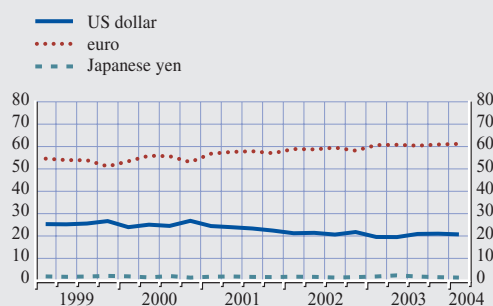
This sub-section presents data on lending and deposit activity conducted across borders outside the euro area. Concerning lending activity, the US dollar is the dominant currency of denomination in this market, accounting for around two-thirds of the outstanding amount of cross-border loans by non-euro area banks to non-bank borrowers outside the euro area in the first quarter of 2004. As has been the case since 1999, the euro is the third currency of denomination, behind the Japanese yen, with market shares of 6% and 10% respectively (see Chart 8).

The largest lenders to non-bank borrowers outside the euro area are UK banks and offshore financial centres, each of which account for more than one-third of the USD 1,759 billion’s worth of loans outstanding in the first quarter of 2004 (see Table 9). UK banks are also the largest lenders of euro outside the euro area, accounting for close to 67% of around USD 100 billion’s worth of such loans outstanding in the first quarter of 2004. However, for the same reasons as those discussed above, only a range of estimates for US banks is available. According to these estimates, US banks are third in importance as lenders in euro outside the euro area.

Turning to deposits, the total stock of deposits held by non-euro area non-banks in banks outside their home country, excluding the euro area, amounted to around USD 2,398 billion in the first quarter of 2004. The amount of such cross-border deposits that is denominated in euro remains relatively small, at around USD 188 billion in the first quarter of 2004. Excluding US data, which is not available in a currency breakdown, and at constant 1994 Q1 exchange rates, this amounts to a share of less than 10% of such cross-border deposits, which compares with the 62% share accounted for by US dollar-denominated deposits (see Chart 9).

Chart 7 Deposits of euro area non-banks with banks outside the euro area¹⁾

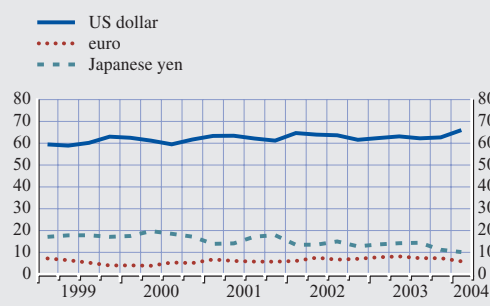
(as a percentage of the total amount outstanding and at constant 1994 Q1 exchange rates)



Sources: BIS and ECB calculations.
1) Excluding data for the US, which are not broken down by currency.

Chart 8 Loans granted by non-euro area banks¹⁾ to non-bank borrowers outside the euro area: currency shares²⁾

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

(first quarter of 2004, values at current exchange rates)

Country of residence of reporting banks	Loans in all currencies		Loans in euro	
	Amount outstanding (USD billions)	Share (as a percentage of the total)	Amount outstanding (USD billions)	Share (as a percentage of the total)
United Kingdom	636	36.2	66	66.8
Offshore centres ²⁾	540	30.7	14	14.3
United States	273	15.5	8 ¹⁾	8.1
Japan ²⁾	168	9.6	2	2.0
Other reporting countries ²⁾	141	8.0	9	8.7
Total	1,759	100.0	99	100.0

Sources: BIS and ECB calculations.

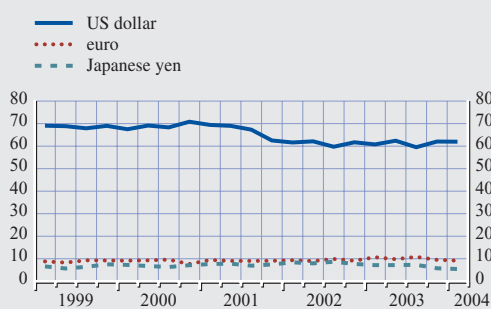
1) Mid-range estimate calculated by the ECB. Loans denominated in currencies other than the US dollar made by US resident banks to non-bank entities outside the euro area amounted to USD 16.2 billion, so that the amount in euro is between 0 and USD 16.2 billion.

2) Corresponding data include some estimates by the BIS.

From a geographical perspective, the largest share of these cross-border deposits in the first quarter of 2004 were held with banks in offshore financial centres, accounting for around half of the total, followed by those held with UK banks (around 30% of the total). Looking at euro-denominated deposits only, the largest shares were held with UK banks (around 40% of all euro-denominated cross-border deposits) and with offshore financial centres (around 31%).

Chart 9 Deposits of non-euro area non-banks with banks outside their country of residence excluding the euro area ¹⁾

(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.

3 THE EURO IN FOREIGN EXCHANGE MARKETS

Previous reviews have shown that the role of the euro in the foreign exchange markets was broadly similar to that of the Deutsche Mark in the past. The euro is the second currency in foreign exchange trading, while the US dollar remains the predominant vehicle currency.¹⁷ This section provides updated information on recent developments related to trading volumes. In addition, the review provides evidence on the euro settlement systems located outside the euro area (see Box 4 below).

Activity on foreign exchange trading in the period under review can be analysed on the basis of the preliminary results of the latest BIS Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity (see BIS 2004d and ECB 2004f). Conducted in April 2004, the Triennial Survey provides a snapshot of global foreign exchange trading. While results are still preliminary and subject to revision, a number of points are worth mentioning at this stage.¹⁸

At the global level, the 2004 Triennial Survey showed a strong increase in the activity of traditional foreign exchange markets, up from an overall average daily turnover of USD 1,200 billion in 2001 to USD 1,880 billion in 2004.¹⁹ Based on the preliminary results, the euro was the second most actively traded currency in foreign exchange markets worldwide, after the US dollar and ahead of the Japanese yen. The euro was involved in 37% of all foreign exchange transactions, a slight decrease of less than 1 percentage point when compared with the 2001 figure.²⁰ This can be seen as a stabilisation after the sharp decline observed between 1998 and 2001, following the elimination of intra-euro area foreign exchange trading after the introduction of the euro.²¹

The preliminary results from the 2004 Triennial Survey also show that, globally, the euro continued to be traded predominantly against the US dollar. 76% of all global activity involving the euro was in trading vis-à-vis the US dollar. The US dollar/euro currency pair also remained that most actively traded,

accounting for 28% of global turnover, although its share is slightly down from the 30% registered in 2001.

Factors that appear to have contributed to the increase in global foreign exchange trading activity include valuation effects, increasing interest of investors in foreign exchange as an asset class of its own, a more active role played by asset managers and the growing importance of hedge funds (BIS 2004d, e). Indeed, available estimates by market participants suggest that the number of hedge funds has grown worldwide, from around 4,000 in 2001 to around 6,000 in 2004, while the assets under the control of hedge funds are estimated to have grown very rapidly, almost doubling to USD 800 billion over the past four years. While this figure is still relatively small when compared with the total of investable assets worldwide, hedge funds are particularly active traders. Moreover, although information about the activities of hedge funds is at best approximate, foreign exchange markets are considered one of the markets on which they concentrate, perhaps particularly so in the case of start-up Europe-based hedge funds.²² The more active role of fund managers and the growing importance of hedge funds, together

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

18 The BIS plans to publish the final global results of the Triennial Survey in spring 2005.

19 Traditional foreign exchange instruments refer to spot transactions, outright forwards and foreign exchange swaps. Average daily activity in the over-the-counter derivatives markets increased even more, from USD 575 billion in 2001 to USD 1,403 billion in 2004.

20 Calculated after adjustment for both local and cross-border double-counting, which arises because transactions are reported by both the seller and the buyer. It should be noted that individual currencies are involved in one settlement leg of a foreign exchange trade and another currency is involved in the second settlement leg of the trade. Thus, the sum of currency percentages adds up to 200%.

21 In 1998, the combined share of the legacy currencies accounted for 53% of global foreign exchange turnover.

22 See "Hedge funds and leverage", Bank of England's Financial Stability Review, June 2004, pp. 52-53.

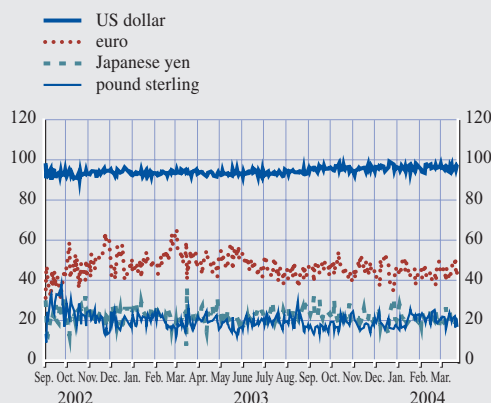
with their presumed greater involvement in the foreign exchange market – even in a context of low volatility of exchange rates – would also help explain why trading between banks and financial customers rose markedly, increasing its share in the total turnover of traditional markets from 28% to 35%.

In addition to the preliminary results of the BIS Triennial Survey, a timely source of data on foreign exchange trading that has recently become available is that provided by the Continuous Linked Settlement (CLS) system that started operations in September 2002.²³ In September 2004, CLS Bank settled on average 130,000 transactions with a gross value equivalent to USD 1,500 billion per day.²⁴ In addition, CLS Bank has increased the number of currencies in which it settles transactions.²⁵

In the period under review, the euro remained the second most widely settled currency by CLS, accounting for an average of around 44% of daily settlements.²⁶ The US dollar was involved, on average, in around 96% of all daily transactions, emphasising its use as a vehicle currency. Compared with the period between September 2002, when CLS started to operate, and June 2003, the average share of the euro in daily transactions declined from 48% to 44%. This slight decline seems to be related to valuation effects and to the increased number of currencies settled in CLS. Perhaps more notable is that, on a daily basis, the share of trades accounted for by the euro has become less volatile in the period under review. Indeed, the share accounted for by the euro on a given day in the review period moved within a narrower range of between 34% and 58%, compared with a range of between 32% and 64% before June 2003, when CLS was still in its early stages (see Chart 10).

Chart 10 Settlement within the CLS system: currency breakdown¹⁾

(as a percentage²⁾ of total transactions settled)



Source: CLS and ECB calculations.

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

2) The sum of currency percentage shares adds up to 200% as both currencies involved in the settlement of a FX trade are counted individually.

²³ 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. According to this principle, the two legs of a transaction are settled simultaneously, and in such a way that the one cannot occur without the other, i.e. the final transfer of one currency occurs only if a final transfer of the other currency takes place.

²⁴ The value of settled transactions amounts to double the value of trades because every trade involves two settlements legs, one in each currency. Thus, in September 2004, CLS settled an average of 65,000 trades with a total value equivalent to USD 750 billion.

²⁵ Settlements by CLS take place in 11 major currencies, including the euro, US dollar, Japanese yen, pound sterling, Australian dollar, Canadian dollar, Danish krone, Norwegian krone, Singapore dollar, Swedish krona and Swiss franc. By the end of 2004, CLS Bank expects also to settle trades in the Hong Kong dollar, Korean won, New Zealand dollar and South African rand.

²⁶ The analysis is based on trading days, on which all of the following currencies were actively traded: Australian dollar, Canadian dollar, Swiss franc, euro, pound sterling, Japanese yen and US dollar. In the period under review, a total of 264 days displayed active trading in all of the above currencies.

