2020

Annual Report 2019

European Central Bank (ECB)

EUROPEAN CENTRAL BANK

EUROSYSTEM

Annual Report

2019

Contents

The year at a glance

** Please note that these remarks relate to the ECB's activities in 2019 and were finalised before the global coronavirus (COVID-19) pandemic. The economic situation and the ECB's policy actions have evolved substantially since that point. The ECB will do everything necessary within its mandate to help the euro area through this crisis. **

2019 marked the 20th anniversary of the introduction of the euro, and support for the single currency among euro area citizens reached an all-time high of 76% in the November Eurobarometer poll.

Euro area economic growth moderated further in 2019, to 1.2% from 1.9% in the previous year. The continued expansion was supported by favourable financing conditions, further employment gains and the mildly expansionary fiscal stance, although global trade-related uncertainty weighed most notably on manufacturing and investment.

Euro area labour markets continued to improve in 2019. The unemployment rate declined further to 7.6%, and wage growth remained robust, around its long-run average.

Headline inflation in the euro area stood at 1.2% on average in 2019, down from 1.8% in 2018. This decline reflected lower contributions from the two more volatile components, energy and food. Excluding these two components, inflation averaged 1.0% in 2019, the same as in the two previous years.

Against that background, the ECB's Governing Council undertook further monetary accommodation in 2019 over three successive rounds. This included a new series of targeted longer-term refinancing operations, an extension of our forward guidance, a reduction in our deposit facility rate and the resumption of our asset purchase programme. By the end of 2019 there were some initial signs of a stabilisation of growth dynamics and a mild increase in underlying inflation.

As part of our policy assessment process, the Governing Council takes into consideration the impact of any potential side effects of our policy. In that vein, a two-tier system for reserve remuneration was introduced, which exempts a fraction of banks' excess cash reserves from the negative deposit facility rate, in order to safeguard the bank-based transmission of monetary policy.

Structurally low profitability remains a challenge for euro area banks, although the sector is adequately capitalised, with a 14.2% Common Equity Tier 1 ratio. During 2019 strong risk-taking in financial and real estate markets continued to fuel the build-up of asset price vulnerabilities, while risks continued to increase in the growing non-bank financial sector. Euro area countries, in consultation with the ECB, implemented a number of macroprudential measures to mitigate and build up resilience to systemic risks.

The Eurosystem continued its efforts to ensure the smooth operation of payment systems. This included preparations for the replacement of TARGET2 with a new, state-of-the-art real-time gross settlement system and the adoption of a new retail payments strategy. The strategy supports the development of a market-led pan-European solution for point-of-interaction payments, to complement the successful Single European Payments Area.

Publication of a new overnight reference rate, the €STR (euro short-term rate), began on 2 October, with the aim of replacing the current reference rate, EONIA, by January 2022. The daily production of the €STR has worked well and the methodology has proved reliable.

The ECB continues to study carefully the impact of climate change on the outlook for price stability and the financial system. This includes understanding the carbon intensity of bank lending portfolios and developing an analytical framework for carrying out a pilot climate risk stress-test analysis for the euro area banking sector. The ECB contributes to the efforts against climate change through its own investment decisions and environmental activities. We reduced carbon emissions and energy consumption per workplace by 74% and 54% respectively between 2008 and 2018.

2019 brought a renewed focus on engaging with a broader audience than financial markets and experts, and on listening more attentively to people’s concerns. Initiatives included the #EUROat20 competition, a new “ECB explains” video series and a monthly podcast.

Frankfurt am Main, May 2020

Christine Lagarde

President

The year in figures

Weaker euro area real GDP growth in 2019

1.2%

The slowdown was mainly driven by weaker international trade, in an environment of prolonged global uncertainty.

Unemployment rate declined

7.6%

In spite of a growing workforce, the unemployment rate continued to decline and reached 7.6% in 2019.

Headline inflation declined

1.2%

Average headline inflation declined to 1.2% in 2019, driven by lower energy and food inflation.

Net asset purchases for monetary policy purposes restarted

€20 billion

To help inflation return to levels below, but close to, 2%, on 1 November 2019 the Eurosystem restarted net asset purchases, at an average of €20 billion per month.

Challenging financial stability environment, but banks adequately capitalised

14.2%

While the financial stability environment remained challenging, euro area banks held enough capital, with a 14.2% Common Equity Tier 1 ratio.

Reduction in ECB carbon emissions per workplace

−74%

The ECB reduced its carbon emissions by 74% per workplace between 2008 and 2018.

ECB launched the euro short-term rate (€STR)

>€30 billion

In October the ECB began publishing a new overnight reference rate for euro area money markets: the €STR. Every day more than €30 billion worth of transactions are used to calculate the rate.

New €100 and €200 banknotes were released

€100 and €200

The introduction of the new notes in May 2019 – with new and innovative security features – completed the Europa series, which was launched in 2013 with the €5 note.

1 Euro area economic activity moderated amid muted inflationary pressures

After peaking in mid-2018, the global economy slowed down considerably in 2019 amid a sharp rise in trade-related uncertainty. The slowdown was broad-based and synchronised across countries. In this context, euro area economic growth moderated further, to 1.2% from 1.9% in the previous year. The growth moderation in 2019 was primarily driven by weaker international trade, in an environment of prolonged global uncertainty. At the same time, the slowdown was cushioned by favourable financing conditions, further employment gains and rising wages, the mildly expansionary euro area fiscal stance and the continued – albeit slower – growth in global activity. Euro area labour markets improved further, while productivity growth decelerated substantially. Inflationary pressures remained muted overall. Headline inflation declined to 1.2%, driven by lower energy and food inflation, while underlying inflation remained subdued. Favourable financing conditions continued to support credit and money growth. Euro area government bond yields declined significantly, whereas euro area equity prices increased mainly on account of lower discount rates. Household wealth was supported by increased valuations of real and financial assets.

1.1 The global economy slowed down considerably

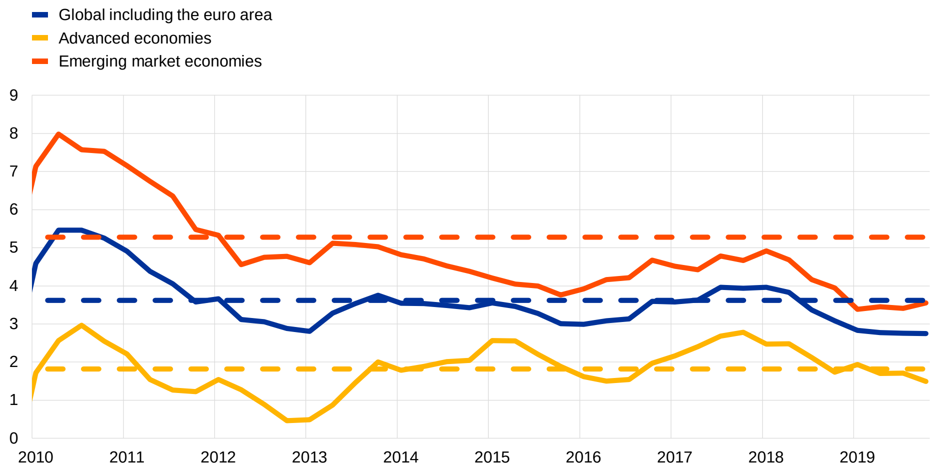
The global economy slowed down considerably in 2019 and the slowdown was broad-based and synchronised across countries

Over the course of 2019 global economic growth declined sharply. After peaking in mid-2018, the global economy slowed down considerably and grew at a rate that was well below the historical average and the weakest since the global financial crisis (see Chart 1). This global slowdown was broad-based and synchronised across countries. In large advanced economies such as the United States, the United Kingdom and Japan, this reflected a decrease from above average rates of growth. In China, growth declined to the lowest rate since 1990 and was around its currently estimated potential rate. Across other large emerging market economies, growth was generally lacklustre, partly reflecting a slow recovery from recent recessions.

Chart 1

Global GDP growth

(annual percentage changes; quarterly data)



Sources: Haver Analytics, national sources and ECB calculations.
Notes: Regional aggregates are computed using GDP adjusted with purchasing power parity weights. The solid lines indicate data and go up to the fourth quarter of 2019. The dashed lines indicate the long-term averages (between the first quarter of 1999 and the fourth quarter of 2019). The latest observations are for 10 March 2020.

The global economic slowdown was driven by a decline in manufacturing sector output and considerably weaker trade and investment growth. By contrast, services sector output growth moderated to a lesser extent, supported by relatively robust consumption growth and a continued improvement in labour markets.

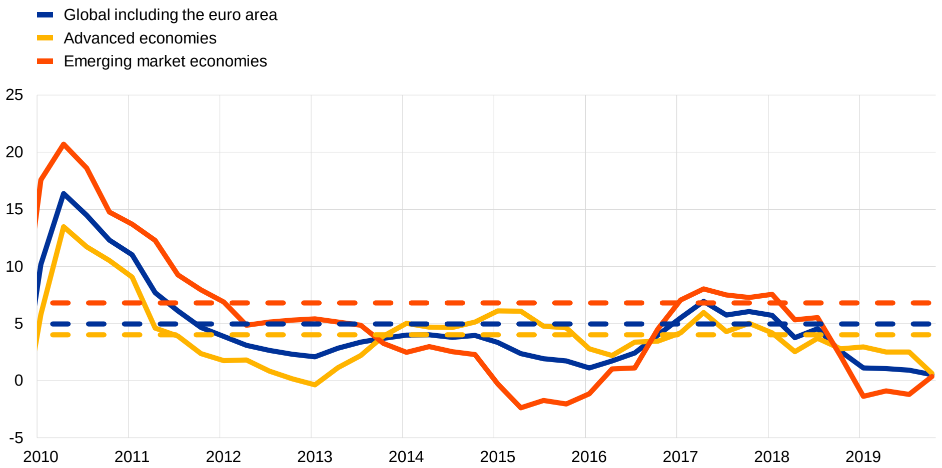
Trade and investment growth weakened considerably in 2019, driven by a sharp rise in trade-related uncertainty

Trade-related uncertainty rose sharply and remained elevated, weakening the global economy. Trade tensions between the United States and China escalated, as suggested by a range of different indicators.[1] Both countries raised tariffs on their bilateral trade. By the end of 2019 most US-China bilateral trade had been subject to higher tariffs. Trade uncertainty eased somewhat as a “phase one” trade agreement was announced in December following additional negotiations between the two countries since mid-October. The agreement was signed on 15 January 2020. Amid elevated trade tensions, the increase in tariffs drove the sharp decline in trade, while increased uncertainty and deteriorating economic sentiment held back investment growth in 2019 (see Chart 2).

1 For more information on trade-related uncertainty, see “Tracking global economic uncertainty: implications for global investment and trade”, *Economic Bulletin*, Issue 1, ECB, 2020.

Chart 2
Global trade growth

(annual percentage changes; quarterly data)



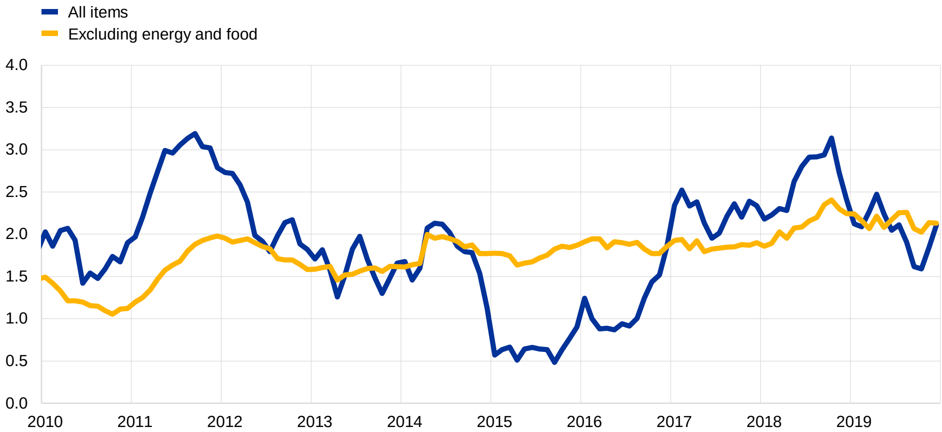
Sources: Haver Analytics, national sources and ECB calculations.
Notes: Global trade growth is defined as growth in global imports including the euro area. The solid lines indicate data and go up to the fourth quarter of 2019. The dashed lines indicate the long-term averages (between the fourth quarter of 1999 and the fourth quarter of 2019). The latest observations are for 10 March 2020.

Headline inflation fell, but core inflation remained broadly stable

Global inflation remained subdued in 2019, reflecting weak global growth momentum (see Chart 3). In the OECD area, headline annual consumer price inflation fell from around 3% in the second half of 2018 to 2.1% in December 2019 on account of falling energy prices and slowing food price inflation. However, underlying inflation (excluding energy and food) remained relatively steady at around 2% over the year.

Chart 3
OECD inflation rates

(annual percentage changes; monthly data)



Source: Organisation for Economic Co-operation and Development.
Note: The latest observations are for December 2019.

Oil prices fluctuated, driven by oil supply dynamics and expectations about global demand

Oil prices fluctuated over the year, reflecting oil supply dynamics in the first half of the year and expectations about global demand in the second half. The oil price fluctuated between USD 53 per barrel and USD 74 per barrel in 2019. In the first half of the year higher than expected cuts to production by OPEC+ (a group of major oil producers), as well as geopolitical tensions, supported an upward trend in oil prices. In the second half oil prices fell amid concerns about trade tensions and the possible impact on the global economy. The effects of the supply outage in Saudi Arabia following a drone attack on 14 September were short-lived as large inventories and the quick restoration of production capacity helped cushion the shock.

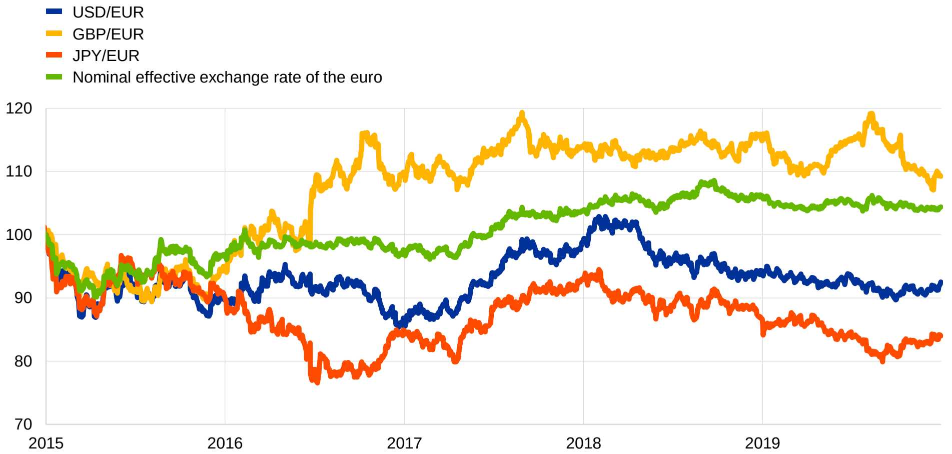
The euro depreciated against currencies of euro area trading partners

The euro depreciated by 1.6% in nominal effective terms over the course of 2019 (see Chart 4). In bilateral terms, this was driven by a depreciation of the euro against the US dollar and the Japanese yen. The euro-pound sterling exchange rate also declined, but exhibited significant volatility throughout 2019 mainly on account of changing Brexit developments.

Chart 4

The euro exchange rate

(daily data; 1 January 2015 = 100)



Sources: Bloomberg, Hamburg Institute of International Economics (HWWI), ECB and ECB calculations.
Notes: Nominal effective exchange rate against 38 major trading partners. The latest observations are for 31 December 2019.

The risks to the outlook for global growth were on the downside

At the end of 2019 the outlook for global growth entailed a moderation of growth as the economic cycle matured in advanced economies and as China gradually transitioned to a lower growth path, while the recovery in other emerging market economies remained fragile. This outlook was uncertain and, on balance, the risks to global activity were on the downside.[2] To the extent that the weakness in the manufacturing sector spread to the services sector, global activity could decelerate more quickly. In China, a sharper slowdown could have a larger effect on the global economy, while an escalation of the trade dispute would exacerbate the negative impact on global trade flows. In Europe, in particular, there was a risk that the United States might impose trade tariffs on some goods in several countries. In general, heightened geopolitical tensions could adversely affect global growth and trade. In addition, despite the United Kingdom's orderly withdrawal from the European Union, there was uncertainty about the future EU-UK relationship and the outcome of the negotiations remained a downside risk. Moreover, a sharp repricing in global financial markets could dent risk appetite globally and affect real economic activity.

[2] The outlook at the end of 2019 did not anticipate any impact or downside risk from the coronavirus outbreak as this information was not known at the time.

1.2 Euro area economic growth moderated, while labour markets continued to improve

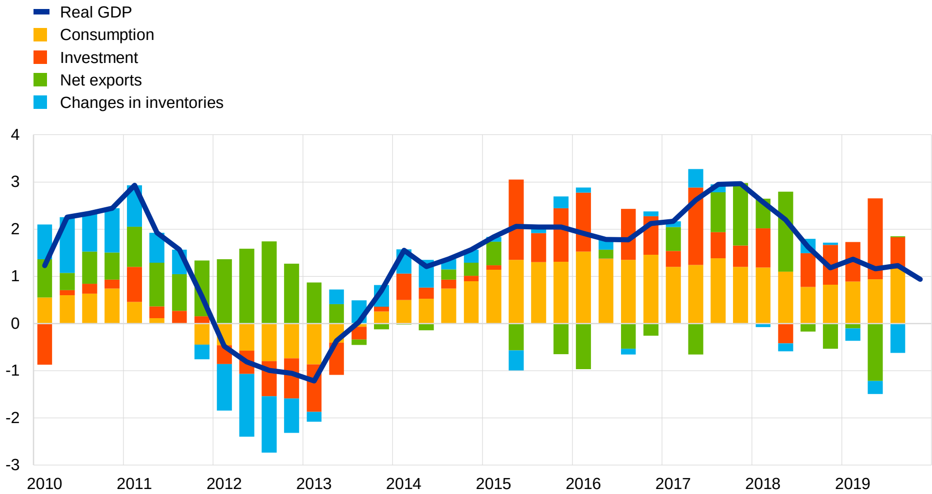
Weaker euro area real GDP growth in 2019

Euro area annual real GDP growth moderated further in 2019, reaching 1.2%, following growth of 1.9% in the previous year (see Chart 5). In contrast to the growth slowdown that took place in 2018, which was driven by weaker growth in both external and domestic demand, the growth moderation in 2019 was primarily driven by a marked weakening in international trade, in an environment of prolonged global uncertainty. At the same time, the euro area expansion continued to be supported by favourable financing conditions, further employment gains and rising wages, the mildly expansionary euro area fiscal stance and the continued – albeit slower – growth in global activity.

Chart 5

Euro area real GDP

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: Annual GDP growth for the fourth quarter of 2019 refers to the preliminary flash estimate, while the latest observations for the components are for the third quarter of 2019.

Domestically oriented sectors showed more resilience in 2019

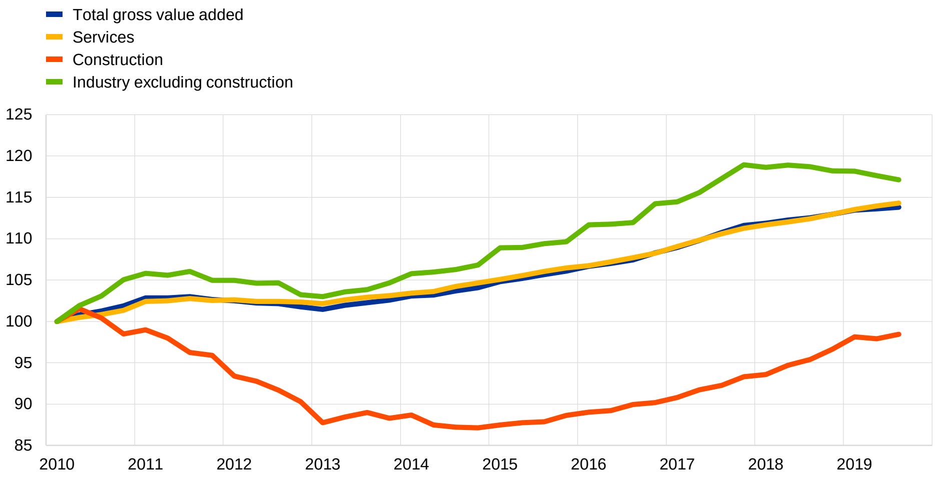
Output growth in 2019 was driven by the services and construction sectors, which showed continued resilience on the back of robust euro area domestic demand. Activity in the euro area industrial sector weakened further (see Chart 6). This reflected negative repercussions from the weakness in foreign demand. There were by contrast only limited signs that weaker external demand affected services in 2019.[3]

[3] For an overview of the interaction between the manufacturing and services sectors, see the box entitled "Developments in the services sector and its relationship with manufacturing", *Economic Bulletin*, Issue 7, ECB, 2019.

