EUROPEAN CENTRAL BANK

EUROSYSTEM

THE INTERNATIONAL ROLE OF THE EURO

JULY 2011

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In 2011 all ECB publications feature a motif taken from the €100 banknote.

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STASTISTICAL TABLES

ABBREVIATIONS

COUNTRIES

AL	Albania
AT	Austria
AU	Australia
BA	Bosnia and Herzegovina
BE	Belgium
BG	Bulgaria
CA	Canada
CH	Switzerland
CL	Chile
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
DZ	Algeria
EE	Estonia
ES	Spain
FI	Finland
FR	France
GE	Georgia
GR	Greece
HK	Hong Kong
HR	Croatia
HU	Hungary
ID	Indonesia
IE	Ireland
IL	Israel
IN	India
IT	Italy
JP	Japan
KR	Korea, Republic of
KZ	Kazakhstan
LT	Lithuania
LU	Luxembourg
LV	Latvia
LT	Lithuania
MD	Moldova
MY	Malaysia
MK	Macedonia, former Yugoslav Republic of
MT	Malta
MX	Mexico
NL	Netherlands
NO	Norway
PE	Peru
PL	Poland
PT	Portugal
RO	Romania
RU	Russia
SE	Sweden
SI	Slovenia
SK	Slovakia
SR	Serbia
TH	Thailand
TR	Turkey
UA	Ukraine
UK	United Kingdom
US	United States
UY	Uruguay

OTHERS

BIS	Bank for International Settlements
COFER	Currency Composition of Official Foreign Exchange Reserves
EA	Euro area
ECB	European Central Bank
ESCB	European System of Central Banks
EU	European Union
IMF	International Monetary Fund
MFI	Monetary financial institution
OeNB	Oesterreichische Nationalbank
OTC	Over the counter
SEFER	Securities Held as Foreign Exchange Reserves
SSIO	Securities held by International Organizations

FOREWORD

This is the tenth annual review of the international role of the euro published by the ECB. It presents the main findings of the continued monitoring and analysis by the ECB and the Eurosystem of the developments, determinants and implications of the use of the euro by non-euro area residents.

The review finds that the international use of the euro has remained broadly stable throughout 2010 when compared with other major international currencies. The stability-oriented monetary policy of the ECB and the Eurosystem continued to underpin the international use of the euro as a credible store of value. Although the global financial crisis continued to have a profound impact on overall activity in the market segments discussed in the review, relative preferences for major international currencies were broadly unchanged.

The current review also examines in greater depth issues that have a bearing on the euro's international role. This analysis is presented in the form of four special features.

The international role of the euro is primarily the outcome of market forces. The ECB will continue to monitor developments and disseminate information to the public on a regular basis.

Jean-Claude Trichet
President of the European Central Bank

1 INTRODUCTION

This report reviews developments in the international role of the euro during 2010. It builds on a comprehensive set of indicators, covering transactions and outstanding amounts in various market segments. In line with previous issues, the main focus is on financial market segments, such as debt securities markets, but markets for goods and services are also covered in this review.

While the discussion of individual market segments has been streamlined compared with earlier issues, the review continues to provide high-quality and timely data for use by academic researchers, professionals and the general public. It draws on data compiled by the ECB and the national central banks of the Eurosystem, as well as data available from international financial institutions. A statistical annex provides detailed information and time series for some key data. Emphasis is put on data harmonisation and the use of a consistent methodology. Where relevant, the review removes exchange rate-related valuation effects by presenting statistical time series at constant exchange rates, so as to facilitate comparisons over time.

In this issue, the analytical component of the review has been enhanced through the presentation of four special features that provide a more in-depth analytical treatment of issues that have a bearing on the international role of the euro. These special features cover the prospects for the international use of emerging market currencies; the empirical determinants of "safe haven" currency status; the impact of asset-backed securities on the currency composition of international debt markets; and survey-based evidence on foreign currency lending in central, eastern and southeast Europe, prepared by the OeNB.

The review is structured as follows. Section 2 discusses the main findings. Section 3 examines recent developments in the international use of the euro, with a focus on 2010. Finally, Section 4 contains the special features of this review.

2 MAIN FINDINGS

DEVELOPMENTS IN THE INTERNATIONAL ROLE OF THE EURO DURING 2010

The year 2010 was characterized by a gradual pick-up of economic and financial activity in an environment of persistent uncertainty stemming from concerns over sovereign and banking sector risks. Against this background, most market segments examined in this review returned to a moderate pace of growth. For instance, the outstanding amount of global debt securities reached USD 95 trillion, up from USD 90 trillion one year earlier. Nevertheless, the rate of growth of the stock of global debt securities remained subdued compared to the period before the crisis. The issuance of international debt securities issued by non-residents also continued to recover but at a considerably lower pace than before the crisis, possibly reflecting persistent uncertainties with respect to financial institutions which account for the bulk of such international issuance and a rise in sovereign borrowing which is mostly carried out in domestic currencies. The trading volume in global foreign exchange markets rose to almost USD 4 trillion in April 2010 as compared to USD 3.3 trillion in April 2007 whereas notional principal outstanding in derivatives markets stagnated by mid-2010 when compared to the end of 2008, most likely reflecting persistent efforts to reduce counterparty risk. Global foreign exchange reserves reached a new historical high (USD 9.3 trillion) at end-2010, mainly reflecting interventions by emerging market central banks aimed at stemming off appreciation pressures on local currencies.

At the same time, the worsening fiscal situation in a number of euro area countries, coupled with the increased credit risk of some euro area financial institutions, posed a new challenge for European financial integration. The bond and money markets in particular were affected by the European sovereign debt crisis and experienced a loss of financial integration.[1]

In spite of these challenges for the euro area, currency preferences have been, by and large, unaffected. The share of euro-denominated instruments, which by definition does not distinguish between different euro area issuers, displayed considerable stability in most market segments throughout 2010 when adjusting for valuation effects. These effects stem from currency movements, such as the weakening of the euro against the US dollar during the first half of 2010 and its re-appreciation during the second half of 2010 and are removed where feasible throughout this review. For instance, the euro has remained in 2010 an important store of value for central bank reserves outside the euro area, acting as the second most important international reserve currency. In fact, the share of the euro in global foreign exchange with known currency composition reserves slightly increased compared to end-2009 (see Table 1) and continued to be an important currency anchor in countries neighbouring the euro area.

In international bond markets, the share of the euro dropped by around two percentage points (see Table 1), mostly due to negative net issuance of euro-denominated international bonds. Temporary factors such as lower funding costs in the US dollar market mainly contributed to this somewhat lower share of the euro. Turning to foreign demand for euro-denominated debt securities figures available up until mid-2010 suggest that non-resident holdings of euro-denominated debt which was issued by euro area residents remained stable when compared to mid-2009.

The share of the euro increased by around one percentage point in the turnover of foreign exchange markets, underscoring the euro's use as an important regional vehicle currency; the relative importance of the euro also increased by almost half a percentage point in global derivatives markets such as OTC interest rate derivatives, and by around one percentage point when used in cross-border loans and deposits (see Table 1). When used as an invoicing currency in merchandise trade of selected euro area countries with non-residents of the euro area, the share of the euro in exports and imports increased by around half a percentage point and five

1 See ECB (2011) for a detailed analysis of financial integration trends in Europe during 2010.

Table 1 Key data on the international role of the euro

Indicator	Share of the euro (%)			Total outstanding amounts (USD billions, unless otherwise stated)		
	Latest	Comparison period	Difference in percentage points	Latest	Comparison period	Difference in percent
Stock of global foreign exchange reserves with a known currency composition, at constant end-2010 exchange rates	26.3 *(Q4 2010)*	26.0 *(Q4 2009)*	0.3	5,120 *(Q4 2010)*	4,562 *(Q4 2009)*	12.2
International debt securities: global measure, i.e. including home curency issuance, and at constant end-2010 exchange rates	26.7 *(Q4 2010)*	27.2 *(Q4 2009)*	-0.5	94,815 *(Q4 2010)*	90,408 *(Q4 2009)*	4.9
International debt securities: narrow measure, i.e. excluding home curency issuance, and at constant end-2010 exchange rates	27.4 *(Q4 2010)*	29.5 *(Q4 2009)*	-2.1	10,567 *(Q4 2010)*	10,333 *(Q4 2009)*	2.3
Daily foreign exchange market turnover, at current exchange rates	19.5 *(2010)*	18.5 *(2007)*	1.0	3,981 *(2010)*	3,324 *(2007)*	19.8
Cross-border loans, at constant end-2010 exchange rates	19.1 *(Q4 2010)*	18.6 *(Q4 2009)*	0.5	5,528 *(Q4 2010)*	5,120 *(Q4 2009)*	8.0
Cross-border deposits, at constant end-2010 exchange rates	21.6 *(Q4 2010)*	20.4 *(Q4 2009)*	1.2	6,015 *(Q4 2010)*	5,687 *(Q4 2009)*	5.8
Invoicing of goods exports of the euro area to non-euro area countries, at current exchange rates	68.0 *(2010)*	67.4 *(2009)*	0.6	… …	… …	… …
Invoicing of goods imports of the euro area from non-euro area countries, at current exchange rates	53.5 *(2010)*	48.6 *(2009)*	4.9	… …	… …	… …
Foreign holdings of euro area debt denominated in euro (percentages of total euro-denominated debt)	18 *(H1 2010)*	17 *(H1 2009)*	1.0	13,896 *(H1 2010)*	12,882 *(H1 2009)*	7.9
Cumulative net shipments of euro banknotes to destinations outside the euro area in EUR billion, not seasonally adjusted	… …	… …	… …	107 *(Dec. 2010)*	109 *(Dec. 2009)*	-1.8

Sources: BIS, ECB and national sources.
Notes: Potential differences to the statistical annex could arise owing to rounding issues.

percentage points, respectively (see Table 1). With non-EU countries, however, trade invoicing patterns remained relatively stable.[2]

Turning to currency and asset substitution outside the euro area, figures on the cumulated volume of net shipments of euro banknotes to destinations outside the euro points to a further stabilisation in the foreign demand for euro banknotes in 2010 which slightly dropped to €107 billion. At the same time, there has been no visible unwinding of the additional demand that non-residents unfolded in the environment of heightened uncertainty after the default of Lehman Brothers. The amount of euro banknotes circulating outside the euro area is estimated at

2 See section 3.4 for details.

around 20-25% of euro currency in circulation and is concentrated in countries neighbouring the euro area. With respect to asset substitution, the euro remained an important store of value in central, eastern and southeast Europe. Its share in total deposits slightly decreased in most non-euro area EU Member States and EU candidate countries when compared to 2009, possibly because of somewhat lower perceived macroeconomic uncertainty as most of these countries returned to positive growth in 2010.

As regards lending in euro and other foreign currencies which creates significant financial instability and macroeconomic risks for borrowers and lenders if borrowers are unhedged, the share of euro-denominated loans in total loans increased during 2010 in several EU Member States and some EU candidate countries. Currency depreciations during the crisis appear to have had no material impact on the re-surge of aggregate foreign currency loan growth in 2010 in some countries. If this trend continued, additional measures to discourage foreign currency lending to unhedged borrowers should therefore be considered by the relevant authorities.

All in all, currency preferences exhibited in 2010 a remarkable degree of stability as the euro continued to be the second most important international currency with a regional focus. The US dollar retained its status as the leading international currency, supported by its large and liquid financial markets and prevailing network effects in many market segments.

MAIN FINDINGS OF THE SPECIAL FEATURES

In view of China's efforts to progressively facilitate the use of the renminbi in trade, the possible international role of emerging market currencies has received increased attention. Against this background, the first special feature reviews recent developments in the use of these currencies while also touching upon the likely determinants for a further rise in their international circulation. It concludes that the international role of currencies from emerging and developing markets is less prominent than the role these countries are assuming in the global economy. This is partly due to the relatively small size, the lack of depth and liquidity, and the low sophistication of their financial markets. In addition, network effects support the use of SDR basket currencies in many market segments. Nevertheless, a gradual increase in the international use of emerging market currencies could materialise over time if such network externalities are overcome by a combination of changes in policies and in the behaviour of economic agents.

The second special feature deals with one key feature of international currencies namely their capacity to be a store of value for international investors in times of financial distress. It draws on a recent empirical study of developments across a large panel of more than 50 currencies in the past 25 years to determine which "fundamentals" make a currency a "safe haven". The analysis reveals that the most consistent and robust predictor of a safe haven status is not the interest rate spread, as emphasised in the carry trade literature, but rather the net foreign asset position, an indicator of country risk and external vulnerability. This confirms that macroeconomic fundamentals of the issuing country are an important determinant of 'safe haven' currencies.

The third special feature assesses the impact of asset-backed securities on the currency composition of the stock of international debt. Motivated by the stylised fact that the euro's share in the market for international debt securities rose steadily until late 2005, followed by a gradual decline since then, the special features asks whether asset-backed securities (ABS) can help explaining these developments. The study is drawing on a newly compiled database of ABS and shows that these instruments are likely to have contributed to a non-negligible extent to the currency composition of the stock of international debt, suggesting that financial innovation can also foster the international use of currencies.

Against the backdrop of widespread foreign currency lending in central, eastern and southeast

Europe, the fourth special feature prepared by the Oesterreichische Nationalbank provides new evidence on the drivers of such lending, based on household surveys. These surveys usefully complement aggregate monetary statistics because they allow moving the level of analysis from macroeconomic data to responses obtained directly from households. It is found that the households' awareness of increased risk was not sufficient to outweigh the perceived advantages of foreign currency loans. Turning to CESEE households' reported difficulties with loan repayments, the major cause of these difficulties was found to stem from a decrease in households' earnings rather than from increased loan instalments in most countries.

3 RECENT DEVELOPMENTS IN THE INTERNATIONAL USE OF THE EURO

3.1 THE EURO IN GLOBAL FOREIGN EXCHANGE RESERVES AND EXCHANGE RATE ANCHORING

In 2010 the share of the euro in global foreign exchange reserves remained broadly stable. Adjusted for valuation effects, the share of euro-denominated assets in global reserve portfolios with a known currency composition increased slightly to 26.3% from 26.0% at end-2009 (at constant end-2010 exchange rates), underscoring the fact that the euro continued to be the second most important global reserve currency. As in previous years, the use of the euro as an anchor currency was largely limited to EU neighbouring countries.

THE USE OF THE EURO IN GLOBAL FOREIGN EXCHANGE RESERVES

During the period under review reserves continued to grow rapidly in several emerging market and advanced economies. Global foreign exchange reserves reached a new historical high of USD 9.3 trillion at end-2010. According to IMF data, which cover only around half of global reserves,[3] the shares of major reserve currencies remained relatively stable throughout 2010 (see Chart 1, Panel B).[4] Such inertia in the currency composition of foreign exchange reserves is likely to result from a combination of factors including the anchoring, liquidity and hedging properties of major reserve currencies.[5] At the same time changes in the aggregate currency composition of global foreign exchange reserves can stem from changes in the relative weights of countries holding reserves, rather than from a change in the currency preferences of central banks outside the euro area.[6]

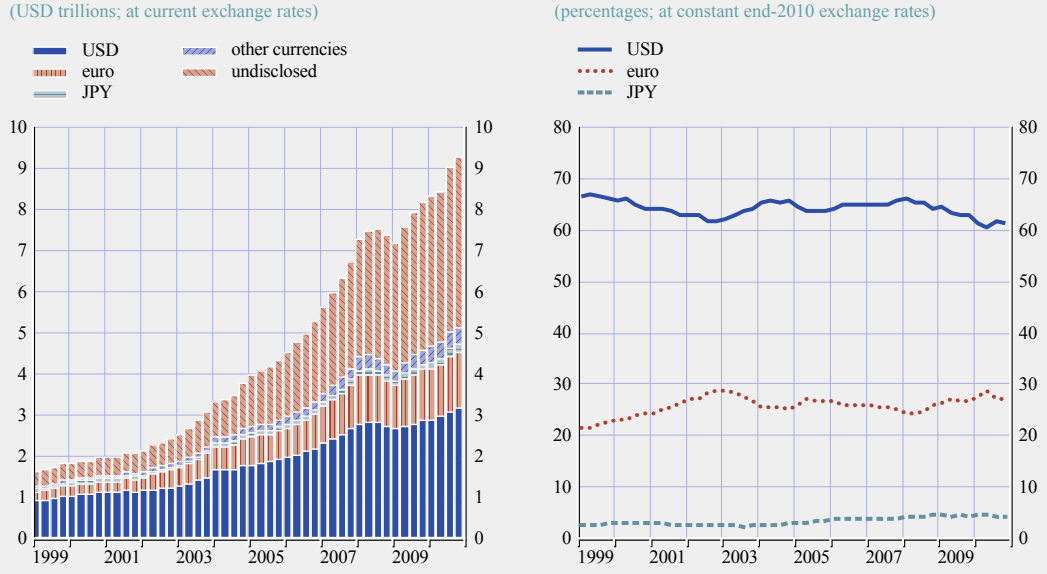
3 According to the IMF, Asian countries in particular do not disclose the currency composition of their foreign exchange reserves to the IMF's survey on the Currency Composition of Official Foreign Exchange Reserves (COFER). Since reserve growth was particularly pronounced among Asian countries, the quality of these data deteriorated further in 2010, with "allocated reserves" covering only around 55% of global foreign exchange reserves, excluding also assets accumulated by most sovereign wealth funds.

4 Evidence from the few central banks that publish the currency breakdown of their reserves (see Table 2 in the statistical annex) broadly confirms this pattern.

5 See ECB (2008) and Beck and Rahbari (2011) who show that in optimal reserve portfolios anchor currencies and currencies which are a good hedge against sudden stops in capital inflows have a large weight. In addition, large reserve holdings do not necessarily have to increase their diversification if the increase in reserves is driven by precautionary motives (see Beck and Weber, 2011).

6 See ECB (2008) for a more detailed discussion of this effect.

Chart 1 Currency composition of global foreign exchange reserves



Sources: IMF and ECB calculations.

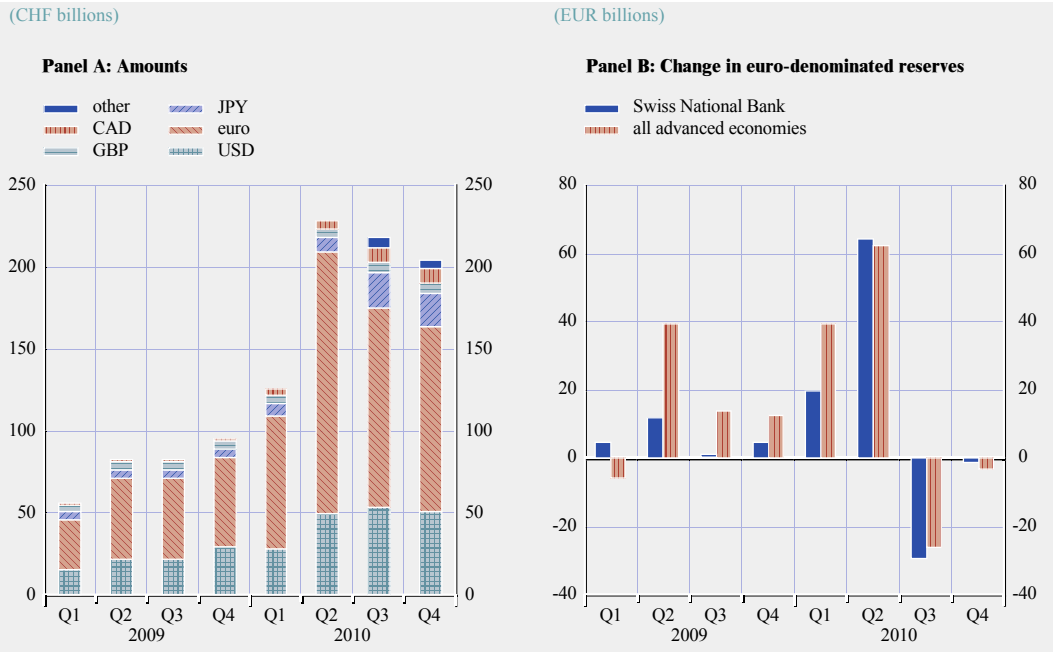
The share of the euro in global foreign exchange reserves increased slightly to 26.3% at the end of 2010 when adjusted for valuation effects (from 26.0% at end-2009, at constant end-2010 exchange rates).[7] During the same period the share of US dollar-denominated assets in global foreign exchange reserves decreased somewhat to 61.4% from 63.2% at end-2009 (at constant end-2010 exchange rates). In line with anecdotal evidence indicating that interest in non-traditional reserve currencies was increasing somewhat among central banks, the share of "other currencies" in global foreign exchange reserves rose by around 1 percentage point when adjusted for valuation effects (see also Section 4.1).

Publicly available figures on the currency composition of reserves held by the SNB suggest that during the second quarter of 2010, the SNB intervened mainly in euro to stave off appreciation pressures on the Swiss Franc (see Chart 2, Panel A). These euro-denominated reserves were then diversified into other currencies (such as the Japanese yen and the Canadian dollar) during the third and fourth quarters of 2010. A comparison between the change in the euro-denominated reserves of the SNB and those held by the advanced economies as reported in the IMF's COFER database suggests that developments in the aggregate were very likely driven by the SNB intervention (see Chart 2, Panel B).

Among the emerging and developing economies which disclose the currency composition of their reserves to the IMF, the share of the euro declined slightly by around half a percentage point when measured at constant end-2010 exchange rates. Such fluctuations are fully in line with the volatility observed before the global economic and financial crisis.

7 The share of the euro measured at current exchange rates decreased by around 1 percentage point owing to negative valuation effects stemming from the depreciation of the euro against the US dollar during the review period.

Chart 2 Currency composition of reserves held by the Swiss National Bank



Sources: SNB, IMF and ECB calculations.

Overall, the available evidence suggests that in 2010 the euro remained an attractive store of value for central banks outside the euro area and continued to be the second most important international reserve currency. At the same time survey-based evidence[8] from central bank reserve managers suggests that there may have been shifts within the euro-denominated segment of their portfolios, increasing the weight of euro area issuers with sound fiscal positions and AAA-rated EU issuers.[9] Such possible reserve portfolio shifts would be in line with adjustments within euro area sovereign bond holdings in private sector portfolios, mirroring the worsening fiscal situation in a number of euro area countries, coupled with the increased credit risk of some euro area financial institutions.

THE USE OF THE EURO IN EXCHANGE RATE ANCHORING

As in previous years, the use of the euro in the exchange rate regimes of countries outside the euro area has a strong geographical and institutional underpinning, as it is observed mainly in EU neighbouring regions and in countries that have established special institutional arrangements with the EU or its Member States (see Table 2). With the exception of those countries participating in 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 ECB. The US dollar, on the other hand, continued to be widely used as an exchange rate anchor in Central and South America and in Asia.

The weight of the euro in the IMF's special drawing right (SDR) basket has risen from 34% in 2005 to 37.4%, following the last five-yearly review of the SDR basket in November 2010 (see Box 1). Its rise has partly displaced the Japanese yen (down from 11% to 9.4%), and the US dollar (down from 44% to 41.9%). The increase in the share of the euro is due predominantly to an increase in the share of reserves denominated in euro over the past five years and, to a lesser extent, to the increase in the same period in the euro area's share in the exports of the four economies issuing the currencies in the basket.

8 See Royal Bank of Scotland (2011). In this survey among reserve managers – representing 39 central banks holding around 35% of global foreign exchange reserves – more than 80% of the respondents indicated that the euro area sovereign debt crisis has affected their reserve management strategy. Many individual respondents suggested that their central bank has reduced its exposure to certain euro area governments.

9 In addition to the European Union and the European Investment Bank, the European Financial Stability Facility has started issuing euro-denominated bonds which appear to have some appeal for foreign central banks and sovereign wealth funds

Table 2 Countries with exchange rate regimes linked to the euro

(as at 1 May 2011)

Region	Exchange rate regimes	Countries
EU (non-euro area)	ERM II	Denmark, Latvia, Lithuania
	Euro-based currency boards	Bulgaria
	Managed floating with the euro as reference currency	Czech Republic, Romania
	Pro memoria: Independent floating	Hungary, Poland, Sweden, United Kingdom
EU candidate and potential candidate countries	Unilateral euroisation	Kosovo, Montenegro
	Euro-based currency boards	Bosnia and Herzegovina
	Pegs or managed floating with the euro as reference currency	Croatia, Former Yugoslav Republic of Macedonia
	Pro memoria: Independent floating	Albania, Iceland, Serbia, Turkey

Table 2 Countries with exchange rate regimes linked to the euro (cont'd)

(as at 1 May 2011)

Region	Exchange rate regimes	Countries
Others	Euroisation	European microstates, French territorial communities
	Pegs based on the euro	CFA franc zone, French overseas territories, Cape Verde, Comoros, São Tomé e Príncipe
	Pegs and managed floats based on the SDR and other currency baskets involving the euro (share of the euro)	Algeria, Belarus, Botswana, Fiji, Iran, Kuwait, Libya, Morocco (80%), Russian Federation (45%), Samoa, Singapore, Syria, Tunisia, Vanuatu

Sources: IMF and ECB.
Notes:
Denmark: Committed to an exchange rate fluctuation band of +/-2.25%.
Latvia: Unilaterally committed to an exchange rate fluctuation band of +/-1%.
Lithuania: Unilaterally committed to a currency board.
European microstates: Republic of San Marino, Vatican City, Principality of Monaco and Andorra. In the case of Andorra: unilateral "euroisation". The other countries and jurisdictions are entitled to use the euro as their official currency.
French territorial communities: Saint-Pierre-et-Miquelon, Mayotte.
CFA franc zone: The West African Economic and Monetary Union (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo) and the Central African Economic and Monetary Community (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea and Gabon).
French overseas territories: French Polynesia, New Caledonia, Wallis and Futuna.
Algeria: Managed float with no preannounced path for the exchange rate.
Belarus: The currency was pegged to a basket of the euro, the US dollar and the Russian rouble at the beginning of 2009, with a fluctuation margin of 10%. In April 2011 the Belarussian rouble lost more than a third of its value against the dollar after the central bank introduced a free floating exchange rate for trade between banks.
Botswana: Weighted basket of currencies comprising the SDR and the South African rand.
Fiji: The currency was pegged to a basket of international currencies in May 2007.
Iran: Maintains a de jure managed floating arrangement against a basket of currencies including the euro, US dollar and Japanese yen.
Kuwait: The currency was pegged to a basket of international currencies in May 2007.
Libya: The rate of exchange is established using a basket of SDR currencies with a fluctuation margin of 25%.
Morocco: Bi-currency basket including the euro (80%) and US dollar (20%).
Russian Federation: Trade-weighted currency basket for monitoring and setting ceilings for real appreciation (the combined share of euro and euro-linked currencies is around 60%); since February 2005 a dollar-euro basket has been used for daily exchange rate management (since February 2007 the euro share has been 45%). The Bank of Russia does not target a specific exchange rate level against the currency basket.
Samoa: The central bank maintains an exchange rate peg based on a basket of the currencies of Samoa's six main trading partners.
Singapore: Managed float against an undisclosed basket of currencies maintained within an undisclosed target band.
Syria: In August 2007 the authorities moved the de facto exchange rate regime from a system of a peg to the US dollar to a system using an SDR basket within a relatively wide margin.
Tunisia: The de facto exchange rate regime is a conventional peg to an undisclosed basket of currencies.
Vanuatu: A basket of the currencies of Vanuatu's major trading partners that is weighted on the basis of trade and tourism receipts.

Box 1

THE EURO AND THE SDR BASKET

The special drawing right (SDR) is an international reserve asset that was created by the IMF in 1967 to provide an alternative to other reserve assets, namely, the US dollar and gold. Initially, one SDR was equal to one US dollar (which was the equivalent of 0.888671 grams of fine gold), but following the collapse of the Bretton Woods system of fixed exchange rates, it was redefined in 1974 in terms of a basket of currencies. Initially the basket comprised 16 currencies, but this number was reduced to five in 1981 (the French franc, Deutsche Mark, Japanese yen, US dollar and pound sterling), and then to four in 1999, when the euro replaced the French franc and Deutsche Mark.

Admission to the SDR basket

The euro is the only currency that has been admitted to the SDR basket since the 1981 redefinition. Admission was a logical consequence of its replacing two of the currencies that comprised the SDR basket, and is in accordance with the eligibility criteria set forth in a decision by the IMF's Executive Board.[1] For currencies to be admitted to the basket:

(a) the underlying economy's share in global exports of goods and services[2] during the previous five-year period must have been among the four[3] largest, and;

(b) the currency must be determined by the IMF to be freely usable in accordance with Article XXX(f) of the IMF's Articles of Agreement. This Article states that "A freely usable currency means a member's currency that the Fund determines (i) is, in fact, widely used to make payments for international transactions, and (ii) is widely traded in the principal exchange markets." To assist the IMF's Executive Board in their determination, the following criteria were suggested by IMF staff in 1977, regarding (i): the extent to which trade in goods and services is paid for in that currency, and the relative volume of capital transactions denominated in that currency; regarding (ii): the volume of transactions, the existence of forward markets and the spread between buying and selling quotations for transactions denominated in that currency.

