



EUROPEAN CENTRAL BANK

EUROSYSTEM

# The international role of the euro

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SUERF webinar

21 JUNE 2023



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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*

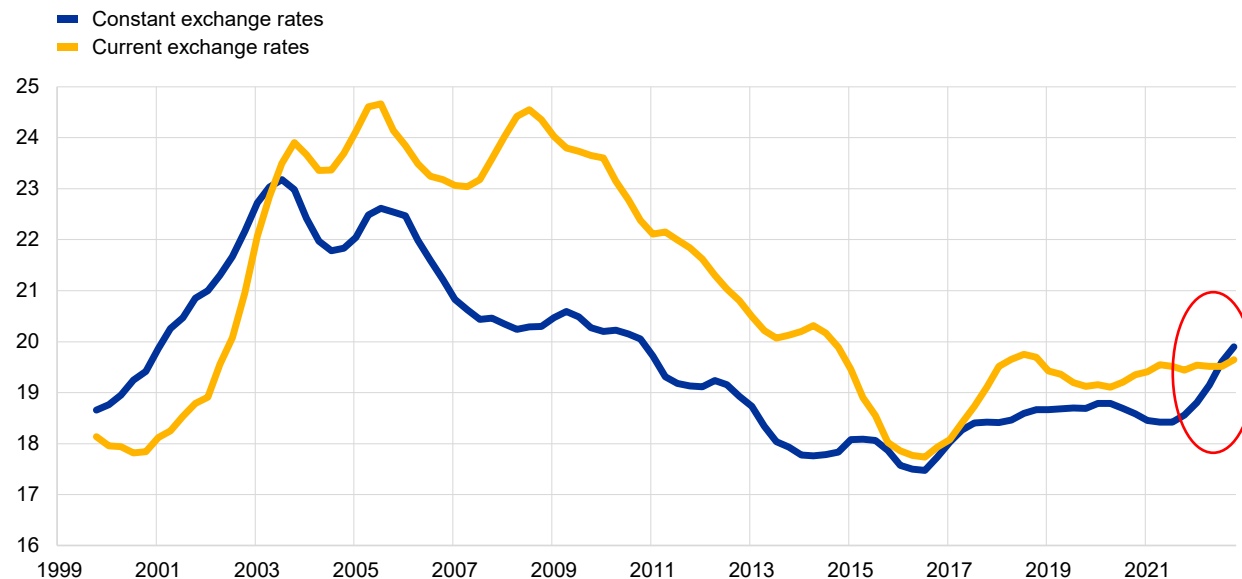
# Outline

1. Key developments
2. Special features
3. 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)



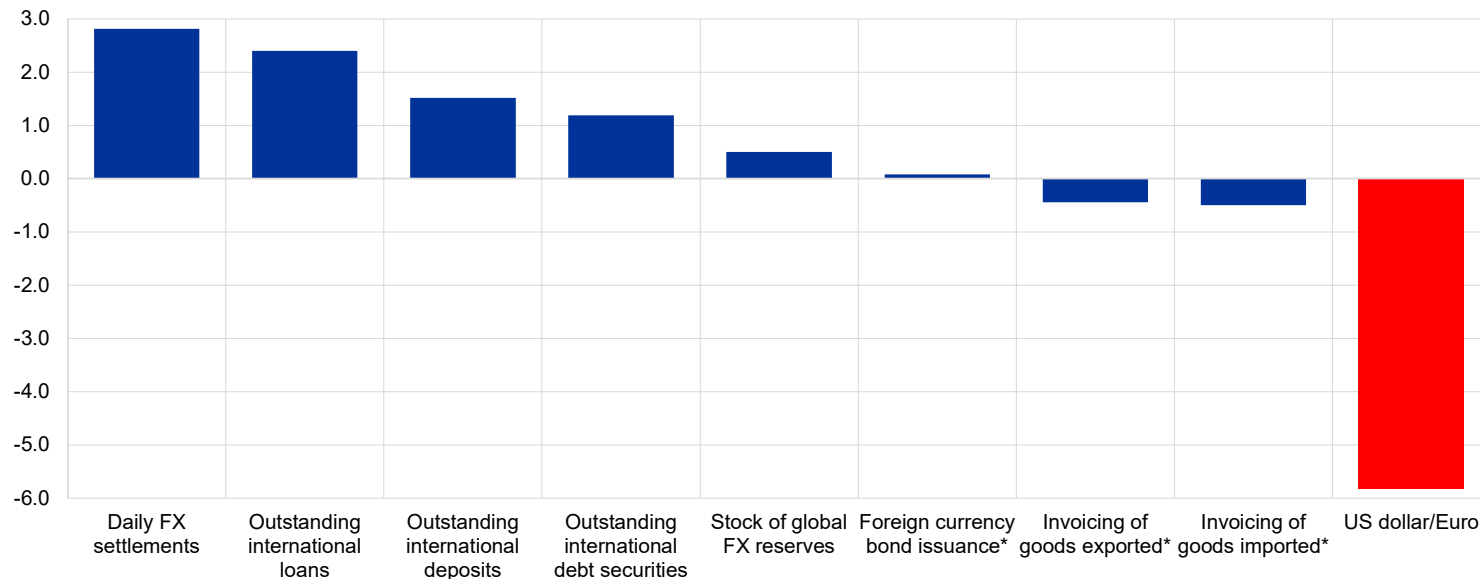
Sources: Bank for International Settlements (BIS), International Monetary Fund (IMF), CLS Bank International, Ilizetzki, Reinhart and Rogoff (2019) and ECB staff calculations.

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)



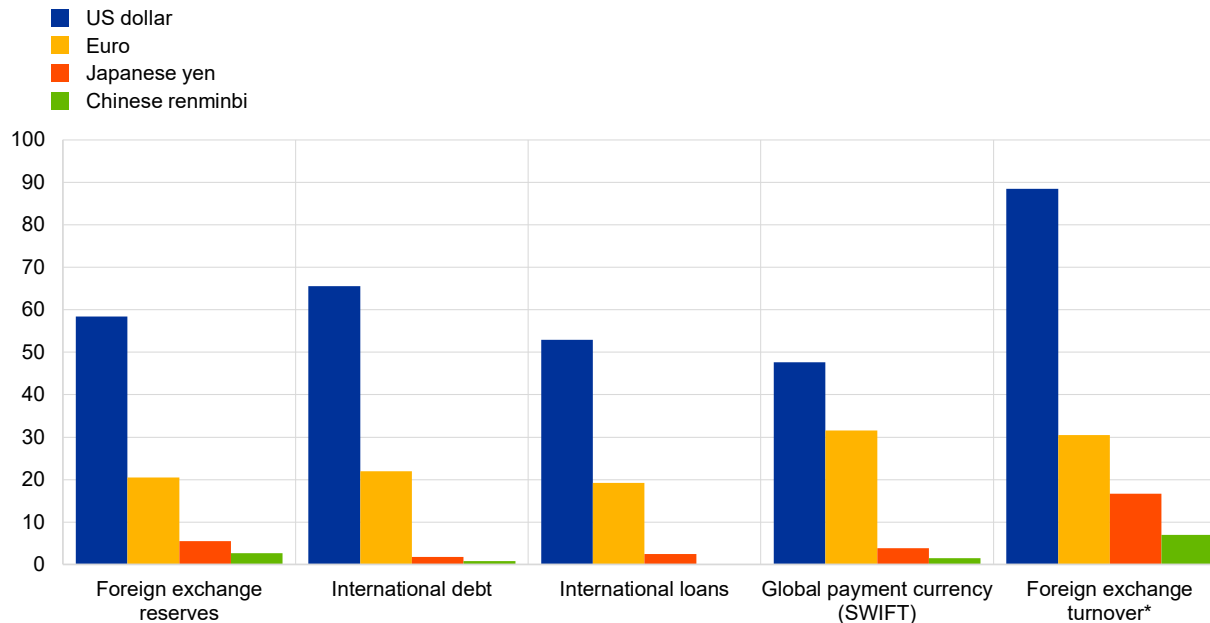
Sources: BIS, CLS Bank International, Dealogic, IMF, national sources, and ECB staff calculations.