Chart 6

Euro area real gross value added by economic activity

(index: Q1 2010 = 100)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for the third quarter of 2019.

In 2019 domestic demand continued to contribute positively to euro area growth, amid favourable financing conditions and improving labour markets. Private consumption, alongside consumer sentiment, remained resilient in 2019 (see Box 1). Household spending was supported by rising employment and wages, which resulted in growing aggregate labour income. Following the gradual slowdown starting in 2018, business investment remained moderate in 2019. A much less dynamic external environment and heightened global uncertainty weighed on firms' investment decisions. In spite of this and the modest developments in corporate profitability and declining capacity utilisation, business investment continued to contribute positively to economic growth, supported by favourable financing conditions. Growth in investment in intellectual property products, which tends to be volatile, was particularly strong.[4] At the same time, there was a slowdown in housing investment after its strong and prolonged recovery of previous years, alongside a moderation of the momentum in euro area housing markets. This deceleration mainly reflected increasingly binding constraints on housing supply – especially in terms of labour shortages, regulatory bottlenecks and the debt-reduction process – which limited growth in the construction sector in the course of 2019.

Box 1
Consumption and household sentiment remained resilient

In 2019 the services and retail sectors remained resilient overall as the euro area economy slowed, despite some moderation in growth in these sectors. Private consumption represents an important part of demand in the services and retail sectors. With this in mind, this box looks more closely at

[4] For instance, investment in intellectual property products in Ireland distorted growth in euro area investment in the second and third quarters of 2019.

consumer confidence in the euro area, considering the reasons for the relative resilience of consumer spending.

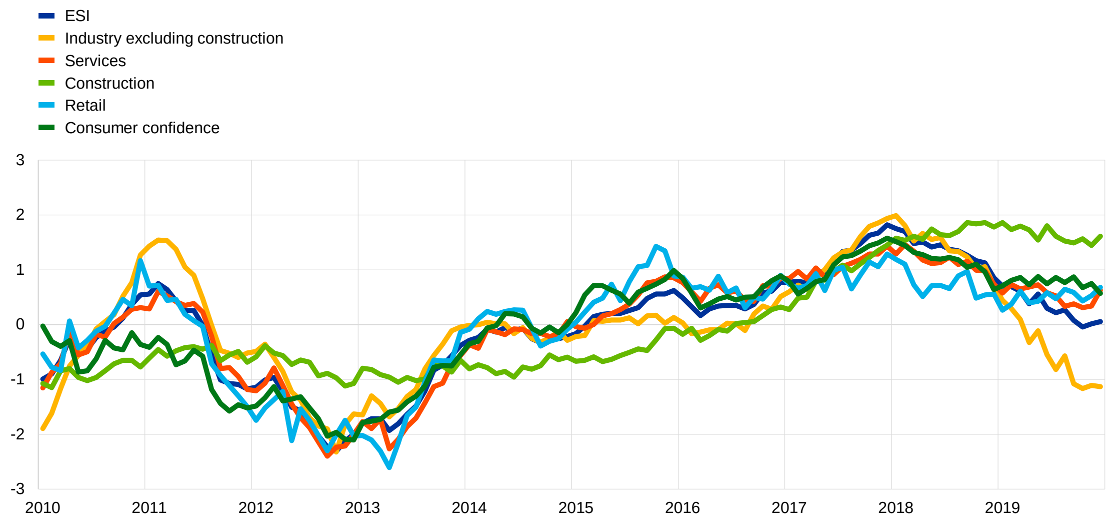
Sentiment among consumers stabilised and held up better than in other sectors

The economic slowdown in 2019 predominantly reflected weaker international trade alongside elevated levels of global uncertainty, which in turn mostly weighed on the euro area industrial sector. Meanwhile, the services and retail sectors remained resilient, despite some moderation. This is evident in Chart A, which displays sentiment in various sectors of the euro area economy. The European Commission's Economic Sentiment Indicator (ESI) is a weighted average of confidence in industry excluding construction (with a weight of 40%), services (30%), construction (5%), the retail sector (5%) and households (20%). As can be seen, the slowdown in the more domestically oriented sectors (i.e. construction, services, retail and households) has been much less pronounced than in industry.

Chart A

Euro area confidence – sectoral breakdown

(standardised percentage balances)



Sources: European Commission and ECB calculations.

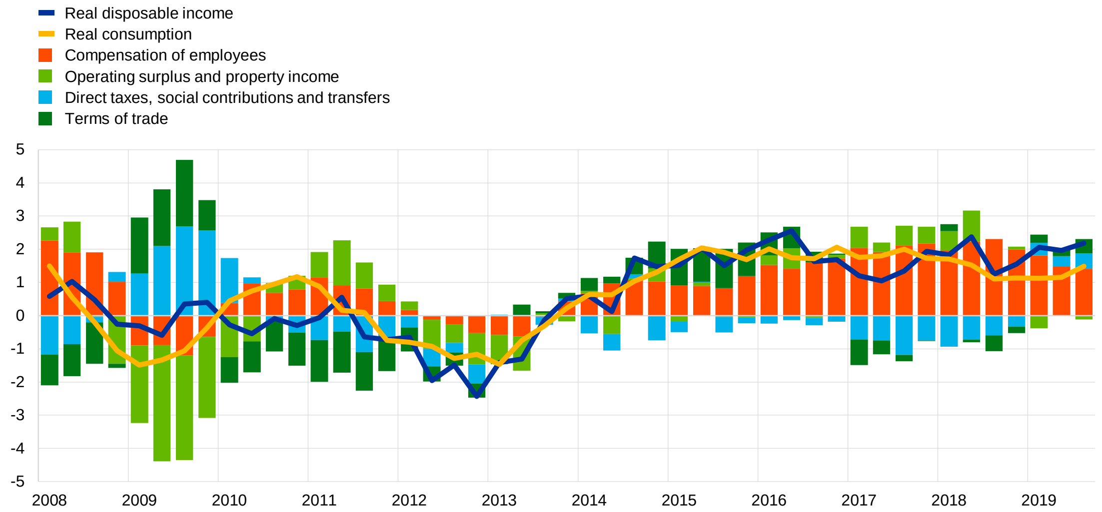
Private consumption remained resilient overall in 2019

Private consumption growth in 2019 was held up by continued growth in real disposable income, which in turn was supported by a resilient labour market. Labour income benefited both from continued increases in wages and further, although slowing, employment gains. In addition, direct taxes, social contributions and transfers are overall likely to have had a small positive impact on income growth, in contrast with 2018 when they still dampened income growth (see Chart B). However, the contribution from the operating surplus and property income, which tend to be closely linked to economic activity, turned slightly negative in 2019, having been positive since 2015.

Chart B

Real private consumption and disposable income

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Drivers of consumer confidence

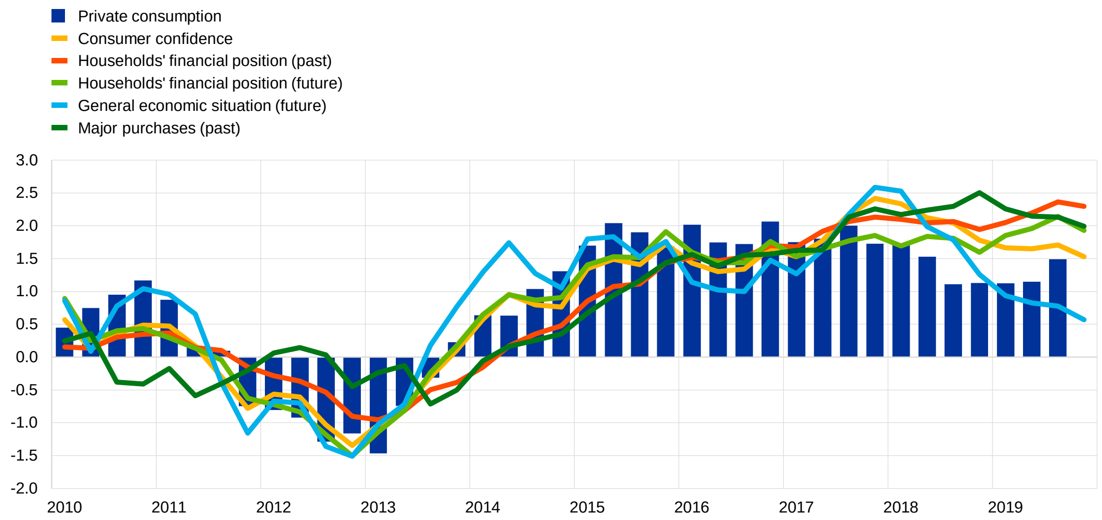
The Commission's Consumer Confidence Index is the result of averaging four sub-indices relating to perceptions of past financial and economic developments as well as expectations regarding future developments 12 months ahead (see Chart C).[5] While one sub-index relates to the assessment of the overall economic situation in the country, the others deal with households' financial situation. Looking at the developments in these sub-indices, it can be seen that households had a relatively more benign view of their personal situation, mainly reflecting the ongoing resilience of the labour market, which has largely shielded household income from the economic slowdown.

5 See "A revised consumer confidence indicator", European Commission, 21 December 2018.

Chart C

Private consumption and consumer confidence

(annual percentage changes; standardised percentage balances)



Sources: Eurostat, European Commission and ECB calculations.
Note: The survey data have been standardised with the average and standard deviation of annual growth in private consumption since 2010.

Robust labour market developments, in conjunction with rising wages, combined with favourable financing conditions and households' improving financial position, largely explain why euro area consumer confidence remained elevated in 2019, supporting private consumption. In the context of resilient domestic demand alongside weak foreign demand, the ECB continues to closely monitor incoming data in order to assess the risk of negative spillovers from the external sector to the domestic sector.

The external sector contributed negatively in net terms to euro area output in 2019. With the exception of exports to the United States, which expanded at a slower pace, the decline was broad-based, owing mainly to the bleak performance of exports of capital goods and cars. Intra-euro area trade declined as well, with the slump concentrated in trade in intermediate goods, reflecting the impairment of euro area production chains.

Euro area labour markets continued to improve, while productivity growth decelerated substantially

Euro area labour markets continued to improve in 2019

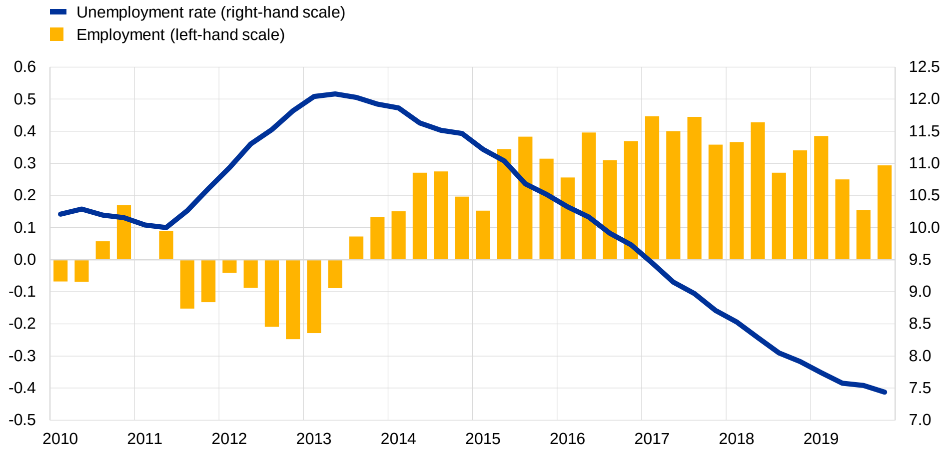
Euro area labour markets continued to improve in 2019 (see Chart 7). This improvement was a key element supporting economic activity in 2019.

According to an analysis based on synthetic labour market indicators, the level of labour market activity was close to its pre-crisis peak in the second quarter of 2019. In addition, labour market momentum remained above its long-term average, although it has recently moderated somewhat.[6] The good labour market performance occurred against the background of continued increases in labour supply, which in part reflected the higher participation of older workers resulting from previous reforms that increased the statutory pension age.[7]

Chart 7

Labour market indicators

(percentage of the labour force; quarter-on-quarter growth rate; seasonally adjusted)



Source: Eurostat.
Note: The latest observations are for the fourth quarter of 2019.

Unemployment rate declined

Employment increased by 1.2% in 2019, which is a robust rate when comparing with GDP growth developments. The growth of labour productivity per person employed was 0.0% in 2019, following 0.4% in 2018.[8] In spite of the increases in labour supply, the unemployment rate continued to decline and reached 7.6% in 2019, close to the rate observed in 2007. However, the dispersion of unemployment rates across euro area countries remained high.

The digital economy requires monitoring

Digitalisation is having an effect on variables which are relevant for monetary policy

According to the literature, digitalisation is having an impact on a number of key economic variables which are relevant for monetary policy. The empirical evidence on the effects of digitalisation suggests that they may be pushing up activity and productivity, while its overall effect on inflation is not clear yet.[9] In 2019 the degree of digitalisation of the EU economies ranged from around 40 for the least digital to around 70 for the most digital economies, according to the European Commission's

6 For details on how these indicators are constructed, see "Indicators of labour market conditions in the euro area", *Economic Bulletin*, Issue 8, ECB, 2019.

7 For more details on labour supply developments in the euro area, see the article entitled "Labour supply and employment growth", *Economic Bulletin*, Issue 1, ECB, 2018.

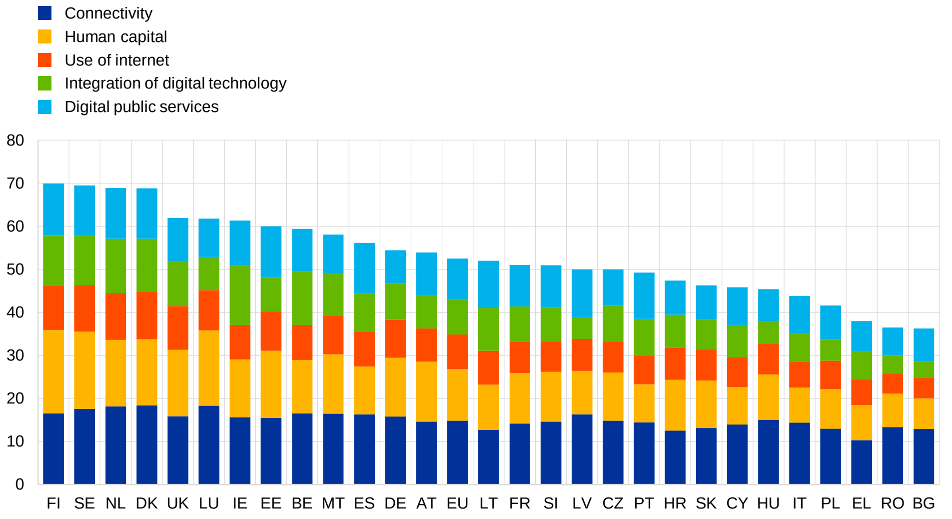
8 For more details on the relationship between employment and productivity during the current employment expansion, see the box entitled "Employment growth and GDP in the euro area", *Economic Bulletin*, Issue 2, ECB, 2019, and the box entitled "How does the current employment expansion in the euro area compare with historical patterns?", *Economic Bulletin*, Issue 6, ECB, 2019.

9 See, for example, Charbonneau, K., Evans, A., Sarker, S. and Suchanek, L., "Digitalization and Inflation: A Review of the Literature", Staff Analytical Note 2017-20, Bank of Canada, November 2017.

Digital Economy and Society Index (DESI) (see Chart 8). While the EU economies scored broadly similarly in terms of connectivity, they displayed less homogeneity in terms of human capital, use of the internet, integration of digital technology and digital public services.

Chart 8

Digital Economy and Society Index for 2019



Source: European Commission.

Structural policies should help to address key challenges

The implementation of policy recommendations remained lacklustre in 2019

The implementation of structural policies in euro area countries needs to be substantially stepped up to boost euro area productivity and growth potential, reduce structural unemployment and increase the resilience of the economy. This includes structural policies to improve the functioning of labour markets, increase competition in product and factor markets and enhance the business environment.[10] Furthermore, structural policies are needed to help address the current and future challenges posed, for example, by population ageing, digitalisation and climate change. The country-specific recommendations (CSRs) provide policy recommendations tailored to an individual country on how to enhance economic growth and resilience. The CSRs are endorsed by Member States in the European Council. In February 2019 the European Commission concluded that 95% of the policy recommendations had either not been implemented or, at best, had been implemented to "some" extent.[11]

10 See, for example, Masuch, K., Anderton, R., Setzer, R. and Benalal, N. (eds.), "Structural policies in the euro area", *Occasional Paper Series*, No 210, ECB, June 2018.

11 For more details on the implementation of the CSRs, see the box entitled "Country-specific recommendations for economic policies under the 2019 European Semester", *Economic Bulletin*, Issue 5, ECB, 2019.

A mildly expansionary fiscal stance provided some support to economic activity

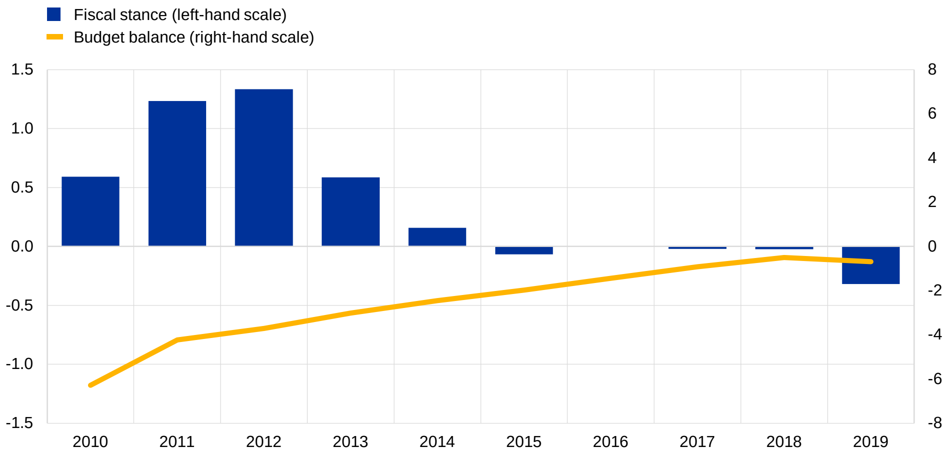
The euro area general government deficit ratio increased slightly on account of a mildly expansionary fiscal stance

After having been broadly neutral for five years, the euro area fiscal stance[12] turned expansionary, albeit mildly, in 2019 (see Chart 9). The loosening of the stance provided support to economic activity in the euro area. It reflected expansionary policy measures which were implemented in some large member countries, mostly cuts to direct taxes as well as public expenditure increases. Based on the December 2019 Eurosystem staff macroeconomic projections, the euro area general government deficit ratio increased slightly in 2019 to 0.7% of GDP. The decline in the budget balance reflected the more expansionary fiscal stance, which was partly offset by savings in interest payments, while the contribution from the cyclical position remained broadly unchanged.

Chart 9

General government balance and fiscal stance

(percentage of GDP)



Sources: Eurostat and ECB calculations.

The aggregate general government debt-to-GDP ratio in the euro area continued to decline in 2019 and reached 84.5% of GDP at the end of the year. However, debt-to-GDP ratios remained high in a number of countries. The reduction in the aggregate debt ratio was supported by favourable interest rate-growth differentials and positive, but declining primary balances. While there were no euro area countries under the corrective arm of the Stability and Growth Pact (SGP) at the end of 2019, the European Commission assessed that the 2020 draft budgetary plans of eight euro area countries, many of which had debt ratios of close to or above 100% of GDP, posed a risk of non-compliance with the requirements under the SGP.[13]

12 The fiscal stance reflects the direction and size of the stimulus from fiscal policies to the economy, beyond the automatic reaction of public finances to the business cycle. It is measured as the change in the cyclically adjusted primary balance ratio net of government support to the financial sector. For more information on the concept of the euro area fiscal stance, see the article entitled “The euro area fiscal stance”, *Economic Bulletin*, Issue 4, ECB, 2016.

