



EUROPEAN CENTRAL BANK

EUROSYSTEM

Currency pegs: a euro area perspective

Danmarks Nationalbank conference
marking the 40th anniversary of the
Danish fixed exchange rate regime

31 October 2022



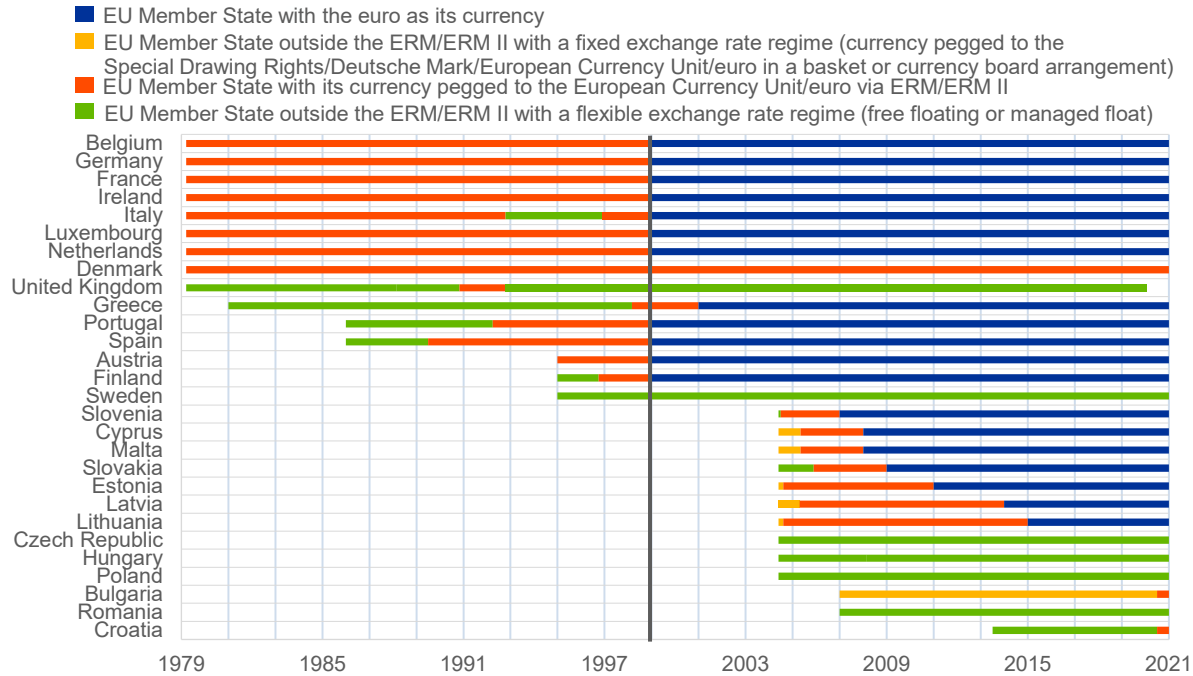
Philip R. Lane
Member of the Executive Board

Currency pegs: some issues from a euro area perspective

- Membership of EA versus non-membership (Lane, Journal of Economic Perspectives, 2021)
- Exchange rate regimes and trade
- Exchange rate regimes and financial linkages
- Euro trackers: expands footprint of ECB monetary policy; attenuates exchange rate channel of monetary policy (Honohan and Lane, International Finance, 1999)
- Monetary policy independence: dilemma or trilemma? (Rey 2015)

The evolution of the European Monetary Union

Exchange rate regimes of EU Member States since the start of the European Monetary System



Source: ECB.

Note: The latest observations are for 2022.

Volatility of exchange rate changes against the euro and the US dollar – countries strictly anchored to the euro

<i>Base currency</i>	Euro <i>standard deviation of monthly percentage changes</i>	US dollar	IMF de facto classification <i>de facto arrangements as identified by IMF staff</i>	IMF de jure classification <i>de jure arrangements as identified by IMF staff</i>
Bulgarian lev (ERM II)	0.001	1.67	Currency board	Currency board
Danish krone (ERM II)	0.04	1.68	Conventional peg	Conventional peg
Serbian dinar	0.12	1.68	Stabilised arrangement	Floating
Bosnia and Herzegovina convertible marka	0.19	1.70	Currency board	Currency board
Macedonian denar	0.20	1.69	Stabilised arrangement	Floating
Romanian leu	0.30	1.66	Crawl-like arrangement	Managed floating
Croatian kuna (ERM II)	0.39	1.77	Stabilised arrangement	Stabilised arrangement
Albanian lek	0.73	1.73	Floating	Free floating
Tunisian dinar	0.80	1.27	Crawl-like arrangement	Floating
Moroccan dirham	0.98	1.63	Pegged exchange rate within horizontal bands	Pegged exchange rate within horizontal bands

Sources: BIS, IMF Annual Report on Exchange Arrangements and Exchange Restrictions 2021 and ECB staff calculations.

Notes: The standard deviation of monthly percentage changes is calculated for the period from 31 January 2020 to 31 August 2022. The IMF classifications are as at 30 April 2021.

Volatility of exchange rate changes against the euro and the US dollar – countries loosely anchored to the euro or floating in the EU neighbourhood region

<i>Base currency</i>	Euro <i>standard deviation of monthly percentage changes</i>	US dollar	IMF de facto classification <i>de facto arrangements as identified by IMF staff</i>	IMF de jure classification <i>de jure arrangements as identified by IMF staff</i>
Swiss franc	1.13	1.50	Crawl-like arrangement	Free floating
Swedish krona	1.21	2.20	Free floating	Free floating
Singapore dollar	1.25	0.99	* Stabilised arrangement	Other managed
Yuan renminbi	1.45	1.12	* Crawl-like arrangement	Managed floating exchange rate arrangement
Kuwaiti dinar	1.51	0.30	* Other managed arrangement	Conventional peg vis-à-vis a currency composite
Pound sterling	1.55	1.82	Free floating	Free floating
Polish zloty	1.56	2.75	Free floating	Free floating
Czech koruna	1.78	2.69	Free floating	Free floating
Algerian dinar	1.82	1.12	* Stabilised arrangement	Managed floating
Hungarian forint	1.85	3.05	Floating	Free floating
Iceland krona	2.35	2.87	Floating	Free floating
Norwegian krone	2.86	3.33	Free floating	Free floating

Sources: BIS, IMF Annual Report on Exchange Arrangements and Exchange Restrictions 2021, and ECB staff calculations.

