



EUROPEAN CENTRAL BANK

EUROSYSTEM

The international role of the euro

Foreign Exchange
Contact Group

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The views expressed here are those of the authors and do not necessarily represent those of the ECB or the Eurosystem

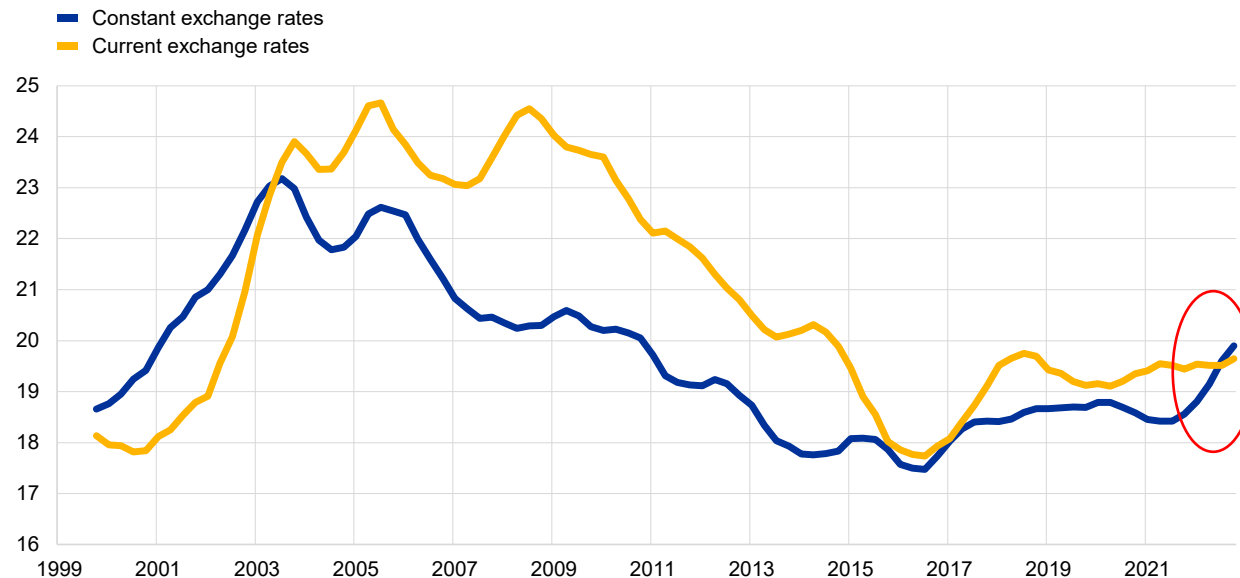
Outline

1. Key developments
2. Brexit Box
3. Special features
4. Conclusions

The international role of the euro remained resilient in 2022

Composite index of the international role of the euro

(percentages; at current and constant Q4 2022 exchange rates; four-quarter moving averages)



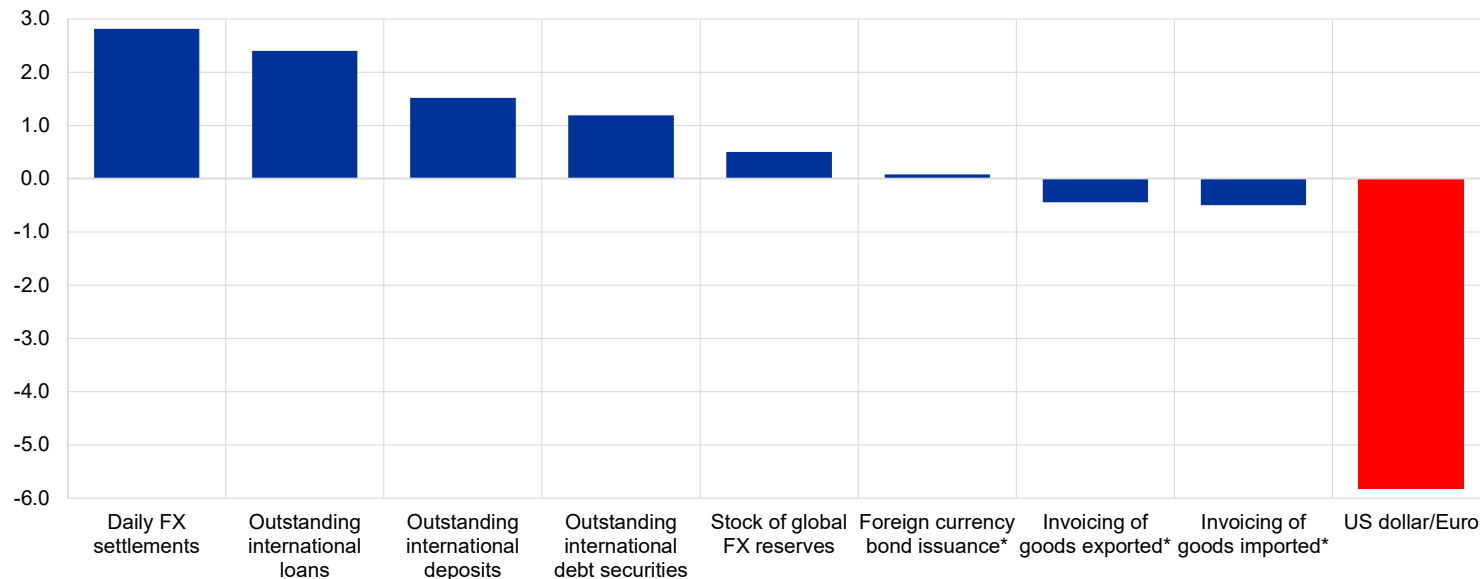
Sources: Bank for International Settlements (BIS), International Monetary Fund (IMF), CLS Bank International, Ilizetzki, Reinhart and Rogoff (2019) and ECB staff calculations.

Notes: Arithmetic average of the shares of the euro at constant and current exchange rates in stocks of international debt securities, loans by banks outside the euro area to borrowers outside the euro area, deposits with banks outside the euro area from creditors outside the euro area, daily foreign exchange trading (settled by CLS), global foreign exchange reserves and global exchange rate regimes. The estimates for the share of the euro in global exchange rate regimes are based on IMF data for the period post-2010; pre-2010 shares were estimated using data from Ilizetzki, E., Reinhart, C. and Rogoff, K. (2019), "Exchange Arrangements Entering the 21st Century: which anchor will hold?", Quarterly Journal of Economics, Vol. 134, Issue 2, May, pp. 599-646. The latest observation is for the fourth quarter of 2022.

The international role of the euro increased in most market segments

Evolution in the international role of the euro over the review period

(percentage point changes at constant Q4 2022 exchange rates, unless otherwise indicated)



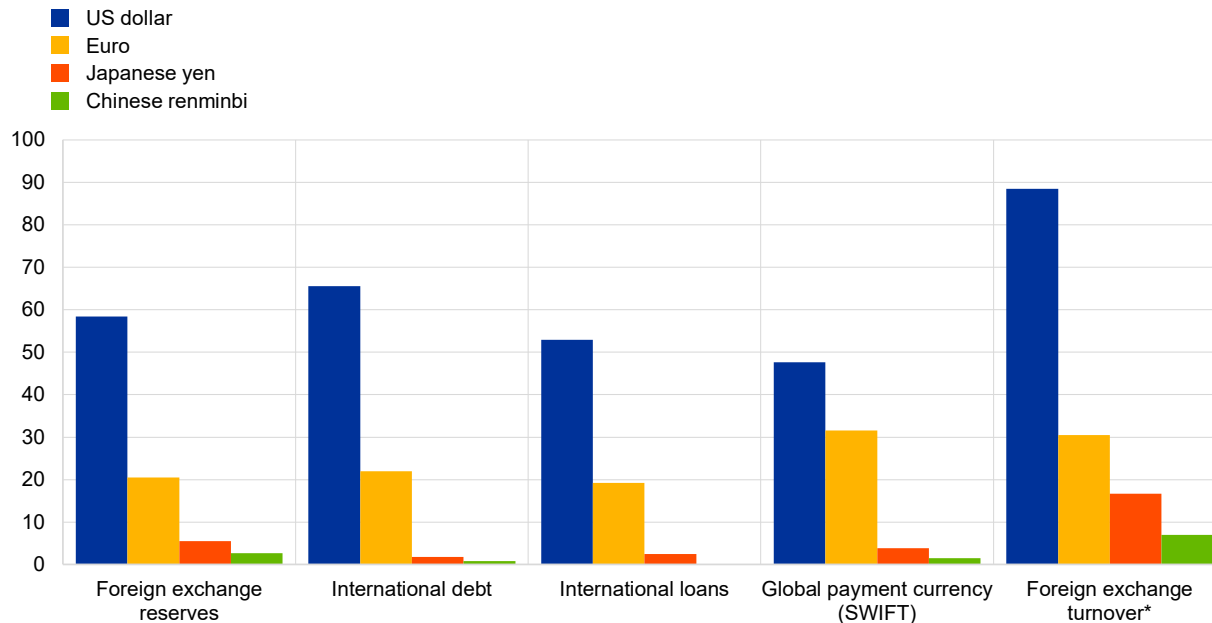
Sources: BIS, CLS Bank International, Dealogic, IMF, national sources, and ECB staff calculations.

Notes: For definitions of the measures, see Table 1 of IRE 2022. * Indicates percentage point change at current exchange rates. The red bar indicates the percentage change of the daily US dollar/Euro exchange rate between 31/12/2021 and 30/12/2022.

The euro remained the second most important currency globally

Snapshot of the international monetary system

(percentages)



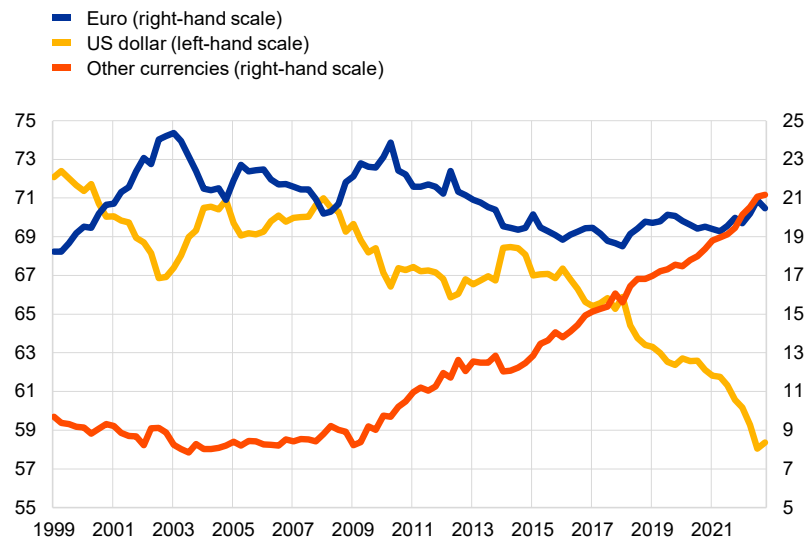
Sources: BIS, IMF, Society for Worldwide Interbank Financial Telecommunication (SWIFT) and ECB staff calculations.

Notes: The latest observation for foreign exchange reserves, international debt and international loans are for the fourth quarter of 2022. Foreign exchange turnover data as at April 2022 and SWIFT data as at December 2022. *Since transactions in foreign exchange markets always involve two currencies, shares add up to 200%.

Box 3: Official reserve managers actively rebalanced their portfolios

Evolution of the share of selected currencies in global foreign exchange reserves

(percentages; at constant Q4 2022 exchange rates)

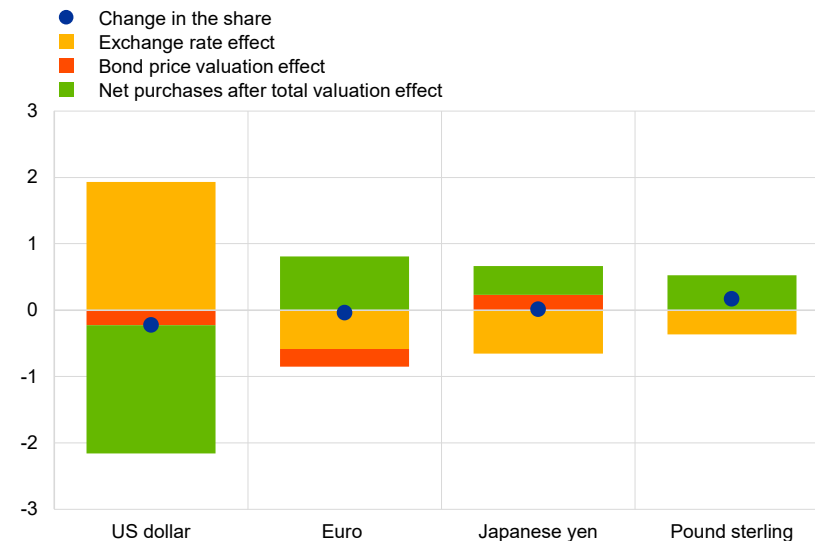


Sources: IMF and ECB staff calculations.

Note: The latest observation is for the fourth quarter of 2022

Breakdown of changes in the shares of selected currencies in global official foreign exchange reserves in 2022

(percentage points, at current exchange rates)



Sources: IMF and ECB staff calculations.

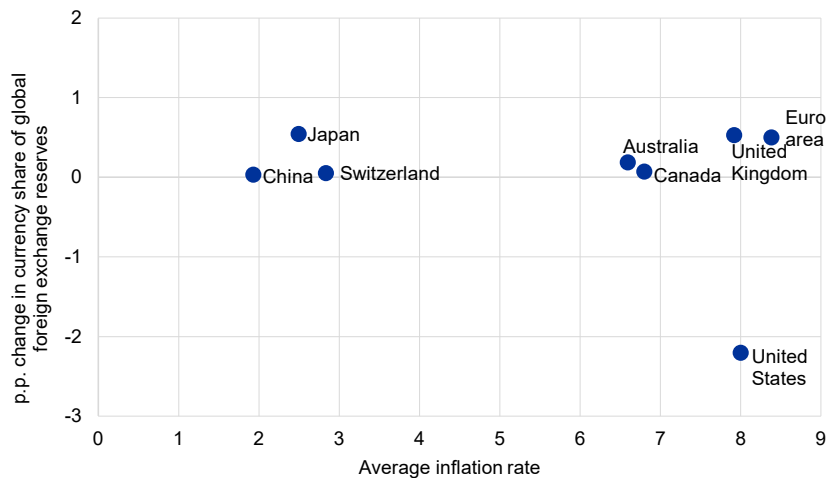
Notes: Valuation effects are accounted for by netting out the change in bond valuations, interest rates and exchange rates from the total change in the value of official reserves. The latest observation is for the fourth quarter of 2022.