13 “The review of draft budgetary plans for 2020 – some implications for a reform of fiscal governance”, *Economic Bulletin*, Issue 8, ECB, 2019.

1.3 Inflationary pressures remained muted

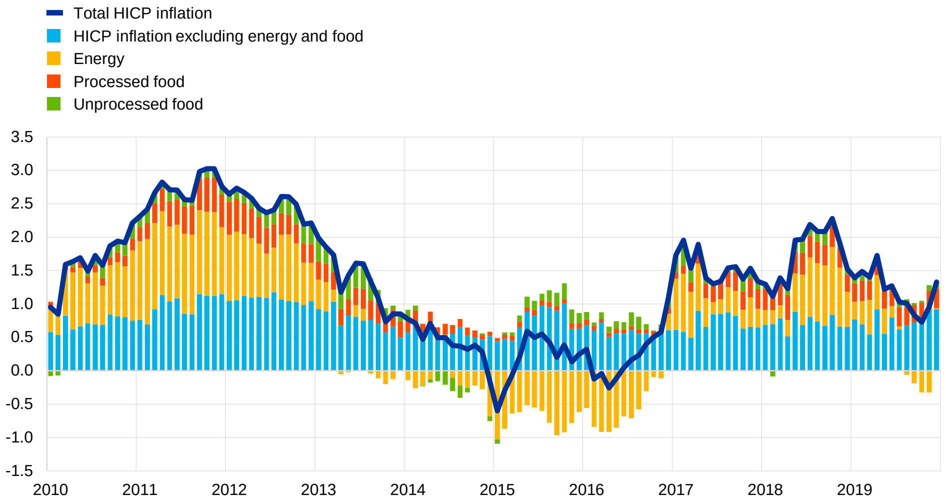
Headline inflation declined

Headline inflation in the euro area stood at 1.2% on average in 2019, down from 1.8% in 2018.[14] This decline essentially reflected lower contributions from the two more volatile inflation components, energy and food. HICP inflation excluding energy and food, one measure of underlying inflation, remained at subdued rates, averaging 1.0% in 2019 as in 2018 and 2017, despite an increase towards the end of the year (see Chart 10).

Chart 10

HICP inflation and contributions by components

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

The decline in headline inflation was driven by lower energy and food inflation, while underlying inflation remained subdued

Developments in energy inflation were largely responsible for the decline in average headline inflation in 2019 compared with 2018. The contribution of total food inflation to headline HICP inflation declined to 0.3 percentage points in 2019, from 0.4 percentage points in 2018. Developments in total food inflation within the year were largely determined by those in the volatile unprocessed food component. Processed food inflation hovered around 1.9% in 2019, which was slightly below the 2018 average. Increases in producer prices for consumer food and in food commodity prices (as captured by EU farm-gate prices), two drivers of processed food prices, suggest that such cost increases were not fully passed through to food prices at the consumer level in a context of high competition.

[14] Average headline inflation in 2018 was revised up to 1.8% from 1.7% by Eurostat after the cut-off date for data in the 2018 Annual Report. The revision followed the implementation of methodological changes to the Harmonised Index of Consumer Prices (HICP) by Eurostat. These changes also implied an upward revision to the average services inflation rate in 2018, to 1.5% from 1.3%, and a downward revision to the average non-energy industrial goods inflation rate in 2018, to 0.3% from 0.4%. These changes, however, had only a mild impact on average HICP inflation excluding energy and food in 2018, which remained unchanged at 1.0%. In contrast to these rather muted effects, the impact on monthly and annual inflation rates of the year 2015 was particularly strong. Average headline inflation for 2015 was revised upwards by 0.2 percentage points and HICP inflation excluding energy and food by 0.3 percentage points. See "A new method for the package holiday price index in Germany and its impact on HICP inflation rates", *Economic Bulletin*, Issue 2, ECB, 2019, and *Monthly Report*, Deutsche Bundesbank, March 2019, pp. 8-9.

HICP inflation excluding energy and food, like other measures of underlying inflation, moved broadly sideways during most of the year and remained below its historical average, despite the mild increase at the end of 2019. Box 2 below discusses the relationship between underlying inflation and economic activity, as well as broader economic developments since the global financial crisis. Weak developments in both non-energy industrial goods and services inflation contributed to subdued HICP inflation excluding energy and food. Non-energy industrial goods inflation averaged 0.3% in 2019, unchanged from 2018 and the average since 2015. Indicators of price pressures at different stages of the pricing chain show that the annual rate of change of producer prices for non-food consumer goods remained broadly stable through the year, but was substantially higher than its average since 2015. This suggests that some of the cost increases have been absorbed at the retailer stage. In addition, unlike in 2018, the average annual rate of change of import prices for non-food consumer goods was positive in 2019, reflecting, among other factors, the depreciation of the euro. Services inflation displayed some volatility linked to price developments in travel-related services that resulted from a statistical effect.[15] Looking through this monthly volatility, services inflation moved sideways and, on average, stood at 1.5% in 2019, unchanged from 2018 and only marginally higher than the average since 2015. Overall, the increases in services prices, which mostly include a large labour cost content, continued to lag behind wage growth.

Box 2
The euro area Phillips curve and its interpretation of recent inflation developments

Since 2013 HICP inflation excluding energy and food has consistently remained below its historical average. While this could initially be explained by large amounts of economic slack and other factors dampening inflationary pressures, the more recent weakness is difficult to account for within a standard Phillips curve framework, as visible from the unexplained component of the decomposition of inflation developments in Chart A. This has prompted renewed scrutiny of this fundamental economic relationship.[16]

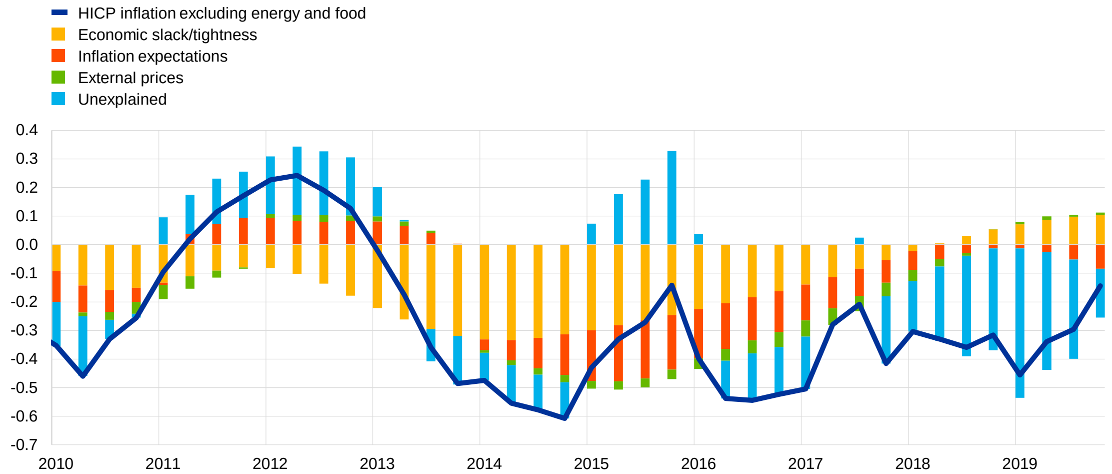
15 Statistical changes to the measures of package-holiday prices in Germany have had a temporary downward impact on euro area services inflation; see *Monthly Report*, Deutsche Bundesbank, August 2019, pp. 57-59.

16 See Bobeica, E. and Sokol, A., "Drivers of underlying inflation in the euro area over time: a Phillips curve perspective", *Economic Bulletin*, Issue 4, ECB, 2019. This analysis focuses on an in-sample decomposition of inflation. For a recent analysis of the forecasting performance of this type of model, as well as of the predictive power of different types of variables for inflation, see Moretti, L., Onorante, L. and Zakipour Saber, S., "Phillips curves in the euro area", *Working Paper Series*, No 2295, ECB, July 2019.

Chart A

Phillips curve-based decomposition of underlying inflation

(annual percentage changes and percentage point contributions; all values in terms of deviations from their averages since 1999)



Source: ECB calculations.

Notes: The bars show average contributions across a large number of model specifications (see Bobeica, E. and Sokol, A., "Drivers of underlying inflation in the euro area over time: a Phillips curve perspective", *Economic Bulletin*, Issue 4, ECB, 2019). Contributions are derived as in Yellen, J. L., "Inflation Dynamics and Monetary Policy", speech at the Philip Gamble Memorial Lecture, University of Massachusetts, Amherst, 24 September 2015.

Inflation determinants within the Phillips curve framework

In essence, the Phillips curve captures the notion that economic activity and the associated degree of tightness in goods and labour markets should influence inflation. High levels of economic slack weighed on inflation in the aftermath of the global financial crisis. The euro area also experienced a second recession between 2011 and 2013, and the weakness in underlying inflation starting in early 2013 is well explained by this factor. However, even if by 2018 many measures of economic activity and slack had returned to average levels, and some measures even started to show signs of excess demand, underlying inflation has remained below its average since 1999 (1.3%).

Besides economic activity, other factors, such as inflation expectations and external prices, are also crucial to understand inflation developments. Many factors can influence economic agents' inflation expectations: recent inflation developments (and in particular energy price movements) typically influence expectations at short horizons, while genuine concerns about the credibility and attainability of a central bank's inflation objective can weigh on longer-term expectations, although these factors are difficult to disentangle empirically.[17] Both market and survey-based measures of inflation expectations weakened over the period 2014-17, which is reflected in their negative contributions to underlying inflation over the same period.[18] More recently, survey measures of longer-term inflation expectations for the euro area, notably those from the ECB Survey of Professional Forecasters, have shown signs of a softening. However, the drag on inflation attributable to these recent developments is smaller.

Finally, measures of external prices, such as oil and broader import price indices, can be an important factor explaining firms' pricing decisions, and thus developments in inflation, over and above what

[17] See Ciccarelli, M. and Osbat, C. (eds.), "Low inflation in the euro area: Causes and consequences", *Occasional Paper Series*, No 181, ECB, January 2017.

[18] The expectations measures underlying Chart A are both short and long-term survey-based inflation expectations from the ECB's Survey of Professional Forecasters and from Consensus Economics.

might already be captured by slack and inflation expectations. While external prices, and especially energy prices, are typically quickly reflected in headline inflation, their indirect effects on underlying inflation appear to have been limited in recent years.[19] Overall, developments in underlying inflation appear to be explained reasonably well by standard factors up to 2017, but the more recent weakness is difficult to account for within this framework.

One possible explanation could be that standard measures of economic slack do not capture all developments in economic activity relevant for inflation. In that spirit, Jarociński and Lenza (2018)[20] derive a measure of economic slack designed explicitly to forecast inflation. Such a measure would imply a much larger amount of economic slack than a more standard measure of the output gap.

Overall, the Phillips curve remains a central element for the interpretation and communication of inflation developments, but it needs to be complemented with information from other tools and approaches, especially in the light of recent developments in underlying inflation.

Domestic cost pressures, as measured by the growth in the GDP deflator, increased on average in 2019, at a rate above the average level of 2018 and the average since 2015 (see Chart 11). The annual growth in compensation per employee maintained its robust pace in 2019, standing at 2.0% on average, slightly below the 2018 average, but above its average since 2015. Compensation per employee growth was tempered by developments in social security contributions,[21] while growth in wages and salaries increased in 2019 compared with 2018, in line with the further reduction in the unemployment rate and despite the moderation in economic growth in the euro area (see Section 1.2 above). The robust average growth in compensation per employee implied, however, an increase in unit labour cost growth as productivity stagnated in 2019. In addition to the higher unit labour cost growth, the increase in the GDP deflator growth also reflected a rebound in profit developments (measured in terms of the gross operating surplus), which had weakened noticeably in the course of 2018. Given that productivity moved sideways in 2019, the profit rebound in 2019 most likely reflected improvements in the terms of trade and developments in economic sectors that were less affected by the global activity and trade slowdown.[22] These were for instance the construction and real estate sectors, which also displayed a high rate of growth in their value added deflators, going up to 4.6% on average in 2019 in the case of construction.

19 External influences might, of course, not be limited to what is captured by import and energy prices. For a discussion of additional mechanisms, see Lane, P., "Globalisation and monetary policy", speech at the University of California, 30 September 2019.

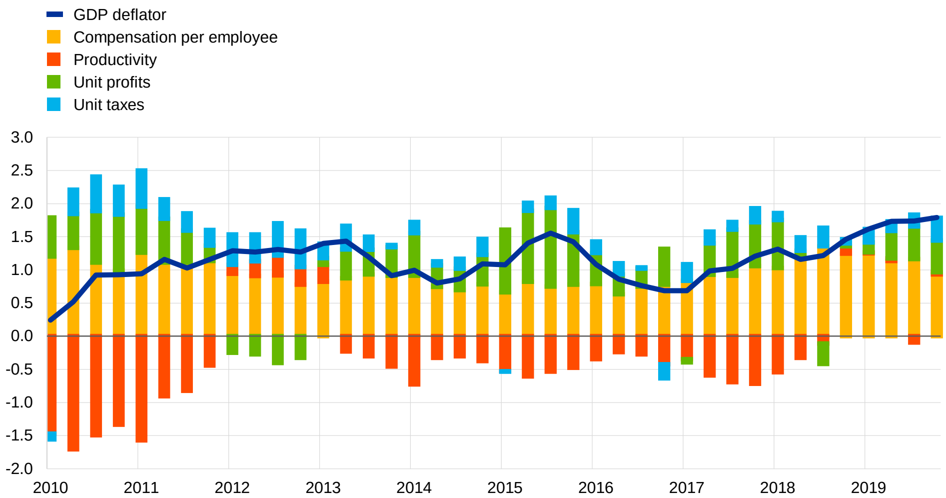
20 Jarociński, M. and Lenza, M., "An Inflation-Predicting Measure of the Output Gap in the Euro Area", *Journal of Money, Credit and Banking*, Vol. 50(6), 2018, pp. 1189-1224.

21 Compensation per employee growth was held back by the decrease of employers' social security contributions in France due to a legislative change (the replacement of the CICE tax credit by a permanent cut in employers' social security contributions).

22 See the box entitled "How do profits shape domestic price pressures in the euro area?", *Economic Bulletin*, Issue 6, ECB, 2019.

Chart 11
Breakdown of the GDP deflator

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

Longer-term inflation expectations declined in the course of 2019. Expectations for inflation five years ahead from the ECB Survey of Professional Forecasters eased to 1.7% in the fourth quarter of 2019 from 1.9% in the fourth quarter of 2018. Market-based measures of longer-term inflation expectations, such as the five-year inflation-linked swap rate five years ahead, also declined. However, they stabilised – albeit at still low levels – towards the end of the year.

1.4 Favourable financing conditions continued to support credit and money growth

In 2019 euro area financial markets were driven primarily by the effects of slowing economic activity amid persistently low inflation, uncertainty related to political factors inducing risk-off sentiment in some periods of the year, and further monetary policy easing. Both money market rates and longer-term bond yields declined significantly, while equity prices increased overall, supported by lower discount rates. The external financing flows of non-financial corporations (NFCs) broadly stabilised in 2019 at a level significantly below their latest peak in 2017, but borrowing from banks and the issuance of debt securities remained solid, supported by favourable financing conditions, and net issuance of unlisted shares was robust, underpinned by an increased number of mergers and acquisitions. The ongoing expansion of bank credit to the private sector, coupled with the low opportunity costs of holding M3, helped to sustain the growth rates of broad money. Favourable financing conditions reflected the ECB’s accommodative monetary policy stance and the capacity of the banking system to pass this accommodation on to the lending rates faced by firms and households. Increasing valuations of financial asset and real estate holdings supported household wealth, which in turn underpinned private consumption growth.

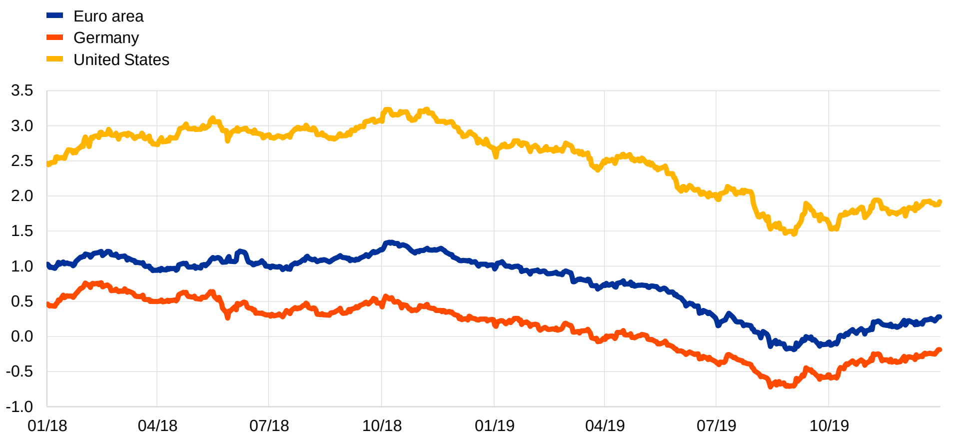
Euro area government bond yields declined significantly in 2019, albeit recovering since September

Euro area government bond yields declined significantly in 2019, with long-term yields reaching negative levels during the summer. This decline reflected growing concerns about the extent and duration of the slowdown in euro area economic activity and its impact on inflation developments. Monetary policy accommodation in the United States, heightened global risk sentiment connected to the US-China trade tensions and Brexit, and growing expectations in financial markets about a further easing of monetary policy by the ECB also contributed to lower risk-free rates in the euro area. After the ECB's monetary policy easing package was announced in September, somewhat more positive euro area macroeconomic data releases and some stabilisation in global risk sentiment contributed to a gradual recovery of euro area government bond yields. This notwithstanding, the euro area GDP-weighted average of ten-year sovereign bond yields stood at 0.28% on 31 December 2019, which was 74 basis points lower than its level on 1 January 2019. The spread of euro area countries' ten-year sovereign bond yields against the German ten-year Bund yield declined, significantly so for some countries, owing to lower fiscal policy uncertainty.

Chart 12

Ten-year sovereign bond yields in the euro area, the United States and Germany

(percentages per annum; daily data)



Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.
Notes: The euro area data refer to the ten-year GDP-weighted average of sovereign bond yields. The latest observations are for 31 December 2019.

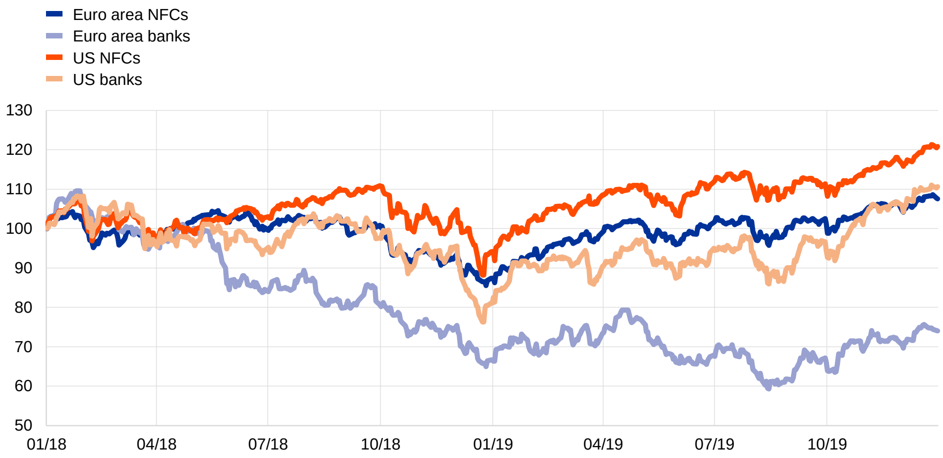
Euro area equity prices increased on account of lower discount rates

In 2019 euro area equity prices increased significantly. The broad index for euro area NFC equity prices increased by 20.7% over the course of 2019, while an index of euro area bank equity prices rose by 9.7% (see Chart 13). Lower discount rates were the main supporting factor behind the equity price developments, while earnings expectations remained weak and movements in risk premia – primarily related to evolving developments in the US-China trade dispute and Brexit negotiations – weighed on equities.

Chart 13

Equity market indices in the euro area and the United States

(index: 1 January 2018 = 100)



Source: Thomson Reuters Datastream.
Notes: The EURO STOXX banks index and the Datastream market index for NFCs are shown for the euro area; the S&P banks index and the Datastream market index for NFCs are shown for the United States. The latest observations are for 31 December 2019.

