ECONOMIC SURVEY

1. THE EXTERNAL ENVIRONMENT AND THE EURO AREA

In the fourth quarter of 2023, real GDP expanded at a slower pace in the United States, whereas it contracted marginally in the United Kingdom and in the euro area. During the quarter under review, the unemployment rate rose marginally in the United States, fell slightly in the United Kingdom and remained unchanged in the euro area.

Consumer price inflation eased in all three economies, as energy inflation turned more negative while pipeline pressures moderated. In the United States, inflation fell to 3.4% in December, after having rebounded to 3.7% in September. In the United Kingdom, inflation fell to 4.0% in December from 6.7% in September and, in the euro area, inflation declined to 2.9% in December, from 4.3% three months earlier. The Federal Reserve, the Bank of England and the ECB kept their key interest rates unchanged during the quarter under review.

Brent oil prices resumed their declining trend in the review period, mainly reflecting an increase in non-OPEC+ supply amid slowing growth in global oil demand. Also, the price of European natural gas fell slightly in the context of high storage levels in the European Union, a mild winter and broadly flat demand.

Key advanced economies

US economic growth slows down

In the United States, real GDP growth slowed down to a quarterly rate of 0.8% in the fourth quarter of 2023, compared to 1.2% in the preceding quarter (see Table 1.1). Higher personal consumption expenditure was the main contributor to growth, followed by government consumption and fixed private investment, which mainly reflected an increase in non-residential investment. Net exports also contributed to economic growth, as an increase in exports outweighed a rise in imports. Although residential investment also supported real GDP growth, its contribution was smaller. By contrast, private inventories declined during the review period, as against a notable increase in the third quarter, resulting in a drag on real GDP growth.

Meanwhile, in the labour market, employment rose marginally in quarter-on-quarter terms, compared to growth at around 0.3% in the previous quarter. Non-farm payroll data suggest that the increase in employment was driven by private services. Employment growth was most pronounced in education and health, followed by the leisure and hospitality sectors. Government employment

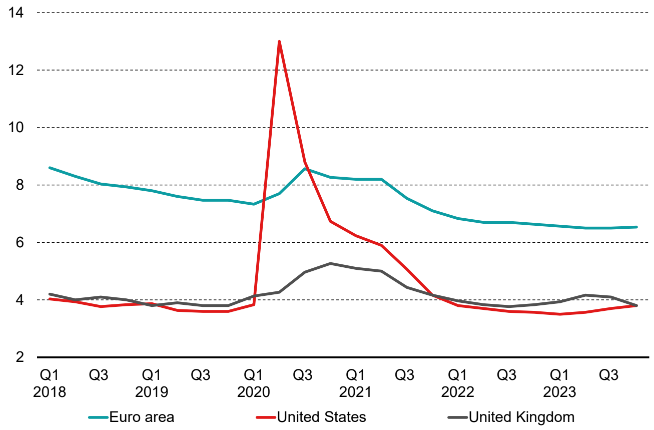
Table 1.1
REAL GDP GROWTH IN SELECTED ADVANCED ECONOMIES
Quarter-on-quarter percentage changes; seasonally and working day adjusted

	2021	2022				2023			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
United States	1.7	-0.5	-0.1	0.7	0.6	0.6	0.5	1.2	0.8
Euro area	0.6	0.6	0.8	0.5	0.0	0.0	0.1	-0.1	-0.1
United Kingdom	1.5	0.5	0.1	-0.1	0.1	0.2	0.0	-0.1	-0.3

Sources: Bureau of Economic Analysis, US; Eurostat; Office for National Statistics, UK.

also increased. The participation rate eased by 0.1 percentage point, to 62.6% during the review period. On average, the unemployment rate inched up to 3.8% in the fourth quarter, from 3.7% in the previous quarter (see Chart 1.1).

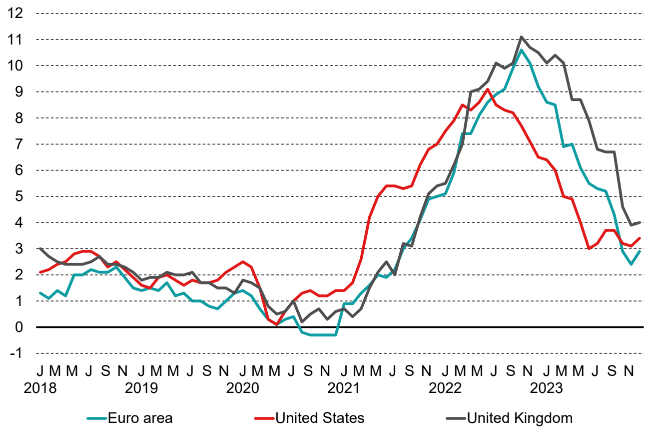
Chart 1.1
UNEMPLOYMENT RATE
(percentage of the labour force; quarterly average; seasonally adjusted)



Sources: Bureau of Labor Statistics, US; Eurostat; Office for National Statistics, UK.

After having rebounded in the previous quarter, inflation declined in the fourth quarter, largely reflecting a more pronounced fall in energy prices. Thus, the annual inflation rate based on the consumer price index (CPI) stood at 3.4% in December, down from 3.7% three months earlier (see Chart 1.2). Annual energy inflation fell to -2.0% in December as against -0.5% in September. Meanwhile, food inflation (including beverages) eased to 2.7% from 3.7%. Although services inflation also moderated, falling to 5.0% in December, it remained relatively high. Inflation excluding food and energy eased to 3.9% in December, from 4.1% in September.

