



DIGITAL MEANS OF PAYMENT VERSUS CASH

Evolution of banknotes in a digital world

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Sofia

Who can have access to the Central bank balance sheet

The enigma of banknotes: From “Die hard” to “Hardly die”

CBDC: a solution in search of a problem?

Who can have access to the Central bank balance sheet

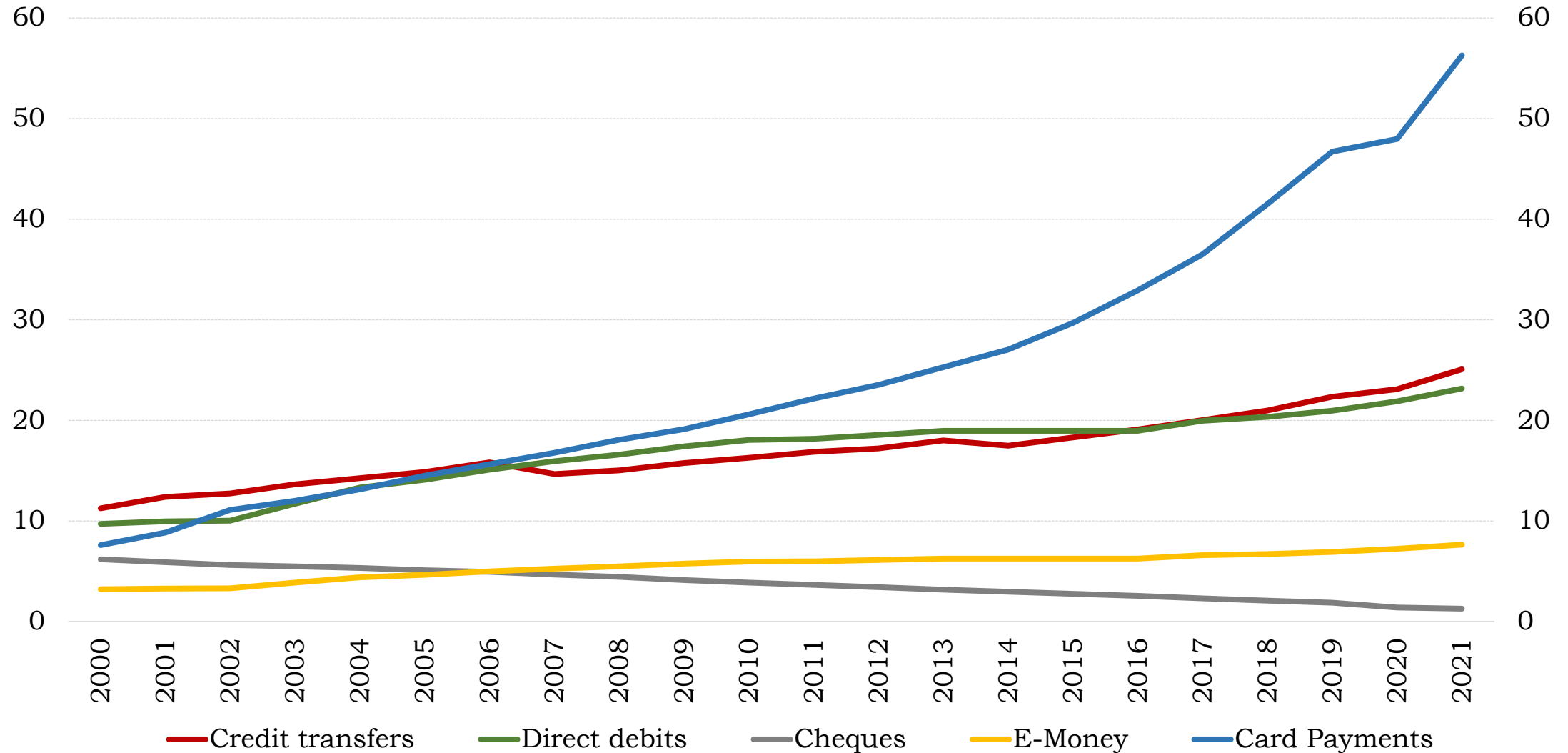


Central banking institutions before 1900*

Bank	Founded	Monopoly note issue	Lender of last resort (decade)
1. Sverige Riksbank	1668	1897	1890
2. Bank of England	1694	1844	1870
3. Banque de France	1800	1848	1880
4. Bank of Finland	1811	1886	1890
5. Nederlandsche Bank	1814	1863	1870
6. Austrian National Bank	1816	1816	1870
7. Norges Bank	1816	1818	1890
8. Danmarks Nationalbank	1818	1818	1880
9. Banco de Portugal	1846	1888	1870
10. Belgian National Bank	1850	1850	1850
11. Banco de España	1874	1874	1910
12. Reichsbank	1876	1876	1880
13. Bulgarian National Bank	1879	1885	1920
14. Bank of Japan	1882	1883	1880
15. Banca D'Italia	1893	1926	1880

* The table excludes central banking institutions of the Netherlands Antilles (est. 1828), Indonesia (1828), Romania (1880) and Serbia (1883).
Source: The Future of Central Banking. Cambridge University Press, 1994.

Use of the main payment services in the Euro area (number of transactions per year in billions)



Source: ECB. Note: Data have been partially estimated for periods prior to 2010, as methodological changes were implemented in previous years and some corresponding data are not available. The historical estimation done by the ECB ensures comparability of figures over the entire period.