NFCs' borrowing from banks and issuance of debt securities were solid

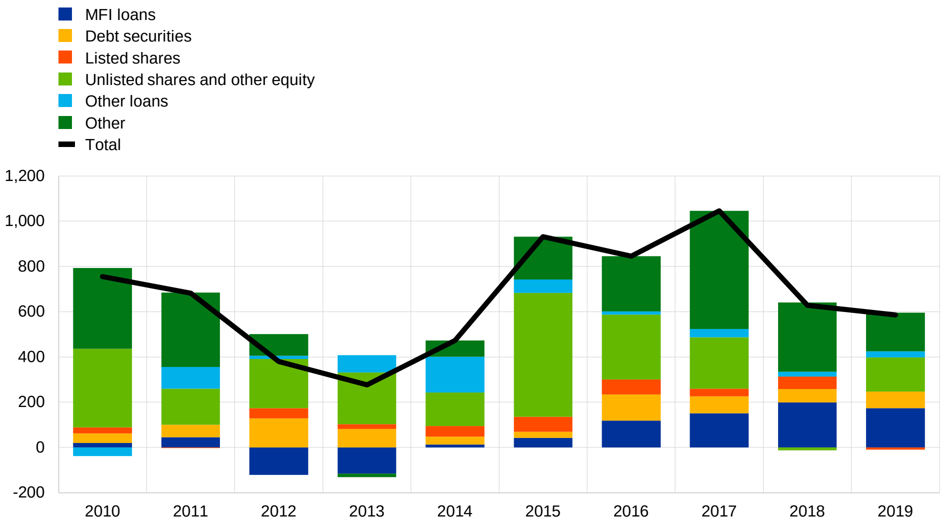
The external financing flows of NFCs broadly stabilised in 2019, significantly below their latest peak in 2017 (see Chart 14). This said, the growth of borrowing from banks and the issuance of debt securities remained solid, supported by favourable financing conditions, and net issuance of unlisted shares was robust, underpinned by an increase in the number of mergers and acquisitions. By contrast, there was moderation in the other sources of financing (including inter-company loans and trade credit) and a decline in the net issuance of listed shares (which reflected the elevated cost of equity compared with other sources of funding). Bank lending rates declined further – broadly in line with the evolution of market rates – to new historical lows during 2019.

Further monetary policy easing by the ECB during 2019 was transmitted to financing conditions, which became more favourable. This was partly due to the fact that some of the measures introduced in 2019 – such as the third series of targeted longer-term refinancing operations (TLTRO III) and the two-tier system for reserve remuneration – were geared towards supporting bank intermediation capacity (see Section 2.1). At the same time, the banking system made further progress in balance sheet repair, in terms of boosting capital positions and improving asset quality.

Chart 14

Net flows of external financing to non-financial corporations in the euro area

(annual flows; EUR billions)



Sources: Eurostat and ECB.
Notes: "Other loans" include loans from non-MFIs (other financial institutions, insurance corporations and pension funds) and from the rest of the world. MFI (monetary financial institution) and non-MFI loans are adjusted for loan sales and securitisation. "Other" is the difference between the total and the instruments listed in the chart. It includes inter-company loans and trade credit. The latest observations are for the third quarter of 2019.

Household wealth was supported by increased valuations of real and financial assets

Households' net wealth increased strongly in the first three quarters of 2019, thereby underpinning private consumption. Despite a moderating momentum in housing markets, net wealth benefited from further house price increases, which resulted in significant valuation gains on households' real estate holdings. In addition, households also registered notable valuation gains on their financial asset holdings. Furthermore, rising house prices and favourable financing conditions contributed to the continued gradual upward trend in the annual growth rate of bank loans to households for house purchase. Household gross indebtedness – measured as a percentage of household nominal gross disposable income – remained at levels well above its average pre-crisis level.

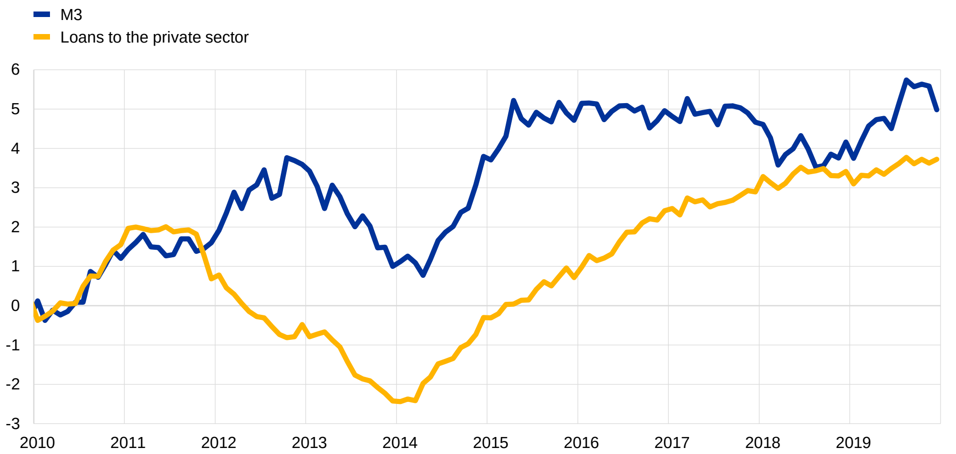
M3 and credit growth recovered in 2019

Overall, bank lending to the private sector was solid, with its annual growth rate (adjusted for loan sales, securitisation and notional cash pooling) increasing to 3.7% in December 2019, from 3.4% in December 2018. Credit growth remained the largest driver of broad money growth (see the blue parts of the bars in Chart 16). At the same time, external monetary flows made an increasing contribution to M3 dynamics (see the yellow parts of the bars in Chart 16). Annual M3 growth thus recovered in 2019 (see Chart 15). While the termination of net purchases under the asset purchase programme at the end of 2018 had a dampening impact on M3 growth (see the red parts of the bars in Chart 16), their resumption in November 2019 only had a limited influence on broad money growth in 2019.

Chart 15

M3 and loans to the private sector

(annual percentage changes)

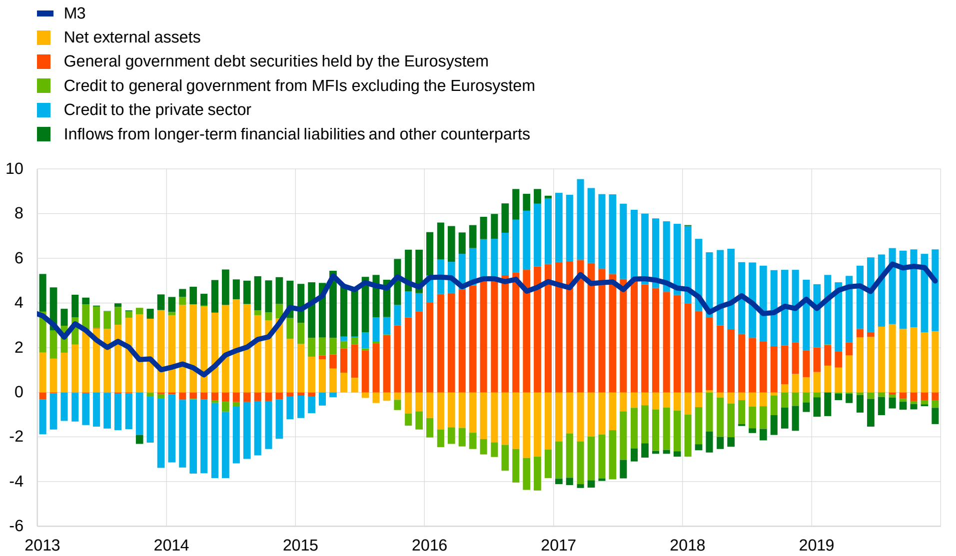


Source: ECB.
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observations are for December 2019.

Chart 16

M3 and its counterparts

(annual percentage changes; contributions in percentage points; adjusted for seasonal and calendar effects)



Source: ECB.
Notes: Credit to the private sector includes MFI loans to the private sector and MFI holdings of securities issued by the euro area non-MFI private sector. As such, it also covers the Eurosystem's purchases of non-MFI debt securities under the corporate sector purchase programme. The latest observations are for December 2019.

Most of M3 growth reflected increased holdings of overnight deposits

From an instrument perspective, overnight deposits continued to be the main driver of M3 growth, given the low opportunity cost of holding liquid deposits in an environment characterised by very low interest rates and a flat yield curve. Growth in overnight deposits reflected the strong expansion of overnight deposits held by both households and NFCs. As a result, the narrow monetary aggregate M1, which comprises currency in circulation and overnight deposits, continued to grow at a robust pace.

2 Monetary policy: determination to act as appropriate

Against the background of a weakening of the euro area economy, more persistent downside risks and an inflation outlook that continued to fall short of the medium-term inflation aim of the Governing Council of the ECB, the Governing Council provided three successive rounds of additional monetary accommodation over the course of 2019. These successive interventions underlined the Governing Council's determination to act as appropriate to support the return of inflation to a sustained convergence path towards its medium-term aim. In view of the time needed for all of the measures to exert their full impact on the euro area economy, the Governing Council continued to closely monitor inflation developments and the pass-through of the unfolding monetary policy measures, while it remained ready to adjust all of its instruments, as appropriate, to ensure that inflation moved towards its aim in a sustained manner, in line with its commitment to symmetry. At the end of 2019 monetary policy-related assets accounted for 70% of the total assets on the Eurosystem's balance sheet. The size of the balance sheet stabilised at €4.7 trillion in 2019, in line with the level reached at the end of the previous year. Risks related to the large balance sheet continued to be mitigated by the ECB's risk management framework.

2.1 A first round of monetary policy measures to keep policy accommodation ample amid rising external headwinds

Following the deterioration in the economic outlook at the end of 2018, incoming information in early 2019 continued to be weaker than expected owing to softer external demand and some country and sector-specific factors, pointing to less buoyant near-term growth momentum than previously anticipated. At the same time, there was considerable uncertainty as to whether the factors slowing down euro area growth would be transitory or longer lasting, and hence to what extent slower growth in the short term would affect the medium-term growth outlook. Against this background, the Governing Council recognised that the risks surrounding the euro area growth outlook had moved to the downside on account of the persistence of uncertainties related to geopolitical factors and the threat of protectionism, vulnerabilities in emerging markets and financial market volatility. The Governing Council highlighted that monetary policy needed to remain patient, prudent and persistent. While supportive financing conditions, favourable labour market dynamics and rising wage growth would continue to underpin the euro area expansion and gradually rising inflationary pressures, the Governing Council reiterated the need for significant monetary policy stimulus to ensure a continued sustained convergence of inflation to levels below, but close to, 2% over the medium term.

The more sluggish economic momentum slowed the adjustment of inflation towards the medium-term aim, prompting the introduction of a first policy package

Incoming economic data during the spring continued to be weak, pointing to a sizeable moderation in the pace of the economic expansion that would extend into 2019. In particular, activity in the manufacturing sector had decelerated markedly, mainly on account of external headwinds, as global growth and trade dynamics remained weak. The more sluggish economic momentum was slowing the adjustment of inflation towards the Governing Council's medium-term aim.

In response to a material downgrade of the growth and inflation outlook, the Governing Council therefore decided at its March meeting on a package of policy measures to provide additional monetary accommodation. This would support the further build-up of domestic price pressures and headline inflation developments over the medium term and increase the resilience of the euro area economy in an environment of global uncertainties. In particular, the Governing Council decided on the following measures. First, it decided to shift out the calendar-based leg of its forward guidance on policy rates. More specifically, the Governing Council expected to keep the key ECB interest rates at their present levels at least through the end of 2019, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to levels in line with its medium-term aim. Second, it reiterated the intention to continue reinvesting, in full, the principal payments from maturing securities purchased under the asset purchase programme (APP) for an extended period of time past the date when it started raising the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation. Given the link between the forward guidance on policy rates and reinvestments, the expected reinvestment horizon was automatically shifted out, reinforcing the guidance on policy rates while underlining the Governing Council's determination to act as appropriate. Third, in addition to the change in policy rate guidance, a new series of quarterly targeted longer-term refinancing operations (TLTRO III) was announced. These operations would start in September 2019 and end in March 2021, and each operation would have a maturity of two years. The new series of TLTROs aimed to preserve favourable bank lending conditions to keep bank credit flowing to customers on affordable terms. In turn, a healthy credit flow to the private sector underpinned the consumption and investment plans of households and businesses, helping the economy to grow and supporting the adjustment of inflation towards the Governing Council's medium-term aim. Fourth, the Governing Council decided to continue to conduct the Eurosystem's lending operations as fixed rate tender procedures with full allotment for as long as necessary, and at least until the end of the reserve maintenance period starting in March 2021.

Following the announcement of the new series of TLTROs, at its next monetary policy meeting, the Governing Council communicated that the precise terms of the TLTRO III series would be announced at one of the forthcoming meetings. In particular, the pricing of the TLTRO III operations would take into account a thorough assessment of the bank-based transmission channel of monetary policy, as well as further developments in the economic outlook. In addition, the Governing Council, bearing in mind that the negative interest rate environment would prevail for longer than previously anticipated, noted that in the context of its regular assessment, it would consider whether the preservation of the favourable implications of negative interest rates for the economy would require the mitigation of their possible side effects, if any, on bank intermediation.

A second round of additional monetary policy accommodation and deteriorating confidence in the inflation outlook

By mid-year, the incoming information indicated that global headwinds continued to weigh on the euro area outlook

By mid-year, the incoming information indicated that global headwinds, relating in particular to the ongoing weakness in global trade and more pervasive and prolonged uncertainties in the external environment, continued to weigh on the euro area outlook. These factors were weighing in particular on the euro area manufacturing sector. Furthermore, HICP inflation decreased further, mainly on account of temporary factors, and measures of underlying inflation continued to move sideways.

In the light of the prolongation of uncertainties and their implications for the inflation outlook, the Governing Council recognised the need to adjust the monetary policy stance for the second time in 2019 and provide additional monetary accommodation for inflation to remain on a sustained path towards its medium-term aim. Therefore, the Governing Council decided at its June meeting to strengthen its forward guidance on policy rates by shifting out further the calendar-based element of the forward guidance. More specifically, the Governing Council stated that it expected the key ECB interest rates to remain at their present levels at least through the first half of 2020, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to its medium-term aim. In addition, it reiterated its forward guidance on reinvestments. Finally, the Governing Council also decided on the pricing of the TLTRO III series. The interest rate in each operation would be set at a level that was 10 basis points above the average rate applied in the Eurosystem’s main refinancing operations. For banks whose eligible net lending exceeded a benchmark, the rate applied in TLTRO III would be lower, and could be as low as the average interest rate on the deposit facility plus 10 basis points. It was noted that this pricing struck a reasonable balance between acknowledging the sound developments in bank lending, on the one hand, and the importance of preserving the accommodative stance, on the other hand.

Over the course of the summer, softening global growth dynamics and weak international trade continued to weigh on the euro area outlook. In addition, the prolonged presence of uncertainties continued to dampen business sentiment, especially in the manufacturing sector. Price developments, in turn, remained muted, while measures of underlying inflation continued to move sideways. Market-based measures of longer-term inflation expectations had stagnated at the historical lows reached after the June meeting, while surveys signalled a marked fall in longer-term expectations.

The Governing Council noted that realised and projected inflation rates had been persistently below levels that were in line with its aim

Against this background, the Governing Council, at its July meeting, noted that inflation rates (both realised and projected) had been persistently below levels that were in line with its aim. Moreover, the Governing Council viewed the symmetry of its medium-term inflation aim as an important element to bolster the achievement of a sustained adjustment in inflation to its aim. It was hence seen as important for the

Governing Council to demonstrate its determination and capacity to act and to be prepared to ease the policy stance further by adjusting all of its instruments, as appropriate, to achieve its inflation aim. At the same time, the Governing Council stated that if the medium-term inflation outlook continued to fall short of its aim, it was determined to act, in line with its commitment to symmetry in the inflation aim. Hence, in this context, the Governing Council decided to reintroduce a so-called easing bias in its forward guidance on policy rates by stating that it expected to keep the key ECB interest rates at present or lower levels. In addition, it tasked the relevant Eurosystem Committees with examining options, including ways to reinforce the forward guidance on policy rates, mitigating measures (e.g. the design of a tiered system for reserve remuneration) and possibilities for the size and composition of potential new net asset purchases. These announcements paved the way for the potential implementation of a comprehensive policy package at the Governing Council's next monetary policy meeting if the inflation outlook failed to improve in line with its aim.

A third round of policy accommodation with a comprehensive package of measures in response to persistently low inflation rates

The September 2019 ECB staff macroeconomic projections showed a further downgrade of the inflation outlook. Overall, the Governing Council was confronted with a protracted slowdown in the euro area economy, persistent downside risks and an inflation outlook that continued to fall short of its medium-term inflation aim. In particular, successive and significant downward revisions to the inflation outlook had brought projected inflation in 2021 down from 1.8% in the December 2018 projections to 1.5% in the September 2019 projections. The further downgrade of the inflation outlook – despite the fact that the financial conditions embedded in the projections already reflected substantial expectations of additional policy easing – meant that inflation was projected to move further away from levels that the Governing Council considered to be consistent with its inflation aim. Measures of underlying inflation remained muted and indicators of inflation expectations remained at low levels. Against this background, the Governing Council agreed that a third round of easing of the monetary policy stance was warranted to support the return of inflation to a sustained convergence path towards its inflation aim. The Governing Council therefore took the following decisions in September:

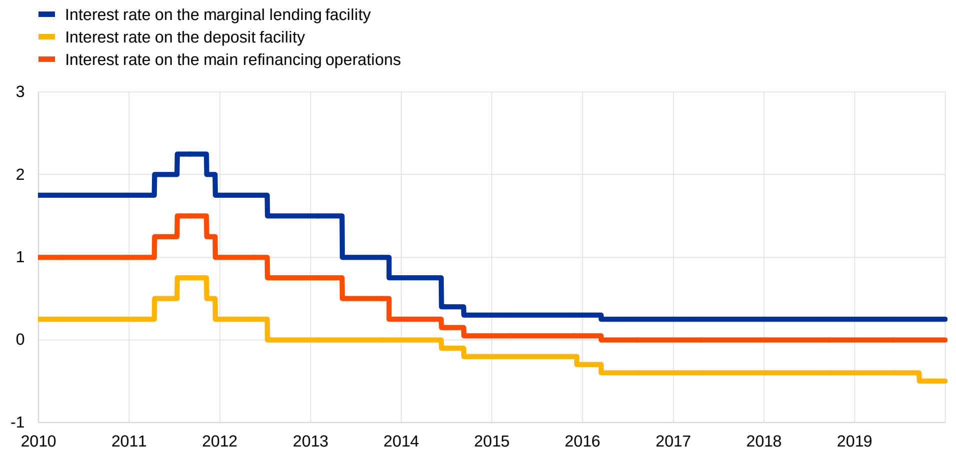
A comprehensive policy response was deemed necessary to support the return of inflation to a sustained convergence path towards the medium-term aim

First, it decided to reduce the deposit facility rate, by 10 basis points, to -0.50% (see Chart 17). The reduction in the deposit facility rate was accompanied by a reformulation of the Governing Council's forward guidance on the expected path of policy rates. It now expected that the key ECB interest rates would remain at their present or lower levels until the inflation outlook was seen to robustly converge to a level sufficiently close to, but below, 2% within the projection horizon, and such convergence has been consistently reflected in underlying inflation dynamics.

Chart 17

Key ECB interest rates

(percentages per annum)



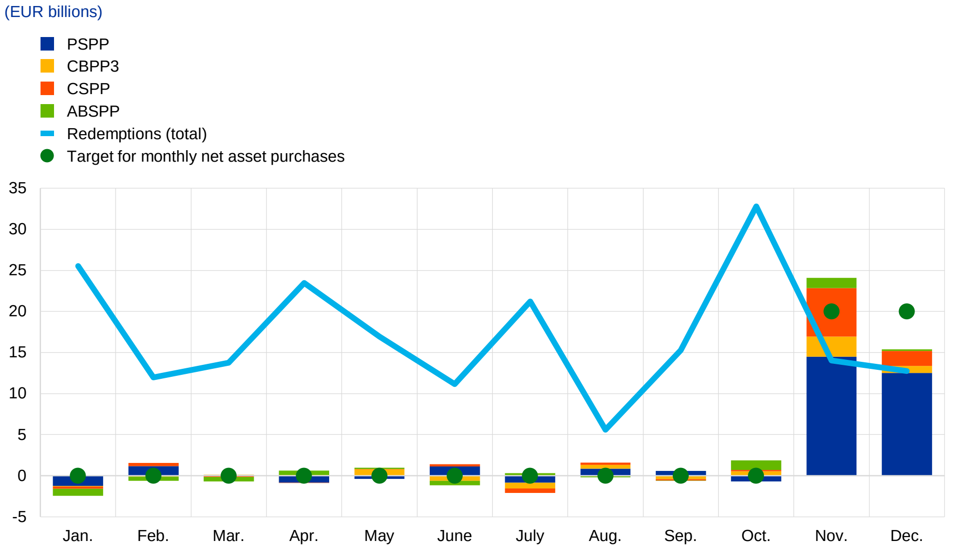
Source: ECB.
Note: The latest observations are for 31 December 2019.