Chart 1.2
CONSUMER PRICE INFLATION
(annual percentage changes)



Sources: Bureau of Labor Statistics, US; Eurostat; Office for National Statistics, UK.

During the fourth quarter of 2023, the Federal Open Market Committee (FOMC) kept the target range for the federal funds rate unchanged at between 5.25% and 5.50%. The FOMC reiterated that it would continue reducing its holdings of Treasury securities and agency debt and agency mortgage-backed securities. Also, the Committee reaffirmed its strong commitment to returning inflation to its 2% objective.[1]

UK economy contracts again

Real GDP in the United Kingdom shrank at a quarterly rate of 0.3% in the quarter under review, after it had contracted by 0.1% in the previous quarter (see Table 1.1). Declines in consumption expenditure by households and non-profit institutions together with a decrease in inventories outweighed increases in business investment and, to a lesser degree, government consumption

[1] In January and March 2024, the FOMC kept both the target range for the federal funds rate and the pace of quantitative tightening unchanged. In January, the Committee dropped its tightening bias in favour of a more neutral stance, as the risks to achieving its goals were “moving into better balance”. Nevertheless, the Committee added that it needed to gain “greater confidence” that inflation was moving sustainably towards 2% before it could reduce the target range.

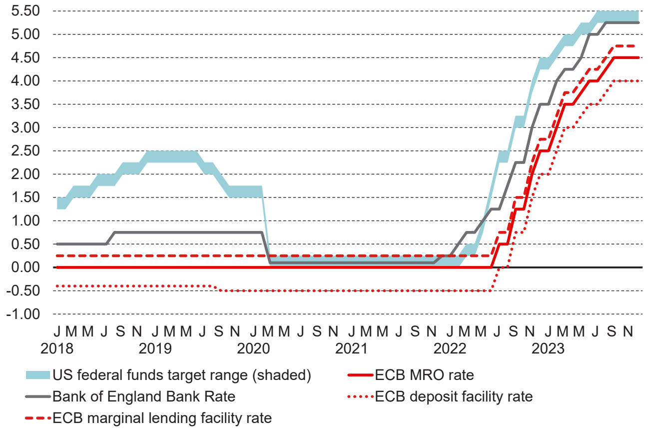
expenditure. Meanwhile, a drop in exports outpaced a decrease in imports, reinforcing a negative trade balance that also contributed to the contraction in economic activity.

Labour market conditions remained broadly stable. The employment rate rose marginally to 75.0% on a quarterly-average basis, while the unemployment rate averaged 3.8% during the review period, slightly down from 4.1% in the third quarter (see Chart 1.1).

Consumer price inflation in the United Kingdom continued to decline during the review period, and did so at a stronger pace than before although inflationary pressures remained elevated. The annual inflation rate decreased to 4.0% in December, compared to 6.7% in September (see Chart 1.2), with inflation down across all major components. In particular, energy prices fell markedly during the quarter. Indeed, the annual rate of energy price inflation fell to -17.3% in December, compared to -0.2% three months before. Among the other major components, food inflation fell notably for the second consecutive quarter, though it remained high. The annual rate of inflation based on the CPI excluding energy, food, alcohol and tobacco fell to 5.1% in December, from 6.1% in September.

Although inflation had fallen back broadly as expected, key indicators of inflation persistence remained elevated. Against this background, during the quarter under review, the Bank of England's Monetary Policy Committee (MPC) kept the Bank Rate unchanged at 5.25%. The MPC continued to judge that monetary policy was likely to need to be restrictive for an extended period of time to return inflation to the 2% target sustainably in the medium term (see Chart 1.3).[2]

Chart 1.3
OFFICIAL INTEREST RATES
(percentages per annum; end of month)



Sources: ECB; Federal Reserve; Bank of England.

The euro area

GDP in the euro area contracts marginally

Economic activity in the euro area stagnated in the last three months of 2023. In real terms, GDP growth fell by 0.1% on a quarter-on-quarter basis, following a similar fall in the third quarter (see Table 1.2). Economic activity during the quarter under review took place against a backdrop of weak global trade, subdued consumer and business confidence, still elevated though abating inflationary pressures and tight financing conditions.

In the fourth quarter of 2023, domestic demand contributed 0.3 percentage point to GDP growth. This largely reflected a rebound in gross fixed capital formation (GFCF), as a marked increase in

[2] In January and March 2024, the MPC kept the Bank Rate unchanged. In January, the MPC removed its tightening bias, due to positive developments on inflation. In March, the MPC stated that it remained prepared to adjust monetary policy as warranted by economic data to return inflation to the 2% target sustainably. The MPC added that it would "keep under review" for how long the Bank Rate should be held at the current level.