Notes: The highlighted currencies, identified by an asterisk (*), are less volatile against the US dollar than against the euro. The standard deviation of monthly percentage changes is calculated for the period from 31 January 2020 to 31 August 2022. The IMF classifications are as at 30 April 2021.

Countries and territories with exchange rate regimes linked to the euro

(as of March 2022)

Countries	Exchange rate regimes	Monetary policy framework
European microstates (non-EU members), some French overseas collectivities	Euroisation	Other ¹
CFA franc zone, CFP franc zone, Comoros, Cabo Verde, São Tomé and Príncipe	Pegs based on the euro	Exchange rate anchor
Samoa	Pegs based on the SDR or other currency baskets involving the euro	Monetary aggregate target
Fiji, Libya	Pegs based on the SDR or other currency baskets involving the euro	Exchange rate anchor

Sources: National central banks, IMF and ECB.

Notes: The table refers to de facto exchange rate regimes.

¹ No separate legal tender/no nominal anchor; various indicators are taken into account in the conduction of monetary policy.

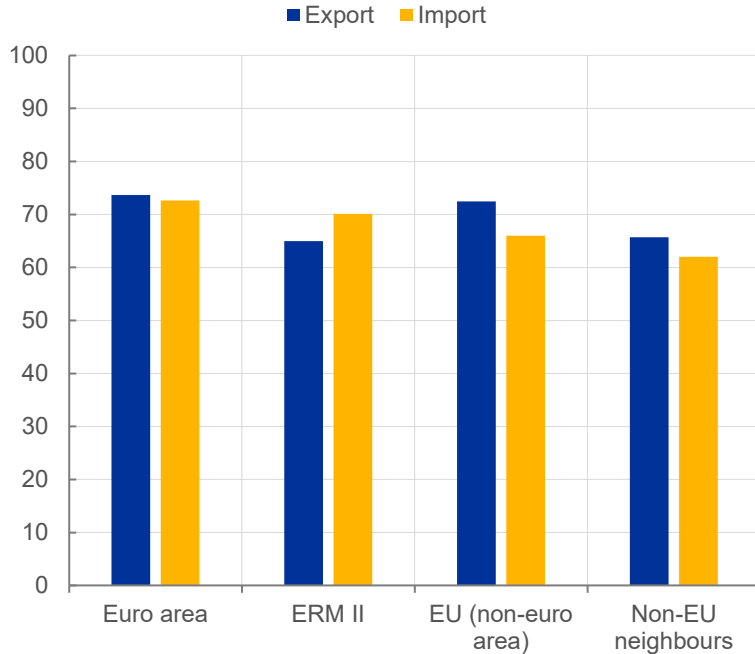
Classification is based on the IMF's 2021 Annual Report on Exchange Arrangements and Exchange Restrictions.

European microstates: Republic of San Marino, Vatican City, Principality of Monaco and Andorra are entitled to use the euro as their official currency. French overseas territories: Saint Barthélemy, Saint Martin and Saint-Pierre and Miquelon use the euro as their official currency. CFA franc zone: CEMAC (Cameroon, Central African Republic, Chad, Republic of Congo, Equatorial Guinea and Gabon) and WAEMU (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, Togo). In December 2019, a reform of the WAEMU was announced where the CFA franc would be replaced with a new unit -the eco- with a fixed exchange rate vis-à-vis the euro. CFP franc zone: New Caledonia and the French overseas territories of French Polynesia and Wallis and Futuna. The CFP Franc has had a fixed exchange rate against the euro since its introduction in 1999. Cabo Verde and São Tomé and Príncipe: both countries have had fixed exchange rates against the euro since 1998 (Cabo Verde) and 2010 (São Tomé and Príncipe). Samoa: the central bank maintains an exchange rate peg based on a basket of currencies that includes the euro, as well as the US dollar, New Zealand dollar and Australian dollar.

Fiji: the currency was pegged to a basket of international currencies in May 2007. The external value of the Fiji dollar is officially determined on the basis of a weighted basket of currencies comprising the Australian dollar, Japanese yen, New Zealand dollar, euro and US dollar.

Euro invoicing in international trade

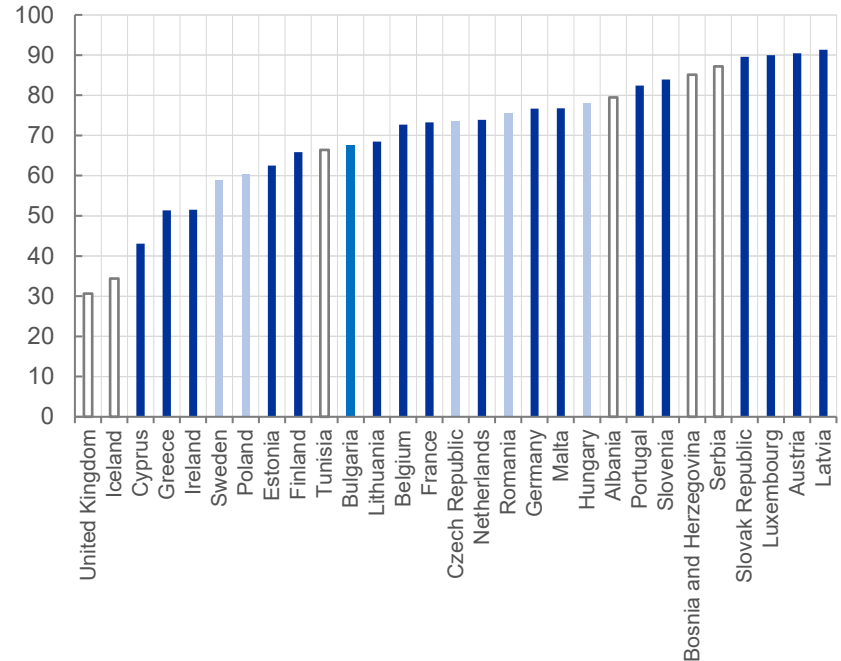
Share of exports and imports invoiced in euro (percent)



Sources: IMF and ECB staff calculations.