Weights of currencies in the SDR basket

Every five years the IMF recalculates the weights of the currencies in the basket based on two criteria: (i) the value of each economy's exports during the five-year period ending 12 months before the revision, and (ii) the value of official holdings of reserves denominated in that currency (held outside the country or the euro area, as applicable) at the end of each year of the same five-year period.[4]

Following the last five-yearly review of the SDR basket in November 2010, the weight of the euro in the SDR basket has risen markedly from 34% in 2005 to 37.4% (see the table). Its rise has partly displaced the Japanese yen (down from 11% to 9.4%) and the US dollar (down from 44% to 41.9%).

Almost two-thirds of the increase in the share of the euro is due to an increase in the share of reserves denominated in euro and, to a lesser extent, to the increase in the euro area's share in the four economies' exports.

In between the five-yearly reviews, the weights of the currencies in the SDR basket change daily as a result of movements in exchange rates.

Initial currency weights in the SDR basket

(percentages)

	2010 review	2005 review	Change
US dollar	41.9	44.0	-2.1
Euro	37.4	34.0	3.4
Pound sterling	11.3	11.0	0.3
Japanese yen	9.4	11.0	-1.6

Source: IMF.

1 These criteria are laid down in IMF Executive Board Decision No 12281-(00/98), as amended by Decision No 13595-(05/99).
2 In the case of a monetary union, trade between members of the union is excluded from the calculation.
3 Note that although the decision specifies four currencies, this number could be changed by an IMF Executive Board Decision, pursuant to Article XV, Section 2 of the IMF's Articles of Agreement.
4 The measure of the currency denomination of reserves is based on the IMF's COFER database which covers only reserves with a known currency composition (see the section on global foreign exchange reserves).

Appreciating currencies gain a larger share in the basket, while the share of depreciating currencies declines. Since the November 2010 revision the weight of the euro has risen further, to 38.1% as at end-May 2011, and the share of the US dollar has fallen by a corresponding amount.

A debate is currently under way regarding the admission of more currencies to the SDR basket.[5] The next formal review of the basket is scheduled for 2015, although new entrants can be considered at any time. While new entrants would affect the weight of the euro in the SDR basket, it would not necessarily reflect any diminution in the status of the euro as an international currency.

5 See e.g. the G20 communiqué of 14-15 April 2011 calling for a "criteria-based path to broaden the composition of the SDR".

3.2 THE EURO IN INTERNATIONAL DEBT MARKETS

Non-euro area residents' holdings as a share of total euro-denominated debt remained stable at 23% as at end-June 2010 (unchanged compared with the end of June 2009). More detailed figures for debt issued by euro area residents in all currencies suggest that non-EU countries accounted for most of the foreign holdings of euro area debt as at end-2009.

The issuance of "international" debt securities continued to increase at a moderate pace in 2010. The share of the euro in the stock of international debt securities fell by 2 percentage points to 27.5%, measured at constant exchange rates. The US dollar became increasingly popular as a funding currency in bond markets, mainly as a result of developments in funding costs. Indeed, throughout 2010 it was for the most part cheaper to borrow in US dollars in the US market and swap the proceeds into euro through foreign exchange swaps rather than borrowing directly in euro.

3.2.1 INTERNATIONAL USES OF EURO-DENOMINATED DEBT SECURITIES – AN OVERVIEW

The international use of the euro in debt securities markets arises when an instrument denominated in euro is issued by a non-euro area resident, is held by a non-resident, or is both issued by and held by non-residents. With regard to issuance, this review provides timely figures as at end-2010 based on BIS data (see Section 3.2.2). For all international dimensions of euro-denominated debt securities, including foreign holdings, an overview as at mid-2010 is provided for the first time on the basis of ECB data (see Table 3).[10]

10 In the ECB's 2009 Report on the International Role of the Euro, a similar exercise was carried out on the basis of BIS data which are not fully comparable with ECB data on the international dimensions of euro-denominated debt securities.

Table 3 International dimensions of euro-denominated debt securities

(EUR billions; percentages)

As at end-June 2010	Held by residents	Held by non-residents	Total
Issued by residents	11,026 *68%*	2,870 *18%*	13,896 *86%*
Issued by non-residents	1,430 *9%*	830 *5%*	2,259 *14%*
Total	12,456 *77%*	3,699 *23%*	16,155 *100%*

As at end – June 2009	Held by residents	Held by non-residents	Total
Issued by residents	10,280 *68%*	2,602 *17%*	12,882 *85%*
Issued by non-residents	1,405 *9%*	857 *6%*	2,262 *15%*
Total	11,684 *77%*	3,459 *23%*	15,143 *100%*

Source: ECB.

As at end-June 2010, out of the €16,155 billion [11] of outstanding debt securities denominated in euro, 77% were held by euro area residents and 23% by non-residents. Compared with mid-2009 the share of foreign holdings in total outstanding euro-denominated debt securities remained unchanged. In the case of securities issued by euro area residents, the share of foreign holdings increased from 17% to 18%. The bulk of euro-denominated debt securities held by non-residents was issued by euro area residents (18% out of 23% of total euro-denominated debt securities), while euro-denominated debt securities which were issued by non-residents and held by non-residents accounted for only 5% of total euro-denominated debt securities. Section 3.2.3 covers in more detail debt securities issued by euro area residents (in all currencies) which are held by non-residents.

With regard to issuance, 86% of all outstanding euro-denominated debt securities were issued by euro area residents as at end-June 2010. Euro-denominated debt securities issued by non-residents (covered in more detail in the next sub-section) accounted for €2,259 billion (14% of total euro-denominated debt securities) as at end-June 2010. Such issues appeared to be targeted mainly at euro area investors, as out of the 14% of total euro-denominated debt securities issued by non-residents 9% was held by euro area residents.

3.2.2 THE USE OF THE EURO ACCORDING TO THE GLOBAL AND NARROW MEASURE OF INTERNATIONAL DEBT SECURITIES

At the end of 2010 the outstanding amount of debt securities (including bonds, notes and money market instruments) reached USD 95 trillion at the global level according to BIS statistics, up from USD 90 trillion one year earlier. The outstanding amount of debt securities denominated in euro accounted for around USD 25 trillion at the end of 2010 – around 27% of all debt securities. These figures (the "global" measure) include both domestic and international debt securities, and as such do not provide a good proxy for the international role of currencies.

To gauge the international dimension of debt securities markets, this review focuses also on the "narrow" concept of international issuance of debt securities, which comprises only issuance in a currency other than the currency of the country in which the borrower resides.[12] At the end of 2010 the total stock of debt securities according to this "narrow" measure stood at USD 11 trillion. Of this total, euro-denominated securities amounted to USD 2.9 trillion, corresponding to a share of 27.5% of the total outstanding amounts. The euro remains the second most important currency in this market segment. The share of international debt securities denominated in US dollars in total issuance was almost 49% according to the narrow measure (see Table 4).

11 At end-June 2010 exchange rates this amount corresponds to USD 19,856 billion. According to the BIS' global measure of international debt securities referred to in the next sub-section, euro-denominated debt securities amounted to USD 22,979 billion at the end of the second quarter of 2010 (see the statistical annex). Such over-estimations of euro-denominated debt securities in the BIS data is recurrent and might arise, for example, from double-counting issues.

12 The narrow measure is the only indicator available in a timely manner that comprises only international transactions, although it does not cover the entire spectrum of international debt transactions. A foreign investor buying a security denominated in the currency of the country in which the issuer resides would not be included in this measure

Table 4 Alternative measures of the supply of debt securities and the shares of major currencies

(as at the fourth quarter of 2010; at current exchange rates)

	Amounts outstanding (USD billions)				Shares (%)		
	Total	Euro	US dollar	Japanese yen	Euro	US dollar	Japanese yen
"Narrow" measure	10,567	2,900	5,145	666	27.4	48.7	6.3
"Global" measure	94,815	25,289	36,185	14,518	26.7	38.2	15.3

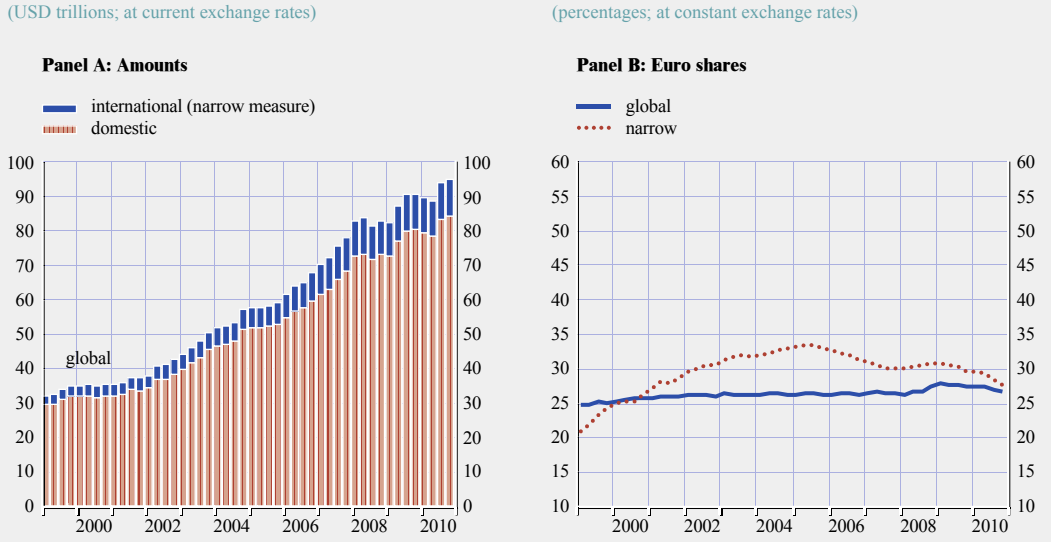
Sources: BIS and ECB calculations.

Looking at developments in currency shares since 1999, the euro has exhibited great stability in debt securities markets. The share of the euro in the global measure of outstanding debt securities drifted upwards from around 25% of global issuance in 1999 to about 27% in 2010, measured at constant exchange rates. Continuing the trend noted in the previous issue of this review, the share of the euro in the narrow measure of international debt displays a hump-shaped pattern, peaking in 2005 and then gradually decreasing (see Chart 3).

The remainder of this section offers a more detailed analysis of the trends and potential determinants of currency shares in the international debt market as defined in accordance with the narrow concept. Table 5 reports data on net issuance of international debt securities according to the narrow measure. In 2010 such issuance declined by more than USD 100 billion compared with the previous year, reaching an eight-year trough of USD 351 billion. This decline is entirely accounted for by a large fall in the net issuance of euro-denominated international debt securities (from USD 36 billion in 2009 to USD -102 billion in 2010) and a smaller decrease in the net issuance of US dollar-denominated debt securities (from USD 442 billion in 2009 to USD 409 billion in 2010). In this context it is useful to recall that the narrow measure of outstanding international debt securities is dominated by financial issuers. Therefore, the prolongation of the financial market turbulence in the course of 2010, affecting international financial institutions, may have contributed to the subdued issuance of international debt securities.

2010 was the first year in which redemptions of euro-denominated securities by non-euro area residents exceeded gross issuance, and a negative net figure of more than USD 100 billion was recorded (see Table 5). Funding cost considerations were the main reason for this trend in the choice of currency issuance in bond markets – namely basis swap levels made it cheaper to borrow in a foreign currency (such as the US dollar, the Australian dollar or the Japanese yen) and swap the proceeds into euro than to borrow directly in euro. Indeed, deviations from the covered

Chart 3 International (narrow) and global measures of outstanding international debt securities



Sources: BIS and ECB calculations.
Note: The shares at constant exchange rates are reported at Q4 2010 exchange rates.

Table 5 Net issuance of international debt securities

(narrow measure, i.e. excluding home currency issuance USD billions; at current exchange rates)

	Annual					Quarterly				
	2006	2007	2008	2009	2010	2009	2010			
						Q4	Q1	Q2	Q3	Q4
Euro	288.8	332.5	179.6	36.1	-102.1	-48.3	52.1	-35.6	-28.7	-89.9
US dollar	749.5	726.2	108.3	441.8	408.6	136.8	132.1	14.1	173.0	89.4
Japanese yen	15.4	76.1	10.0	-44.2	-10.3	-12.0	-9.8	-8.5	7.2	0.8
Total (including other currencies)	1,318.2	1,396.0	379.8	454.4	351.1	51.2	194.2	-33.7	176.9	13.7

Sources: BIS and ECB calculations.

interest parity – which appeared following the collapse of Lehman Brothers in the autumn of 2008 – persisted throughout 2009 and 2010 and may have induced non-US borrowers to tap the US market, borrowing in US dollars (see Box 2).

Box 2

BASIS SWAPS AND CURRENCY CHOICE IN INTERNATIONAL BOND ISSUANCE

There is a large body of literature and analysis, including in past issues of this review, on the determinants of currency choice in international bond markets. One such determinant is the hedging motive, with borrowers selecting the currency composition of their bond issuance with a view to reducing the associated currency risks. In particular, firms with substantial foreign currency revenues may issue bonds denominated in foreign currency to match the currency composition of their assets and liabilities. The currency choice in international bond issuance may also be affected by strategic and cost factors. Issuers may decide to target those markets and currencies that offer a large investor base and low funding costs. The latter factor, the cost of funding, may prompt them to issue in currencies with relatively low interest rates (see Habib and Joy, 2010) or to vary their currency choice to exploit arbitrage opportunities (see McBrady and Schill, 2007).

Over the past few years considerations related to the cost of funding have become increasingly relevant in the currency choice of bond issuance. The reason is that with the beginning of the turbulence in money markets in August 2007 deviations from the covered interest parity appeared in foreign currency swap markets. In particular, the US dollar rate implied by foreign exchange swaps – i.e. the rate implied by borrowing in a currency other than the US dollar and swapping the proceeds into US dollars using foreign currency swaps – tended to exceed the US dollar cash rate. This deviation from the covered interest parity – known in the markets as a positive "basis swap" for the US dollar – peaked at around 100 basis points against the euro following the collapse of Lehman Brothers in September 2008, and remained at elevated levels in the course of 2009 and 2010 (see the chart). Other major currency pairs involving the US dollar displayed similar deviations from the covered interest parity. Baba and Packer (2009) argue that the US dollar funding needs of European financial institutions combined with rising counterparty risk created a one-sided market and were responsible for the dislocations in the foreign exchange swap market. To a large extent, these dislocations have been successfully tackled by the

US dollar swap lines arranged between the Federal Reserve System and the ECB after the collapse of Lehman Brothers, which allowed the ECB to provide US dollar term funding to European institutions (see Goldberg et al. 2010). These foreign exchange swap lines were terminated at the beginning of 2010, but they had to be reinstated in May 2010 following the increase in the financial market turbulence associated with the sovereign debt crisis in the peripheral countries of Economic and Monetary Union. Mancini Griffoli and Ranaldo (2010) show that US dollar funding constraints prevented traders from arbitraging away excess profits.

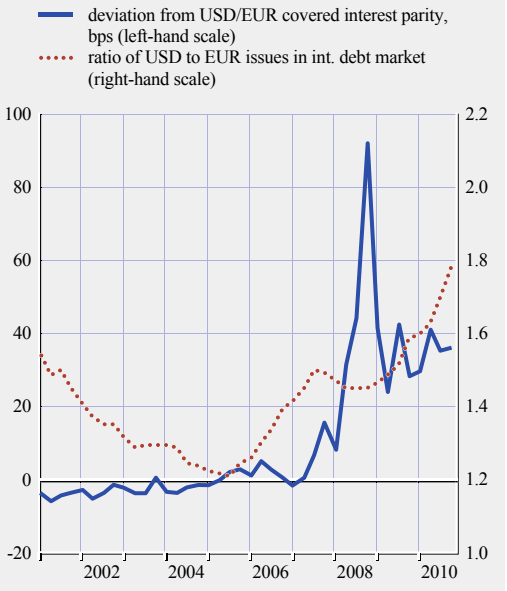
For non-US borrowers in the international debt market, the positive basis swap for the US dollar implies that it is cheaper to borrow in US dollar in the US market and swap the proceeds into their domestic currency than to borrow directly in their domestic currency cash market. The continued elevated levels of the basis swap in 2009 and 2010, of around 20-40 basis points, may have increased the importance of funding cost considerations in the currency choice of bond issuers, favouring borrowing in the US dollar market.

Indeed, the chart shows that the ratio of US dollar-denominated issuances to euro-denominated issuances in the international debt market (based on the outstanding amounts as captured by the narrow measure) has risen sharply since 2009. Anecdotal evidence, based on the behaviour of a number of sovereign and supra-national borrowers, confirms that a shift towards US dollar issuances and, in general, away from relatively "expensive" euro-denominated issuances was driven by the low funding costs in the US dollar market (see Euroweek, 2010).

In conclusion, positive basis swaps, particularly when large and persistent, may generate shifts in the currency shares in the international debt markets. Over the long term, however, the impact of transitory swings in funding costs would be expected to wane, leaving currency shares to be determined by structural factors such as the depth and liquidity of financial markets and the presence of a large investor base.

Spread between the three-month foreign exchange swap-implied US dollar rate and US dollar LIBOR vs the ratio of US dollar to euro issuance in the stock of international debt

(basis points; quarterly data)

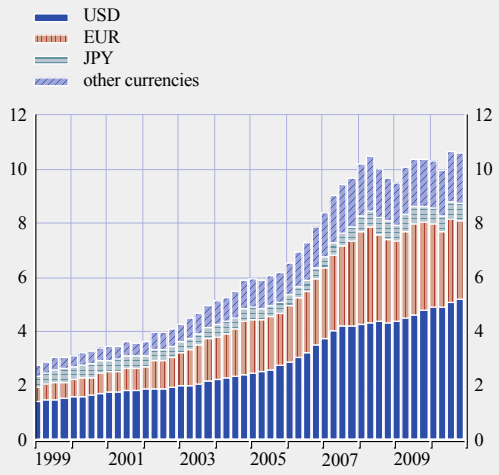


Sources: BIS, Thomson Reuters and ECB calculations.

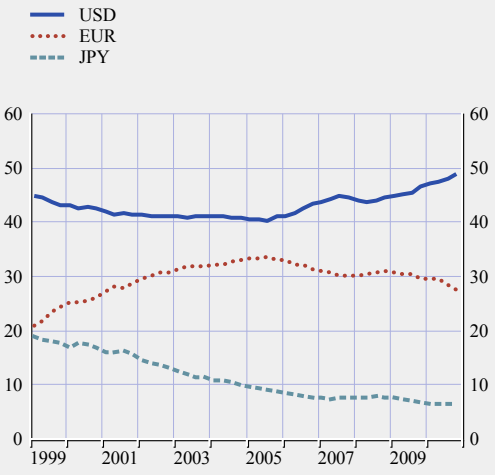
As a result of these trends in net issuance, in the course of 2010 the share of the euro in the stock of international debt securities dropped by 2 percentage points from 29.5% (at end-2009) to 27.5% (at end-2010), measured at constant exchange rates. This decline was entirely offset by an increase in the share of the US dollar in international bond issuance, which rose from 46.5% (at end-2009) to 48.7% (at end-2010), measured at constant exchange rates. International issuance in the Japanese yen continued its long-term downward trend in relative terms with a share of 6.3% of total international issuance as at the end of 2010, compared with 6.7% at the end of 2009 (see Chart 4, Panel B).

Chart 4 Stock of international debt securities (narrow measure): outstanding amounts and currency shares

(USD trillions, at current exchange rates)



(percentages, at constant exchange rates)



Sources: BIS and ECB calculations.

As regards the international issuers of euro-denominated bonds and notes (excluding money market instruments), the private sector, and in particular the financial sector, remained the largest issuing sectors. At the end of 2010 financial institutions accounted for around 68% of the total outstanding amount of euro denominated international bonds and notes (see Table 4 in the statistical annex). In terms of new issuance in the course of 2010, financial

Table 6 The top 20 non-euro area issuers of euro-denominated bonds and non-US issuers of US dollar-denominated bonds

(issuer; total amount issued in the review period; EUR millions)

Top 20 non-euro area issuers of euro-denominated bonds		Top 20 non-US issuers of US dollar-denominated bonds	
Lloyds TSB Bank plc	11,534	KfW Bankengruppe – KfW	27,422
Royal Bank of Scotland plc	10,805	European Investment Bank – EIB	22,357
Barclays Bank plc	9,872	International Bank for Reconstruction & Development – World Bank	15,353
Nordea Bank AB	7,514	Westpac Banking Corp	10,420
DnB NOR Boligkreditt AS	5,796	Bank of Nova Scotia	9,344
Republic of Poland	5,250	Rabobank Nederland	8,255
Abbey National Treasury Services plc	5,106	Province of Ontario	8,022
UBS AG (London)	5,052	National Australia Bank Ltd	7,656
Credit Agricole SA (London)	4,836	Barclays Bank plc	7,399
HSBC Bank plc	4,707	Royal Bank of Canada	7,036
Swedbank Mortgage AB	4,590	Royal Bank of Scotland plc	6,574
Credit Suisse (London)	4,201	NRW. Bank	6,328
Bank of America Corp	3,699	Asian Development Bank	6,202
Danske Bank A/S	3,400	Inter-American Development Bank – IADB	6,013
Nationwide Building Society	3,292	Australia & New Zealand Banking Group Ltd – ANZ	5,461
National Australia Bank Ltd	3,275	Bank Nederlandse Gemeenten NV – BNG	5,411
Swedish Covered Bond Corp	3,040	ING Bank NV	5,401
Credit Suisse (Guernsey) Ltd	3,000	Lloyds TSB Bank plc	5,374
Skandinaviska Enskilda Banken AB – SEB	2,921	Shell International Finance BV	5,306
BES Finance Ltd	2,800	Caisse d'Amortissement de la Dette Sociale – CADES	5,263
Memo item:			
European Investment Bank	24,720		

Source: DCM Analytics.

institutions based in the United Kingdom and in northern Europe (Norway, Sweden and Denmark) accounted for the bulk of euro-denominated bonds issued in the international debt market. In 2010 one sovereign issuer, the Republic of Poland, also ranked among the largest non-euro area issuers of euro-denominated bonds. In contrast, the list of major non-US issuers of US dollar-denominated bonds is geographically more diversified and includes European, Australian and Canadian banks and international organisations (see Table 6).

3.2.3 FOREIGN HOLDINGS OF EURO AREA DEBT SECURITIES AS AT END-2009

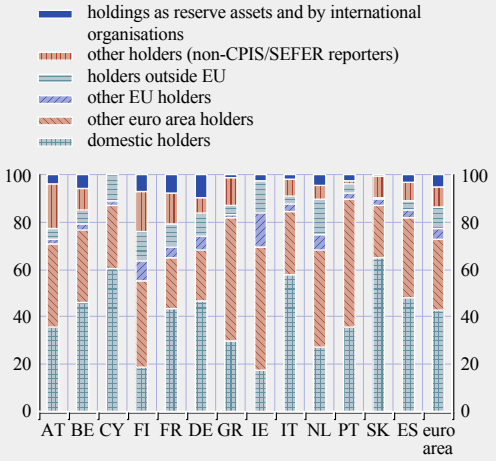
As mentioned in Section 3.2.1, the euro-denominated debt that is held by non-residents is typically issued by euro area residents. At the same time debt securities issued by euro area residents are mainly denominated in euro. In fact, as at end-2009 around 89% of euro area debt was denominated in euro. Therefore, in order to arrive at a more detailed picture of foreign holdings of euro-denominated debt – broken down by the geographic origin of foreign investors and by euro area issuer – trends in foreign holdings of debt issued by euro area residents can be assumed to mirror developments in euro-denominated debt relatively closely.

When national accounts and international investment position data for euro area countries are combined with data from the IMF's Coordinated Portfolio Investment Survey (CPIS), its survey on Securities Held as Foreign Exchange Reserves (SEFER) and Securities Held by International Organizations (SSIO), the following observations can be made:

As at end-2009, non-euro area residents held less than one-third of total euro area debt (27%). The bulk of euro area debt is held domestically and by other euro area countries (43% and 29% respectively of total amounts outstanding as at end-2009, see Chart 5). At the country level, the highest share of non-euro area resident holdings is recorded for securities issued by Austria, Finland, France, Germany, Ireland and the Netherlands.

Chart 5 Debt securities issued by euro area countries, by holder

(percentages of total outstanding amounts; as at end-2009)



Sources: ECB calculations, IMF (CPIS, SEFER, SSIO) and National sources (national account and i.i.p.).
Notes: i.i.p. figures for Cyprus and the Netherlands include 'Special Financial Institutions'. Reserve assets and holdings by international organisations (IO) cannot be allocated to reporting countries since the results from the IMF's surveys on Securities Held as Foreign Exchange Reserves (SEFER) and Securities Held by International Organizations (SSIO) report figures only in aggregate form.

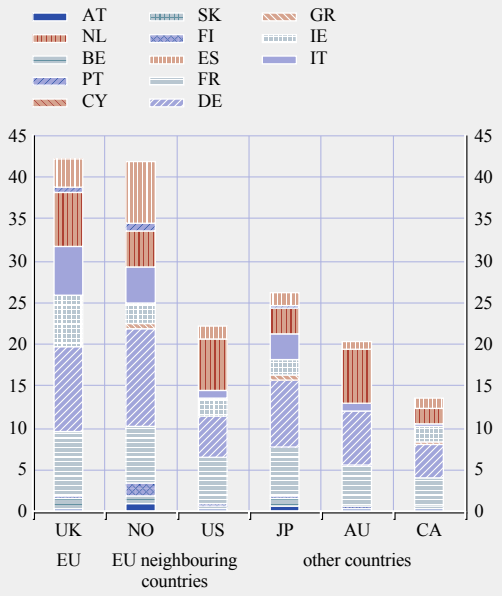
Among non-resident holders of euro area securities, non-EU countries hold 8.1% of total euro area debt, and non-euro area EU countries hold 4.8% (of which the United Kingdom accounts for 3.9%). Finally, 5.6% of euro area debt is held as reserve assets[13] or by international organisations. As a residual category, countries which do not take part in the CPIS and SEFER surveys are estimated to account for 8.4% of euro area debt holdings.

The share of euro area assets in international portfolios varies widely across countries outside the euro area. It is around 20%-25% in the portfolios of the United States, Japan and

13 Reserve assets are not recorded directly in the CPIS but aggregate figures are supplied via the IMF's SEFER survey.

Chart 6 Debt securities issued by euro area residents in the portfolios of selected countries outside the euro area

(percentages of total portfolio investment assets held in the form of debt securities; as at end-2009)



Sources: ECB and IMF.

Australia, somewhat lower for Canada (13%) and higher for the United Kingdom and Norway (around 40%), reflecting the euro area's closer financial integration with other EU countries or EU neighbouring countries (see Chart 6). In terms of exposures to individual euro area countries, the portfolio weights broadly mirror the market size of the respective issuers, with German, French and Dutch securities carrying the largest weights. Some exceptions include, for example, the higher share of Dutch debt securities in the portfolio of the United States, which is larger than the share of German debt securities.[14]

3.3 THE EURO IN FOREIGN EXCHANGE AND DERIVATIVES MARKETS

The latest data from the BIS Triennial Central Bank Survey indicate a continued surge in turnover in foreign exchange markets, primarily driven by spot transactions. The role of the euro has increased by 1.0 percentage point to 19.5% since the previous survey in April 2007. Moreover, the regional distribution of trades involving the euro appears to have broadened since the euro's launch, with some activity moving from the euro area to other geographical areas. Lastly, currencies of emerging and developing economies have maintained their rise to more prominence, accounting for 7.3% of total volume in 2010, after 6.2% in April 2007. In OTC foreign exchange and interest rate derivatives markets, the share of the euro has remained stable.

In 2010 the BIS published its latest Triennial Central Bank Survey which is one of the most comprehensive sources of information about activity in global foreign exchange markets.[15] As in previous waves of the survey, the latest results show that foreign exchange market turnover increased again, despite the considerable disruptions witnessed by global financial markets in the period since the preceding survey in April 2007. In fact, trading volume rose by 19.8% to almost USD 4 trillion in April 2010, compared with USD 3.3 trillion in April 2007 (see Chart 7). Spot transactions accounted for the bulk of the surge (at USD 485 billion, an increase of 48.3%) whereas foreign exchange swaps, which had displayed the most vigorous expansion in the previous survey, stagnated at USD 1,765 billion (an increase of 3.0%).[16] On the one hand, this switch in growth drivers is partly due to the

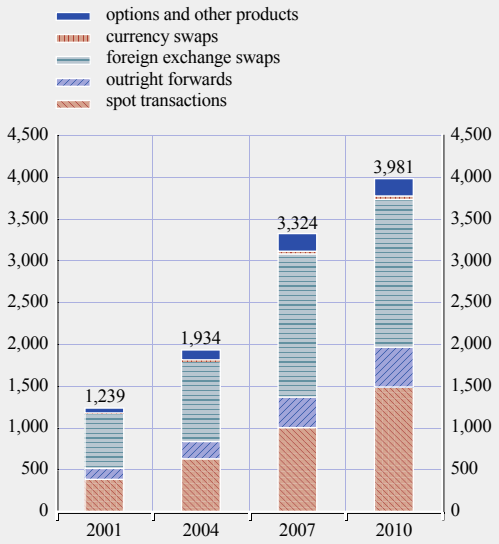
14 Debt securities issued by the Netherlands include securities issued by "Special Financial Institutions" which are subsidiaries of foreign (often US-based) parent companies.