Table 1.2
CONTRIBUTIONS TO QUARTERLY REAL GDP GROWTH IN THE EURO AREA[1]
Percentage points; quarter-on-quarter percentage change

	2021	2022				2023			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Private consumption	0.2	0.0	0.4	0.7	-0.4	0.1	0.0	0.2	0.0
Government consumption	0.1	0.1	0.0	0.0	0.1	-0.1	0.1	0.1	0.1
GFCF	0.7	-0.2	0.1	0.3	0.0	0.1	0.0	0.0	0.2
Changes in inventories[2]	0.6	0.1	0.2	0.1	-0.2	-0.6	0.6	-0.4	-0.1
Exports	1.3	0.8	1.0	0.7	-0.1	-0.2	-0.6	-0.7	0.0
Imports	-2.4	-0.2	-0.9	-1.1	0.5	0.8	0.0	0.8	-0.3
GDP	**0.6**	**0.6**	**0.8**	**0.5**	**0.0**	**0.0**	**0.1**	**-0.1**	**-0.1**

Source: Eurostat.
[1] Data are seasonally and working day adjusted. Figures may not add up due to rounding.
[2] Including acquisitions less disposals of valuables.

investment in intellectual property outweighed decreased spending on machinery and equipment as well as a further decline in construction investment. Government consumption expenditure contributed 0.1 percentage point to GDP growth, while private consumption expenditure remained practically unchanged. By contrast, changes in inventories reduced GDP growth by 0.1 percentage point as destocking continued during the fourth quarter. Also, a more pronounced negative balance on net exports deducted 0.3% from GDP during the quarter under review, since imports rose while exports remained practically unchanged amid weak foreign demand.

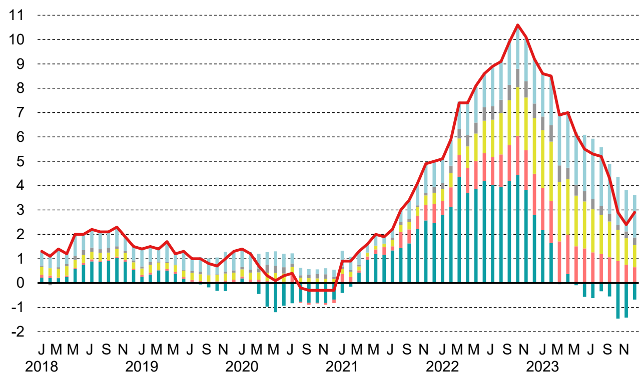
Labour market remains resilient

The labour market in the euro area remained resilient during the fourth quarter despite the lacklustre economic activity. With output slightly down, continued employment growth implies a drop in productivity. Indeed, employment continued to expand, growing at a quarterly rate of 0.3% during the fourth quarter, compared to 0.2% in the preceding quarter.[3] Meanwhile, the seasonally adjusted unemployment rate stood at 6.5% in December, the same as three months before, also averaging 6.5% in the quarter under review (see Chart 1.1).

Inflation declines further

Although inflationary pressures in the euro area remained high, they continued to abate in the fourth quarter. The annual rate of inflation based on the HICP stood at 2.9% in December, down from 4.3% three months before (see Chart 1.4). The decline in overall inflation

Chart 1.4
CONTRIBUTIONS TO HICP INFLATION IN THE EURO AREA
(percentage points; annual percentage change)



Source: ECB.

[3] Employment data refer to the national accounts, total employment domestic concept. Data are seasonally and calendar adjusted.

reflected a drop in energy prices coupled with slower growth in the prices of the other major HICP components besides unprocessed food. The contribution of past energy price increases and other supply shocks to overall inflation continued to diminish, while high interest rates and tight financial conditions acted as a drag on aggregate demand. Nevertheless, domestic price pressures remained strong, partly reflecting rising wages.

Turning to the major HICP components, energy prices fell at an annual rate of 6.7% in December, following a drop of 4.6% in September. Processed food inflation eased to 5.9% over the review period, compared to 9.4% in September, partly reflecting lower food commodity prices. The annual rate of NEIG inflation slowed down to 2.5% in December, compared to 4.1% three months earlier. Also, the annual rate of change of services prices eased to 4.0% in December from 4.7% three months earlier. By contrast, unprocessed food inflation rose to 6.8% in December, compared to 6.6% in September.

Underlying inflationary pressures continued to moderate during the review period. Thus, the annual rate of HICP inflation excluding energy and food prices decelerated to 3.4% in December, compared to 4.5% in September.

Economic activity expected to expand gradually, inflation set to decline further

According to the ECB staff macroeconomic projections published in March 2024, real GDP growth in the euro area is estimated to inch up to 0.6% in 2024. It is then expected to increase to 1.5% and 1.6% in 2025 and 2026, respectively (see Table 1.3). In the near term, ECB staff envisage a relatively slow economic recovery, mainly in the context of tight financing conditions and heightened consumer uncertainty, which are expected to adversely affect economic activity. However, economic growth is expected to pick up gradually over the remainder of this year, underpinned by increasing real disposable income, government consumption and exports. Further out, economic recovery will also be supported by the gradual fading away of the impact from the ECB's monetary policy tightening.

Compared to the December 2023 projections, these projections are built on assumptions that include lower interest rates, lower energy prices and a slight depreciation of the euro. Real

Table 1.3
MACROECONOMIC PROJECTIONS FOR THE EURO AREA[(1)]
Annual percentage changes

	2022	2023	2024	2025	2026
GDP	**3.4**	**0.5**	**0.6**	**1.5**	**1.6**
Private consumption	4.2	0.5	1.2	1.6	1.5
Government consumption	1.6	0.2	1.3	1.4	1.2
GFCF	2.8	0.8	-0.6	1.6	2.3
Exports	7.4	-0.7	1.0	2.9	3.2
Imports	8.1	-1.3	1.0	3.1	3.2
HICP	**8.4**	**5.4**	**2.3**	**2.0**	**1.9**
HICP excluding energy and food	3.9	4.9	2.6	2.1	2.0

Source: ECB.
(1) ECB staff macroeconomic projections (March 2024).

GDP growth is revised downwards by 0.2 percentage point for 2024. Real GDP growth for 2025 is unrevised while it is raised by 0.1 percentage point for 2026. The downward revision to the 2024 forecast mainly reflects weaker outcomes at the end of 2023 and still subdued forward-looking business and household surveys. On the other hand, the upward revision for 2026 mainly reflects modest upward revisions to both private consumption and investment estimates for that year.