Box 4**EURO SETTLEMENT SYSTEMS AND ARRANGEMENTS LOCATED OUTSIDE THE EURO AREA**

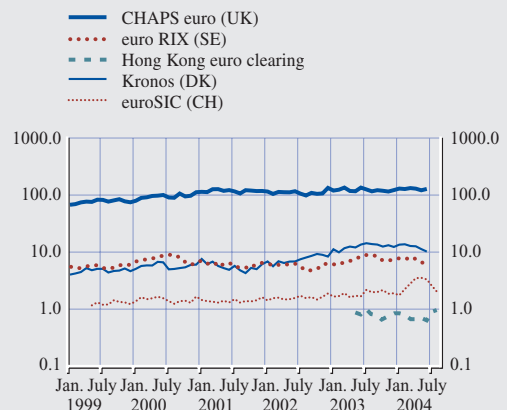
Apart from CLS, there are five euro payment systems located outside the euro area. The Danish Kronos system, the CHAPS Euro system in the United Kingdom and the Euro RIX system in Sweden form the local TARGET components of these countries. In addition, two formal euro settlement arrangements are located in Switzerland (euroSIC) and in Hong Kong (EUR CHATS). In contrast to the case of CLS, these systems are no multi-currency systems, but settle euro transactions only. All banks participating directly in the three national TARGET components also have direct access to TARGET, while only the respective settlement agent (Swiss Euro Clearing Bank and Standard Chartered Bank Ltd) has direct access to TARGET in the case of euroSIC and EUR CHATS.

In 1999, when TARGET was created, the EU countries that did not adopt the single currency were allowed to connect their domestic euro RTGS component to TARGET. For the countries concerned, this connection was intended to facilitate their move towards Stage Three of Economic and Monetary Union. The respective euro RTGS systems primarily settle large-value payments related to foreign exchange, money market or securities transactions. Due to the importance of London as a financial centre, CHAPS Euro is by far the largest off-shore euro system. In the first half of 2004, it settled a daily average of 18,400 transactions, with a daily value of €128 billion, compared with 16,800 transactions of €122 billion in 2003. The Danish Kronos system is the second largest off-shore euro system, settling a daily average of 350 transactions with a value of €12.4 billion in the first half of 2004 (400 transactions of €12.6 billion in 2003). The Swedish Euro RIX system processed 410 transactions with a value of €7.4 billion per day in the first six months of 2004 (380 transactions of €7.5 billion in 2003). Amongst the Member States joining the EU in May 2004, Poland indicated that it aims to connect to TARGET in early 2005.

The Swiss euroSIC also started its operations with the introduction of the euro in 1999. It facilitates Swiss banks' cash management and cross-border payments in euro via its links to TARGET. It processes primarily transactions of private companies and individuals. In addition, it also handles interbank payments, which largely consist of the euro leg of foreign exchange transactions, cover payments for money market transactions and securities transactions. EuroSIC has consistently increased the values and volumes of processed payments and, in the first eight months of 2004, handled a daily average of 9,500 transactions with a value of €2.9 billion per day, compared with 2,000 transactions with a value of €1.4 billion in 1999. At the same time, the average value of

Daily values settled by euro payment systems located outside the euro area

(EUR bln, logarithmic scale)



Source: ECB, Swiss Interbank Clearing and Hong Kong Interbank Clearing Ltd.

the payments processed declined from €0.7 million in 1999 to €0.3 million in the first eight months of 2004.

EUR CHATS in Hong Kong started its operations at the end of April 2003. Hong Kong banks saw a need to synchronise their euro payments with Hong Kong dollar payments, US dollar payments and euro securities transactions in the Hong Kong market. Thus, the Hong Kong euro clearing system is largely used for the settlement of the euro leg of foreign exchange transactions. Since May 2003 until August 2004, the daily transaction values have ranged between €600 million and €1 billion. As the Hong Kong euro clearing system normally processes only around 30 transactions per day, the average size of a payment is €25 million.

4 THE EURO IN INTERNATIONAL TRADE IN GOODS AND SERVICES

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.²⁷ While evidence regarding this aspect of the euro's international role remains limited, progress in the availability of data has been made. In particular, in the preparation of this review, the European System of Central Banks (ESCB) has collected data, when available, on the currency breakdown of foreign trade for a number of EU countries. This exercise complements the efforts made in previous years to report the currency breakdown of extra-euro area international trade for a number of euro area countries.

4.1 THE ROLE OF THE EURO IN INTERNATIONAL TRADE IN GOODS AND SERVICES BY SELECTED EURO AREA COUNTRIES

The use of the euro as a currency for the settlement or invoicing of international trade transactions by selected euro area countries has

²⁷Two counterparts may agree that trade is invoiced in a given currency, but settled in another currency. Therefore, data reported according to the currency of invoicing (i.e. the currency of denomination of contracts) and data reported according to the currency of settlement (i.e. the currency in which the corresponding payments are made through the banking system) may differ. While academic literature mainly focuses on invoicing as a determinant of the pricing behaviour of international corporations, available data refer to the settlement currency in many cases.

Box 5

THE CHOICE OF CURRENCY IN INTERNATIONAL TRADE: THEORY AND RECENT EVIDENCE

What determines the choice of a particular currency to invoice or settle international trade? While this question has attracted the attention of international economists for decades, the limited availability of data has proved to be an obstacle for the development of literature in this area. Despite this data limitation, a number of stylised facts have long been established in literature.

In a seminal contribution, Grassman (1973) found that, on the basis of a study of Swedish exports and imports in 1968, 66% of Swedish exports, but only 26% of imports, were invoiced in Swedish kronor. The finding that exporters tended to invoice in their own currency is commonly referred to as "Grassman's law" and was later on complemented by a number of contributions (see Bénassy-Quéré et al., 1998, for a review of early literature). Krugman (1984) and Black (1990) observed that the relative sizes of the trading partners mattered and that Grassman's law applied unless the importing country was much larger than the exporter. McKinnon (1979) emphasised the difference between trade in differentiated manufactured goods and that in relatively homogeneous primary goods, explaining the predominance of domestic currency pricing by European countries with the fact that such exporters of industrial products enjoyed greater market power and were thus able to avoid bearing the exchange rate risk. This helps to explain why for trade between industrial and developing countries the industrial country's currency or a third currency, usually the US dollar, is used in most cases. In addition, and unsurprisingly, inflationary currencies are used less in their country's foreign trade than less inflationary currencies (see a summary of stylised facts from early literature in Hartmann, 1998:98).

A common argument in literature is that practices regarding the choice of invoicing currency in international trade change only slowly. A particular case of “inertia” appears to be that of commodities traded in exchanges. Trade in homogeneous commodities is often centralised, which facilitates the efficient communication of relative price information. As Tavlas (1997:719) points out, such commodity exchanges tend to be centralised in only a few countries that have a comparative advantage as financial centres. The existence of such established exchanges in the United States and the United Kingdom reduces the likelihood of commodities traded through exchanges being priced in currencies other than the US dollar and the pound sterling.

In recent years, evidence challenging Grassman’s law and a focus on the impact of conditions of monopolistic behaviour and sticky prices on open economies has translated into renewed interest in the issue of the choice of currency in international trade. The term “pricing to market”, introduced by Krugman (1987) and Dornbusch (1987), captures the behaviour of monopolistic firms that are able, by exploiting their ability to take advantage of differences in demand elasticity across countries, to set different prices in different national markets. In practice, pricing to market is likely to be associated with the use of the currency of the local market where the goods are sold as the invoicing currency. In addition, in the presence of menu costs for changing nominal prices and an environment of flexible exchange rates, exporters facing a competitive local market may opt to use the local currency in their pricing so as to avoid that exchange rate fluctuations would result in a loss of competitiveness. The combination of market power and nominal rigidities has brought the issue of the choice of invoicing currency to the centre stage. Full “local currency pricing” implies no pass-through from the exchange rate to domestic inflation, sparking literature on the extent of local currency pricing and a revisiting of the so-called expenditure-switching effect played by flexible exchange rates in traditional models of open economies, by which nominal exchange rate changes were seen as facilitating relative price adjustment and prompting demand to switch from foreign to domestic goods, or vice versa (Engel, 2002; Devereux and Engel, 2003).

While recent theoretical research has focused on making the choice of invoicing currency endogenous to the models, and moving from a partial equilibrium to general equilibrium setting, there is a continuity with much of earlier literature. The micro-foundations of recent models exploit, as in the case of earlier contributions, albeit in a more formalised way, the perspective of firms’ maximising expected profits (Devereux and Engel, 2001) and the issues of transaction costs and inertia (Rey, 2001). Another recent contribution to literature worth highlighting is that of Bacchetta and van Wincoop (2003), who use a dynamic general equilibrium model of the currency of denomination of international trade to show that a new currency established as the result of a monetary union is likely to be used more extensively in trade than the sum of the currencies it replaces.

The central banking community has also paid increasing attention to this issue. Recent studies by staff from Suomen Pankki (Freystätter 2003) and the Bank of Japan (Oi, Otani and Shirota, 2004) are examples of this interest. In addition, De Nederlandsche Bank (DNB) recently published an overview of currency practices in Dutch exports and imports in the period from 1975 to 2002 in its Quarterly Bulletin (March 2004). Among other results, the DNB article provides evidence over the long-term of an increase of invoicing in US dollars and, more recently, of the speed of the change from the guilder to the euro in Dutch foreign trade.

Table 10 Share of the euro as a settlement/invoicing currency in the extra-euro area exports of goods and services of selected euro area countries

(as a percentage of the total)

	Goods			Services		
	2001	2002	2003	2001	2002	2003
Belgium ¹⁾	46.7	53.5	55.3	...	55.5	64.4
France	49.2	55.3	52.4	60.4	56.9	57.9
Germany	...	49.0	63.0	...	...	...
Greece	23.5	39.3	47.3	11.3	13.3	16.3
Italy	52.7	54.1	58.2	50.7	57.0	62.1
Luxembourg	...	51.5	52.7	...	40.4	43.0
Portugal	43.5	48.4	54.6	37.4	44.1	48.6
Spain	52.0	57.5	60.8	52.9	59.5	63.8

Sources: National central banks and ECB calculations.

Notes: (...) stands for "not available". Data for 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, which refer to invoicing. 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 and 2003 on behalf of the Deutsche Bundesbank. Data on services for Belgium, France, Italy and Luxembourg include travel, whereas travel is excluded for Greece, Portugal and Spain.

1) Data for 2001 refers to Belgium and Luxembourg.

shown a notable increase in recent years. While the time series of data available remains short, a number of developments are worth highlighting. Key features are presented, first for exports, and then for imports.

Concerning exports, in 2003 the share of the euro in extra-euro area exports increased for both goods and services in the vast majority of euro area countries for which data are available (see Table 10). According to the data available,

the increase in the share of the euro was particularly strong in the case of Germany's exports of goods. Notable increases were also widely observed in the shares of exports of goods and services denominated in euro by Spain, Portugal, Italy and Greece. Overall, the use of the euro appears to be more widespread in exports of goods than in exports of services. The particularly low figure for Greece's exports appears to be attributable to the important role played by maritime

Table 11 Share of the euro as a settlement/invoicing currency in the extra-euro area imports of goods and services of selected euro area countries

(as a percentage of the total)

	Goods			Services		
	2001	2002	2003	2001	2002	2003
Belgium ¹⁾	47.2	53.6	57.0	44.4	57.7	64.3
France	39.8	46.8	45.1	54.6	54.7	51.7
Germany	...	48.0	55.2	...	...	...
Greece	29.3	35.8	39.6	15.3	16.8	20.1
Italy	40.8	44.2	44.5	49.9	56.1	62.9
Luxembourg	...	35.3	41.7	...	28.5	36.0
Portugal	53.6	57.5	60.2	55.6	58.3	64.3
Spain	49.7	55.8	60.3	45.3	49.4	54.6

Sources: National central banks and ECB calculations.