Notes: ERM II includes Bulgaria; EU (non-euro area) is the average of the Czech Republic, Hungary, Poland, Romania and Sweden; Non-EU neighbours is the average of Albania, Bosnia and Herzegovina, Iceland, Serbia, Tunisia and the United Kingdom. The shares for Italy, Spain, Denmark and Croatia are missing. The latest observations are for 2019.

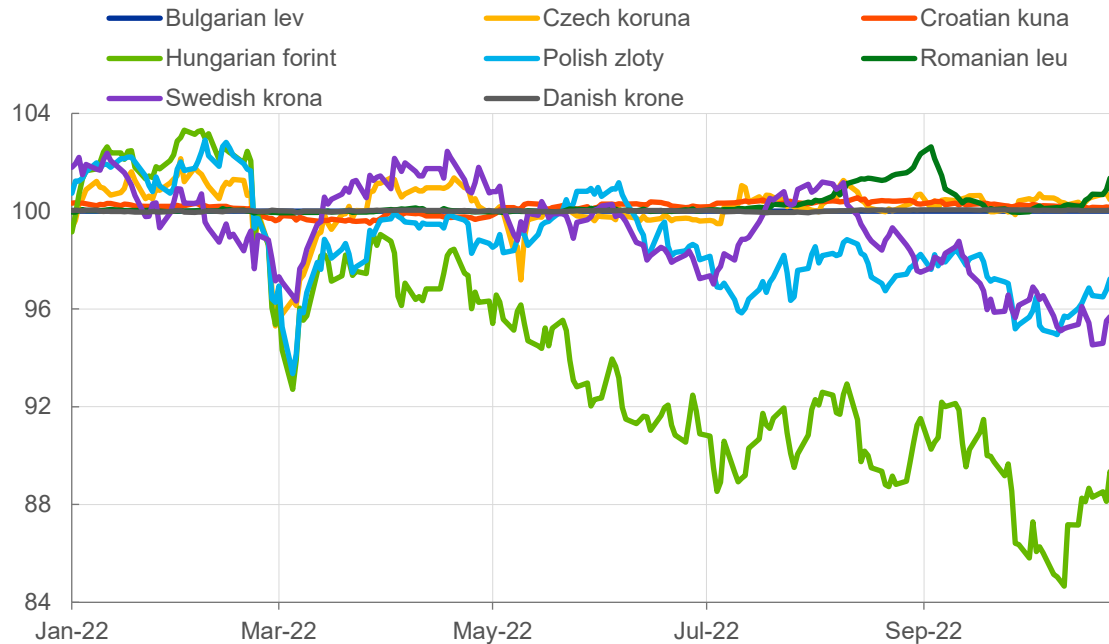
Total trade invoiced in euro (percent)



Sources: IMF and ECB staff calculations.

Notes: The bars show the average of the shares of exports and imports invoiced in euro in 2019. Dark blue shows euro area countries, blue shows ERM II countries, light blue shows EU (non-euro area) countries and white shows non-EU neighbour countries. The shares for Italy, Spain, Denmark and Croatia are missing. The latest observation is for 2019.

Exchange rates of non-euro area EU countries' currencies against the euro

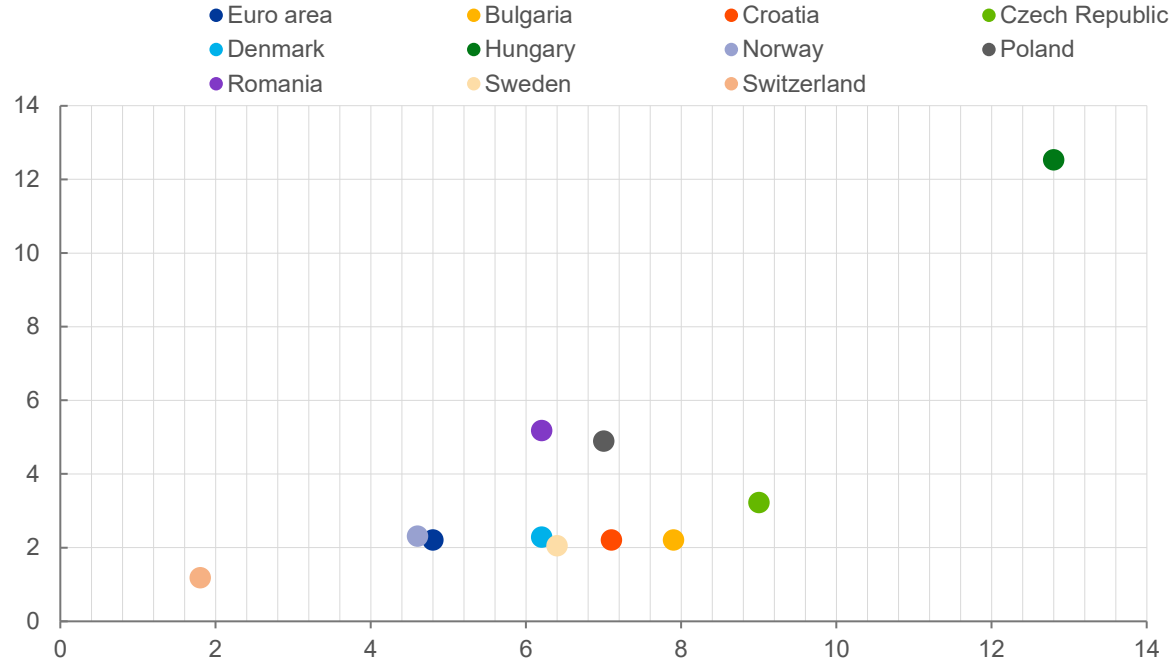


Source: ECB.