Cash Payments: Limits in Different Countries in Europe

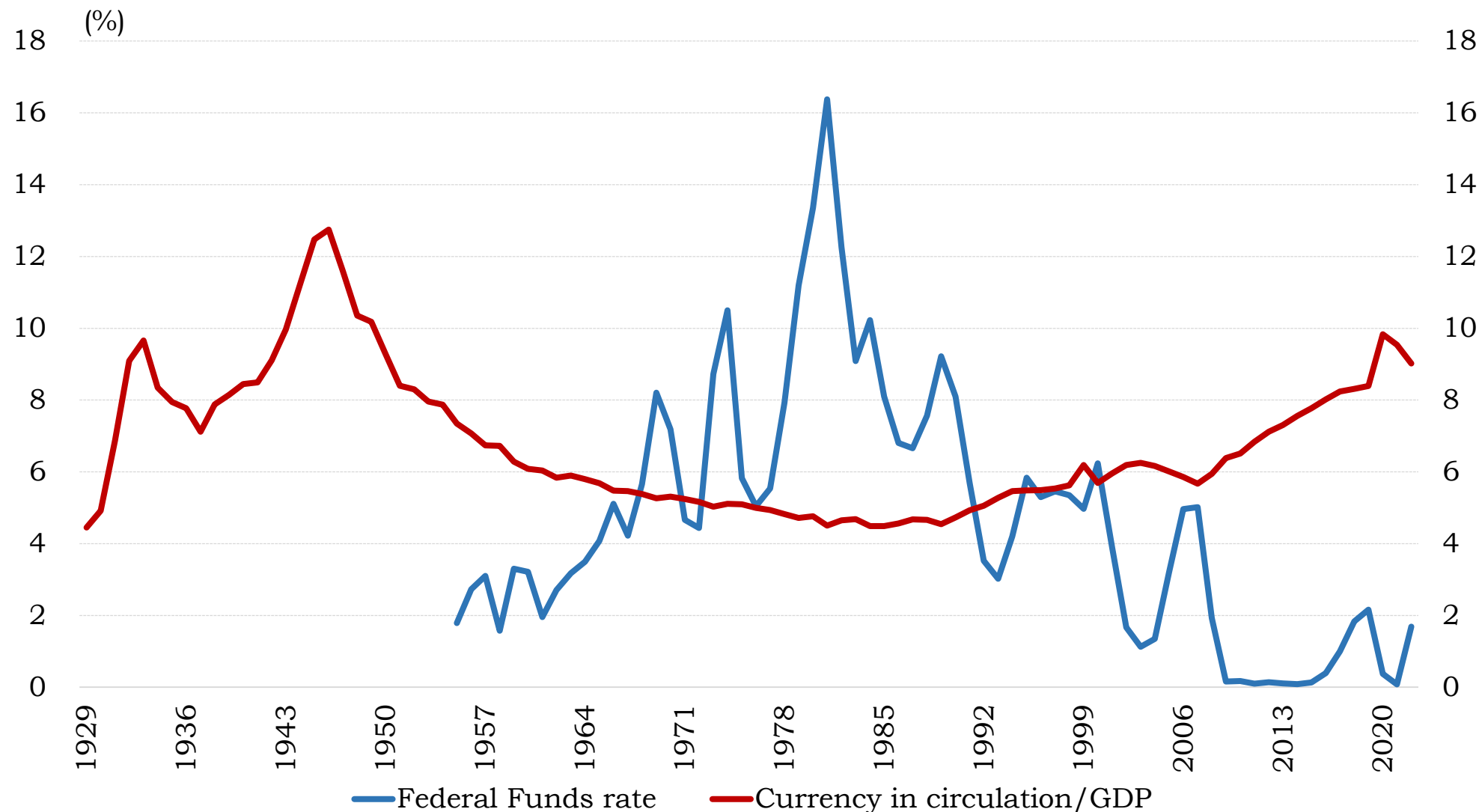


Countries with no limits	Countries with limits		
Germany	Belgium	€ 3,000	for goods and services; does not apply betw. consumers
Austria	Bulgaria	approx. € 5 113	
Cyprus	Croatia	€ 15,000	
Estonia	Denmark	approx. € 2 689	for merchants accepting cash payments; this does not apply to banks; no limit between individuals
Finland			
Ireland	Spain	€ 1,000	cash limit to traders
Iceland		€ 10,000	for consumers with no tax residence in Spain
Luxembourg	France	€ 1,000	for residents
Netherlands		€ 15,000	for non-residents
United Kingdom		€ 300	at treasury counters (for taxes, hospital bills, etc.)
Sweden	Greece	€ 500	the limit does not apply for purchase of a vehicle
	Hungary	approx. € 4 200	for legal persons and business associations; no limit for consumers
	Italy	€ 1,000	since 1 January 2022
	Latvia	€ 7,200	
	Lithuania	€ 3,000	
	Malta	€ 10,000	for real estate, jewellery, cars, boats, antiques, etc.
	Norway	approx. € 958	for services (for tax reasons); no limit betw. individuals
		approx. € 3 841	for payments to a professional
	Poland	approx. € 3 267	only for payments between merchants
	Portugal	€ 3,000	
		€ 500	limit for payment of taxes
	Romania	approx. € 2 033	for the delivery of goods and services (limit per day)
		approx. € 10 165	for payments between consumers (limit per day)
		approx. € 1 016	for payments to businesses (limit per day)
	Czech Republic	approx. € 10 500	the limit is per day
	Slovakia	€ 5,000	between traders and between consumers and traders
		€ 15,000	between individuals
	Slovenia	€ 5,000	merchants accept cash up to and including this limit

Source: European Consumer Centre Luxembourg.



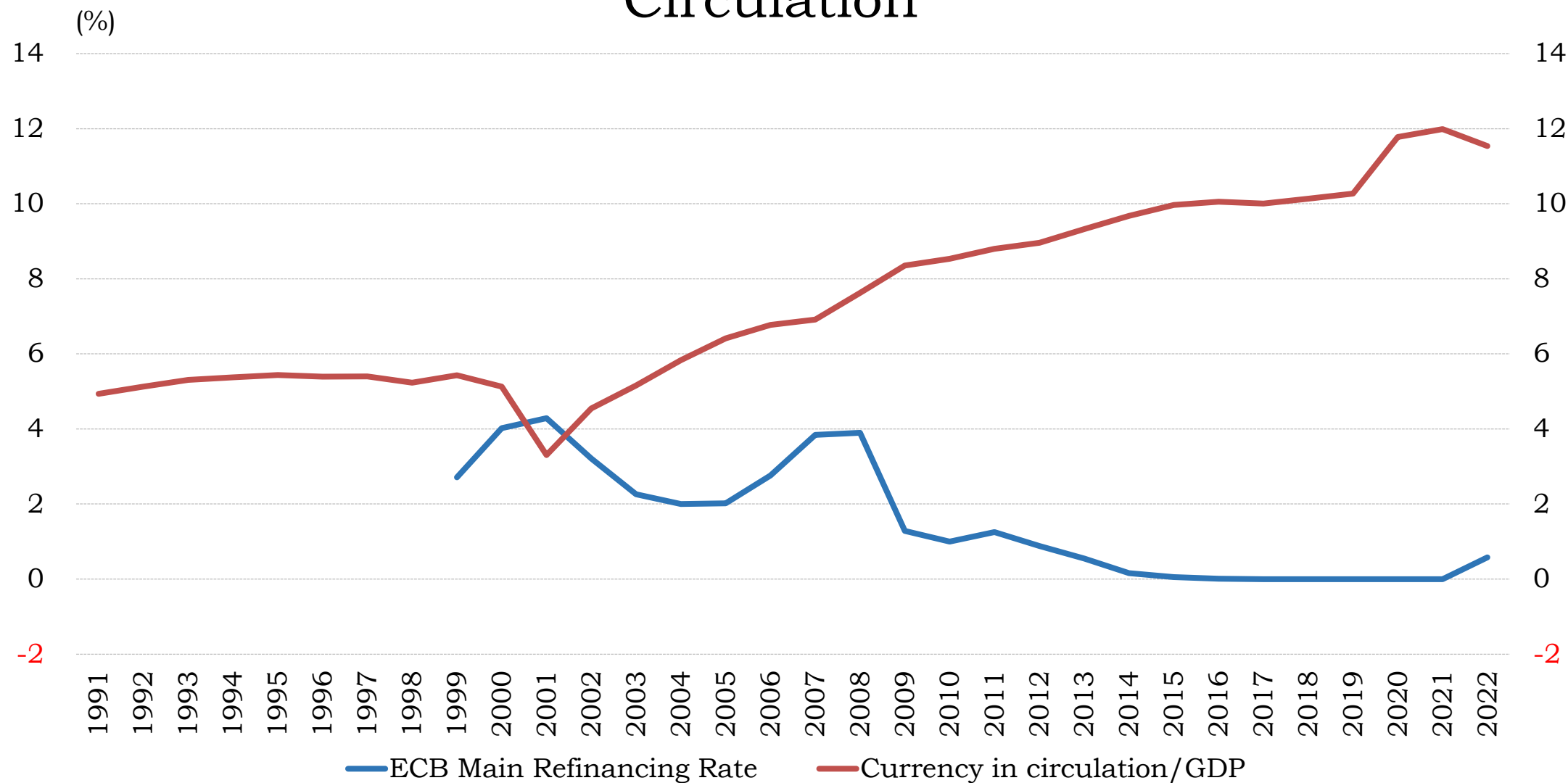
United States: Federal Funds Rate and Currency in Circulation