Notes: (...) stands for "not available". Data for 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, which refer to invoicing. 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 and 2003 on behalf of the Deutsche Bundesbank. Data on services for Belgium, France, Italy and Luxembourg include travel, whereas travel is excluded for Greece, Portugal and Spain.

1) Data for 2001 refer to Belgium and Luxembourg.

transportation, a sector traditionally characterised by a high use of the US dollar.

Concerning imports, as reported in Table 11, the share of the euro has also seen a notable increase over the past two years, for both goods and services, and across the reporting countries. Nevertheless, it remained somewhat lower than in the case of exports, with the exception of Portugal (with regard to both goods and services), Greece and Italy (services), and Belgium (goods). The fact that the share of the euro in imports is lower than that in exports is in line with the so-called Grassman's Law, whereby exporters are typically in a better position to enforce their currency preferences vis-à-vis importers (see Box 5). It may also reflect the weight of certain commodities that are usually priced in US dollars on the imports side (such as raw materials, including oil).

While the heterogeneity of experience among euro area countries points to the importance of specific national factors, it is noteworthy that the increase in the use of the euro for extra-euro area international trade has taken place widely across the euro area countries for which data are available. It is difficult, however, to draw general conclusions as to the factors underlying these developments. Valuation effects due to exchange rate movements may play a part in explaining the developments observed over the past few years, although – depending on the importance of local-currency pricing by euro area exporters – they may not prove to be a significant factor in explaining the increase in the share of euro-denominated invoicing in respect of euro area countries' exports. In addition, as was noted in the previous issue of the review, the change of bookkeeping, accounting and other administrative procedures from the legacy

Table 12 Share of the euro in exports of selected non-euro area countries

	Exports invoiced in euro (percentage of total exports)				Exports to the euro area (percentage of total exports)			
	2000	2001	2002	2003	2000	2001	2002	2003
Non-euro area EU countries								
Cyprus	...	...	...	31	19	19	22	32
Czech Republic	...	...	68	70	63	62	61	63
Denmark	...	...	34	35	45	44	43	40
Estonia	...	...	65	70	44	41	37	39
Hungary	...	...	83	85	70	69	66	63
Latvia	...	...	51	57	31	30	29	27
Lithuania	...	...	18	22	31	26	26	27
Malta	...	...	...	...	26	35	30	25
Poland	...	...	60	65	60	59	58	57
Slovakia	...	...	...	...	56	56	57	59
Slovenia	...	...	87	87	60	58	55	56
Sweden	...	...	...	...	40	39	39	39
United Kingdom	21	23	21	...	53	51	52	51
EU candidate countries								
Bulgaria	37	48	52	61	42	46	47	51
Romania	...	...	59	64	57	62	61	61
Other countries								
Australia ¹⁾	0	1	1	1	7	7	7	7
Japan	8 ²⁾	7 ²⁾	9	...	13	12	11	12
South Korea	2	1	6	8	10	10	10	10
Tunisia	46	52	...	...	76	77	77	76
Ukraine	...	...	11	15	15	16	16	17

Sources: IMF, National Sources.

Note: (...) stands for "not available".

1) Share of the euro only, excluding all legacy currencies. Data for 2003 refers to the first quarter.

2) Combined share of the euro and the Deutsche Mark only.

currencies to the euro might have induced some firms to revise their pricing policies. Given the practice of relatively long-term contracts that is common in international trade, the effects from such changes may manifest themselves over a period of time.

4.2 THE ROLE OF THE EURO IN INTERNATIONAL TRADE IN GOODS AND SERVICES BY THIRD COUNTRIES

With the help of the national central banks of the ESCB, data on the currency breakdown of international trade for a number of non-euro area EU countries has been compiled (see Tables 12 and 13). In addition, available evidence is also presented for a number of non-EU countries.

Available evidence regarding exports suggests that the share of the euro has increased in most of the new Member States between 2002 and 2003. In many cases, this increase in the share of the euro in total exports exceeded the increase in the share of the euro area as a destination for exports, suggesting that exports to non-euro area countries may also be increasingly invoiced in euro. In some countries, such as Hungary and Slovenia, the share of the euro greatly exceeded that of trade with the euro area. A notable increase in the share of the euro in the invoicing of exports has also taken place in EU candidate countries such as Bulgaria and Romania. By contrast, data from Denmark and the United Kingdom do not point to an increase in the share of the exports invoiced in euro.

Turning to available evidence on imports, we can also observe increases in the share recorded

Table 13 Share of the euro in imports of selected non-euro area countries

	Imports invoiced in euro (percentage of total imports)				Imports from the euro area (percentage of total imports)			
	2000	2001	2002	2003	2000	2001	2002	2003
Non-euro area EU countries								
Cyprus	...	...	...	45	38	40	34	27
Czech Republic	...	...	65	66	56	57	56	55
Denmark	...	...	34	30	48	50	51	53
Estonia	...	...	59	61	41	39	40	40
Hungary	...	...	73	72	54	53	51	59
Latvia	...	...	39	49	39	40	41	37
Lithuania	...	...	48	53	32	35	35	35
Malta	...	...	...	...	51	44	47	44
Poland	...	...	60	60	52	53	53	60
Slovakia	...	...	...	...	45	46	46	51
Slovenia	...	...	83	84	63	64	64	71
Sweden	...	...	...	...	49	49	49	50
United Kingdom	19	19	27	...	46	44	47	48
EU candidate countries								
Bulgaria	47	55	60	63	40	44	45	53
Romania	...	...	66	68	51	53	53	59
Other countries								
Australia ¹⁾	2	5	9	9	13	15	16	17
Japan	2 ²⁾	3 ²⁾	5	...	9	10	10	10
South Korea	2	1	5	6	8	8	9	9
Tunisia	50	56	...	...	67	66	66	69
Ukraine	...	...	4	5	18	19	21	29

Sources: IMF, National Sources.

Note: (...) stands for "not available".

1) Share of the euro only, excluding all legacy currencies. Data for 2003 refers to the first quarter.

2) Combined share of the euro and the Deutsche Mark only.

for most new Member States. As in the case of exports, in some new Member States the vast majority of imports are denominated in euro (e.g. Slovenia), while EU candidate countries have also seen an increase in the relative use of the euro for imports. While available data on countries outside the EU are limited, there is also some evidence of an increase of the euro's share in the foreign trade of some countries beyond the neighbouring regions of the EU.

SPECIAL FOCUS: DETERMINANTS OF THE CURRENCY CHOICE IN INTERNATIONAL BOND ISSUANCE BY CORPORATIONS

I INTRODUCTION

The increasing use by non-euro area residents of the euro as a financing currency in international bond markets has been one of the key characteristics of the internationalisation of the single currency since the start of Stage Three of Economic and Monetary Union.²⁸ Indeed, since 1999, the share of the euro in the amount outstanding of international debt securities has increased from 21% to 31%.

As indicated in previous reviews, another salient feature is that non-euro area issuers of euro-denominated bonds have been predominantly corporations and financial sector institutions from developed economies.²⁹ This section endeavours to identify the main motivations underlying the decision by corporations to issue bonds in euro. It is based on research undertaken by ECB staff in the course of 2004 on the determinants of the currency choice in international bond issuance.³⁰ The analysis focuses on corporations only and excludes financial institutions. This is because the latter – as intermediaries – may have often raised finance on behalf of their customers. As a result, these customers' ultimate motivations for raising finance in euro may not be directly revealed in issuance and balance sheet data, which would in turn blur the interpretation of the results.³¹

The modelling of corporations' decisions to issue bonds in a particular currency has been divided into two steps (see also Box 6 for a detailed description):

- (a) issuance in the home currency or in a foreign currency (binary choice)

and, in the event of this leading to a decision to borrow in foreign currency,

- (b) issuance in a particular foreign currency as opposed to all other foreign currencies (multivariate choice), which may contribute to understanding why non-euro area firms have preferred the euro to other foreign currencies.

The analysis presented here draws partly on existing literature on the determinants of the currency choice in bond issuance. Several papers have studied the choice between the home and a foreign currency, addressed in step (a) above. However, most of the existing work has been based on single-country examples or emerging markets, while non-euro area issuers of euro-denominated international bonds have originated from mature economies. Keloharju and Niskanen (1997) use a panel of Finnish companies, while Nandy (2002) considers a panel of both Canadian and UK firms. Turning to emerging markets (see Galindo, Panizza and Schiantarelli (2003) for a survey), literature has mainly focused on the impact of exchange rate fluctuations, or the exchange rate regime (Mohapatra 2004), on the currency choice in bond issuance. Finally, Esho, Sharpe and Webster et al. (2001) look at the related market for syndicated loans, concentrating on East-Asian firms.

More importantly, the choice of a particular currency in international bond issuance (as in step (b) above) has been far less researched. Kedia and Mozumdar (2003) extend the binary currency choice between home and foreign currency to a multivariate decision-making problem involving a range of currencies. However, the paper looks at foreign currency-denominated debt by US companies only, giving it a strong regional focus. It is therefore this section's ambition to fill these gaps by studying the multivariate decision-making problem and broadening the geographical scope by taking into account bonds issued by corporations in a number of developed

28 For details, see ECB (2002, 2003b) and Geis, Mehl and Wredenberg (2004).

29 By contrast, sovereign emerging market borrowers have been making less use of the euro as an international financing currency, in particular in the wake of the default of Argentina (IMF, 2002).

30 The focus is based on a paper by Siegfried, Simeonova and Vespro (2004), "The choice of currency in bond issuance," mimeo, ECB. It has also benefited from extensive discussions with the International Primary Market Association.

31 The same kind of reasoning has also been applied to other market segments, such as the international loan and deposit markets (see Section 1.2).

economies. This involved the creation of a new dataset (Section 2) covering firm-level bond issuance and macroeconomic data in order to model the demand and the supply sides of the international bond market (Section 4). Macroeconomic factors, such as the bond market capitalisation or deposits in a given currency area, were used as proxies to capture the demand side. To identify the main determining factors for the currency decisions of individual firms, i.e. the supply side, microeconomic variables, including firm-level balance sheet data, were combined with macroeconomic data. In the end, the analysis was based on a sample of 1,428 firms, issuing 8,022 bonds in the four main currencies of issuance, namely the US dollar, the euro, the Japanese yen and the pound sterling, in the period from 1999 to 2003.

The main results (Section 5) largely point to two areas of consideration at the firm level, cost and strategic motivations (Section 3 reviews possible choice determinants). In this respect, the euro appears to be chosen as a currency for bond issuance for two main reasons. On the cost side, firms issue in euro to attempt to hedge their exposure to the euro area. Results also indicate that some foreign companies may have tapped euro area financial markets as part of an overall strategy to broaden their investor base towards investors located in the euro area.

2 A NEW DATASET OF INTERNATIONAL BOND ISSUANCE IN THE PERIOD FROM 1999 TO 2003

A key challenge of the analysis of determinants of the currency choice for international bonds was the creation of a new dataset at the level of single bond issues. Covering the period from 1999 to 2003, i.e. the first five years after the introduction of the euro, firm-level balance sheet data drawn from Van Dijk's Osiris database were matched with bond issuance data from Thomson Financial and linked with macroeconomic data from the IMF and the BIS. This high level of data disaggregation was needed to gain insights into the issuance process and the currency decision at the level of each single issue, i.e. the supply side of the bond market, while capturing the demand side by including macroeconomic variables.

The final dataset is the result of a multi-staged selection process (see Table 14). Company data from the Osiris database, featuring almost 25,000 companies worldwide, marked the starting point of the exercise. From this set, active industrial companies listed on a stock exchange and domiciled in developed economies according to the IMF definition³² were selected. This yielded 16,500 companies.