Inflation uncorrelated with changes in foreign exchange reserves

Interest rates in the euro area still lower than in other major economies

Changes in the share of selected currencies in foreign exchange reserves and inflation in 2022

(x-axis: percentages; y-axis: percentage points, at constant Q4 2022 exchange rates)

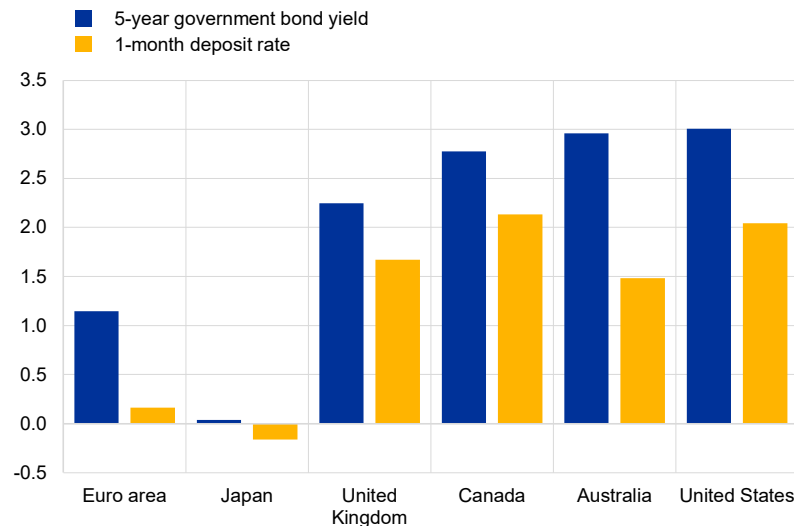


Sources: IMF and ECB calculations.

Note: The latest observation of the foreign exchange reserve data is for the fourth quarter of 2022.

Five-year and one-month interest rate in the major economies in 2022

(percentages)



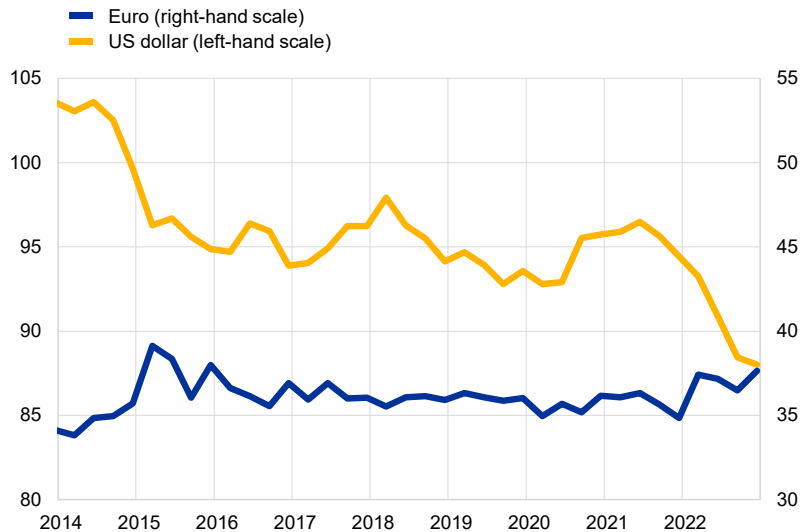
Sources: Refinitiv Datastream, BIS and ECB calculations.

Note: The five-year government yield for the euro area is calculated as a debt-weighted average of five-year euro area yields of sovereigns with a Standard & Poor's credit rating of at least AA.

The euro remained the second most important currency in global foreign exchange settlements

Share of foreign exchange transactions settled in CLS

(percentages at constant Q4 2022 exchange rates)

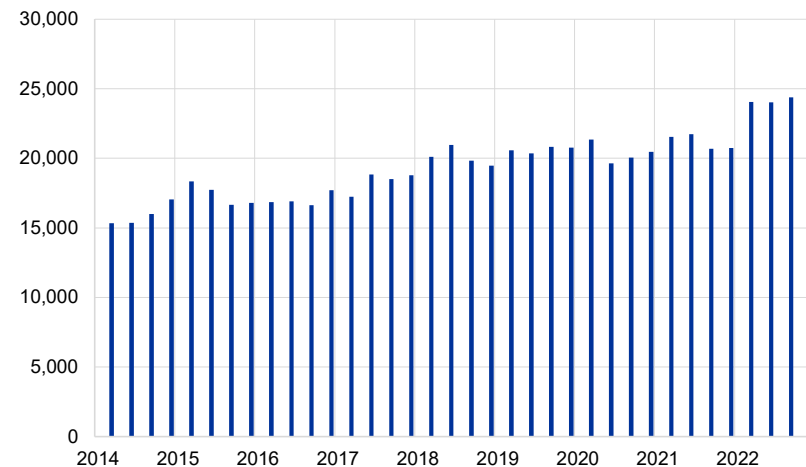


Sources: ECB calculations based on CLS Bank International data.

Notes: As two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%. The latest observation is for the fourth quarter of 2022.

Total value of euro-denominated foreign exchange transactions settled in CLS

(EUR billion equivalents per quarter)

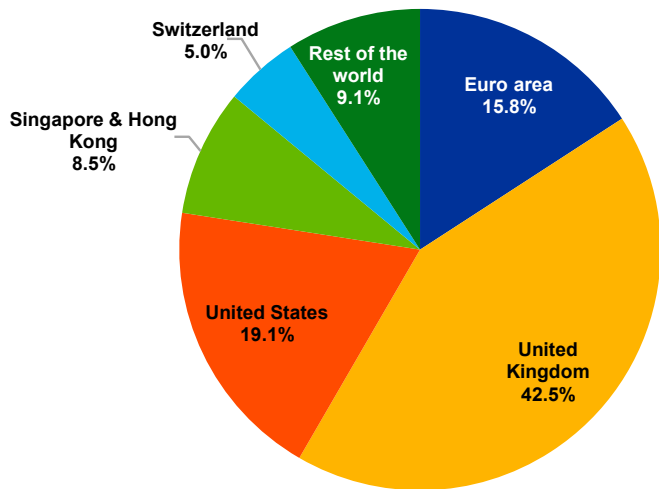


Sources: ECB calculations based on CLS Bank International data.

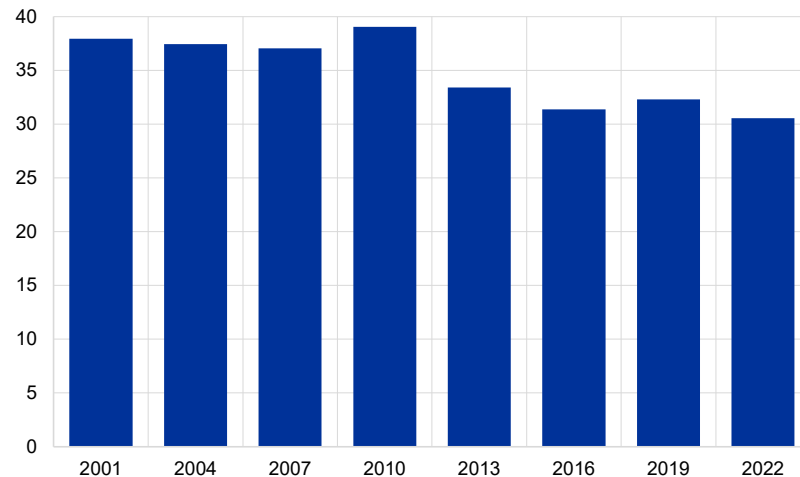
Note: The latest observation is for the fourth quarter of 2022.

The share of the euro in global OTC transactions decreased slightly in the latest BIS Triennial Survey compared with the previous survey

Share of selected economies in global foreign exchange transactions in euro in 2022 (percentages)



Share of the euro in global OTC foreign exchange transactions, on a net-net basis (percentages, in April of the corresponding year shown on the x-axis)



Sources: BIS and ECB calculations.

Notes: The data on geographical locations include spot transactions, outright forwards, foreign exchange swaps, currency swaps, options and other products. They are adjusted for local inter-dealer double-counting (i.e. on a net-gross basis). The BIS uses several criteria to determine the location of a foreign exchange transaction, notably the location of the initiating sales desk.

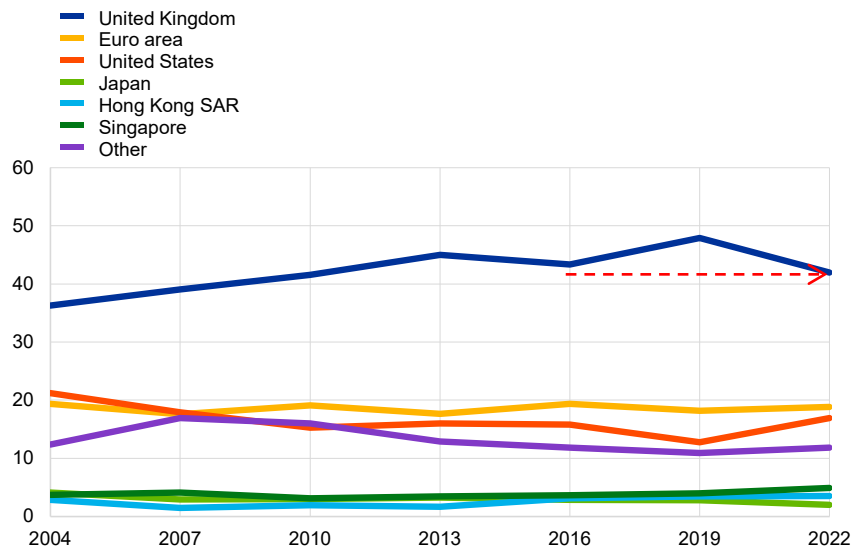
Sources: BIS and ECB calculations.

Notes: As two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%. Adjusted for local and cross-border inter-dealer double-counting (i.e. on a "net-net" basis).

Box 4 on Brexit: Average daily turnover (notional) of euro-denominated foreign exchange (FX) and over-the-counter (OTC) interest rate derivatives

Average daily turnover (notional) of FX spot and derivatives

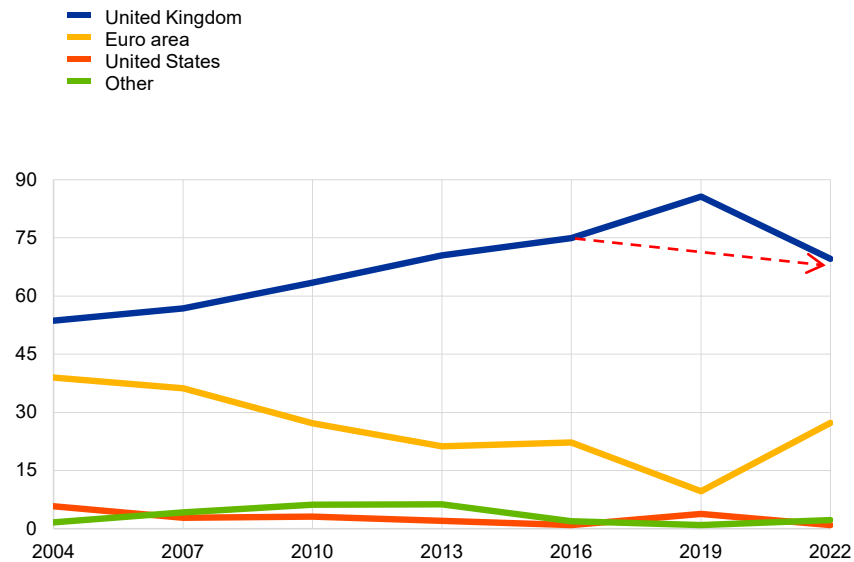
(percentages)



Sources: BIS Triennial Central Bank Survey of FX and OTC derivatives markets and ECB calculations.
 Notes: Foreign exchange transactions are net of local inter-dealer double-counting. The chart shows the share of the average daily turnover (notional) in the total, on a net-gross basis, of foreign exchange spot, swaps, forwards and options.

Average daily turnover (notional) of OTC IRDs

(percentages)



Sources: BIS Triennial Central Bank Survey of FX and OTC derivatives markets and ECB calculations.
 Notes: The chart shows OTC IRDs including forward rate agreements, interest rate swaps and options. Corrected for local but not cross-border inter-dealer double-counting (i.e. "net-gross" basis).