Source: Federal Reserve, Bureau of Economic Analysis.



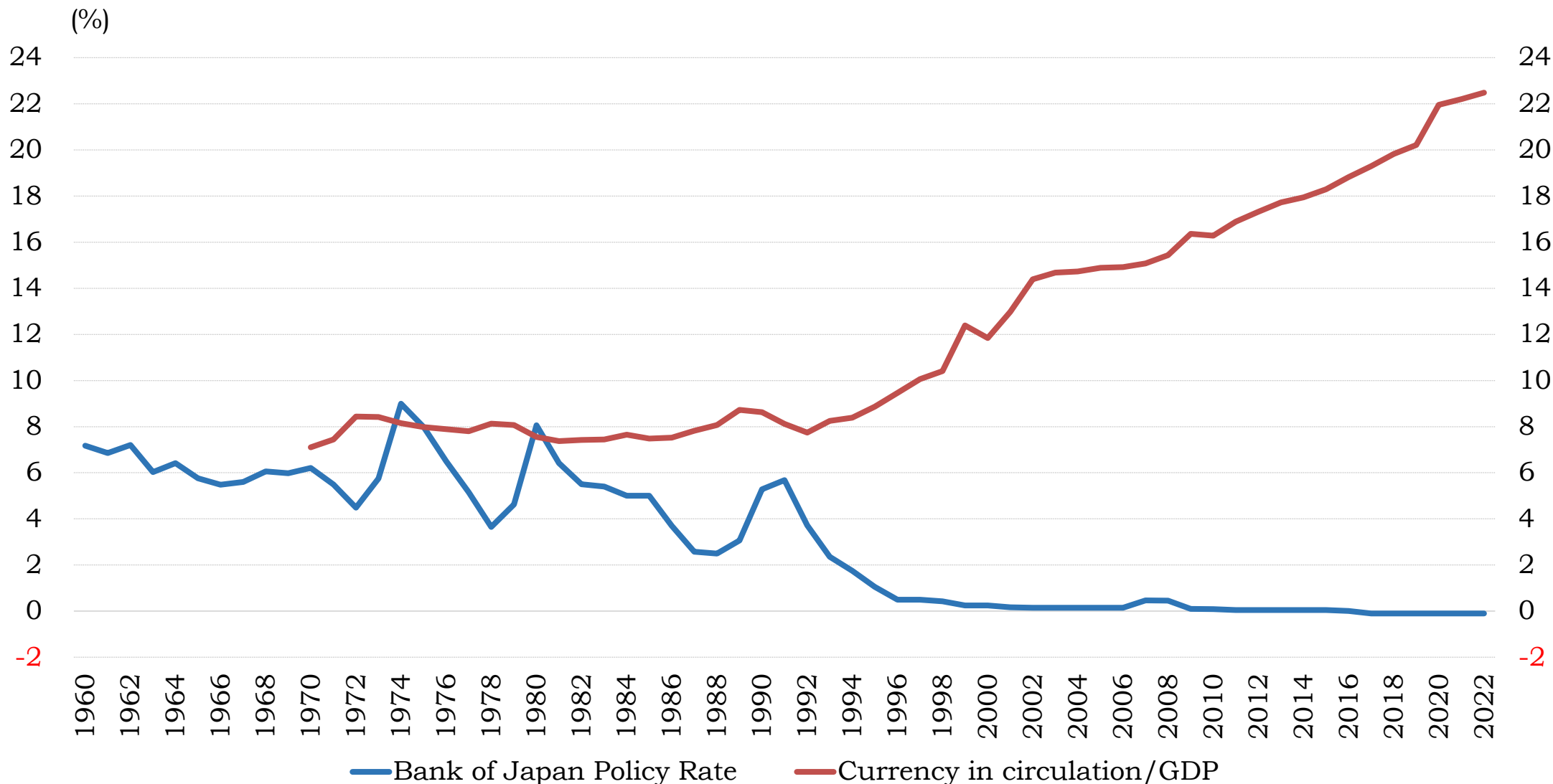
Euro Area: ECB Main Refinancing Rate and Currency in Circulation



Source: ECB.