Turning to the outlook for prices, ECB staff foresee HICP inflation to decline to an average of 2.3% in 2024 and to ease further to 2.0% and 1.9% in 2025 and 2026, respectively. Hence, HICP inflation is expected to fall to slightly below the ECB's 2% target in 2026. Over the next few quarters, HICP inflation is expected to drop further, albeit at a more gradual pace than in 2023 amid some volatility stemming from base effects from the energy component and the timing of Easter in 2024. Energy inflation is projected to remain in negative territory for most of this year. Following some fluctuations, it is expected to settle at rates close to zero in 2025 and early 2026, and pick up towards end-2026. Food inflation is expected to decline notably in 2024, because of receding pipeline pressures, and settle at 2.3% in 2025 and 2026.

HICP inflation excluding energy and food is expected to continue to moderate from an average of 4.9% in 2023 to 2.6% in 2024 and further to 2.1% and 2.0% in 2025 and 2026, respectively. While underlying inflation is expected to decline further as pipeline pressures recede, the drop is expected to be measured owing to upward pressures from wages.

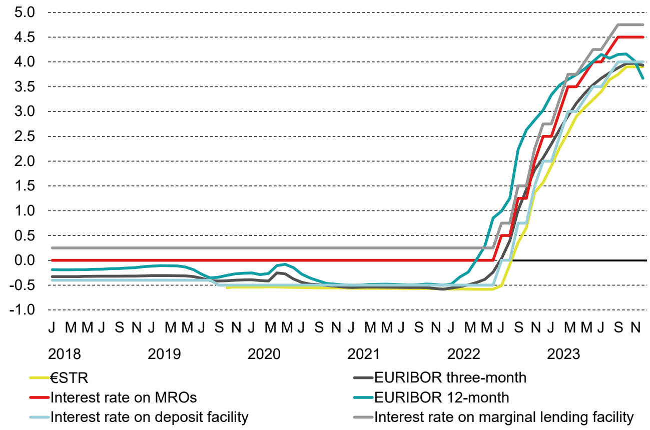
Compared to the December 2023 projections, HICP inflation has been revised downwards by 0.4 and 0.1 percentage point for 2024 and 2025, respectively, while the inflation projection for 2026 remained unchanged. The downward revision for 2024 mainly reflects a lower energy component, mirroring lower energy commodity prices. Underlying inflation projections have been revised downwards by 0.1, 0.2 and 0.1 percentage point for 2024, 2025 and 2026, respectively. These downward revisions mainly reflect indirect effects from lower energy prices, a weaker growth outlook and lower growth in ULCs.

ECB keeps interest rates unchanged

Following ten consecutive hikes, the Governing Council decided to keep the three key ECB interest rates unchanged in October and in December. The Council observed that past interest rate increases continued to be transmitted forcefully to financing conditions. This was increasingly dampening credit demand and thereby helping to push down inflation. Nevertheless, the Council stated that, while inflation had dropped in recent months, it was likely to pick up again temporarily in the near term. Also, although underlying inflation had eased further, domestic price pressures remained elevated, primarily owing to strong growth in ULCs. Accordingly, the Council reiterated that it would continue to follow a data-dependent approach in determining the appropriate level and duration of a restrictive monetary policy.

In December, the Governing Council announced further steps in the normalisation of the Eurosystem balance sheet. The Council stated that it intended to continue to reinvest, in full, the principal payments from maturing securities purchased under the PEPP during the first half of 2024. Over the second half of this year, the Governing Council intended to reduce the PEPP portfolio by €7.5 billion per month on average, before discontinuing reinvestments under the PEPP at the end of 2024.[4]

Chart 1.5
KEY MONEY MARKET INTEREST RATES
(percentages per annum; market rates − monthly averages; ECB rates − end of month)



Source: ECB.

Money market rates rise marginally in the short-end but fall further out the curve

Money market interest rates in the euro area increased slightly more in the short end. They fell further out along the curve during the review period, reflecting market expectations that the current interest rate tightening cycle might have reached its peak, as inflationary pressures eased. Hence, the euro short-term rate (€STR) increased modestly further, though it remained below the interest rate on the ECB's deposit facility (see Chart 1.5).[5] It averaged 3.90% in December, compared to 3.75% in September. The three-month euro interbank offered rate (EURIBOR) averaged 3.93% in December, as against 3.88% three months earlier. By contrast, the 12-month EURIBOR fell, averaging 3.67% in December from 4.15% in September.[6]

Euro area government bond yields decline

The euro area ten-year benchmark government bond yield fell during the fourth quarter, breaking a rising trend established since late 2021 when monetary policy began to tighten. This yield averaged 2.87% in December, compared to 3.51% three months earlier. The decrease in yields occurred amid a drop in interest rate expectations in financial markets as inflationary pressures eased and the outlook for economic growth worsened.

Individual sovereign bond yields fell to varying degrees in euro area countries. In Germany, ten-year sovereign bond yields dropped by 56 basis points to 2.10%. Yields went down by 80 basis points in Greece and by 69 basis points in Italy to 3.28% and 3.82%, respectively. Yields dropped by around 60 basis points in France, Spain and Portugal. In the remaining euro area jurisdictions yields also fell, with the decline ranging from over 100 basis points in Estonia and around 20 basis points in Slovenia.