Special features

- A. Geopolitical fragmentation risks and international currencies
- B. How a leading international currency replace another
- C. Determinants of currency choice in cross-border bank loans

Special features

A. Geopolitical fragmentation risks and international currencies

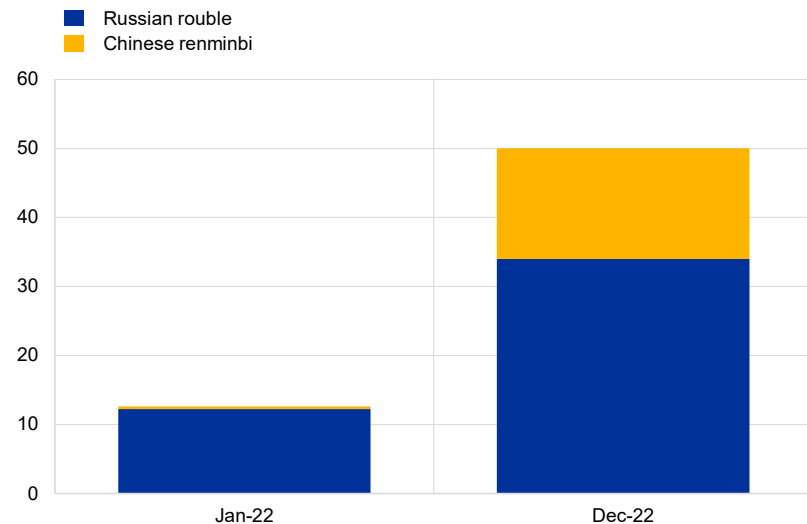
B. How a leading international currency replace another

C. Determinants of currency choice in cross-border bank loans

Evidence of a stronger role of the Chinese renminbi in Russia's international trade invoicing and cross-border payment patterns

Breakdown of Russia's exports by invoicing currency

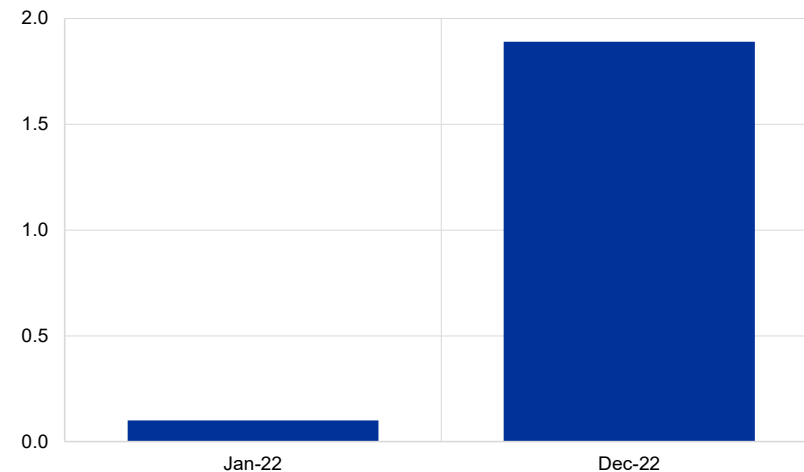
(percentages)



Sources: Central Bank of Russia and ECB staff calculations.

Russia's share of offshore renminbi cross-border payments in SWIFT

(percentages)

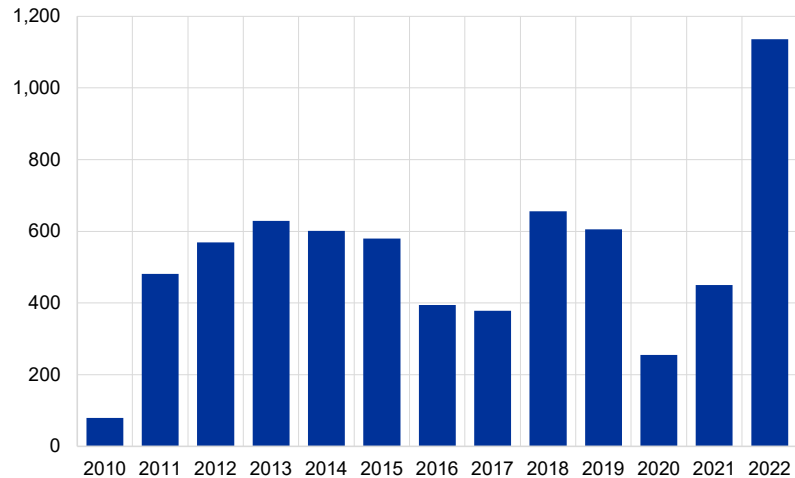


Source: SWIFT. Notes: share of Russia in total offshore renminbi cross-border payments excluding China. In January 2022 Russia was not in the top 15 countries for renminbi offshore payment volumes and for this reason its share is not reported by SWIFT. For that period Russia's share is approximated using the smallest share reported by SWIFT.

Though some evidence points to accumulation of gold by countries geopolitically close to China and Russia

Evolution of gold purchases by central banks

(tonnes)

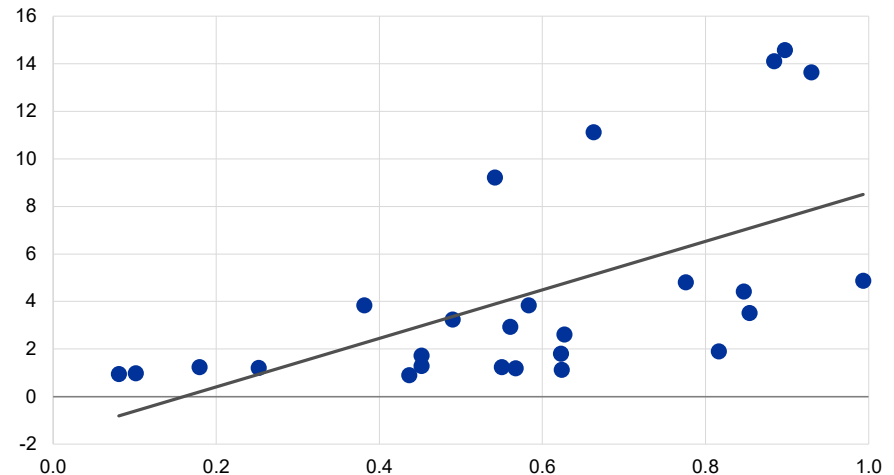


Sources: IMF, Metals Focus, Refinitiv GFMS, World Gold Council.

Notes: The blue bars show demand for gold by central banks and other institutions reported by the World Gold Council. Latest observation is 31 December 2022.

Correlation between geopolitical alignment and change in the share of gold in reserve assets

(x-axis: geopolitical index; y-axis: percentage point change)



Sources: ECB calculations based on the Global Sanctions Database (GSDB), SIPRI Arms Transfers Database, Green Finance & Development Center, the United Nations, World Gold Council and the IMF.

Notes: The scatterplot includes countries that increased the share of gold in their official foreign reserves more than the average change across all countries. The share of gold in total reserves is calculated using World Gold Council data. The geopolitical index measures the closeness of a country to the country pair China-Russia versus the United States where a higher value indicates that a country is closer to China-Russia than to the United States. The latest observation is for the fourth quarter of 2022.

Special features

A. Geopolitical fragmentation risks and international currencies

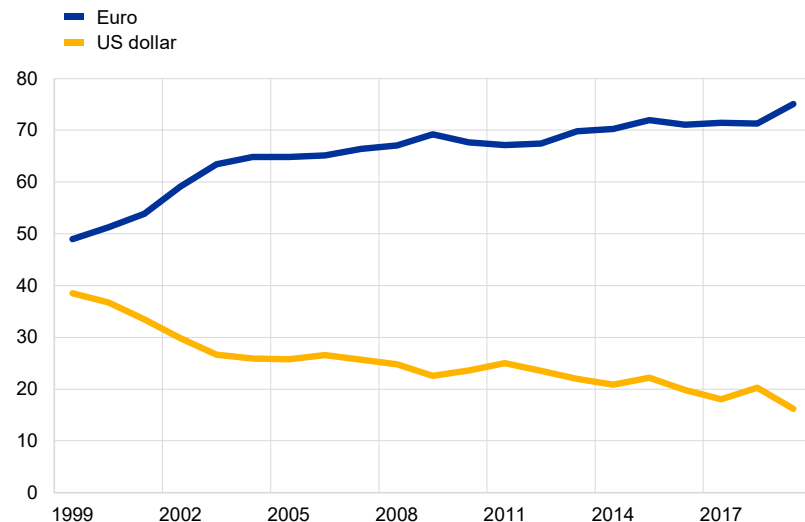
B. How a leading international currency replace another

C. Determinants of currency choice in cross-border bank loans

Countries neighbouring the euro area increased euro invoicing at the expense of the US dollar: trade or exchange rate volatility shock?

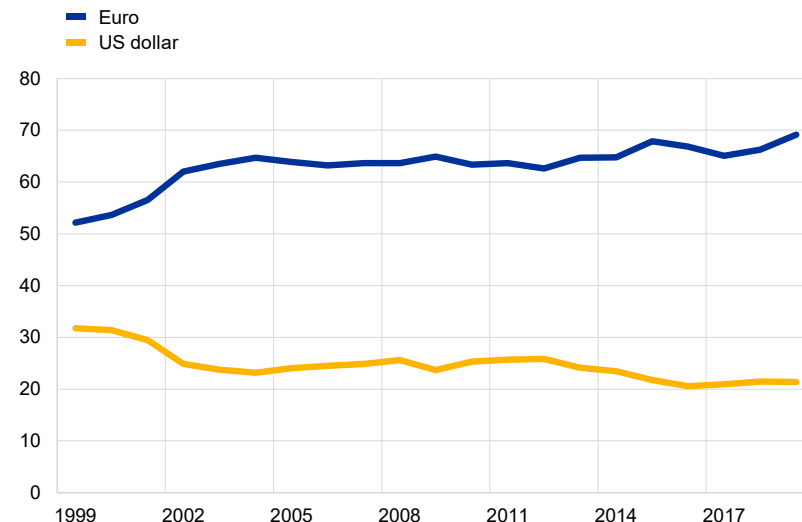
Share of the euro and the US dollar as an invoicing currency for exports

(percentages)



Share of the euro and the US dollar as an invoicing currency for imports

(percentages)

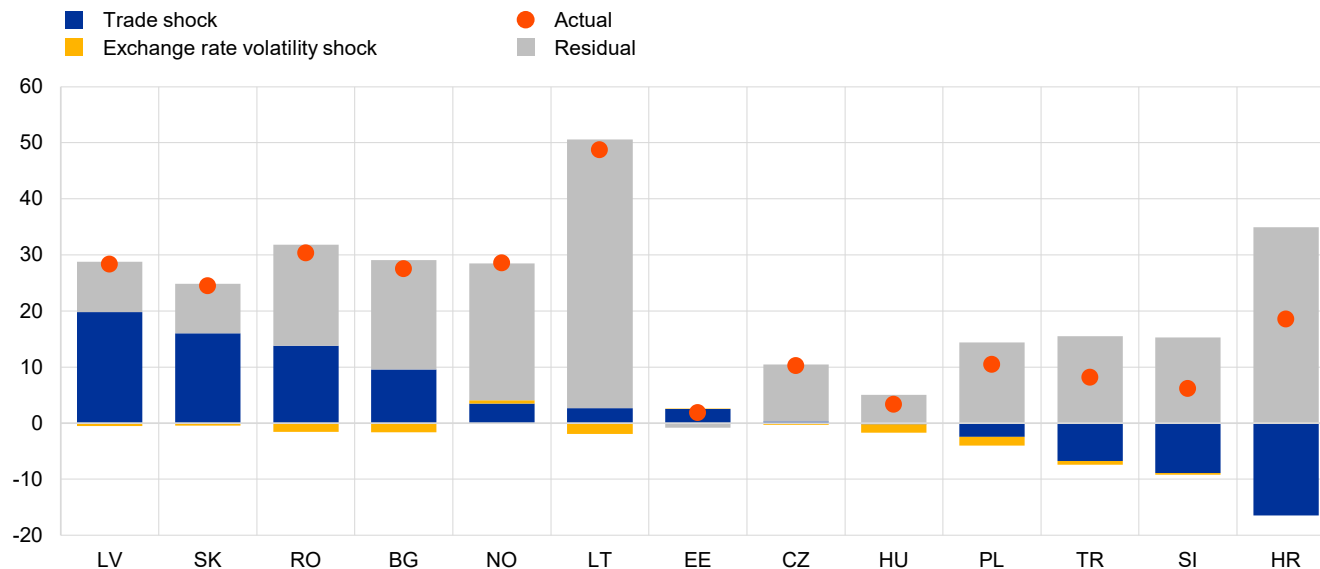


Source: Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T. (2022), "Patterns of invoicing currency in global trade: New evidence", Journal of International Economics, Vol. 136.
Notes: Cross-country averages of individual observations of a sample of countries neighbouring the euro area which were not inaugural members of the euro area in 1999 (Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, North Macedonia, Norway, Poland, Romania and Slovakia). The latest observation is for 2019.

Trade integration with the euro area can support the euro's role as a invoicing currency

Historical decomposition of the share for export invoicing across countries

(percentage points)



Sources: Mehl, Mlikota and Van Robays, "How does a dominant currency replace another? Evidence from European trade", CEPR Discussion Paper, forthcoming. Notes: For each country, the red dot indicates the actual increase in the share of the euro as an invoicing currency for exports between 2000 and 2019. The blue (yellow) bars indicate the estimated contribution of the trade (exchange rate volatility) shock, while the grey bar is the residual. The residual component encapsulates other important determinants of invoicing currency choice that are not explicitly modelled, such as changes to the economic fundamentals of the dominant currency issuer (such as higher inflation, geopolitical shocks, or policy support).

Conclusions

- International role of the euro resilient in 2022
- No substantial changes in use of international currencies since Russia's war in Ukraine, only anecdotal evidence
- But international currency status should not be taken for granted
- European economic integration pivotal in increasing resilience of the international role of the euro in a more fragmented world economy

Issues for discussion

- How have higher interest rates and inflation affected the international role of currencies?
- Have geopolitical developments, such as Russia's war in Ukraine, changed the use of international currencies?
- What are the consequences of Brexit for the international role of the euro?
- What could be done to support the international role of the euro?

Additional background slides 2023 report

Special Feature A: Debate on the impact of geopolitical fragmentation risks on the international monetary system following Russia's invasion of Ukraine

Towards a new regime...

- Sanctions imposed on Russia eroded confidence in the US dollar among countries not geopolitically aligned with the United States
- Incentives to diversify reserves into non-traditional currencies, physical gold, or reduce level of exposure to FX reserves

...or status quo?