Notes: An increase corresponds to an appreciation. The latest observations are for 28 October 2022.

Changes in inflation and three-month money market rates in 2022

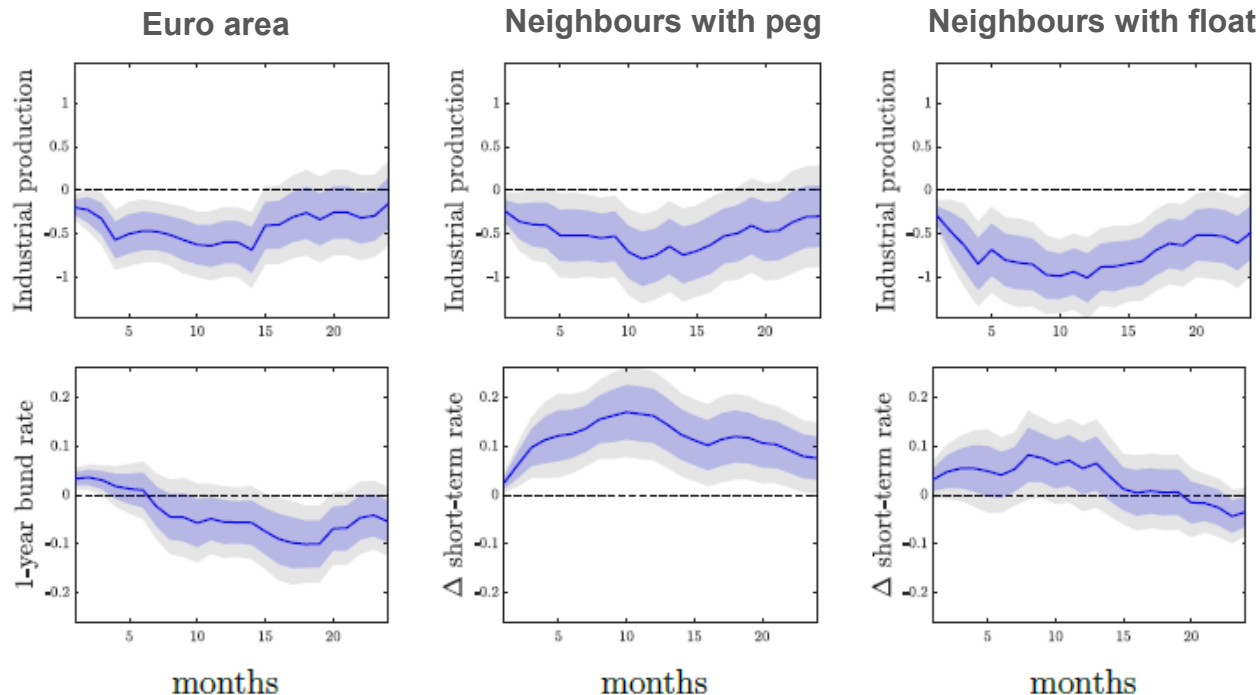
(in percentage points)



Source: ECB.

Notes: Horizontal axis: changes in year-on-year inflation between January and September 2022. Vertical axis: changes in three-month money market rates between 3 January and 28 October 2022. EURIBOR is used for Bulgaria and Croatia.

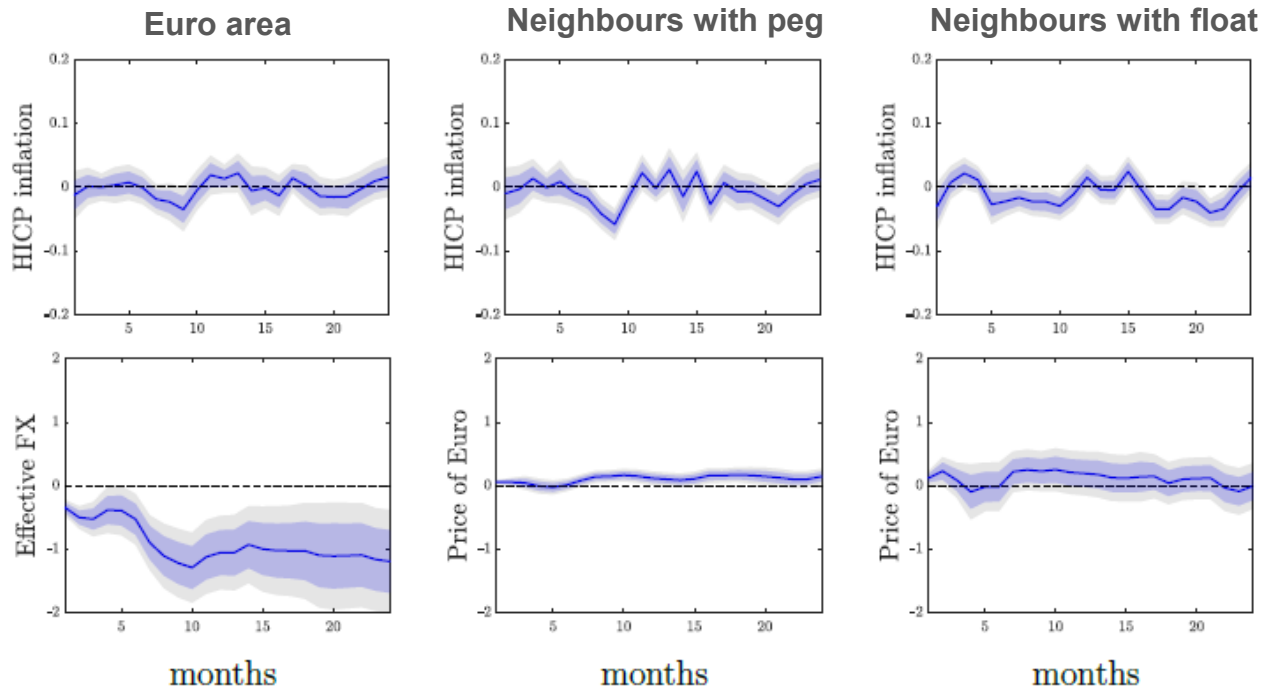
Adjustment to euro-area monetary policy shock