As a result, spreads between yields on the ten-year German bonds and those on the bonds issued by most of the other euro area jurisdictions narrowed. Spreads between German benchmark

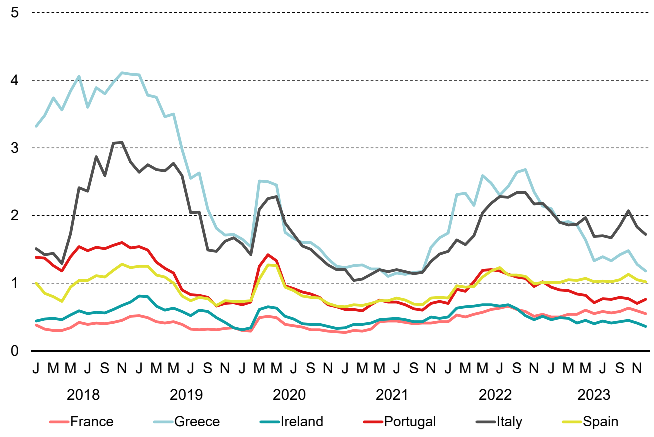
[4] On 25 January and on 7 March 2024, the Governing Council kept the three key ECB interest rates unchanged. The Council expressed its determination to ensure that inflation would return to its 2% medium-term target in a timely manner. The Governing Council reiterated that interest rate decisions would be based on its assessment of the inflation outlook in light of the incoming economic and financial data, the dynamics of underlying inflation and the strength of monetary policy transmission.

[5] The €STR is a reference rate based on money market data collected by the Eurosystem, reflecting the wholesale euro unsecured overnight borrowing costs of banks located in the euro area. The €STR is published on each T2 business day based on transactions conducted and settled on the previous T2 business day.

[6] The EURIBOR is an interest rate benchmark indicating the average rate at which principal European banks lend unsecured funds on the interbank market in euro for a given period.

yields and those on Greek and Italian government bonds narrowed to a greater extent (see Chart 1.6).

Chart 1.6
SELECTED EURO AREA GOVERNMENT BOND YIELD SPREADS
(difference vis-à-vis German ten-year government bond yields in percentage points)



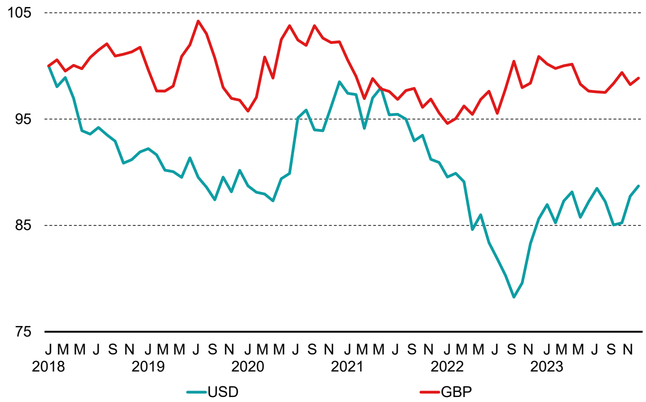
Source: ECB.

The euro appreciates versus the US dollar and in effective terms

The nominal effective exchange rate (EER) of the euro against the EER-18 group of countries gained 0.4% in the quarter under review.[7]

Meanwhile, the euro rebounded by 4.3% against the US dollar (see Chart 1.7). Narrowing interest rate differentials between the United States and the euro area as well as market perception that the US currency was overvalued likely undermined the dollar. The single currency strengthened by 0.5% versus the British pound on market concern about the future path of inflation and economic growth in the United Kingdom. The euro also gained against other currencies including the Hong Kong and Canadian dollars as well as the Norwegian krone.

Chart 1.7
EXCHANGE RATE MOVEMENTS OF THE EURO AGAINST OTHER MAJOR CURRENCIES
(index of end of month rates; Jan. 2018=100; an increase in the index implies euro appreciation)



Source: Eurostat.

By contrast, the euro weakened against the Japanese yen, largely on spillover effects from developments in the USD/JPY exchange rate, but also reflecting market anticipation that the Bank of Japan would in the near future offer indications as to when it would end its negative interest rate policy. The euro also depreciated against other currencies such as the Polish zloty, the Swedish krona, the Australian dollar, the Hungarian forint and the Swiss franc. The single currency remained practically unchanged against the Singapore dollar, the Korean won, the Romanian leu and the Chinese renminbi.

Commodities

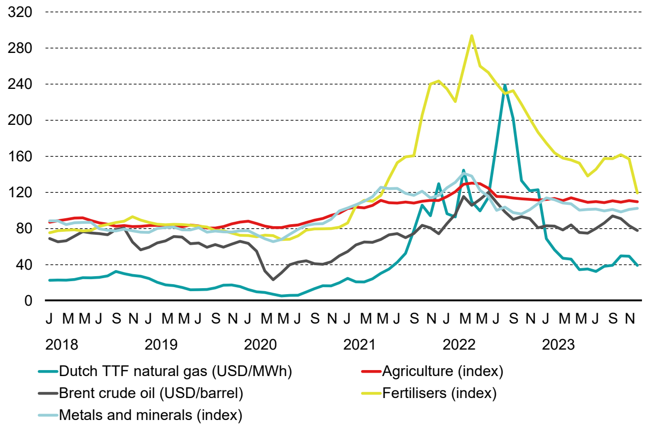
Commodity prices decline during the quarter

After having risen in the previous quarter, oil prices declined in the fourth quarter, as an increase in non-OPEC+ supply coincided with slowing growth in global oil demand. The announcement

[7] The EER-18 is based on the weighted averages of the euro exchange rate against the currencies of Australia, Bulgaria, Canada, China, Czech Republic, Denmark, Hong Kong, Hungary, Japan, Norway, Poland, Romania, Singapore, South Korea, Sweden, Switzerland, the United Kingdom and the United States.

that OPEC+ output cuts would be extended through the first quarter of 2024 failed to support oil prices. The price of Brent crude oil averaged USD 77.9 per barrel in December 2023, 17.2% below the level prevailing in September. Similarly, the price of European natural gas fell in the quarter under review, mainly on account of high storage levels in the EU and broadly flat demand. The average price of Dutch TTF natural gas stood at USD 39.3 per megawatt hour in December, or 0.4% lower than three months earlier (see Chart 1.8).