- Sound institutions and macroeconomic fundamentals remain essential determinants of the currencies used as a global safe asset
- No obvious alternative to deep and liquid financial markets in debt securities in US dollars, open to both domestic and foreign investors

Special Feature A: Official statements point to the intention of some countries to use alternative currencies for invoicing international trade

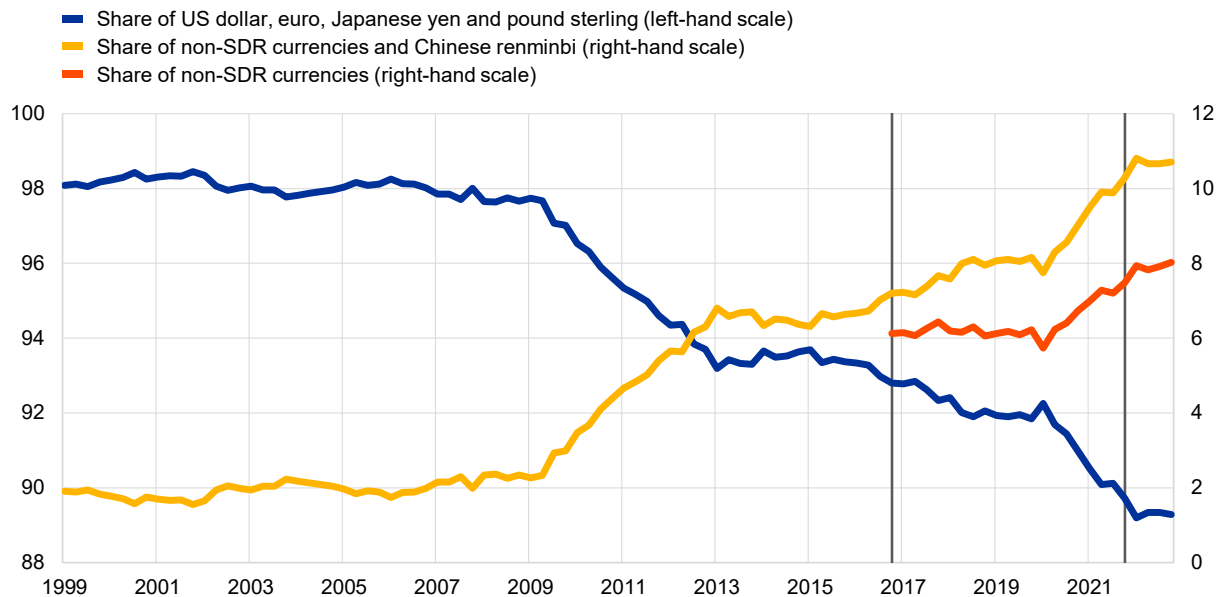
- Russia “seeks” payment for oil exports in **United Arab Emirates dirhams** from India (18/07/2022)
- Presidents Putin and Erdoğan agree to pay Russian gas in **roubles** in “near future” (16/09/2022)
- President Xi “encourages” Gulf nations to settle oil and gas in **renminbi** “in the future” (09/12/2022)
- President Lula calls on BRICS countries to use their **own currencies** in international trade (13/04/2023)

Sources: Reuters, Bloomberg, Markets Insider and the Financial Times.

Special Feature A: Diversification into non-traditional reserve currencies has not accelerated visibly since Russia's invasion of Ukraine

Currency shares in total allocated foreign exchange reserves

(percentages, at current exchange rates)

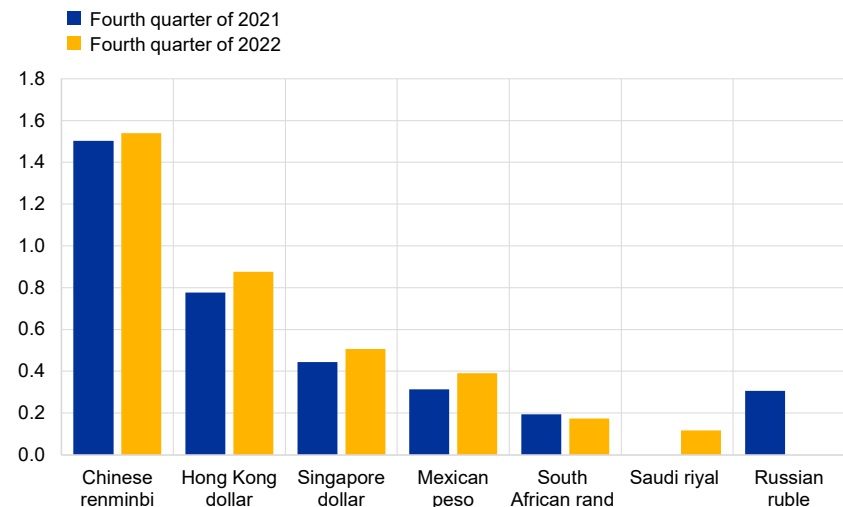


Sources: IMF and COFER. Notes: The main reserve currencies are the US dollar, the euro, the Japanese yen and the pound sterling. Although COFER provides separate data on reserves held in the Australian dollar, Canadian dollar, Chinese renminbi and the Swiss franc, Arslanalp et al. (2022) estimate that the remaining reserve currencies are the Swedish krona, Norwegian krone, Danish krone, Korean won, Singapore dollar, New Zealand dollar and the Hong Kong dollar. The share of non-SDR currencies comprises all currencies other than the main four currencies mentioned above together with the Chinese renminbi, as the latter was added to the SDR basket in 2016. The first vertical line from the left-hand side marks the introduction of the Chinese renminbi to the SDR basket, while the second vertical line indicates the beginning of 2022.

Special Feature A: Other data do not show substantial changes in international currency use due to geopolitical factors

Share of global payments in SWIFT of selected currencies

(percentages)

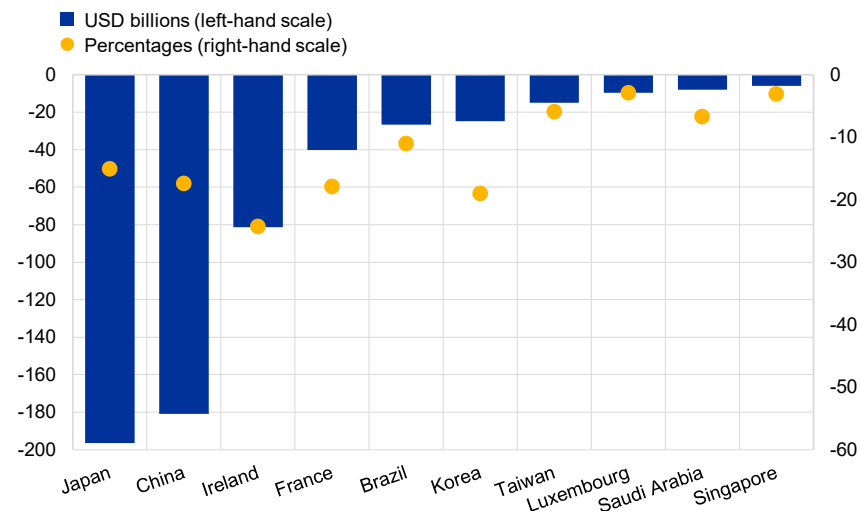


Source: SWIFT and ECB staff calculations.

Notes: The data refer to the currency shares of messages exchanged on SWIFT in the total value of selected currencies, excluding payments within the euro area. Data on the top 20 currency shares are available, meaning that if a currency does not make this cut-off point the value of the currency will be zero in the chart.

Change in the holdings of US Treasury securities between Dec-2021 and Jan-2023

(USD billions and percentages)



Source: US Treasury International Capital System and ECB staff calculations.

Note: The chart includes the countries which belonged to the largest 20 holders of US Treasury securities in December 2021 and cut their holdings of US Treasury securities over December 2021 to January 2023.

Special features

- A. Geopolitical fragmentation risks and international currencies
- B. How a leading international currency replace another
- C. Determinants of currency choice in cross-border bank loans**

Special Feature C: Distance effect stronger for euro cross-border bank loans

Euro-denomination of bank loans and trade invoicing highly correlated

Estimated effect of distance to currency issuer on EUR and US dollar claims (percentages)

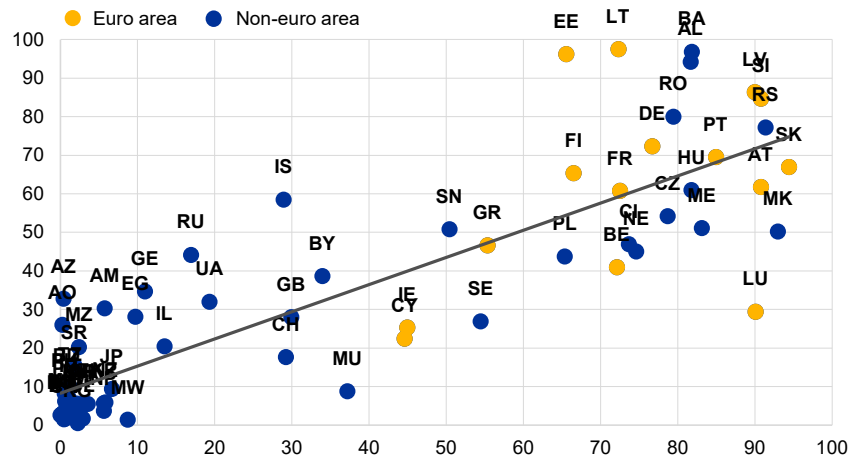
(percentages)



Sources: BIS locational banking statistics, CEPII & Emter, McQuade, Pradhan and Schmitz.
 Notes: Bars show estimated percentage change (regression coefficients) in cross-border claims on all sectors in currency of issuer in response to a one percent increase in distance to currency issuer. Error bars show 90% confidence intervals. Includes source and host country, currency and time fixed effects. Cluster-robust standard errors (reporter, counterpart, currency level). Regression includes bilateral data on 32 reporters and 178 counterparty countries in 2019.

Euro cross-border bank loans and export invoicing, by counterparty countries

(y-axis: share of euro in cross-border bank loans to all sectors in %; x-axis share of euro in export invoicing in %)

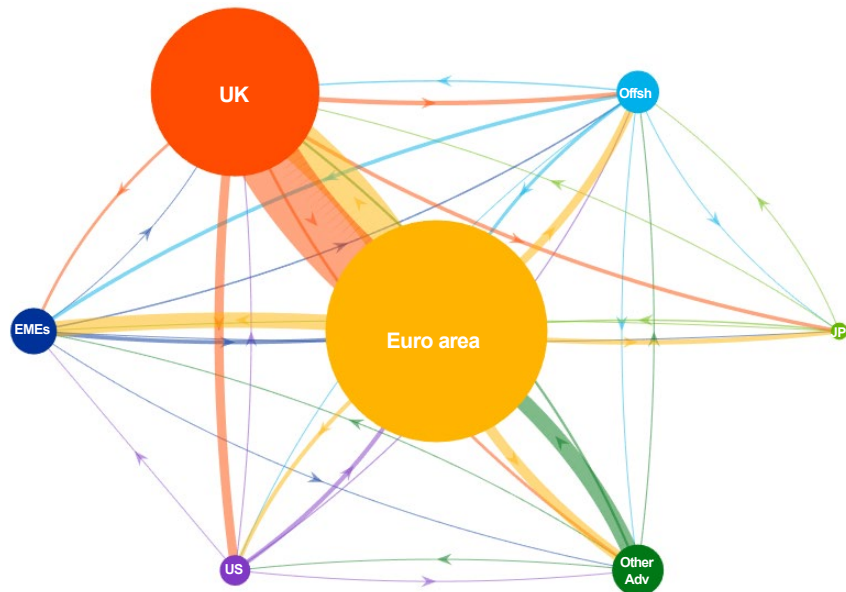


Sources: BIS locational banking statistics (by residence) and authors' calculations.
 Notes: The data displayed are for counterparty/destination countries in the BIS data. Euro area countries are included but intra-euro area bank loans are excluded. Reported values are for the 2016-2019 average.

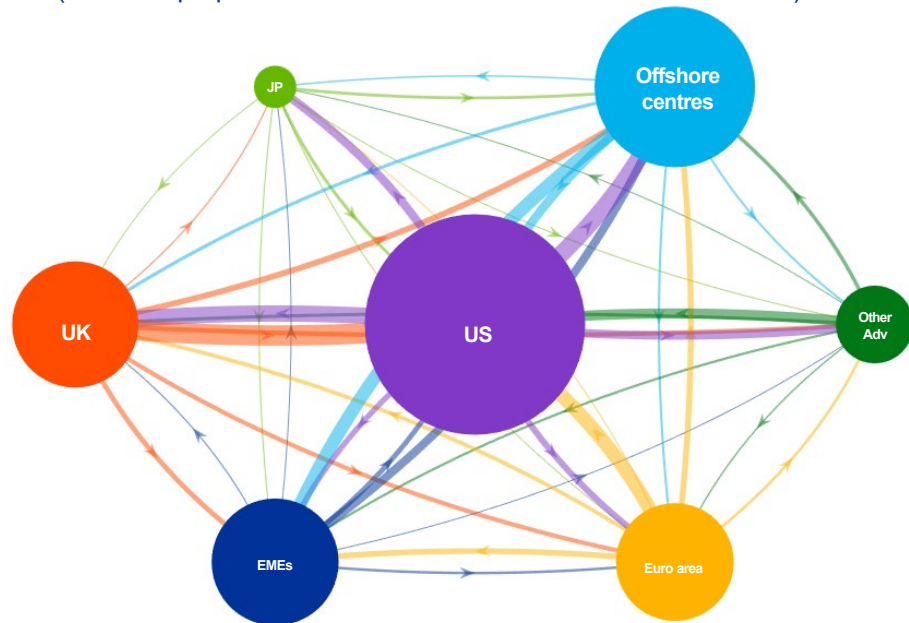
Special Feature C: City of London remains a key financial centre in network of euro-denominated cross-border bank loans despite Brexit

Network of euro-denominated (left) and US dollar-denominated (right) cross-border bank loans

(scaled in proportion to % of total euro-denominated loans)



(scaled in proportion to % of total US dollar-denominated loans)



Sources: BIS locational banking statistics (by residence) and ECB/BIS calculations.

Notes: Arrows originating from a node represent loans by banks located in the country/region to the country/region where arrow ends. Edges (arrows) of a size of less than USD 1 billion have been omitted in the calculations. The node size is proportional to the total and shows relative importance (e.g. banks in the United Kingdom are the largest non-euro area providers of euro-denominated loans, followed by those in offshore centres, the United States, Japan, other advanced economies, Switzerland and emerging market economies). Loans between countries in the same region are excluded. Data reported are the average of quarterly observations for 2021.