Closer analysis of the firms compiled in this sample revealed that many firms had a single shareholder owning more than 50% of the shares, indicating that these companies might be subsidiaries of the respective shareholder. Subsidiaries, however, are likely to decide on the issuance of international bonds, including the preferred currency, in close coordination with the holding company. Thus, it could be misleading to link bond issuances by these companies with the respective balance sheet data, as the holding company's characteristics would in fact be more appropriate to explain the financing decisions taken by the subsidiary. For example, data on a subsidiary might indicate strong financing needs, which would be attenuated through the issuance of a bond if the firm were a stand-alone company. As a subsidiary of another company, such financing needs might instead be fulfilled through transfers from the parent company. For these

reasons, companies with a single shareholder holding more than 50% of the shares were withdrawn from the sample, reducing the number of companies to 9,760.

The remaining sample included many companies that are small in terms of assets and/or numbers of employees. In order also to keep data manageable, firms from the first quartile of the distribution by total assets in US dollar terms in any year, and of employees in at least one year, were discarded.³³ Applying these criteria produced a sample of 4,424 companies. To guarantee continuity in the reported data, companies with less than three years of consecutive balance sheet data were removed from this initial set, reducing the total number of companies to 1,711.

In a second step, the company data from Van Dijk's Osiris database were combined with bond issue data from Thomson Financial. According to this source, a total of 12,210 bonds were issued by 2,471 companies domiciled in industrial countries in the period from 1999 to 2003. Matching issue data with firm-level information resulted in 9,233 issues by 1,586 firms. Thus, on average, each company included in the sample issued slightly more than one bond per year in the period under review.

³² Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Korea, the Netherlands, Norway, Singapore, Sweden, Spain, Portugal, Switzerland, Taiwan, the United Kingdom and the United States.

³³ In terms of assets, the company size in the final sample ranges from USD 91,000 to USD 180 billion. In terms of employment, the company size ranges from ten to 1.5 million employees.

Table 14 Overview of information available in bond and firm-level databases

	Number of firms	Number of bond issues
Industrial companies in the Osiris database	24,883	-
Listed, active, companies in advanced economies	16,500	-
Largest shareholder owns less than 50%	9,760	-
2 nd to 4 th quartiles in assets in all years	5,464	-
2 nd to 4 th quartiles in employees in one year	4,424	-
Three consecutive years of balance sheet data	1,711	-
Active issuers between 1999 and 2003	2,471	12,210
Matched bond issue and balance sheet data	1,586	9,233
of which:		
Located and issuing in the United States, the euro area, Japan and the United Kingdom	1,496	8,361
Domestic issues	1,468	7,461
Merger and acquisition (M&A) activity related to bond issuance	921	5,295
Subsidiary information	1,383	8,448

Sources: Van Dijk Osiris and Thomson ONE databases, and ECB staff calculations.

Table 15 provides information on

- the geographical distribution of the companies issuing bonds that are covered by the sample (column 1),
- the currency distribution of bonds issued (column 2), and
- the number of domestic bonds covered by the sample (column 3), i.e. the number of bonds denominated in the home country

currency that were issued by companies of the respective countries.

It reveals that the sample has a bias towards the United States, which accounts for more than 50% of all issues (4,727 of a total of 9,233 issues). By contrast, issues from Nordic and East-Asian countries are scarce in the database. The bias towards the US dollar is even more pronounced as 5,443 issues are denominated in

Table 15 Distribution of issues by residence of the issuer and by currency

Country/Currency	Number of bonds issued by companies from	Number of bonds issued in currency	Number of domestic issues issued by companies from
United States/USD	4,727	5,443	4,490
Japan/JPY	1,563	1,630	1,449
Euro area/EUR	1,428	1,060	744
United Kingdom/GBP	484	302	191
Korea/KRW	311	296	278
Taiwan/TWD	252	210	206
Canada/CAD	197	60	30
Switzerland/CHF	89	83	36
Sweden/SEK	58	5	2
Australia/AUD	50	90	24
Singapore/SGD	26	25	8
Hong Kong/HKD	21	21	3
Norway/NOK	15	6	0
Denmark/DKK	10	2	0
Israel/ILS	2	0	0
<i>All countries/currencies</i>	<i>9,233</i>	<i>9,233</i>	<i>7,461</i>

Sources: Thomson ONE databases and ECB staff calculations.

Table 16 Distribution of bond issuance in the four main regions, by country and by currency

Region	EUR	GBP	USD	JPY	Total
Euro area	744	54	441	92	1,331
United Kingdom	124	191	107	40	462
United States	101	49	4,490	35	4,675
Japan	14	2	89	1,449	1,554
<i>Total</i>	<i>983</i>	<i>296</i>	<i>5,127</i>	<i>1,616</i>	<i>8,022</i>

Sources: Thomson ONE databases and ECB staff calculations.

the US currency. 1,630 bonds were issued in yen, while 1,060 were denominated in euro. Relating the number of domestic issues to the number of bonds issued by companies in the respective country provides a measure of home bias in issuance. It is particularly strong in the United States, as 4,490 issues out of a total of 4,727, i.e. 95%, were denominated in US dollars. By contrast, firms from the euro area chose the euro in only 52% of the cases (744 out of 1,428).

As the number of observations is very small for several countries, the full dataset is not suitable for an econometric analysis of the currency choice. At the same time, the predominant part of total issues, or 91% out of 9,233, were issued in the four main currencies by firms domiciled in the euro area, the United States, the United Kingdom, or Japan. Similarly, most firms (1,496 out of 1,711) are located in these four regions. Accordingly, the focus of the econometric exercise lies on firms that issue in the four main currencies and are domiciled in the United States, the euro area, the United Kingdom or Japan, leading to a total of 8,022 issues (see Table 16).

Closer analysis of this group of bonds reveals that for all four currencies, the largest share of issuance comes from the domestic market (the main diagonal in Table 16). Euro area residents were the second most important bond issuers in US dollars, pounds sterling and Japanese yen in the period under consideration (row 1). Looking at the euro as an issuing currency (column 1), UK residents are the most important non-resident issuers, accounting for

124 out of 983, or one-eighth, of all euro-denominated issues. US companies and, in particular, Japanese companies are less important as foreign issuers of euro-denominated bonds due to their substantial home bias.

3 THEORETICAL CONSIDERATIONS

In previous reviews, as well as in Geis, Mehl and Wredenburg (2004), several determinants of issuance are mentioned to explain the increasing use of the euro as an international financing currency. The main arguments can be summarised as follows:

- *Hedging*: companies issue euro-denominated bonds as they face the need to ensure that euro-denominated assets are hedged by euro-denominated liabilities.³⁴
- *Diversification of the investor base*: companies issue euro-denominated bonds as they face the need to diversify the investor base and to ensure safe access to funding sources.
- *Opportunity to arbitrage financing costs across currencies*: this may happen (i) when borrowers can issue a bond at a lower interest rate in euro than in domestic currency and (ii) when swap conditions facilitate such arbitrage, i.e. when borrowers can convert this gain into domestic currency. The former arises, in particular, if euro area investors are ready to buy bonds issued by non-euro area residents at a premium compared with the credit spreads prevailing in the latter's domestic markets.

Based on this evidence, it is safe to assume that the choice of the currency of issuance is determined by

- the firm's attempt to *minimise borrowing costs*, with the macroeconomic environment, the microeconomic characteristics of the firm itself and the size and duration of the bond issue being taken as given;
- *strategic considerations* by the issuing company with regard to the company's overall goal of ensuring a sustainable pattern of financing activities.

COSTS

Borrowing costs are captured by International Accounting Standard IAS 23, according to which they consist of three parts: interest costs, debt issue transaction costs and foreign exchange risk.

- Interest rate differentials between two currencies may affect the choice of currency when raising debt, as borrowers will tend to issue debt in the currency with the lowest interest cost.³⁵
- Hedging of foreign currency risk exposure is particularly important for long-term assets, as the long-term currency swap market is illiquid. Because it is less simple for a firm to hedge long-term liabilities in the currency derivatives market, companies use "natural" hedges, i.e. they borrow in the currencies of the countries where their assets are located.³⁶
- Transaction costs may increase the cost of borrowing in a given currency relative to other currencies. For example, the consolidation of European markets in the wake of the introduction of the euro appears to have reduced the advantage of local knowledge for national banks, and has attracted global underwriters.³⁷

³⁴ Hedging of foreign exchange exposure has also been found to be a statistically significant determinant of foreign currency-denominated bond issuance in the literature referred to above (Keloharju and Niskanen, 1997; Kedia and Mozumdar, 1999, and Esho, Sharpe and Webster, 2001).

³⁵ Explanations for continued differences in interest rates have included political risk (Aliber 1973, Doodley and Isard 1980) and differences in tax rates (Levi, 1977; Shapiro, 1984). Data on expectations for exchange rate movements over the very long term (i.e. matching the maturity of bond issues) are not available. Hence, the analysis on the impact of interest rate differentials remains, by necessity, partial, as one factor of the uncovered interest rate parity condition cannot be taken into account properly.

³⁶ Huffmann and Makar (2004) confirm this behavioural pattern of using forward contracts for the short period, while issuing foreign currency-denominated debt for the long-term hedging of foreign currency-denominated assets.

³⁷ Santos and Tsatsaronis (2003) and Melnik and Nissim (2004) show that the introduction of the euro as the single currency increased market integration.

STRATEGIC SUPPLY AND DEMAND EFFECTS

On the demand side, a large number of potential investors in a given currency area may raise the issuer's interest in issuing in that currency in order to establish an investor base in that market. On the supply side, firms may have financing needs that exceed the capacity of the local market. This may make it necessary for them to diversify into bonds denominated in other currencies so as to tap a wider investor base. Finally, different creditor rights may affect the decision to issue in another country (LaPorta et al, 1998). Differences in regulations may have a similar effect, as discussions with market participants suggest.

4 EXPLANATORY VARIABLES AND METHODOLOGY

Econometric analysis of the above-mentioned considerations requires that costs and strategic effects are captured by observable data. A caveat is that variables are at best imperfect proxies for the economic effects they are designed to represent. Accordingly, the results should be interpreted with caution.

The following variables were used to re-map the theoretical considerations into observable data:

- *Interest rate differential*: the general level of interest rates difference is measured by the interest difference between government bond yields in the firm's domestic market and the market of the currency in which the bond is denominated.³⁸

- *Hedging*: long-term assets in the target region of the bond issued are captured (i) by the share of subsidiaries of the firm in the region of the issuance currency and (ii) the aggregate M&A activity of the issuer in that region up to six months prior to the bond issue.

Ad (i): for 1,383 companies in the final sample covering all industrial countries, Van Dijk's Osiris database provides information on the geographic distribution of subsidiaries, which is used as a proxy for foreign exposure of the company.

Ad (ii): the information on bond issuance and firm balance sheets from Van Dijk's Osiris and Thomson Financial was linked with information on mergers and acquisitions (M&As). About 85%, or 1,349, of the 1,586 companies in the sample covering all industrial countries pursued M&A activities in the period from 1999 to 2003. In these five years, the average firm acquired more than eight firms, bringing the total number of M&A transactions to 13,962. For about half of these transactions (6,793), Thomson

provides the value of the transaction, corresponding to 1,251 companies. In order to match the M&A data with bond issue data, it was assumed that a bond issue relates to M&A activity if the issue occurred within six months after the merger. Applying this criterion leads to 5,295 matched issues by 921 firms. Thus, more than half (57%) of the bonds were issued up to six months after M&A activity, indicating that the bond issue may have resulted from the need to finance the merger.