Net asset purchases for monetary policy purposes restarted

Second, it decided to restart net purchases of bonds under the APP at a monthly pace of €20 billion as from 1 November (see Chart 18) with the expectation to terminate net purchases shortly before the Governing Council started to raise the key ECB interest rates. The Governing Council also reiterated that it would continue to reinvest, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it started to raise the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

Chart 18

Monthly net asset purchases and total redemptions under the APP in 2019



Source: ECB.
Notes: Monthly net purchases at book value and monthly redemption amounts. During the reinvestment phase, the Eurosystem adheres to the principle of market neutrality via smooth and flexible implementation. To this end, the reinvestments of principal redemptions are distributed over the year to allow for a regular and balanced market presence. Furthermore, additional net asset purchases can also be distributed to neighbouring months to cater for expected lower market activity in particular months (e.g. December). As a consequence, monthly net purchases are not exactly equal to the monthly target for net asset purchases. The latest observations are for 31 December 2019.

Third, it decided to recalibrate the third series of TLTROs with a more attractive interest rate for participating banks (banks outperforming a minimum lending benchmark could now borrow at a rate that could be as low as the average interest rate on the deposit facility prevailing over the life of the operation) and a longer maturity (three years instead of two years). The more favourable TLTRO conditions sought to preserve favourable bank lending conditions, ensure the smooth transmission of monetary policy and further support the accommodative stance of monetary policy.

Finally, to safeguard the bank-based transmission of monetary policy, a two-tier system for reserve remuneration was introduced which exempts a fraction of banks' excess cash reserves from the negative deposit facility rate.

All elements of the package of measures decided upon at the Governing Council's September monetary policy meeting were designed to complement each other in providing monetary stimulus and support the convergence of inflation towards the Governing Council's aim. The reduction in the deposit facility rate and the strengthened state-contingent forward guidance served to anchor short to medium-term interest rates, which are important for pricing loans to firms in the euro area. The renewed net asset purchases and the expected reinvestment horizon anchored medium to longer-term interest rates, which are important for pricing mortgage loans to households. TLTRO III was recalibrated to preserve favourable bank lending conditions, ensure a smooth transmission of monetary policy and incentivise banks to keep credit flowing to their customers. Finally, the two-tier system for reserve remuneration was designed to alleviate the direct cost of negative interest rates for banks in order to support the bank-based transmission of monetary policy.

Consequently, easier market funding conditions continued to be passed through to the lending conditions faced by firms and households.

Monitoring inflation developments in the light of a tentative stabilisation in the growth outlook, while standing ready to act

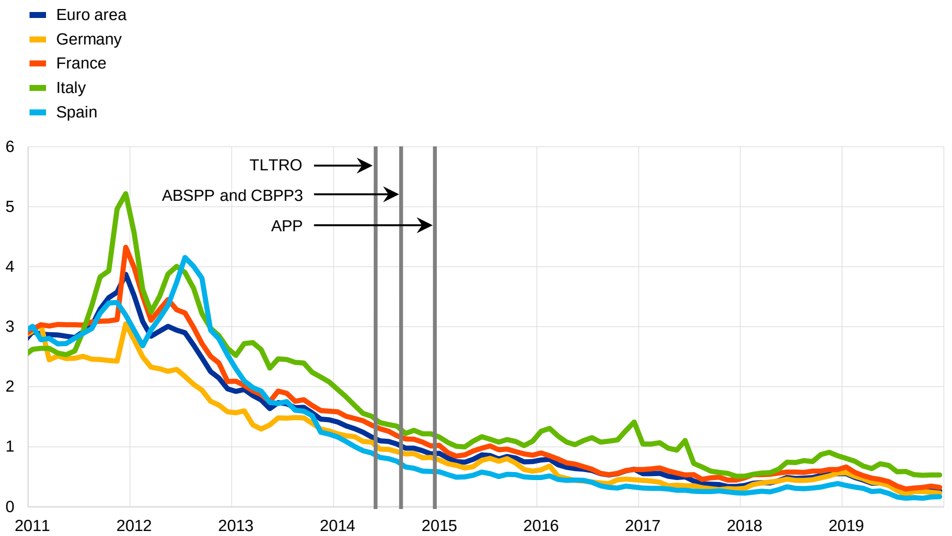
By year-end, following three rounds of monetary policy easing over the course of 2019, measures of underlying inflation remained generally subdued and euro area growth dynamics continued to be weak, although there were some initial signs of stabilisation in the growth slowdown and of a mild increase in underlying inflation in line with previous projections. In the light of these developments and given that it took time for all of the measures to exert their full impact, the Governing Council announced at its December meeting that it was closely monitoring inflation developments and the pass-through of the unfolding monetary policy measures taken in September to the economy. In any case, it underlined that it continued to stand ready to adjust all of its instruments, as appropriate, to ensure that inflation moved towards its aim in a sustained manner, in line with its commitment to symmetry.

In the light of the persistent uncertainties and downside risks, substantial additional monetary policy accommodation was implemented over the course of 2019. All elements of the measures taken continued to work together and contributed to a further decline in bank funding costs (see Chart 19). Banks' very favourable financing conditions were passed on to the wider economy, with borrowing conditions for firms and households standing at – or close to – their historical lows (see Chart 20). All decisions taken over the course of 2019 contributed to the ample degree of monetary policy accommodation introduced since 2014 and continued to support the improvement in the economic performance of the euro area.

Chart 19

Composite cost of debt financing for banks

(composite cost of deposit and unsecured market-based debt financing; percentages per annum)

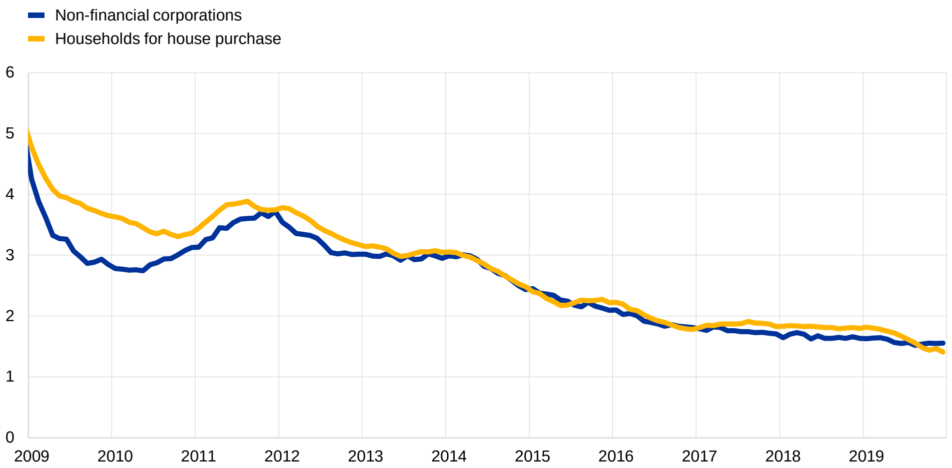


Sources: ECB, Markit iBoxx and ECB calculations.
Notes: The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their corresponding outstanding amounts. The latest observations are for 31 December 2019.

Chart 20

Composite bank lending rates for non-financial corporations and households

(percentages per annum)



Source: ECB.
Notes: Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observations are for 31 December 2019.

2.2 Eurosystem balance sheet dynamics amid the restart of net asset purchases

The size of the Eurosystem's balance sheet remained unchanged in 2019

Since the onset of the global financial crisis in 2007-08, the Eurosystem has taken a variety of standard as well as non-standard monetary policy measures, which have had a direct impact on the size and composition of the Eurosystem's balance sheet over time. The non-standard measures have included refinancing operations to provide funding to counterparties with an initial maturity of up to four years, as well as purchases of assets issued by private and public entities (under the APP). In December 2018 the Eurosystem ended net asset purchases under the APP and, in 2019, it fully reinvested the principal payments from maturing securities. As of 1 November 2019 the Eurosystem restarted net asset purchases at an average monthly pace of €20 billion. At the end of 2019 the size of the Eurosystem's balance sheet stood at €4.7 trillion, unchanged from the level at the end of 2018.

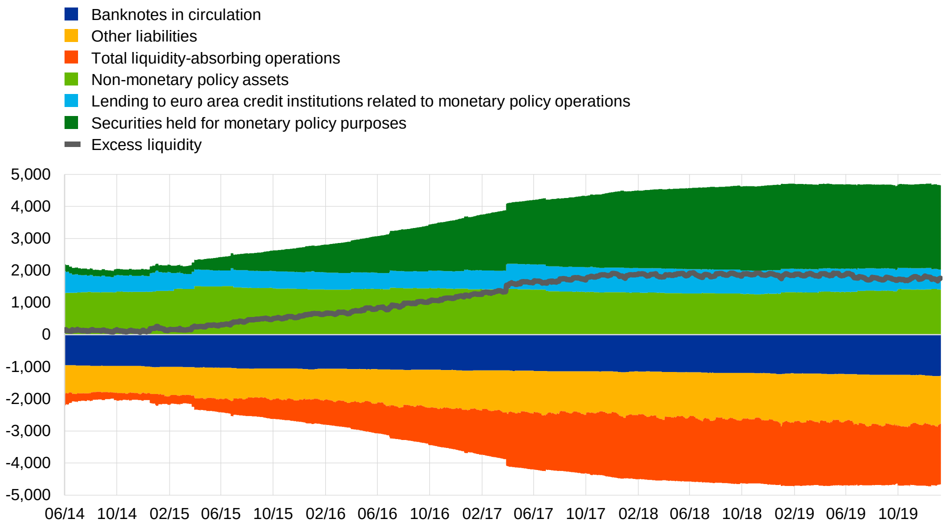
At the end of 2019 monetary policy-related assets amounted to €3.3 trillion, accounting for 70% of the total assets on the Eurosystem's balance sheet (down from 72% at the end of 2018). These monetary policy-related assets include loans to euro area credit institutions, which accounted for 13% of total assets (down from 16% at the end of 2018), and assets purchased for monetary policy purposes, which represented around 56% of total assets (unchanged from the end of 2018) (see Chart 21). Other financial assets on the balance sheet mainly consisted of foreign currency and gold held by the Eurosystem and euro-denominated non-monetary policy portfolios.

On the liabilities side, the overall amount of counterparties' reserve holdings and recourse to the deposit facility remained broadly unchanged at €2 trillion and represented 39% of the liabilities side at the end of 2019, unchanged from the end of 2018. After the announcement of the two-tier system for reserve remuneration, effective from 30 October 2019, counterparties' cash holdings with the Eurosystem significantly shifted towards reserve holdings at the expense of recourse to the deposit facility. At the end of 2019 the latter represented 15% of counterparties' overall cash holdings with the Eurosystem, down from 34% at the end of 2018. Banknotes in circulation grew in line with the historical growth trend and accounted for 28% of liabilities at the end of 2019, up from 26% at the end of 2018. Other liabilities, including capital and revaluation accounts, accounted for 34%, unchanged from the end of 2018 (see Chart 21).

Chart 21

Evolution of the Eurosystem's consolidated balance sheet

(EUR billions)



Source: ECB.
Notes: Positive figures refer to assets and negative figures to liabilities. The line for excess liquidity is presented as a positive figure, although it refers to the sum of the following liability items: current account holdings in excess of reserve requirements and recourse to the deposit facility.

Average APP portfolio maturity and distribution across assets and jurisdictions

The APP comprises four active asset purchase programmes: the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP) and the corporate sector purchase programme (CSPP). Following the Governing Council decisions, the monthly net purchase targets for the APP have changed over time.

At the end of 2019 APP holdings amounted to €2.6 trillion

At the end of 2019 APP holdings amounted to €2.6 trillion (at amortised cost). The ABSPP accounted for 1% (€28 billion), the CBPP3 for 10% (€264 billion) and the CSPP for 7% (€185 billion) of total APP holdings at the year-end. Out of the private sector purchase programmes, the CSPP contributed the most to the growth in APP holdings in the last two months of 2019, with €7.7 billion of net purchases. CSPP purchases are made based on a benchmark which reflects the market capitalisation of all eligible outstanding bonds.

The PSPP accounted for 82% of total APP holdings

The PSPP accounted for the bulk of the APP holdings, amounting to €2.1 trillion or 82% of total APP holdings at the end of 2019, the same proportion as at the end of 2018. Under the PSPP, the allocation of purchases to jurisdictions was guided by the ECB's capital key on a stock basis. Within the individual purchase allocations assigned to euro area national central banks (NCBs), NCBs had the flexibility to choose between purchases of central government securities, regional government securities, and securities issued by agencies established in the respective jurisdictions. Some NCBs also purchased securities issued by EU supranational institutions. The ECB did not purchase any debt securities issued by EU supranational institutions or regional government bonds. The weighted average maturity of the PSPP holdings stood at 7.12 years at the end of 2019, somewhat lower than the 7.37 years at the end of 2018, with some variation across jurisdictions.[23]

The Eurosystem reinvested the principal payments from maturing securities held in the APP portfolios. Redemptions under the private sector purchase programmes amounted to €37.2 billion in 2019, while redemptions under the PSPP amounted to €167.3 billion.[24] The assets purchased under the PSPP, the CSPP and the CBPP3 continued to be made available for securities lending[25] in order to support bond and repo market liquidity.[26]

Developments in Eurosystem refinancing operations

The outstanding amount of Eurosystem refinancing operations decreased by €109.3 billion since the end of 2018, standing at €624.1 billion at the end of 2019. This can be largely attributed to the voluntary repayments of €208 billion of the TLTRO II series. The amount of €101.1 billion allotted in the first two operations of the TLTRO III series only partially compensated for the decline in outstanding refinancing operations due to TLTRO II repayments. The weighted average maturity of outstanding Eurosystem refinancing operations decreased from around 1.8 years at the end of 2018 to around 1.2 years at the end of 2019.

2.3 Financial risks associated with the APP are mitigated through appropriate frameworks

Risk efficiency is a key principle of the Eurosystem’s risk management function

The main objective of the renewed net asset purchases under the APP is to support the robust convergence of inflation towards the Governing Council’s medium-term aim. At the same time, asset purchases should be both necessary and proportionate to fulfil the ECB’s mandate and achieve its price stability objective. When there are several options to fulfil the policy objectives, the option selected should be efficient both from an operational as well as from a risk perspective. In that context, the Eurosystem’s risk management function endeavours to attain risk efficiency: achieving the policy objectives with the lowest amount of risk for the Eurosystem.[27]

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23 The Eurosystem aims for a market-neutral asset allocation, purchasing securities across all eligible maturities in all jurisdictions in a way that reflects the composition of the euro area government bond market.

24 The ECB publishes the expected monthly redemption amounts for the APP over a rolling 12-month horizon.

25 See “General APP securities lending framework” on the ECB’s website for information on securities lending under the CBPP3 and the ABSPP. It should be noted that securities purchased under the Securities Markets Programme, the CBPP and the CBPP2 are also made available for lending by the Eurosystem.

26 The ECB publishes on a monthly basis for the PSPP the aggregate monthly average on-loan balance for the Eurosystem and the aggregate monthly average amount of cash collateral received.

27 See “The financial risk management of the Eurosystem’s monetary policy operations”, ECB, July 2015.

Outright asset purchases require specific risk control frameworks

All monetary policy instruments, including outright asset purchases, inherently involve financial risks, which are managed and controlled by the Eurosystem. The outright asset purchases require specific financial risk control frameworks which depend on the specific policy objectives and on the features and risk profiles of the asset types involved. Each of these frameworks consists of eligibility criteria, credit risk assessments and due diligence procedures, pricing frameworks, benchmarks and limits. The APP risk control frameworks apply to the purchase of additional assets, the reinvestment of principal payments from maturing APP holdings, and APP holdings for as long as they remain on the Eurosystem's balance sheet.

The risk control frameworks not only serve the purpose of mitigating financial risks, but also contribute to a successful achievement of the policy objectives by steering asset purchases towards a diversified market-neutral asset allocation. In addition, the design of the risk control frameworks also takes into consideration non-financial risks such as legal, operational and reputational risks.

In the following, the current financial risk control frameworks governing the implementation of the APP are described.[28] Table 1 summarises the key elements of the applicable frameworks.

Table 1

Key elements of the risk control frameworks for the APP

	ABSPP	CBPP3	CSPP	PSPP
Main eligibility criteria	Asset-backed securities eligible as collateral for Eurosystem credit operations; additional location criteria	Covered bonds eligible as own-use collateral for Eurosystem credit operations	Corporate bonds eligible as collateral for Eurosystem credit operations; additional exclusion criteria	Central, regional and local government bonds, and bonds issued by recognised agencies and international or supranational institutions located in the euro area[2)], eligible as collateral for Eurosystem credit operations
Minimum credit quality	CQS 3[1)]	CQS 3	CQS 3	CQS 3
Minimum remaining maturity	None	None	6 months	1 year
Maximum remaining maturity	None	None	30 years and 364 days	30 years and 364 days
Issue limits	70%	70%	70%, for public undertakings 33%/25% (depending on CAC)	50% for supranational bonds, otherwise 33%/25% (depending on CAC)
Issuer limits	None	Yes	Yes	50% for supranational bonds, otherwise 33%
Credit risk assessments and due diligence procedures	Yes	Yes	Yes	None
Price review (ex post)	Yes	Yes	Yes	Yes

Source: ECB.
Notes: CQS: credit quality step as per the Eurosystem's harmonised rating scale (see the Eurosystem credit assessment framework); CAC: collective action clause.
1) ABSs rated below credit quality step 2 have to satisfy additional requirements, which include: (i) no non-performing loans backing the ABS at issuance or added during the life of the ABS; (ii) the cash-flow-generating assets backing the ABSs must not be structured, syndicated or leveraged; and (iii) servicing continuity provisions must be in place.
2) See the "Implementation aspects of the public sector purchase programme (PSPP)" page on the ECB's website.

28 See also the "Asset purchase programmes" page on the ECB's website.

Eligibility requirements for outright asset purchases

Eligibility criteria apply to all asset classes

Only marketable assets which are accepted as collateral for Eurosystem credit operations are potentially eligible for outright asset purchases. The collateral eligibility criteria for Eurosystem credit operations are stated in the general framework for monetary policy instruments. Among other things, eligible assets are required to meet high credit quality standards by having at least one credit rating[29] provided by an external credit assessment institution (ECAI) accepted within the Eurosystem credit assessment framework (ECAF) qualifying as credit quality step 3 (CQS 3) of the Eurosystem's harmonised rating scale or higher (CQS 1 and CQS 2). Furthermore, assets must be euro-denominated and issued and settled in the euro area. In the case of asset-backed securities (ABSs), the debtors underlying the respective claims must be predominantly located in the euro area.

In addition to the eligibility criteria above, specific eligibility criteria apply depending on the purchase programme. For instance, for the PSPP and the CSPP, there are minimum and maximum maturity restrictions in place. For the CSPP, assets issued by credit institutions, or by issuers for which the parent undertaking is a credit institution, are not eligible for purchase. Moreover, for the CSPP and the CBPP3, assets issued by wind-down entities and asset management vehicles are excluded from purchases. In the CBPP3, the assets must fulfil the necessary conditions for their acceptance as own-use collateral for Eurosystem credit operations, i.e. they can be used as collateral by the issuing credit institution.[30] Furthermore, conditional pass-through covered bonds ceased to be eligible for purchase from 1 January 2019. In addition, asset purchases must not circumvent the rules prohibiting the monetary financing of public authorities as set out in Article 123(1) of the Treaty on the Functioning of the European Union.

Credit risk assessments and due diligence procedures

Credit risk assessments and due diligence procedures are conducted on an ongoing basis

For the private sector purchase programmes, the Eurosystem conducts appropriate credit risk assessments and due diligence procedures on the purchasable universe on an ongoing basis. Monitoring frameworks are maintained using certain risk indicators. These assessments and procedures follow the principle of proportionality, where riskier assets are subject to more in-depth analysis. If warranted, additional risk management measures may apply, also subject to the principle of proportionality. These include in particular limitations on or the suspension of purchases and, in extraordinary cases, even sales of assets, which require a case-by-case assessment by the Governing Council.