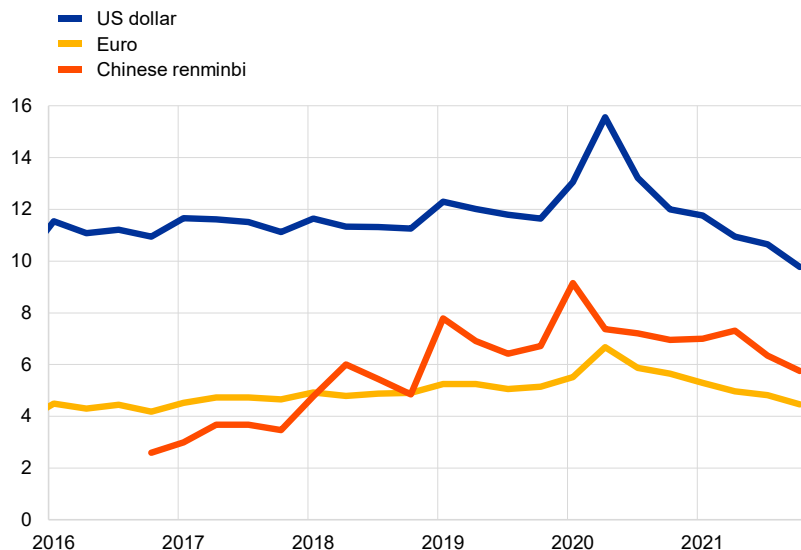
Additional analytical boxes

1. Internationalisation of the renminbi and capital account openness
2. Investment funds and search for yield within the sovereign debt market of highly-rated issuers
3. Valuation effects and rebalancing of official foreign exchange reserves
4. Impact of Brexit on the international role of the euro
5. The impact of war: extreme demand for euro cash in the wake of Russia's invasion of Ukraine (*ECB/OeNB*)

Box 1: The renminbi might acquire a more important international reserve currency role via China's trade links

Global reserves-to-imports' invoicing ratio for selected currencies

(percentages)

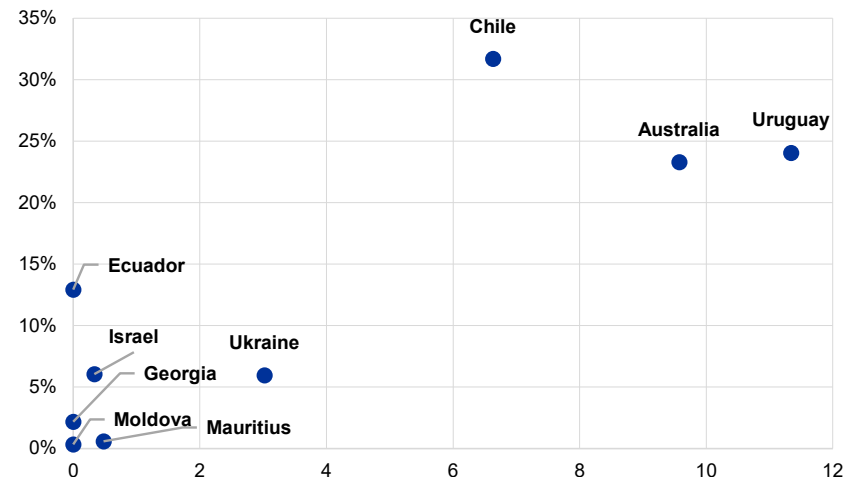


Source: Eichengreen, B., Macaire, C., Mehl, A., Monnet, E. and Naef, A. (2022), "Is capital account convertibility required for the renminbi to acquire reserve currency status?", CEPR Working Paper. Notes: Global imports denominated in US dollars and euro are estimated by aggregating country-level observations from the dataset of Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T. (2022), "Patterns of invoicing currency in global trade: New evidence", Journal of International Economics, Vol. 136, No 103604.

Countries that trade more with China hold more renminbi reserves

Reserves-to-imports coverage – country-level evidence for the renminbi

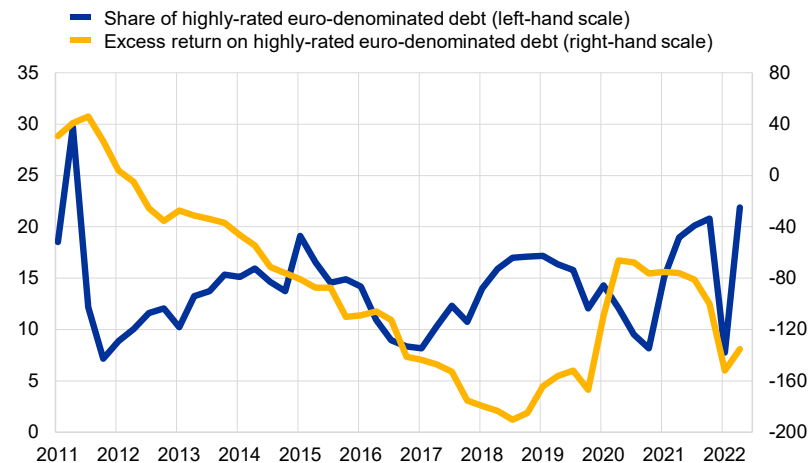
(y-axis: percentages; x-axis: months)



Source: Eichengreen, B., Macaire, C., Mehl, A., Monnet, E. and Naef, A. (2022), "Is capital account convertibility required for the renminbi to acquire reserve currency status?", CEPR Working Paper. Notes: The chart plots the share of bilateral imports from China on the y-axis against the ratio of reserves held in renminbi to months of imports invoiced in renminbi on the x-axis for selected economies for which data on both variables are available.

Box 2: Yield differentials have an influence on the global appeal of the euro as an investment currency

Excess return on and share of highly-rated euro-denominated government debt securities in total fund portfolio of safe assets (percentages)

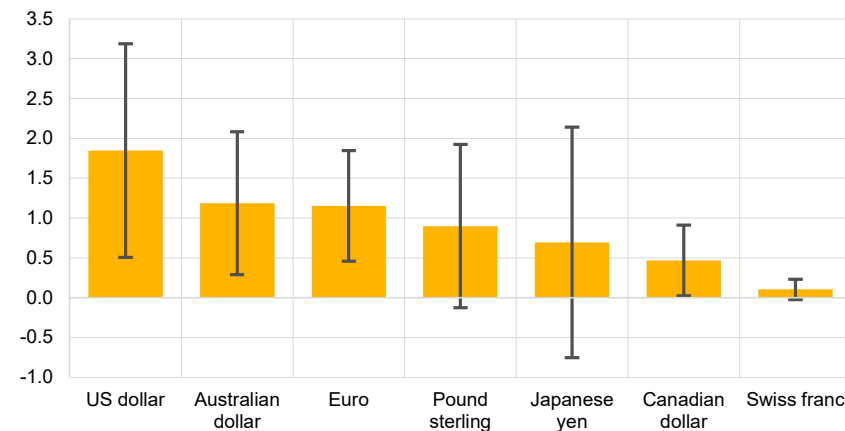


Sources: BIS, Refinitiv Lipper, Refinitiv Eikon and ECB calculations.

Notes: The share of highly-rated euro-denominated debt is computed as the aggregate amount of AUT, BEL, FRA, DEU and the NLD in funds' portfolios in the sample, divided by the aggregate amount of all sovereign debt securities issued by AUS, AUT, BEL, CAD, FRA, DEU, JPN, NLD, NZL, CHE, GBR and USA. The excess return for the euro area is defined as the average yield of debt securities issued by AUT, BEL, FRA, DEU and NLD, weighted by debt market capitalisation, minus the weighted average of yields of other countries in the portfolios.

Estimated coefficients of excess returns on funds' currency shares

(regression coefficients)

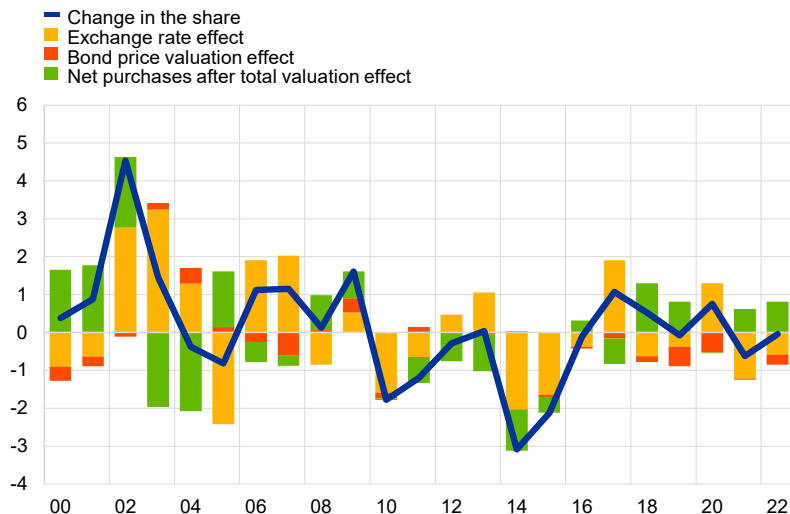


Sources: BIS, Lipper for Investment Management, Refinitiv Lipper Global Data Feed, Refinitiv Eikon and ECB calculations. Notes: Estimates of the coefficient β_2 from the regression $s_t^j = \alpha_t + \gamma_t + \beta_1 s_{t-1}^j + \beta_2 r_{t,t}^{x,j} + \beta_3 \Delta s_{t,t}^{j,P,R} + \beta_4 \Delta s_{t,t}^{j,X,R} + \varepsilon_{t,t}^j$ estimated separately for j = Australian dollar, Canadian dollar, euro, Japanese yen, pound sterling, Swiss franc and US dollar. The error bars represent 95% confidence intervals based on Driscoll-Kraay standard errors, which account for heteroskedasticity and cross-section and time series correlation in the error term.

Box 3: Official reserve managers partially rebalance the currency composition of foreign exchange reserves in response to valuation effects

Decomposition of changes in the share of foreign exchange reserves held in euro into net purchases and valuation effects

(annual percentage points)

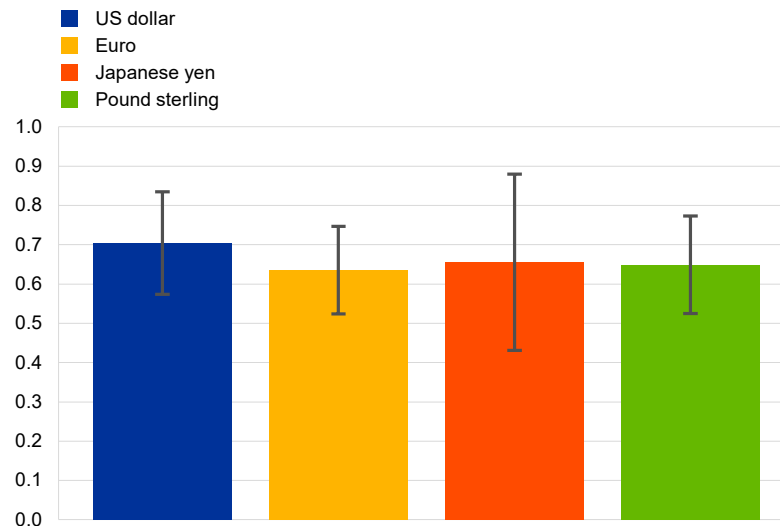


Source: IMF and ECB calculations.

Notes: We account for valuation effects by netting out the change in bond valuations, interest rates and exchange rates from the total change in the value of official reserves to get the approximate net purchases in period t . The latest observation is for the fourth quarter of 2022.

Estimated elasticity of currency shares in total reserves to valuation changes

(regression coefficients)

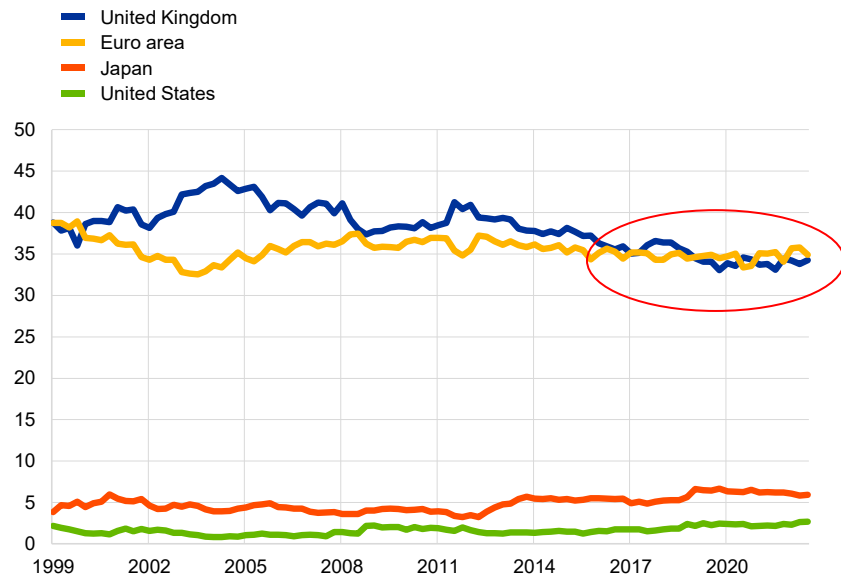


Source: IMF and ECB calculations.

Notes: Elasticities are computed following Chinn et al. (2022) by estimating for each major reserve currency i the regression: $\Delta Reserve_{i,t} = \alpha + \beta \Delta V_{i,t} + \varepsilon_{i,t}$, where $\Delta V_{i,t}$ is a proxy for the change of the currency share owing to valuation effects, sample period 1999Q1-2022Q4. The latest observation is for the fourth quarter of 2022.

Box 4: Evidence on the impact of Brexit on international banking and euro-denominated repo clearing

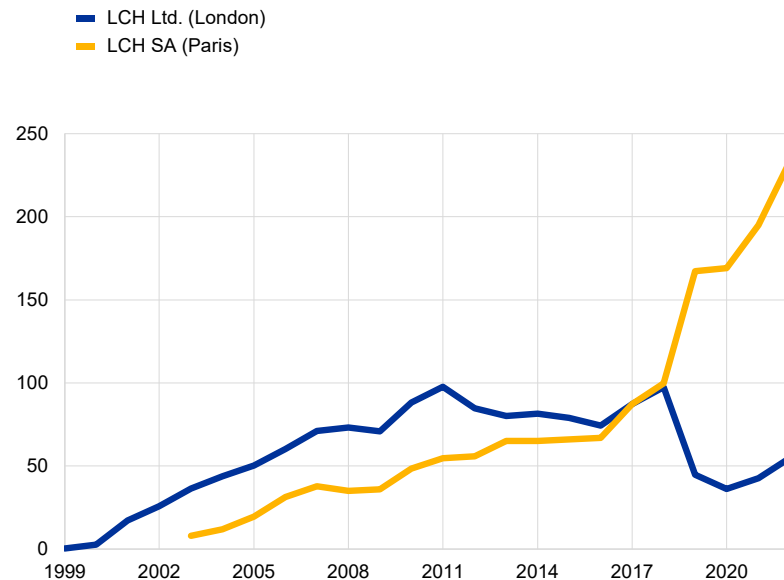
Share of international euro claims and liabilities, by location of reporting bank (percentages)



Sources: BIS locational banking statistics and ECB calculations.