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)



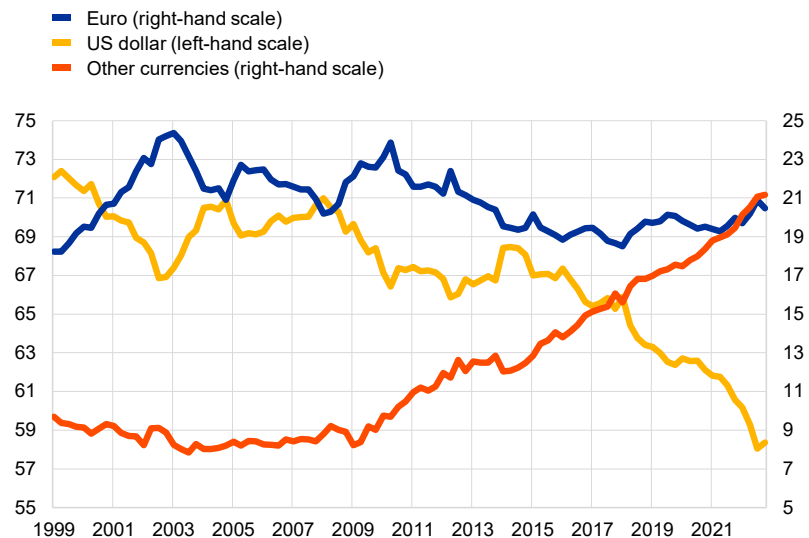
Sources: BIS, IMF, Society for Worldwide Interbank Financial Telecommunication (SWIFT) and ECB staff calculations.

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%.

# 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)

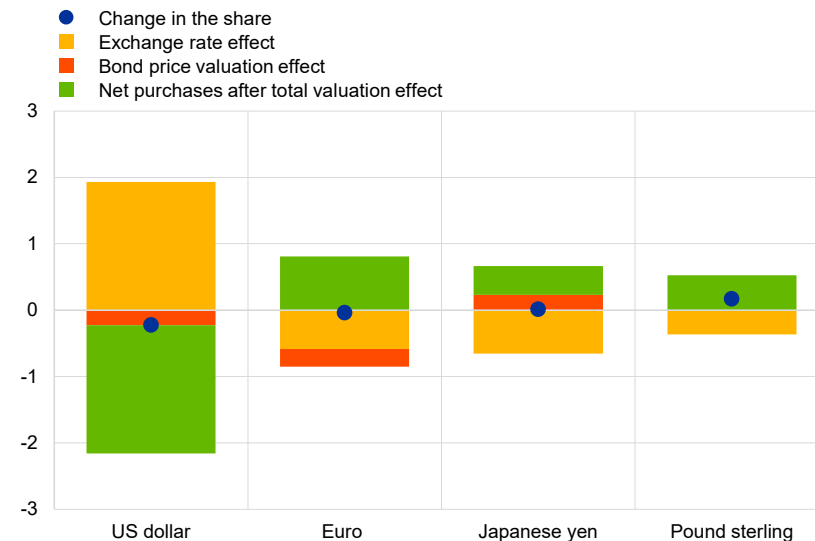


Sources: IMF and ECB staff calculations.

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.

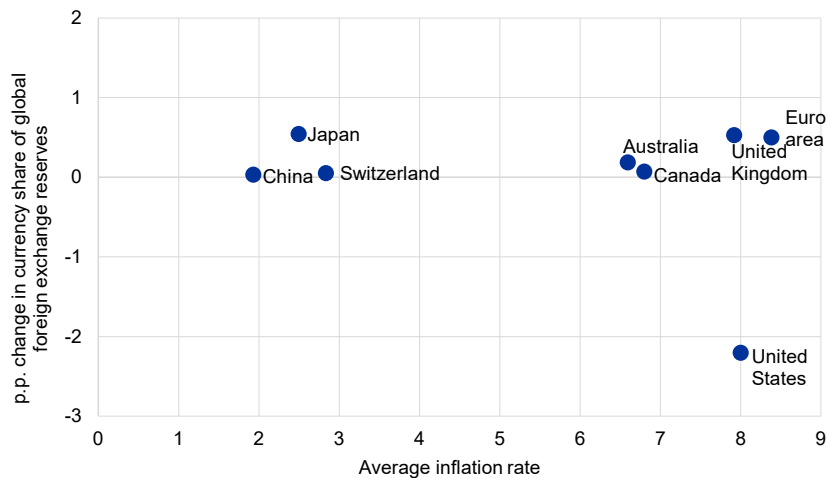
Notes: Valuation effects are accounted for by netting out the change in bond valuations, interest rates and exchange rates from the total change in the value of official reserves. The latest observation is for the fourth quarter of 2022.

# 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)

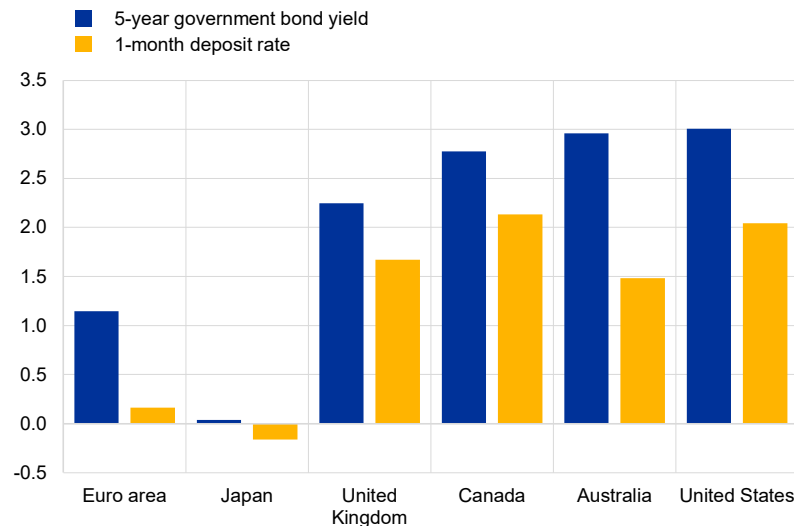


Sources: IMF and ECB calculations.

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)



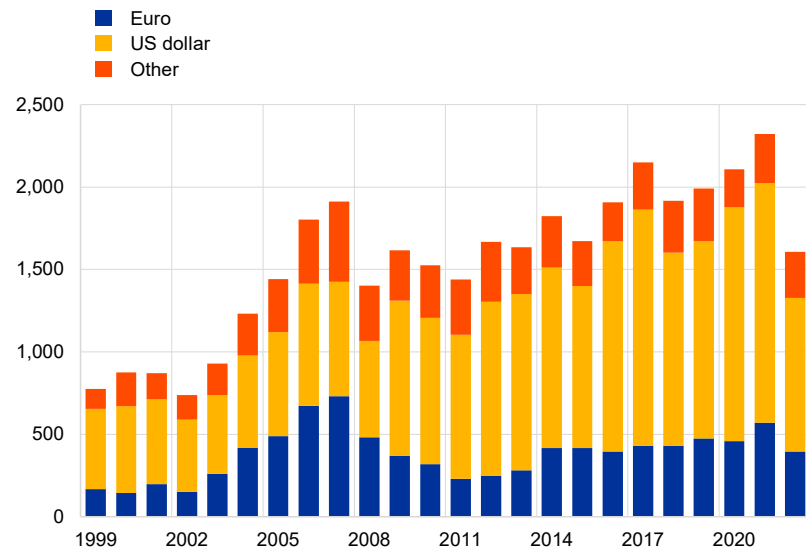
Sources: Refinitiv Datastream, BIS and ECB calculations.

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.