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29 ABSs are required to have at least two credit ratings by an ECAI.

30 See Article 138, paragraph 3(b), of Guideline (EU) 2015/510 of the European Central Bank of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60) (OJ L 91, 2.4.2015, p. 3).

Pricing frameworks

The pricing frameworks ensure that purchases are made at market prices

The pricing frameworks for the APP ensure that purchases are made at market prices in order to minimise market distortions and facilitate the achievement of risk efficiency. These frameworks take into account available market prices, the quality of such prices and fair values. Ex post price checks are also conducted in order to assess whether the transaction prices reflected market prices at the time of the transactions.

Purchases of eligible debt instruments with a negative yield to maturity are permissible in all asset purchase programmes including, to the extent necessary, those with a yield below the deposit facility rate.[31]

Benchmarks

Benchmarks are used to ensure diversification

Benchmarks are used to ensure the build-up of a diversified portfolio and contribute to mitigating risks. The benchmarks for the private sector purchase programmes are guided by the market capitalisation of the purchasable universe, i.e. the nominal outstanding amounts of the eligible assets satisfying risk considerations. In the case of the PSPP, the ECB's capital key guides the allocation of purchases per jurisdiction on a stock basis.

Limits

Issue and issuer limits are an effective tool to limit risk concentration

Limit frameworks are in place for the APP. The calibration of issue and issuer limits[32] takes into account policy, operational, legal and risk management considerations. The limits are fine-tuned according to the asset class, with a distinction being made between public sector assets and private sector assets.

PSPP issue and issuer limits are applied to safeguard market functioning and price formation, to limit risk concentration and to ensure that the Eurosystem does not become a dominant creditor of euro area governments. The issue limit for PSPP-eligible supranational bonds is 50% of the outstanding amount of the asset issued. For all other PSPP-eligible bonds, the issue limit is set at 33% of the outstanding amount of the issue, subject to a case-by-case verification that it would not lead to the Eurosystem having a blocking minority for the purpose of collective action clauses. Otherwise, the issue limit is 25%. The issuer limit for supranational issuers is set at 50% of the outstanding amount of eligible assets issued by the respective institution; for other eligible issuers, it is 33%.

For the private sector purchase programmes, the issue limit is 70%. In the CSPP, lower issue limits apply in specific cases, for example for assets issued by public

31 On 12 September 2019 the Governing Council decided to extend the possibility of buying assets with yields below the interest rate on the deposit facility, to the extent necessary, under all parts of its APP. For further details, see "ECB provides additional details on purchases of assets with yields below the deposit facility rate", press release, ECB, 12 September 2019.

32 The issuer limit refers to the maximum share of an issuer's outstanding securities that the Eurosystem could hold.

undertakings, which are dealt with in a manner consistent with the treatment under the PSPP. In addition to these issue limits, issuer limits are applied for the CBPP3 and the CSPP. For the CSPP, the issuer limits are defined based on a benchmark allocation related to an issuer group’s market capitalisation in order to ensure a diversified allocation of purchases. Moreover, lower limits may apply if warranted based on the outcome of the credit risk assessment and due diligence procedures, as explained above.

3 Euro area financial sector: increasing bank resilience amid risks

The risk environment confronting the euro area financial sector remained challenging during 2019. On the one hand, several factors supported financial stability, including a growing economy and the sound capitalisation of euro area banks. On the other hand, increasing downside risks to future growth weighed on the financial stability environment. Strong risk-taking in financial and real estate markets continued to fuel the build-up of asset price vulnerabilities, while risks continued to increase in the growing non-bank financial sector. In this environment, euro area countries, in consultation with the ECB, implemented a number of macroprudential measures to mitigate and build up resilience to systemic risks. In addition, ECB Banking Supervision took microprudential actions and contributed to a stable European banking sector. In 2019 the ECB also continued to contribute to the discussions on completing the banking union and advancing the capital markets union, and highlighted the importance of developing tools to mitigate risks in the non-bank financial sector.

3.1 The financial stability environment in 2019

Challenging financial stability environment, but banks adequately capitalised

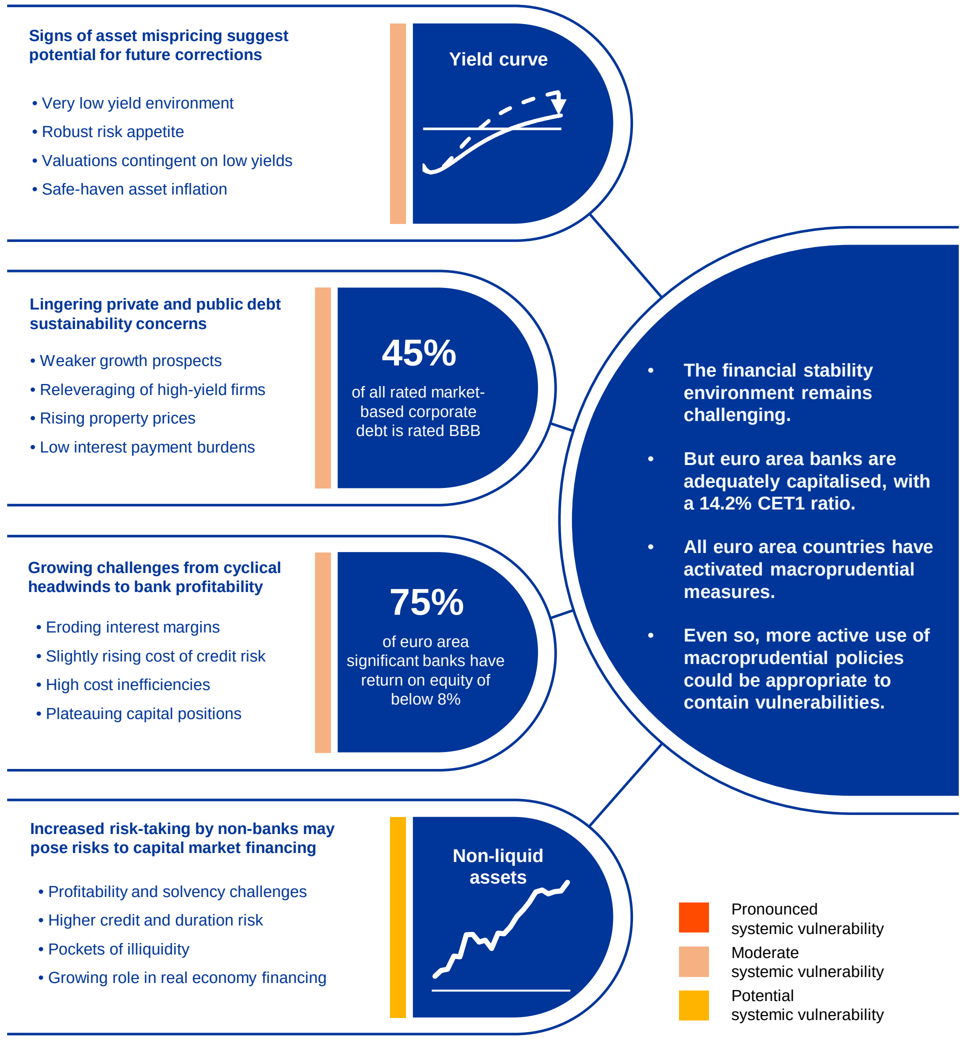
The financial stability environment remained challenging during 2019. The global economic outlook deteriorated during the year and elevated political and policy uncertainty posed large downside risks. In this setting, markets were increasingly driven by expectations of further monetary policy easing and by a flight to safety. This led to significantly lower yields on higher-rated sovereign and corporate bonds. The environment characterised by low (or negative) interest rates and low yields on safe assets challenged financial institutions' profitability. In response, investment funds and insurers took on greater risks. The deteriorating growth outlook and the associated expected "lower-for-longer" interest rate environment weakened bank profitability prospects further. Banks were however supported by abating funding challenges amid lower funding costs and improved bond market access and they remained adequately capitalised, with a 14.2% Common Equity Tier 1 (CET1) ratio.

Four key financial stability vulnerabilities were identified

Four key financial stability vulnerabilities for the euro area over a two-year horizon were identified by the ECB during 2019 and discussed in the ECB's semi-annual Financial Stability Review (see Figure 1):

Figure 1

Key financial stability vulnerabilities in the euro area



Source: ECB.
Note: Financial stability assessment as at 20 November 2019.

- First, asset price vulnerabilities remained prominent during 2019, with the ECB highlighting the risk of a disruptive repricing in global financial markets. The search for yield intensified during 2019, with stock prices in the euro area increasing some 20% despite lower corporate profits and the deteriorating macroeconomic environment, and less than 10% of the bonds outstanding globally offering yields of 3% or more. Abrupt corrections in equity and lower-rated fixed income markets therefore remained a risk, especially in the face of high economic and political uncertainty. Buttressed by the low interest rate environment, euro area property prices continued to rise in 2019. The warnings and recommendations issued by the European Systemic Risk Board with regard to residential real estate vulnerabilities indeed suggested that continued strong price dynamics, coupled with relatively buoyant mortgage lending growth and high household indebtedness, represented key vulnerabilities in a number of countries (see Section 3.2).

- Second, public and private debt sustainability concerns continued to linger in several countries, with debt in the public and/or non-financial private sectors often at levels that were high by historical and international standards. Although low financing costs alleviated near-term debt sustainability pressures, public and private finances remained exposed to the risk of a sudden change in market sentiment or deteriorating macroeconomic conditions. A sudden upward correction in interest rates from their very low levels could be particularly harmful for households and non-financial corporations in countries where loans with floating interest rates predominate.

- Third, vulnerabilities increased in the euro area banking sector. Euro area banks' profitability remained low in 2019 and profitability prospects weakened against the backdrop of the deteriorating growth outlook and the lasting low interest rate environment. Although the stock of non-performing loans continued to decline at a moderate pace, further improvements were needed in parts of the banking sector. Overcapacity and cost inefficiencies also continued to weigh on banks' long-term profitability prospects in many cases.

- Fourth, vulnerabilities continued to build up in the non-bank financial sector as a result of increased risk-taking. Investment funds and insurers continued to take on risks in response to declining yields on higher-rated assets. At the same time, the decline in highly liquid assets and pockets of high leverage in the investment fund sector raised concerns about the potential for sudden and large redemptions and investment behaviour that could amplify any market volatility.

Reduction in ECB carbon emissions per workplace

Other vulnerabilities beyond the short to medium-term horizon with a potential negative impact on the financial sector were also highlighted by the ECB during 2019. Notably, efforts to assess the financial stability implications of climate change were stepped up, with enhanced communication on the topic. The ECB is aiming to contribute, within its mandate, to the general efforts to mitigate the potential negative effects of climate change, focusing on several key areas (see Box 3). Closer to home, as regards the ECB's efforts to reduce its own environmental impact, carbon emissions per workplace were reduced by 74% between 2008 and 2018 (see also Box 3). In addition, during 2019 the ECB looked at the implications of developments in financial technology at both the micro- and macroprudential levels (see Box 4).

Box 3
The ECB and climate change

Climate-related risks (also known as risks related to global warming) have become increasingly important for the financial system and the economy at large through two main channels: physical risks and transition risks. Physical risks are related, inter alia, to the increased severity and frequency of adverse weather events. The materialisation of these risks has adverse impacts on asset values, prices of goods and collateral in affected areas, and hence causes losses for many actors, including insurance companies as well as banks and other financial institutions. Physical risks are already materialising and are on the rise globally.[33] Transition risks relate to the possible side effects and costs of policies aimed at climate risk mitigation. The resulting adjustment towards a low-carbon economy can take place in an orderly or disorderly manner. For example, an abrupt introduction of policies or the impact of new technologies could trigger market risks for banks and other investors owing to unexpected asset price decreases and potential fire sales of carbon-intensive assets. Furthermore, the transition or related policies may lower the profitability of carbon-intensive firms, leading to higher credit risks for banks exposed to these sectors. This may also lead to output losses and relative price changes.

Policymakers face a decision when considering tackling climate change: they can either embark now on possibly costly climate risk mitigation policies to ensure a timely and orderly transition to a low-carbon economy, or they can instead not take action and risk facing "the tragedy of the horizon" scenario, in which climate-related risks will be addressed too late, and sizeable transition and physical risks could materialise simultaneously.[34] It has already been recognised that while environmental externalities should be primarily corrected by first-best policies, such as taxes, all authorities need to reflect on the appropriate response to climate change and related risks in their own area of competence.[35] The ECB, in its monetary policy strategy review, will assess the possible involvement of the Eurosystem in tackling climate change risks, and see whether and how – acting within its mandate – it can contribute.

Against this background, the ECB may contribute within its mandate to the general efforts to mitigate the potential negative effects of climate change in areas where it can be most effective and where it is operationally feasible. More specifically, the ECB's efforts are focused on the following key areas: (1) enhancing economic analysis, forecasting models and risk assessment; (2) developing the monitoring and assessment of financial stability risks, including climate risk stress testing; (3) banking supervision; (4) integrating climate risk considerations into its own investment and business operations; (5) assessing the impact of climate change on its monetary policy stance; (6) supporting EU and international fora, legislators and standard-setters in their work addressing the risks of climate change and incorporating sustainability considerations into financial decision-making; and (7) protecting the environment through its environmental management system.

1. Economic analysis, forecasting models and risk assessment

It is important and increasingly relevant for the ECB to take into account the effects of climate change and of climate change policies when assessing the outlook for price stability in the conduct of monetary policy. In this context, climate change will be part of the forthcoming monetary policy strategy review. The ECB has already been able to take into consideration the impact of climate change shocks and related policies in its core economic analysis. Technological policies and fiscal mitigation and adaptation policies, such as carbon taxation, typically have a direct impact on prices. The impact on inflation may also be indirect, via supply and demand conditions in the economy, which in turn affect investment and productivity growth. The needed climate-friendly policies therefore also have an effect on countries' fiscal balances and the operational costs of corporations in exposed

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33 See the special feature entitled "Climate change and financial stability", *Financial Stability Review*, ECB, May 2019.

34 See Carney, M., "Breaking the Tragedy of the Horizon – climate change and financial stability", speech given at Lloyd's of London, 29 September 2015.

35 See Cœuré, B., "Monetary policy and climate change", speech given at a conference on "Scaling up Green Finance: The Role of Central Banks", organised by the Network for Greening the Financial System, the Deutsche Bundesbank and the Council on Economic Policies, Berlin, 8 November 2018.

sectors, ultimately with implications for price-setting. Climate change itself may also lead to a gradual transformation of households' behaviour and consumption patterns, with implications for growth dynamics, both in terms of the mean and the volatility of output growth. Such effects translate ultimately into impacts on wealth and potential output. The ECB is increasingly analysing the macro implications of climate change and related public policies. The findings of this work aim to better account for such aspects in the ECB's regular economic analysis, forecasting models and risk assessment. The implications of climate change for the transmission channels of monetary policy and monetary analysis, and especially for credit provision, are also being considered.

2. Monitoring and assessment of financial stability risks

As a part of climate change adaptation, the ECB actively monitors physical and transition risks for banks and also non-bank financial institutions. This has required the development of a sufficiently granular understanding and monitoring of the carbon intensity of banks' portfolios at the firm level, based on exposures to non-financial corporations and carbon emissions.[36] There is also a parallel focus on developing an analytical framework for carrying out a pilot climate risk stress-test analysis for the euro area banking sector which will be macroprudential in nature.[37] Importantly, this work has spanned all countries in the European Economic Area under the auspices of a joint project team on climate risk monitoring. The team, reporting to the European Systemic Risk Board's Advisory Technical Committee and the European System of Central Banks' Financial Stability Committee, has two aims: (i) to implement a monitoring framework for climate-related systemic risks; and (ii) to identify forward-looking scenarios to assess climate risks and transmission channels in a stress-test exercise. In the light of the global nature of the climate challenge, it is critical to develop a common understanding of the financial risks posed by climate change. In this respect, the ECB and several Eurosystem national central banks are members of the Network for Greening the Financial System (NGFS) and are playing an important role in shaping nascent work on gauging financial stability risks from climate change along with both the Financial Stability Board and the Basel Committee on Banking Supervision (BCBS).

3. Banking supervision

Climate-related risks are a significant risk driver for the euro area banking system.[38] Surveys of banks conducted in 2019 by the ECB (covering around 44% of total euro area banking assets) found that euro area banks are getting increasingly involved in joint industry initiatives to enhance their own methodologies to measure climate-related risks and contribute to broader and more comparable disclosures. The ECB is of the view that banks should adopt a timely and strategic approach to considering these risks, consistent with the policy messages and expectations contained in the EBA Action Plan on Sustainable Finance published in December 2019. The ECB is actively cooperating with national competent authorities, financial regulators (e.g. the European Banking Authority and the BCBS) as well as other central banks and supervisors (notably through the NGFS) to further develop its supervisory approach to climate-related risks.[39]

36 See the May 2019 and November 2019 issues of the ECB's Financial Stability Review.

37 See de Guindos, L., "Implications of the transition to a low-carbon economy for the euro area financial system", speech given at the European Savings and Retail Banking Group conference "Creating sustainable financial structures by putting citizens first", Brussels, 21 November 2019.

38 See SSM Risk Map for 2020.

39 For more information on the ECB's supervisory activities in relation to climate change, see the box entitled "Green finance" in the 2019 ECB Annual Report on supervisory activities.

4. Investment operations

The ECB contributes to the efforts against climate change through its own investment decisions. The ECB's staff pension fund pursues a sustainable investment policy, which seeks to reduce the ECB's carbon footprint. For the ECB's staff pension fund portfolio, the broad investment universe and the longer-term investment horizon allow a sustainable and responsible investment (SRI) policy, based on selective exclusion and proxy voting guidelines, to be pursued. The ECB delegated proxy voting for equity holdings to its external investment managers, who have signed up to the United Nations-supported Principles for Responsible Investment, requiring them to incorporate environmental, social and governance (ESG) standards into their voting policies. The ECB has also decided to replace the current broad benchmarks for the equity portfolios of its pension fund with the low-carbon versions of these benchmarks. The ECB is also working on the practical implementation of SRI principles in its own funds portfolio, which consists of its paid-up capital and its general reserve fund, as part of its participation in the NGFS and in line with the latter's recently published SRI guide for central banks' portfolio management.

5. Monetary policy operations

Following the principle of market neutrality, the Eurosystem has also purchased green bonds under its four asset purchase programmes (i.e. the asset-backed securities purchase programme, the corporate sector purchase programme, the public sector purchase programme and the third covered bond purchase programme) and is thereby supporting the ongoing efforts against climate change. The ECB supports initiatives aimed at improving the pricing of climate change risks and the assessment of related transition risks by private actors. This includes the development and enhancement by external credit assessment institutions recognised under the Eurosystem credit assessment framework of methodologies and standards for the integration of ESG criteria into their ratings, or the development of other more specific ESG-related scores.

The ECB critically monitors the extent to which climate change-related risks are priced and hence integrated into lending conditions, and considers whether additional measures are necessary to reflect climate change-related risks in the universe of collateral eligible for Eurosystem credit operations under the framework for marketable assets. More generally, the ways in which climate change can affect the ECB's monetary policy operations are expected to be considered in the ECB's monetary policy strategy review.

6. EU and international initiatives on sustainable finance

The ECB contributed to various European and international initiatives aimed at improving the collective response to climate change through the promotion of sustainable and green finance. At the EU level, the ECB welcomed the European Commission's Action Plan on financing sustainable growth as an important step towards integrating sustainability into financial decision-making and actively supported the proposed development of a common EU taxonomy of sustainable assets as a key step for scaling up green financing. As a member of the Technical Expert Group on Sustainable Finance, which was set up to assist with the European Commission's initiatives following up on its Action Plan, the ECB contributed to the preparation of a technical report published in June 2019, notably providing analytical input and technical support to the assessment of the economic impact of the taxonomy. The ECB has been cooperating more broadly with a larger set of central banks and financial regulators across the world to mainstream green finance and scale up the contribution of the financial sector to funding the transition to a green economy, notably within the framework of the NGFS and in international fora such as the G7.