Notes: Banks' cross-border and local (in euro) claims and liabilities combined, including loans and debt securities, but excluding derivatives.

Repo clearing at LCH London and Paris (EUR trillions, yearly nominal values)



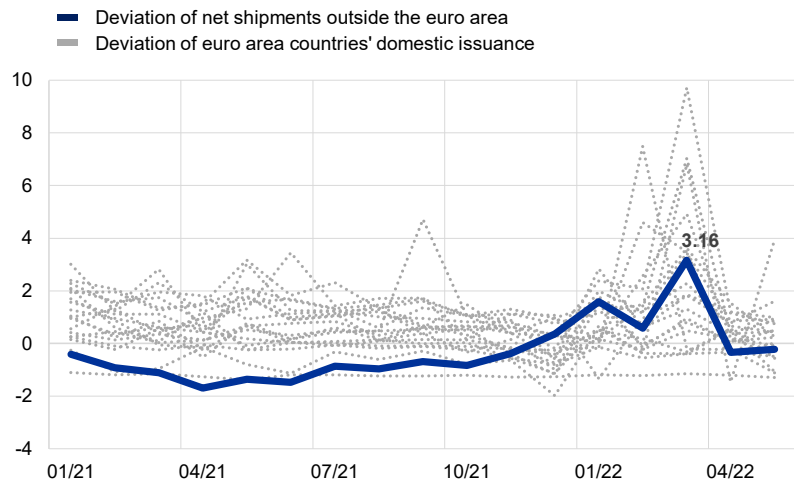
Sources: LCH Group and ECB calculations.

Notes: Figures have been adjusted to remove the impact of a break in series in the first quarter of 2018, when LCH SA joined the population of reporting institutions.

Box 5: Extreme demand for euro cash in the wake of Russia's invasion of Ukraine

Excess foreign demand for euro cash in the wake of Russia's invasion was higher than in most euro area countries

(standard deviations from historical average, monthly data)

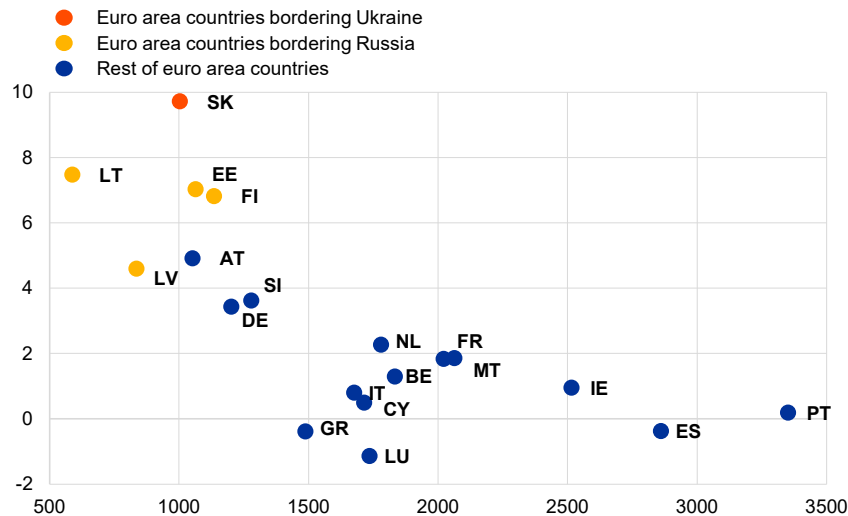


Sources: ECB.

Notes: On the x-axis the time series data on banknote issuance were seasonally adjusted for each country and standardised. Net shipments abroad from each euro area country were removed to avoid double-counting. The chart shows each country's maximum standard deviation in February or March 2022, as some countries reacted more rapidly than others after Russia's invasion on 24 February 2022.

Euro area countries near the conflict experienced high levels of cash demand after the start of 2022

(x-axis: distance in km from the country's capital to Kyiv; y-axis: standard deviations from historical average)



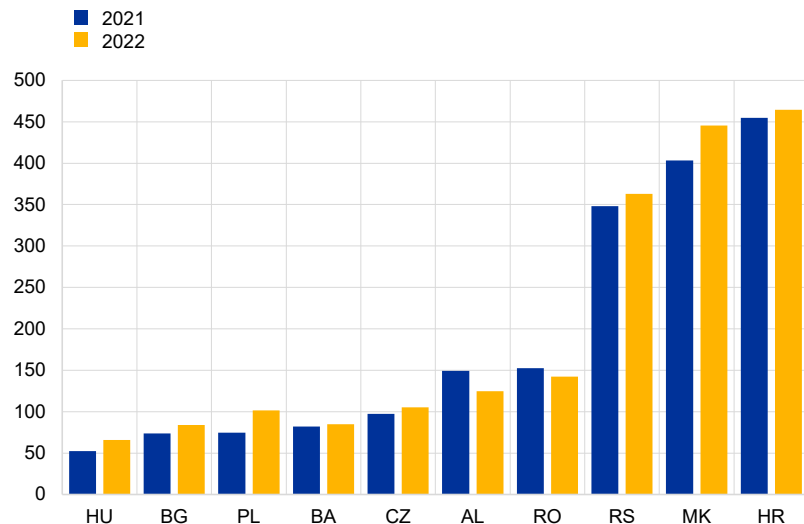
Sources: ECB.

Notes: On the x-axis the time series data on banknote issuance were seasonally adjusted for each country and standardised. Net shipments abroad from each euro area country were removed to avoid double-counting. On the y-axis the physical distance in kilometres from each country's capital to Kyiv is measured using straight lines.

Box 5: Regions where euro cash usage is common were more likely to report increases in cash withdrawals, euro cash holdings and euro savings

Amounts of euro cash holdings by individuals

(EUR, per capita (projection))

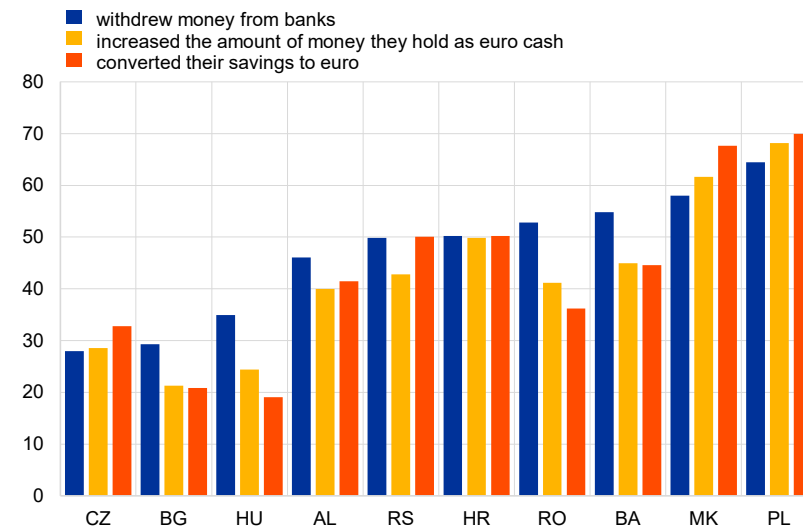


Source: OeNB Euro Survey.

Notes: Per capita values are extrapolated for the entire population aged 14 years and over.

Perceived reactions: “Since the start of the war in Ukraine, many people...”

(percentages, adults who agree that many people in their country reacted in one of the following ways:)



Source: OeNB Euro Survey.

Notes: Bars indicate the share of respondents that “strongly agree”, “agree” or “somewhat agree” that adults in their countries reacted by either withdrawing money from banks, increasing their euro cash holdings or converting savings to euro.

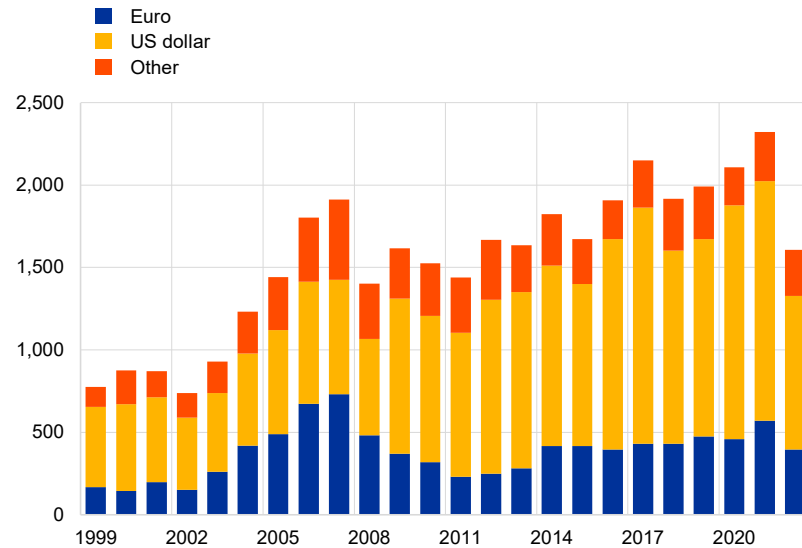
Other standard charts

2023 report

Rising interest rates led to retrenchment in international bond issuance, in particular US-dollar-denominated bonds

Currency composition in volumes of foreign currency-denominated bond issuance

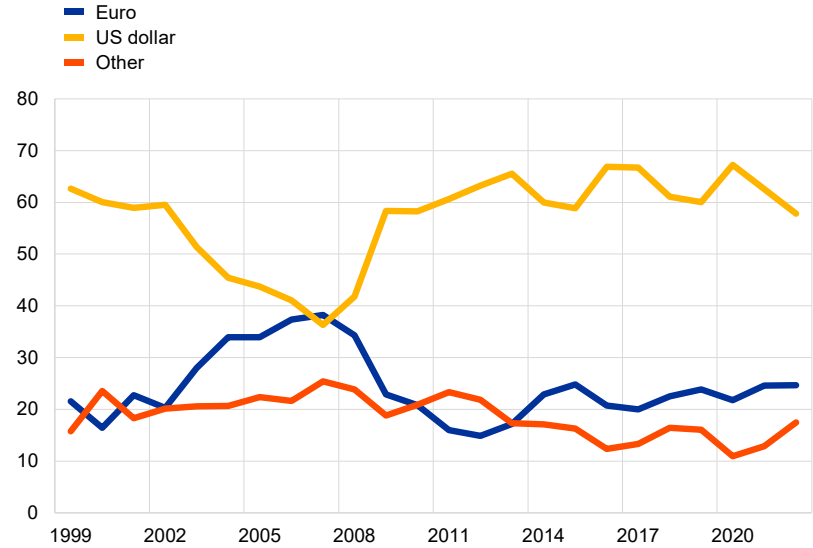
(USD billions)



Sources: Dealogic and ECB calculations.
Note: The latest observation is for end-2022.

Currency composition in shares of foreign currency-denominated bond issuance

(percentages)

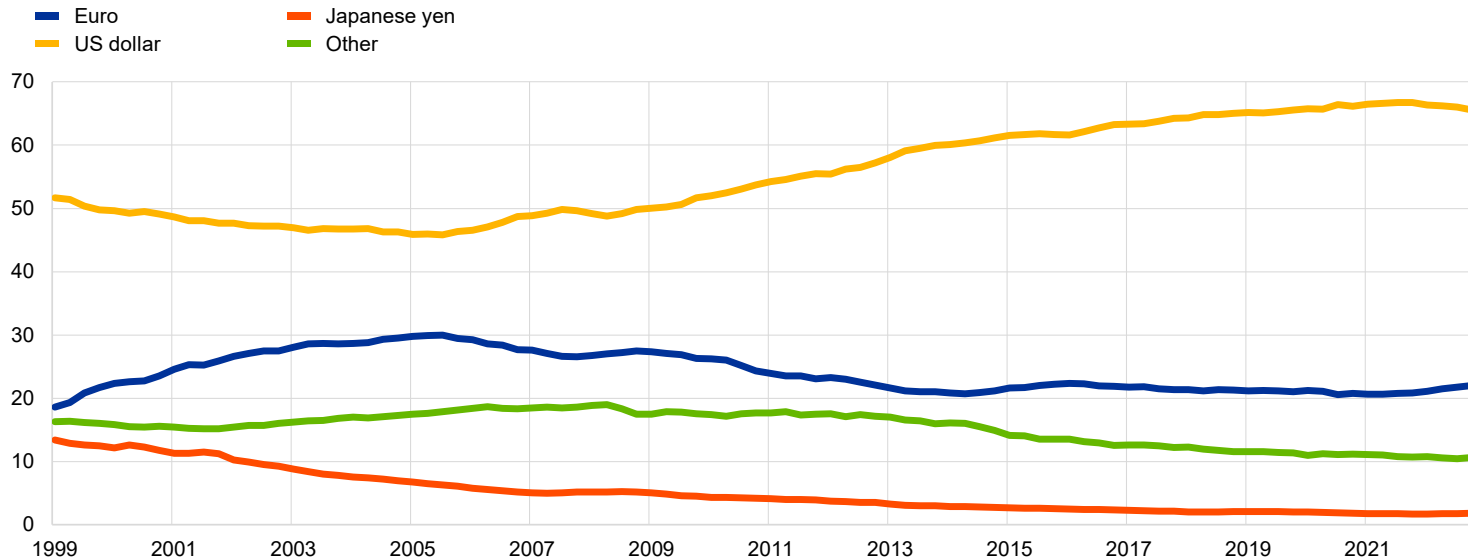


Sources: Dealogic and ECB calculations.
Note: The latest observation is for end-2022.