Chart 1.8
COMMODITY PRICES
(monthly averages)



Source: World Bank.

World Bank data show that non-energy commodity prices fell by 1.5% during the quarter under review. Lower prices for fertilizers and agricultural products outpaced higher prices for metals and minerals. Meanwhile, the prices for precious metals were up by 5.3%.

BOX 1: AN INTRODUCTION TO THE DIGITAL EURO[1]

Introduction

Major central banks around the world are considering the introduction of some form of central bank digital currency (CBDC) and the ECB is no exception. The ECB published its first report on a digital euro in October 2020.[2] During the following year, it officially launched a two-year investigation phase on the design and distribution of a digital euro.[3] This unit would be an electronic form of cash that would complement conventional paper currency in fulfilling the basic functions of money, that is, to provide a means of payment, serve as a store of value and act as a unit of account. Through the issuance of a digital euro, the Eurosystem would be adapting money to reflect the digital age, while assuring the public that physical cash would remain fully accepted and available throughout the euro area.

In June 2023, the European Commission published legislative proposals on a digital euro and the legal tender status of euro banknotes and coins.[4,5] If these proposals were to be adopted, they would reinforce the acceptance of euro cash in transactions and its accessibility throughout the euro area.

In October 2023, the ECB issued a summary report[6] following the conclusion of the investigation phase and announced the Governing Council's decision to launch the first part of the preparation phase. The two-year long first part of the preparation phase, which began on 1 November 2023, would include the finalisation of a rulebook and the selection of providers who would develop a platform and the required infrastructure.[7] A decision by the Governing Council to issue a digital currency would only be taken following the enactment of the relevant legislation.

As a CBDC, a digital euro would be a liability of the Eurosystem. A digital euro would be exchanged at par against euro banknotes and coins. It would ensure the privacy of end-users to the largest extent possible. In principle, a digital euro would be available for use by citizens and businesses in the euro area for transaction purposes at any time and could be used in peer-to-peer transactions online or offline, and in both e-commerce and physical stores, through supervised financial intermediaries of their own choice. As a public good, a digital euro would be made accessible to the largest possible number of euro area residents without entailing any charges to end-users for basic services. A digital euro would act as a store of value for eligible natural persons similar to other Eurosystem liabilities, albeit with holding limits.

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1 Prepared by Mr Silvio Vella, Senior Economist, and reviewed by Mr John H. Caruana, Head, Monetary Policy and Eurosystem Relations Department. The author is grateful for comments and suggestions offered by Mr Alexander Demarco, Deputy Governor, Monetary Policy. The views expressed are those of the author and do not necessarily reflect the views of the Central Bank of Malta. Any remaining errors are the sole responsibility of the author. This box is based on information available until 12 February 2024.

2 Report on a digital euro, ECB, 2020.

3 Eurosystem launches digital euro project, ECB Press Release, 14 July 2021.

4 Proposal for a Regulation of the European Parliament and of the Council on the establishment of the digital euro, COM(2023) 369 final, European Commission, 28 June 2023.

5 Proposal for a Regulation of the European Parliament and of the Council on the legal tender of euro banknotes and coins, COM(2023) 364 final, European Commission, 28 June 2023.

6 A stocktake on the digital euro - Summary report on the investigation phase and outlook on the next phase, ECB, 18 October 2023.

7 Eurosystem proceeds to next phase of digital euro project, ECB Press Release, 18 October 2023.

As a central-bank electronic money, a digital euro would preserve the Eurosystem's monetary sovereignty and the efficiency of the monetary-policy transmission mechanism and strengthen its autonomy in digital payment services across the euro area.

Retail and wholesale CBDC

A CBDC can be made available for retail payment services or wholesale funding. A retail digital currency could be used by both natural and legal persons, whereas a wholesale digital currency would be available only to eligible financial institutions.

A retail CBDC can take either of two forms, namely token or account-based. In token form, digital currency units are linked to a physical medium, for instance a mobile phone or payment card, which characterises ownership. In case of an account-based system, digital currency units are stored in an account linked to the holder and accessible online. Payments are made from an account to another provided that both the issuer and the beneficiary hold accounts denominated in the digital currency.

Wholesale CBDCs would ensure that users could exchange new classes of digital assets for currency units within a framework that would keep a distributed infrastructure operating approach. Settlement costs and times could be reduced as wholesale CBDCs do not require several intermediaries in the processing chain. Wholesale CBDCs could also reduce frictions that block some transactions, especially online.

At the current juncture, it is envisaged that the digital euro would take the form of a retail CBDC that would be available for use in all retail payment channels throughout the euro area. Payment service providers (PSPs), such as banks and other financial institutions, would play a central role in the distribution and management of digital euro accounts by acting as intermediaries between the Eurosystem and end-users. Such intermediaries would provide digital euro-related services across all euro area countries, including the maintenance of customer relationships.