- *Transaction costs*: since transaction costs are only available for few issues, bond market capitalisation per unit of GDP was used as a measure of the transaction costs, as larger markets should display lower transaction costs, which in turn ought to increase the incentive to issue in these markets.³⁹

- *Demand-side effects*: deposits as a proportion of GDP in a region are used to capture the demand-side effects that may affect the decision to issue in a particular region.⁴⁰

- *Supply-side effects*: the total assets of the firm are used to proxy the demand for debt of the firm that may exceed the capacity of the local bond market.

- *Legal and regulatory issues*: as it is difficult to recast these effects into numerical values, they are captured by country dummies in the estimation procedure.

³⁸ Concretely, the logit analysis uses the exponential function of the interest rate on long-term government bonds in the domestic market minus the interest rate on long-term government bonds in the target area, as reported in the IMF International Financial Statistics monthly series.

³⁹ Bond market capitalisation of the target region, expressed in USD millions, was taken from the BIS International Capital Market Statistics.

⁴⁰ Deposits held by commercial banks and other financial institutions in local currency as a share of nominal GDP in local currency, as reported by the IMF annual statistics in the International Financial Statistics or WEO databases.

The firm's underlying cost function is unobservable in the data and only the (discrete) currency choice can be observed. As alternatives are not completely symmetrical (see Box 6), the decision between home and

foreign currency is modelled in a logit model (see Greene 2003, Chapter 21), while the choice between a multitude of currencies is captured in a conditional logit model.

Box 6

MODELLING THE MULTIVARIATE CURRENCY CHOICE

The choice of currencies in bond issuance can be modelled in two ways. Starting from the basic assumption that a firm chooses the currency of issuance to minimise borrowing costs, this box outlines the main ideas leading to the estimation procedure for the determinants of currency choice in bond issuance.

A firm determines the currency of bond issuance so as to minimise its borrowing costs. Given J different currencies, the probability that j will be chosen satisfies:

$$P(j|x) = P[\Pi_j(t, x_j) \leq \Pi_k(t, x_k) \text{ for } j \neq k],$$

where Π_j denotes the costs of the firm, given that it issues in the j -th currency and given the assumption that the distribution of Π is such that the probability that both sides of the equation are equal is 0. A firm i faces a technology T_i describing the feasible operations it can undertake. The technology depends on the attributes of the firm. Minimising costs subject to T_i yields the restricted cost function Π_{ij}^* which will thus depend on characteristics of the firm's technology, the firm's environment and the attributes of the currency choice.

The cost function Π_{ij}^* associated with a discrete alternative is the minimum cost attainable by the firm given the characteristics of technology T_i and the fixed currency alternative X_j . Accordingly, the j -th currency will be picked by the i -th firm if, and only if

$$\Pi_{ij}^* = \min\{\Pi_{ik}^*; k = 1, \dots, K\}.$$

Assume that

$$\Pi_{ij} = c + X_{ij}\beta + \varepsilon_{ij},$$

where $\Pi_{ij} = \ln \Pi_{ij}^*$, c is a constant term, $X_j = [\ln X_{j1}^*, \dots, \ln X_{jm}^*]$ is a vector of observable characteristics for the j -th currency, β is a vector of unknown coefficients to be estimated, and ε_{ij} is a random term denoting the unobservable advantages to the i -th firm from issuing in the j -th currency. McFadden (1984) shows that, under these conditions, the probability that firm i chooses currency j is given by:

$$P(i \text{ chooses currency } j) = \exp(X_{ij}\beta) / \sum_{j=1}^J \exp(X_{ij}\beta).$$

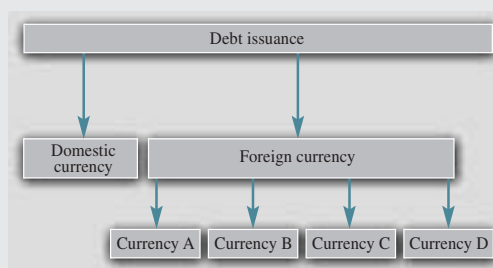
Since the cost function of the firm is unobservable, the estimation procedure cannot directly identify the link between the firm's cost and the influencing factors. Instead, the procedure must assume a link between the (unobservable) cost function and the (observable) discrete

outcome of the firm's currency choice. One particular approach to this problem is known as logit estimation.

The present decision has a particular structure, which may be represented in graphical terms as a two-step procedure, as shown in the chart below.

Arguably, the decision in favour of issuing in domestic currency is not independent of the firm characteristics, as the firm is more likely to issue in domestic currency than in any foreign currency. This particular structure of the decision suggests two ways of modelling the choice:

The firm's decision tree



(a) Modelling the decision by dividing it into two steps. The first part – the choice between domestic and foreign currency – can then be modelled in a simple logit model. For the second part, a conditional logit model is the appropriate one as it permits to model a choice between several alternatives. However, as the conditional logit model assumes that X_i depends only on the attributes of currency j , but not on the attributes of alternative $k \neq j$ (the property of independence from irrelevant alternatives (IIA)), the model must be extended by a dummy capturing the effect that one currency is domestic for each firm. The results referred to in the main text are taken from this approach.

(b) Modelling the complete decision tree as a nested logit model (cf. Train 2003, Chapter 4, for a survey). However, it is not meaningful to apply a nested logit to the global sample, as firms from different countries face different alternatives. For example, a firm from the United States may, in the second step, only choose from among the euro, the Japanese yen and the pound sterling, while a firm from the euro area may only choose from among the US dollar, the Japanese yen and the pound sterling. Thus, the nested logit approach has only been used for the sub-sample of US firms. The results – not reported in this special focus – in general support the conclusions derived from the logit/conditional logit approach.

5 RESULTS

The results of the econometric analysis confirm the significance of all variables that were designed to capture the cost and strategic effects identified in previous reviews and in literature on the choice of currency for issuing international bonds. Moreover, the variables influence the choice in a direction that is consistent with theoretic reasoning. In the following, results are reported for estimates related to the decision between issuance in domestic currency and issuance in foreign currency, and the decision that is taken on the issuance in a particular foreign currency, given that the issuer has decided not to issue in the home currency.⁴¹

HOME VERSUS FOREIGN CURRENCY

Logit estimates reveal that cost and strategic considerations play a key role when companies decide on whether to issue a bond in the home currency or in a foreign currency (see Table 17). In particular, the following variables have a positive and significant influence on the probability of a company issuing a bond denominated in a foreign currency:⁴²

- lower interest rates in the foreign currency area than in the domestic market (row 2),

- a large share of subsidiaries resident in the foreign currency area (row 3),
- M&A activity in the foreign currency area up to six months prior to the issuance of a bond (row 4) and
- lower transaction costs, as measured by bond market capitalisation (row 5)

This holds true over a wide variety of specifications of the estimation, exemplified here by regressions 1 to 6.

Moreover, supply-side effects are statistically influential for the decision to issue in foreign currency. Larger firms are less likely to issue in the domestic currency (row 1), as the firm size, measured by the log of total assets, is a significant factor in increasing the probability of a foreign currency bond issue. This may both

⁴¹ In the estimation, this is taken into account by a dummy variable for issuance in domestic currency. The interpretation of the numerical results for this conditional logit exercise is not straightforward. The interested reader is referred to the background paper.

⁴² A variable is significant at the 5% level when the coefficient – in absolute values – is about twice as large as the respective standard error.

Table 17 Logit estimates for the choice between issuance in domestic and in foreign currency

	1	2	3	4	5	6
Log (total assets)	0.16 (0.04)	0.15 (0.04)	0.14 (0.03)	0.12 (0.03)	0.16 (0.04)	0.15 (0.04)
Interest rate differential	0.61 (0.19)	0.60 (0.19)	0.40 (0.09)	0.68 (0.29)	0.47 (0.15)	
Share of subsidiaries	6.35 (0.29)	6.45 (0.30)			6.55 (0.34)	6.81 (0.33)
M&A dummy		0.44 (0.16)	0.20 (0.12)			
Bond market capitalisation				0.58 (0.12)		
Deposits/GDP					0.24 (0.11)	0.33 (0.10)
Number of observations	7,655	7,655	7,655	7,655	7,613	7,613
Pseudo-R ²	0.60	0.60	0.40	0.42	0.59	0.57
Log-pseudo-likelihood	-1,263.0	-1,258.3	-1,865.7	-1,822.5	-1,255.6	-1,342.2

Note: All regressions include fixed effects with respect to the country and year. Standard errors in parentheses are robust regarding clustered heterogeneity.

reflect an excess need for finance and easier access to international bond markets.

Similarly, demand-side effects, captured by the deposit-to-GDP ratio in the foreign currency region, significantly raise the likelihood of a firm issuing bonds in foreign currency. This may result from the desire to broaden the investor base, as suggested in ECB (2003b).

Finally, all country dummies are statistically highly significant in every specification (not shown in Table 17). As indicated, this may reflect the importance of legal and regulatory differences for the currency decision in international bond issuance.⁴³

CHOOSING AMONG FOREIGN CURRENCIES

Estimates of decisions involving a choice among foreign currencies are also in line with the expected effects of cost and strategic factors influencing the currency denomination of bonds issued. Corroborating previous results, higher exposure to a region raises the likelihood of issuing in that currency. This finding holds true independently of the measure for exposure, such as the share of subsidiaries in a currency area relative to the total number of subsidiaries of a firm, or M&A activity in a given currency area in the six months prior to the bond issue. Compared with the US dollar, this effect is strongest for the Japanese yen and weakest for the pound sterling. The effect for the euro lies somewhere in between that of the other currencies.

Similarly, the previous supply-side arguments appear to apply also for the choice between foreign currencies. Establishing an investor base seems to be strategically important, mainly for large issuers. Asset size is positively associated with the issuance of US dollar-denominated bonds, while smaller firms – controlling for other effects – tend to issue in euro.

In contrast to the bivariate logit estimates, transaction costs (proxied by the size of the bond market) appear – counterintuitively – to

raise the likelihood of issuance in a given currency. On the demand side, a larger share of deposits per unit of GDP in a currency region is found to raise the probability of a bond being issued in that currency.

⁴³ See also Box 3 of this review.

6 CONCLUSIONS

The increase in the use of the euro as a financing currency in international bond markets has been one of the key characteristics of the international role of the euro. To improve the understanding of the driving factors behind this increase in euro-denominated bond issuance, the ECB launched a research project based on a new dataset at the single bond issue level for the period from 1999 to 2003. This dataset was used to analyse econometrically the determinants of currency choice in bond issuance by corporations in developed economies.

The research design split the question in two parts, namely the firm's choice of issuing bonds in foreign as opposed to domestic currency and the choice between several foreign currencies. The choice between domestic and foreign currency appears to be determined by the attempt to hedge foreign exposure. In addition, strategic considerations for diversifying the investor base may induce large companies, in particular, to issue in foreign currency. Large firms may also face constraints in raising funds in their local markets and may be better known internationally. For both reasons, larger companies appear to be more active in international bond issuance.

The choice between foreign currencies, including the euro, yields similar results. As before, cost effects and strategic considerations appear to influence the firm's decision. For issuance in euro, these results imply that the main motivations underlying the decision by corporations to issue bonds in euro include (a) the attempt of foreign firms to hedge their exposure to the euro area and, (b) the effort of some issuers to broaden their investor base. Thus, econometric evidence is in line with the observation that the size of the respective economy as well as the breadth, liquidity and efficiency of financial markets are key factors for the development of international currencies.

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 refers to the euro’s role in third countries’ monetary and exchange rate policies, in the form of an anchor, reserve or 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.