15 See BIS (2010).

16 A spot transaction is defined as a single outright transaction involving the exchange of two currencies within two business days at a rate agreed on the date of the contract. A foreign exchange swap involves the actual exchange of two currencies (principal amount only) on a specific date at a rate agreed at the time of the conclusion of the contract (the short leg), and a reverse exchange of the same two currencies at a date further in the future and at a rate (which is generally different from the rate applied to the short leg) agreed at the time of the conclusion of the contract (the long leg). This design makes the foreign exchange swap different from an outright forward where two currencies are exchanged only once on a date in the future and at a rate agreed at the time of the conclusion of the contract and from a currency swap where principal is exchanged at the start and the end of the contract but a stream of interest payments on that amount flows between both parties during the life of the contract.

Chart 7 Global foreign exchange market turnover

(USD billions; daily averages in April)



Source: BIS.

repercussions of the global financial crisis. Markets for foreign exchange swaps with their inherent exposure to counterparty credit risk not only experienced severe disruptions in the wake of the turmoil, but have so far also failed to recover to any great extent in the light of persistent constraints on the balance sheets of dealers making a market in these instruments and the limited availability of credit. On the other hand, the popularity of spot transactions has soared owing to structural shifts in foreign exchange markets, most notably the continued proliferation of electronic execution methods, which favour spot trading rather than contracts exhibiting counterparty credit risk; the progressive spread of algorithmic and high-frequency trading; and the increasing tendency among retail investors to view currencies as an asset class.[17]

With regard to the currency composition of foreign exchange market turnover, the share of the euro climbed from 18.5% in April 2007 to 19.5% in April 2010, its highest level recorded to date in the BIS Triennial Central Bank Survey (see Table 7).[18] Likewise, the Japanese yen rose by 0.9 percentage point to 9.5%, the first time it had registered an expansion of its role since the 2001 survey. Lastly, the currencies of emerging and developing countries expanded their prominence in global foreign exchange trading further, attaining a share of 7.3% in April 2010, after 6.2% in April 2007.[19] The Turkish lira (up 0.3 percentage point), the Chinese renminbi (up 0.2 percentage point), the Korean won (up 0.2 percentage point) and the Brazilian real (up 0.2 percentage point) showed the largest increases in this group.[20] By contrast, the steady

17 For a more detailed analysis of these issues, see King and Rime (2010).

18 In this section, all currency shares are reported at current exchange rates, implying that some of the observed developments are at least partly due to exchange rate fluctuations.

19 However, part of this increase was triggered by a refinement of the data collection process for the April 2010 survey, which diminished transactions labelled as non-attributable, benefiting the group of emerging and developing currencies to some extent.

20 For a more detailed analysis of the development of the role of currencies of emerging and developing economies in global foreign exchange markets, see Section 4.1 of this report.

Table 7 Global foreign exchange market turnover, currency breakdown

(percentages; daily averages in April, at current exchange rates)

	(2001)	(2004)	(2007)	(2010)
US dollar	44.9	44.0	42.8	42.4
Euro	19.0	18.7	18.5	19.5
Japanese yen	11.8	10.4	8.6	9.5
Currencies of other advanced economies [1]	16.8	19.1	20.1	18.9
Currencies of emerging and developing economies [2]	4.3	4.5	6.2	7.3
Non-attributable transactions	3.3	3.3	3.8	2.4

Source: BIS.
1) AUD, CAD, CHF, DKK, GBP, NOK, NZD, SEK.
2) BRL, CLP, CNY, COP, CZK, HKD, HUF, IDR, ILS, INR, KRW, MXN, MYR, PHP, PLN, RUB, SAR, SGD, SKK (before the 2010 survey), SIT (before the 2010 survey), THB, TRY, TWD, ZAR.

ascent of currencies of other advanced economies observed over the last decade was interrupted in 2010, with their combined share dropping by 1.2 percentage points to 18.9%. In particular, contractions in trading of the pound sterling (down 1.0 percentage point) and the Scandinavian currencies (down 0.8 percentage point) were the main drivers of this development, whereas shares of the "commodity currencies" – the Australian dollar and Canadian dollar – increased by 0.5 percentage point each. Finally, the share of the US dollar, falling by 0.4 percentage point to 42.4%, remained relatively stable, confirming its vehicle currency status in global foreign exchange markets.[21]

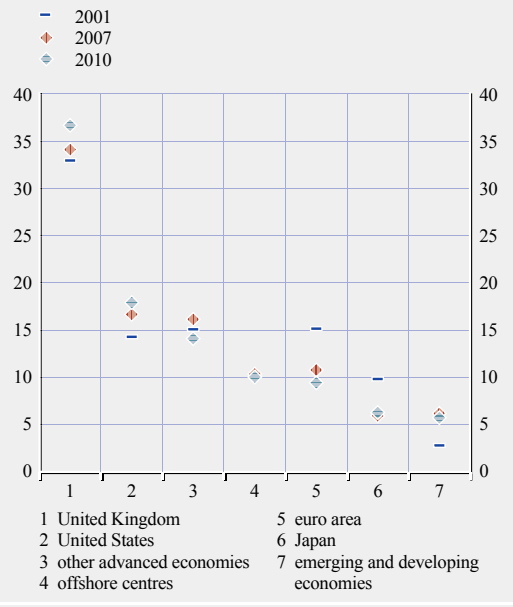
In terms of the geographical distribution of turnover, activity has become even more concentrated in the United Kingdom and the United States since the last survey. The United Kingdom's share rose from 34.1% of global volume in April 2007 to 36.7% by April 2010, while that of the United States rose from 16.6% to 17.9% in the same period (see Chart 8). However, despite this tendency of foreign exchange trading to converge in major financial centres, it is noteworthy that emerging and developing economies have managed to gain market share since April 2001 and now represent 5.7% of the total. In turn, euro area countries and Japan have lost market share. In April 2010 the euro area's share was 9.4% and Japan's share was 6.2%, which is 5.7 percentage points and 3.6 percentage points less than their respective shares in April 2001.

Not surprisingly, the euro area is the region where the share of transactions involving trading against the euro is highest, at 31.2% (see Chart 9). Nevertheless, this share has declined by 2.6 percentage points since April 2001,

21 A vehicle currency (B) is defined as a currency that is used in the foreign exchange markets as a means to exchange two other currencies (A and C), so that currencies A and C are not exchanged directly (AC) but via B in two transactions (AB and BC). If all trading in global foreign exchange markets were conducted by using a vehicle currency, its share in Table 7 would be 50%.

Chart 8 Global foreign exchange market turnover, regional breakdown

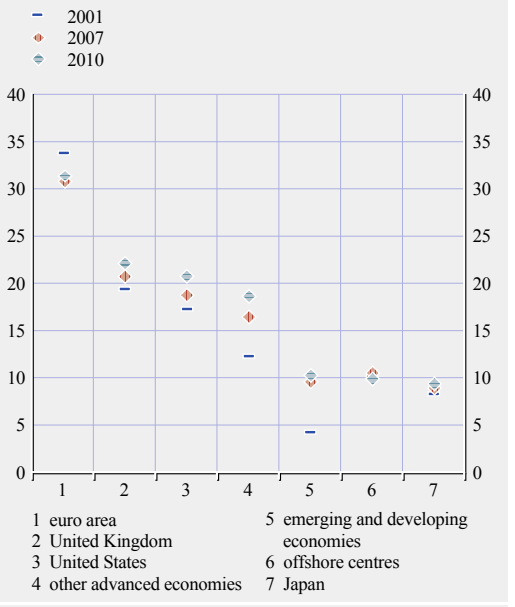
(percentages; daily averages in April)



Sources: BIS and ECB calculations.

Chart 9 The euro's share in global foreign exchange market turnover, regional breakdown

(percentages; daily averages in April)



Sources: BIS and ECB calculations.

whereas it has risen in most other regions of the world. Most notably, transactions involving the euro have gained considerable prominence in other advanced economies and in emerging and developing countries, soaring to 18.6% and 10.2% of total transactions respectively, i.e. 6.3 percentage points and 6.0 percentage points more than in April 2001. Interestingly, this observation also holds true when these two groups are divided further into countries in the vicinity of the euro area and those further away. Although the share of euro transactions is still lower in economies outside the euro area's neighbourhood, in line with comparable findings in previous editions of this report, it has nonetheless surged across the board. Specifically, in advanced economies close to the euro area[22] it climbed from 17.0% in April 2001 to 23.3% in April 2010, whereas the corresponding shares for advanced economies not neighbouring the euro area[23] were 6.0% and 10.6%. Regarding the group of emerging and developing countries, the figure for April 2010 was 19.5% (up 8.4 percentage points) for those located in the proximity of the euro area[24] and 5.7% (up 3.0 percentage points) for those further away.[25] Thus, the relative stability of the share of euro transactions in the turnover of global foreign exchange markets (see Table 7) to some degree masks perceptible changes in patterns of global trading conducted against the euro.

DERIVATIVES MARKETS

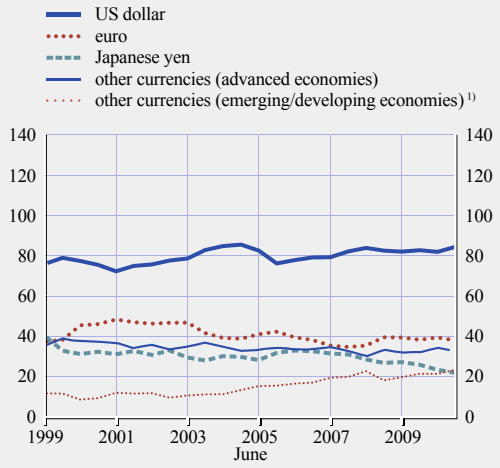
Notional principal outstanding in derivatives markets stagnated in 2010, to stand at USD 669 trillion, which is only slightly less than at the end of 2009. Active contracts on organised exchanges fell by 7.1% to USD 68 trillion in 2010 while those in OTC markets declined from USD 604 trillion to USD 601 trillion. These comparatively modest changes were mainly driven by two, partly offsetting factors. On the one hand, mounting tensions in sovereign debt markets and the revision of market participants' expectations about future monetary policy trajectories triggered price movements in some of the underlying assets, ultimately supporting demand for derivatives contracts. On the other hand, persistent efforts to reduce counterparty risk by netting offsetting positions via portfolio compression services or by the use of central counterparties continued to have a contractionary effect on notional amounts outstanding.[26]

Turning to the currency breakdown of the notional principal outstanding of OTC derivatives, the share of the euro net of valuation effects owing to exchange rate changes has remained comparatively stable in the market for foreign exchange instruments, standing at 37.9%[27] at the end of 2010 (see Chart 10). By contrast, it has increased from 36.7% to 38.2% for OTC interest rate derivatives during 2010 (see Chart 11). Notably, the role of the Japanese yen in these markets has continued to decline. In the case of foreign exchange derivatives this runs counter to developments observed in the BIS Triennial Central Bank Survey (see Table 7), indicating a substitution of derivatives with spot transactions involving the yen in the period 2007-10. Lastly, the market share of OTC foreign exchange derivatives denominated in the currencies of emerging and developing economies, which stood at 23.4% at the end of 2010, has surpassed the level seen before the financial crisis (22.6%) during the period under review, whereas no similar trend has been observed for interest rate contracts to date.

22 Denmark, Norway, Sweden and Switzerland.
23 Australia, Canada and New Zealand.
24 Bulgaria, the Czech Republic, Estonia, Hungary, Israel, Latvia, Lithuania, Poland, Romania, Russia, Slovakia (before the 2010 survey), Slovenia (before the 2010 survey) and Turkey.
25 Argentina, Brazil, Chile, China, Colombia, India, Indonesia, Malaysia, Mexico, Peru, the Philippines, Saudi Arabia, South Africa, South Korea, the Taiwan Province of China and Thailand.
26 Portfolio compression services reduce counterparty risk by consolidating a particular exposure consisting of a combination of derivatives contracts with several counterparties into fewer transactions yielding the same profile. Central counterparties achieve the same effect by eliminating offsetting positions among their members. For more details concerning these mechanisms, see Vause (2010).
27 In OTC foreign exchange derivatives markets, the shares of individual currencies add up to 200%, as both currency legs settled in a foreign exchange trade are counted separately.

Chart 10 Currency breakdown of OTC foreign exchange derivatives

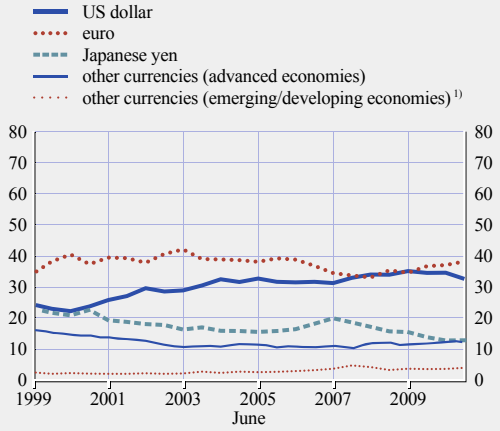
(percentages, at constant exchange rates)



Sources: BIS and ECB calculations.
Note: The sum of currency percentage shares adds up to 200% as both currencies involved in the settlement of a foreign exchange trade are counted separately.
1) Difference between the total and the shares of AUD, CAD,CHF, DKK, EUR, GBP, HKD, JPY, NOK, NZD, SEK and USD. This may include some advanced economy currencies not reported separately. Although their shares are likely to be rather small, the figures reported should be seen as an upper bound.

Chart 11 Currency breakdown of OTC interest rate derivatives

(percentages; at constant exchange rates)



Sources: BIS and ECB calculations.
1) Difference between the total and the shares of AUD, CAD, CHF, DKK, EUR, GBP, HKD, JPY, NOK, NZD, SEK and USD. This may include some advanced economy currencies not reported separately. Although their shares are likely to be rather small, the figures reported should be seen as an upper bound.

3.4 THE EURO IN INTERNATIONAL TRADE

The use of the euro as a settlement or invoicing currency for merchandise trade with countries outside the EU was stable in 2010, with its share in most instances fluctuating around the levels witnessed in 2009.

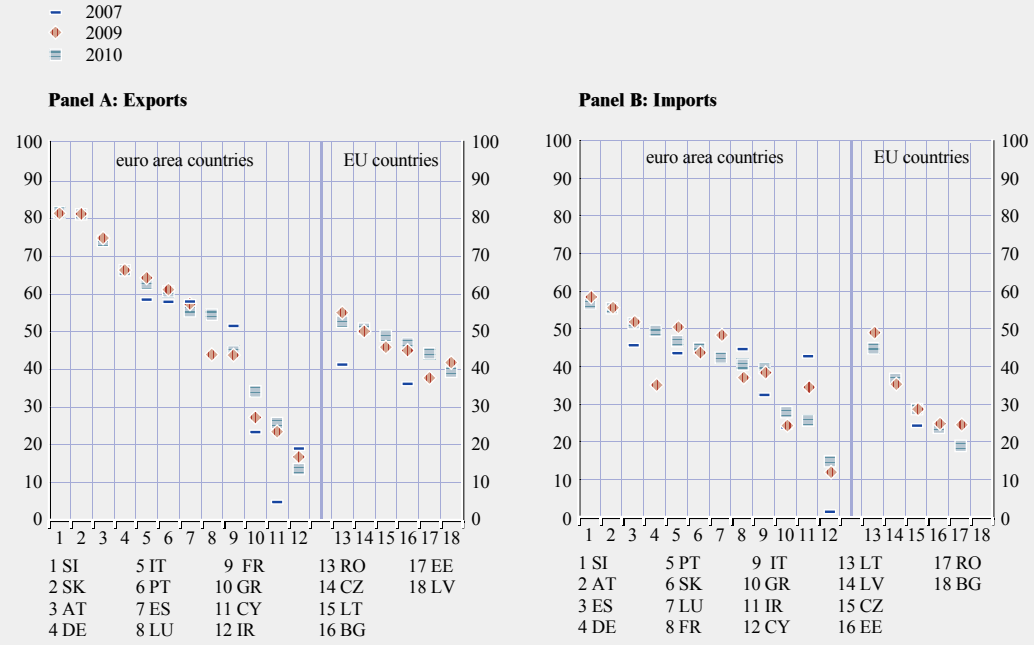
In 2010 most EU Member States registered relatively stable shares of the euro in the currency composition of their trade flows. Notable exceptions include Estonia, Greece and Luxembourg where the role of the euro in their exports of goods rose by 6.5 percentage points, 6.9 percentage points and 10.6 percentage points respectively (see Chart 12, Panel A). Turning to imports, Ireland, Lithuania, Luxembourg, Portugal and Romania recorded substantial drops of between 4.0 percentage points and 9.2 percentage points, whereas Germany displayed a significant increase of 14.1 percentage points (see Chart 12, Panel B).

Additionally, Chart 12 highlights the fact that if a country's domestic currency is the euro, it does not necessarily conduct a high share of its international trade in euro, as demonstrated by the rather low figures for Cyprus, Greece and Ireland which are in many cases considerably below those for EU countries that have not yet joined the euro area. Moreover, the euro's role in pricing exports is generally larger than its role in imports, pointing towards a sizeable degree of producer pricing power in countries both inside and outside the euro area. This observation is further corroborated by the fact that the euro is the currency used to denominate a substantial share of the imports that non-euro area EU Member States receive from euro area countries (see Table 11 in the statistical annex).[28] However, the different structure of exports as compared with imports also plays a part, as the latter encompass a significant share of trade in

28 For a more in-depth analysis of this issue, see ECB (2010b), pp. 25-8.

Chart 12 The euro's share in EU Member States' merchandise trade with countries outside the EU

(percentages of total merchandise trade)



Sources: National central banks, national statistical offices and ECB calculations.
Note: 2010 data for Bulgaria refer to the first quarter only; 2010 data for Romania cover the period January to November.

raw materials which are likely to have been paid for in US dollars owing to its dominant role in transactions in commodity markets.[29]

3.5 THE EURO AS A PARALLEL CURRENCY

Regarding currency substitution, statistics on net shipments of euro banknotes to destinations outside the euro area suggest that foreign demand for euro banknotes remained more or less unchanged throughout 2010, with the volume of monthly net shipments of euro banknotes abroad staying subdued and of a similar magnitude to that observed in 2009. This levelling-off of the cumulated volume of net shipments abroad since 2009 points to a stabilisation in foreign demand for euro banknotes. At the same time there has been no visible unwinding of the additional demand that non-residents exhibited in the environment of heightened uncertainty in October 2008. The amount of euro banknotes circulating outside the euro area is estimated at around 20%-25% of euro currency in circulation and is concentrated in countries neighbouring the euro area.

As regards asset substitution, the share of the euro in total deposits decreased slightly during the review period in most non-euro area EU Member States and EU candidate countries. As regards lending by these countries in euro and other foreign currencies – which, if borrowers are unhedged, creates significant risks to financial stability and macroeconomic risks for borrowers and for the lender – the share of euro-denominated loans in total loans increased during 2010 in several non-euro area EU Member States and EU candidate countries.

29 Unfortunately, a more detailed breakdown of currency invoicing by product group, which could further substantiate this conjecture, is presently not available

3.5.1 CURRENCY SUBSTITUTION – THE USE OF EURO BANKNOTES OUTSIDE THE EURO AREA

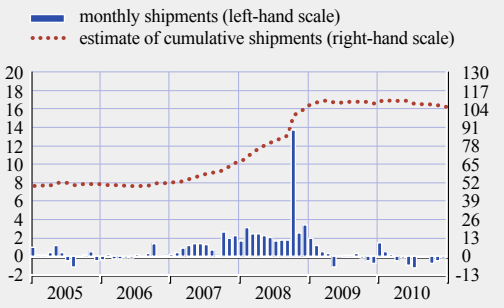
EVIDENCE FROM NET EURO BANKNOTE SHIPMENT DATA COLLECTED BY THE EUROSYSTEM

The use of euro banknotes outside the euro area cannot be estimated precisely. One estimate of the amount of euro banknotes circulating abroad that is published regularly in this report is the accumulation over time of net shipments of euro banknotes by euro area MFIs to destinations outside the euro area (see Chart 13). According to this measure, around €107 billion worth of euro banknotes are estimated to have been in circulation outside the euro area at the end of December 2010 – around 13% of the total euro currency in circulation in that month. This estimate is considered to be a lower bound, given that the banking channel is only one of a number of channels for euro banknotes shipped outside the euro area. Indeed, anecdotal evidence suggests that the outflows of euro banknotes via non-MFI channels (for example, via tourism or workers' remittances) are often greater than the backflow via non-bank channels. The net shipments by banks thus provide an incomplete picture of the true net banknote flows. Taking into account a range of different estimates suggests that around 20%-25% (potentially a figure closer to the upper end of the range) of euro currency was circulating outside the euro area at the end of 2010.

Foreign demand for euro banknotes remained more or less unchanged throughout 2010, while the implied domestic circulation of banknotes increased in 2009 and 2010 at a robust pace. In 2010 the volume of monthly net shipments of euro banknotes abroad stayed subdued and of a similar magnitude to that observed in 2009. This limited net shipment of euro area banknotes in seasonally adjusted terms contrasts with the series of markedly positive net shipments recorded in 2007 and 2008. This levelling-off of the cumulated volume of net shipments abroad since 2009 points to a stabilisation in foreign demand for euro banknotes at a level well above the cumulated volume recorded between 2005 and 2006. At the same time there has been no visible unwinding of the additional demand that non-residents exhibited in the environment of heightened uncertainty after the default of Lehman Brothers. The stabilisation of foreign demand is also suggested by the underlying data for gross shipments. Indeed, in 2010 gross shipments of banknotes abroad declined somewhat compared with the previous year, while gross backflows from locations outside the euro area remained broadly similar. From a longer-term perspective and thus taking into consideration the significantly higher accumulated amount of banknotes estimated to be circulating abroad, the shipment and backflow activity has moderated since 2009.

Chart 13 Net shipments of euro banknotes to destinations outside the euro area

(EUR billions; adjusted for seasonal effects)



Source: Eurosystem.
Notes: Net shipments are the sum of euro banknotes sent abroad minus euro banknotes received. The figures refer to seasonally-adjusted data for which the cumulative figure as at end-2010 is €106 billion. The end-2010 figure reported in the main text and in the key data sheet (€107 billion) refers to non-seasonally adjusted data. The last observation refers to December 2010.

THE REGIONAL BREAKDOWN OF EURO BANKNOTE PURCHASES FROM AND SALES TO LOCATIONS OUTSIDE THE EURO AREA: EVIDENCE FROM GLOBALLY ACTIVE BANKNOTE WHOLESALE BANKS

Figures provided by banknote wholesale banks,[30] confirm that international demand for euro banknotes was characterised in 2010 by rather

30 Banknote wholesale banks act as intermediaries between national central banks and banks or bureaux de change which order from them foreign currency banknotes for their customers and lodge with them banknotes that they have purchased from their customers. Since 2006 globally active banknote wholesale banks have reported their euro banknote turnover to the ECB on a voluntary basis, providing annually a breakdown of their purchases and sales by region.

balanced purchases and sales of euro banknotes. Purchases exceeded sales in 2010 only slightly so that a small net inflow of euro banknotes from locations outside the euro area was experienced. The increased net outflow of euro banknotes during 2007 and 2008 that resulted from the financial crisis has thus not been unwound.

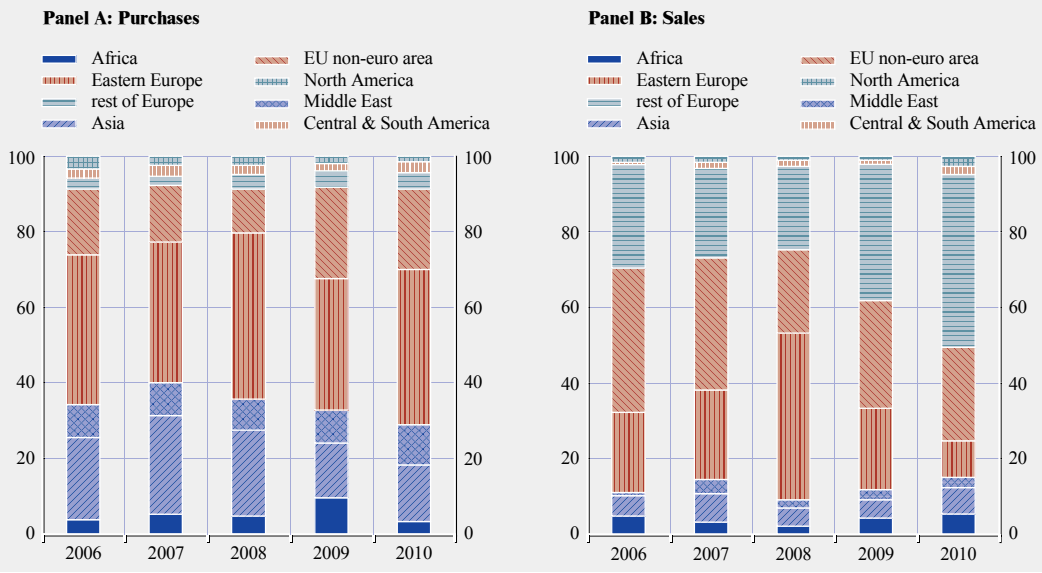
Chart 14 shows from which regions banknote wholesale banks purchased euro banknotes and to which regions they sold euro banknotes. In 2010 80% of all euro banknotes sold by these banks were purchased by European countries and close to 70% of their purchases were from European countries. This underscores the fact that international usage of the euro, as measured by banknote purchases from and sales to banknote wholesale banks, is largely concentrated in countries neighbouring the euro area.

Nearly half of all sales went to Switzerland which dominates the "rest of Europe" region. Between 2006 and 2010 net outflows to that region increased by some 80%. Since Switzerland is surrounded by euro area countries it is likely that euro banknotes sold to Switzerland largely find their way back to the euro area via unregistered channels when they are used mainly for purchases of goods and services in neighbouring countries or, generally, as travel money. In 2010 around 15% of all euro banknotes were sold to the United Kingdom which is part of the "non-euro area EU" region.

Half of all purchases of euro banknotes in 2010 were from Eastern European countries, both from non-EU countries (the "eastern Europe" region) and EU countries (80% of purchases from the "non-euro area EU" region can be attributed to EU Member States in eastern Europe). While the value of purchases from those countries remained at a similar level to that seen in 2009, the value of sales halved so that a net inflow of euro banknotes from eastern Europe was experienced in 2010.

Chart 14 Regional breakdown of euro banknote purchases from and sales to locations outside the euro area (from 2006 to 2009)

(percentages)



Source: ECB (based on data from banknote wholesale banks).

3.5.2 ASSET AND LIABILITY SUBSTITUTION – THE USE OF EURO-DENOMINATED BANK DEPOSITS AND LOANS

Economic agents in central, eastern and south-eastern Europe widely use the euro for domestic financial transactions. As in previous years, this review reports the euro's share in total deposits and loans in countries outside the euro area with a focus on countries neighbouring the euro area.

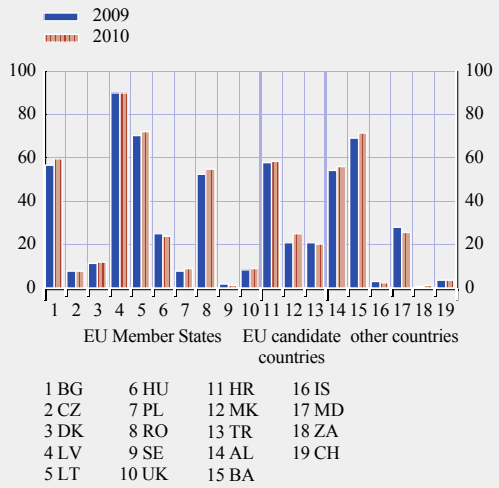
Over the review period the share of the euro in total deposits decreased slightly in most non-euro area EU Member States and EU candidate countries (see Table 13 in the statistical annex).[31] While this decrease may stem from a response of economic agents to a gradual decrease in macroeconomic and financial uncertainty as most of these countries returned to positive growth in 2010, it could also reflect, to some extent, valuation effects.[32]

The share of euro-denominated loans in total loans increased during 2010 in several EU Member States and EU candidate countries (see Chart 15). While such changes could be, to some extent, due to higher redemptions of loans denominated in local currency or valuation effects[33], it seems that lending in euro and other foreign currencies has started to accelerate again in some EU Member States (e.g. in Bulgaria, Poland and Romania) and EU candidate countries (e.g. in the former Yugoslav Republic of Macedonia).[34] In other countries foreign currency loan growth remained subdued, reflecting a traditionally low preference for foreign currency loans (the Czech Republic) or recently implemented government measures restricting foreign exchange lending (Hungary).

Currency depreciations during the crisis of 2008-09 appear to have had no material impact on the resurgence of aggregate foreign currency loan growth in 2010 in some countries, in particular when countries which introduced a ban on foreign exchange lending after the crisis are excluded (see Chart 16).[35]

Survey-based evidence collected by the OeNB suggests, however, that there appears to be an increased awareness of exchange rate risk at the level of individual households in countries which have recently experienced a depreciation of their local currencies (see Section 4.4). Such seemingly contradictory findings could for example stem from changes in the risk appetite of economic agents or reflect the fact

Chart 15 The share of the euro in the loans of selected EU Member States and EU candidate countries



Sources: National central banks and ECB calculations.
Notes: The definition of loans may vary across countries. Where available, foreign exchange-indexed loans are included. Data for Turkey include foreign branches of Turkish banks.