# 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

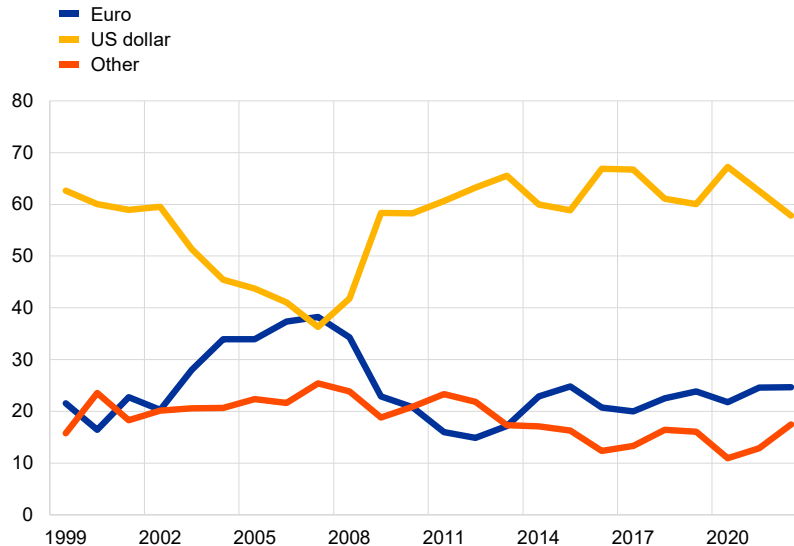
(USD billions)



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.



## 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

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A. Geopolitical fragmentation risks and international currencies

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# The 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

## Official statements point to the intention of some countries to use alternative currencies for invoicing international trade

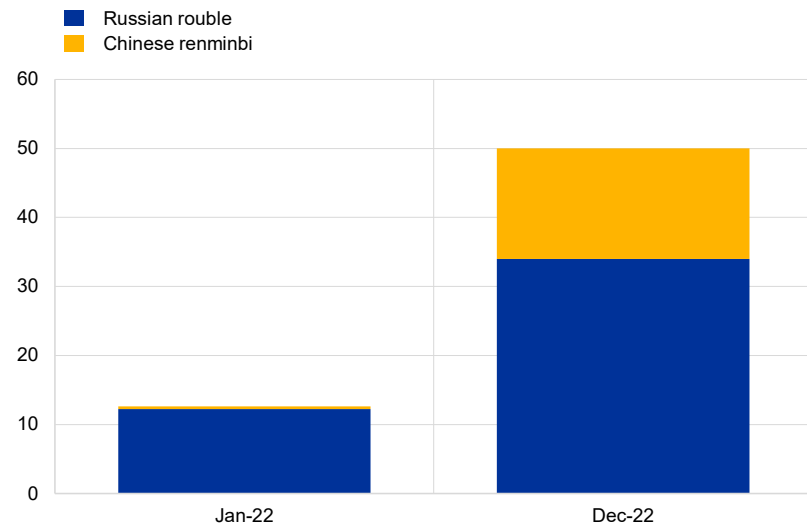
- Russia “seeks” payment for oil exports in **United Arab Emirates dirhams** from India (18/07/2022)
- Presidents Putin and Erdoğan agree to pay Russian gas in **roubles** in “near future” (16/09/2022)
- President Xi “encourages” Gulf nations to settle oil and gas in **renminbi** “in the future” (09/12/2022)
- 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.

# 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

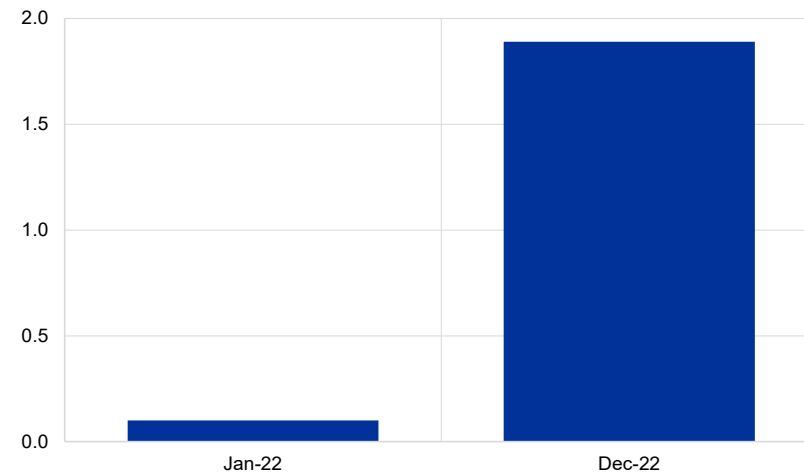
(percentages)



Sources: Central Bank of Russia and ECB staff calculations.

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

(percentages)

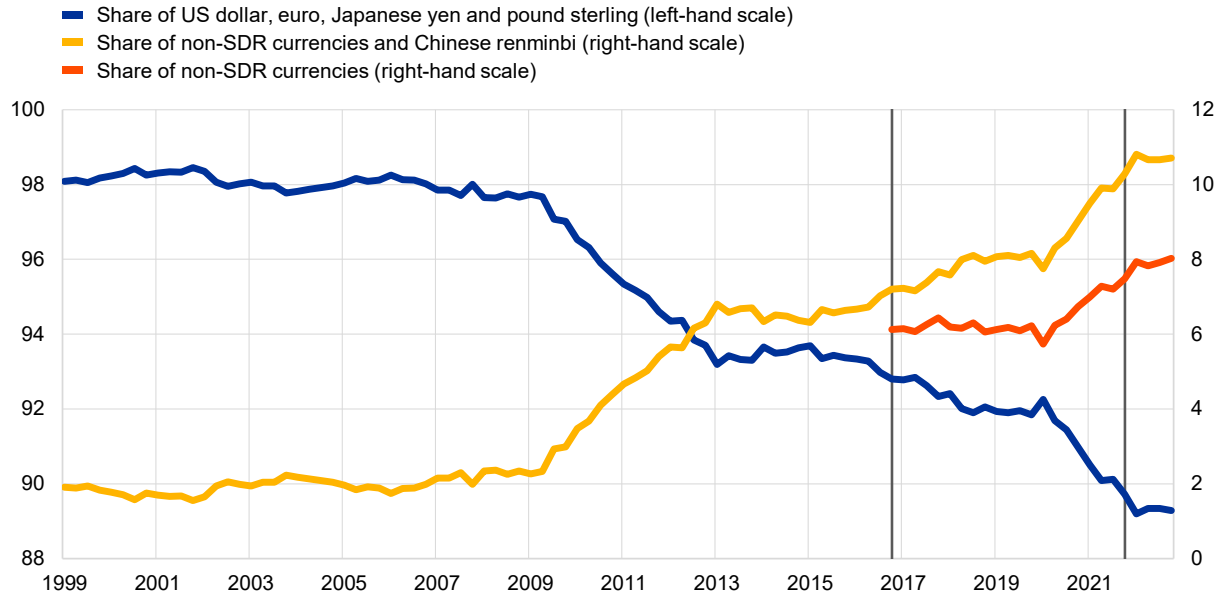


Source: SWIFT. Notes: share of Russia in total offshore renminbi cross-border payments excluding China. In January 2022 Russia was not in the top 15 countries for renminbi offshore payment volumes and for this reason its share is not reported by SWIFT. For that period Russia's share is approximated using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

# 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)

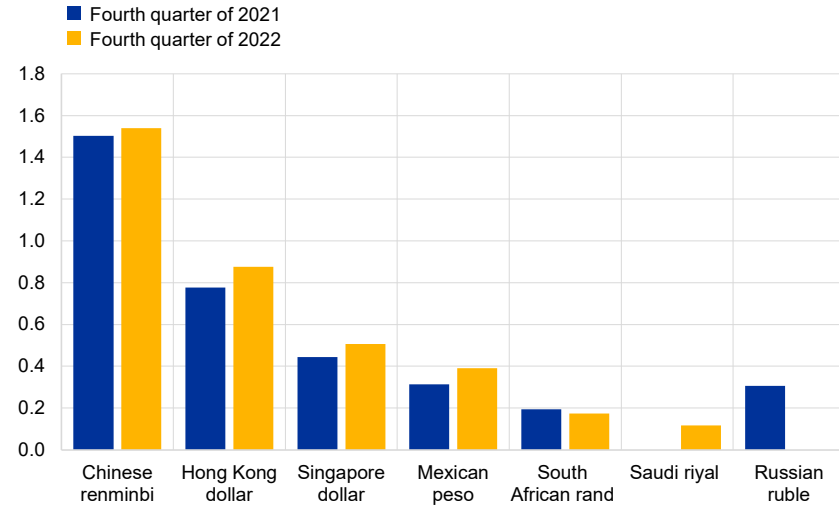


Sources: IMF and COFER. Notes: The main reserve currencies are the US dollar, the euro, the Japanese yen and the pound sterling. Although COFER provides separate data on reserves held in the Australian dollar, Canadian dollar, Chinese renminbi and the Swiss franc, Arslanalp et al. (2022) estimate that 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.