Source: Corsetti, Kuester, Müller and Schmidt (2021).

Notes: The shock is a one-standard deviation shock identified by Jarocinski and Karadi (2020). The solid line represents the point estimate, and the shaded areas correspond to 68 and 90 per cent confidence bounds based on Driscoll and Kraay (1998) robust standard errors. The panels in the top row show the per cent response of industrial production and panels in the bottom row show the response of interest rates in annualised percentage points. For neighbour countries, the difference between the neighbour's interest rate and the euro area interest rate is shown.

Adjustment to euro-area monetary policy shock

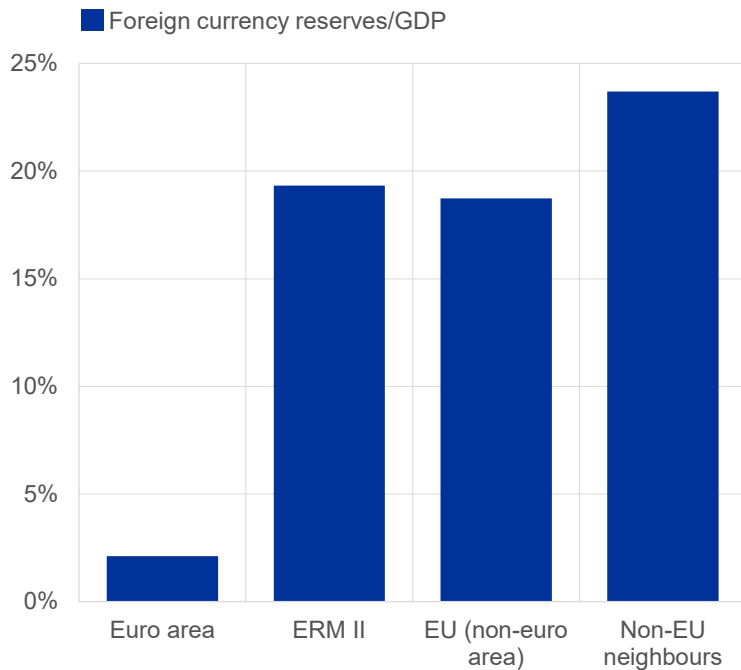


Source: Corsetti, Kuester, Müller and Schmidt (2021).

Notes: The shock is a one-standard deviation shock identified by Jarocinski and Karadi (2020). The solid line represents the point estimate, and the shaded areas correspond to 68 and 90 per cent confidence bounds based on Driscoll and Kraay (1998) robust standard errors. The panels in the top row show the response of the monthly rate of change of the consumer price index (in per cent, not annualised), and the panels in the bottom row show the per cent change in the nominal exchange rate.

Level of foreign exchange reserves

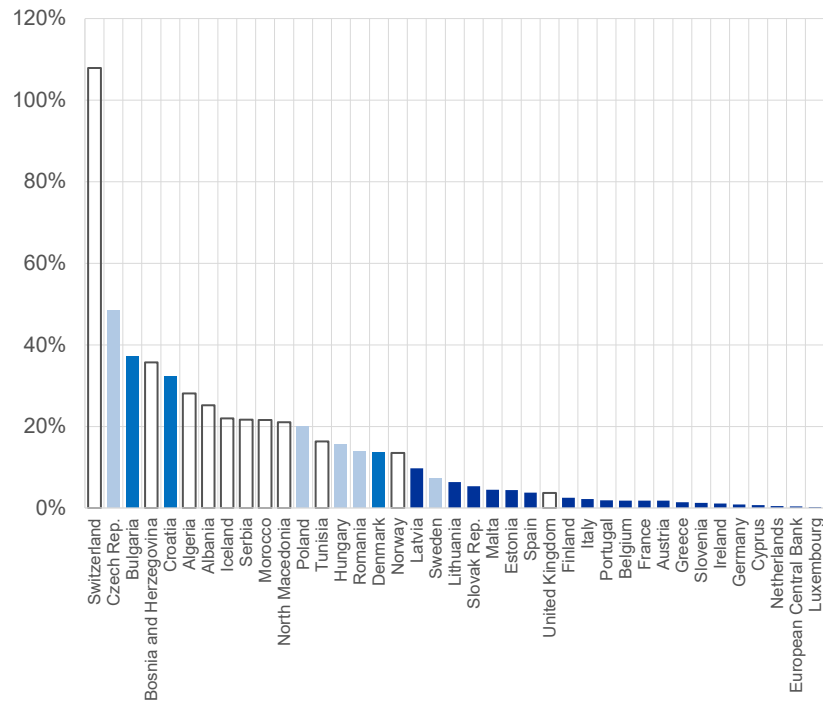
Foreign exchange reserves by region (as a percentage of GDP)



Sources: IMF and ECB staff calculations.