31 The share of the euro in foreign currency deposits has remained high, i.e. ranging from around 60% to 90%, except in Turkey, where the share of the euro in total foreign currency deposits stood at 38.5% as at end-2010 (see Table 13 in the statistical annex).

32 A complete currency breakdown of deposit data is not available for all countries. Therefore, currency shares are reported at current exchange rates and are not adjusted for valuation effects related to exchange rate changes.

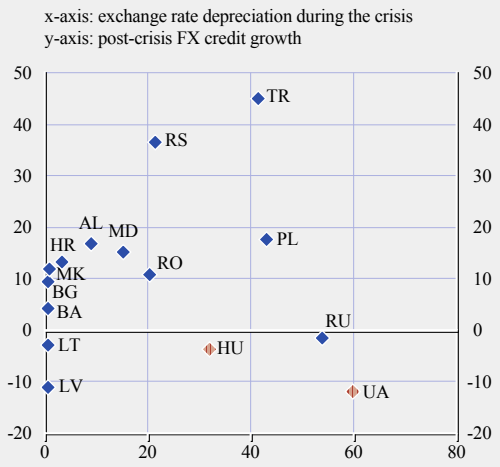
33 The shares are computed from stock data. Note that a change in stock could result not only from net flows (new loans minus redemptions), but also from valuation effects related to exchange rate changes, reclassification and other valuation adjustments.

34 Disaggregated figures for loans by sector suggest that the share of euro-denominated loans in total loans to households increased in 2010. Therefore, it is likely that financial stability risks associated with unhedged borrowing also increased.

35 In most countries, the share of foreign exchange lending in total lending also increased during the same period. Disaggregated figures broken down by sector are not available for many non-EU countries.

Chart 16 Currency depreciations during the crisis versus post-crisis growth in foreign currency loans

(percentages)



Sources: Haver Analytics, IMF, national central banks and ECB calculations.
Notes: Currency depreciations refer to the maximum percentage depreciation of local currencies vis-à-vis the euro or the US dollar compared with their level in July 2008 when the crisis intensified (i.e. in the period between August 2008 and June 2009). Post-crisis foreign currency loan growth refers to the percentage change in the outstanding amount of foreign currency loans in December 2010 compared with June 2009 at current exchange rates. Hungary and Ukraine introduced a ban on foreign currency lending to households after the crisis.

that other important demand- and supply-side drivers of foreign exchange lending remained significant.[36]

Since lending in euro outside the euro area and in foreign currencies more generally could lead to a rise in financial stability risks and macroeconomic costs if the liabilities in foreign currencies of borrowers are not matched by assets denominated in the same currency (see Box 3), additional measures to discourage foreign currency lending should therefore be considered if lending in foreign currencies to unhedged borrowers continues to rise. As a general principle, an overall operating environment for economic agents that encourages prudent and well-informed decision-making by lenders and borrowers is key to the prevention of growing currency mismatches on private sector balance sheets. This involves the pursuit of sound and stability-oriented macroeconomic policies. In addition, the adoption of regulatory and supervisory policy measures can also play an important role in mitigating the risks stemming from foreign currency lending.

36 For a more detailed analysis of the drivers of foreign exchange lending, see e.g. Rosenberg and Tirpák (2009) and ECB (2007). A specific analysis of demand and supply factors is provided by Brown et al. (2011).

Box 3

RISKS AND COSTS ASSOCIATED WITH FOREIGN CURRENCY LENDING

Micro-prudential risks

Lending in foreign currencies entails several financial stability risks for borrowers and lenders (see ECB, 2010a). First, it exposes unhedged borrowers to exchange rate risk. Financial institutions granting such loans are exposed to "indirect exchange rate risk" which can materialise as credit risk in a situation when unhedged borrowers are not able to fully repay their foreign currency loans as any depreciation of the local currency inflates the value of debt repayments in that currency. Under such circumstances, credit quality typically also deteriorates owing to a worsening of the macroeconomic environment (in particular because of a rise in unemployment) so that foreign currency loans expose financial institutions to correlated market and credit risk. In addition, financial institutions granting foreign currency loans may be exposed to funding risk if they rely heavily on wholesale and parent bank financing rather than on local deposits.

Macro-prudential risks

Lending in foreign currency can foster excessive credit growth since lower foreign interest rates lead to additional demand for loans. For example, there seems to be a strong link between rapid credit growth and borrowing in foreign currencies in non-euro area EU countries in central and eastern Europe (see ECB, 2010a). Countries which had experienced particularly strong credit growth before the global financial crisis also tended to have a higher share of foreign currency loans. In turn, excessive credit growth can lead to the build-up of asset price bubbles, in particular in the case of house prices when lending is concentrated in the real estate sector. To the extent that foreign currency lending is financed by capital inflows, e.g. via parent banks to local subsidiaries, it can also foster unsustainable external imbalances. Owing to the high level of financial integration between the euro area and countries in central, eastern and southeast Europe, the unwinding of such internal and external imbalances can also have negative spillover effects on the euro area.

Macroeconomic costs

Lending in foreign currencies can impair the interest rate channel of monetary policy since a restrictive monetary policy leads to a decrease in domestic currency lending but simultaneously accelerates the growth of foreign currency-denominated loans (see Brzoza-Brzezina et al., 2011). In addition, the benefit of currency depreciation via an increase in competitiveness can, to some extent, be offset by negative balance sheet effects. In extreme cases, depreciations – in particular in emerging market countries – can be contractionary owing to a high level of foreign currency lending (see Galindo et al., 2003). Therefore, many authorities in countries with a high level of foreign currency debt pursue contractionary policies to stabilise the exchange rate during a crisis in order to avoid negative financial stability implications via balance sheet effects. In the academic literature this response to depreciation pressures is often referred to as "fear of floating" (see Hausmann et al., 2001; and Towbin and Weber, 2011). It should be noted that such policies may even be optimal ex post, since the loss in output owing to the monetary tightening can be more than offset by the benefits of avoiding the fallout from negative balance sheet effects. Ex ante, however, the build-up of currency mismatches is fostered if economic agents anticipate this type of policy response (see Caballero and Krishnamurthy, 2005).

4 SPECIAL FEATURES

1 PROSPECTS FOR THE INTERNATIONAL USE OF EMERGING MARKET CURRENCIES

China's efforts to facilitate the international use of the renminbi – mainly in trade transactions (see Box 4) – highlight the role that currencies of emerging and developing countries may play in global goods and capital markets in the future.[42] Against this background, recent developments in the use of these currencies are analysed, touching upon the likely determinants for a further rise in their international circulation. The focus is on debt and foreign exchange markets as these are among the few areas where an extensive currency breakdown of a comprehensive set of transactions is presently available.

INTRODUCTION

Over the past decade emerging (and developing) countries have increasingly assumed a greater role in the world economy. Only ten years ago they accounted for around 20% (37%) of world GDP at current (purchasing power parity) exchange rates, whereas by 2010 their share had risen to 33% (48%) of world GDP. In the coming years the bulk of global economic growth is expected to be accounted for by activity in emerging markets, as advanced economies are facing potentially slower growth in view of their need for balance sheet repair following the crisis. Similarly, in terms of world trade, the role of emerging markets has become more prominent: in 2010 they accounted for around 36% of total trade in goods and services, compared with just 23% ten years ago.

By contrast, emerging economies' financial deepening has, despite some progress, been more limited. For example, the capitalisation of their stock and bond markets has only grown from 8% and 5% respectively of the world total in 1999, to around 34% and 10% of the world total in 2009.[43] Nevertheless, financial markets of emerging countries are growing fast, albeit from a relatively low base, and this, in turn, supports some degree of internationalisation of their currencies. For instance, in the past it was extremely difficult if not impossible for these countries to issue long-term debt denominated in their domestic currencies owing to their history of high inflation and defaults (the "original sin"). More recently, however, thanks to improvements in institutions and macroeconomic performance, local currency bond markets have started to attract the interest of foreign investors. As noted by Burger and Warnock (2006), the "original sin" is not an ineluctable destiny of emerging markets, but simply the outcome of previous bad macroeconomic management.

As a result, while it may be too soon to see signs of a significant role of emerging market currencies in the world economy by observing current international financial statistics, it seems reasonable to expect such a role to emerge over time, in particular for the currencies of large economies like China.[44] Against this background, the purpose of this section is to assess the status quo and to highlight recent developments in the international role of currencies of emerging and developing countries by drawing on the limited available information for debt and foreign exchange markets.

THE ROLE OF EMERGING MARKET CURRENCIES IN GLOBAL DEBT MARKETS

The global debt market is dominated by the currencies of major advanced economies, particularly the SDR basket currencies, whereas financial instruments denominated in the currencies of emerging (and developing) countries represent only a small, but growing, share. Specifically, of the USD 93.5 trillion of global debt outstanding in the third quarter of 2010, USD 79.4 trillion (86%) was denominated in one of the four SDR basket currencies, in contrast to USD 5.2 trillion (6%) in currencies from other advanced economies and USD 8.5 trillion (9%) in those of emerging

42 See for example McCauley and Scatigna (2011), Mihaljek and Packer (2010) and IMF (2011).

43 These shares are approximated by using data available from the BIS (bond markets) and the World Federation of Exchanges (stock markets).

44 See Bénassy-Quéré and Pisani-Ferry (2011).

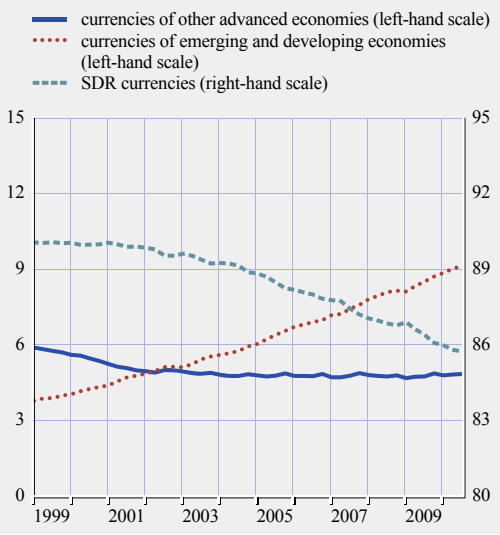
markets.[45] Net of valuation effects owing to exchange rate fluctuations, the share of emerging markets has risen steadily from 3.8% in 1999, mainly at the expense of debt denominated in the SDR basket currencies whose share decreased by around 4 percentage points from 90% in 1999. During the same period the share of debt denominated in currencies of other advanced economies fell only slightly, declining by around one percentage point (see Chart 17).

In general, domestic transactions (in which both the issuer and buyer of a security are residents of the same country, whose currency is used to denominate the security) account for the majority of outstanding global debt, while there tend to be far fewer international transactions (where the currency in which the security is denominated is not the home currency of at least one of the two counterparts). This is particularly the case for debt denominated in emerging market currencies compared with that denominated in the currencies of advanced economies. In particular, between 1999 and the third quarter of 2010 the bulk (97%) of the USD 7.1 trillion increase in the debt stock denominated in emerging market currencies was accounted for by domestic transactions. By contrast, foreign issuers residing outside emerging economies but denominating debt in their currencies – corresponding to the narrow measure of international currency usage presented in Section 3.2.2 of this report – accounted for only around 2% of total new debt. Lastly, the increase in the debt stock resulting from issuance of debt securities by issuers from emerging and developing countries denominated in their domestic currency but targeted at foreign investors, which is particularly encompassing those investors seeking exposure to these economies and their local currencies, was a mere 0.7%, indicating that the contribution from this – more broadly defined – international usage of emerging market currencies was relatively minor.[46] However, the moderate shift from domestic to international transactions seen between the first quarter of 2005 and the last quarter of 2008 indicates a nascent tendency towards greater international usage of the currencies of emerging and developing countries (see Chart 18).

Nevertheless, the extent of this internationalisation has varied widely across these currencies. Indeed, although the stock of issues denominated in these currencies has grown at a rapid pace in most instances (see Chart 19, Panel A), only a few have seen a notable contribution to this expansion from foreign transactions. Most prominently, foreign

Chart 17 Currency denomination of the global stock of debt securities

(percentages; at constant exchange rates)



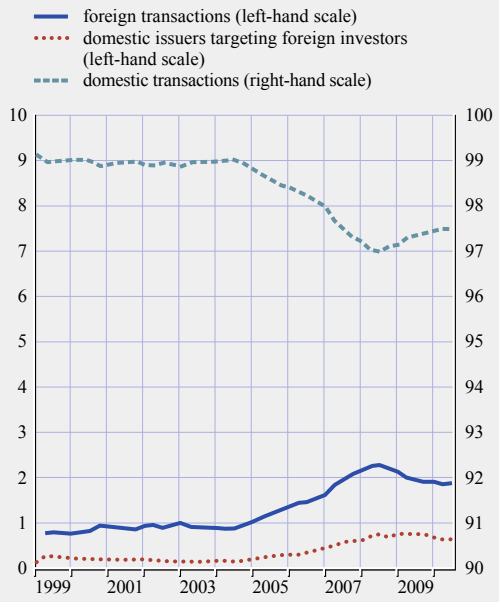
Sources: BIS, Bloomberg and ECB calculations.

45 In accordance with the BIS country classification, other advanced economies include Australia, Canada, Denmark, Iceland, New Zealand, Norway, Sweden and Switzerland. The group of emerging or developing economies comprises Argentina, Brazil, Chile, China, Colombia, Croatia, the Czech Republic, Egypt, Estonia, Hungary, India, Indonesia, Israel, Kuwait, Malaysia, Mexico, Morocco, Pakistan, Peru, the Philippines, Russia, Saudi Arabia, South Africa, South Korea, the Taiwan Province of China, Thailand, Turkey and the United Arab Emirates. The number of countries in the sample is limited by data availability. The remainder was made up of debt denominated in the currencies of two offshore centres (the Hong Kong dollar and the Singapore dollar).

46 As a comparison, of the USD 50.9 trillion rise in the debt stock denominated in SDR currencies between the first quarter of 1999 and the third quarter of 2010, 57.0% comprised domestic transactions, 14.2% comprised debt issuance by issuers residing outside Japan, the euro area, the United Kingdom and the United States but using any of the SDR currencies to denominate their debt and 28.9% comprised debt issuance by domestic issuers targeting foreign investors.

Chart 18 Share of issuer groups in the stock of debt securities denominated in currencies of emerging and developing countries

(percentages, at constant exchange rates)



Sources: BIS, Bloomberg and ECB calculations.

transactions accounted for around 20% and 9% of the rise in the debt stock outstanding in South African rand and Turkish lira respectively between the first quarter of 1999 and the third quarter of 2010 (see Chart 19, Panel B).[47] Additionally, they played a small role in debt issued in Mexican pesos (4.1%), Malaysian ringgit (3.2%), Chilean pesos (2.4%), Brazilian reais (2.2%) and Thai baht (1.8%), while they were all but absent from debt issuance in Chinese renminbi, Korean won, Indian rupees, Taiwanese dollars and Pakistani rupees.

THE ROLE OF EMERGING MARKET CURRENCIES IN GLOBAL FOREIGN EXCHANGE MARKETS

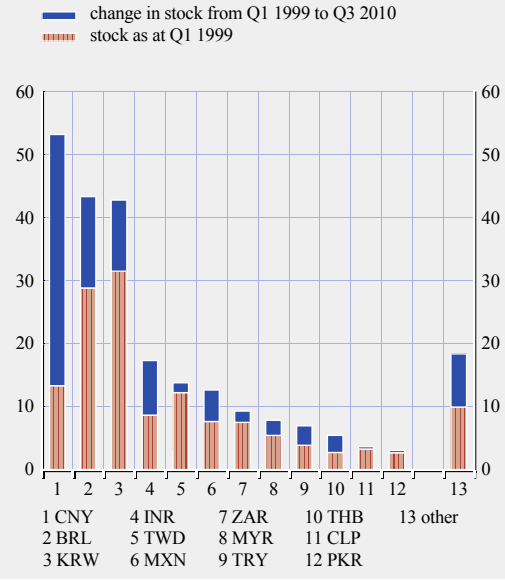
In line with developments observed in debt markets, between 2001 and 2010 turnover in foreign exchange markets witnessed a modest, albeit noticeable, shift of trading out of the SDR basket currencies into those of other advanced economies, such as the Australian dollar,

47 A large share of the international transactions in these two currencies was accounted for by supranational institutions.

Chart 19 Debt securities denominated in currencies of emerging and developing countries

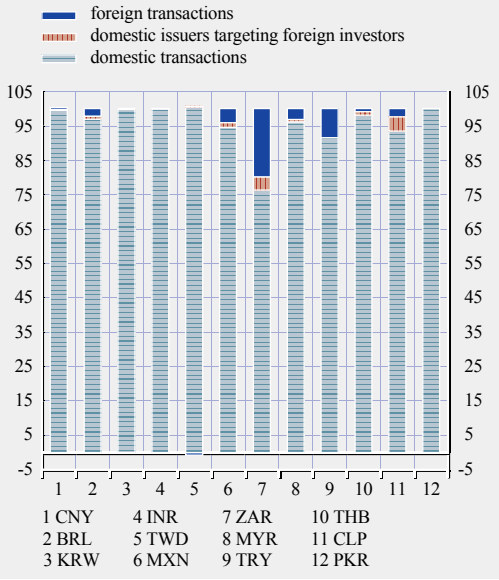
(USD billions)

Panel A: Stocks



(percentages)

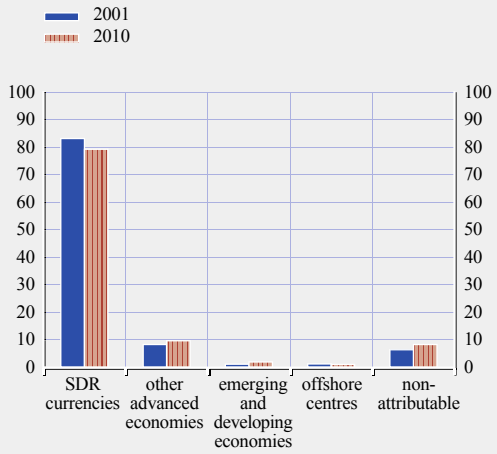
Panel B: Shares of issuer groups in the stock of new debt accumulated since Q1 1999



Sources: BIS and ECB calculations.

Chart 20 Foreign exchange market turnover

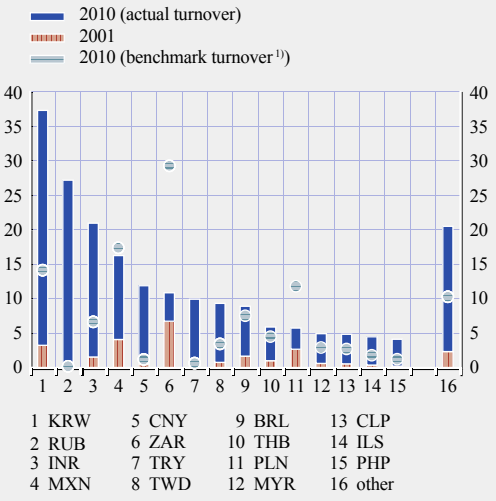
(percentages of total turnover)



Sources: BIS and ECB calculations.

Chart 21 Foreign exchange market turnover of currencies of emerging and developing countries

(USD billions)



Sources: BIS and ECB calculations.
1) Turnover in 2001 (Chinese renminbi: 2004) multiplied by global growth of turnover between 2001 (Chinese renminbi: 2004) and 2010.

the Canadian dollar and the New Zealand dollar, and into those of emerging (and developing) countries.[48] During this period the share of the SDR basket currencies in global activity contracted from 83.1% to 79.3% (see Chart 20).[49] At the same time the share of currencies of other advanced economies[50] expanded by 1.4 percentage points to 9.6% and that of currencies of emerging and developing economies[51] by 0.8 percentage point to 1.9%.[52]

Although the share of emerging market currencies is relatively small from a global perspective, it is interesting to note that the rise in their turnover has far outpaced the growth of the overall foreign exchange market (see Chart 21).[53] Most prominently, trading in Russian roubles and Turkish lira climbed more than 126-fold and 66-fold respectively, albeit from a very low base. Similarly, trading in the Chinese renminbi, the Indian rupee, the Israeli shekel, the Korean won, the Philippine peso and the Taiwanese dollar grew by a factor of more than ten. Only markets for the Mexican peso, the Polish zloty and the South African rand grew less than the global aggregate.

As observed for the vast majority of global foreign exchange transactions (see Section 3.3)

48 The analysis in this section is based on data available from the BIS Triennial Central Bank Survey that measures activity in global foreign exchange markets in April of every third year. The first survey including the euro was conducted in April 2001 and is thus chosen as the comparison year for the latest survey conducted in April 2010. See BIS (2002) and BIS (2010).

49 As both legs of a foreign exchange transaction are counted separately, the shares of all currencies sum to 200%.

50 These include the currencies of Australia, Canada, Denmark, New Zealand, Norway, Sweden and Switzerland.

51 These include the currencies of Argentina, Brazil, Bulgaria, Chile, China, Colombia, the Czech Republic, Estonia, Hungary, India, Indonesia, Israel, Latvia, Lithuania, Malaysia, Mexico, Peru, the Philippines, Poland, Romania, Russia, Saudi Arabia, Slovakia (before the 2010 survey), Slovenia (before the 2010 survey), South Africa, South Korea, the Taiwan Province of China, Thailand and Turkey.

52 These shares represent a lower bound, as BIS data only record onshore trading of the currencies of emerging and developing economies and of currencies from other advanced economies (with the exception of the Australian dollar, the Canadian dollar and the Swiss franc). Assigning the share of non-attributable currencies (6.3% in 2001 and 8.2% in 2010) to either of these two groups would result in an upper bound. However, the level of detail of the BIS data does not allow a further breakdown of the group of non-attributable currencies.

53 Some part of this growth beyond the global average is probably explained by the rapid expansion of emerging and developing economies' international trade during this period which, in turn, necessitated a corresponding increase in foreign exchange transactions.

most of the trading of currencies of emerging countries takes place against the US dollar, confirming its role as the primary vehicle currency[54] for this segment of the market. In fact, for the most actively traded currencies of emerging economies, more than 90% of the volume is against the US dollar, with only the Chinese renminbi (19.6%) and the Polish zloty (43.9%) having a substantial role in transactions not involving the US dollar. Ultimately, this partly explains why trading in SDR basket currencies has not declined at a more significant pace so far, since the counterpart of each trade in currencies of emerging countries is in most cases either the US dollar or – to a much lesser extent – the euro.

54 In a transaction involving a vehicle currency, currency A is not directly swapped for currency B, but currency A is first exchanged for (vehicle) currency C and currency C is then traded against currency B.

Box 4

THE INTERNATIONALISATION OF THE RENMINBI

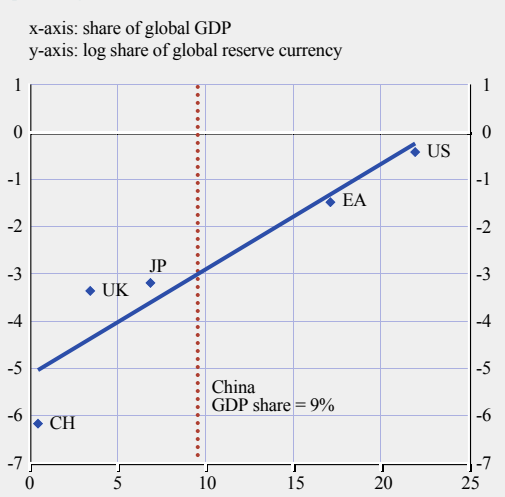
Although China's share in world output and trade has been increasing significantly in recent years, the use of the Chinese renminbi as an international currency has remained limited. Given that China is now the third largest economy (after the United States and the euro area) and the second largest exporter (after the euro area) in the world, the size of the renminbi's potential role as a reserve currency is greater than that of the Japanese yen and the pound sterling (see Chart A). The current lack of an international role for the renminbi reflects, therefore, other factors – mainly (i) the limited capital account convertibility of the renminbi; (ii) the semi-closed and underdeveloped domestic financial markets; and (iii) the legacy of a policy of non-internationalisation pursued by the Chinese authorities until a few years ago.

However, there is increasing awareness among the Chinese authorities that the US dollar orientation no longer serves the country best. While the US dollar still plays a predominant role, for instance in China's trade invoicing and foreign exchange reserves, the Chinese authorities have launched several initiatives since March 2009 to promote wider international use of the renminbi. Such measures have mainly focused on four areas.

First, the authorities aim at extending the use of the renminbi in trade invoicing. In July 2009 a renminbi trade settlement pilot project was launched in five cities in China with regard to their trade with Hong Kong SAR, Macao SAR and the countries of the Association of Southeast Asian Nations (ASEAN). A year later this programme was considerably widened, and the scheme was extended to the

Chart A Reserve currency roles of the Chinese renminbi and other currencies

(percentages)



Sources: IMF and World Bank.
Note: GDP shares are expressed in purchasing power parity terms.

trade of 20 Chinese provinces with all countries. This accounts for 95% of Chinese trade. At the end of 2010 the number of companies allowed to participate in the programme was expanded from a few hundred to nearly 70,000.

Second, new measures have strengthened the role played by Hong Kong SAR as an offshore centre for the renminbi. Although the first steps were taken in 2004, a milestone was achieved when it was decided in July 2010 to sign an agreement between the People's Bank of China (PBC) and the Hong Kong Monetary Authority (HKMA). Under this agreement: (i) all companies can open deposit accounts denominated in renminbi (not only related to trade) in Hong Kong SAR; and (ii) financial institutions can also offer more advanced financial products denominated in renminbi. However, prior approval by the PBC is still required to transfer funds to and from the mainland, whereas trade-related transfers have been liberalised.

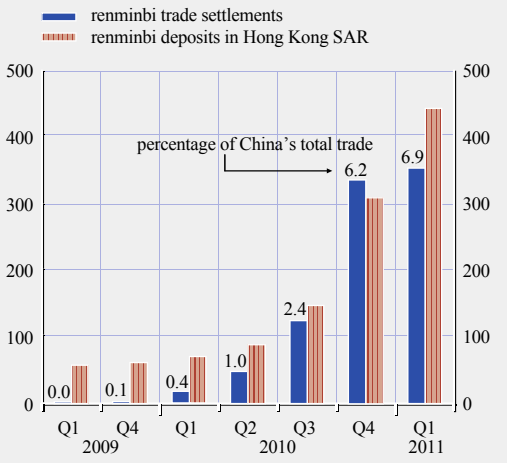
Third, over the past three years the PBC has signed local currency swap agreements worth a total of around RMB 829 billion (USD 127 billion) with the central banks of Hong Kong SAR, South Korea, Singapore, Indonesia, Malaysia, Argentina, Belarus, Iceland, New Zealand and Uzbekistan. Such arrangements mainly aim to provide renminbi liquidity to the central banks of these territories in the event of any future drying-up of US dollar liquidity, in order to finance bilateral trade.

Fourth, since August 2010 overseas renminbi clearing banks and foreign central banks have been allowed to invest in onshore bond markets as an initial step for the renminbi to eventually become a reserve currency. Nonetheless, these transactions are subject to strong restrictions: (i) only renminbi that have been acquired offshore and obtained via trade settlements or central bank swaps can be invested; (ii) only the direct counterparties of these transactions (foreign clearing banks and foreign central banks) are eligible to invest; and (iii) these investments will be subject to an (as yet undisclosed) quota.

Despite the strong expansion recorded in the past three years, the level of use of the renminbi as an international currency is still low. In the first quarter of 2011 the total value of renminbi trade settlements was around RMB 360 billion, representing 7% of total Chinese trade in that quarter (see Chart B). Offshore renminbi deposits amounted to RMB 451 billion in March 2011, which is equivalent to 7.6% and 0.6% of total deposits in Hong Kong SAR and mainland China respectively. The Hong Kong SAR-based renminbi bond market is small in size, and only amounted to around RMB 80 billion in March 2011. Daily trading on the offshore foreign exchange market has recently soared, from close to zero in mid-2010 to over USD 250 million at the end of 2010 (6.2% of overall renminbi trading), but remains contained.

Chart B Renminbi trade settlements and renminbi deposits in Hong Kong SAR

(RMB billions)



Source: CEIC.

Looking ahead, it is unclear over what time horizon the renminbi will emerge as a key reserve currency. The measures taken in recent years have mainly pursued wider international use of the renminbi in trade invoicing and the creation of an offshore centre for the renminbi in Hong Kong SAR, but the regime of capital controls has been left virtually unchanged. As a result, the potential for the renminbi to increase its role as an international currency appears relatively limited for the time being.

In particular, non-Chinese companies conducting significant business overseas in US dollars will have little incentive to shift to renminbi invoicing to the extent that it introduces an additional foreign exchange risk for them. Moreover, US dollar trade invoicing may persist even in regional trade owing to strong network externalities, i.e. the fact that major competitors use the US dollar. According to estimates by Cui et al. (2009), even with a fully convertible renminbi no more than 20%-30% of China's exports could be priced in renminbi. Another severe limitation for the international use of the renminbi is the very small size of and limited potential for a deep offshore renminbi market in the absence of deep and developed domestic renminbi capital markets and a truly market-determined exchange rate. This hinders the use of the renminbi as a store of value.