The share of the euro in the stock of international debt securities increased in 2022

Currency composition of outstanding international debt securities

(percentages; at constant Q4 2022 exchange rates)



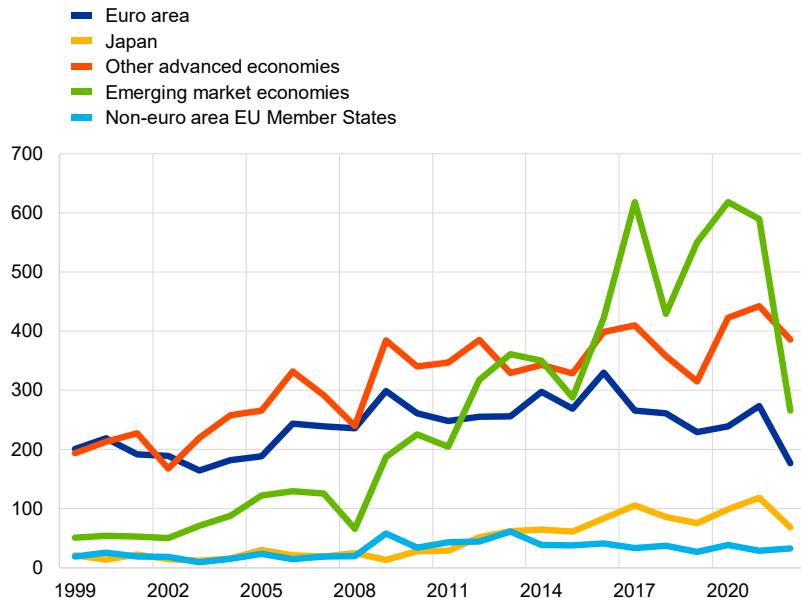
Sources: BIS and ECB calculations.

Notes: Narrow measure. The latest observation is for the fourth quarter of 2022.

Issuance of euro and US dollar-denominated bonds declined in emerging market economies in 2022

Regional breakdown of US dollar-denominated international bond issuance

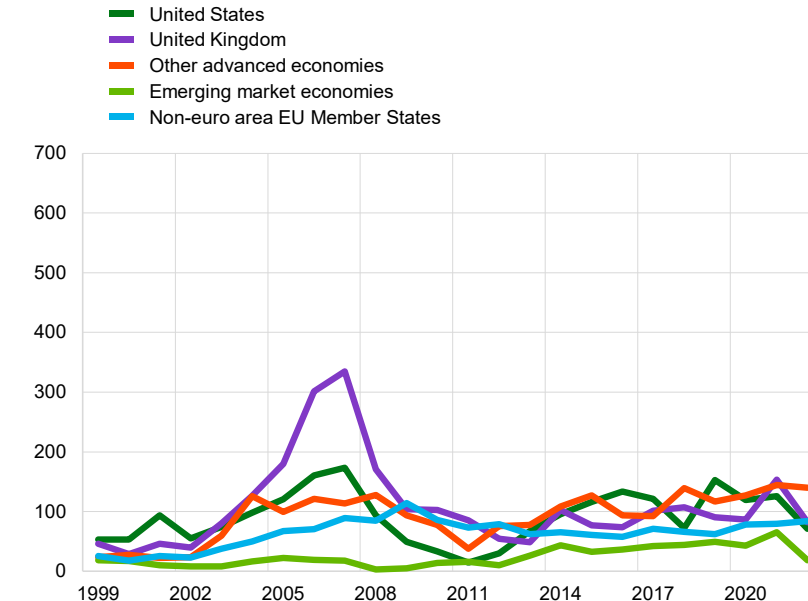
(USD billions)



Sources: Dealogic and ECB calculations.
Note: The latest observation is for end-2022.

Regional breakdown of euro-denominated international bond issuance

(USD billions)

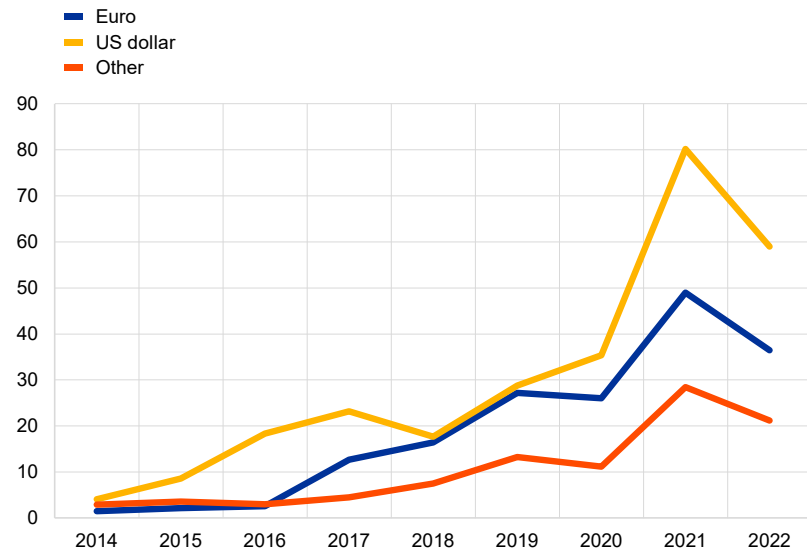


Sources: Dealogic and ECB calculations.
Note: The latest observation is for end-2022.

International green bond issuance retrenched in 2022, although the share of the euro in total issuance remained stable

Currency composition of foreign currency-denominated green bond issuance (values)

(USD billions)

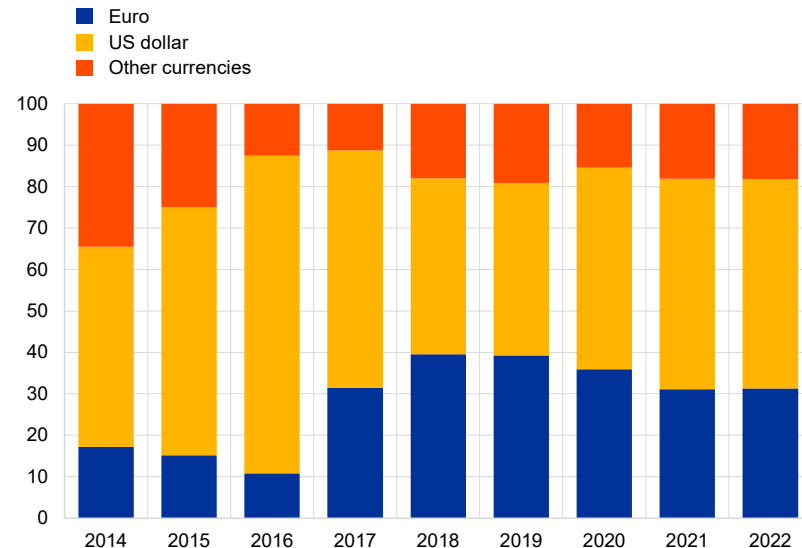


Sources: Dealogic and ECB calculations.

Notes: Annual totals are based on the aggregation of individual deals. The latest observation is for end-2022.

Currency composition of foreign currency-denominated green bond issuance (shares)

(percentages)



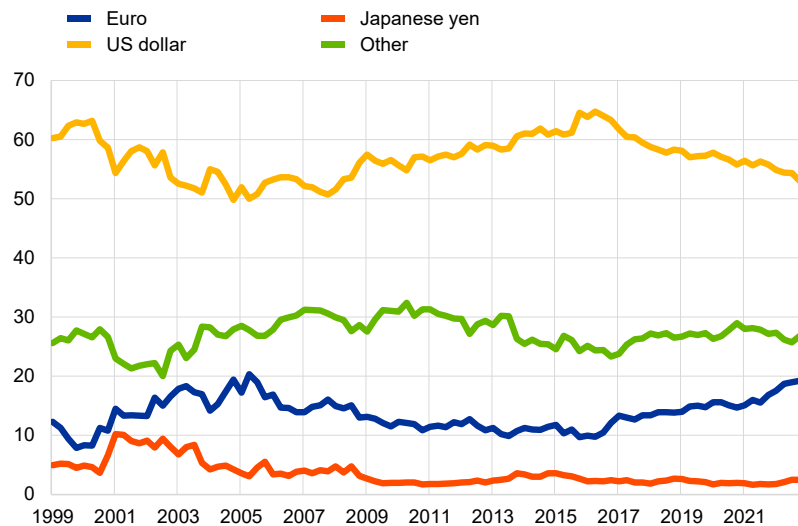
Sources: Dealogic and ECB calculations.

Notes: Annual totals are based on the aggregation of individual deals. The latest observation is for end-2022.

The share of the euro remained close to historical peaks in outstanding international loans and increased further in outstanding international deposits in 2022

Currency composition of outstanding amounts of international loans

(percentages; at constant Q4 2022 exchange rates)

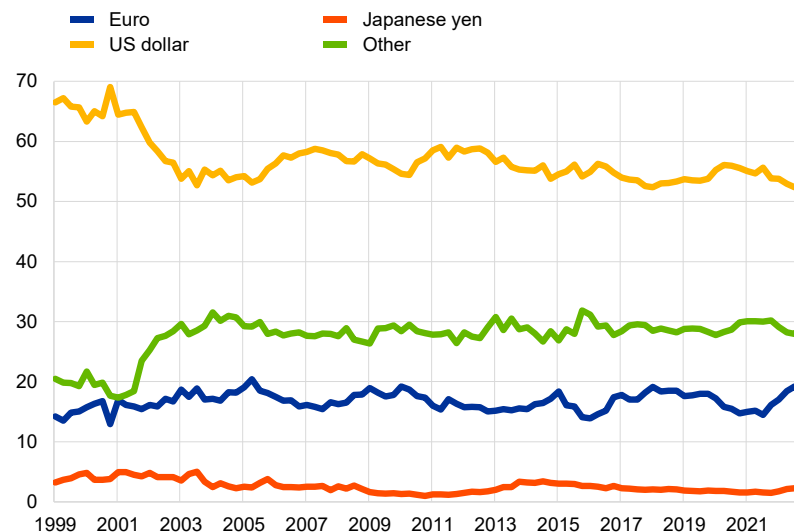


Sources: BIS and ECB calculations.

Notes: The latest observation is for the fourth quarter of 2022. International loans are defined as loans by banks outside the currency area to borrowers outside the currency area.

Currency composition of outstanding amounts of international deposits

(percentages; at constant Q4 2022 exchange rates)



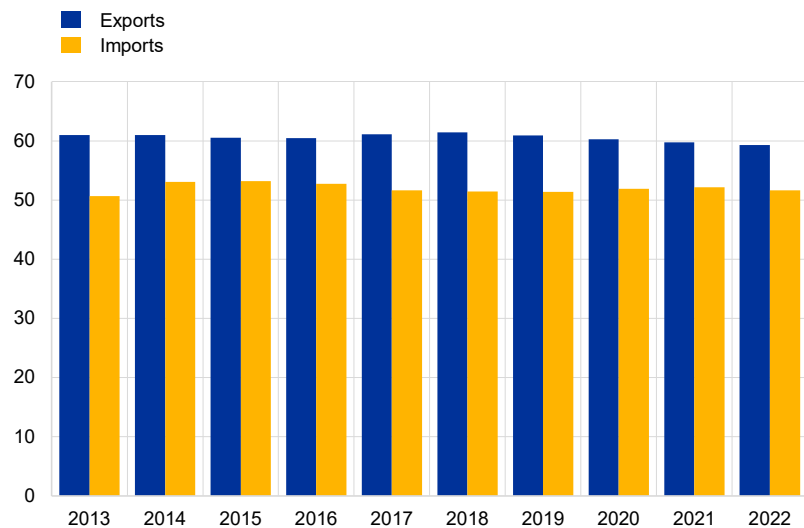
Sources: BIS and ECB calculations.

Notes: The latest observation is for the fourth quarter of 2022. International deposits are defined as deposits with banks outside the currency area from creditors outside the currency area.

The share of euro as an invoicing currency of extra-euro area trade in goods and services was broadly stable in 2022

Share of the euro in invoicing of extra-euro area trade in goods

(percentages)

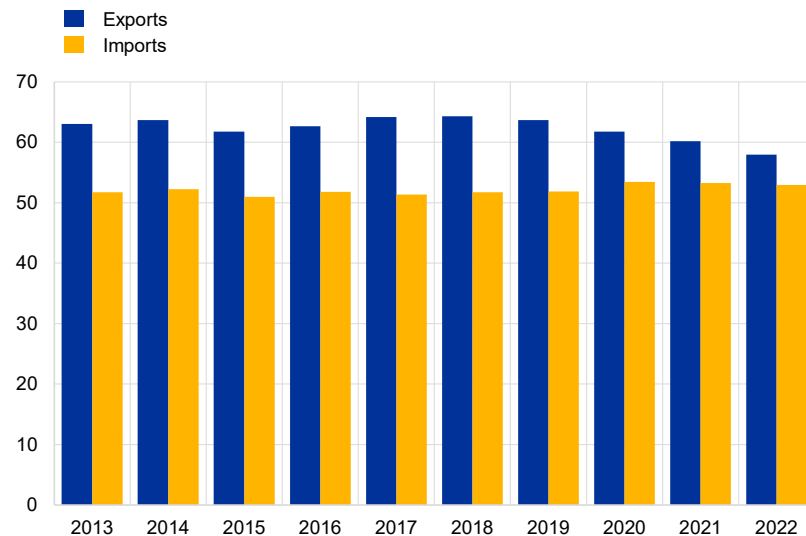


Sources: National central banks and ECB calculations.

Note: The computation of the euro area aggregate is based on the latest observation reported by each Member State.