Notes: Euro area includes the ECB's reserve assets and those held by the national central banks of euro area countries; ERM II includes Bulgaria, Croatia and Denmark; EU (non-euro area) includes Czech Republic, Hungary, Poland, Romania and Sweden; Non-EU neighbours includes Albania, Algeria, Bosnia and Herzegovina, Iceland, Macedonia, Morocco, Norway, Serbia, Switzerland, Tunisia and the United Kingdom. GDP weighted averages. The latest observation is for August 2022.

Foreign exchange reserves by country (as a percentage of GDP)

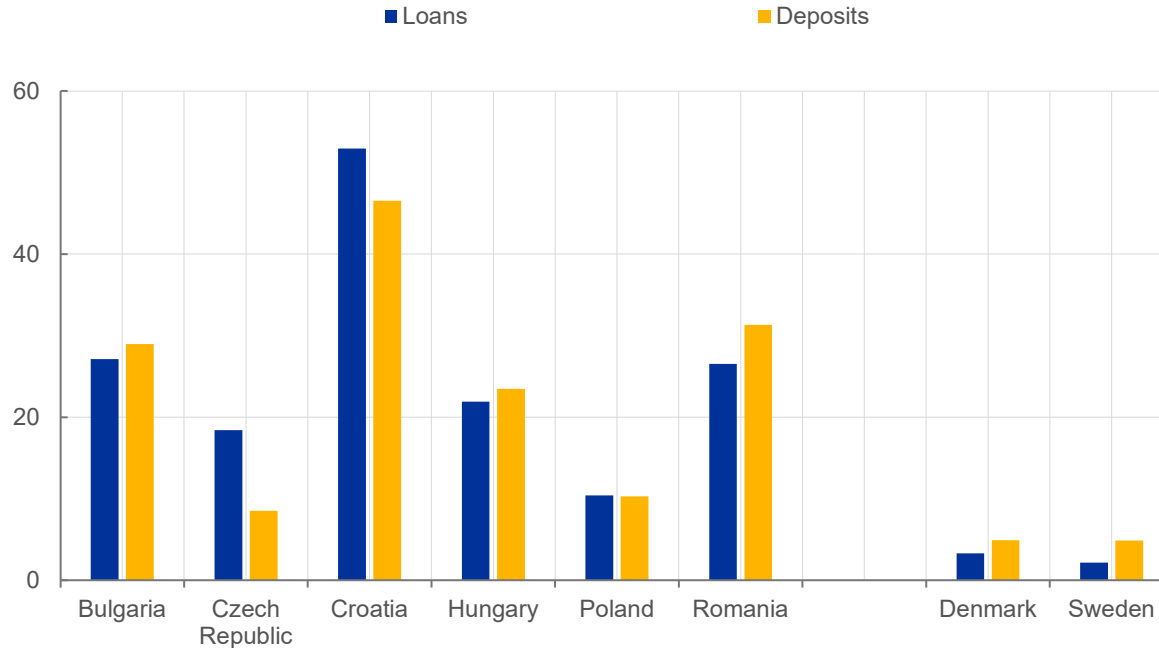


Sources: IMF and ECB staff calculations.

Notes: Dark blue shows euro area countries and the ECB, blue shows ERM II countries, light blue shows EU (non-euro area) countries and white shows non-EU neighbour countries. The latest observations are for August 2022.

Share of the euro in deposits and loans for non-euro area EU countries in 2022

(in percentage)

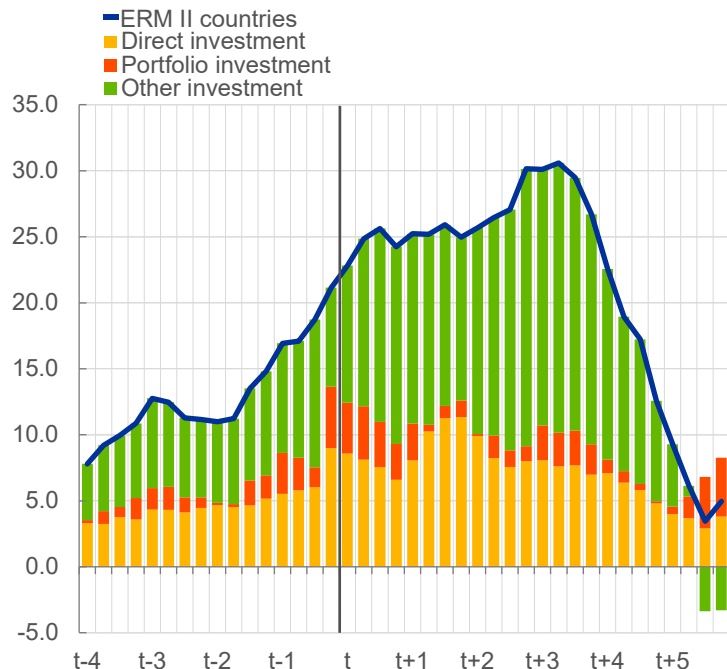


Source: ECB.

Note: Data are taken from the ECB Balance Sheet Items statistics and refer to outstanding amounts of loans/deposits of/with MFIs at the end of August 2022.

Gross international financial inflows of CEECs before and after joining ERM II

(as a percentage share of GDP; unweighted averages)

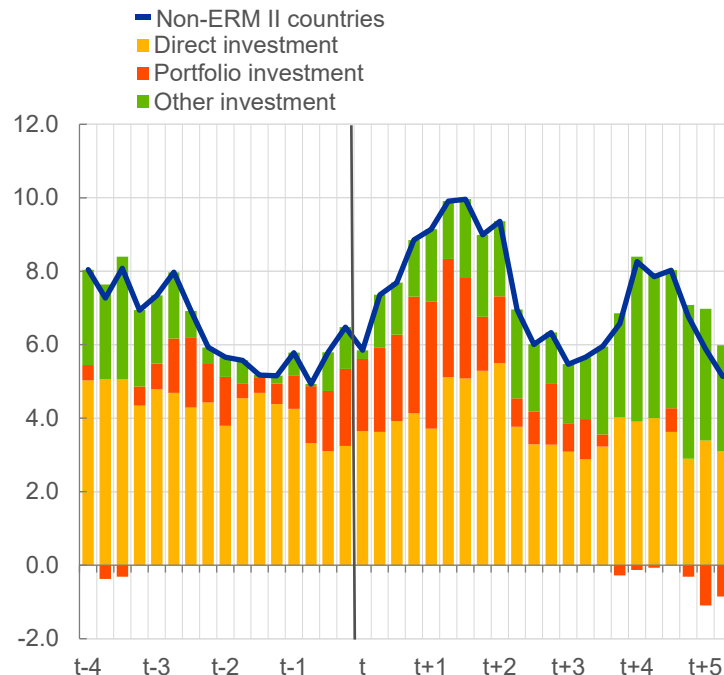


Source: ECB staff calculations.