# 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)

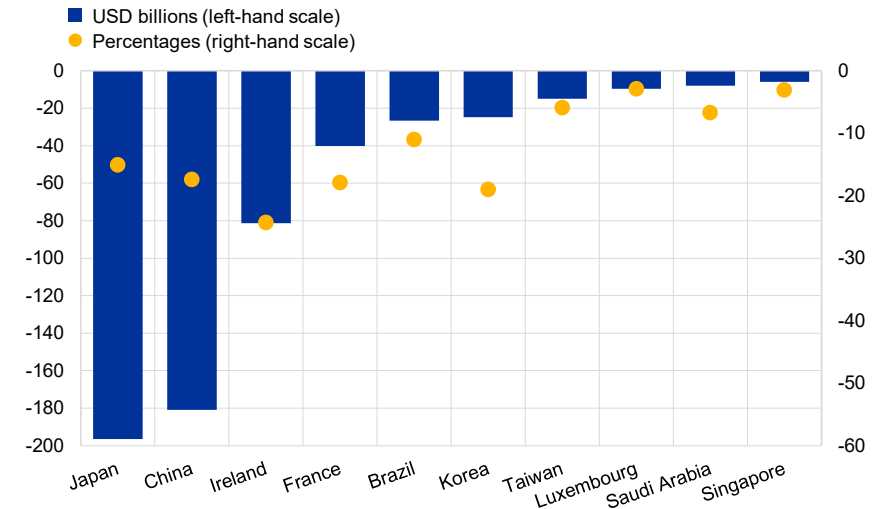


Source: SWIFT and ECB staff calculations.

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)



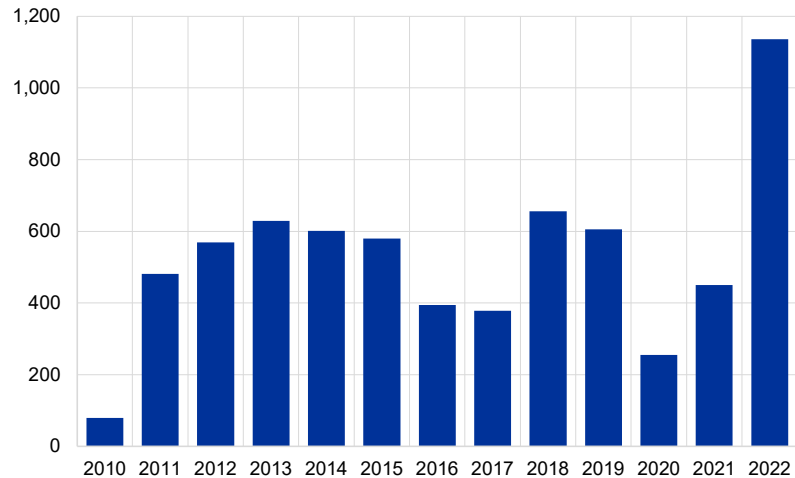
Source: US Treasury International Capital System and ECB staff calculations.

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.

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

## Evolution of gold purchases by central banks

(tonnes)

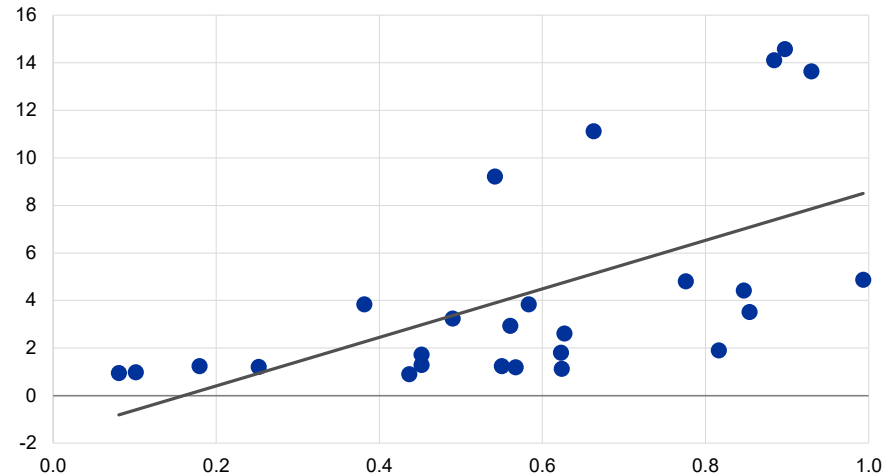


Sources: IMF, Metals Focus, Refinitiv GFMS, World Gold Council.

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.



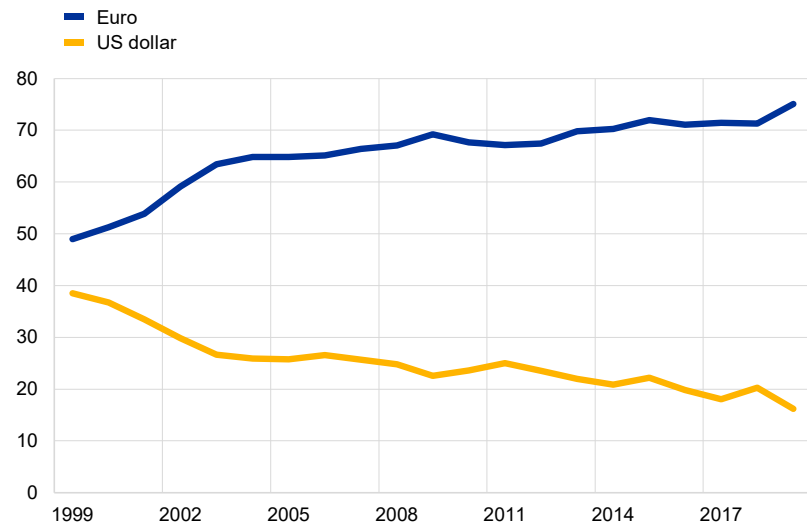
## Special features

- 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?