I 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 of 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 involving a reference currency or a basket of reference currencies. In 40 of these countries, the euro serves as the anchor of exchange rate policies (see Table 18), either as the sole reference currency, or as part of a currency basket.⁴⁴

The use of the euro in third countries’ exchange rate regimes has a strong geographical and institutional underpinning. This is most obvious for non-euro area EU Member States. However, it also applies to EU neighbouring countries with special institutional arrangements with the EU or its Member States, such as the candidate, potential candidate and the CFA Franc Zone countries.

Except in the case of participation in the exchange rate mechanism II (ERM II), the decision to use the euro as an anchor currency is a unilateral decision and does not involve any commitment on the part of the Eurosystem.

DEVELOPMENTS IN THE PERIOD UNDER REVIEW

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 were related to the enlargement of the European Union in May 2004, as three of the New Member States – Estonia, Lithuania and Slovenia – joined ERM II at the end of June 2004.⁴⁵ The Latvian authorities announced that they envisage changing the SDR peg of the lats to the euro on 1 January 2005. Finally, in Romania, an EU candidate country, authorities increased the weight of the euro in the informal currency basket to 75%.

1.2 THE EURO AS A RESERVE CURRENCY

In 2003, the global reserve build-up continued. At end-2003, global reserve assets stood at USD 3,014 billion, compared with USD 2,397 billion at the end of 2002 (see Chart 11).⁴⁶ Thus, the accumulation of reserves – expressed in US dollars – accelerated further, increasing by 26% in 2003, as compared with 17% in 2002 and 6% in 2001. Again, Japan and selected emerging Asian countries accounted for the bulk (around 78%) of the increase, namely for roughly USD 485 billion. Comparing industrial with developing and emerging market economy countries, the latter’s share

44 Other entities linking their exchange rate regimes 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 (see Table 18). As a result, a combined total of 50 countries and territories have an exchange rate regime involving the euro.

45 For details, see ECB (2003a) and ECB (2004 a-e).

46 The information on aggregate reserve holdings has been taken from IMF (2004), with SDR values being converted into US dollar values on the basis of year-end exchange rates.

Table 18 Countries with exchange rate regimes linked to the euro

(as at 30 June 2004)

Region	Exchange rate regimes	Countries
European Union (non-euro area)	ERM II	Denmark, Estonia ¹⁾ , Lithuania ¹⁾ , Slovenia
	Peg arrangements based on the euro	Cyprus, Hungary
	Peg arrangements based on a basket involving the euro	Latvia (SDR ²⁾), Malta (euro share: 70%)
	Managed floating with the euro as reference currency	Czech Republic, Slovakia
	<i>Memory item:</i> Independent floating	Sweden, United Kingdom, Poland
Candidate and potential candidate countries	Unilateral euroisation	Kosovo, Montenegro
	Euro-based currency boards	Bulgaria, Bosnia and Herzegovina
	Peg arrangements or managed floating with the euro as reference currency	Romania ³⁾ , Croatia, FYR Macedonia, Serbia
	<i>Memory item:</i> Independent floating	Turkey, Albania
Others	Euroisation	European microstates ⁴⁾ , French territorial communities ⁵⁾
	Peg arrangements based on the euro	CFA Franc Zone ⁶⁾ , French overseas territories ⁷⁾ , Cape Verde, Comoros
	Peg arrangements and managed floats based on the SDR and other currency baskets involving the euro (share of the euro)	Israel (approx. 28%) ⁸⁾ , Seychelles (37.7%), Russian Federation (40%) ⁹⁾ , Botswana, Morocco, Tunisia, Vanuatu

Sources: IMF and ECB compilation.

1) Unilateral commitment to a currency board.

2) The SDR is a basket of currencies, including the US dollar, the euro, the Japanese yen and the pound sterling.

3) With an informal reference to a currency basket, involving both the US dollar and the euro.

4) Republic of San Marino, Vatican City, Principality of Monaco, Andorra. In the case of Andorra: unilateral euroisation. The other countries and jurisdictions are entitled to use the euro as their official currency.

5) Saint-Pierre-et-Miquelon, Mayotte.

6) 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).

7) French Polynesia, New Caledonia, Wallis and Futuna.

8) Peg with automatically and asymmetrically widening band (currently about 55%), data on weight and band refer to end-2003.

9) Russian Federation: 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.

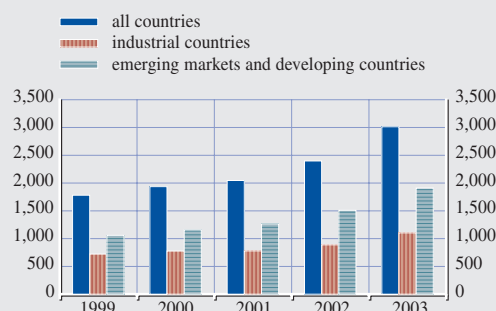
in total foreign exchange reserves increased slightly to 63.4%.

Euro-denominated assets in global foreign exchange reserves rose slightly from 19.3% to 19.7% (see Table 19). This was the result of divergent developments in industrialised and developing/emerging market countries. While the latter saw an increase in euro-denominated reserves by 1 percentage point, the euro's weight in portfolios of industrialised countries dropped slightly from 21.3% to 20.9%.

As in 2002, the increasing use of the euro in global foreign reserves was supported by strong

Chart 11 Global foreign exchange reserves

(USD billions)



Sources: IMF (2004) and ECB calculations.

Table 19 Official foreign exchange reserves: currency shares

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

	2000	2001	2002	2003
All countries				
US dollar	66.6	66.9	63.5	63.8
Euro	16.3	16.7	19.3	19.7
Japanese yen	6.2	5.5	5.2	4.8
Pound sterling	3.8	4.0	4.4	4.4
Swiss franc	0.5	0.5	0.6	0.4
Unspecified currencies	6.6	6.4	7.1	6.8
Industrialised countries				
US dollar	72.5	72.7	69.1	70.8
Euro	17.2	17.5	21.3	20.9
Japanese yen	6.3	5.6	4.6	4.0
Pound sterling	2.0	1.8	2.2	1.7
Swiss franc	0.2	0.3	0.6	0.2
Unspecified currencies	1.8	2.1	2.2	2.3
Developing and emerging market countries				
US dollar	62.2	62.9	59.8	59.3
Euro	15.6	16.2	17.9	18.9
Japanese yen	6.1	5.4	5.5	5.2
Pound sterling	5.1	5.4	5.8	6.2
Swiss franc	0.7	0.6	0.6	0.6
Unspecified currencies	10.2	9.4	10.4	9.8

Source: IMF (2004).

positive price effects related to the outstanding stock of euro-denominated reserves and reflecting the euro's appreciation against other international currencies in the period under review (see Table 20). Indeed, for the first time since its introduction, the euro benefited from larger price than quantity effects, i.e. the actual accumulation of euro-denominated reserves by authorities over the period under review. By

contrast, the relative amount of US dollar-denominated reserves was influenced by divergent price and quantity effects. While authorities were actively buying US dollar-denominated reserve assets (+ SDR 263 billion), the value of their outstanding US dollar portfolios was negatively affected by the depreciation of the US dollar in the amount of more than SDR 100 billion.

Table 20 Currency composition of official holdings of foreign exchange, end of year

(in billions of SDR)

	2000	2001	2002	2003
US dollar				
Change in holdings	142.2	89.3	20.7	161.2
Quantity change	97.3	54.4	102.1	263.0
Price change	44.9	34.8	-81.4	-101.8
Year-end value	934.4	1,023.6	1,044.3	1,205.5
Euro				
Change in holdings	63.6	27.2	60.9	55.5
Quantity change	67.2	31.2	33.7	21.7
Price change	-3.7	-4.0	27.2	33.9
Year-end value	228.6	255.8	316.7	372.2

Source: IMF (2004).

Table 21 Currency breakdown of total foreign exchange reserves of selected countries

(percentages)

	Euro		US dollar		Japanese yen		Other currencies	
	June 2003	June 2004	June 2003	June 2004	June 2003	June 2004	June 2003	June 2004
G20 countries								
Australia	40	31	40	54	9	7	11 ¹⁾	8 ¹⁾
Canada	46	43	51	53	3	3	0	0
United Kingdom	52	50	32	36	16	14	0	0
United States	56	56	...	...	44	44	0	0
New EU Member States								
Latvia ²⁾	43	41	43	43	3	4	11	12
Slovak Republic	63	68	33	29	0	0	4 ¹⁾	3
EU neighbouring countries								
Croatia	65	70	32	30	...	...	3 ³⁾	0 ³⁾
Switzerland	51	51	37	38	0	0	12	11

Sources: Websites of countries' authorities and ECB calculations.

1) Including SDRs and gold.

2) Latvia pegs its currency to the SDR.

3) Including any holdings of Japanese yen.

A general country or regional breakdown of the currency composition of foreign exchange reserves is not available. However, as analysed in more detail in last year's review (ECB 2003), the rapid build-up of reserves worldwide has mainly been taking place in countries whose currency is oriented de jure or de facto towards the US dollar.⁴⁷ By contrast, in EU neighbouring regions where the euro plays a more prominent part as an anchor currency, countries have – in absolute amounts – accumulated foreign reserves to a lesser extent. Thus, the regional patterns of reserve accumulation have remained rather unfavourable towards the euro.

Evidence for the few central banks publishing the currency breakdown of their reserves (see Table 21) reveals that euro-denominated reserve assets – as a percentage of total foreign exchange reserve assets – remained basically constant in most countries in the period under review. Exceptions were Australia, where the percentage of euro-denominated assets dropped quite significantly, as well as Croatia and Slovakia, where there was an increase by 5 percentage points.

1.3 THE EURO AS AN INTERVENTION CURRENCY

The functions of anchor, reserve and intervention currency are intricately intertwined. Under a floating regime, foreign exchange market interventions are infrequent, as they are mainly conducted to calm disorderly market conditions. By contrast, countries operating any form of exchange rate peg and managed float intervene regularly to achieve an exchange rate consistent with the chosen regime. In conducting interventions, they preferably use the anchor currency.

As in the case of reserves, authorities do not publish the currency composition of interventions. An exception is the Japanese Ministry of Finance which provides regular information on the date, amount and currency of Japan's foreign exchange market

⁴⁷ ECB (2003b) reports results of a survey on central bank reserve asset management (Pringle and Carver, 2003), covering 54 central banks worldwide. The survey revealed that the share of the euro in foreign exchange reserve portfolios is low in Asia and the Western Hemisphere, but comparatively large in EU neighbouring regions.

interventions.⁴⁸ In the period under review, such interventions amounted to about USD 250 billion. Unlike the situation in the previous reporting period, there were no foreign exchange purchases in euro between mid-2003 and mid-2004.

Press reports and publicly available statements by authorities indicate that several central banks of the new EU Member States, including those of the Czech Republic, Hungary, Latvia, Slovakia and Slovenia, intervened by using the euro as the intervention currency. Moreover, by design, interventions in euro were conducted by authorities of countries operating a euro-based currency board. Finally, Romania and some western Balkan countries were again active in the foreign exchange market in managing their exchange rate vis-à-vis the euro.

⁴⁸ Information on foreign exchange interventions by Japanese authorities can be found on the website of the Japanese Ministry of Finance (<http://www.mof.go.jp>).