Notes: The central and eastern European countries (CEECs) covered are Estonia, Latvia, Lithuania, Slovenia and Slovakia. The period "t" is a country-specific event and identifies the year in which the country joined ERM II: 2004 for Estonia, Lithuania and Slovenia and 2005 for Latvia and Slovakia.

Gross international financial inflows of CEECs not participating in ERM II before and after joining the European Union

(as a percentage share of GDP; unweighted averages)

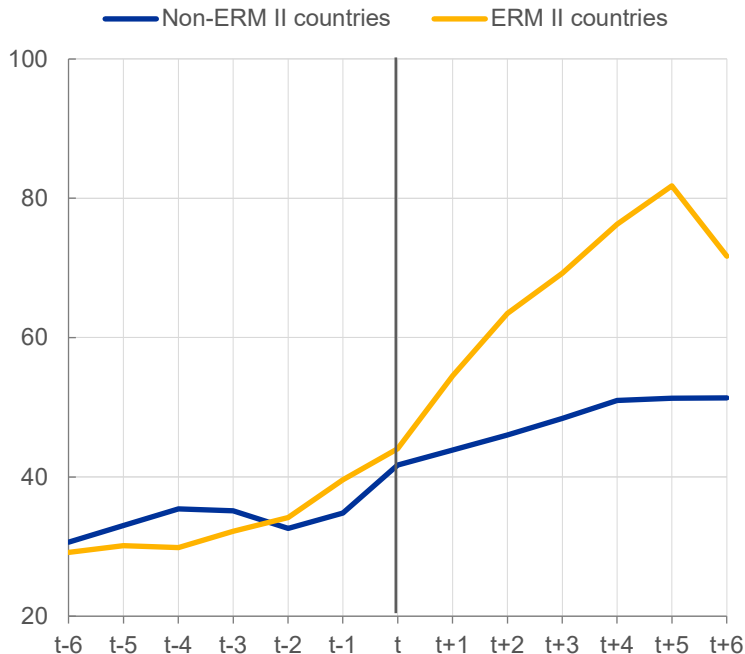


Source: ECB staff calculations.

Notes: The central and eastern European countries (CEECs) covered are Bulgaria, the Czech Republic, Croatia, Hungary, Poland, and Romania. The period "t" is a country-specific event and identifies the year of the country's accession to the European Union: 2004 for the Czech Republic, Hungary and Poland, 2007 for Bulgaria and Romania and 2013 for Croatia.

Domestic credit to the private sector in ERM II and non-ERM II CEECs

(as a percentage share of GDP; unweighted averages)

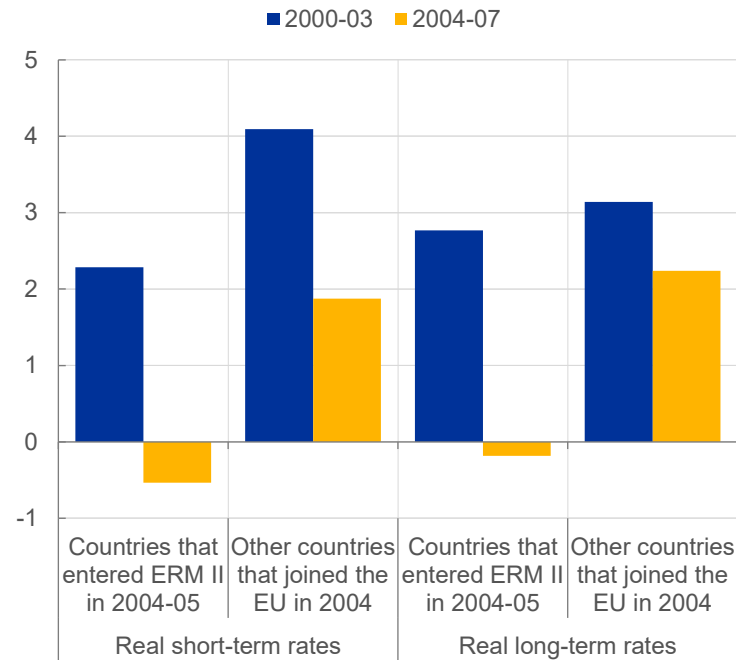


Source: ECB staff calculations.

Notes: The ERM II countries covered are Estonia, Latvia, Lithuania, Slovenia and Slovakia. The period "t" is a country-specific event and identifies the year in which the country joined ERM II: 2004 for Estonia, Lithuania and Slovenia and 2005 for Latvia and Slovakia. The non-ERM II countries covered are Bulgaria, the Czech Republic, Croatia, Hungary, Poland and Romania. The period "t" is a country-specific event and identifies the year of the country's accession to the European Union: 2004 for the Czech Republic, Hungary and Poland, 2007 for Bulgaria and Romania and 2013 for Croatia.