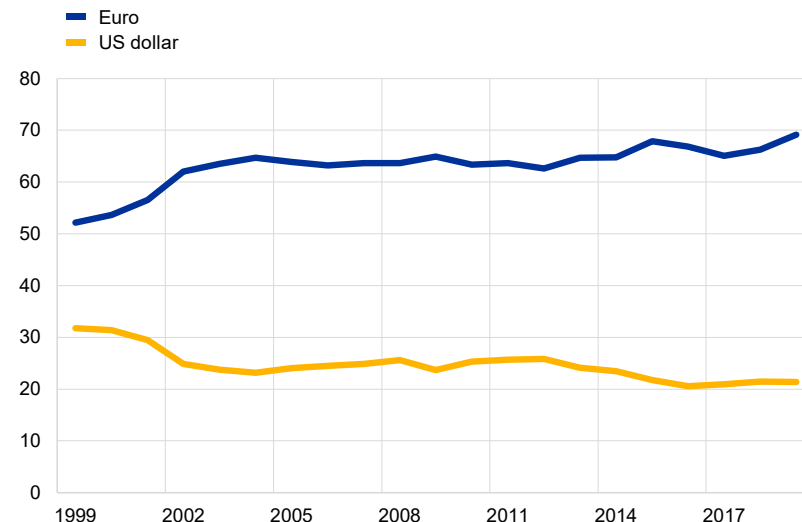
## Share of the euro and the US dollar as an invoicing currency for exports

(percentages)



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

(percentages)

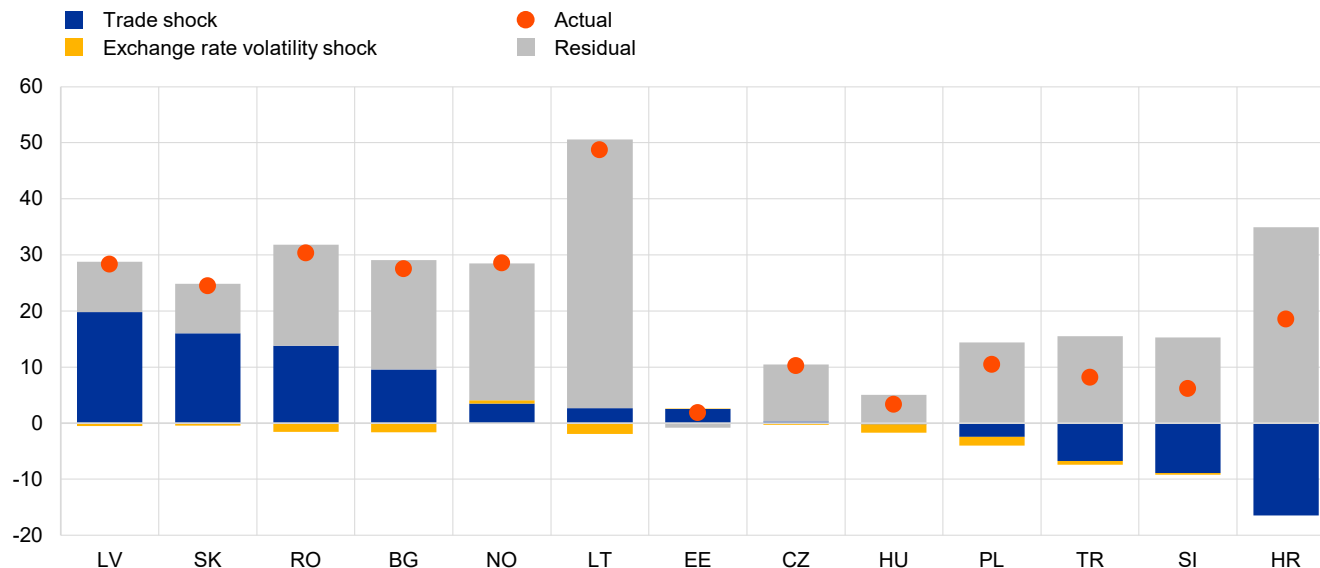


Source: Boz, E., Casas, C., Georgiadis, G., Gopinath, G., Le Mezo, H., Mehl, A. and Nguyen, T. (2022), "Patterns of invoicing currency in global trade: New evidence", Journal of International Economics, Vol. 136.  
Notes: Cross-country averages of individual observations of a sample of countries neighbouring 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).

## Special features

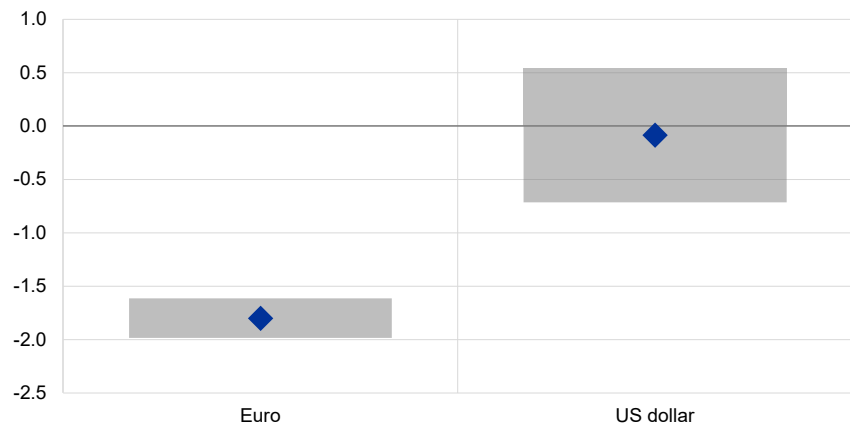
- A. Geopolitical fragmentation risks and international currencies
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# Distance effect stronger for euro than US dollar in cross-border bank loans

## Euro-denomination of bank loans and trade invoicing highly correlated

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

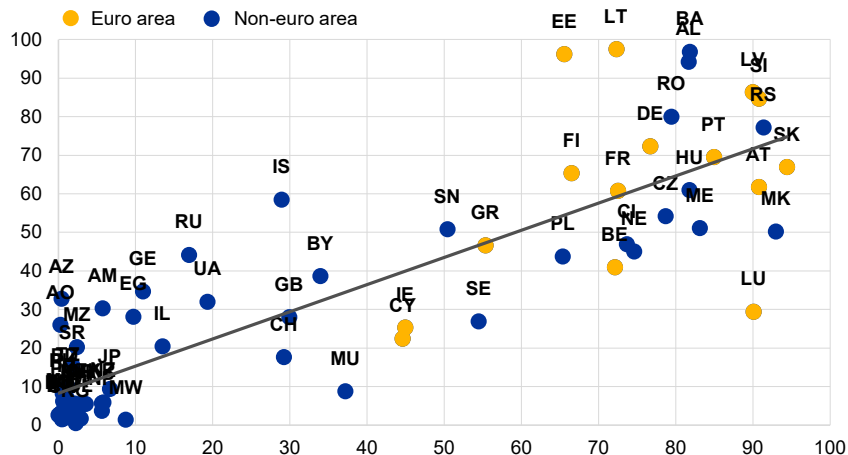
(percentages)



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 %)

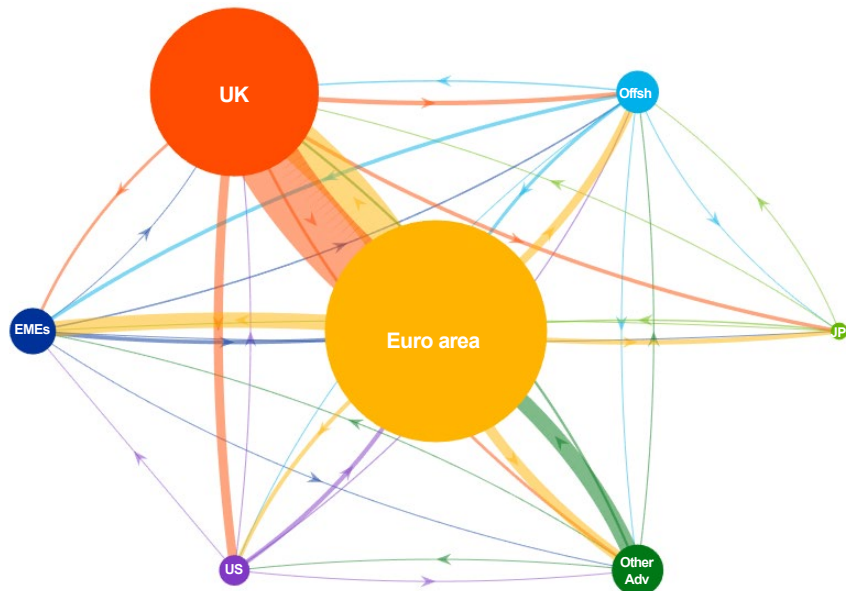


Sources: BIS locational banking statistics (by residence) and authors' calculations.  
 Notes: The data displayed are for counterparty/destination countries in the BIS data. Euro area countries are included but intra-euro area bank loans are excluded. Reported values are for the 2016-2019 average.