7. Green ECB

As regards the ECB's efforts to reduce its environmental impact, in 2019 the ECB was successfully recertified in accordance with the European Eco-Management and Audit Scheme (EMAS) and set new environmental objectives and took measures to strengthen its commitment to environmental protection and to the continuous improvement of its environmental performance. Several new measures were implemented during the year to mitigate the environmental impact of daily operations, such as electronic submissions for public tender procedures. The ECB has also entered into interinstitutional collaboration with the European Parliament to jointly offset residual CO2 emissions, whilst maintaining the avoidance and reduction of emissions as strategic priorities of its environmental management system. Raising awareness about the pressing challenges posed by climate change and the need to take meaningful action remained a central pillar of the ECB's environmental management efforts. The ECB took part in the EU Mobility Week and the EU Week for Waste Reduction and offered training courses on climate change to staff. Compared with 2008, the ECB's environmental activities have led to a reduction of carbon emissions and energy consumption per workplace by 74% and 54% respectively in 2018. More information on the ECB's environmental performance is available in its environmental statement.

3.2 Macroprudential policy to build sector-wide resilience

Macroprudential policies are a key instrument to address risks to financial stability

The emergence of systemic risks in the financial system can be addressed through macroprudential policies and the SSM Regulation assigns an important role and specific powers to the ECB in this field. In particular, the ECB has the task of assessing macroprudential measures for banks provided for in EU legislation and adopted by national authorities in countries participating in the Single Supervisory Mechanism (SSM), and also has the power to top up such national measures. In response to the main risks prevailing in 2019, national authorities in the euro area, in consultation with the ECB, implemented notably more macroprudential measures than in the previous year, with a view to mitigating and strengthening resilience to systemic risks.

Continued macroprudential efforts to preserve financial stability

The ECB assesses macroprudential policies in euro area countries

The ECB continued its extensive efforts in the field of macroprudential policy, thereby making an important contribution to preserving financial stability. In addition to a body of related analytical work, the ECB provided a platform for regular joint risk assessments and policy coordination between the ECB and the national authorities in the euro area. The ECB and the national authorities also continued to engage in broad and open discussions on the use of macroprudential instruments, and on the enhancement of the analytical toolkit in the field of macroprudential policy. These efforts further improved the methods and processes for assessing systemic risks and the adequacy of macroprudential policy measures in the euro area.

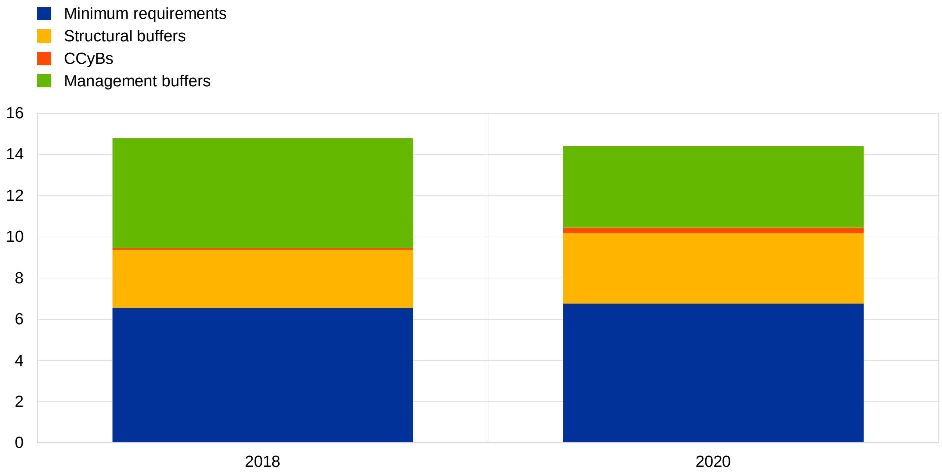
Releasable macroprudential buffers can play an important countercyclical role

Macroprudential discussions in 2019 focused on the importance of banks remaining resilient and able to withstand adverse shocks to the macro-financial environment. Only with releasable buffers in place can macroprudential policy play a countercyclical role. In this context, the countercyclical capital buffer (CCyB) is the key instrument that can be released if cyclical risks materialise. A greater availability of releasable buffers in the form of CCyBs would thus help avoid a simultaneous deleveraging across the banking system, which could result in a credit crunch and aggravate the downturn. This underscores the relevance of not only the level of capital buffers, but also the ability to release them in times of stress. At this point in the euro area, the implemented CCyBs amount to 0.1% of risk-weighted assets and remain overall small relative to other buffer requirements (see Chart 22).

Chart 22

Decomposition of bank capital buffers

(percentages)



Source: ECB.
Notes: Minimum requirements include Pillar 1 CET1, the Pillar 2 requirement and CET1 capital to meet shortfalls for Tier 1 and Tier 2. Structural buffers include capital conservation buffers, systemic risk buffers, as well as G-SII and O-SII buffers. Management buffers are those buffers that banks hold in excess of these regulatory requirements. The right bar shows announced CCyB rates as at March 2020.

The ECB concluded a review of the O-SII buffer framework

In 2019 the ECB also concluded its first review of the buffer floor framework for other systemically important institutions (O-SIIs) in the SSM area. The O-SII buffer is aimed at limiting the negative externalities that a failure of systemically important institutions can pose to the domestic financial system and the wider economy. The revised O-SII floor methodology is more granular and increases the minimum buffer rates for the most systemically relevant banks (see the March 2020 Macroprudential Bulletin for more details). The new framework will help to ensure that more systemic banks can be subject to higher buffer requirements in certain jurisdictions, thus reducing risks to financial stability. It will be phased in starting from 1 January 2022.

Furthermore, the ECB continued to enhance its communication on macroprudential policy issues, raising awareness by making the ECB's ongoing work and thinking in this field more transparent. The November 2019 Financial Stability Review contained a section on how macroprudential policies can address vulnerabilities in the financial system. Besides speeches, press releases and other publications such as occasional papers, the ECB continued publishing its biannual Macroprudential Bulletin, which is an important communication tool for explaining the ECB's macroprudential policy framework and decision-making procedures, as well as analytical advances and assessments in the field. The ECB also continued to publish on its website an overview of currently active macroprudential measures in countries subject to ECB Banking Supervision.

Macroprudential policy decisions during 2019

The ECB assessed 106 macroprudential policy decisions in 2019

In line with its legal mandate, the ECB in 2019 assessed notifications by the national authorities in the euro area of 106 macroprudential policy decisions regarding instruments targeting cyclical and structural systemic risks, as well as other instruments under Article 458 of the Capital Requirements Regulation (CRR). Most notifications related to the setting of countercyclical capital buffers or the identification of global and other systemically important institutions (G-SIIs and O-SIIs) and the calibration of the respective capital buffers. The Governing Council of the ECB did not object to any of the macroprudential policy decisions that national authorities notified during 2019.

The national competent authorities of seven euro area countries had announced the activation of a CCyB rate above 0% by the end of 2019, compared with four countries in the previous year. In 12 countries the buffer had not been activated by the end of 2019. The calibration of the CCyB rates was based on “guided discretion”, which combines guidance from key risk indicators and more discretionary elements reflecting specific economic and financial conditions.

Looking at the countries that announced CCyB increases in 2019, the Haut Conseil de Stabilité Financière in France decided to raise the CCyB rate from 0.25% to 0.5% in March 2019 as a preventive measure and considering an upward trend in private sector indebtedness in France. The Nationale Bank van België/Banque Nationale de Belgique decided to raise the CCyB rate from 0% to 0.5% in June 2019, its main objective being to increase banks’ resilience to cyclical risks. While cyclical systemic risks were not seen as acute, it considered that it was prudent to introduce a preventive measure to ensure the continuity of credit provision through the cycle. The Bundesanstalt für Finanzdienstleistungsaufsicht in Germany decided in June 2019 to introduce a positive CCyB rate of 0.25%. It assessed that the build-up of cyclical systemic risks (in particular vulnerabilities related to the underestimation of credit risk, the overvaluation of collateral and interest rate risk) had created a potential threat to financial stability. In July 2019 Národná banka Slovenska decided to further increase the CCyB rate from 1.5% to 2% in Slovakia. The banking sector and its profitability had become more exposed to cyclical risks and the authority saw signs of exuberance in financial markets. Finally, in Luxembourg the Commission de Surveillance du Secteur Financier decided to increase the CCyB rate from 0.25% to 0.5% in December 2019, in the light of strong increases in lending and real estate prices.

Borrower-based measures can help maintain sound lending standards

The low interest rate environment could induce higher risk-taking and a loosening of lending standards, particularly if bank profitability is under pressure. Further increases in residential real estate prices, coupled with trends in mortgage lending and fragilities in the household sector, led to an increase in real estate vulnerabilities in 2019 in a number of euro area countries. In such a situation, guidance on sound lending standards or the pre-emptive tightening of borrower-based measures with appropriate exemptions could help contain a potential build-up of risks. By the end of 2019, 13 countries in the euro area had introduced such measures, which fall under the sole competence of the national authorities.

Regarding macroprudential instruments targeting other risks, the ECB assessed national authorities' decisions on O-SII buffers, systemic risk buffers, as well as macroprudential measures under Article 458 of the CRR. As for measures adopted in 2019 in this latter category, Eesti Pank introduced a new measure to ensure the resilience of banks to systemic risks associated with housing loans. Credit institutions that use the internal ratings-based (IRB) approach must apply an exposure-weighted average risk weight of at least 15% to retail exposures secured by mortgages on immovable property granted to residents of Estonia. The measure came into force on 30 September 2019. The Finnish Financial Supervisory Authority also decided in June 2019 to extend the period of application for the credit institution-specific minimum level of 15% for the average risk weight on housing loans applicable to credit institutions that have adopted the IRB approach. The extension of the minimum level came into force on 1 January 2020 and will apply for one year.

Cooperation with the European Systemic Risk Board

The ECB continued to closely cooperate with and support the ESRB

The ECB continued to provide analytical, statistical, logistical and administrative support to the European Systemic Risk Board (ESRB) Secretariat, which is in charge of the day-to-day business of the ESRB. The ESRB is responsible for the macroprudential oversight of the EU financial system and the prevention and mitigation of systemic risk.

The ECB regularly contributed to the ESRB's ongoing identification and monitoring of potential systemic risks and provided general support to work undertaken by the ESRB. For example, the ECB was involved in the work on closing real estate data gaps, which led to the approval of an ESRB Recommendation, as well as in the development of an enhanced monitoring framework for material third countries. In addition, the ECB supported the ESRB's analysis of medium-term vulnerabilities in the residential real estate sector, which led to five warnings and six recommendations being issued by the ESRB to selected EU countries.

The ECB also greatly contributed to the ESRB's initial considerations on developing a common framework for the macroprudential stance. A dedicated report was published in April 2019 as a first step towards such a common framework. It established the link between macroprudential policies and the objective of financial stability. In addition, the ECB continued to contribute to the second phase of this work, by co-chairing the ESRB's expert group mandated to develop operational methods to facilitate the assessment, discussion and communication of the macroprudential stance.

Furthermore, the ECB is co-chairing an analytical expert group tasked with assessing the materiality of the potential overlap between macroprudential capital buffers, the minimum leverage ratio and the minimum requirement for own funds and eligible liabilities (MREL). This work aims to describe how the requirements interact and the implications for the effectiveness of macroprudential buffers.

Throughout the year the ECB also chaired the drafting team preparing the ESRB Recommendation on exchange and collection of information for macroprudential purposes on branches of credit institutions having their head office in another Member State or in a third country.

Further work was done on macroprudential instruments for use beyond banking

The ECB continuously supported the ESRB's work on macroprudential instruments to be used beyond the banking sector. The ECB contributed to the analysis of data and risks, in particular the implications of margining practices for insurers, and to the design of new macroprudential instruments for the insurance sector, focusing on some of the options which were shortlisted in the 2018 report on macroprudential provisions, measures and instruments for insurance. The outcome of this work will directly feed into the ongoing discussions on the review of Solvency II, with the aim to strengthen the regulatory framework for insurers and reinsurers from a macroprudential perspective.

The ECB also contributed to the continued development of risk metrics for non-banks, and to the drafting of the fourth issue of the EU Non-bank Financial Intermediation Risk Monitor, which presents an overview of developments in the sector, with a focus on assessing potential risks to financial stability. In addition to this, the ECB provided valuable contributions to the interim paper on mitigating the procyclicality of margins and haircuts in derivatives markets and securities financing transactions, both in terms of drafting and developing the underlying analytical thinking.

Analytical work on the financial sector implications of climate change was given more prominence

Furthermore, the ECB worked together with the ESRB on developing and implementing methodologies for conducting an impact study of how different climate change scenarios could be affecting the EU financial sector. It also provided a mapping of different methodologies, an assessment of data availability and an overview of the type of financial institution exposures to be analysed when conducting climate-related risk analysis.

The ECB chaired the ESRB Task Force on Stress Testing, which prepared the adverse scenarios for the pension fund stress test of the European Insurance and Occupational Pensions Authority, as well as the money market fund and central counterparty stress tests of the European Securities and Markets Authority. To this end, several Directorates General of the ECB provided critical technical and modelling support to the ESRB task force.

Finally, the ECB actively participated in the ESRB's European Systemic Cyber Group, which developed an analytical framework for assessing cyber risks.

More detailed information on the ESRB can be found on its website and in its Annual Reports.

3.3 Microprudential activities to ensure the soundness of individual banks

The year 2019 marked five years since the establishment of ECB Banking Supervision. Throughout these years its microprudential activities have contributed to fostering a stable European banking sector and a level playing field for all banks in the euro area. Thanks to the progress made since 2014, European banking supervision is evolving into a mature institution.

Continuity and adaptation of the ECB's supervisory priorities

Although the post-crisis repair of banks' balance sheets has greatly advanced, it nonetheless continued to rank highly among the supervisory priorities in 2019. Other priorities focused on the drivers of low profitability for European banks and governance issues, including banks' conventional risk management capabilities, and emerging risks, particularly regarding the ongoing digitalisation of financial services and their vulnerability to IT and cyber risks.

Supervisory tools and methods continued to be improved

Throughout 2019 ECB Banking Supervision continued to improve its tools and methods. Following up on its previous commitment, the ECB revised, in August 2019, the supervisory expectations for the prudential provisioning of new non-performing exposures (NPEs), specified in the Addendum to the ECB Guidance to banks on non-performing loans, in order to take into account new Pillar 1 requirements.[40] Following a public consultation and the publication of the general topics guide in November 2018, the ECB published, in July 2019, final risk type-specific chapters of the ECB guide to internal models, covering credit risk, market risk and counterparty credit risk. In February 2019 the ECB also published aggregate stress-test results for all participating banks under its supervision, as a complement to the 2018 EU-wide stress test. And, in October 2019, it published the results of its 2019 sensitivity analysis of liquidity risk conducted as the annual stress test. The results of both exercises feed respectively into the 2018 (published in April 2019) and the 2019 Supervisory Review and Evaluation Process.

Preparatory work was done ahead of the United Kingdom's exit from the EU

While the number of banks directly supervised by the ECB remained broadly stable in 2019, a number of banks have undergone significant changes to their group structures and activities as banking groups consolidate or relocate activities from the United Kingdom to the euro area. For the banks that became significant as a result, the ECB assumed the direct supervision and, for some of those, the obligatory comprehensive assessment was launched in the second half of 2019. In the uncertain period preceding the United Kingdom's withdrawal from the EU, ECB Banking Supervision focused on monitoring the preparedness of banks and supervisors for all possible contingencies and, in particular, the implementation of banks' Brexit plans, as agreed between banks and supervisors. While banks made some progress towards their target operating models in 2019, the ECB repeatedly warned against further delays and continued to communicate its supervisory expectations through updates to the FAQs on the ECB Banking Supervision website, several articles in the Supervision Newsletter and bilateral discussions with the supervised entities.

Progress was made towards establishing close cooperation with Bulgaria and Croatia

The year 2019 also witnessed progress towards enlarging the SSM beyond the euro area, after Bulgaria and Croatia requested the establishment of close cooperation between the ECB and their national competent authorities (NCAs). ECB Banking

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[40] The new EU regulation, which outlines the Pillar 1 treatment for NPEs, is Regulation (EU) 2019/630 of the European Parliament and of the Council of 17 April 2019 amending Regulation (EU) No 575/2013 as regards minimum loss coverage for non-performing exposures (OJ L 111, 25.4.2019, p. 4). It entered into force on 26 April 2019.

Supervision concluded, in July 2019, its comprehensive assessment of six Bulgarian banks and agreed, in August 2019, to conduct a comprehensive assessment of five Croatian banks, which is required as part of the process of establishing close cooperation with EU Member States whose currency is not the euro. In parallel, the ECB has been working closely with Българска народна банка (Bulgarian National Bank) and Hrvatska narodna banka in view of their potential future role as NCAs within the SSM.

More detailed information on ECB Banking Supervision can be found on its website and in the 2019 ECB Annual Report on supervisory activities.

Box 4
Fintech

Financial technology brings significant benefits for banks, their customers, the financial system and the broader economy, but it also entails challenges and risks. Financial institutions are free to innovate in a responsible manner, but the associated risks must be mitigated through effective risk management frameworks and oversight.

The emergence of fintech and specialised fintech firms has led to changes in existing banking business models. In the European Union, fintech firms have so far mostly entered into partnerships with banks, enabling the latter to improve the customer experience by providing a wider range of financial services and products in a more affordable and efficient manner. Moreover, with the increasing availability of data and the use of artificial intelligence as well as enhanced computing power to harness the data, banks are also increasingly using fintech to enhance their own internal operations.

As a result, interlinkages between fintech firms and banks are growing, most notably in the provision of outsourcing services, and operational risks have increased at both the institutional and the system-wide levels. Some fintech firms are also offering new financial services, especially in the area of payments, putting pressure on banks. Importantly, “big tech” firms with their large customer bases and established technology platforms are gradually making inroads into financial services and have already become dominant providers of cloud computing.

The ECB has responded to the evolving challenges and risks arising from financial innovation on multiple fronts. At the macroprudential level, the ECB is monitoring and assessing the financial stability implications of fintech. Profitability pressures stemming from competition with fintech firms are being amplified by banks’ needs for investment in digitalisation, which requires time to yield net benefits. Growing interlinkages with fintech firms could mean that disruptions in these firms might have systemic implications for the financial system unless adequate safeguards are put in place.

The ECB also contributes to fintech-related policy and financial stability work through various European and international fora, including the European Banking Authority, the Financial Stability Board, the Basel Committee on Banking Supervision and the Committee on Payments and Market Infrastructures. In addition, it acts as a driver of change, as can be seen from the launch of TARGET

Instant Payment Settlement and the ongoing exploration of the application of new technologies to market infrastructures.[41]

At the microprudential level, ECB Banking Supervision is carrying out further work to develop a common understanding of fintech-related risks and to ensure a consistent supervisory approach to these risks across the SSM. This involves assessing the impact of fintech on banks' business models and the main associated risks. In order to enhance its supervisory approach to fintech, ECB Banking Supervision is engaging with SSM banks to learn how they are using innovative technologies and solutions and what the implications are for their business models, and more importantly how the main risks could be addressed by risk management frameworks.

On 21-22 May the first ECB Fintech Industry Dialogue took place, bringing together euro area bankers and supervisors, third-country supervisors, as well as representatives from regulatory authorities such as the European Commission, the European Banking Authority and the European Securities and Markets Authority. The dialogue focused on: (i) credit scoring using artificial intelligence and big data; (ii) automated online investment advice ("robo-advice"); and (iii) cloud computing. The event was intended to be the first of several such dialogues where banks have the opportunity to provide supervisors with their views on the recommended areas of supervisory focus. This input contributes to further developing the approach to the supervision of banks using innovative technologies.

ECB Banking Supervision also continued to develop its international cooperation on fintech-related matters both within and outside the SSM. For example, knowledge-sharing initiatives were set up to facilitate swift access to relevant fintech information for supervisors across the national competent authorities and at the ECB.

3.4 The ECB's contribution to European policy initiatives

The framework set up following the global financial crisis can still be enhanced

Five years ago the first pillar of the banking union, the Single Supervisory Mechanism, began operations following the ambitious set of institutional and regulatory initiatives taken in the aftermath of the global financial crisis. With this concrete step, EU Member States and institutions fostered financial integration and stability and strengthened economic resilience.

Today, however, there is still scope to further integrate the single banking market. This would contribute to the uniform transmission of monetary policy and further remove the destabilising relationship between banks and sovereigns, which was at the heart of the euro area sovereign debt crisis. Further progress on developing and integrating capital markets is also needed to enhance the ability of the financial system to diversify risks and to complement the banking union. In addition, risks in the non-bank financial sector should be mitigated through appropriate macroprudential tools.