Share of the euro in invoicing of extra-euro area trade in services

(percentages)



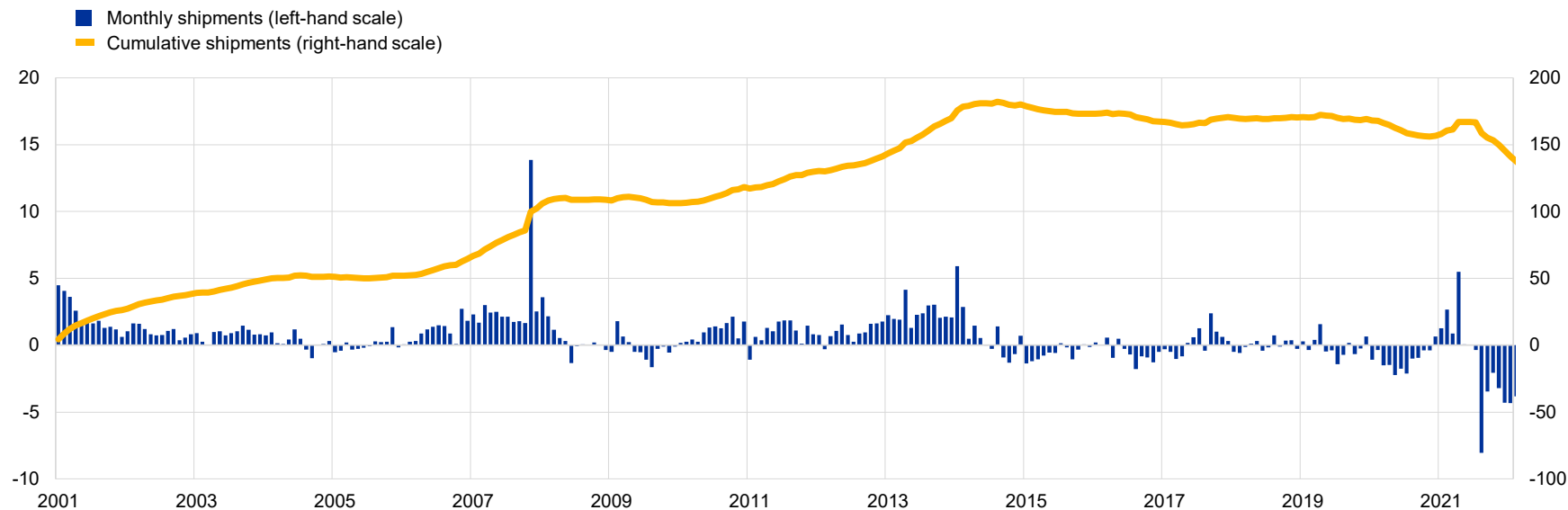
Sources: National central banks and ECB calculations.

Note: The computation of the euro area aggregate is based on the latest observation reported by each Member State.

Net shipments of euro banknotes to destinations outside the euro area saw an unprecedented decline in 2022

Net monthly shipments of euro banknotes to destinations outside the euro area

(EUR billions; adjusted for seasonal effects)



Source: Eurosystem.

Notes: Net shipments are euro banknotes sent to destinations outside the euro area minus euro banknotes received from outside the euro area. The latest observation is for December 2022.

General background slides

Decline in the US dollar share as a reserve currency and for international loans, but resilience in other market segments over the medium-term

Overview of changes in the international monetary system between 2022 and 2017

(percentage point changes at constant Q4 2022 exchange rates, unless otherwise indicated)



Sources: BIS, IMF, Society for Worldwide Interbank Financial Telecommunication (SWIFT) and ECB staff calculations.

Notes: For foreign exchange reserves, international debt and international loans the bars show the percentage point changes of the currency shares between the fourth quarter of 2022 and the fourth quarter of 2017. For the SWIFT payments the bars indicate the percentage point change between December 2022 and December 2017. The bars of foreign exchange turnover indicate the percentage point change between April 2022 and April 2016. * Indicates percentage point change at current exchange rates.

Reasons for the decline in the euro's role since the global financial crisis

General

- The euro area sovereign debt crisis raised concerns about the euro's future

Investment currency

- Increased diversification of official portfolios towards other currencies (AUD, CAD, RMB)
- Relatively low interest rates lowered the attractiveness of investments in euro-denominated securities

Financing currency

- Rising share of global debt issuance by emerging market economies (which is traditionally dollar-oriented)
- Higher currency swap costs reduced the attractiveness of the euro as a funding currency for acquiring dollars

Determinants can be influenced by policies

Economic size

Stability (economic, financial, political)

Sound institutions



- Price stability, Financial stability
- Sound fiscal & structural policies
- Deeper EMU & Banking Union

Financial openness

Liquidity/depth of financial markets

Efficient financial market infrastructures for payments and settlements



- Capital Markets Union
- Common debt issuance
- ECB euro liquidity lines
- Initiatives on markets and payments infrastructure

Geopolitical outreach

Inertia and network effects

Completing the Banking Union and the architecture of EMU will make the euro area more resilient and support the international role of the euro

- **Completing the Banking Union is essential to improve the euro area's ability to ensure its financial stability and resilience:**
 - Swift finalisation of the review of the crisis management and deposit insurance framework.
 - Progress towards a European deposit insurance scheme.
 - Fewer barriers to cross-border integration.
- **A complete banking union will create the right policy environment for a more resilient euro area banking sector.**
- **Other dimensions of deepening the Economic and Monetary Union are also essential:**
 - In particular, more progress toward a permanent EU fiscal stabilisation facility will also be needed to make the EU and euro area more resilient.

The Capital Markets Union is also important to raise the euro's global status

- **A genuine EU Capital Markets Union could strengthen the international role of the euro by integrating and developing EU financial markets.**
- Ultimately, this would lead to deeper, more liquid and well-functioning euro-denominated financial markets.
- **Some initiatives can have a direct impact by generating classes of financial products** which are harmonised across the European Union, e.g. the Euro is the leading global currency of green finance.
- **Further initiatives are important for the integration and development of capital markets** in the euro area:
 - Harmonisation of insolvency and withholding tax frameworks, strengthening of supervisory convergence and reducing the debt-equity bias in taxation.

Efficient market infrastructures and payments raise the euro's global status indirectly

The Eurosystem operates infrastructure services facilitating the free flow of cash, securities and collateral across Europe.

- T2 (real time gross settlement of payments), T2S (securities settlement) and TIPS (instant retail payments settlement).
- A unified system for managing assets used as collateral in Eurosystem credit operations (Eurosystem Collateral Management System (ECMS)) is planned for launch in April 2024.
- As part of the European payments strategy, the Eurosystem supports initiatives towards a pan-European retail payment solution.

These services strengthen efficiency of market infrastructures and foster financial market integration; in turn, euro-denominated financial markets become more attractive to foreign market participants.

Monetary policy considerations on a stronger international role of the euro

1999 assessment in blue

Benefits

Seigniorage

Lower transaction and hedging costs

Exorbitant privilege

(lower external financing costs)

Greater monetary policy autonomy

Stronger international transmission of monetary policy with positive spillbacks

Lower pass-through reduces impact of FX shocks on CPI

Reduced exposure to unilateral decisions from third countries

2021 assessment in red

Costs

Blurred monetary aggregate signals

(?)

Capital flow volatility (?)

Exorbitant duty

(stronger exchange rate and risk of asset fire sales in global stress episodes; need for provision of liquidity backstop)

Lower effects of monetary policy on import prices

ECB liquidity lines are motivated by monetary policy objectives

- The provision of euro liquidity to non-euro area central banks aims at **addressing euro liquidity needs of banks and companies located in these countries** in a stressed market environment.
- Providing euro liquidity to non-euro area central banks in crisis times **reduces risks related to a) sell-off episodes of euro-denominated assets and b) adverse spillovers** from other economies to the euro area economy, including through global confidence effects.
- Overall, these arrangements **aim to facilitate a smooth transmission of monetary policy**, which benefits all euro area citizens.

What is the digital euro?

The digital euro is **central bank money** for **digital retail payments** by **citizens, businesses and governments** in the **entire euro area**

What is digital money?



Liability of central bank

- i. **Cash:** physical form, to general public
- ii. **Central bank deposits:** digital form, limited access
- iii. **CBDC/digital euro:** Complement to cash and Central Bank deposits



Liability of a private entity

- i. Commercial bank money
- ii. E-money
- iii. Some 'stablecoins' that entail a claim/liability on an identifiable entity



Not a liability

- i. Crypto-assets

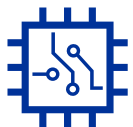
Why would we need a digital euro?



A payment option allowing **everyone** to pay digitally **everywhere** in the euro area



The **evolution of cash** in the digital age, protecting the role of public money as a **monetary anchor** for the financial system



A **European platform for innovation**, allowing intermediaries to build services for their customers that are instantly available across Europe



Increasing **resilience** of European payments

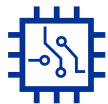
Key features of a digital euro



Complementing, not substituting, cash



Supervised intermediaries (banks and other providers of payment services) **will be in charge of distributing** a digital euro



A digital euro will never be **programmable money**

Taking stock and the road ahead

Foundational design options

First set
(Q3-2022)

Online/offline
Level of privacy

Tools to avoid excessive use
Transfer mechanism

Second set
(Q4-2022)

Role of intermediaries
Funding and defunding

Settlement model
Distribution model

Third set
(Q1-2023)

Compensation model
Delivery approach

Advanced functionalities
Core and value-added services

Use cases

Person-to-person

E-commerce

Physical store

Government payments

Research and experiments (Q2-2023)




Focus group research

Market research

Prototyping exercise

High-level design of a digital euro and holistic review (Q2-2023)

Digital euro interoperability with other CBDCs

-  The Eurosystem is **engaged in the G20/BIS work on various approaches** that could support the provision of cross-currency payments.
-  Importance to **factor in the international dimension into the development of CBDC** as part of the G20 priorities for next years.
-  A digital euro should first and foremost meet the **retail payment needs of the euro area. Yet, interoperability** with other retail CBDCs could facilitate **cross-currency use**.

Possible interoperability models applied to retail CBDC

1

Compatible

Individual CBDC systems would use **common standards** such as message formats, cryptographic techniques and data requirements

Least complex but least improvement

2

Interlinking

CBDC systems are **linked** (e.g. contractual agreements, technical links, operational components), so that participants can transact without participating in each system

Most realistic; advanced economies

3

Single system

Shared **single system** among multiple currencies involved in the cross-currency transaction

Most ambitious; Regional (EEA) CBDCs; Impact on design of D€ back-end

International CBDC developments



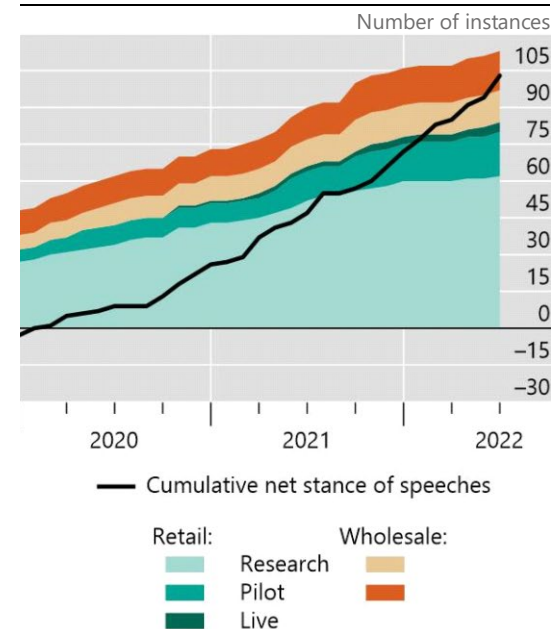
Most central banks around the world are exploring CBDC



The ECB supports **ongoing international initiatives on CBDC**:

- Work by group of **seven central banks** (CAN, CH, ECB, JPN, SWE, UK, US) together with the **BIS**
- **G7** public policy principles for retail CBDCs (2021)
- **IMF** CBDC Handbook on areas highlighted in G7 principles

Rise in CBDC projects



Source: Bank of International Settlements, July 2022

CBDC and the international monetary system

Opposing views in the policy debate:

Not a large impact because...

- ✓ ... CBDC act at the margin; currency and reserve choices are driven primarily by fundamental forces
- ✓ ... large costs for substituting the US dollar
- ✓ ... low remuneration of CDBC might be an issue for reserve management

Large impact because...

- ✓ ... CBDC can reduce the costs of currency substitution
- ✓ ... there will not be problems of scarcity constraint (as for safe assets)
- ✓ ... countries might use them to actively promote the internationalization of their currencies (i.e. through setting standards)

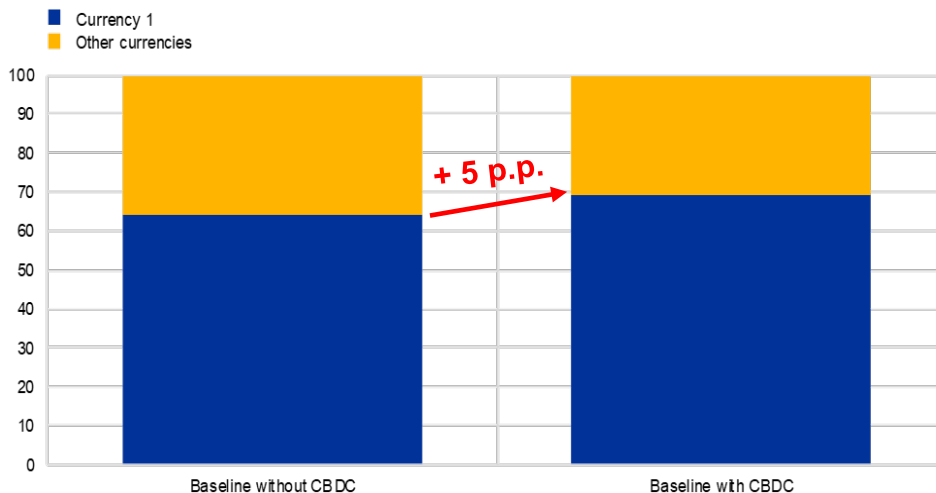
The role of the digital euro

A digital euro...

- ✓ ... will mainly serve domestic payment purposes...
- ✓ ... but it could also reduce frictions and costs of euro-denominated cross-border payments
- ✓ .. may defend and foster the euro area strategic autonomy
 - ✓ reduce the reliance on foreign payment infrastructures
 - ✓ amid potential rise of foreign private digital moneys or foreign CBDC

Model simulations on the impact of CBDC for international currency use

(Currency breakdown of global export payments in alternative simulations, percentages)



Source: ECB calculations.

Notes: The left panel shows simulations based on a three-country DSGE model in the spirit of Eichenbaum et al. (2020) with no capital controls, a 1% liquidation cost for debt securities, symmetric 33%-weights for all countries and the same volatility of the exogenous shocks in both simulations.