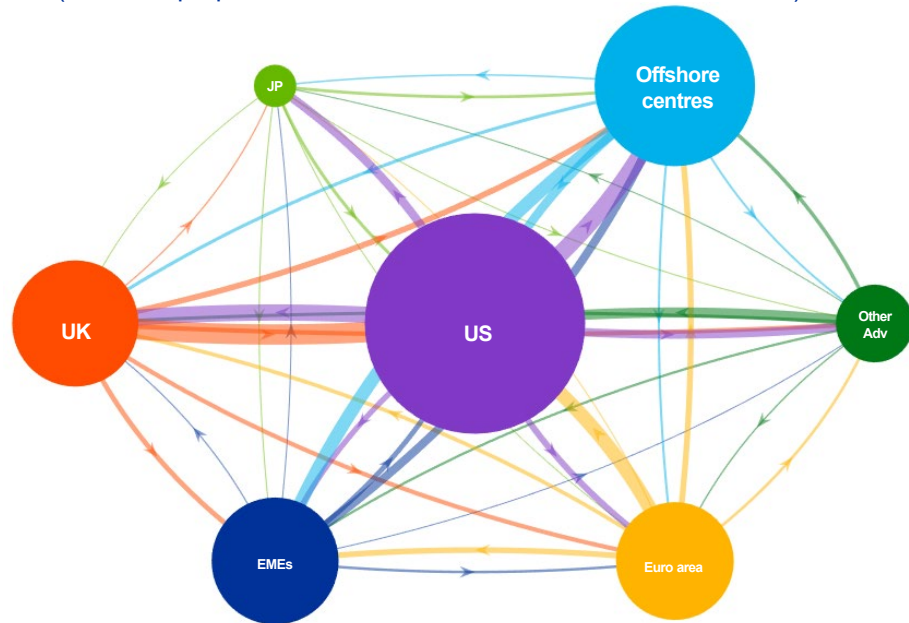
# City of London remains a key financial centre in network of euro-denominated cross-border bank loans despite Brexit

## 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.

# 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

# Additional background slides 2023 report



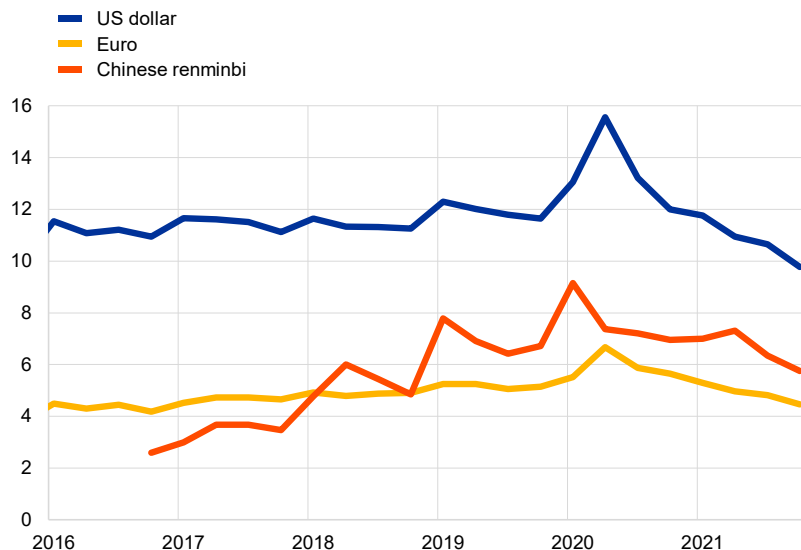
## Additional analytical boxes

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)

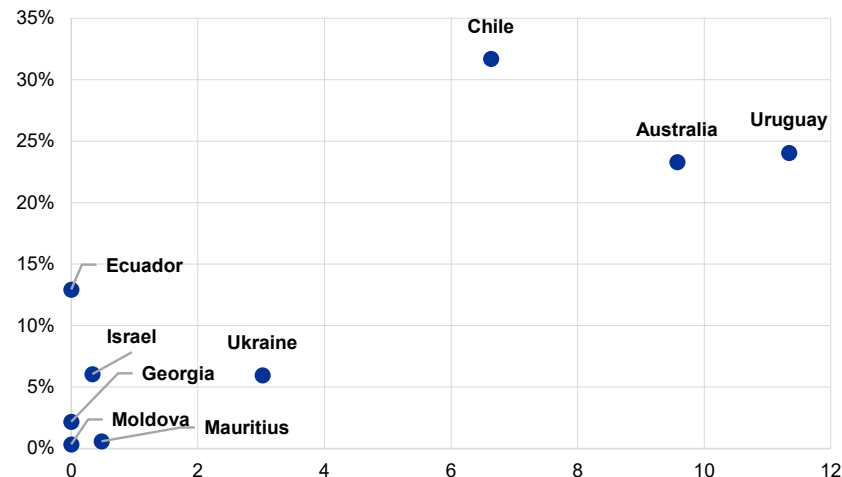


Source: Eichengreen, B., Macaire, C., Mehl, A., Monnet, E. and Naef, A. (2022), "Is capital account convertibility required for the renminbi to acquire reserve currency status?", CEPR Working Paper. Notes: Global imports denominated in US dollars and euro are estimated by aggregating country-level observations 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

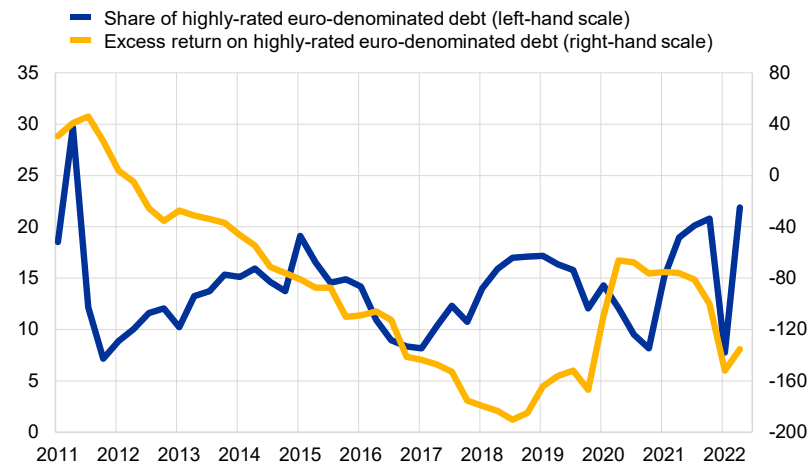
(y-axis: percentages; x-axis: months)



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)

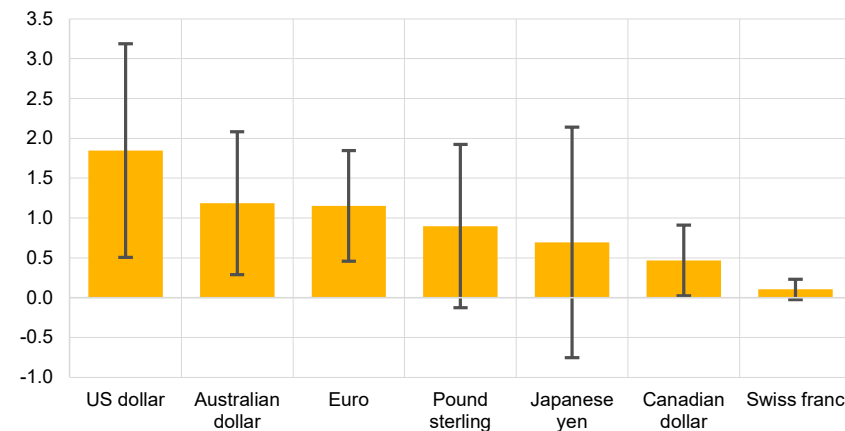


Sources: BIS, Refinitiv Lipper, Refinitiv Eikon and ECB calculations.