2 PRIVATE USE: THE EURO AS A PARALLEL CURRENCY IN THIRD COUNTRIES

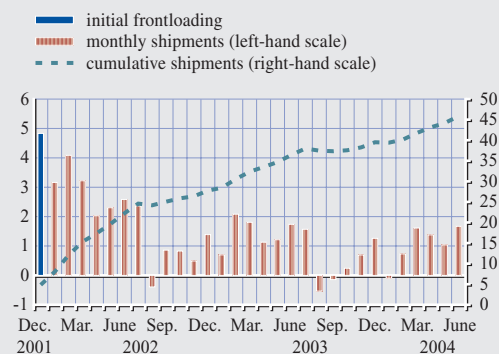
Residents of many developing, emerging market and transition economies hold a significant share of their financial assets in the form of foreign currency-denominated assets, mostly as foreign cash or foreign currency-denominated bank deposits. Holdings of euro banknotes and euro-denominated deposits outside the euro area can be considered one of the facets of the international role of the euro, in particular in EU neighbouring regions. This section provides updated information on the level of euro-based currency (Sub-section 2.1) and asset substitution (Sub-section 2.2) observed in these countries. The section also includes an overview of the methods used to estimate currency in circulation (Box 7) and a review of a survey conducted by the Oesterreichische Nationalbank on the use of the euro as a parallel currency in Central and South-East Europe (Box 8).

2.1 CURRENCY SUBSTITUTION – THE USE OF EURO CASH OUTSIDE THE EURO AREA

Data on shipments by banks of euro banknotes to destinations outside the euro area provide reliable, albeit limited, information on the

Chart 12 Net shipments¹⁾ of euro banknotes to destinations outside the euro area

(EUR billions)



Source: Eurosystem.

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

amount of euro banknotes circulating abroad. This is because shipments of euro banknotes by banks necessarily give an incomplete picture of the overall circulation of the euro abroad. Transfers of euro banknotes to and from the euro area take place also through other channels, such as tourism, workers' remittances or activity in the grey economy (see Box 7).

Box 7

INDIRECT METHODS OF IDENTIFYING CURRENCY IN CIRCULATION ABROAD

Developments in the use of currency outside the euro area can only be monitored directly to a very limited extent. Tools used are, for example, analyses of the net shipment of banknotes by euro area MFIs to destinations abroad, surveys (see Box 8) using information on net euro banknote transactions between authorised banks and individuals in countries outside the euro area and analyses of developments in euro-denominated deposits abroad. Overall, however, the holdings of banknotes and coins outside banks cannot be easily tracked, and direct methods therefore often miss significant parts of currency flows.

One example for this measurement problem in direct methods is the measurement of net flows of euro banknotes to tourist regions outside the euro area. Euro area travellers often take euro banknotes directly to these destinations (not recorded in official statistics), whereas these banknotes return to the euro area via wholesale banks (recorded in official statistics).

In order to circumvent these measurement problems, a number of indirect methods have been developed to estimate the level of currency circulating abroad. A good review of these methods

can be found in the report of the United States Treasury Department (2003). Fischer et al. (2004) studied the relative importance of the main motives for holding euro legacy currencies in overall currency demand and estimated non-resident demand for euro legacy currencies with a number of alternative methods.

Fischer et al. find evidence of a significant demand for euro legacy currencies from abroad. In the estimated demand function for currency, the exchange rate of the euro – as a proxy for non-resident demand – is one of the long-run determinants of demand for real currency balances. The split of the currency demand function into small and large banknote denominations revealed that the exchange rate in fact only played a role for the large denominations. The store-of-value function of money therefore seems to have been the predominant motive of non-residents for holding euro legacy currencies.

In a second step, the study derived estimates of the share of euro legacy currencies held abroad in the overall amounts outstanding of currency. These estimates are based on alternative methods that all exploit the fact that currency used for domestic transactions is characterised by specific patterns that cannot be observed, or can be observed only to a very small extent, for currency held for domestic hoarding purposes or for currency held abroad. In particular, currency used for domestic transactions is characterised by significant and recurring intra-annual fluctuations. These fluctuations are determined, for example, by holiday seasons or seasonal events such as Christmas shopping. The higher therefore the importance of domestic hoarding and non-resident demand, the smaller is the relative importance of these intra-annual fluctuations in overall currency demand.

Three alternative estimation methods were exploited in the study. All three compare reference currencies with euro legacy currencies, in which the reference currencies were characterised by hoarding patterns comparable to those of euro legacy currencies, but were not influenced by significant non-resident demand.

- The first method simply compares the relative importance of the regular intra-annual patterns of the reference currency with that of euro legacy currencies.
- The second estimation approach uses the comparison of the relative importance of the intra-weekly pattern of banknotes in circulation between a number of reference currencies and euro area legacy currencies in deriving an estimate of the non-resident demand for euro legacy currencies.
- The third method regresses the relative importance of regular intra-annual variations in currency in circulation against the relative importance of these variations in a time series that reflects the main use of currency for domestic transactions, namely retail trade. A comparison of this relation for the reference currency and euro legacy currencies led to the required information on the share of non-resident demand in the overall demand for euro legacy currencies.

The joint results of these methods suggest that, in the late 1990s and in 2000, between 8% and 15% of the euro legacy currencies were circulating abroad.

Since end-2002, the flow of euro banknotes shipped by banks to destinations outside the euro area has stabilised, following the relatively large shipments observed as a result of the euro cash changeover (see Chart 12).⁴⁹ In the period under review, net shipments of euro banknotes to destinations outside the euro area amounted to €9.4 billion, down from €14.2 billion in the previous twelve months. In June 2004, the cumulative stock of euro banknotes shipped by banks to destinations outside the euro area stood at €45.8 billion, compared with €36.4 billion in June 2003.

As for the geographical distribution of euro banknotes in specific regions outside the euro area, there is evidence that, for some countries, namely former Yugoslav republics, the amounts of euro banknotes held are non-negligible (see Box 8 below).

In addition to the evidence from South-East Europe, data on foreign exchange cash transactions by authorised Russian banks are in line with the view expressed in last year's review that Russian businesses and households demand euro cash for conducting trade and – as indicated by the seasonal pattern of banks' euro sales – tourism (see Chart 13).

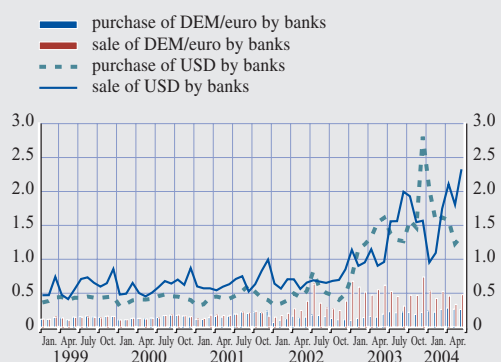
As a store of value, however, the US dollar remains the dominant foreign currency in Russia. When some Russian banks were facing liquidity problems in mid-2004, depositors preferred to exchange rouble deposits into US dollar cash. As a result, Russian banks sold US banknotes in the amount of approximately USD 5.2 billion to customers in June and July 2004, more than twice as much as in the same months of the previous year.⁵⁰ By contrast, euro figures remained at levels similar to those observed in 2003.

2.2 ASSET SUBSTITUTION – THE USE OF EURO-DENOMINATED BANK DEPOSITS

The euro cash changeover was accompanied in many EU neighbouring countries by a strong increase in euro-denominated deposits. In many countries, particularly former Yugoslav republics, households deposited “under-the-mattress” legacy currency cash holdings with banks, rather than exchanging them directly for new euro banknotes. Over the past two years, the increase in such deposits has slowed down considerably.⁵¹ Comparing the 23 EU neighbouring countries and territories for which data is available for both end-2002 and end-2003 suggests that the estimated total stock of outstanding euro-denominated bank

Chart 13 Volume of cash transactions in US dollars and euro in Russia¹⁾

(USD billions)



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

⁴⁹ The information was compiled in cooperation with the NCBS of the Eurosystem.

⁵⁰ Similar figures have been reported for foreign currency brought into the Russian Federation by authorised banks: in June/July 2004, US dollar volumes reached USD 4.4 billion, compared with USD 0.75 billion in the same months of 2003. By contrast, euro volumes remained largely stable, namely in the range of between USD 0.70 and USD 0.85 billion.

⁵¹ As in previous years, the data presented here were collected by the ECB in a survey of central banks of EU neighbouring countries in 2004. For the sake of comparability with figures reported in previous years, and given that data reported in this section referred to end-2003, data for the new Member States, then acceding countries, are reported as part of the EU neighbouring countries. The following countries or territories participated in the data collection campaign: Albania, Belarus, 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. The cooperation of these countries is gratefully acknowledged.

Table 22 Outstanding euro-denominated bank deposits in selected countries

	Absolute amounts (EUR millions)		As a percentage of total deposits		As a percentage of foreign deposits	
	End-2002	End-2003	End-2002	End-2003	End-2002	End-2003
Cyprus	1,759	2,013	7.9	8.9	23.4	26.0
Czech Republic	3,518	3,274	6.7	6.3	59.6	61.7
Estonia	1,016	389	26.2	11.7	62.7	44.9
Hungary	2,685	2,530	9.4	9.1	58.1	62.0
Latvia	860	1,393	14.4	19.8	19.4	26.8
Malta	745	897	8.8	11.0	24.9	33.5
Poland	3,518	4,237	4.7	6.5	28.3	40.0
Slovakia	1,682	2,209	9.2	11.1	59.6	52.0
Bulgaria	864	1,197	16.2	18.5	32.7	38.4
Romania	n/a	1,164	n/a	11.9	n/a	28.0
Turkey	7,444	8,141	9.6	9.5	16.7	19.6
Albania	260	325	12.6	13.4	38.7	43.5
Bosnia & Herzegovina	883	923	46.0	41.4	88.0	87.4
Croatia	8,048	9,265	56.8	75.8	83.7	94.2
Kosovo	708	893	100.0	100.0	100.0	100.0
Macedonia (FYR)	471	n/a	55.1	n/a	85.5	n/a
Montenegro	170	186	82.9	88.0	82.9	88.0
Serbia	663	911	81.2	83.2	88.9	87.8
Belarus	n/a	72	n/a	3.9	n/a	7.1
Moldova	23	59	6.4	14.6	12.4	27.8
Ukraine	155	371	2.3	4.1	7.2	12.7
Egypt	1,028	1,758	1.4	3.1	5.1	9.8
Israel	7,073	6,913	6.0	6.7	19.5	21.7
Jordan	29	n/a	0.5	n/a	2.3	n/a
Lebanon	1,602	1,556	3.8	3.9	5.5	6.0
Morocco	n/a	59	n/a	0.2	n/a	25.7
Saudi Arabia	1,151	704	1.2	0.9	6.9	5.0
South Africa	636	778	0.6	0.6	13.3	22.4

Sources: National central banks and ECB calculations.
Note: Data may be subject to revisions.

deposits in these countries and territories increased from €46.5 billion at the end of 2002 to €51 billion at the end of 2003.⁵²

experienced a notable increase in the share of deposits denominated in euro.