Real interest rates in ERM II and non-ERM II CEECs

(percentages)



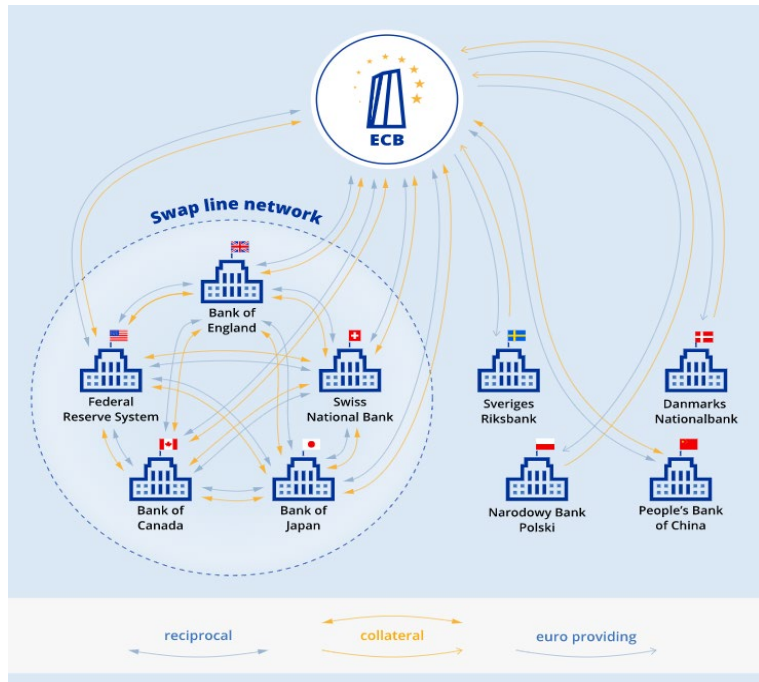
Sources: DataStream, ECB, Eurostat, OECD, Reuters, and ECB staff calculations.

Notes: Nominal three-month money market rates and nominal long-term (10-year maturity) interest rates for convergence purposes are adjusted using the Harmonised Index of Consumer Prices (HICP). Aggregates are simple averages across countries. The countries that entered ERM II in 2004-05 are Estonia, Lithuania and Slovenia (all in 2004), and Latvia and Slovakia (both in 2005). The other countries that entered the European Union in 2004 are the Czech Republic, Hungary, and Poland. Data for real long-term rates are missing for 2000. Data for Slovenia are available from 2002 onwards. Estonia is excluded from the aggregate of real long-term rates owing to missing data.

Countries receiving swap/repo lines in the EU neighbourhood

Swap lines

(foreign currencies that are accepted as collateral)

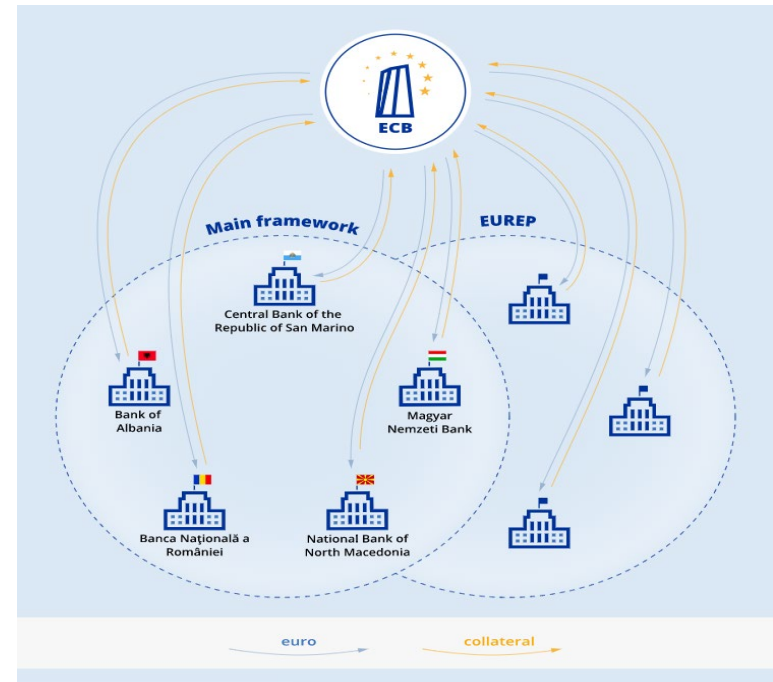


Source: ECB.

Notes: Illustration of the agreements in place as at April 2022.

Repo lines

(adequate euro-denominated collateral accepted by the ECB)



Source: ECB.

Notes: Illustration of the agreements in place as at April 2022.

Countries receiving swap/repo lines in the EU neighbourhood

List of central bank liquidity lines the Eurosystem maintains under its main framework for swap and repo lines

<i>Non-euro area counterpart</i>	Type of arrangement	Maximum borrowable amount (EUR millions)	Expiry date	Reciprocal
Danmarks Nationalbank	Swap line	24,000	Standing	No
Sveriges Riksbank	Swap line	10,000	Standing	No
People's Bank of China	Swap line	45,000	8 October 2025	Yes
Narodowy Bank Polski	Swap line	10,000	15 January 2023	No
Magyar Nemzeti Bank	Repo line	4,000	15 January 2023	No
Banca Națională a României	Repo line	4,500	15 January 2023	No
Bank of Albania	Repo line	400	15 January 2023	No
National Bank of North Macedonia	Repo line	400	15 January 2023	No
Central Bank of the Republic of San Marino	Repo line	100	15 January 2023	No

Source: ECB.

Notes: The table does not include swap lines established within the swap line network. The table does not include repo lines established with non-euro area central banks under the Eurosystem repo facility for central banks (EUREP), for which the ECB does not disclose its counterparties. The maximum borrowable amount for the People's Bank of China is set to CNY 350 billion when CNY is provided to the ECB. This is an illustration of the agreements in place as at April 2022.

- Inter-connections between euro area and broader European regional economy: trade, financial, monetary
- Spillovers and spillbacks across all countries but sensitive to exchange rate regime
- ECB: integrates regional European economic developments in economic projections and policy assessments