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)

(regression coefficients)

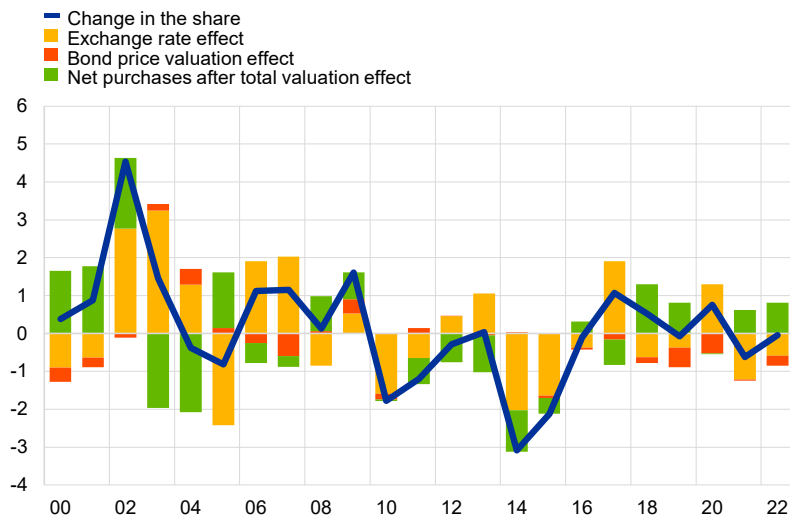


Sources: BIS, Lipper for Investment Management, Refinitiv Lipper Global Data Feed, Refinitiv Eikon and ECB calculations. Notes: Estimates of the coefficient  $\beta_2$  from the regression  $s_{i,t}^j = \alpha_i + \gamma_t + \beta_1 s_{i,t-1}^j + \beta_2 r_{i,t}^{x,j} + \beta_3 \Delta s_{i,t}^{j,P,R} + \beta_4 \Delta s_{i,t}^{j,X,R} + \varepsilon_{i,t}^j$  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)

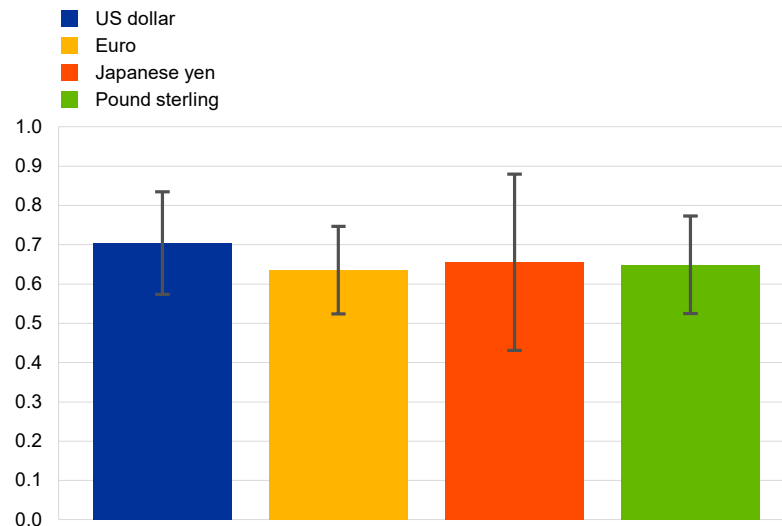


Source: IMF and ECB calculations.

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)

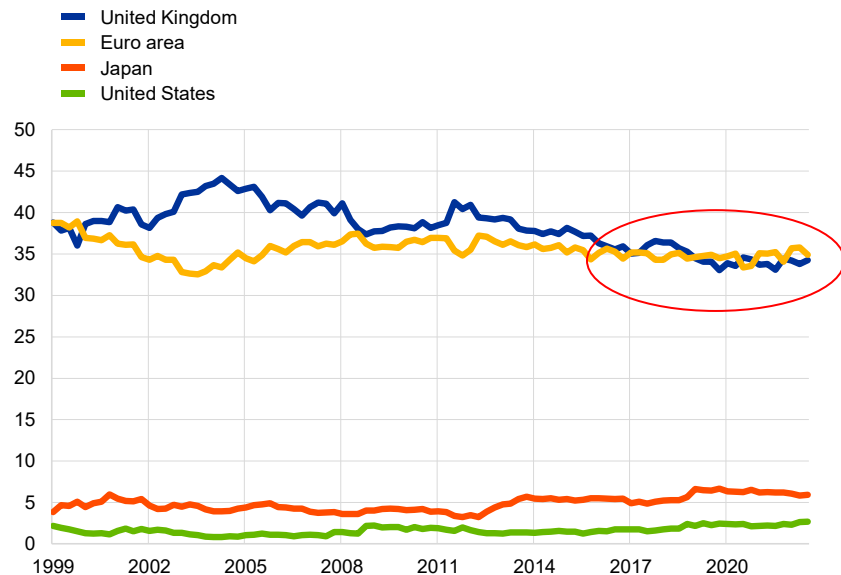


Source: IMF and ECB calculations.

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

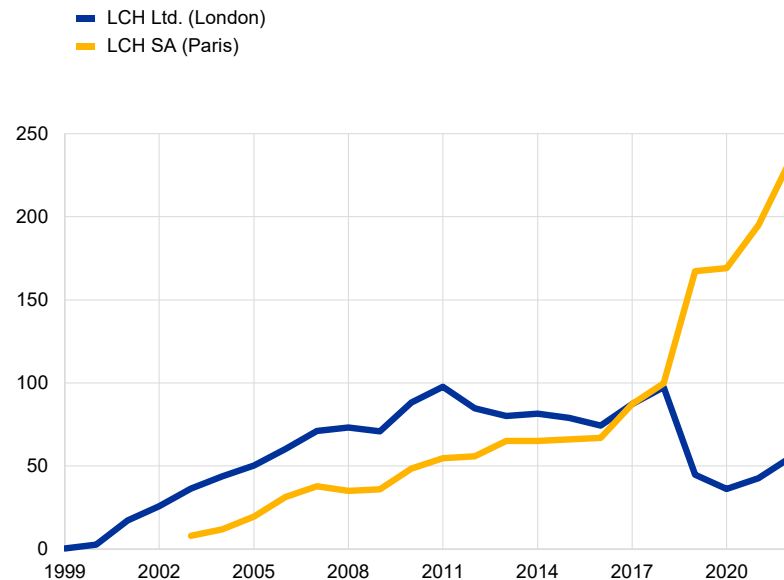
## Share of international euro claims and liabilities, by location of reporting bank (percentages)



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)



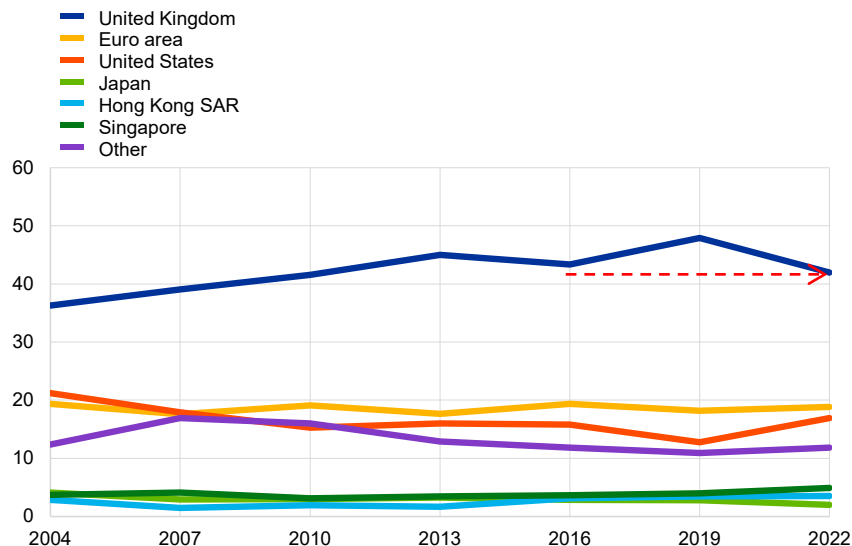
Sources: LCH Group and ECB calculations.