Motivation for issuing a digital currency

A wide range of motives has prompted central banks around the world to consider issuing a digital currency of their own.[8]

Monetary sovereignty – If many economic agents in a country start using a digital currency of another jurisdiction or a private digital currency instead of the national currency unit, the ability of the central bank to perform its basic functions of conducting monetary policy and acting as lender of last resort may be hampered. A digital euro mitigates such risks and helps to ensure that central bank money continues to play a key role in the economy, supporting monetary autonomy in the euro area.

Financial stability – In the absence of a digital euro, the emergence of potentially dominant private providers of a digital currency in payment services could exert an excessively strong impact on the financial sector. A digital euro would protect the role of public money as a monetary anchor for the financial system and would always fulfil the role of a public good.

[8] See Pfister, C. "Central Bank Digital Currency: A Primer", SUERF, 2020, *Policy Note* 143, p.2.

Financial inclusion – Financial inclusion refers to the wide reach of affordable digital technology in payment systems across the various segments of society. A CBDC facilitates financial inclusion by widening access to digital payments to embrace practically all members of society. Indeed, digital financial inclusion is a key principle underpinning a digital euro. Basic digital euro services will be available to euro area residents free of any charges.[9]

Access to payments – The development of technology is increasingly leading to a decline in users' preference for paper money. This reduces the use of central bank money in transactions due to lack of access to specific payment channels. This is also the case for the euro area, where the role played by cash as a retail payments instrument is diminishing. The development of a digital euro is not intended to replace euro banknotes, however, but rather to complement them by making central bank money also accessible to payment channels that cannot be accessed using banknotes, such as online shopping.

Making payments more efficient and less expensive – In countries where cash and cheque use is pronounced, operational costs related to cash handling and storage as well as cheque clearance are high. Through CBDC central banks could offer an alternative and cost-effective method of payment. In the case of a digital euro, the Eurosystem would bear its own costs, as it does with the production and issuance of banknotes, while the legislative proposal of the European Commission envisages that merchant fees would be no higher than existing alternative payment channels.

Ensuring resilience of payments – In the absence of a digital currency issued by the central bank, concerns arise about the potential disruption to digital services and the occurrence of concentration risks in payments systems where settlement is carried out exclusively by a few large private operators. Through a CBDC, the central bank can mitigate such risks significantly. A digital euro would potentially bolster the resilience of European payments.

Reducing the illicit use of money – A CBDC can mitigate the illicit use of money as, with a CBDC in place, users can be expected to make less use of cash, which is totally anonymous and absolutely lacks an audit trail. In contrast, with an account-based retail CBDC, transactions are not fully anonymous, as the intermediary must comply with the relevant legislation such as data and consumer protection, including safeguards against the risks of financial loss and risks to user security. With a digital euro, legislation related to anti-money laundering and combating the financing of terrorism (AML/CFT) would be still applicable for intermediaries with respect to on-boarding and transactions of end-users.

Competition – A CBDC can enhance competition in payments services by competing with existing forms of payments and by offering PSPs the opportunity to assume an intermediating role between payers and beneficiaries of funds, depending on the design of the digital currency platform.

[9] Moreover, according to the ECB, "citizens of euro area countries who are not resident in the euro area may also have access to digital euro, provided they have the right to open a payment account in a euro area country without being a resident at that point of time." See "A stocktake on the digital euro - Summary report on the investigation phase and outlook on the next phase," ECB, 2023.

A digital euro is expected to act as a European platform for innovation, enabling financial intermediaries to develop additional services to their customers, at a fee, that would be instantly available across Europe. With a digital euro in place, the chance for large service providers to reach a monopolistic position would be lessened, though such big players may not be precluded from providing intermediary services, within a European regulatory framework.

Design features of a CBDC

Design features refer to the characteristics and functions of a CBDC. These aim to support policy goals or mitigate risks that could arise from issuing CBDC. During the investigation phase of the digital euro project, the Eurosystem carried out a holistic review to ensure consistency between all the design options endorsed so far. The ECB published the results of the prototype and market research exercises.[10]

Restrictions on CBDC holdings and use

The literature discusses potential risks that can arise from the introduction of a CBDC, including the crowding out of credit institutions and bank runs. These risks can be contained by the implementation of specific measures such as restricting CBDC holdings and transactions. In this regard, the design of the digital euro contemplates holding limits for end-users who are natural persons, whereas for legal persons, the holding limit will be zero.

Presently, central banks that have issued a CBDC do not pay interest on CBDC holdings, thus limiting CBDC competition with bank deposits. If no interest is paid on CBDC, it can still be attractive as a means of payment, although its appeal as a store of value diminishes. As regards digital euro holdings, the ECB is not developing a remunerated digital euro.[11] A non-remunerated digital euro would thus emulate more closely the properties of banknotes and coins.

Anonymity

Anonymity is one of the key characteristics of cash. Anonymity can be preferred by a section of the population who would like to benefit from confidentiality when effecting payments. Also, anonymity strengthens financial inclusion as the end-user does not need to satisfy identification requirements that can be costly or difficult to obtain. Anonymity, however, increases the risk of illicit use of money. As discussed further below, the European Commission's legislative proposals include certain features necessary to combat money laundering and the financing of terrorism that would apply to the digital euro.

The proposed design of a digital euro would guarantee the highest level of privacy for digital payments, with no access to individual information by the Eurosystem.