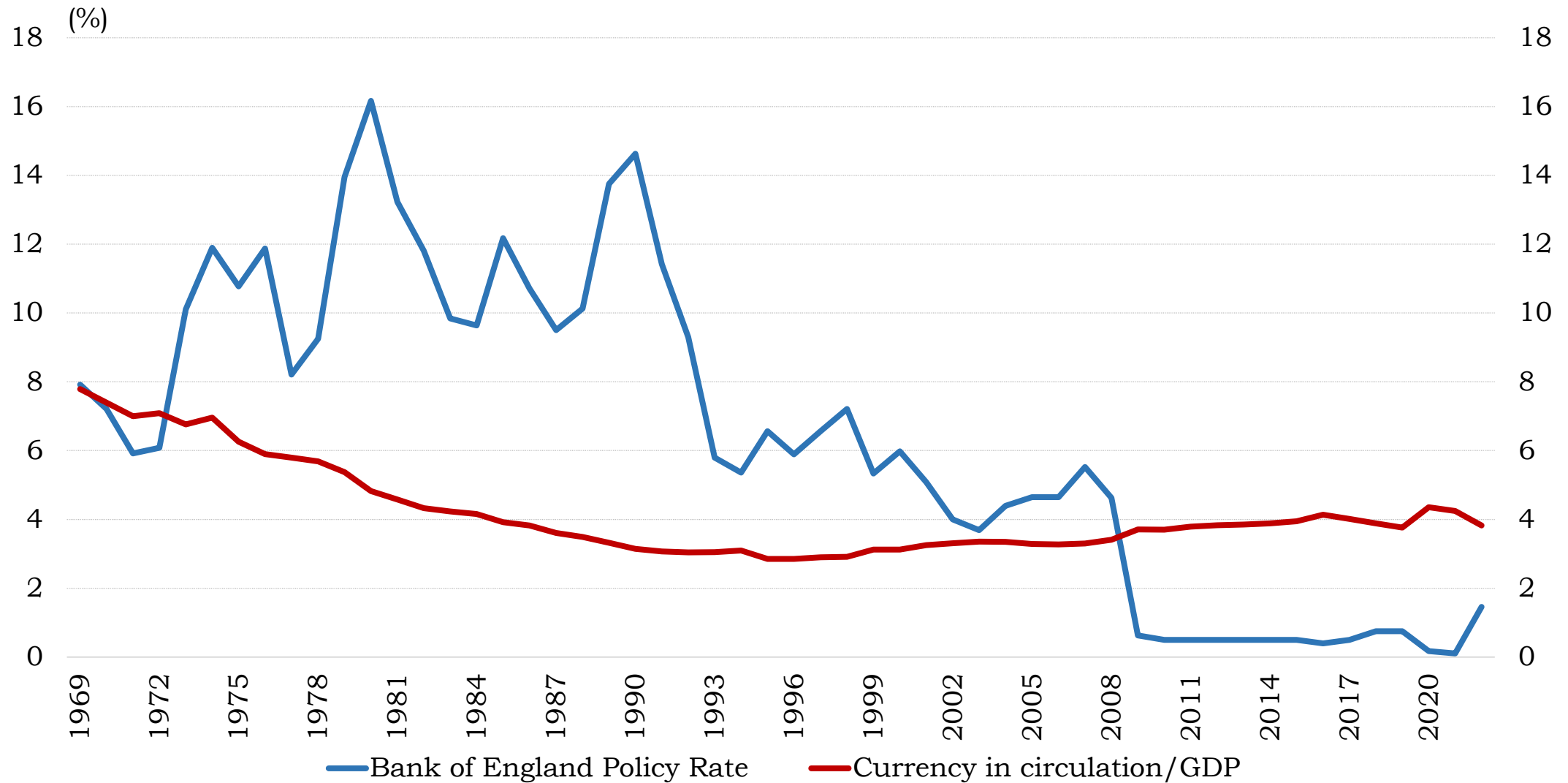
Bank of Japan Policy Rate and Currency in Circulation



Source: Bank of Japan, Bank for International Settlements.



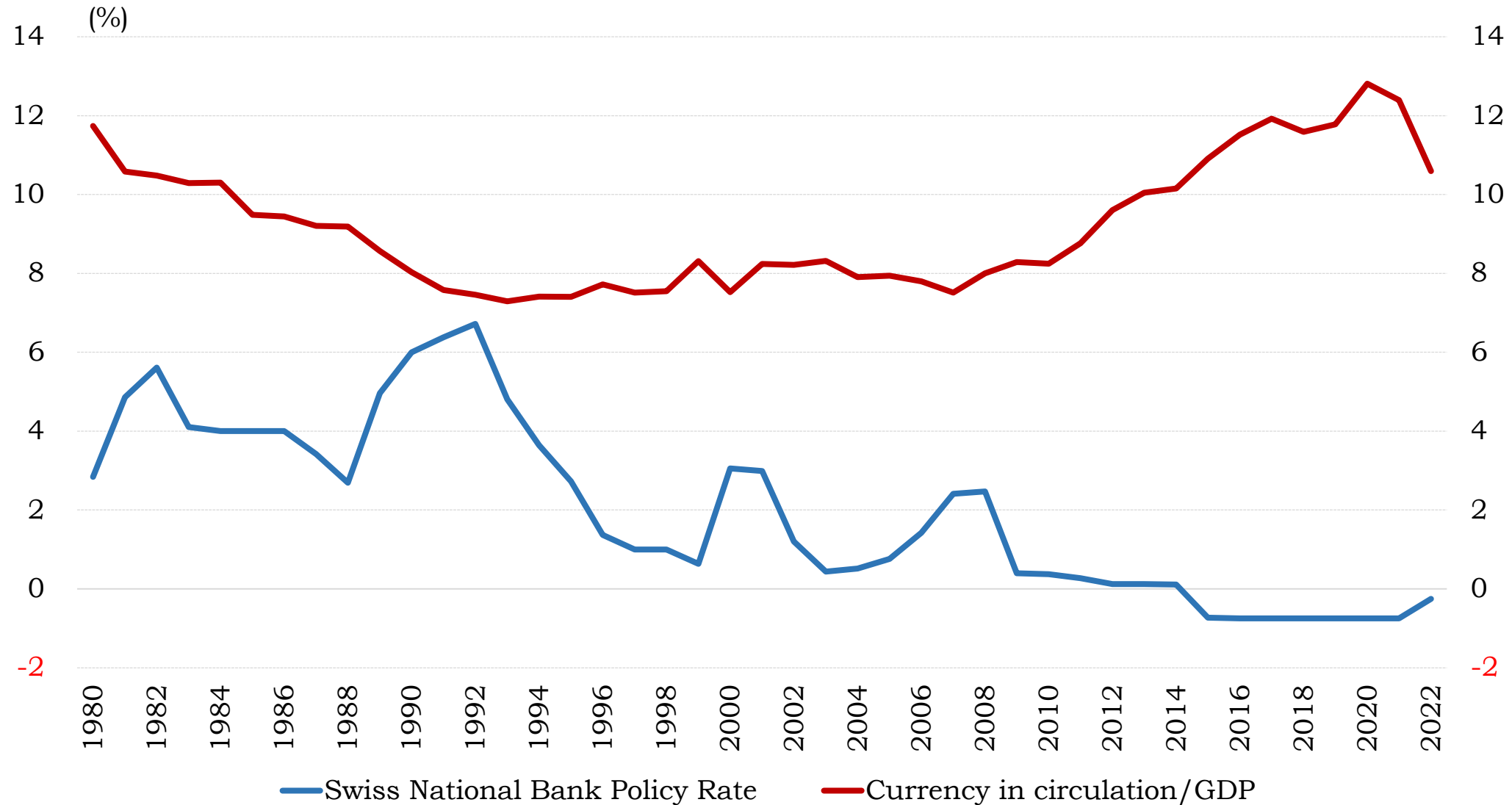
Bank of England Policy Rate and Currency in Circulation



Source: Bank of England.