Ultimately, the broader use of the renminbi as a store of value will require the liberalisation of the capital account. This should be accompanied by the reform of domestic financial markets as a prerequisite. While there are no clear-cut, specific indications so far that the Chinese authorities are aiming for substantial advancement in this area in the near future, this is understood to be their medium-term goal.

CONCLUDING REMARKS

The international role of currencies of emerging (and developing) markets is less prominent than the role these countries are assuming in the global economy. Partly, this is due to the relatively small size, the lack of depth and liquidity, and the low level of sophistication of their financial markets in comparison with those of major advanced economies. Additionally, structural factors that support the internationalisation of a currency, such as the absolute magnitude of economic output or openness to trade and cross-border financial transactions, are lacking or are not yet established in some cases, and this discourages more extensive use of some emerging market currencies by foreigners. Moreover, some countries do not have a long history of stability-oriented policies, particularly with regard to low and stable inflation which is one of the key prerequisites for a currency to become a widely accepted store of value at home and abroad. Lastly, the presence of network externalities in currency usage for transaction purposes or as a unit of account, such as in the foreign exchange market, produces scale economies which inevitably favour one large incumbent currency – often the US dollar. However, albeit starting from a very low base, the use of the currencies of emerging countries in international markets is growing rapidly and may continue to gain pace if the process of opening-up to foreign trade and investment continues, and further progress is made with regard to macroeconomic stabilisation and institutional development, which will ultimately render these economies and, in particular, their financial markets, more resilient to external shocks.

2 WHAT MAKES A CURRENCY A SAFE HAVEN [55]

A key feature of international currencies is their capacity to be a good store of value for international investors, in particular in times of financial distress, which is in turn the outcome of good macroeconomic governance. This special feature draws on a recent empirical study of the behaviour of a large panel of more than 50 currencies over the past 25 years to determine which "fundamentals" make a currency a safe haven. The analysis reveals that the most consistent and robust predictor of safe haven status is not the interest rate spread, as emphasised in the carry trade literature, but rather the net foreign asset position, which is an indicator of country risk and external vulnerability. This confirms that the macroeconomic fundamentals of the issuing country are an important determinant of safe haven currencies.

INTRODUCTION

In finance, a safe haven is a financial or real asset, commodity, or currency, which preserves or increases its value relative to a broad market portfolio during turbulent times, such as periods of war, hyperinflation or financial crises. A safe haven asset may also be thought of as a hedge against major global financial shocks. Major international currencies, which are supported by large, deep and liquid financial markets, are valued by international investors for their store of value function. This is particularly the case during financial crises when liquidity dries up and sharp movements in asset and currency prices produce significant losses in international portfolios. Therefore, international currencies are natural candidates for safe haven status.[56] Developments during the recent global financial crisis were no exception, with the US dollar and the Japanese yen – although not the euro – appreciating sharply following the collapse of Lehman Brothers in September 2008. To a certain extent, the appreciation of the US dollar was surprising, since the United States was the epicentre of the financial turmoil. As a consequence, the latest global financial crisis triggered renewed interest in two important questions. Which are the safe haven currencies that tend to appreciate with rising global financial volatility? What are their characteristics, and what are the fundamentals of the countries issuing these currencies, which may help to identify them? The purpose of this special feature is to answer these two questions, providing a descriptive analysis of the behaviour of the main international currencies around major financial crises and, subsequently, investigating in a more formal way the empirical determinants of safe haven currencies across a panel of more than 50 currencies over the past 25 years.

MAJOR INTERNATIONAL CURRENCIES AND GLOBAL FINANCIAL VOLATILITY

Which currencies tend to appreciate during global financial crises? In order to answer this question we proceed in two steps. First, we identify a number of crisis episodes and then we look at the behaviour of major international currencies, the US dollar, the euro, the Japanese yen and the Swiss franc – the latter is included as it is usually regarded as having safe haven status – around these turbulent periods.

In Table 8 we provide a list of episodes of major global financial distress over the past 25 years, which are identified using the VIX index of the Chicago Board Options Exchange – measuring the implied volatility of the Standard & Poor's 500 index – as a proxy of global risk aversion.[57] The crisis episodes are identified according to two criteria: one to mark the beginning of the crisis and one to establish the approximate duration of the financial turbulence. First, a crisis episode is assumed to start when the increase in the

55 This section is based on the research work of Habib and Stracca (2011).

56 Alternatively, government assets of reserve currency issuing countries such as US Treasury bonds or German Bunds might be regarded as safe haven assets. In order to study safe haven properties in the case of these assets, an analysis of sovereign bond prices or yields during periods of financial turmoil would be warranted.

57 Several papers found that the VIX is highly correlated with many manifestations of risk and risk aversion on a global scale (see, for example, Collin-Dufresne et al., 2001). For instance, between 1986 and 2010 the correlation between the VIX and the realised volatility of returns on the Thomson Reuters World Stock Market Index, covering up to 40 countries, was greater than 80%. The VXO (measuring the implied volatility of the Standard & Poor's 100 index) from the same source is used from 1986 to 1989.

Table 8 Major global distress episodes since 1986 and the nominal effective exchange rate of international currencies

Event	Start (1)	End (2)	Duration (months)	Percentage change compared to the month before the start of the crisis				
				Nominal effective exchange rate				
				USD	EUR	JPY	CHF	World stock market (3)
US stock market crash	Oct. 1987	Apr. 1988	7	-2.3	3.9	11.4	0.6	-2.1
1st Gulf War	Aug. 1990	Nov. 1990	4	-4.8	5.5	12.9	2.3	-12.4
Spillover of Asian crisis	Nov. 1997	Dec. 1997	2	5.6	2.3	-0.4	2.9	-3.8
Russian default	Aug. 1998	Nov. 1998	4	-2.2	6.5	12.8	3.7	-3.3
September 11th attacks	Sep. 2001	Nov. 2001	3	1.4	-0.8	0.1	2.8	-5.8
Internet bubble burst and 2nd Gulf War	July 2002	Apr. 2003	10	-3.0	10.2	0.8	1.9	-13.7
Lehman Brothers bankruptcy	Sep. 2008	July 2009	11	6.6	2.5	21.3	3.5	-25.7
EMU sovereign debt crisis	May 2010	July 2010	3	2.0	-3.3	8.4	4.8	-9.1
Memo:(4)								
US Subprime mortgage crisis	Mar. 2007	Apr. 2007	2	-1.9	1.5	0.2	-0.1	6.2
Liquidity crunch	Aug. 2007	Sep. 2007	2	-1.0	0.8	5.6	1.0	1.1

Sources: IMF, Haver Analytics, Thomson Reuters and ECB staff calculations.
Notes: (1) The distress episode begins in the month in which the percentage change in the VIX is above two standard deviations. (2) The distress episode ends when the level of the VIX falls below its long-term average plus one standard deviation. (3) Data are from the Thomson Reuters world market index covering up to 40 equity markets. (4) In these two events, the VIX increased in relative terms by more than two standard deviations, but the level remained below its long-term average plus one standard deviation.

monthly percentage change of the VIX is larger than two times its historical standard deviation. Second, the crisis is assumed to continue until the absolute level of the VIX remains above its long-run average plus one standard deviation.[58]

Table 8 compares the performance of the trade-weighted index of the major international currencies during the financial distress periods. Contrary to the common belief, the US dollar was not always a safe haven in the past, before the latest global financial turmoil. The source of the shock – whether it be US-centred, an emerging market crisis or a war – does not help to explain the pattern of US dollar fluctuations after the eruption of a crisis. The anecdotal evidence from Table 8 is in line with Ranaldo and Söderlind (2010), one of the rare academic studies on safe haven currencies, who confirm that between 1993 and 2008 the Swiss franc, the euro, the Japanese yen and the pound sterling tended to appreciate against the US dollar when the US stock market fell, US bond prices rose and volatility in currency market increased. Conversely, the euro – the synthetic index before 1999 – behaved as a safe haven in most of the pre-2008 crisis events, appreciating in nominal effective terms.[59] This safe haven status of the euro was somewhat dented by the latest global financial crisis. In the period from shortly after the collapse of Lehman Brothers to November 2008 the euro exchange rate depreciated by around 4% (not shown in Table 8), but as the severity of the crisis abated until, almost one year later, the distress period terminated, the exchange rate rebounded, appreciating in effective terms by 2.5%. The euro area-centred sovereign debt crisis was by contrast associated with a temporary weakness of the euro exchange rate.

In contrast to the US dollar, the Japanese yen and the Swiss franc have an almost clean record as safe haven currencies. Only in the wake of the Asian crisis did the Japanese yen weaken, whereas it appreciated in all other instances. The extent of the trade-weighted

58 Inevitably, the criteria and the identification of the crisis periods are somewhat arbitrary. However, this working definition of global crises is used only for the preliminary descriptive analysis and has two valuable features. First, it is generally robust to alternative indicators of global financial volatility and, second, it identifies rather precisely the major crisis episodes that are usually studied in the finance literature.

59 Even though the Deutsche Mark could be considered as the potential candidate for safe haven status before 1999, when looking at trade-weighted exchange rates, it is more informative to report the synthetic euro. This is because, in nominal effective terms, the fluctuations of the Deutsche Mark are much smaller than that of the synthetic euro, since the exchange rate mechanism limited the fluctuation of the bilateral exchange rates with major EU trading partners.

appreciation of the yen was remarkable – at more than 10% – in at least three crises: Black Monday in October 1987, the Kuwait invasion in August 1990 and the Russian crisis in August 1998, and was very large following the collapse of Lehman Brothers at more than 20%.[60] Following major crises, the trade-weighted fluctuations of the Swiss franc are smaller than that of the yen, but always point towards a strengthening of the Swiss currency.

Overall, this descriptive analysis shows that among the major currencies only the Japanese yen and the Swiss franc have consistently appreciated following global financial turmoil. Moreover, the safe haven status of a currency may depend on the source of the shock, its propagation and, crucially, the ability of the countries issuing the safe haven currencies to withstand the economic consequences of the initial shock. In any event, this preliminary evidence suggests that the international role is not necessarily in itself a strong predictor of safe haven status, as signalled by the mixed performance of the US dollar. In order to draw conclusions, however, it is necessary to look at the potential empirical determinants of safe haven currency status in a systematic manner.

THE FUNDAMENTALS OF SAFE HAVEN CURRENCIES

In order to gain an appreciation of the "fundamentals" of safe haven currencies, we need to go beyond a few crisis episodes and a few currencies. Do we know why a currency becomes a safe haven in the first place?

The existing literature offers only a partial answer to that question, mainly in the context of the analysis of carry trade strategies. This literature shows how low-yield currencies typically appreciate during times of global financial stress and behave as safe havens.[61] Specifically, low interest rate currencies systematically deviate from the uncovered interest parity, as they systematically underperform during "normal" times and adjust abruptly in exceptional circumstances, for instance when global exchange rate volatility increases and global stock markets fall.

In a recent paper, Habib and Stracca (2011) broaden the analysis of safe haven currencies in two different directions. First, they go beyond the existing literature on carry trade, the latter concept being applicable only in a context where traders pursue carry trade strategies.[62] Second, and most importantly, they search for the "fundamentals" of safe haven currencies, analysing a panel of 52 currencies (51 bilateral exchange rates vis-à-vis the US dollar) in advanced and emerging countries over the past 25 years.

What makes a safe haven currency? There are three plausible sets of explanations of safe haven status. First, a currency may be a safe haven if the country issuing it is itself safe and low risk, which may be appreciated by nervous investors in times of high risk aversion. This explanation could be a good fit for the safe haven role of the Swiss franc. Second, the size and liquidity of a country's financial market may support safe haven status, an argument that has been voiced during the latest financial crisis. When global risk aversion is high, market liquidity may dry up and the most liquid markets may have an added advantage. This explanation is closely related to the concept of international currencies and could apply particularly to the US dollar and the euro. Finally, it is possible that financial openness and, more generally, financial globalisation is a determinant of safe haven status. In particular, an ideal safe haven should be insulated from global shocks.

One essential element of the analysis of the fundamentals of safe haven currency status is the identification of those determinants that are stable and robust. For example, the global credit crisis of 2007-09 may have had different characteristics, in terms of safe haven currencies, compared with previous episodes of high global volatility.[63]

60 In the first few months after the bankruptcy of Lehman Brothers the appreciation of the Japanese yen overshot to 30%.

61 See, for example Brunnermeier et al., (2008), Lustig et al., (2008); and Menkhoff et al., (2009).

62 Carry trade is an investment strategy where an investor takes a long position in high interest rate currencies and a short one in low interest rate currencies. The carry trade strategy is an explanation that best fits the Japanese yen, the typical low interest rate currency.

63 See Ranaldo and Söderlind, (2010).

Habib and Stracca (2011) indeed find that this is the case in particular for the US dollar, the behaviour of which has been rather anomalous compared with previous patterns. Thus, and contrary to the common belief, which has been strengthened by the appreciation of the dollar during the recent crisis, the dollar is not always a safe haven currency. Therefore, Habib and Stracca (2011) consider different specifications and sub-samples as well as country groups (in particular advanced versus emerging countries), with the aim of identifying those characteristics that are robustly associated with safe haven status.

In the empirical investigation, the following relationship between currency returns and global risk aversion (proxied by the VIX index) is considered:

$$\Delta e_{it} = \alpha v_t + \beta x_{it} v_t + \gamma x_{it} + \delta_i + \rho \Delta e_{i,t-1} + \varepsilon_t$$

where Δe_{it} is the bilateral monthly log change in the value of the US dollar in terms of domestic currency i, with an increase therefore indicating an appreciation of the US dollar or, vice versa, a depreciation of the domestic currency; v is the "news" element in the indicator of global risk aversion, which is exogenous to the model; x is a vector with domestic variables that may affect the elasticity of returns to changes in risk aversion (most of them actually timed t-1 to avoid simultaneity problems); and ε is a disturbance term. The main parameters of interest in the investigation are contained in the coefficient β, which shows the determinants of the reaction of currency returns to changes in global risk aversion. If this interaction term is significant, then one can conclude that the explanatory variable x influences the behaviour of exchange rates in relation to shifts in global risk aversion, v. The v measure has been standardised (to zero mean and unit standard deviation) in order to facilitate the interpretation of the estimated coefficients, which may be thought of as marginal effects.

The results show that only a very few variables prove consistently and robustly to be determinants of safe haven status. This is certainly not unexpected given the large literature on the exchange rate "disconnect", i.e. the absence of a robust link between exchange rates and potential fundamentals. Therefore, explaining exchange rate behaviour is difficult and caution should be used when interpreting exchange rate movements during periods of financial distress. Nonetheless, a few variables are statistically significant predictors of safe haven currency status and prove robust across specifications, although this is more the case when applied to advanced countries and less the case when applied to emerging countries (see Table 9):

- The interest rate spread (the one-month interbank interest rate of a given currency versus the US dollar one-month rate) is consistently associated with safe haven status in the case of advanced countries, but not in the case of emerging countries, probably reflecting the low liquidity and high transaction costs that are typically associated with the currencies of emerging economies. This confirms the notion that the interest rate differential is not a fundamental driver of safe haven status, and it depends on carry trade strategies being pursued.

- The net foreign asset position, an indicator of external vulnerability, and, to a lesser extent, the absolute size of the stock market, an indicator of market size and financial development, are robustly associated with safe haven status. In particular, the net foreign asset position is robustly significant for advanced and emerging countries alike.

These results are robust across different sample periods (e.g. including or excluding the 2007-09 global financial crisis, before and after the introduction of the euro) and country groups (advanced versus emerging). The authors of the study also consider several indicators of "global" risk aversion, which are alternative to the VIX, obtaining similar results. The finding that the net foreign asset position plays a robust and significant role, which is greater than the role of the interest rate spread – at least for emerging countries – suggests that a successful explanation of the safe haven currency status should revolve

Table 9 Determinants of safe haven currency status

(dependent variable: monthly change in the bilateral exchange rate vis-à-vis the US dollar)

	(1) Final	(2) Advanced	(3) Emerging	(4) Until Aug. 2007	(5) From Aug. 2007	(6) Before euro	(7) After euro
Lagged dependent variable	0.342***	0.334***	0.342***	0.346***	0.211***	0.405***	0.306***
	(0.027)	(0.015)	(0.049)	(0.033)	(0.023)	(0.042)	(0.032)
Interest rate spread vs. US (lag)*VIX	0.021	0.059***	0.012	0.019	0.098***	0.051**	-0.002
	(0.021)	(0.012)	(0.024)	(0.022)	(0.021)	(0.020)	(0.025)
Interest rate spread vs. US (lag)	0.051**	0.010	0.056**	0.054**	0.016	0.024	0.057**
	(0.021)	(0.020)	(0.026)	(0.023)	(0.063)	(0.045)	(0.025)
Pegged to the USD*VIX	-0.001	-0.002	-0.001	0.002	-0.002	0.007*	-0.002
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)
Pegged to the USD	-0.001	0.001	-0.002	0.000	-0.012***	-0.002	-0.001
	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)	(0.005)	(0.001)
Pegged to the EUR*VIX	-0.002**	-0.000	-0.003*	0.001	-0.002	0.000	-0.004***
	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.000)	(0.001)
Pegged to the EUR	-0.002	-0.004*	-0.001	-0.002	-0.011**	0.000	-0.002
	(0.001)	(0.002)	(0.002)	(0.001)	(0.005)	(0.000)	(0.002)
Pegged to the DEM*VIX	-0.009***	-0.008***	-0.006***	-0.005***		-0.000	
	(0.001)	(0.001)	(0.002)	(0.002)		(0.002)	
Pegged to the DEM	-0.001	-0.002	0.005	0.000		0.000	
	(0.001)	(0.002)	(0.003)	(0.001)		(0.002)	
Growth of FX reserves*VIX	-0.007	-0.005	-0.008	0.014*	-0.009	0.028**	-0.016**
	(0.005)	(0.006)	(0.010)	(0.008)	(0.008)	(0.014)	(0.006)
Growth of FX reserves	-0.016**	-0.008	-0.027***	-0.012**	-0.027	-0.013	-0.021**
	(0.006)	(0.008)	(0.008)	(0.006)	(0.036)	(0.010)	(0.008)
Net foreign assets to GDP (lag12)*VIX	-0.004***	-0.006**	-0.003***	-0.003**	-0.003***	-0.004	-0.005***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Net foreign assets to GDP (lag12)	-0.002	-0.005	-0.000	0.001	-0.020	0.017	-0.004*
	(0.002)	(0.003)	(0.002)	(0.002)	(0.019)	(0.010)	(0.002)
Stock mkt capitalisation to world GDP (lag12)*VIX	-0.000**	-0.000	0.000	-0.000**	-0.000	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Stock mkt capitalisation to world GDP (lag12)	-0.000	-0.000	-0.001*	-0.000	0.001	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Standardised values of VIX	0.005***	0.003*	0.006***	0.000	0.005***	-0.005**	0.007***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
Observations	6,123	2,992	3,131	5,489	634	2,049	4,074
Number of countries	50	22	28	50	38	32	41
R2 Within	0.204	0.189	0.225	0.160	0.446	0.158	0.239
R2 Between	0.581	0.286	0.698	0.580	0.325	0.619	0.378
R2 Overall	0.210	0.181	0.235	0.171	0.354	0.164	0.234

Source: Habib and Stracca (2011).
Notes: Results are based on a panel of 51 bilateral exchange rates vis-à-vis the US dollar, over a sample period of monthly data from January 1986 to December 2009. Standard errors are shown in parentheses. The explanatory variables are included alone and multiplied by the VIX, i.e. the Chicago Board Options Exchange index of the implied volatility of the Standard & Poor's 500 index. A negative coefficient implies an appreciation vis-à-vis the US dollar. A statistically significant negative interaction term with the VIX indicates that a certain variable is a significant predictor of safe haven currency status.

around the idea of country risk and vulnerability, namely the first of the three explanations that were put forward above. For advanced countries, some measures of financial development and the liquidity of the foreign exchange market (measured by the bid-ask spread) are also found to be associated with safe haven behaviour, suggesting that the second of the proposed explanations also applies for advanced countries. As for the third explanation, financial openness, we find that capital account restrictions are significant in some specifications, suggesting that the currencies of more financially open countries are more likely to be safe havens.[64]

64 Results for capital account restrictions should be viewed with some caution due to the limited data available for the indicator.

CONCLUDING REMARKS

It is not clear from the presented findings whether being an international currency leads per se to safe haven currency status. On the one hand, some of the characteristics that are often found to be associated with safe haven status (low interest rates, low country risk, a high degree of financial development and openness, and a liquid foreign exchange market) are also likely determinants of the international role of currencies.[65] On the other hand, it is not clear whether being an international currency has a direct causal relationship with safe haven status. This is illustrated by the fact that the US dollar was not in itself (i.e. controlling for other determinants of safe haven status) a safe haven, on average, before the 2007-09 global financial crisis, and the same is true for the euro.[66]

65 See Chinn and Frankel (2008).

66 In the panel regressions, the US dollar has been chosen as the benchmark exchange rate. This allows the relationship between the US dollar and the VIX to be interpreted in a straightforward way, but it is not possible to fully control for the fundamentals of the United States. A dummy for the euro is insignificant when included in the models reported in Table 9.

3 THE IMPACT OF ASSET-BACKED SECURITIES ON THE CURRENCY COMPOSITION OF THE STOCK OF INTERNATIONAL DEBT

After the launch of the euro in 1999 one of its most prominent features was its steady rise in popularity in the market for international debt securities until late 2005. This was followed by a gradual decline that has continued to date (see Chart 4, Panel B). While the determinants of issuance in this market have been well-researched, they do not completely explain the presence of this readily observable pattern. Against this background, the analysis draws on a newly compiled database which makes an effort to shed additional light on the euro's rise and subsequent slight decline by examining the segment of asset-backed securities (ABS) more closely. It shows that these instruments are likely to have contributed to the stabilisation and renewed rise in the share of the US dollar after 2005. It also attempts to offer an explanation for some of the determinants of currency choice in the ABS market.

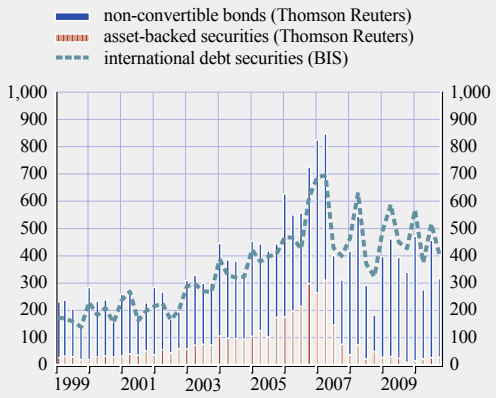
THE SIZE AND STRUCTURE OF THE MARKET FOR ASSET-BACKED SECURITIES

Before its collapse in the wake of the global crisis, the ABS segment had grown to be one of the most prominent segments in international debt securities markets. Indeed, after accounting for a mere 10% to 20% of total issuance in the period 1999 to 2001, its share increased rapidly thereafter, peaking at close to 40% in the four quarters immediately preceding the beginning of the financial turmoil in the summer of 2007 (see Chart 22). ABS had not only become one of the most commonly used debt instruments but also emerged as an essential driver of the rise in the stock of international debt securities which underlies a large part of the analysis conducted in Section 3.2.2 of this report.[67]

When the structure and composition of ABS issuance between 1999 and 2010 is compared with that of non-convertible bonds[68], some notable differences emerge. First, the finance industry played a far more dominant role in the issuance of ABS than in the issuance of non-convertible bonds, accounting for around 90% and 58% respectively of total activity in these segments (see Chart 23). Consequently, practically no ABS were issued by other sectors, with the exception being the manufacturing sector (8%). Even in this sector, however, issuance predominantly reflected the activity of financing arms of large automobile producers. Second, ABS issuance is more heavily concentrated in fewer jurisdictions than non-convertible bond issuance. In fact, in more than half of all cases of ABS issuance the ultimate parent company sponsoring the

Chart 22 Issuance activity in international debt securities markets

(USD billions)



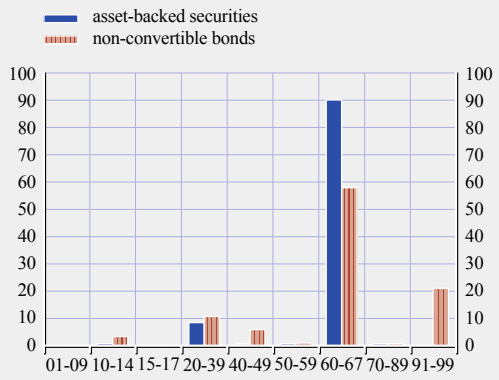
Sources: BIS, Thomson Reuters and ECB calculations.

67 The analysis in Section 3.2.2 relies on the BIS database of international debt securities. While this source allows for the disaggregation of data in a multitude of ways, there is no security-by-security breakdown and it does not differentiate between ABSs and non-convertible bonds. Thus, for the purposes of this section, a comprehensive database has been compiled from information on individual debt issues available from Thomson Reuters. However, these data can only capture issuance activity but not the stock of outstanding debt considered in Section 3.2.2. Nevertheless, major trends in debt issuance should be reflected in corresponding movements in debt stocks, particularly since the newly collected data appear to be reasonably close to the BIS' own debt issuance aggregate (see the line in Chart 22), with differences being mainly due to additional data sources taken into account by the BIS together with the outcome of quality checks performed on the data.

68 Non-convertible bonds are debt securities that cannot be exchanged for a specific number of shares of a company's preferred or common stock.

Chart 23 Issuance activity by industry

(percentages)

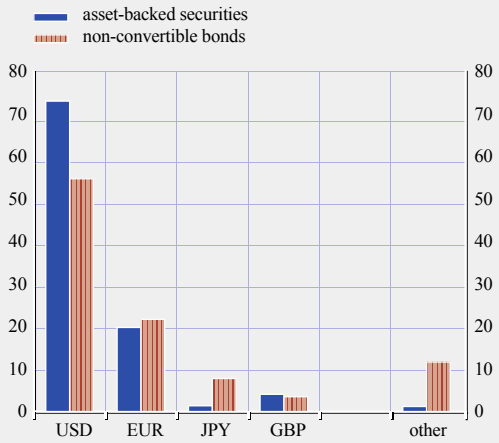


Sources: Thomson Reuters and ECB calculations.
Note: The figures along the x-axis denote the industry groups of the Standard Industrial Classification, i.e. 01-09 agriculture, 10-14 mining, 15-17 construction, 20-39 manufacturing, 40-49 transportation and utilities, 50-59 trade, 60-67 finance, 70-89 services and 91-99 the public sector.

special purpose vehicle (SPV) issuing the ABS was located in either the Cayman Islands or the United Kingdom.[69] The remainder were typically spread across countries and regions where large financial institutions are located, such as the euro area (13%), Switzerland (13%), the United States (5%) and Japan (5%),

Chart 24 Issuance activity by currency

(percentages)



Sources: Thomson Reuters and ECB calculations.

mirroring the extent of the role that these institutions play in this part of the international debt market. Lastly, the currency of choice for close to three-quarters of ABS issues was the US dollar (see Chart 24). This diverged significantly from its 55% share of issues of non-convertible bonds. By contrast, the role of the euro and the pound sterling was roughly equal for both types of securities, at approximately 20% and 4% respectively, whereas ABS issuance in Japanese yen and other currencies was conspicuously low.

Against the background of these structural differences, the question arises whether the determinants of currency choice in the ABS market are the same as for the non-convertible bonds market, which are usually largely analysed from the angle of hedging[70] and cost saving[71] motives.

CURRENCY CHOICE IN THE MARKET FOR ASSET-BACKED SECURITIES

Assuming a high degree of overlap between the drivers of the currency denomination of ABS and non-convertible bonds would imply a certain amount of co-movement with regard to the choices made in both markets among the different currencies on offer. However, a cursory glance at the fluctuations in the shares of the euro and the US dollar shows that this is not the case (see Chart 25, Panels A and B).[72] The correlation

69 The large share of the Cayman Islands could point towards a failure of the Thomson Reuters data to appropriately allocate each ABS issue to its true ultimate parent. Although many SPVs (the immediate issuers) reside in the Cayman Islands and other offshore centres owing to their lenient regulatory and tax environments, it appears unlikely that their sponsoring parent organisations are located in these jurisdictions to the extent indicated by the data.