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 4: 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

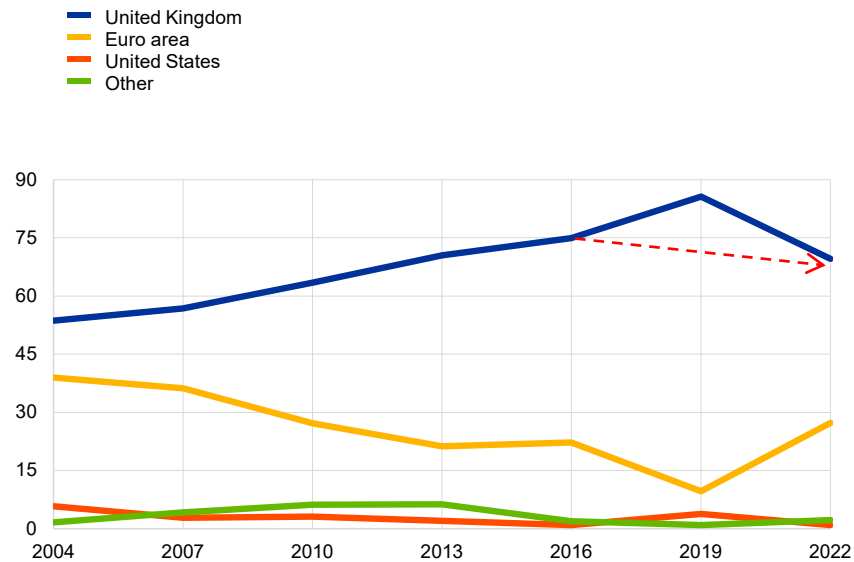
(percentages)



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)

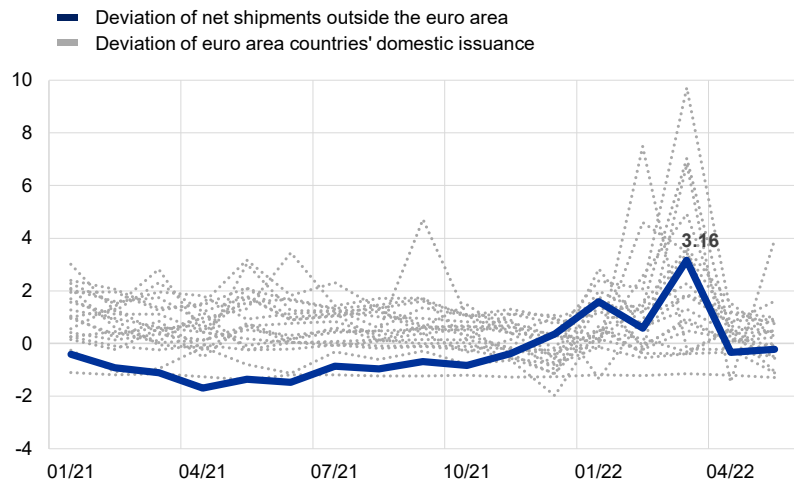


Sources: BIS Triennial Central Bank Survey of FX and OTC derivatives markets and ECB calculations.  
 Notes: The chart shows OTC IRDs including forward rate agreements, interest rate swaps and options. Corrected for local but not cross-border inter-dealer double-counting (i.e. "net-gross" basis).

# 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)

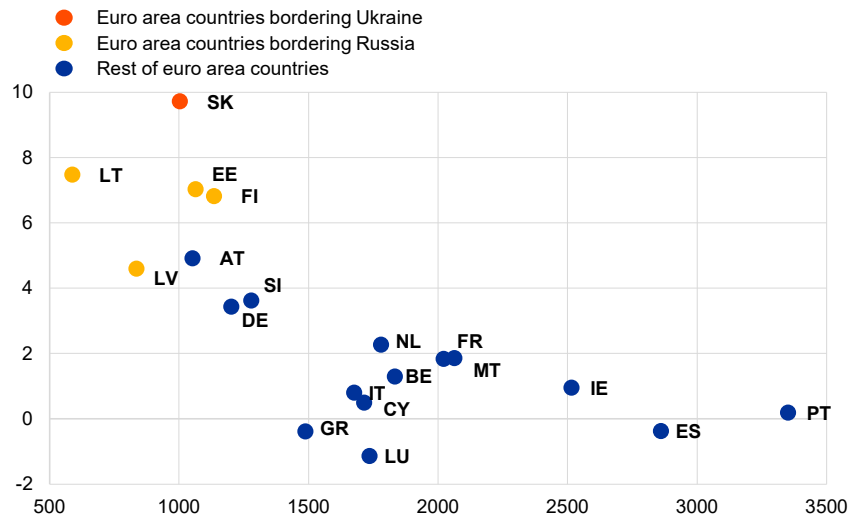


Sources: ECB.

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)



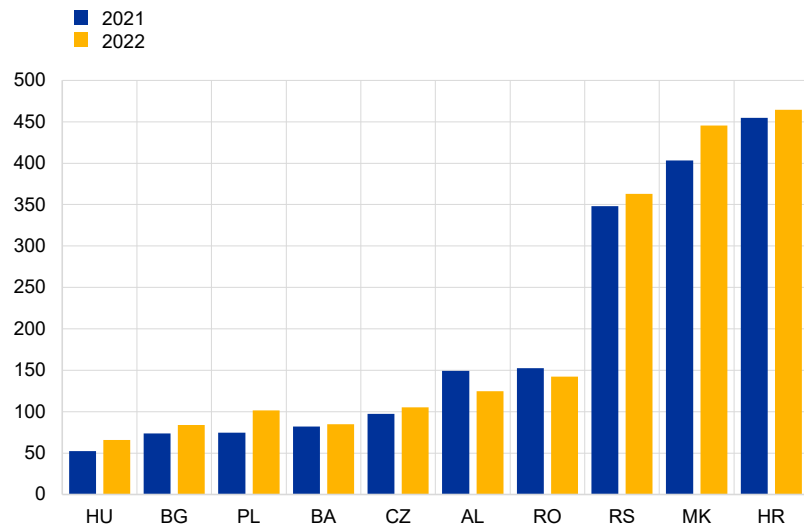
Sources: ECB.

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))

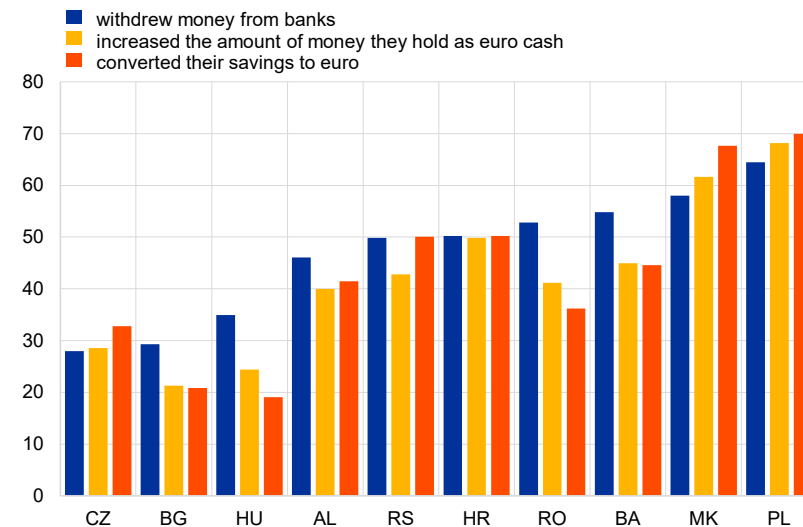


Source: OeNB Euro Survey.

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.