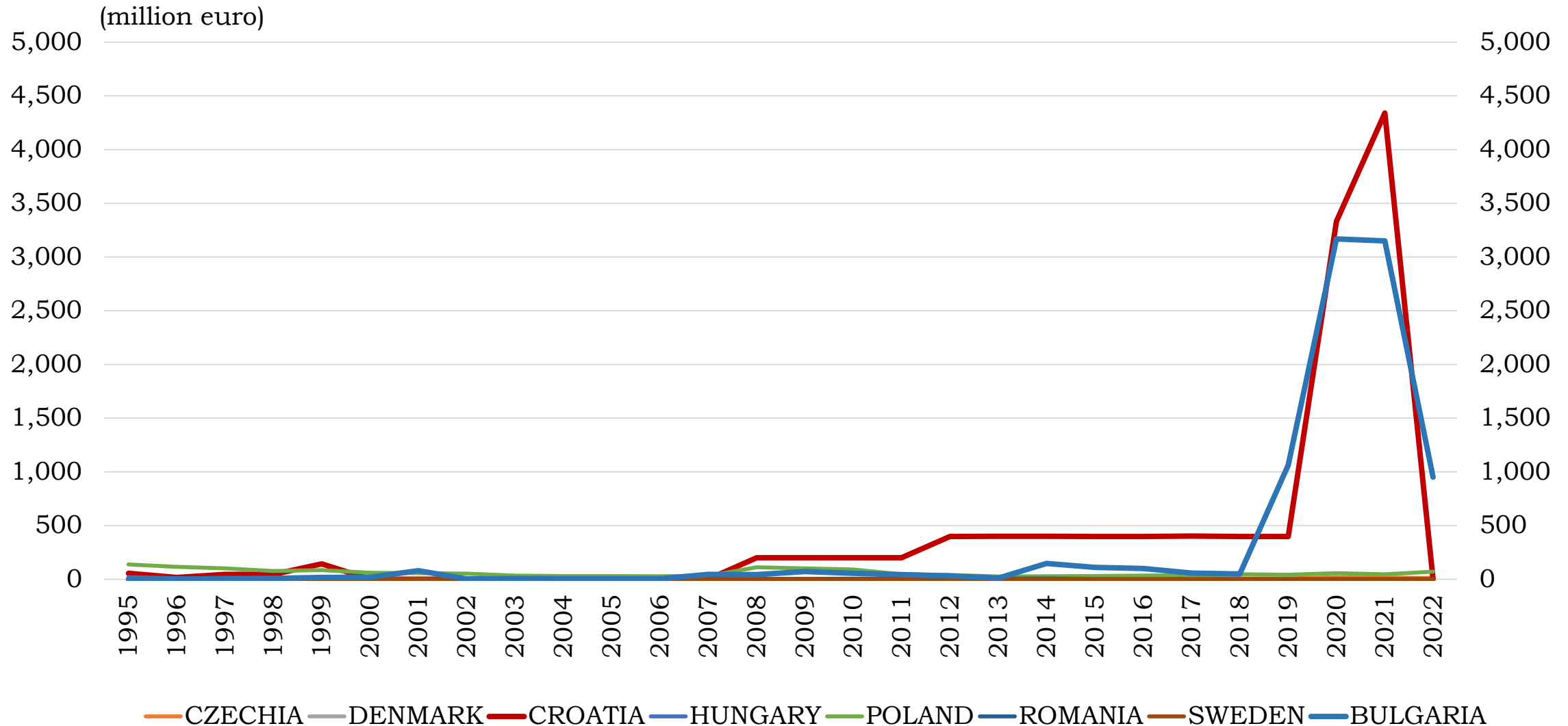


Switzerland: Policy Rate and Currency in Circulation



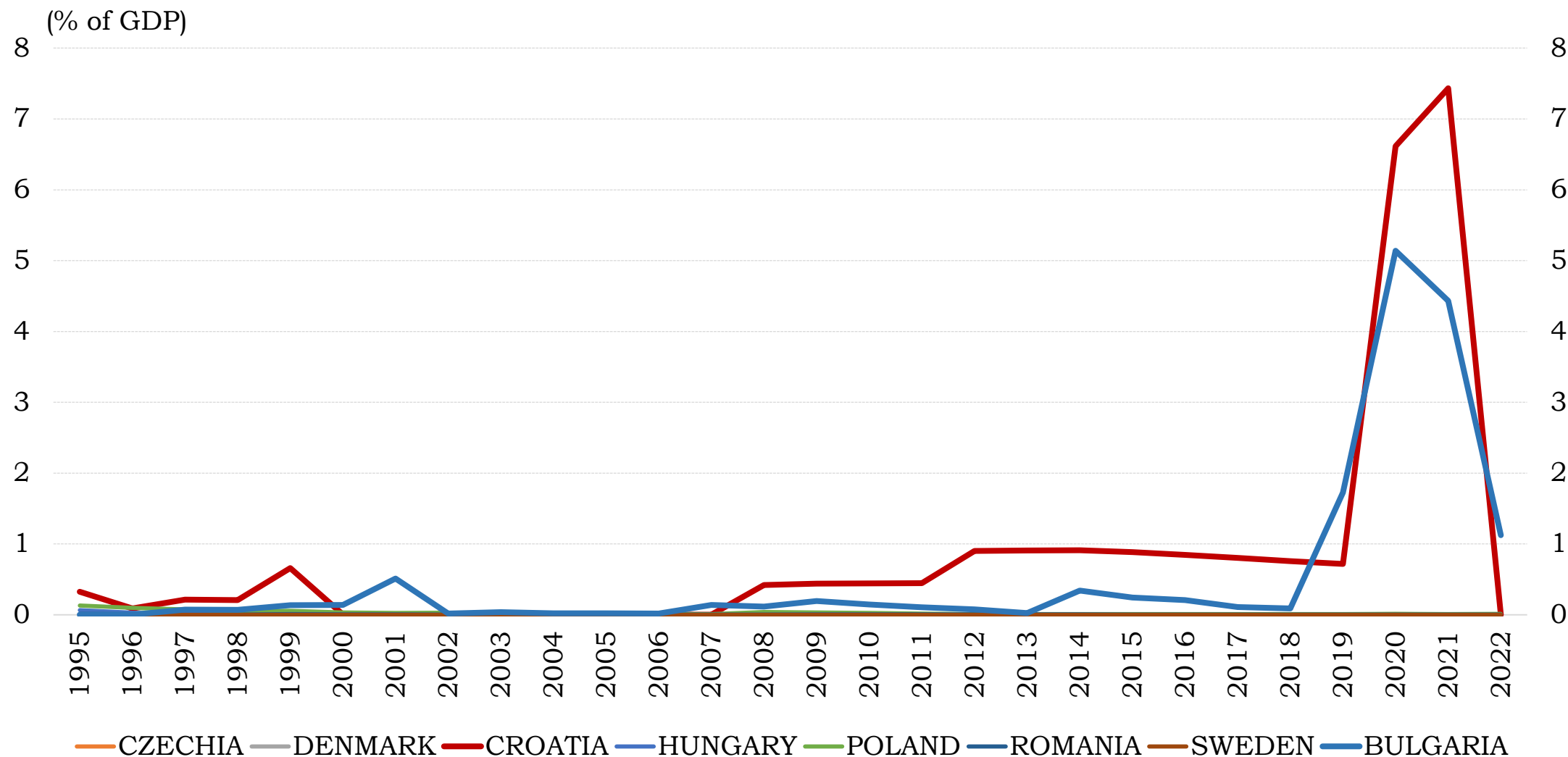
Source: Swiss National Bank, Bank for International Settlements.