The latest data suggest that the share of the euro in foreign-currency denominated deposits has increased in most EU neighbouring countries. However, this may be partly explained by valuation effects driven by the appreciation of the euro vis-à-vis the US dollar. As for the share of the euro in total deposits, no clear trends can be detected. Even within a particular region, developments appear to have been rather diverse. For example, while the share of euro-denominated deposits to total deposits decreased in Bosnia and Herzegovina, Croatia

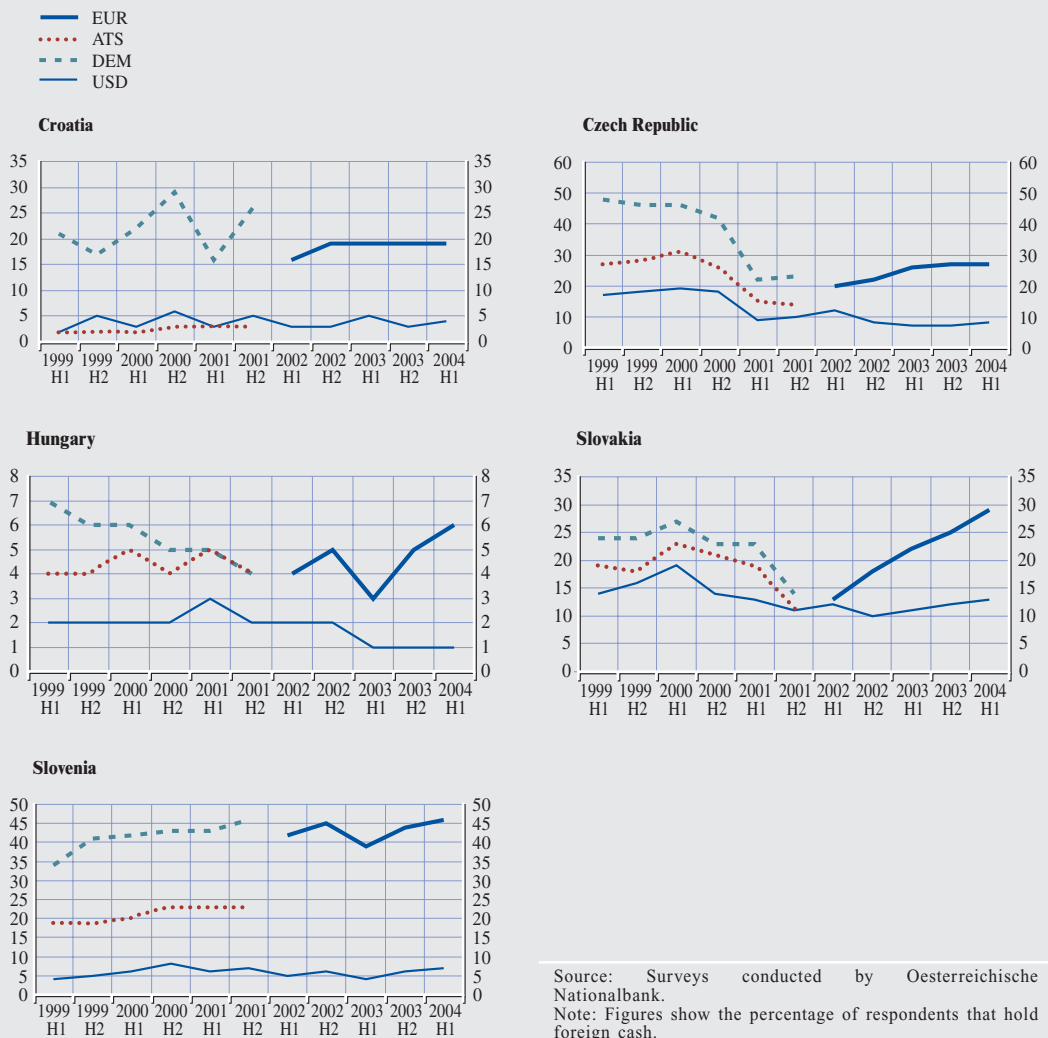
⁵²Data at the country level should be interpreted with care as methodologies in compiling the respective statistics might differ.

Box 8

THE EURO IN CENTRAL, SOUTH-EASTERN AND EASTERN EUROPE – SURVEY RESULTS

Surveys conducted by the Oesterreichische Nationalbank¹ in Croatia, Hungary, the Czech Republic, Slovenia and Slovakia since 1997 reveal important information about the role of cash holdings in foreign currency, including the euro, in these countries. The figure below summarises the evolution of foreign currency cash holdings as a percentage of respondents since 1997. It shows that in the 1990s the Deutsche Mark was consistently the most important foreign

Foreign currency holdings in percent of respondents



¹ About 1,000 people over the age of 14 were interviewed per survey and country in April/May, and then again in October/November. For a detailed description, see Stix (2001) and Nauschnigg (2003).

currency, while the Austrian schilling usually took second place, sometimes following closely behind the Deutsche Mark (especially in Slovakia and Hungary), with the US dollar taking third place (with the exception of Croatia, where the US dollar was second in importance). A decline in the share of the population that held Deutsche Mark can be observed between 1997 and 2002 in Croatia, the Czech Republic and Hungary, and – to a lesser extent – in Slovakia.

In the course of the cash changeover, a substantial proportion of the stock of Deutsche Mark, Austrian schilling and other euro area currencies which circulated in central, eastern and especially south-eastern Europe was exchanged for euro. The 2002 survey showed that 71% of the respondents exchanged their Deutsche Mark holdings for euro, 21% for local currencies, 4% for US dollars, 1% for Swiss francs and 2% for other currencies. A particularly large proportion of Deutsche Mark and Austrian schilling holders exchanged these currencies for euro in Croatia (85%) and Slovenia (79%), while a smaller proportion did so in Hungary (57%), the Czech Republic (48%) and Slovakia (50%).

A sizeable percentage of respondents also exchanged their foreign currency holdings for local currencies: 36% in Hungary, 41% in the Czech Republic, 31% in Slovakia, 16% in Slovenia and 21% in Croatia. Exchange for US dollars was more modest with 10% in Slovakia and 8% in the Czech Republic. In the other countries, the corresponding numbers were between 2% and 5%.

The smooth changeover from the Deutsche Mark, the Austrian schilling and the other euro area currencies to euro banknotes and coins at the start of 2002 ensured that the euro has been firmly established in the countries covered by the survey. The figure below indicates an upward trend in the share of the population holding euro cash since 2002. In spring 2004, about 46% of Slovenians, 29% of Slovaks, 27% of Czechs, 19% of Croats and 6% of Hungarians held euro cash balances.

Estimates of the amounts of euro and US dollars that circulate in these five countries show that joint holdings of Deutsche Mark and Austrian schillings decreased by about one-third between 2000 and early 2002.² After 2002, the survey results indicate an increased demand for euro. However, this increase (about 20% from spring 2002 to spring 2004) has not made up for the decline in the demand for Deutsche Mark and Austrian schillings prior to 2002. The projections for the demand for US dollars indicate a downward trend over the period from 2000 to 2004, with US dollar demand in early 2004 being about half of the demand in 2000.

² Estimated currency amounts from survey responses are likely to understate true holdings. However, changes over time in these amounts should be informative about changes in overall currency demand.

CONCLUSIONS

In the period under review, the euro continued to expand certain facets of its role as an international currency. This applies, in particular, to the use of the euro as an invoicing and settlement currency in international trade. While evidence is still limited, available data indicate that exporters and importers increasingly invoice or settle international payments in euro. Leaving aside the use of the euro in international trade, authorities of developing and emerging market economies increased somewhat the share of euro denominated foreign exchange assets in their reserve portfolios. The role of the euro continued to increase more gradually in some areas relating to the international bond, loan and deposit markets.

Other aspects of the international role of the euro showed signs of stability in the period under review. This is the case of the use of the euro as an anchor and parallel currency. Moreover, the share of the euro in foreign exchange trading may have decreased slightly, as indicated by the preliminary results of the BIS Triennial Survey, and by evidence on foreign exchange trading provided by the CLS system. In general, however, the stock of available information on the international role of the euro in the first five years after its introduction supports the view that changes in the international role of currencies are slow and gradual.

The review provides further information on the geographical patterns of the international role of the euro. An analysis of the regional breakdown of the outstanding stock of international debt securities and their currency denomination confirms the strong regional focus of the international role of the euro with regard to its function as a financing currency. In terms of both levels and growth, international financing in euro has been most prominent in euro area neighbouring regions. By contrast, borrowers in Asia, Latin America and the Middle East have continued to issue only a small fraction of their international bonds in euro.

The special focus of this year's review sheds light on one of the key characteristics of the internationalisation of the single currency, namely the issuance of euro-denominated bonds by corporations from developed economies. Based on a new dataset covering more than 8,000 bonds issued by about 1,500 companies in the United States, the euro area, Japan and the United Kingdom over the period from 1999 to 2003, econometric analysis supports the notion presented in previous reviews that firms' decisions on the currency of denomination are influenced by both strategic and cost-related factors. With regard to strategic considerations, the investor base in a region and the firm size are shown to affect the firm's decision in which currency to issue a bond. On the cost side, the firm's exposure to a currency area has a bearing on the currency choice for bond issuance. For issuance in euro, these results are in line with the views expressed by market participants who explain the increased use of the euro as a currency for bond issuance by companies' attempts to hedge their exposure to the euro area and to broaden their investor base by tapping euro area financial markets.

KEY DATA SHEET

	2004 review (latest data available)	2003 review period
The euro in international debt markets	percentage	percentage
<i>Share of the euro in:</i>		
– globally defined stock of debt securities ¹	2004 Q1: 25.6	2002 Q4: 24.1
– broadly defined stock of international debt securities ¹	2004 Q1: 43.2	2003 Q2: 41.7
– narrowly defined stock of international debt securities ¹	2004 Q2: 30.8	2003 Q2: 30.4
– narrowly defined issues of international bonds and notes	2004 Q2: 36.1	2003 Q2: 31.3
– narrowly defined issues of international money market instruments	2004 Q2: 34.9	2003 Q2: 33.5
– bond portfolio sample surveyed by <i>The Economist</i>	mid-2004: 26	mid-2003: 32
– portfolios of funds under management in the United States and Canada included in eMaxx database	mid-2004: 0.6	mid-2003: 0.4
– portfolios of funds under management in non-euro area Europe included in eMaxx database	mid-2004: 32.1	mid-2003: 36.4
The euro in international loan and deposit markets		
<i>Share of the euro in:</i>		
– cross-border loans from euro area banks to non-bank borrowers outside the euro area ¹	2004 Q1: 38.0	2003 Q1: 37.2
– cross-border loans from non-euro area banks to non-bank borrowers in the euro area ¹	2004 Q1: 60.9	2003 Q1: 57.4
– cross-border loans from non-euro area banks to non-bank borrowers outside the euro area ¹	2004 Q1: 5.9	2003 Q1: 7.6
– cross-border deposits of non-euro area non-banks in banks in the euro area ¹	2004 Q1: 51.0	2003 Q1: 51.2
– cross-border deposits of euro area non-banks in banks outside the euro area ¹	2004 Q1: 61.2	2003 Q1: 60.7
– cross-border deposits of non-euro area non-banks in banks outside their country of residence excluding the euro area ¹	2004 Q1: 9.2	2003 Q1: 10.7
The euro in foreign exchange markets		
<i>Share of the euro in:²</i>		
– total foreign exchange turnover	April 2004: 37.2	April 2001: 37.6
– daily settlement with CLS	30 June 2004: 44	30 June 2003: 46

¹ At constant 1994 Q1 exchange rates.

² Given the convention to account 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.

The euro in trade in goods and services	percentage	percentage
<i>Share of the euro in:</i>		
– settlement/invoicing of exports of goods to non-euro area residents of a number of euro area countries	2003: 47 to 63	2002: 39 to 58
– settlement/invoicing of imports of goods from non-euro area residents of a number of euro area countries	2003: 40 to 60	2002: 35 to 58
– settlement/invoicing of exports of services to non-euro area residents of a number of euro area countries	2003: 16 to 64	2002: 13 to 60
– settlement/invoicing of imports of services from non-euro area residents of a number of euro area countries	2003: 20 to 64	2002: 17 to 58
The euro in third countries		
– number of countries or territories whose exchange rate regimes were linked to the euro	mid-2004: 50	mid-2003: 51
– share of the euro in global foreign exchange reserves	end-2003: 19.7	end-2002: 19.3
– cumulative net shipments of euro banknotes to destinations outside the euro area	June 2004: €46 billion	June 2003: €36 billion
– total stock of euro-denominated bank deposits in EU neighbouring regions ³	end-2003: €51 billion	end-2002: €46.5 billion

³ Data refer to 23 countries and territories for which data is available for both 2002 and 2003.

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