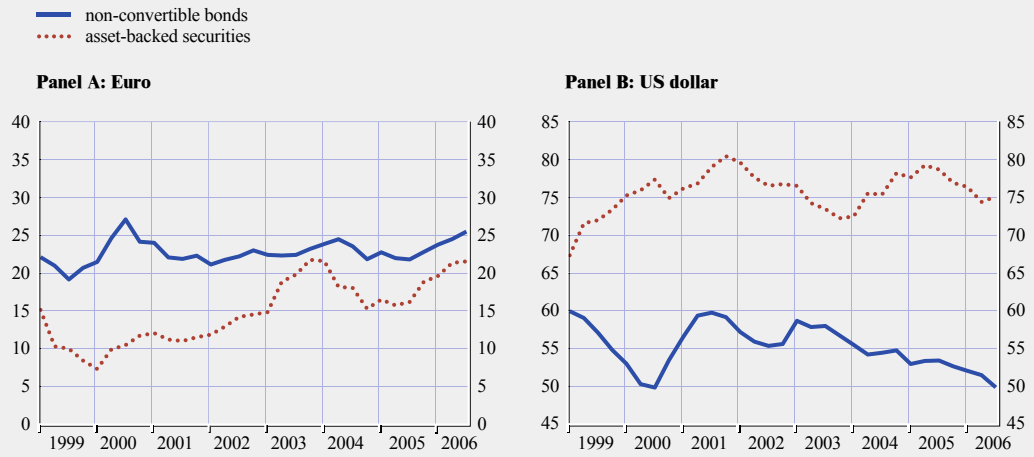
70 See for example Kedia and Mozumdar (2003) and Siegfried et al. (2007).

71 See for example Habib and Joy (2008) and McBrady et al. (2010).

72 It is worth noting that the observed differences in the pattern of currency choice could also stem from the presence of different issuer groups with distinct motivations in each of these markets, such as the issuance of non-convertible bonds, but not of ABS, by the public sector. Nevertheless, in the light of the large share of financial institutions in both segments, it seems reasonable to expect at least some co-movement of currency shares if the issuance determinants of both types of securities are indeed alike.

Chart 25 Currency shares in ABS and non-convertible bond issuance

(percentages; at constant exchange rates; four-quarter moving averages)

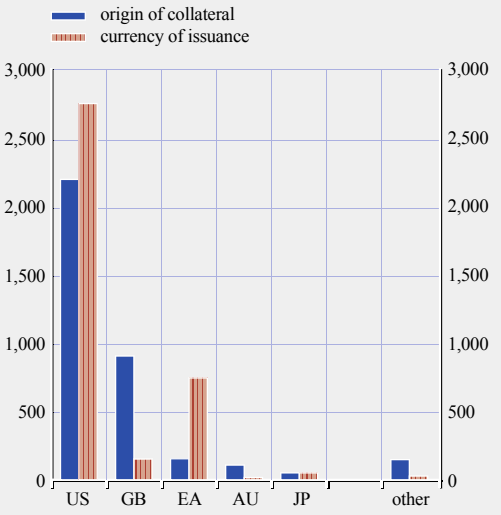


Sources: Thomson Reuters and ECB calculations.

between variations in the share of the euro in the ABS segment and the non-convertible bond segment is actually a mere 0.10 for the period[73] displayed in Chart 25, Panel A, while that for the US dollar shown in Panel B is even lower, at 0.02.

Chart 26 Currency choice and origin of collateral in ABS markets

(USD billions)

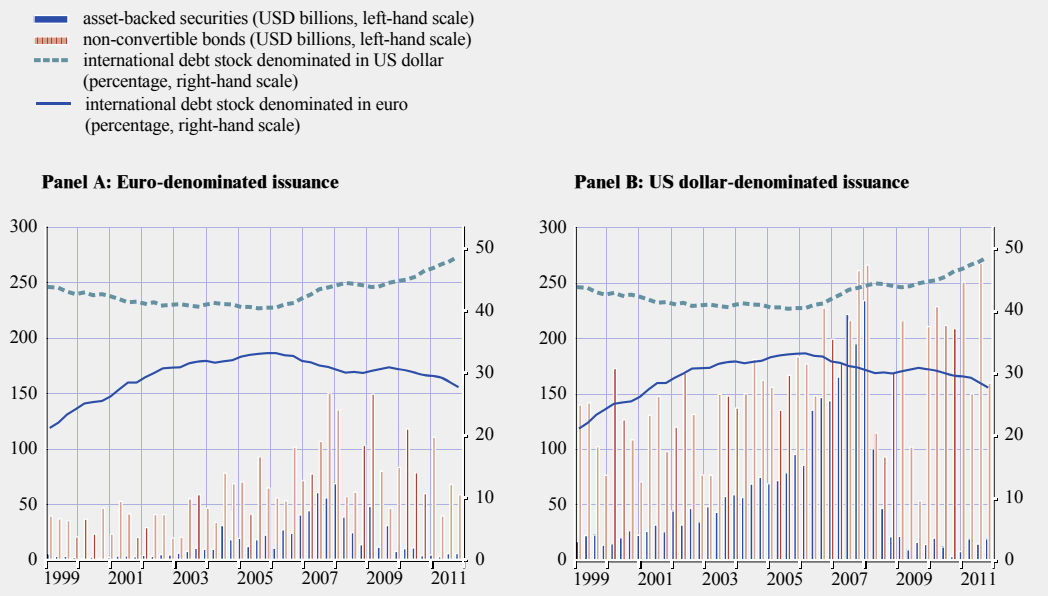


Sources: BIS, Thomson Reuters and ECB calculations.

Thus, the main factors traditionally underlying the preference for one currency over another in non-convertible bond issues do not seem to apply in the case of ABS issues – or at least not to the same extent. Instead, the important factor is the origin of the collateral underlying individual ABS tranches. In fact, substantial amounts of collateral are located in the United States, which points towards a relatively strong link with the prominence of US dollar-denominated ABS issues (see Chart 26). In addition, investor demand appears to have a bearing too, as evidenced by the comparatively weak ABS issuance in pounds sterling and Australian dollars, despite the sizeable stock of collateral available in the United Kingdom and Australia that could theoretically back ABS issuance in their currencies. By contrast, the euro area presents the opposite picture with euro-denominated ABS issues exceeding the amount of collateral located in the euro area by a ratio of almost five to one. When the highly

73 Chart 25 only covers the period to the beginning of the financial market turmoil in the summer of 2007 which had major disruptive effects on the issuance of ABS and the corresponding distribution of currency shares in this market. For a more detailed analysis of the period encompassing the crisis, see ECB (2009), pp. 31-34.

Chart 27 Issuance activity and currency composition of the stock of international debt securities



Sources: BIS, Thomson Reuters and ECB calculations.

structured nature of ABS is taken into account, these observations are less surprising since, by tranching and re-tranching the collateral underlying ABS and by using derivatives, their cash flow and risk profiles can be adjusted to meet almost any investor requirements which – before the financial crisis – was regarded as one of their main advantages.

As a result, the currency choice for ABS issues seems to be less driven by issuers' desire to hedge their exposure to a particular currency or reduce their financing costs by issuing debt in a currency that is characterised by a low interest rate and/or that is depreciating. Rather, it appears to be influenced to a significant degree by the preferences of investors and the presence of collateral in a specific currency. The latter, in turn, is dependent on the origination of credit on the balance sheets of financial intermediaries that then offload these assets into SPVs which ultimately issue ABS tranches collateralised against them.[74] The large stock of collateral available in the United States and the United Kingdom (see Chart 26) – both of which faced a credit boom before the crisis, particularly in mortgage credit – is evidence for this.[75]

THE IMPACT OF ASSET-BACKED SECURITIES ON THE ROLE OF THE EURO IN INTERNATIONAL DEBT MARKETS

While it is likely that ABS played a comparatively small role in shaping the currency composition of the stock of international debt securities before 2002, the impressive surge in issuance in the period until the advent of the financial crisis in the summer of 2007 can be expected to have had some tangible repercussions.[76] Indeed, superimposing issuance activity involving ABS and non-convertible bonds denominated in euro and US

74 Apart from the origination of credit, the refinancing of assets via securitisation and the use of off-balance sheet vehicles has to be common and accepted practice for growth in credit to translate into a rise in ABS issuance. This is not the case in all jurisdictions, as other means of refinancing are more prevalent in some countries, such as the *Pfandbrief* in Germany.

75 Almost half of all ABS issuance during the period 1999 to 2010 was collateralised by some sort of real estate-related debt.

76 In fact, according to data from Thomson Reuters, more than twice as many ABS were issued between 2002 and 2007 than in the 20 years before that period.

dollars on a chart displaying the shares of the euro and the US dollar in the stock of international debt securities allows some noteworthy conclusions to be drawn (see Chart 27).

First, it seems possible that the rise to prominence of ABS after 2001 may have contributed to halting the fall of the US dollar's share in outstanding amounts of international debt. Having fallen from about 44% at the beginning of 1999 to around 40% by mid-2003, its share stayed roughly constant at that level until late 2005. During the same period, issuance of US dollar-denominated ABS accelerated while that of non-convertible bonds recorded only marginal increases (see Chart 27, Panel B). Second, the declining trend of the US dollar reversed at the start of 2006, coinciding with an unprecedented increase in US dollar-denominated ABS issuance, which in some quarters approached or even surpassed the issuance of non-convertible debt. Third, the rapid collapse in ABS issuance with the advent of the financial crisis briefly interrupted the ascent of the US dollar between the fourth quarter of 2007 and the second quarter of 2008, despite the fact that issuance of non-convertible bonds denominated in US dollars continued on a relatively large scale. Turning to the euro (see Chart 27, Panel A), issuance of ABS and non-convertible bonds denominated in euro quickened after 2003, but was apparently not sufficient to counteract the influence that the massive amount of securities issued in US dollars during the same period had on the currency composition of the outstanding stock of international debt.

Following the near demise of the market for ABS in the wake of the crisis, their issuance has fallen to a trickle, at least when compared with activity prior to the summer of 2007. In fact, the still increasing share of the US dollar in the outstanding amount of international debt is now almost exclusively accounted for by issuance of non-convertible bonds, which largely comprise debt of the financial industry, the public sector and manufacturers.[77] Nevertheless, ABS will continue to have an impact on the currency composition of the international debt stock, particularly since a sizeable proportion of these securities were issued with maturities of over 30 years.[78]

CONCLUDING REMARKS

The preceding sections have shown that the ABS segment of the debt market differs from the non-convertible bonds segment, both in terms of its structural features and potentially also in terms of the determinants of currency choice. Some proof has been presented indicating that the origin of the underlying collateral seems to be an important factor in the decision on the currency in which ABS tranches are issued. Furthermore, investors' preferences also appear to be a factor. This is difficult to substantiate with firm evidence, as comprehensive information about investor demand and preferences is hard to obtain. However, the way these products are structured to satisfy virtually any investor requirements serves as a strong indication.

In addition, it has been demonstrated that ABS issuance activity may offer an explanation for some of the trends and shifts in the currency composition of the stock of international debt securities. The enormous issuance amounts witnessed from 2002 to mid-2007, particularly in US dollars, are likely to have shaped that currency's share, and with it also the share of the euro, in the stock of international debt securities – at least to some extent. This also underlines the role financial innovation can play in influencing a currency's prominence in global financial markets.

77 The distribution of debt issued between the third quarter of 2007 and the end of 2010, based on the Standard Industrial Classification, was 50.3% finance, 26.1% public sector, 10.7% manufacturing, 6.3% transportation and utilities, 5.3% mining and 1.3% for all remaining industries.

78 Almost half of all ABS issued between 1999 and 2010 have maturities of more than 30 years.

4 FOREIGN CURRENCY LENDING IN CESEE COUNTRIES: EVIDENCE FROM THE OeNB EURO SURVEY [79]

The implications of foreign currency lending to unhedged borrowers in central, eastern and south-eastern Europe (CESEE) for macroeconomic and financial stability had already been a subject of debate prior to the global economic and financial crisis. Since the crisis affected the CESEE region, triggering exchange rate fluctuations and putting a strain on the financial situation of households, the issue of foreign currency lending has increasingly caught the attention of policy-makers.

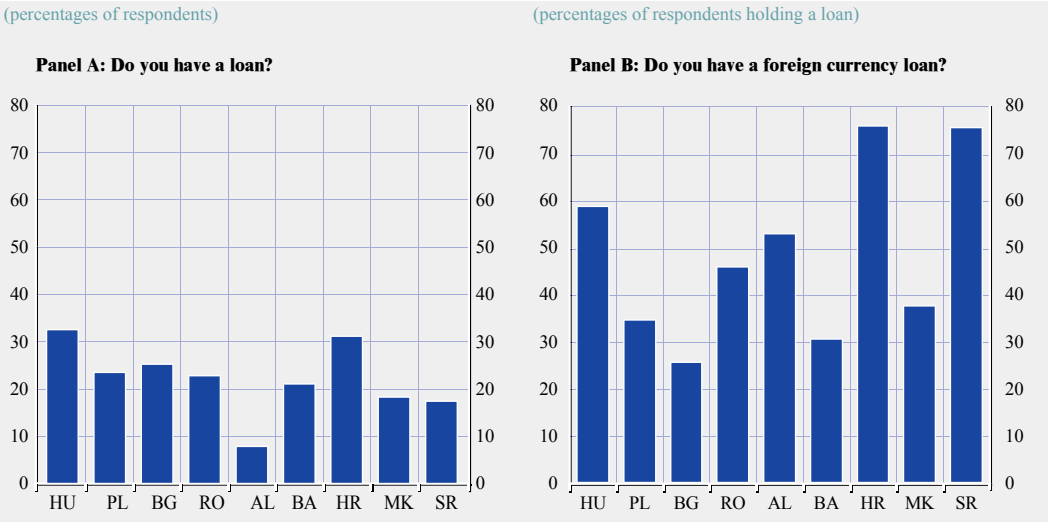
To design appropriate economic policy responses, policy-makers need information on (i) the drivers of foreign currency borrowing; (ii) the impact of the crisis on demand for foreign currency loans; and (iii) the reasons why households have difficulties in repaying their foreign currency loans. Although the literature on the causes and consequences of foreign currency lending is growing, many questions remain unanswered, in particular in connection with the recent crisis. Against this background, the OeNB Euro Survey, which has been conducted semi-annually among households in nine CESEE countries since autumn 2007, provides new evidence on foreign currency borrowing by households. [80]

The OeNB Euro Survey complements aggregate monetary statistics in at least three respects. First, it allows the level of the analysis to move from macroeconomic data to responses obtained directly from households. Second, as the survey started before the crisis and has been repeated seven times, it allows some conclusions to be drawn about the effects of the crisis on the behaviour of households. Third, the survey covers almost all CESEE countries: four EU Member States (Bulgaria, Hungary, Poland and Romania) as well as five EU candidate and potential candidate countries (Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia and Serbia) – and hence allows country comparisons based on harmonised data.

79 This special feature was written by the OeNB.

80 Beyond that, the OeNB Euro Survey provides evidence on the use of euro cash holdings and savings deposits denominated in euro. As a case in point, survey results on the extent of the use of euro denominated deposits and the impact of the global financial crisis on households portfolios were presented in last year's report (see ECB 2010b, Box 3). Further information on the survey and related publications can be found at www.ceec.oenb.at.

Chart 28 Dissemination of loans among households



Source: OeNB Euro Survey.
Note: The data exclude respondents answering "Don't know/no answer". Average across all survey waves from spring 2008 to autumn 2010.

SOME FACTS ABOUT HOUSEHOLD BORROWING IN CESEE COUNTRIES

The distribution of loans to households varies greatly across the CESEE region, reflecting different levels of financial development in these countries. While more than 30% of respondents in Hungary and Croatia report that they have taken out loans (see Chart 28, Panel A), fewer than 10% of respondents in Albania have done so. Concerning the distribution of foreign currency loans, three out of four borrowers in Croatia and Serbia report that their loans are solely or predominantly denominated in a foreign currency, followed by Hungary and Albania where three out of five borrowers hold foreign currency loans (see Chart 28, Panel B). Interestingly, the two countries with the lowest share of respondents holding a foreign currency loan are Bulgaria (26%) and Bosnia and Herzegovina (31%), which both have currency board arrangements.

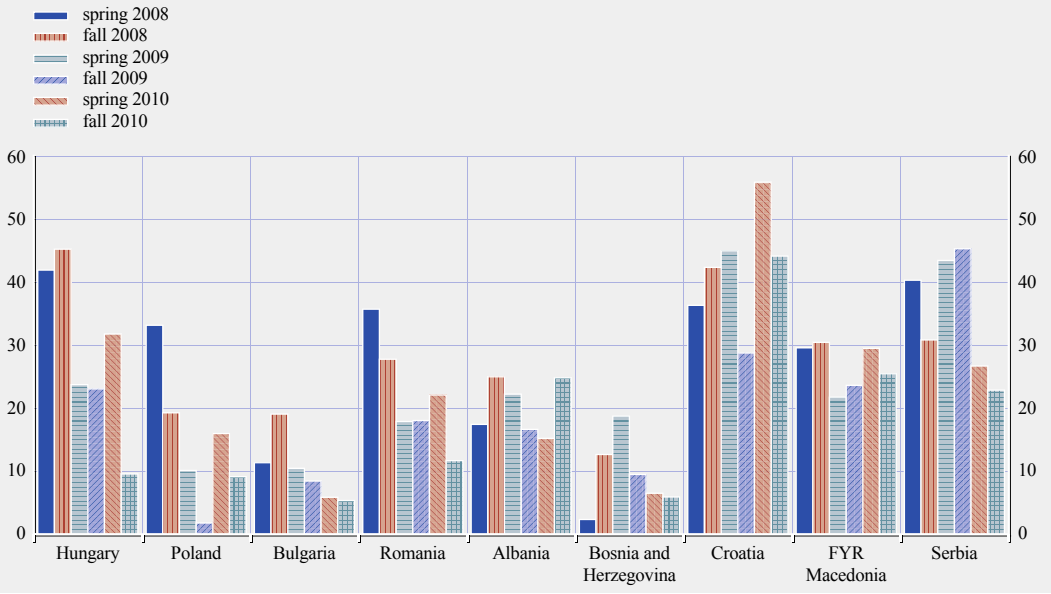
Concerning the denomination of foreign currency loans, monetary statistics reveal that they are predominantly taken out in euro in all CESEE countries. In Poland and Hungary, between 35% and 60% of loans to households are denominated in foreign currency other than the euro, in particular in Swiss francs.

The dissemination of foreign currency loans is affected by both demand and supply factors.Microeconomic evidence provided by Beckmann, Scheiber and Stix (2011) suggests that the underlying causes seem to be manifold and both factors are important. First, banks play an active part: Foreign currency lending is higher in highly euroized economies suggesting that banks try to shift the currency risk to borrowers. A relatively high share of households said that they did not have a choice between a foreign currency loan and a domestic currency loan. Some borrowers would not have received the required amount in domestic currency. Second, households also actively demand foreign currency loans because of favorable interest rate differentials or more stable interest rates.

Furthermore, the OeNB Euro Survey allows to look at possible future developments. It includes

Chart 29 Do you plan to take out a foreign currency loan within the next year?

(percentages of respondents planning to take out a loan)



Source: OeNB Euro Survey.
Note: The data exclude respondents answering "Don't know/no answer".

a question asking respondents whether they plan to take out a foreign currency loan within the next 12 months, which can be interpreted as future demand. The replies thus capture the impact of the financial crisis on demand for such loans.

Since the outbreak of the crisis the number of respondents planning to take out a loan has declined in the region. In seven out of nine countries, the number of those planning to take out a foreign currency loan has declined too (see Chart 29). The results for Hungary possibly reflect respondents' awareness of recent government measures to curb new foreign currency lending. These measures include the prohibition of housing loans in foreign currency, which entered into force in August 2010, i.e. before the autumn 2010 wave of the survey was conducted.[81] However, the most recent data suggest that demand for foreign currency loans has not disappeared completely. In some countries, demand seems to have dropped and then remained at the lower level, while in other countries, demand actually seems to have recovered after a temporary decline caused by the financial crisis. The latter tendency has been particularly pronounced in Poland, where the domestic currency suffered substantial depreciation in the first half of 2009. This raises the question whether households are unresponsive to the risk of depreciation associated with foreign currency loans which materialised in the course of the financial crisis.

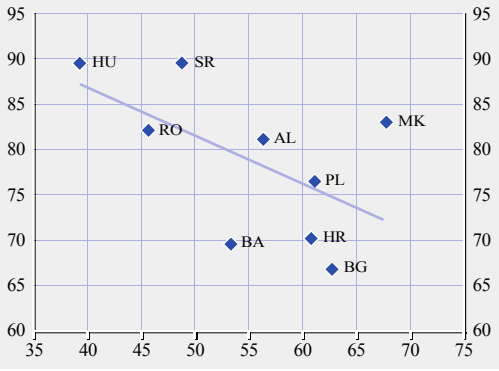
PERCEIVED RISK AND ATTRACTIVENESS OF EURO LOANS

In spring and autumn 2010 the survey respondents were also asked whether euro loans[82] had become riskier because of exchange rate depreciations, thus establishing a direct link between risk perception and crisis-related exchange rate changes.[83] Between 67% (Bulgaria) and 90% (Hungary) of respondents answered in the affirmative. In countries where the exchange rate actually depreciated (Hungary, Poland, Romania, Albania and Serbia), the share of respondents who agree that euro loans have become riskier is 10 percentage points higher than in countries where no depreciation took place.

Chart 30 Increase in perceived risk versus relative attractiveness of euro loans

(percentages)

x-axis: percentage of respondents reporting that loans in euro are more attractive than domestic currency loans
y-axis: percentage of respondents reporting that loans in euro have become riskier



Sources: Beckmann, Scheiber and Stix (2011).
Note: The data exclude respondents answering "Don't know/no answer".

These results imply that the crisis had a clear bearing on respondents' perception of the risk associated with euro loans. Is this sufficient to make euro loans unattractive?

As would be expected, the average perception of higher riskiness is negatively correlated with the perceived attractiveness of euro loans (see Chart 30). Nevertheless, in six out of nine countries, the majority of respondents agreed that, taking everything into account, euro loans are more attractive than domestic currency loans. The share of respondents who think so is lowest in Hungary, at about 40% – still a remarkably high value, given that close to

81 Some types of foreign currency lending are still permitted, and the public may not have been fully aware of these government measures. Accordingly, close to 10% of Hungarian interviewees still reported that they planned to take out a foreign currency loan.

82 In order to obtain comparable results across countries, these particular questions on risk awareness and perceived attractiveness explicitly focussed on euro loans, given the predominant role of the euro in most countries.

83 Respondents were asked whether they agree or disagree with the following two statements on a scale from 1 to 6: i) "Over the last two years, taking out a loan in euro has become riskier because of possible exchange rate depreciations" and ii) "Taking everything into account, loans in euro are more attractive than local currency loans".

Table 10 Survey evidence about the attractiveness of euro loans

(percentages)

	All countries (1)	Countries where currencies did not depreciate (2)	Countries where currencies depreciated (3)	Test of equal proportions H_0: (2)=(3)
All respondents	55	61	50	***
Respondents holding a loan	52	55	49	**
of which: in foreign currency	57	61	53	**
Respondents planning to take out a loan	54	59	49	***

Source: Beckmann, Scheiber and Stix (2011).
Notes: Values represent the percentage shares of respondents who agree with the statement "Taking everything into account, loans in euro are more attractive than domestic currency loans". For example, in countries where the exchange rate did not depreciate, 56% of respondents holding a loan agreed with the above statement (44% disagreed), whereas the corresponding value is 47% in countries where the exchange rate did depreciate. ***, ** and * denote that the difference between countries that experienced currency depreciations and those that did not is significant at the 1%, 5% and 10% levels respectively (one-sided test).

90% of respondents agree that euro loans have become riskier. Thus, the results suggest that the perception of a higher risk was not sufficient to outweigh the presumed advantages of euro loans. This could be taken as evidence that the demand for euro loans is driven mainly by other factors – presumably interest rate differentials and concerns about domestic inflation volatility.

The perceived attractiveness of euro loans has also been affected by recent episodes of currency depreciation. In countries that did not see depreciations, 61% of respondents regarded euro loans as attractive, while the corresponding share is 50% in countries which experienced depreciations (see Table 10). These values reflect the answers of all respondents, i.e. including those who do not hold a loan and those who do not plan to take out a loan. Table 10 provides a breakdown of responses by these sub-groups.

This analysis reveals two noteworthy results. First, a majority of those holding a foreign currency loan still consider euro loans more attractive than domestic currency loans. Clearly, these values differ across exchange rate regimes, but even in countries that experienced currency depreciations, 53% regard a euro loan as more attractive. Second, among those who plan to take out a loan, 54% consider euro loans more attractive than domestic currency loans. Despite a statistically significant difference with respect to the exchange rate regime, the value observed in countries that saw depreciations still seems rather high at 49%.

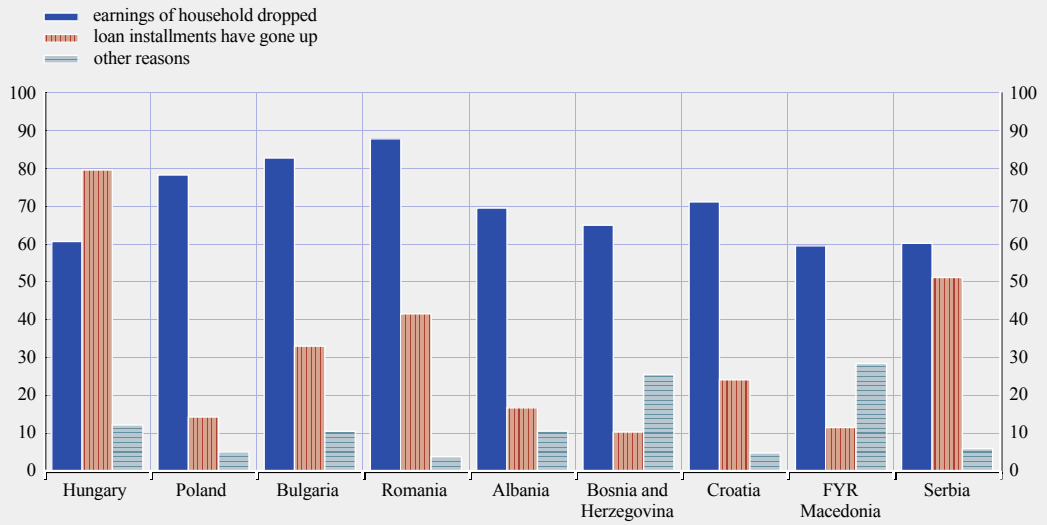
HOUSEHOLDS' DIFFICULTIES TO PAY DOWN LOANS: TO WHAT EXTENT ARE FOREIGN CURRENCY LOANS TO BLAME?

The risk perception of foreign currency loans can also be influenced by the experiences of compatriots with such loans.[84] The latest OeNB Euro Survey of autumn 2010 included some questions about difficulties with loan repayments. For instance, respondents were asked whether they have found it more difficult to pay down their loans as a result of the economic and financial crisis. Those who reported increased difficulties were then asked about the reasons. Possible answers included lower household earnings as well as higher instalment payments. The results clearly reveal that in all countries except Hungary and Serbia, difficulties with repayments are mainly related to a decrease in earnings (see Chart 31) and not to increased instalment payments. By contrast, in Hungary and Serbia, respondents indicated that higher instalments were roughly as important as the income effect. Among those

84 For example, Beckmann, Scheiber and Stix (2011) provide evidence that the risk assessment of such loans is strongly influenced by whether or not respondents had aquaintances who experienced difficulties with their foreign currency loans.

Chart 31 Reasons for difficulties to pay down loan

(percentages of respondents who report that it is more difficult to pay down their loan)



Source: OeNB Euro Survey autumn 2010 wave.
Note: The data exclude respondents answering "Don't know/no answer". Respondents were asked the following question: If you do find it more difficult to pay down your loan: Why is this the case? Respondents could choose any number of the following reasons (i) The earnings of my household have dropped, (ii) the loan instalments have gone up, (iii) for other reasons.

who stated that higher instalments were causing the difficulties, the share of those holding a foreign currency loan was above 80% in Hungary and above 90% in Serbia. These results establish, not surprisingly, that the increase in instalment payments is related to the depreciation of the forint and the dinar and, by extension, that foreign currency loans are the major cause of arrears in these two countries. However, this assumption is not confirmed for the CESEE region as a whole. Overall, the fact that households have a lower debt-servicing capacity because of rising unemployment and decreased earnings seems to play a more important role than higher instalments. In particular in countries with pegged or quasi-pegged currencies, foreign currency loans do not seem to be the major cause of repayment difficulties. This may be one reason why demand for foreign currency loans has not declined more strongly as a consequence of the financial crisis.

CONCLUDING REMARKS

Evidence collected in the OeNB Euro Survey suggests that a majority of households have become more aware of the exchange rate risk related to euro loans. This perception of increased risk was found for all CESEE countries and was particularly pronounced in countries where the local currency had actually depreciated during the crisis. At the same time economic agents still consider euro loans more attractive than domestic currency loans in most countries.

Turning to the difficulties with loan repayments reported by CESEE households, the major cause of these difficulties was found to stem from a decrease in households' earnings rather than from increased instalment payments. Thus, in particular in countries with pegged or tightly managed exchange rates, foreign currency loans do not seem to be the major reason for repayment problems.