Increase in Foreign Assets in Cash by Some Non-euro area Central Banks in the Period of Negative Interest Rates (2)



Source: Eurostat: Financial balance sheets (Central Bank Assets, Currency). Note: For Bulgaria foreign assets in cash are almost entirely in euro over the period 2004 - May 2021 (for which there is available breakdown) and entirely in euro since June 2021.

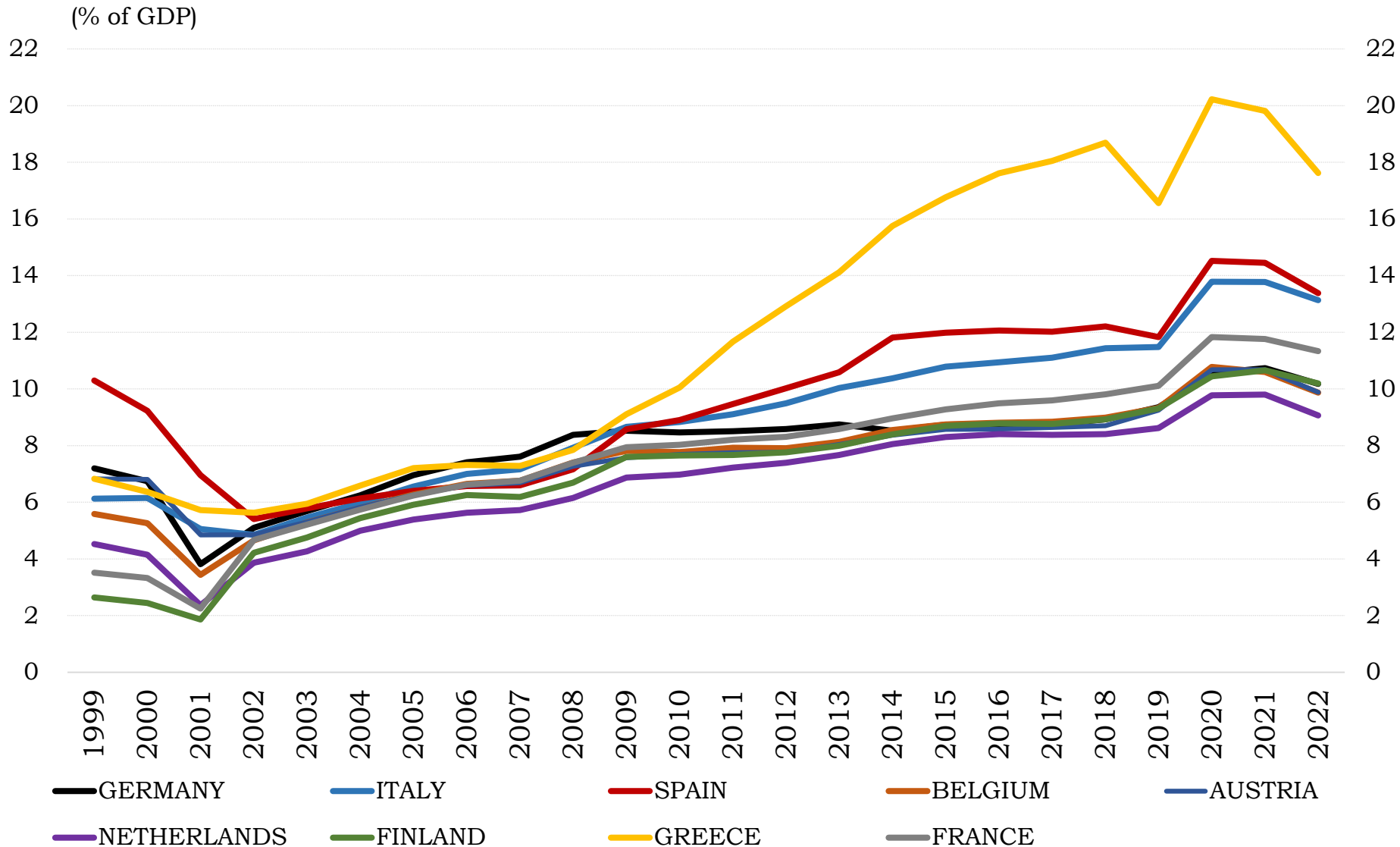
Increase in Foreign Assets in Cash by Some Non-euro area Central Banks in the Period of Negative Interest Rates (1)



Source: Eurostat: Financial balance sheets (Central Bank Assets, Currency). Note: For Bulgaria foreign assets in cash are almost entirely in euro over the period 2004 - May 2021 (for which there is available breakdown) and entirely in euro since June 2021.



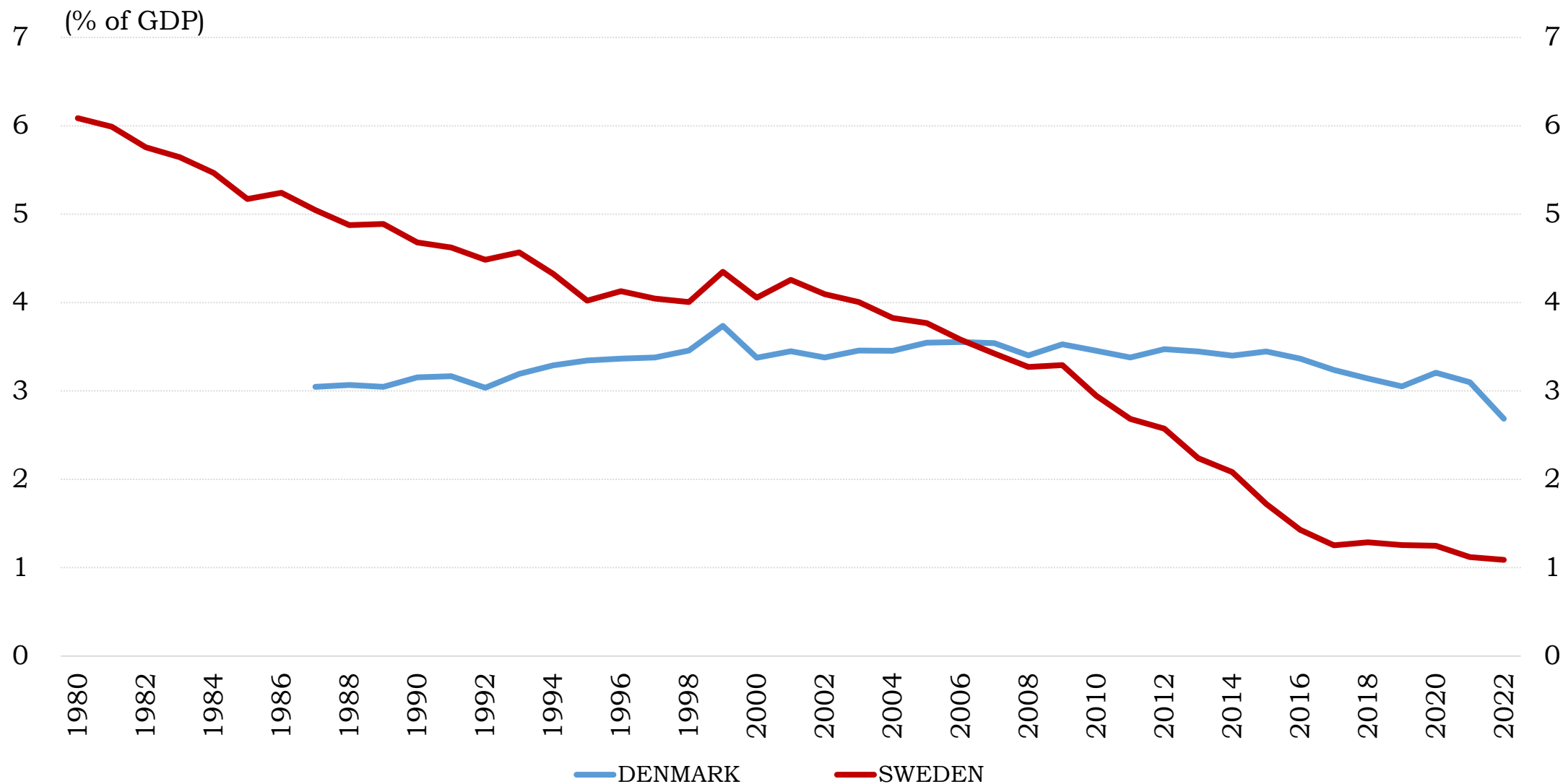
Selected Euro Area Countries: Currency in Circulation