Offline capacity

Offline capacity would enable CBDC holders to use the digital currency to effect payment transactions where an internet connection is not available. Offline capacity is linked to the

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10 Digital euro – Prototype summary and lessons learned, ECB, 26 May 2023.
11 Opinion of the European Central Bank of 31 October 2023 on the digital euro (CON/2023/34).

policy goal of resilience. The Eurosystem aims to develop a digital euro that will be available both online and offline.

Ease of use
The digital euro would enable smooth onboarding and simple access for end-users. Onboarding and access could take place via existing online banking or mobile banking apps or through a dedicated digital euro app developed by the Eurosystem. The Eurosystem also aims to enable users to easily switch digital euro holdings and services from one provider to another.

Cross-border payments using CBDC
Although retail CBDC projects are usually aimed at transactions undertaken within the same jurisdiction, central banks and international organisations are increasingly evaluating the potential use of CBDCs to enhance the efficiency of cross-border payments.

Operating model
Besides the technological model, for instance distributed ledger technology or technology based on centralised ledgers, associated with the conditions under which digital currency units are held, the choice of distribution channel also affects how a central bank may manage a retail CBDC. Two principal distribution channels can be identified.

First, in a direct model (or unilateral CBDC) no intermediaries are involved and central banks themselves provide the digital currency to end-users. Second, in an intermediated model (intermediated CBDC), central banks issue the CBDC and use intermediaries to provide the digital currency to end-users. This is expected to be the case with a digital euro, wherein supervised intermediaries will manage customer relationships, digital euro payments and related services to better ensure privacy for end-users.

Legal foundations for a CBDC
A CBDC requires a legal framework which empowers a central bank to issue CBDC and the legal status assigned to such a form of currency. According to a survey among central banks, most participants prefer granting legal tender status to CBDC.[12]

As regards the digital euro, an important element of the European Commission's legal proposal is the legal tender status granted to it. In general, the legal tender status granted to the digital euro would entitle citizens to use digital euro in payments and obliges suppliers to accept it. Nevertheless, the Commission's proposal recognises the right for a microenterprise not to accept the digital euro, unless it accepts comparable digital means of payment. Similarly, a natural person acting in the course of a purely personal activity is not obliged to accept the digital euro.

Privacy is of utmost importance in the design of a digital euro. A digital euro would be a new payment solution with enhanced privacy and data protection. A proposal put forward by the Eurosystem provides that only intermediaries would be able to access the user information

[12] Soderberg G et al. "Behind the Scenes of Central Bank Digital Currency – Emerging Trends, Insights, and Policy Lessons," *IMF Note* 2022/004.

needed for onboarding clients and for ensuring compliance with existing AML regulation. Hence, a digital euro, whilst respecting privacy, would not provide total anonymity as does cash. Having said that, the possibility to pay offline would provide cash-like privacy, with neither the intermediary nor the central bank processing the payment. In its proposal, the European Commission states that by excluding full anonymity, the initiative would be consistent with the objectives of the AML package. The Commission adds that, meanwhile, the digital euro initiative provides a high level of privacy for offline digital euro payments, although the number and value of offline payments are likely to be limited to mitigate risks of fraud. Online digital euro payment transactions would follow the same data protection, privacy and AML/CFT rules as is the case for other digital means of payment, in conformity with the relevant EU legal framework.

Another aspect of the Commission's proposal envisages that end-users would be able to use basic services of the digital euro free of charge while intermediaries would be compensated in a similar way as for comparable digital means of payment.

The Commission's proposal recognises the ECB's ability to develop and apply the tools needed to maintain the equilibrium between commercial bank and central bank money. Such tools include the setting-up of holding limits.

Furthermore, the Eurosystem is working on a draft rulebook for a digital euro to regulate the relationship between the end-user, the intermediary, and the Eurosystem, and any disputes that may arise between them. This is taking place in close collaboration with representatives of a wide variety of stakeholders.

Way forward

The issuance of CBDC is a novelty in the world of central banking, and consequently it still presents some open issues and challenges together with opportunities.

Open issues include the nature of sustainable business models that ensure cost recovery to central banks and provide adequate incentives for private-sector participation. Other issues relate to the need to extend the boundaries of innovation to allow for the implementation of desirable features such as offline capacity. Key challenges include making choices in a very new and rapidly evolving business area, the appropriate technology to adopt, and the costs associated with the development process.

A retail CBDC is likely to bring about more efficiency in retail transactions by enabling firms to simplify invoicing and accounting processes as well as shortening payment times. As Fabio Panetta, the former Chair of the Eurosystem High-Level Task Force on digital euro, put it, "As people increasingly choose to pay digitally, we should be ready to issue a digital euro alongside cash … A digital euro would increase the efficiency of European payments and contribute to Europe's strategic autonomy".[13]

Over the next two years, the Eurosystem will test technical solutions and business arrangements that could develop a digital euro which would meet both the Eurosystem's require-

[13] Panetta F. (2021). A digital euro to meet the expectations of Europeans, 14 April 2021.

ments and the needs of users. The Eurosystem will continue to engage with the public and all stakeholders during this phase. Subsequently, should the European Commission's legislative process be successfully concluded, the Governing Council of the ECB would need to decide whether to move to the next stage of preparations, which would pave the way for the possible eventual issuance and roll-out of a digital euro. According to ECB President Christine Lagarde, the single currency would be prepared for the future wherein "a digital euro can be used for all digital payments […] It would coexist alongside physical cash, which will always be available, leaving no one behind".[14]

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