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STATISTICAL ANNEX

Table I Global holding of foreign exchange reserves

		All countries						Advanced economies	
		Total holdings of foreign reserves [1]	Allocated reserves [2]	EUR	USD	JPY	Other	Total holdings of foreign reserves [1]	Allocated reserves [2]
Outstanding amounts (in USD billions, at current exchange rates)									
2001		2,050	1,570	301	1,122	79	67	1,246	1,122
2002		2,408	1,796	427	1,205	78	86	1,442	1,278
2003		3,025	2,223	559	1,466	88	111	1,766	1,556
2004		3,748	2,655	659	1,751	102	144	2,069	1,824
2005		4,320	2,844	684	1,903	102	155	2,077	1,820
2006		5,251	3,316	832	2,171	102	210	2,250	1,979
2007		6,700	4,119	1,082	2,642	120	275	2,432	2,154
2008		7,337	4,210	1,112	2,698	132	267	2,491	2,194
2009	Q1	7,163	4,058	1,046	2,645	114	253	2,453	2,148
	Q2	7,565	4,269	1,174	2,682	130	283	2,606	2,283
	Q3	7,880	4,439	1,239	2,729	141	330	2,714	2,376
	Q4	8,163	4,562	1,257	2,833	133	339	2,779	2,425
2010	Q1	8,286	4,636	1,267	2,857	140	371	2,827	2,468
	Q2	8,414	4,754	1,262	2,956	155	381	2,930	2,564
	Q3	8,985	4,996	1,346	3,064	179	407	3,100	2,716
	Q4	9,258	5,120	1,348	3,144	195	433	3,093	2,704
Currency shares in foreign exchange reserves with disclosed currency composition (at constant exchange rates)									
2001		...	78.8	25.6	63.1	7.2	4.1	...	91.2
2002		...	76.1	27.9	61.8	5.8	4.5	...	89.5
2003		...	74.0	26.0	64.4	5.1	4.6	...	88.4
2004		...	70.8	24.4	66.0	4.8	4.8	...	88.2
2005		...	66.8	26.1	64.0	5.0	4.9	...	88.1
2006		...	63.4	25.2	64.9	4.5	5.4	...	88.2
2007		...	60.9	24.4	65.7	4.1	5.8	...	88.4
2008		...	57.3	25.5	64.4	3.5	6.7	...	88.0
2009	Q1	...	56.9	25.6	64.5	3.4	6.5	...	87.7
	Q2	...	56.1	26.3	63.6	3.6	6.5	...	87.5
	Q3	...	55.8	26.1	62.9	3.6	7.5	...	87.4
	Q4	...	55.5	26.0	63.2	3.4	7.4	...	87.1
2010	Q1	...	56.0	27.0	61.4	3.5	8.1	...	87.3
	Q2	...	57.2	28.1	60.5	3.5	7.9	...	87.8
	Q3	...	55.5	26.5	61.7	3.7	8.1	...	87.5
	Q4	...	55.3	26.3	61.4	3.8	8.4	...	87.4
Currency shares in foreign exchange reserves with disclosed currency composition (at current exchange rates)									
2001		...	76.6	19.2	71.5	5.0	4.3	...	90.1
2002		...	74.6	23.8	67.1	4.4	4.8	...	88.6
2003		...	73.5	25.2	65.9	3.9	5.0	...	88.1
2004		...	70.8	24.8	65.9	3.8	5.4	...	88.2
2005		...	65.8	24.1	66.9	3.6	5.5	...	87.6
2006		...	63.1	25.1	65.5	3.1	6.3	...	88.0
2007		...	61.5	26.3	64.1	2.9	6.7	...	88.5
2008		...	57.4	26.4	64.1	3.1	6.4	...	88.1
2009	Q1	...	56.6	25.8	65.2	2.8	6.2	...	87.5
	Q2	...	56.4	27.5	62.8	3.0	6.6	...	87.6
	Q3	...	56.3	27.9	61.5	3.2	7.4	...	87.6
	Q4	...	55.9	27.6	62.1	2.9	7.4	...	87.3
2010	Q1	...	55.9	27.3	61.6	3.0	8.0	...	87.3
	Q2	...	56.5	26.5	62.2	3.3	8.0	...	87.5
	Q3	...	55.6	26.9	61.3	3.6	8.2	...	87.6
	Q4	...	55.3	26.3	61.4	3.8	8.4	...	87.4

Sources: IMF and ECB calculations.
Notes: 1) Includes unallocated reserves, i.e. reserves with undisclosed currency composition.
2) Reserves with disclosed currency composition. Their shares are in total holdings of foreign reserves.

Advanced economies				Emerging and developing economies					
EUR	USD	JPY	Other	Total holdings of foreign reserves[1]	Allocated reserves[2]	EUR	USD	JPY	Other
Outstanding amounts (in USD billions, at current exchange rates)									
213	792	68	49	804	447	88	330	11	18
297	850	69	63	966	518	131	355	9	23
358	1,045	81	73	1,259	667	202	421	7	38
416	1,228	91	90	1,679	831	243	523	11	54
385	1,261	86	87	2,243	1,024	299	642	16	68
438	1,350	84	107	3,001	1,336	394	821	18	103
519	1,423	85	126	4,267	1,966	563	1,219	35	149
508	1,475	94	117	4,846	2,016	604	1,223	38	150
478	1,478	84	107	4,710	1,910	568	1,167	29	146
563	1,504	97	118	4,958	1,987	611	1,178	32	165
604	1,538	104	130	5,167	2,063	635	1,191	37	200
613	1,582	95	136	5,384	2,137	645	1,251	38	203
627	1,599	100	142	5,459	2,168	640	1,259	41	229
647	1,667	104	146	5,484	2,189	615	1,289	51	234
684	1,734	124	173	5,885	2,280	662	1,330	55	234
665	1,736	127	176	6,165	2,415	683	1,408	68	257
Currency shares in foreign exchange reserves with disclosed currency composition (at constant exchange rates)									
25.2	62.0	8.6	4.2	...	58.4	26.7	65.9	3.5	3.9
27.1	61.0	7.3	4.6	...	55.5	29.9	63.7	2.3	4.1
23.7	65.4	6.6	4.3	...	53.4	31.4	62.0	1.4	5.1
22.3	67.1	6.3	4.4	...	49.2	29.0	63.7	1.7	5.6
22.9	66.2	6.6	4.4	...	46.6	31.7	60.2	2.1	5.9
22.1	67.1	6.1	4.7	...	44.5	30.0	61.6	2.0	6.5
22.2	67.1	5.5	5.2	...	45.2	26.9	64.1	2.6	6.4
22.3	67.4	4.8	5.6	...	41.4	29.0	61.0	2.1	7.8
22.1	68.0	4.7	5.2	...	40.8	29.6	60.5	1.8	8.1
23.5	66.4	5.1	5.1	...	39.6	29.6	60.4	2.0	8.1
23.6	65.9	4.9	5.5	...	39.3	28.9	59.4	2.0	9.7
23.8	66.1	4.5	5.6	...	39.2	28.6	59.9	2.1	9.5
25.1	64.5	4.6	5.8	...	39.8	29.2	58.0	2.1	10.7
26.7	63.3	4.3	5.7	...	40.6	29.7	57.2	2.5	10.6
24.8	64.1	4.7	6.4	...	38.6	28.6	58.7	2.5	10.2
24.6	64.2	4.7	6.5		39.2	28.3	58.3	2.8	10.6
Currency shares in foreign exchange reserves with disclosed currency composition (at current exchange rates)									
19.0	70.6	6.1	4.4	...	55.6	19.7	73.8	2.4	4.0
23.2	66.5	5.4	4.9	...	53.6	25.3	68.6	1.7	4.5
23.0	67.2	5.2	4.7	...	53.0	30.2	63.1	1.1	5.7
22.8	67.3	5.0	4.9	...	49.5	29.2	63.0	1.3	6.5
21.2	69.3	4.7	4.8	...	45.6	29.2	62.7	1.5	6.7
22.1	68.2	4.3	5.4	...	44.5	29.5	61.5	1.3	7.7
24.1	66.1	4.0	5.9	...	46.1	28.6	62.0	1.8	7.6
23.1	67.2	4.3	5.3	...	41.6	30.0	60.7	1.9	7.4
22.3	68.8	3.9	5.0	...	40.6	29.7	61.1	1.5	7.7
24.7	65.9	4.3	5.2	...	40.1	30.8	59.3	1.6	8.3
25.4	64.7	4.4	5.5	...	39.9	30.8	57.7	1.8	9.7
25.3	65.2	3.9	5.6	...	39.7	30.2	58.5	1.8	9.5
25.4	64.8	4.0	5.8	...	39.7	29.5	58.1	1.9	10.6
25.2	65.0	4.1	5.7	...	39.9	28.1	58.9	2.3	10.7
25.2	63.8	4.6	6.4	...	38.7	29.0	58.3	2.4	10.3
24.6	64.2	4.7	6.5	...	39.2	28.3	58.3	2.8	10.6

Table 2 Currency composition of foreign exchange reserves for selected countries

(share of the euro in foreign exchange reserve holdings as a percentage of total; at current exchange rates)

	2006	2007	2008	2009	2010
Non-euro area EU Member States	...	68.6	61.3	70.1	67.15
Bulgaria	99.4	99.1	99.1	...	...
Czech Republic	55.3	54.0	59.3	64.1	54.50
Latvia	46.4	38.8	60.5	63.1	58.30
Lithuania	100.0	100.0	94.9	90.8	92.10
Poland	40.0	36.3	33.7	36.7	35.40
Romania	68.8	67.8	62.2	61.5	59.10
Sweden	50.0	46.9	48.5	48.1	50.00
United Kingdom	66.8	64.4	40.2	63.3	59.00
Candidate and potential candidate countries					
Croatia	85.5	84.1	76.6	71.7	73.70
Serbia	71.3	71.1	70.3	71.9	...
Turkey	...	55.2	48.2	48.4	50.60
Other industrial countries					
Canada	51.0	47.5	40.4	41.9	40.00
Norway	47.2	44.0	48.3	47.2	33.40
Russia	...	38.8	40.0	33.2	...
Switzerland	47.0	40.2	47.9	55.6	54.90
United States	61.2	37.9	53.7	54.0	54.20
Latin American countries					
Chile	24.9	34.8	37.3	34.8	35.20
Peru	18.2	11.9	14.9	17.4	16.80
Uruguay	1.3	12.5	9.5	2.6	...

Sources: National central banks and ECB calculations.
Notes: Figures for Poland, Sweden, and Lithuania up to 2007 refer to currency benchmarks as published in the annual reports of the central banks of these countries. Figures for Bulgaria, Czech Republic, Romania and Serbia refer to currency compositions as published in the annual reports of the central banks of these countries. Figures for the United Kingdom refer to combined currency shares for the Bank of England and the UK government (including other foreign currency assets such as claims vis-à-vis residents). Data for the United States refer to combined currency shares for the Open Market Account (SOMA) at the Federal Reserve and the US Treasury Exchange Stabilization Fund (ESF); reciprocal currency arrangements are not included. In the case of Norway, currency shares refer to the fixed income part of Norges Bank's foreign exchange reserve investment portfolio, while the currency composition is taken from quarterly reports. Data for Chile refer to the combined currency shares in the liquidity and the investment portfolio of the Central Bank of Chile. In the case of Peru, the share of the euro refers to reserve assets denominated in currencies other than the US dollar. According to the Central Reserve Bank of Peru, these are mostly euro-denominated assets.

2 THE EURO IN INTERNATIONAL DEBT MARKETS

Table 3 Outstanding international debt securities, by currency

	Global measure					Narrow measure				
		of which:					*of which:*			
	Total	EUR	USD	JPY	Other	Total	EUR	USD	JPY	Other
(Outstanding amounts in USD billions, at current exchange rates, end of period)										
1999	34,787	7,333	16,018	6,535	4,900	3,031	627	1,483	484	436
2000	35,480	7,386	16,980	6,208	4,905	3,388	726	1,701	471	489
2001	37,086	7,644	18,445	5,936	5,061	3,564	822	1,800	426	516
2002	42,371	9,854	19,803	6,827	5,886	4,068	1,107	1,902	411	648
2003	50,154	13,163	21,410	8,321	7,260	4,960	1,559	2,134	439	828
2004	57,191	15,672	23,280	9,400	8,839	5,845	1,968	2,390	456	1,031
2005	58,780	14,880	25,326	8,851	9,723	6,162	1,923	2,711	401	1,128
2006	67,426	18,442	28,179	8,905	11,900	7,830	2,450	3,460	413	1,507
2007	77,940	22,778	31,245	9,464	14,453	9,652	3,104	4,186	510	1,853
2008	82,440	23,630	33,148	11,831	13,830	9,607	3,092	4,294	654	1,567
2009 Q1	81,929	23,385	33,865	10,943	13,737	9,429	2,957	4,335	597	1,541
Q2	86,729	25,529	34,118	11,459	15,624	10,016	3,197	4,474	600	1,746
Q3	90,278	26,842	34,502	12,342	16,592	10,341	3,342	4,599	627	1,773
Q4	90,408	26,416	34,705	12,232	17,055	10,333	3,242	4,736	600	1,755
2010 Q1	89,367	25,124	34,741	12,243	17,259	10,255	3,084	4,868	583	1,721
Q2	88,193	22,954	34,980	13,172	17,088	9,931	2,773	4,882	604	1,672
Q3	93,875	25,763	35,626	14,039	18,446	10,588	3,053	5,055	650	1,830
Q4	94,815	25,289	36,185	14,518	18,823	10,567	2,900	5,145	666	1,856
(Percentages of outstanding amounts, at constant exchange rates, end of period)										
1999	100.0	25.0	41.0	21.0	13.0	100.0	24.2	43.0	17.6	15.2
2000	100.0	25.5	40.9	21.1	12.5	100.0	26.0	42.4	16.6	15.0
2001	100.0	25.8	41.0	21.2	12.0	100.0	28.5	41.2	15.7	14.6
2002	100.0	26.0	41.0	20.6	12.4	100.0	30.5	41.1	13.0	15.5
2003	100.0	26.1	40.1	20.5	13.4	100.0	31.7	41.0	11.1	16.1
2004	100.0	26.0	39.4	20.1	14.4	100.0	32.9	40.7	9.8	16.6
2005	100.0	26.1	39.2	19.8	15.0	100.0	32.8	40.9	8.8	17.5
2006	100.0	26.2	39.5	18.3	16.1	100.0	31.1	43.4	7.6	17.9
2007	100.0	26.2	39.7	16.5	17.6	100.0	29.9	44.4	7.5	18.2
2008	100.0	27.3	39.9	15.9	17.0	100.0	30.8	44.5	7.6	17.2
2009 Q1	100.0	27.7	40.0	15.7	16.7	100.0	30.6	44.7	7.5	17.2
Q2	100.0	27.7	39.1	15.5	17.7	100.0	30.4	45.0	7.1	17.6
Q3	100.0	27.5	38.7	15.2	18.5	100.0	30.1	45.4	6.8	17.6
Q4	100.0	27.2	38.5	15.4	18.8	100.0	29.5	46.5	6.7	17.3
2010 Q1	100.0	27.3	38.1	15.4	19.1	100.0	29.4	46.9	6.5	17.2
Q2	100.0	27.3	38.2	15.7	18.9	100.0	29.3	47.3	6.4	17.0
Q3	100.0	26.9	38.1	15.4	19.6	100.0	28.4	48.0	6.3	17.4
Q4	100.0	26.7	38.2	15.3	19.9	100.0	27.4	48.7	6.3	17.6
(Percentages of outstanding amounts, at current exchange rates, end of period)										
1999	100.0	21.1	46.0	18.8	14.1	100.0	20.7	48.9	16.0	14.4
2000	100.0	20.8	47.9	17.5	13.8	100.0	21.4	50.2	13.9	14.4
2001	100.0	20.6	49.7	16.0	13.6	100.0	23.1	50.5	11.9	14.5
2002	100.0	23.3	46.7	16.1	13.9	100.0	27.2	46.8	10.1	15.9
2003	100.0	26.2	42.7	16.6	14.5	100.0	31.4	43.0	8.9	16.7
2004	100.0	27.4	40.7	16.4	15.5	100.0	33.7	40.9	7.8	17.6
2005	100.0	25.3	43.1	15.1	16.5	100.0	31.2	44.0	6.5	18.3
2006	100.0	27.4	41.8	13.2	17.6	100.0	31.3	44.2	5.3	19.2
2007	100.0	29.2	40.1	12.1	18.5	100.0	32.2	43.4	5.3	19.2
2008	100.0	28.7	40.2	14.4	16.8	100.0	32.2	44.7	6.8	16.3
2009 Q1	100.0	28.5	41.3	13.4	16.8	100.0	31.4	46.0	6.3	16.3
Q2	100.0	29.4	39.3	13.2	18.0	100.0	31.9	44.7	6.0	17.4
Q3	100.0	29.7	38.2	13.7	18.4	100.0	32.3	44.5	6.1	17.1
Q4	100.0	29.2	38.4	13.5	18.9	100.0	31.4	45.8	5.8	17.0
2010 Q1	100.0	28.1	38.9	13.7	19.3	100.0	30.1	47.5	5.7	16.8
Q2	100.0	26.0	39.7	14.9	19.4	100.0	27.9	49.2	6.1	16.8
Q3	100.0	27.4	38.0	15.0	19.6	100.0	28.8	47.7	6.1	17.3
Q4	100.0	26.7	38.2	15.3	19.9	100.0	27.4	48.7	6.3	17.6

Sources: BIS and ECB calculations.

Table 4 Outstanding international bonds and notes, by currency and by sector

	EUR					USD	
	Sovereigns	Other public entities	Corporations	Financial institutions	International organisations	Sovereigns	Other public entities
Outstanding amounts in USD billions, end of period							
1999	95	42	101	211	127	358	180
2000	97	53	134	262	111	395	185
2001	93	71	188	323	100	395	208
2002	111	99	259	450	119	418	234
2003	140	129	341	674	148	431	282
2004	161	149	337	1,006	168	460	324
2005	148	127	279	1,082	148	467	371
2006	165	140	298	1,492	167	463	423
2007	182	137	356	2,021	187	460	461
2008	168	121	345	2,075	181	449	497
2009 Q1	157	114	348	1,959	190	471	536
Q2	182	130	378	2,092	232	486	573
Q3	192	130	387	2,170	251	511	611
Q4	190	130	386	2,132	238	534	627
2010 Q1	181	121	352	2,012	245	555	657
Q2	167	110	316	1,802	226	564	669
Q3	190	115	349	1,989	257	578	706
Q4	187	113	346	1,891	243	588	731
Percentages of outstanding amounts, end of period							
1999	16.5	7.3	17.6	36.6	22.1	26.4	13.3
2000	14.8	8.0	20.4	39.8	17.0	26.0	12.2
2001	12.0	9.1	24.3	41.7	12.9	24.0	12.6
2002	10.7	9.5	25.0	43.3	11.5	23.8	13.3
2003	9.8	9.0	23.8	47.1	10.4	21.8	14.3
2004	8.8	8.2	18.5	55.3	9.2	20.8	14.7
2005	8.3	7.1	15.7	60.6	8.3	18.5	14.7
2006	7.3	6.2	13.2	65.9	7.4	14.5	13.2
2007	6.3	4.8	12.4	70.1	6.5	12.0	12.0
2008	5.8	4.2	11.9	71.8	6.3	11.2	12.5
2009 Q1	5.7	4.1	12.6	70.8	6.8	11.6	13.2
Q2	6.0	4.3	12.5	69.4	7.7	11.5	13.6
Q3	6.1	4.2	12.4	69.3	8.0	11.8	14.1
Q4	6.2	4.2	12.5	69.3	7.8	12.0	14.1
2010 Q1	6.2	4.2	12.1	69.1	8.4	12.1	14.4
Q2	6.4	4.2	12.1	68.8	8.6	12.2	14.5
Q3	6.5	4.0	12.0	68.6	8.9	12.1	14.8
Q4	6.7	4.1	12.4	68.0	8.7	12.0	15.0

Sources: BIS and ECB calculations.
Notes: Narrow definition of international bonds and notes. Other public entitities include public corporations, public banks and other public financial institutions.

USD					JPY		
Corporations	Financial institutions	International organisations	Sovereigns	Other public entities	Corporations	Financial institutions	International organisations
					Outstanding amounts in USD billions, end of period		
303	401	113	89	75	61	186	40
351	461	129	77	71	60	178	32
375	518	151	62	62	57	172	27
373	567	166	61	67	56	175	30
410	678	174	60	77	56	194	35
430	810	180	53	84	61	210	35
448	1,056	180	38	79	49	193	32
518	1,616	177	32	82	52	203	31
593	2,147	185	30	91	56	265	35
619	2,214	213	35	114	75	354	45
625	2,200	226	30	106	68	327	43
656	2,246	252	29	111	68	328	44
687	2,250	262	31	120	73	343	46
734	2,291	273	32	118	70	322	44
751	2,335	276	31	112	67	313	44
765	2,331	298	34	119	71	318	45
805	2,380	307	35	127	76	343	48
843	2,412	314	38	131	78	351	49
					Percentages of outstanding amounts, end of period		
22.4	29.6	8.4	19.7	16.6	13.6	41.2	8.9
23.1	30.3	8.5	18.4	17.0	14.3	42.6	7.7
22.8	31.4	9.2	16.4	16.2	15.0	45.2	7.1
21.2	32.2	9.4	15.8	17.1	14.4	45.0	7.8
20.7	34.3	8.8	14.2	18.3	13.2	46.0	8.3
19.5	36.8	8.2	12.0	19.0	13.7	47.4	7.9
17.8	41.9	7.1	9.7	20.2	12.6	49.3	8.2
16.2	50.5	5.5	8.0	20.6	13.0	50.7	7.7
15.4	55.8	4.8	6.2	19.1	11.8	55.6	7.4
15.5	55.5	5.3	5.5	18.3	12.0	56.8	7.3
15.4	54.2	5.6	5.2	18.4	11.9	57.0	7.5
15.6	53.3	6.0	5.1	19.1	11.7	56.5	7.6
15.9	52.1	6.1	5.1	19.7	11.9	56.0	7.4
16.5	51.4	6.1	5.5	20.1	11.9	55.0	7.6
16.4	51.0	6.0	5.5	19.8	11.8	55.3	7.7
16.5	50.4	6.4	5.8	20.3	12.0	54.2	7.7
16.9	49.8	6.4	5.5	20.2	12.0	54.6	7.6
17.2	49.3	6.4	5.9	20.3	12.0	54.2	7.6

Table 5 Outstanding international bonds and notes, by currency and by region

	EUR									
	Euro area	DK, SE, UK	Other non-euro area EU	Non-EU Europe	North America	Asia & Pacific	Latin America	Offshore centres	International org.	Other
Outstanding amounts in USD billions, end of period										
1999	144	7	17	117	24	42	92	127	7	
2000	172	8	24	144	25	49	116	111	8	
2001	223	11	25	183	27	47	151	100	7	
2002	313	16	33	259	35	54	200	119	10	
2003	478	26	49	368	52	59	240	148	13	
2004	697	39	60	436	94	63	251	168	12	
2005	744	47	65	399	100	46	222	148	12	
2006	966	64	85	528	130	50	253	167	18	
2007	1,306	77	112	692	158	52	275	187	27	
2008	1,378	84	122	677	150	43	232	181	24	
2009 Q1	1,315	82	114	656	138	40	212	190	22	
Q2	1,421	92	123	704	147	41	230	232	23	
Q3	1,488	96	125	720	152	43	231	251	23	
Q4	1,475	97	123	707	148	44	221	238	23	
2010 Q1	1,406	97	116	645	139	39	201	245	23	
Q2	1,262	90	110	576	121	38	179	226	21	
Q3	1,394	102	122	623	138	44	196	257	23	
Q4	1,329	100	117	599	135	44	189	243	24	
Percentages of outstanding amounts, end of period										
1999	25.0	1.3	2.9	20.3	4.2	7.3	15.9	22.1	1.2	
2000	26.2	1.2	3.6	21.9	3.8	7.4	17.7	17.0	1.2	
2001	28.8	1.5	3.2	23.7	3.5	6.1	19.4	12.9	0.9	
2002	30.1	1.5	3.2	25.0	3.4	5.2	19.3	11.5	0.9	
2003	33.3	1.8	3.4	25.7	3.6	4.1	16.8	10.4	0.9	
2004	38.3	2.2	3.3	23.9	5.2	3.4	13.8	9.2	0.7	
2005	41.7	2.6	3.7	22.4	5.6	2.6	12.4	8.3	0.7	
2006	42.7	2.8	3.8	23.4	5.8	2.2	11.2	7.4	0.8	
2007	45.3	2.7	3.9	24.0	5.5	1.8	9.5	6.5	0.9	
2008	47.7	2.9	4.2	23.4	5.2	1.5	8.0	6.2	0.8	
2009 Q1	47.5	3.0	4.1	23.7	5.0	1.4	7.7	6.8	0.8	
Q2	47.2	3.1	4.1	23.4	4.9	1.4	7.6	7.7	0.8	
Q3	47.5	3.1	4.0	23.0	4.9	1.4	7.4	8.0	0.7	
Q4	47.9	3.2	4.0	23.0	4.8	1.4	7.2	7.8	0.7	
2010 Q1	48.3	3.3	4.0	22.2	4.8	1.3	6.9	8.4	0.8	
Q2	48.1	3.4	4.2	22.0	4.6	1.4	6.8	8.6	0.8	
Q3	48.1	3.5	4.2	21.5	4.8	1.5	6.8	8.9	0.8	
Q4	47.8	3.6	4.2	21.6	4.9	1.6	6.8	8.7	0.9	

Sources: BIS and ECB calculations.
Note: Narrow definition of international bonds and notes.

Euro area	DK, SE, UK	Other non-euro area EU	Non-EU Europe	USD North America	Asia & Pacific	Latin America	Offshore centres	International org.	Other
									Outstanding amounts in USD billions, end of period
270	168	14	27	130	189	230	174	113	36
301	215	13	33	130	199	240	197	129	63
328	228	13	37	148	209	238	229	151	66
358	259	10	36	154	224	237	236	166	77
448	318	10	38	159	249	239	256	174	83
522	376	9	47	160	285	240	286	180	98
626	451	10	56	162	324	235	364	180	112
781	574	9	79	170	375	232	652	177	145
906	717	9	84	184	394	244	955	185	164
954	749	7	83	198	398	234	983	213	169
986	758	7	82	205	393	235	992	226	170
1,025	804	7	85	216	411	235	993	252	180
1,060	810	10	86	223	438	247	999	262	183
1,082	821	12	88	237	475	268	1,011	273	186
1,121	835	16	92	245	495	284	1,018	276	185
1,106	835	17	93	263	501	297	1,018	297	195
1,135	859	19	100	280	519	310	1,039	307	203
1,150	873	18	104	296	537	323	1,056	313	210
									Percentages of outstanding amounts, end of period
20.0	12.4	1.1	2.0	9.6	14.0	17.0	12.9	8.4	2.7
19.8	14.2	0.9	2.2	8.6	13.1	15.8	12.9	8.5	4.1
19.9	13.9	0.8	2.3	9.0	12.7	14.4	13.9	9.2	4.0
20.4	14.7	0.6	2.1	8.7	12.8	13.5	13.4	9.4	4.4
22.7	16.1	0.5	1.9	8.1	12.6	12.1	12.9	8.8	4.2
23.7	17.1	0.4	2.1	7.3	12.9	10.9	13.0	8.2	4.5
24.9	17.9	0.4	2.2	6.4	12.9	9.3	14.4	7.2	4.4
24.5	18.0	0.3	2.5	5.3	11.7	7.3	20.4	5.5	4.5
23.6	18.7	0.2	2.2	4.8	10.3	6.4	24.9	4.8	4.3
23.9	18.8	0.2	2.1	5.0	10.0	5.9	24.6	5.4	4.2
24.3	18.7	0.2	2.0	5.1	9.7	5.8	24.5	5.6	4.2
24.4	19.1	0.2	2.0	5.1	9.8	5.6	23.6	6.0	4.3
24.5	18.8	0.2	2.0	5.2	10.1	5.7	23.1	6.1	4.2
24.3	18.4	0.3	2.0	5.3	10.7	6.0	22.7	6.1	4.2
24.5	18.3	0.4	2.0	5.4	10.8	6.2	22.3	6.0	4.1
23.9	18.1	0.4	2.0	5.7	10.8	6.4	22.0	6.4	4.2
23.8	18.0	0.4	2.1	5.9	10.9	6.5	21.8	6.4	4.3
23.6	17.9	0.4	2.1	6.1	11.0	6.6	21.6	6.4	4.3

Table 5 Outstanding international bonds and notes, by currency and by region (cont'd)

	JPY									
	Euro area	DK, SE, UK	Other non-euro area EU	Non-EU Europe	North America	Asia & Pacific	Latin America	Offshore centres	International org.	Other
Outstanding amounts in USD billions, end of period										
1999	122	63	5	8	55	29	10	116	40	3
2000	110	56	4	9	60	25	11	109	32	2
2001	98	46	3	8	60	19	12	104	27	3
2002	105	39	3	8	63	20	11	106	30	3
2003	112	45	3	9	67	23	9	117	35	3
2004	124	51	3	10	73	21	8	117	35	3
2005	116	49	4	10	65	18	4	91	32	2
2006	120	51	5	12	69	19	2	91	31	2
2007	140	66	6	14	93	25	4	93	35	2
2008	174	92	7	22	120	40	3	118	45	2
2009 Q1	156	84	7	21	108	42	2	108	43	2
Q2	161	84	6	22	107	44	2	108	44	2
Q3	168	89	6	24	110	48	3	117	46	2
Q4	156	88	7	25	103	46	5	111	44	2
2010 Q1	144	87	7	25	97	48	4	108	44	2
Q2	149	93	7	27	101	49	4	110	45	2
Q3	155	106	7	31	105	54	5	116	48	2
Q4	160	112	7	32	103	57	7	119	49	2
Percentages of outstanding amounts, end of period										
1999	27.1	13.9	1.1	1.8	12.3	6.5	2.1	25.7	8.9	0.6
2000	26.5	13.4	0.9	2.1	14.3	5.9	2.6	26.1	7.7	0.5
2001	25.9	12.2	0.7	2.1	15.9	5.1	3.1	27.3	7.1	0.7
2002	27.0	10.1	0.6	2.2	16.1	5.2	2.9	27.4	7.8	0.8
2003	26.6	10.6	0.7	2.2	15.9	5.3	2.1	27.6	8.3	0.8
2004	27.9	11.6	0.7	2.1	16.4	4.8	1.7	26.3	7.9	0.6
2005	29.6	12.6	1.0	2.6	16.7	4.5	1.0	23.2	8.2	0.6
2006	29.9	12.6	1.2	3.0	17.1	4.7	0.5	22.7	7.7	0.5
2007	29.3	13.7	1.2	3.0	19.4	5.3	0.9	19.5	7.4	0.4
2008	27.9	14.7	1.2	3.5	19.2	6.4	0.4	19.0	7.3	0.4
2009 Q1	27.2	14.7	1.2	3.6	18.8	7.3	0.4	18.9	7.5	0.4
Q2	27.8	14.5	1.0	3.7	18.5	7.6	0.4	18.6	7.6	0.3
Q3	27.5	14.5	1.1	4.0	17.9	7.8	0.4	19.1	7.4	0.4
Q4	26.6	15.0	1.2	4.2	17.6	7.8	0.8	18.9	7.6	0.4
2010 Q1	25.5	15.4	1.2	4.5	17.2	8.4	0.8	19.1	7.7	0.4
Q2	25.3	15.9	1.2	4.6	17.2	8.3	0.8	18.7	7.7	0.4
Q3	24.7	16.9	1.1	4.9	16.7	8.6	0.8	18.5	7.6	0.3
Q4	24.7	17.3	1.0	5.0	15.9	8.7	1.0	18.4	7.6	0.3

Sources: BIS and ECB calculations.
Note: Narrow definition of international bonds and notes.