Source: ECB.



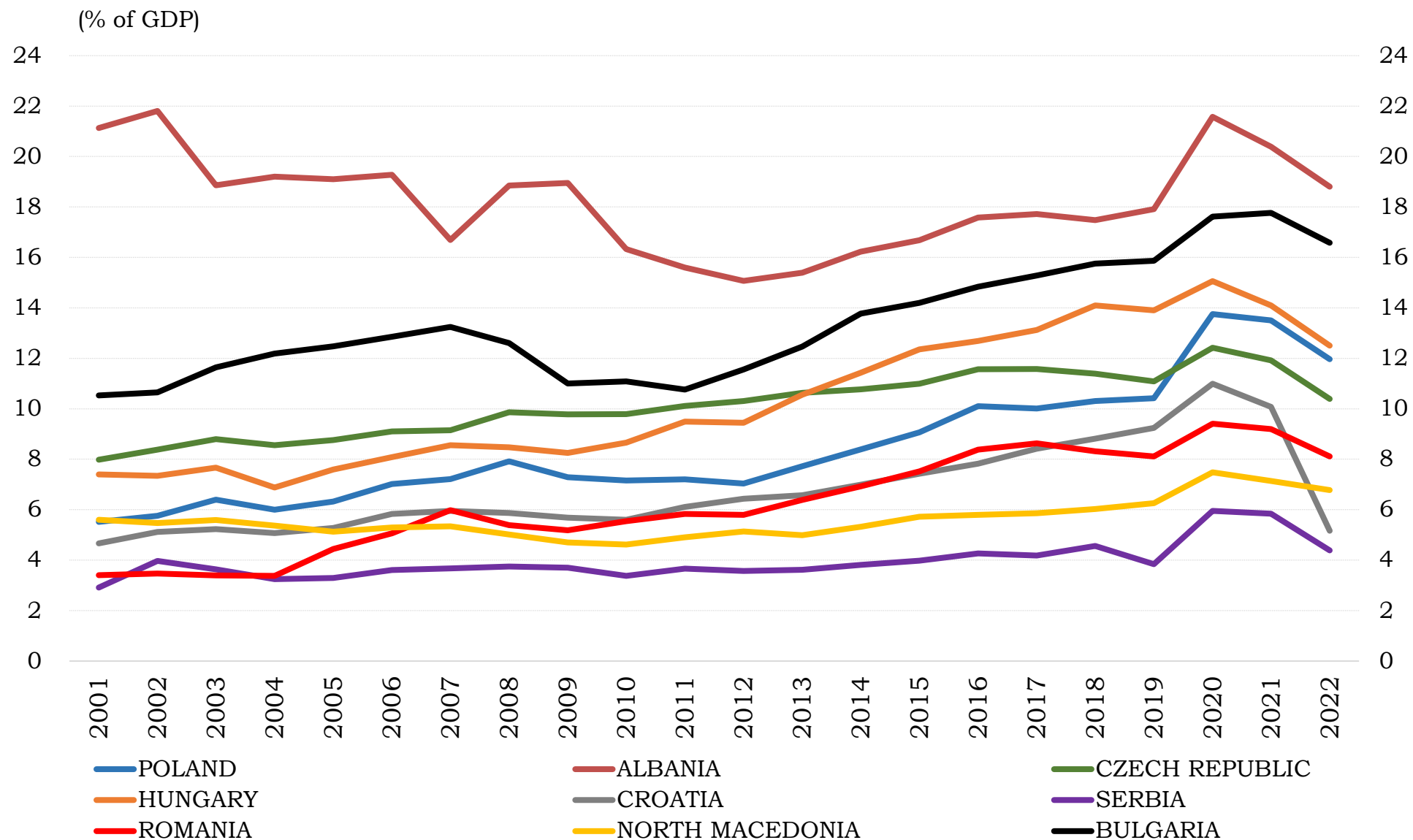
Sweden and Denmark: Divergent Dynamics in Currency in Circulation



Source: Sveriges Riksbank, Danmarks Nationalbank, ECB.



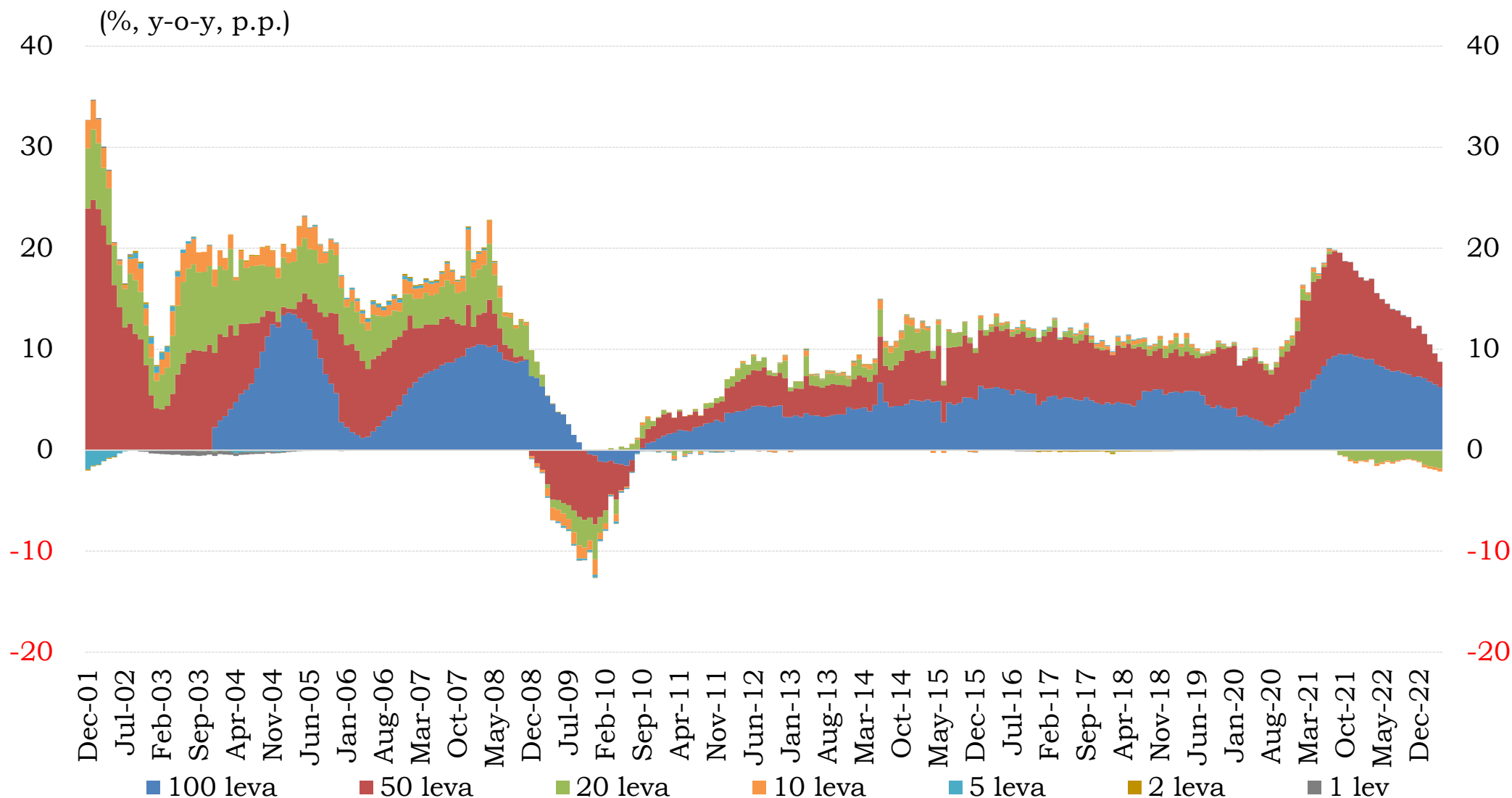
Selected Eastern European Countries: Currency in Circulation



Sources: BNB, ECB, IMF.



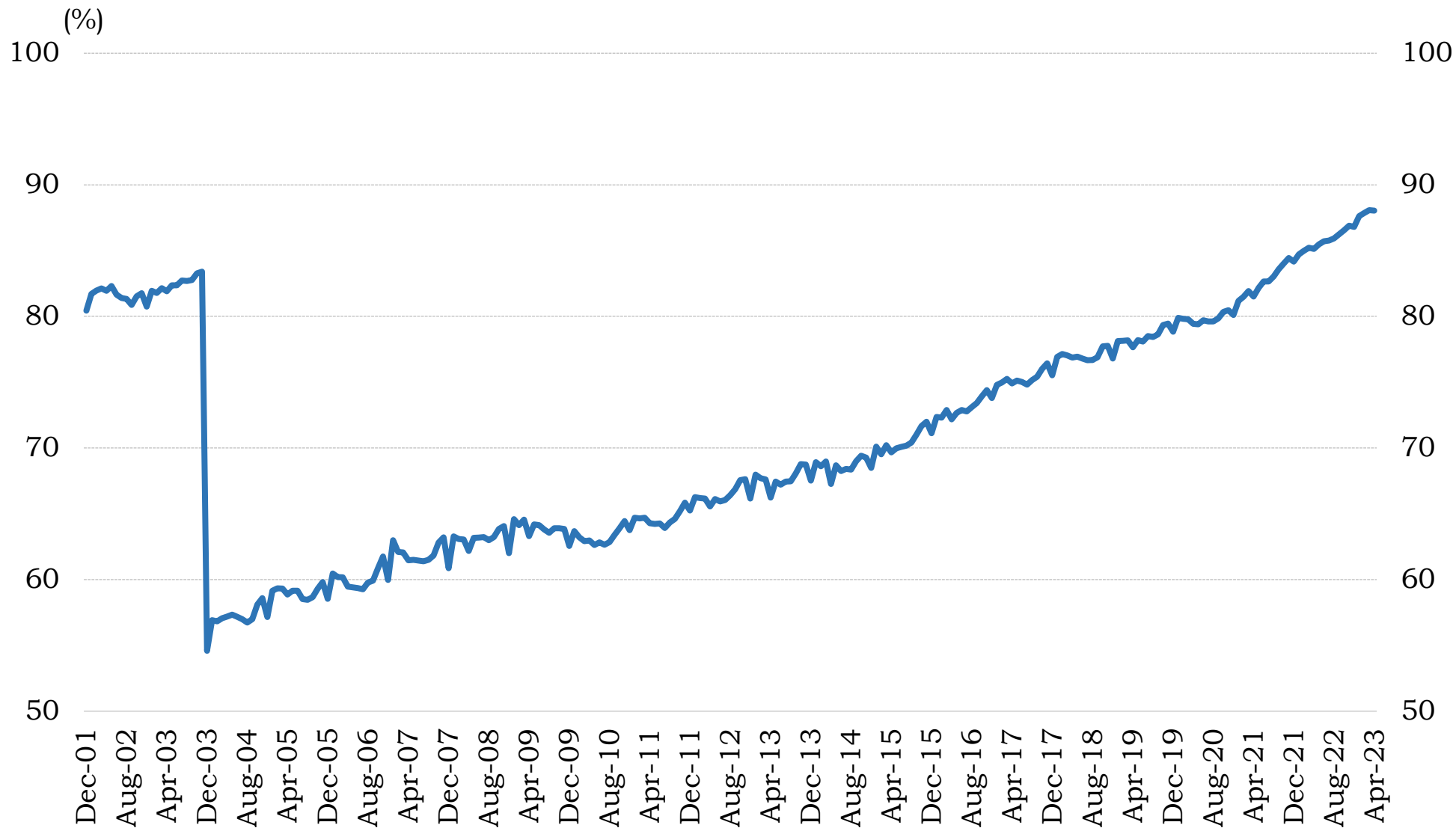
Bulgaria: Currency in Circulation Annual Growth, Contribution by Banknote Denomination



Source: Bulgarian National Bank. Note: The banknote of 100 leva is in circulation as from December 2003.



Bulgaria: Share of Two Highest Denomination of Banknotes in the Amount of Total Banknotes



Source: Bulgarian National Bank. Note: The banknote of 100 leva is in circulation as from December 2003.

Central Bank Digital Currency: a solution in search of a problem?



Main functions of central bank:

- conduct monetary policy in order to achieve price stability
- maintain financial stability (lender of last resort)
- development of payment system

How CBDC is going to help central banks fulfill their mandates

CBDC beyond central bank mandate