Table 6 Outstanding international bonds and notes in selected regions at the end of the review period, by currency

(percentages; narrow measure; in USD billions and as a percentage of the total amount outstanding)

	Total amounts outstanding (USD billion)	*of which denominated in:*			
		US dollar	Euro	Japanese yen	Other currencies
Africa	39	62.0	33.7	3.7	0.6
Asia and Pacific	808	66.6	16.7	7.0	9.7
of which:					
Japan	68	68.4	20.5	…	11.0
Europe	5,016	43.5	30.7	6.2	19.7
of which:					
Euro area	2,064	55.7	…	7.7	36.6
Denmark, Sweden, United Kingdom	2,476	35.2	53.7	4.5	6.6
Other non-euro area EU Member States	159	13.7	76.4	4.3	5.6
EU27	4,699	43.5	30.4	5.9	20.2
Non-EU developed Europe [1]	229	28.0	43.4	14.1	14.5
Non-EU developing Europe	94	77.8	16.7	0.0	5.5
International organisations	881	35.6	27.5	5.6	31.3
Latin America	381	84.8	11.5	1.8	2.0
Middle East	144	84.9	12.0	0.3	2.8
North America	1,273	23.3	47.1	8.1	21.6
of which:					
Canada	383	77.4	12.7	2.5	7.3
United States	891	…	61.8	10.5	27.7
Offshore centres	1,493	72.7	12.7	8.0	6.6
Total	**10,035**	**48.7**	**27.7**	**6.5**	**17.2**

Sources: BIS and ECB calculations.
1) Iceland, Norway, Switzerland and European microstates.

3 THE EURO IN INTERNATIONAL LOAN AND DEPOSIT MARKETS

Table 7 Outstanding international loans, by currency

	All cross-border loans [1]					Loans by banks outside the euro area to borrowers outside the euro area [2]				
	Total	of which:				Total	of which:			
		EUR	USD	JPY	Other		EUR	USD	JPY	Other
Outstanding amounts in USD billions, at current exchange rates, end of period										
1999	1,854	234	979	95	545	462	37	274	40	111
2000	1,851	266	999	81	505	441	42	254	47	98
2001	2,023	304	1,174	84	462	446	50	260	47	90
2002	2,232	379	1,241	105	506	504	79	263	50	113
2003	2,672	519	1,465	116	571	599	110	292	44	154
2004	3,076	666	1,612	152	646	666	157	296	42	171
2005	3,420	639	1,889	118	774	777	141	385	58	194
2006	4,505	832	2,545	121	1,007	1,003	173	497	51	282
2007	5,649	1,210	2,966	181	1,292	1,404	299	646	73	386
2008	5,401	1,145	2,831	168	1,258	1,374	230	712	77	355
2009 Q1	5,209	1,065	2,831	117	1,197	1,310	216	702	59	333
Q2	5,247	1,103	2,801	122	1,221	1,337	224	692	50	371
Q3	5,334	1,115	2,845	120	1,254	1,369	223	702	48	397
Q4	5,120	1,017	2,759	109	1,235	1,400	215	737	49	399
2010 Q1	5,180	1,015	2,816	102	1,248	1,403	223	732	48	400
Q2	5,097	955	2,764	110	1,268	1,336	200	699	51	386
Q3	5,473	1,099	2,921	114	1,339	1,443	222	757	58	406
Q4	5,528	1,055	2,990	127	1,356	1,431	207	757	54	413
Percentages of outstanding amounts, at constant exchange rates, end of period										
1999	100.0	15.7	49.5	6.1	28.7	100.0	10.1	56.8	10.4	22.8
2000	100.0	18.8	49.0	5.6	26.6	100.0	12.4	52.8	13.7	21.1
2001	100.0	20.3	51.7	5.9	22.1	100.0	15.0	51.7	14.9	18.4
2002	100.0	20.1	51.7	6.4	21.9	100.0	18.2	47.8	13.2	20.8
2003	100.0	20.1	53.5	5.6	20.8	100.0	18.7	47.1	9.3	24.9
2004	100.0	21.2	52.3	6.2	20.3	100.0	22.8	44.0	7.9	25.4
2005	100.0	20.3	53.0	4.8	21.9	100.0	19.4	46.7	10.2	23.7
2006	100.0	18.6	56.1	3.9	21.4	100.0	17.0	48.3	7.3	27.4
2007	100.0	19.8	53.5	4.5	22.2	100.0	19.4	46.1	7.2	27.4
2008	100.0	20.3	52.4	3.5	23.8	100.0	16.1	51.7	6.3	25.9
2009 Q1	100.0	20.2	53.6	2.7	23.4	100.0	16.3	53.0	5.4	25.3
Q2	100.0	20.0	53.8	2.8	23.4	100.0	15.9	51.9	4.4	27.8
Q3	100.0	19.4	54.2	2.5	23.9	100.0	15.0	51.8	3.9	29.3
Q4	100.0	18.6	54.5	2.5	24.3	100.0	14.3	53.0	4.0	28.7
2010 Q1	100.0	19.3	54.1	2.2	24.3	100.0	15.7	51.9	3.9	28.5
Q2	100.0	19.9	53.0	2.3	24.7	100.0	16.0	51.4	4.1	28.5
Q3	100.0	19.7	53.6	2.1	24.5	100.0	15.1	52.6	4.1	28.2
Q4	100.0	19.1	54.1	2.3	24.5	100.0	14.4	52.9	3.8	28.9
Percentages of outstanding amounts, at current exchange rates, end of period										
1999	100.0	12.6	52.8	5.1	29.4	100.0	7.9	59.4	8.6	24.1
2000	100.0	14.4	54.0	4.4	27.3	100.0	9.4	57.6	10.6	22.3
2001	100.0	15.0	58.0	4.1	22.8	100.0	11.1	58.3	10.5	20.2
2002	100.0	17.0	55.6	4.7	22.7	100.0	15.6	52.1	9.9	22.4
2003	100.0	19.4	54.8	4.4	21.4	100.0	18.3	48.7	7.3	25.7
2004	100.0	21.6	52.4	4.9	21.0	100.0	23.5	44.5	6.3	25.7
2005	100.0	18.7	55.2	3.4	22.6	100.0	18.1	49.5	7.4	25.0
2006	100.0	18.5	56.5	2.7	22.3	100.0	17.2	49.6	5.1	28.1
2007	100.0	21.4	52.5	3.2	22.9	100.0	21.3	46.0	5.2	27.5
2008	100.0	21.2	52.4	3.1	23.3	100.0	16.8	51.8	5.6	25.8
2009 Q1	100.0	20.4	54.4	2.2	23.0	100.0	16.5	53.6	4.5	25.5
Q2	100.0	21.0	53.4	2.3	23.3	100.0	16.8	51.8	3.7	27.7
Q3	100.0	20.9	53.3	2.2	23.5	100.0	16.3	51.2	3.5	29.0
Q4	100.0	19.9	53.9	2.1	24.1	100.0	15.3	52.7	3.5	28.5
2010 Q1	100.0	19.6	54.4	2.0	24.1	100.0	15.9	52.1	3.5	28.5
Q2	100.0	18.7	54.2	2.2	24.9	100.0	15.0	52.3	3.9	28.9
Q3	100.0	20.1	53.4	2.1	24.5	100.0	15.4	52.5	4.0	28.1
Q4	100.0	19.1	54.1	2.3	24.5	100.0	14.4	52.9	3.8	28.9

Sources: BIS and ECB calculations.
Note: Excluding interbank loans.
1) Including loans to/from Japan, Switzerland, the United Kingdom and the United States in their domestic currency.
2) Excluding loans to/from Japan, Switzerland, the United Kingdom and the United States in their domestic currency.

Table 8 Outstanding international deposits, by currency

	All cross-border deposits [1]					Deposits by depositors outside the euro area in banks outside the euro area [2]				
	Total	*of which:*				Total	*of which:*			
		EUR	USD	JPY	Other		EUR	USD	JPY	Other
Outstanding amounts in USD billions, at current exchange rates, end of period										
1999	1,894	393	1,136	88	277	642	89	427	40	86
2000	2,062	389	1,303	84	287	663	77	472	29	85
2001	2,386	464	1,435	84	404	835	103	510	35	187
2002	2,739	597	1,542	93	507	862	135	455	38	235
2003	3,407	812	1,898	84	613	1,046	192	531	40	282
2004	4,001	989	2,198	112	703	1,137	239	539	34	326
2005	4,123	919	2,361	116	727	1,277	239	652	55	331
2006	5,227	1,096	3,060	135	936	1,602	292	842	46	422
2007	6,574	1,387	3,863	146	1,178	2,079	431	1,082	49	517
2008	6,088	1,315	3,692	126	955	1,839	397	957	59	426
2009 Q1	5,689	1,262	3,391	96	939	1,730	375	904	42	409
Q2	5,733	1,299	3,296	102	1,036	1,779	385	897	39	458
Q3	5,824	1,313	3,383	104	1,023	1,794	384	902	44	463
Q4	5,687	1,232	3,339	94	1,021	1,792	388	896	41	468
2010 Q1	5,732	1,268	3,407	81	976	1,744	383	873	36	453
Q2	5,625	1,155	3,396	94	980	1,646	329	838	38	441
Q3	5,931	1,306	3,517	98	1,011	1,743	351	901	41	449
Q4	6,015	1,297	3,637	83	997	1,756	357	920	35	443
Percentages of outstanding amounts, at constant exchange rates, end of period										
1999	100.0	25.2	54.6	5.4	14.9	100.0	17.3	62.2	7.3	13.2
2000	100.0	24.2	56.5	5.2	14.2	100.0	15.5	66.1	5.8	12.6
2001	100.0	25.8	52.6	4.9	16.7	100.0	17.0	55.7	6.2	21.1
2002	100.0	25.7	52.0	4.6	17.7	100.0	18.8	49.5	6.0	25.7
2003	100.0	24.8	54.8	3.2	17.2	100.0	19.1	49.8	5.0	26.2
2004	100.0	24.5	55.4	3.6	16.5	100.0	20.7	47.5	3.8	28.0
2005	100.0	24.3	55.0	3.9	16.8	100.0	20.4	49.0	5.9	24.7
2006	100.0	21.2	58.4	3.8	16.6	100.0	18.3	52.0	4.2	25.5
2007	100.0	19.7	60.4	3.1	16.7	100.0	19.2	53.0	3.3	24.6
2008	100.0	20.7	60.6	2.3	16.3	100.0	20.8	52.1	3.6	23.5
2009 Q1	100.0	22.0	58.8	2.0	17.2	100.0	21.6	51.8	2.9	23.8
Q2	100.0	21.7	58.2	2.1	18.0	100.0	20.7	50.9	2.6	25.9
Q3	100.0	21.0	59.2	2.0	17.8	100.0	19.9	51.1	2.8	26.2
Q4	100.0	20.4	59.6	1.9	18.1	100.0	20.3	50.6	2.6	26.4
2010 Q1	100.0	21.8	59.2	1.6	17.3	100.0	21.7	49.9	2.4	26.1
Q2	100.0	21.8	58.9	1.8	17.5	100.0	21.3	49.8	2.5	26.5
Q3	100.0	21.7	59.6	1.7	17.0	100.0	19.8	51.9	2.4	25.8
Q4	100.0	21.6	60.5	1.4	16.6	100.0	20.4	52.4	2.0	25.2
Percentages of outstanding amounts, at current exchange rates, end of period										
1999	100.0	20.8	60.0	4.7	14.6	100.0	13.9	66.5	6.2	13.4
2000	100.0	18.8	63.2	4.1	13.9	100.0	11.6	71.1	4.4	12.8
2001	100.0	19.4	60.1	3.5	16.9	100.0	12.3	61.1	4.2	22.4
2002	100.0	21.8	56.3	3.4	18.5	100.0	15.7	52.8	4.4	27.2
2003	100.0	23.8	55.7	2.5	18.0	100.0	18.4	50.8	3.8	27.0
2004	100.0	24.7	54.9	2.8	17.6	100.0	21.0	47.4	3.0	28.6
2005	100.0	22.3	57.3	2.8	17.6	100.0	18.8	51.1	4.3	25.9
2006	100.0	21.0	58.5	2.6	17.9	100.0	18.2	52.6	2.9	26.3
2007	100.0	21.1	58.8	2.2	17.9	100.0	20.7	52.0	2.3	24.9
2008	100.0	21.6	60.6	2.1	15.7	100.0	21.6	52.0	3.2	23.2
2009 Q1	100.0	22.2	59.6	1.7	16.5	100.0	21.7	52.3	2.4	23.7
Q2	100.0	22.7	57.5	1.8	18.1	100.0	21.7	50.4	2.2	25.7
Q3	100.0	22.6	58.1	1.8	17.6	100.0	21.4	50.3	2.5	25.8
Q4	100.0	21.7	58.7	1.7	18.0	100.0	21.6	50.0	2.3	26.1
2010 Q1	100.0	22.1	59.4	1.4	17.0	100.0	21.9	50.0	2.1	26.0
Q2	100.0	20.5	60.4	1.7	17.4	100.0	20.0	50.9	2.3	26.8
Q3	100.0	22.0	59.3	1.7	17.0	100.0	20.1	51.7	2.4	25.8
Q4	100.0	21.6	60.5	1.4	16.6	100.0	20.4	52.4	2.0	25.2

Sources: BIS and ECB calculations.
Note: Excluding interbank deposits.
1) Including deposits in/of Japan, Switzerland, the United Kingdom and the United States in their domestic currency.
2) Excluding deposits in/of Japan, Switzerland, the United Kingdom and the United States in their domestic currency.

Table 9 The euro's share as a settlement/invoicing currency in extra-euro area transactions of euro area countries

(as a percentage of the total)

	Goods										Services									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Exports																				
Euro area																				
of which	-	-	-	-	-	62.6	64.1	66.1	67.4	68.0	-	-	-	-	-	51.2	54.7	52.9	53.6	54.7
Belgium	46.7	53.6	56.6	57.7	54.8	58.5	52.8	56.2	57.4	-	-	64.1	70.6	72.2	73.0	73.7	74.1	73.8	75.9	-
France	50.8	50.5	49.0	49.2	49.8	50.8	51.5	49.3	52.5	53.7	40.0	40.3	42.4	42.4	43.6	47.2	49.0	39.9	36.5	41.4
Italy	52.7	54.1	58.2	59.0	58.3	59.4	64.3	68.7	69.2	67.6	39.7	43.1	47.0	48.9	56.5	53.9	59.3	66.6	67.0	65.5
Greece	23.5	39.3	47.3	44.3	39.1	38.8	39.2	32.6	36.3	38.9	11.3	13.3	16.3	14.1	15.6	14.6	14.9	15.6	19.1	19.9
Spain	52.0	57.5	61.7	62.4	62.1	61.6	65.2	60.6	61.7	59.4	53.3	59.5	64.1	64.3	67.5	67.2	71.8	71.2	70.6	71.8
Cyprus	-	-	-	-	-	-	2.8	21.2	24.3	25.9	-	-	-	-	-	-	40.0	39.9	40.7	41.3
Luxembourg	46.7	44.0	51.5	61.8	61.4	57.7	59.2	51.9	50.3	53.1	-	40.4	41.6	41.9	42.4	47.7	48.4	46.6	47.2	44.8
Portugal	40.4	44.3	50.6	55.5	56.5	55.8	61.4	63.1	64.2	63.4	41.4	47.7	54.0	56.2	58.2	60.8	59.9	65.8	68.1	62.0
Slovenia	-	-	-	-	-	74.2	79.0	79.4	84.7	82.7	-	-	-	-	-	80.1	80.8	83.2	82.7	80.0
Slovakia	-	-	-	-	-	-	-	96.5	94.8	94.4	-	-	-	-	-	-	-	-	-	-
Imports																				
Euro area																				
of which	-	-	-	-	-	42.5	45.0	47.5	48.6	53.5	-	-	-	-	-	53.9	55.7	57.1	55.6	57.5
Belgium	47.2	53.7	57.8	55.7	51.2	58.3	56.1	56.4	57.7	-	-	60.1	65.8	68.3	71.2	73.9	71.7	73.3	70.3	-
France	42.6	40.8	44.1	45.7	46.3	44.7	44.8	44.2	44.3	46.7	43.3	44.0	46.6	49.2	50.3	54.6	54.8	54.9	49.1	54.0
Italy	40.8	44.2	44.5	41.2	39.4	43.0	44.3	47.8	49.7	47.6	45.2	53.2	54.4	52.3	55.5	56.0	59.1	63.8	62.2	65.6
Greece	29.3	35.8	39.6	40.6	34.1	33.6	34.9	37.3	37.9	36.1	15.3	16.8	20.1	22.7	24.0	26.2	29.5	29.0	34.5	31.2
Spain	49.7	55.9	61.1	61.3	56.0	54.8	56.7	58.8	60.6	58.6	45.2	48.8	54.3	57.0	60.2	60.3	60.7	61.5	61.7	60.8
Cyprus	-	-	-	-	-	-	1.7	9.8	12.7	15.6	-	-	-	-	-	-	27.9	13.3	12.9	14.1
Luxembourg	47.2	31.9	41.9	50.0	43.8	38.8	37.9	38.8	55.3	51.1	-	27.7	34.3	30.2	31.2	29.8	34.0	38.4	41.2	40.6
Portugal	50.5	54.9	58.1	58.0	54.4	52.6	51.8	53.7	56.6	52.1	62.6	64.9	68.9	70.8	72.5	74.5	72.6	73.3	72.7	71.3
Slovenia	-	-	-	-	-	64.0	73.1	75.0	69.9	62.0	-	-	-	-	-	53.1	57.2	58.1	64.8	67.1
Slovakia	-	-	-	-	-	-	-	82.1	77.8	76.5	-	-	-	-	-	-	-	-	-	-

Sources: National Central Banks and ECB calculations.
1) Data for Cyprus, Spain and Luxembourg refer to the currency of settlement.
2) Services data for Cyprus and Spain exclude travel item.
3) Data for Belgium as of 2007 are based on estimates and are not comparable with data for previous years.

Table 10 The euro's share as a settlement/invoicing currency in extra-EU exports and imports of goods

(as a percentage of the total)

	Exports				Imports			
	2007	2008	2009	2010	2007	2008	2009	2010
Euro area countries								
Austria	-	75.6	74.9	74.1	-	63.0	55.9	55.4
Cyprus	4.7	19.3	23.4	25.7	1.5	9.0	12.1	14.7
France	51.5	49.3	43.8	44.7	44.8	44.2	37.3	40.4
Germany	-	-	66.4	66.3	-	41.2	35.3	49.4
Greece	23.3	20.9	27.2	34.1	23.9	28.2	24.5	27.8
Ireland	18.9	17.1	16.7	13.4	42.9	36.3	34.7	25.5
Italy	58.5	64.1	64.3	62.7	32.6	39.4	38.6	39.4
Luxembourg	-	44.9	43.9	54.5	-	38.2	48.6	42.3
Portugal	57.9	61.1	61.2	60.7	43.7	48.1	50.7	46.7
Slovakia	-	-	81.3	81.2	-	-	43.9	44.8
Slovenia	-	82.9	81.5	81.7	-	65.0	58.7	56.7
Spain	58.0	55.2	57.4	55.4	45.8	49.7	52.1	51.4
Non-euro area EU countries								
Bulgaria	36.1	41.5	45.0	46.8	24.4	25.0	28.9	28.6
Czech Republic	-	-	50.1	50.8	-	-	25.0	23.6
Estonia	-	-	37.7	44.2	-	-	35.5	36.6
Latvia	-	-	41.8	39.3	-	-	49.2	44.8
Lithuania	-	-	45.9	48.9	-	-	24.7	18.8
Romania	41.2	41.3	55.1	52.6	37.1	35.7	34.7	35.6

Sources: National central banks/national statistical offices and ECB calculations.
1) Data for Bulgaria for 2010 refer to the first quarter only.
2) Data for Romania for 2010 cover the period from January to November.

Table 11 The euro's share in total exports and imports in non-euro area countries

(as a percentage of the total)

	Goods										Services									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Exports																				
Bulgaria	48.1	52.4	60.7	62.2	60.4	57.7	60.5	61.5	68.6	53.8	-	-	-	-	-	73.1	76.3	77.9	79.0	74.7
Czech Republic	68.7	68.2	70.3	73.4	71.9	68.8	72.0	73.6	76.0	76.4	62.5	67.9	67.9	68.3	64.6	70.3	67.2	72.3	76.0	77.1
Estonia	53.8	65.3	70.3	65.7	60.3	55.1	57.8	59.1	-	-	10.3	21.6	37.4	38.3	41.6	44.2	48.0	53.3	-	-
Latvia	34.1	40.4	41.6	47.9	53.3	54.8	59.5	66.9	66.4	64.4	-	-	20.7	26.4	33.2	37.9	42.5	51.5	53.9	52.4
Lithuania	27.8	36.6	46.8	49.7	51.3	56.2	56.5	57.3	56.3	56.8	28.5	38.4	42.8	49.4	51.1	51.9	53.9	54.7	57.7	54.8
Poland	57.2	60.1	64.9	69.3	70.1	69.9	69.8	68.2	66.1	-	57.2	60.1	64.9	69.3	70.1	69.9	69.8	68.2	66.1	-
Romania	55.7	58.6	63.8	66.3	64.3	67.6	67.7	68.5	75.9	72.5	-	-	-	-	71.0	72.0	71.2	75.2	73.8	63.4
Imports																				
Bulgaria	55.5	60.1	62.7	63.6	60.4	58.9	60.2	65.7	70.9	65.0	-	-	-	-	-	69.9	77.1	77.1	80.8	86.7
Czech Republic	66.6	66.7	67.6	71.3	70.6	67.8	68.0	68.3	68.9	68.5	58.1	62.9	59.0	64.8	61.1	61.4	61.3	69.3	78.4	76.9
Estonia	53.9	59.3	61.5	59.7	59.0	56.1	58.5	59.1	-	-	14.6	31.4	46.9	34.2	39.8	42.3	51.2	53.6	-	-
Latvia	44.5	51.9	49.6	52.8	59.2	61.2	67.2	67.4	66.1	61.8	-	-	25.4	29.0	33.3	36.8	39.3	42.7	42.8	45.3
Lithuania	38.3	48.5	53.0	55.0	51.3	53.8	55.4	54.6	55.1	51.5	31.8	40.6	43.0	47.0	47.8	54.1	53.5	51.0	48.7	49.7
Poland	57.7	59.6	60.2	61.7	60.5	58.6	59.1	56.4	54.8	-	40.8	46.8	52.1	53.0	54.8	54.3	54.0	54.0	58.9	-
Romania	60.6	65.6	67.9	70.8	71.1	73.4	71.5	70.9	73.2	66.1	-	-	-	-	64.0	69.0	74.6	74.5	78.6	68.3

Sources: National sources.
1) Data for Bulgaria and Latvia refer to the currency of settlement.
2) Data for Bulgaria for 2010 refer to the first quarter only.
3) Data for Romania for 2010 cover the period from January to November.

5 THE EURO AS A PARALLEL CURRENCY: THE USE OF EURO-DENOMINATED BANK LOANS AND DEPOSITS IN COUNTRIES OUTSIDE THE EURO AREA

Table 12 Outstanding euro-denominated bank loans in selected countries and dependent territories

	Absolute amounts (EUR millions)		Percentages of total loans		Percentages of foreign loans	
	2009	2010	2009	2010	2009	2010
Non-euro area EU Member States						
Bulgaria	14,730	15,605	56.5	59.2	96.8	96.8
Czech Republic	5,678	5,962	7.9	7.6	90.9	92.8
Denmark	53,889	58,234	11.0	11.7	73.8	78.2
Latvia	16,984	15,610	89.1	89.3	96.9	96.9
Lithuania	12,790	12,332	69.5	71.8	95.8	96.6
Hungary	15,742	15,355	24.6	23.8	38.3	37.2
Poland	12,886	15,877	7.9	8.7	25.1	26.8
Romania	24,526	26,774	52.0	54.5	86.5	86.4
Sweden	7,590	7,068	1.9	1.5	41.0	38.9
United Kingdom	230,440	258,758	8.2	8.8	46.2	47.8
Other countries						
Albania	1,939	2,082	54.1	55.6	83.1	82.8
Bosnia and Herzegovina	4,932	5,292	68.4	71.0	93.2	93.5
Croatia	19,851	21,224	57.7	57.9	79.0	78.9
FYR Macedonia	604	766	20.8	24.9	95.2	98.1
Israel	3,518	3,322	3.0	2.3	20.2	17.3
Moldova	355	404	28.0	25.7	57.5	55.2
South Africa	1,043	2,524	0.5	1.0	6.9	14.1
Switzerland	26,002	28,921	3.7	3.4	24.4	22.7
Turkey	38,081	51,272	20.8	20.0	65.5	63.0

Sources: National central banks and ECB calculations.
Notes: Definitions of loans may vary across countries. Data may be subject to revisions as compared with previous issues of this report owing to methodological changes. Where available, foreign exchange-indexed loans are included. Figures for Turkey include foreign branches of Turkish banks.

Table 13 Outstanding euro-denominated bank deposits in selected countries and dependent territories

	Absolute amounts (EUR millions)		Percentages of total deposits		Percentages of foreign deposits	
	2009	2010	2009	2010	2009	2010
Non-euro area EU Member States						
Bulgaria	9,380	9,347	46.1	42.4	86.3	84.3
Czech Republic	6,088	6,439	6.7	6.5	80.3	80.1
Denmark	3,885	4,556	2.4	2.8	52.2	55.9
Latvia	3,618	3,424	49.8	43.5	89.5	86.5
Lithuania	3,087	2,850	29.1	25.0	87.8	84.1
Hungary	8,195	8,074	17.7	17.7	84.2	82.2
Poland	9,150	9,937	6.2	5.9	67.3	66.6
Romania	14,036	13,094	35.5	31.4	91.5	87.2
Sweden	4,944	6,972	2.9	3.2	53.8	58.8
United Kingdom	179,249	173,860	7.1	6.3	46.6	42.9
Other countries						
Albania	1,204	1,705	21.1	25.5	47.5	53.4
Bosnia and Herzegovina	2,795	2,821	45.2	44.1	91.6	91.1
Croatia	17,865	18,929	62.7	64.0	93.0	91.9
FYR Macedonia	1,478	1,596	58.6	56.4	90.4	90.8
Israel	9,974	9,530	6.8	5.5	24.9	22.4
Moldova	489	569	35.4	33.1	70.3	70.0
South Africa	1,526	1,921	1.0	1.0	13.6	14.2
Switzerland	85,032	82,442	14.9	11.7	44.7	38.4
Turkey	32,360	33,552	13.7	11.3	41.0	38.5

Sources: National central banks and ECB calculations.
Notes: Definitions of deposits may vary across countries. Data may be subject to revisions as compared with previous issues of this report owing to methodological changes. Where available, foreign exchange-indexed deposits are included. Figures for Turkey include foreign branches of Turkish banks.

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