41 See Chapter 4 for more details.

Completing the banking union

In-depth work to complete the banking union was carried out in 2019

In 2019 the ECB was fully involved in the work in EU fora to strengthen the banking union. In June 2019 the Euro Summit acknowledged in its declaration the progress made on deepening Economic and Monetary Union and supported the continuation of technical work on strengthening the banking union. In the second half of 2019 the High-Level Working Group on a European Deposit Insurance Scheme (EDIS) carried out further work on the short and long-term perspectives regarding the establishment of an EDIS, the options for the regulatory treatment of sovereign exposures, as well as how to strengthen financial stability, enhance crisis management and foster integration. Furthermore, the Eurogroup decided to continue its efforts to finalise the package on the revision of the European Stability Mechanism Treaty, also in view of the need to provide a common backstop to the Single Resolution Fund.[42]

The ECB contributed extensively to the technical discussions in EU fora by providing input to the different work streams. Regarding the crisis management framework, the ECB insisted on addressing the existing overlaps in regulation on early intervention measures.[43] The ECB also supported further analysis of the impediments to cross-border integration, notably the barriers to the free flow of capital and liquidity within the banking union. More generally, the ECB advocated a compromise package that would include a first stage of EDIS in the form of liquidity support, while providing an end-stage perspective in the form of full loss coverage. Such an encompassing agreement would allow Europeans to reap the full benefits of the banking union, including market integration and an equal protection of depositors. The pooling of resources for deposit insurance at the European level would better preserve the confidence of depositors than national schemes; the latter could be more exposed in the event of an idiosyncratic shock, which could potentially weaken their credibility and hence depositor trust.

In line with the concept that risk sharing and risk reduction are two mutually reinforcing processes, the ECB contributed to the further reduction of risks in the banking sector. In particular, ECB Banking Supervision continued its work on banks' balance sheet repair with the follow-up to its non-performing loans guidance and assessed the quality of banks' underwriting criteria with a focus on new lending. In 2019 the ECB continued to contribute to the joint monitoring reports on risk reduction (see the May edition and the November edition), prepared together with the European Commission and the Single Resolution Board, which showed further progress in risk reduction.

The second pillar of the banking union was also a major focus of the year. In December 2018 it was agreed that the European Stability Mechanism would provide the common backstop to the Single Resolution Fund. However, the resolution framework continues to have a major gap because a euro area framework for the provision of liquidity to viable banks coming out of resolution is yet to be created. While

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42 The common backstop to the Single Resolution Fund, which will be provided by the European Stability Mechanism, is a safety net aimed at ensuring that the Single Resolution Fund has additional resources to support any necessary resolution measures.

43 See also the Opinion of the European Central Bank of 8 November 2017 on revisions to the Union crisis management framework (CON/2017/47).

other major jurisdictions have such a framework in place, largely based on government guarantees to the central bank as liquidity provider, it has so far not been possible to agree on an equivalent solution in the euro area.

Advancing the capital markets union

CMU can facilitate the transmission of monetary policy

In 2019 the ECB continued to advocate the completion of the capital markets union (CMU). A genuine capital markets union, if effectively realised, would significantly deepen financial integration and strengthen Economic and Monetary Union, as well as foster the international role of the euro. This would support a smoother and more homogeneous transmission of monetary policy.

Deeply integrated capital markets would further increase the resilience of the financial system by reducing the reliance on banks and encouraging alternative market-based sources of finance. As underlined in the ECB's Financial Stability Review in 2019, completing the capital markets union is a fundamental prerequisite to enhance risk sharing and improve the resilience of the euro area to economic shocks. Geopolitical and economic developments since 2015, such as Brexit as well as digitalisation and climate change, have strengthened the need for integrated European capital markets.

With the conclusion of the European Commission's 2015 CMU Action Plan, a significant number of legislative and non-legislative proposals in the CMU agenda were finalised by the Commission in the 2014-19 legislative term. While much has been achieved on the legislative front, renewed ambition on some of the key priorities is indispensable to push this project forward.

Further harmonisation efforts are needed to advance CMU

In 2019 the ECB underlined the key priorities to advance the capital markets union in EU fora. This included stressing the importance of further harmonisation of national tax and insolvency regimes, which is essential for well-functioning cross-border capital market transactions, as well as further supervisory convergence towards a single rulebook, in particular for non-banks.[44] In the long term, providing additional supervisory powers to the European Securities and Markets Authority would foster a genuine capital markets union with a consistent implementation of the single rulebook across the European Union.

Macroprudential policy for the non-bank financial sector

Continued growth in the non-bank financial sector raises potential financial stability concerns

While being fully supportive of more market-based financing of the euro area economy, the ECB remains concerned about the rapid growth of the non-bank financial sector and its potential implications for financial stability. While a greater role for non-bank financial intermediation in financing the economy is part of the CMU agenda, it continues to be crucial to effectively monitor this sector.

[44] Further harmonisation and standardisation, building on the single rulebook as a harmonised regulatory framework, are key to achieving a genuine capital markets union.

Given these developments, ensuring a sound prudential framework for non-bank financial institutions is indispensable to adequately address the systemic risks that could materialise in this sector. Thus, in 2019, the ECB continued to advocate an extension of the macroprudential framework beyond the banking system and contributed extensively to the related technical discussions in EU and international fora.

4 Smooth functioning of market infrastructure and payments

One of the basic tasks of the Eurosystem is to ensure the smooth operation of payment systems. This task is closely interlinked with the Eurosystem’s responsibilities in the fields of monetary policy and financial stability. The Eurosystem plays a central role in developing, operating and overseeing market infrastructures and arrangements that facilitate the safe and efficient flow of payments, securities and collateral across the euro area.

4.1 TARGET Services

Currently, the Eurosystem’s TARGET Services consist of three components: TARGET2, a real-time gross settlement system for euro payment transactions related to the Eurosystem’s monetary policy operations, as well as bank-to-bank and commercial transactions; TARGET2-Securities (T2S), a single platform for Europe-wide securities settlement; and TARGET Instant Payment Settlement (TIPS), which allows payment service providers to offer their customers the instant transfer of funds, around the clock, every day of the year.

More than 1,000 banks use TARGET2 to initiate transactions in euro, either on their own behalf or on behalf of their customers. Taking into account branches and subsidiaries, more than 45,000 banks worldwide can be reached via TARGET2. In 2019 TARGET2 processed on average 344,120 payments per day with an average daily value of €1.7 trillion.

As a systemically important payment system (SIPS), TARGET2 is crucial not only for the stability and efficiency of the financial sector and the euro area economy, but also for the smooth conduct of the single monetary policy of the euro area and for the stability of the single currency. Like other SIPSs, TARGET2 is subject to continuous oversight by the Eurosystem, which follows a risk-based approach including the monitoring of end-point security and cyber resilience.

In 2019 the Eurosystem implemented a new TARGET2 contingency tool. In the event of an outage of TARGET2 (even if this lasts more than one day), it allows the Eurosystem to continue processing transactions categorised as “critical” and “very critical”. The new contingency tool is part of a broader strategy for strengthening the operational and cyber resilience of the Eurosystem’s market infrastructure.

TARGET2 to be replaced with a new real-time gross settlement system in 2021

TARGET2 has been running smoothly for over a decade. However, as the payments ecosystem has changed significantly during that time owing to technological developments, new regulatory requirements and changing user demands, the Eurosystem is planning to replace TARGET2 with a new real-time gross settlement (RTGS) system in November 2021, and at the same time to optimise liquidity management across all TARGET Services. The new RTGS system will use the messaging standard ISO 20022 and will be able to facilitate payments in multiple currencies. At the end of 2019, based on feedback received in a public consultation, an enhanced version of the User Detailed Functional Specifications for the future RTGS service was published. Furthermore, two network service providers signed contracts with the Eurosystem to offer users network-agnostic connectivity to all Eurosystem market infrastructure services via the new Eurosystem Single Market Infrastructure Gateway (ESMIG).

With regard to T2S, it is now over two years since the migration waves of central securities depositories (CSDs) to the common platform were completed. T2S is currently used by 21 CSDs, serving 20 markets across Europe. In 2019, T2S processed an average of 606,938 transactions per day with an average daily value of €1,106.13 billion.

In 2019 for the first time, an independent external examiner appointed by the ECB Governing Council performed technical and operational examinations of T2S services. The observations made by the examiner were shared with the Eurosystem and the CSDs and non-euro area central banks that use T2S. These examinations will now be performed every year.

Furthermore, following a pre-assessment in 2015, the first comprehensive oversight assessment of T2S in operation, initiated in 2018, was finalised in 2019. It concluded that T2S is largely compliant with the CPMI-IOSCO Principles for financial market infrastructures, indicating that T2S is safe and efficient. While shortcomings in certain areas were identified during the assessment, none were deemed to pose a serious risk if not promptly addressed.

Following the launch of TIPS in November 2018, in its first year seven euro area markets connected to the service, meaning that more than 1,000 payment service providers are now reachable via TIPS. More euro area markets are preparing to join TIPS in 2020. Since TIPS can support different currencies, Sveriges Riksbank expressed its intention to incorporate the Swedish krona into TIPS in 2022.

Furthermore, the Eurosystem is developing a new TARGET Services component, namely the Eurosystem Collateral Management System (ECMS). This single system will be capable of managing the assets used as collateral in all Eurosystem credit operations. In 2019 and on schedule, the project reached the end of its specification phase. Its go-live date is planned for November 2022.

4.2 Innovation and integration in market infrastructure and payments

The financial industry is undergoing considerable transformation driven by innovation and digitalisation. In the retail payments market, for example, new EU legislation allowing third-party access to payment accounts, the launch of instant payments and technical innovations in general have led to the emergence of new market players, new channels for accessing payment services and new ways of initiating payments.

(See Box 5 for information on crypto-assets, stablecoins and central bank digital currency.) The challenge for the Eurosystem with respect to these developments is twofold: it must foster integration and innovation in its role as a catalyst and promote the safety and efficiency of market infrastructure and payments in its role as overseer.

Box 5
Crypto-assets, stablecoins and central bank digital currency

Over the last few years, there has been a lot of hype surrounding bitcoin and other crypto-assets and their potential to be a substitute for money. Crypto-assets allow individuals and businesses to conduct transactions directly with each other without the need for a trusted third party. However, the fact that these assets have been referred to as "crypto-currencies", "digital currencies" and "virtual currencies" might have given rise to some false expectations regarding their features and functionalities. In broad terms, crypto-assets are assets recorded in digital form that are considered valuable by their users as an investment and/or means of exchange but that are neither a financial claim on, nor a financial liability of, any natural or legal person.

The major disadvantage of crypto-assets is their price volatility. The volatility of crypto-assets has in recent years been higher than the volatility observed, for example, in various commodities markets. This shows the extent to which crypto-asset investors are subject to market risk. Furthermore, this high volatility means that crypto-assets cannot properly perform the three functions of money: a store of value, a means of payment and a unit of account.

In an attempt to circumvent the problem of high price volatility, financial service providers and technology companies have launched a new class of crypto-assets, known as stablecoins, that use stabilisation mechanisms to minimise price fluctuations. Depending on the stabilisation mechanism used, the value of the stablecoin may be backed by: (i) holdings of money (in one currency or a basket of different currencies); (ii) securities and commodities such as gold; (iii) crypto-assets; or (iv) a mechanism attempting to match demand and supply (i.e. algorithmic stablecoins). In 2019 particular attention was paid to stablecoin initiatives, such as Libra, that claim to enable faster transactions at potentially lower costs on a global scale by providing a new separate payment arrangement. However, stablecoins have not yet been tested on a large scale and pose a number of legal, regulatory and oversight risks. Before stablecoin initiatives go live these issues must be addressed through appropriate system design and governance, and risk-proportionate oversight requirements and regulation.

Crypto-assets and stablecoins have sparked a broader debate on payments innovation and on the roles of the private and public sectors in devising new ways to make payments more affordable, efficient and inclusive. The issuance of a central bank digital currency (CBDC) could potentially address the social demand for new innovative, efficient and resilient tools for making payments. But various design features of CBDC could have far-reaching implications for the financial system that need to be carefully assessed. With regard to the retail payments ecosystem, the CBDC design should neither exclude possible collaboration with the private sector nor crowd out private market-led solutions for fast and efficient retail payments in the euro area.

In 2019 the ECB published a report entitled SEPA Migration Impact Assessment, which showed that the development of the Single Euro Payments Area (SEPA) and the migration to pan-European payment schemes for credit transfers and direct debits have brought significant progress towards a safe, efficient and integrated European payments market. However, a SEPA for cards has not been achieved. Furthermore, end-user solutions for payment initiation remain fragmented across Europe. Similarly, for point-of-interaction payments (i.e. point-of-sale and e-commerce payments), a pan-European solution addressing the needs of European users has not yet emerged.

New retail payments strategy, payment instruments oversight framework and collateral management standards

To address this issue, in 2019 the Eurosystem adopted a new retail payments strategy. The strategy supports the development of a market-led pan-European solution for point-of-interaction payments and sets out the key objectives for such a solution.

In the area of oversight, and based on the approach whereby entities performing the same functions should be subject to the same oversight expectations ("same risk, same requirements"), the Eurosystem has taken steps to review its oversight policy and to start developing a new framework for the oversight of payment instruments, schemes and arrangements (PISA oversight framework). This new holistic, agile and future-oriented framework is designed to apply to both established and new payment products, providers and technologies, and to contribute to the safety and efficiency of the overall payment system.

The Eurosystem is fostering market-wide harmonisation in the post-trade area to support the further integration of financial markets in Europe. In the area of collateral management harmonisation, the key objective is to work towards the establishment of a single collateral management rulebook for Europe, comprising standards for collateral management. In 2019, a first set of such standards was adopted by the ECB's Advisory Group on Market Infrastructures for Securities and Collateral, covering triparty collateral management, corporate actions for debt instruments, and billing processes; these should be implemented by November 2022. National Stakeholder Groups have been asked to prepare their respective adaptation plans with a view to complying with the standards.

The Eurosystem has also continued to foster post-trade harmonisation in the field of securities settlement, in particular by closely monitoring progress in implementing standards and following up on any gaps in progress. At the end of 2019, 90% of the markets that participate in T2S complied with the core harmonisation standards (compared with 85% in 2018).

The Eurosystem is involved in the authorisation of all euro area CSDs

In the area of securities infrastructures, the Eurosystem, as the central bank of issue for the euro, participates in the authorisation and regular review and monitoring of CSDs under the CSD Regulation. In fact, the Eurosystem is the only authority currently involved in the authorisation and review of all euro area CSDs and as such is helping to facilitate a consistent approach to these tasks, thereby playing a key role in guarding the safety and efficiency of securities settlement.

With regard to central counterparties (CCPs), the Eurosystem as the central bank of issue for the euro has continued to contribute to the activities of supervisory colleges established under the European Market Infrastructure Regulation (EMIR), including to the assessment of CCPs' requests to extend their services or to introduce changes to their risk models. Furthermore, the Eurosystem is represented in crisis management groups established or being set up globally for CCPs that are systemically important in more than one jurisdiction.

In 2019 the Eurosystem engaged in discussions relating to the revision of the EMIR framework, the purpose of which is to enhance the regulatory framework for CCPs, in particular non-EU CCPs, and which came into effect on 1 January 2020. The Eurosystem also contributed to the preparations for an EU regulation on CCP recovery and resolution and was involved in EU-wide CCP stress tests, in particular related to liquidity risk.

5 Efforts to support market functioning, and financial services provided to other institutions

In October 2019 the ECB began publishing the euro short-term rate (€STR), a new reference interest rate that is based entirely on money market statistical reporting data. The €STR will progressively replace the euro overnight index average (EONIA) and is expected to become one of the main reference rates in euro area markets. The launch of the new reference rate was well anticipated by the financial industry and did not result in any serious disruptions. The daily production of the €STR has worked well and the methodology has proved reliable. In 2019 the ECB continued to be responsible for the administration of various financial operations on behalf of the EU, and continued its overall coordinating role in relation to the Eurosystem Reserve Management Services framework. Furthermore, the ECB decided to start publishing additional data on its foreign exchange interventions as of April 2020, with the aim of enhancing communication and transparency in this field and in line with its accountability practices in other policy areas (see Box 6).

5.1 The €STR, the new overnight reference rate for euro area money markets

ECB launched the euro short-term rate (€STR)

On 2 October 2019 the ECB began publishing a new overnight reference interest rate for the euro area markets. The euro short-term rate, or the €STR, reflects the wholesale euro unsecured borrowing costs of euro area banks. This robust and reliable rate, computed daily based currently on more than €30 billion worth of eligible transactions reported by 50 different reporting agents, should progressively replace EONIA.

The methodology of the €STR is designed to comprehensively reflect the underlying money market dynamics. The rate is informed by a broad set of eligible transactions reported by banks which were conducted with other banks as well as with non-bank financial institutions; this makes it resilient to structural changes in the unsecured market. In 2019 the average daily volume of transactions underlying the €STR calculation stood at €31.1 billion. The €STR's data sufficiency policy ensures that the rate is representative by requiring that: (a) at least 20 of the institutions currently reporting under the Money Market Statistical Reporting (MMSR) Regulation submit contributions; and (b) the five banks reporting the largest share of the volume do not account for more than 75% of a given day's turnover. If one of these requirements is not met, a short-term contingency procedure is triggered, thus ensuring the availability of the rate. Finally, the rate is computed as a volume-weighted trimmed average, whereby the top and bottom 25% of the volume, corresponding to the transactions with the lowest and highest rates, are filtered out to compute the rate, which helps to reduce the influence of outliers (for further details on how the €STR is determined see Box 7 in Chapter 7).

The €STR, a robust and reliable rate based on a broad set of eligible transactions, will replace EONIA

The €STR is progressively replacing EONIA, which will be discontinued on 3 January 2022. Following the recommendations of the private sector working group on euro risk-free rates and a public consultation, on 2 October 2019 the administrator of EONIA – the European Money Markets Institute – changed the EONIA methodology so that, until its discontinuation on 3 January 2022, the rate is determined as the €STR plus a fixed spread of 8.5 basis points. The working group on euro risk-free rates, which was established in 2017 to identify and recommend risk-free rates that could serve as a basis for an alternative to existing benchmarks, produced guidance for the transition from EONIA to the €STR. This includes recommendations on how to approach EONIA-linked contracts, as well as analyses of the implications of the change for products, processes and models, for financial accounting and for risk management.

The ECB's efforts to communicate with benchmark users in preparation for the €STR launch together with the guidance and recommendations of the working group on euro risk-free rates contributed to the smooth start of the €STR. The launch of the new reference rate and the change to the EONIA methodology were well anticipated by the financial industry and did not result in any serious disruptions. For example, internal systems were adjusted to take into account the different timing for publishing the reference rate, i.e. in the morning of the day following the trade date. Moreover, the first market transactions indexed to the €STR, including the first issuances of securities, were successfully completed. In the derivatives market, the first over-the-counter swap transactions were executed with the launch of the rate, while some of the central clearing counterparties started offering clearing of €STR-based products shortly afterwards in October and November.

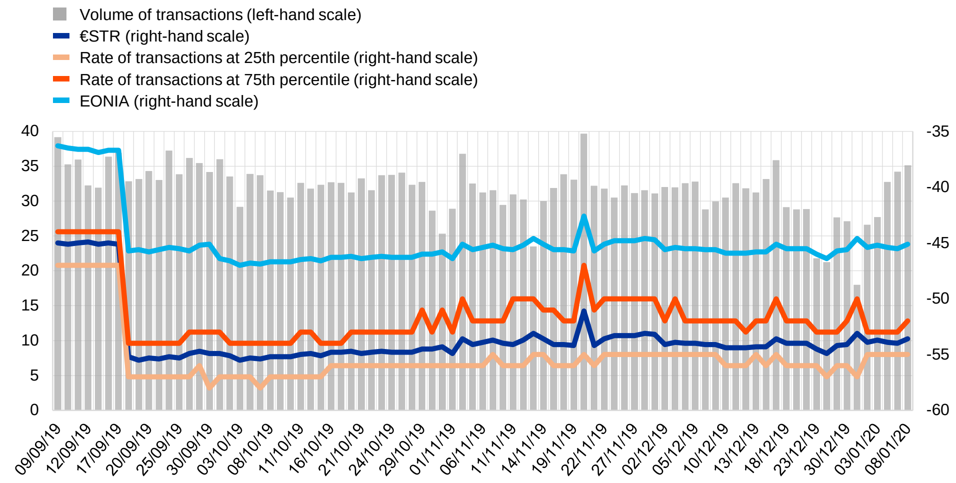
The daily production of the €STR has worked well and the methodology has proved reliable

The daily production of the €STR has worked well and the methodology has proved reliable. The reliability of the methodology can be illustrated by two examples. First, the ECB's deposit facility rate cut on 18 September 2019 was fully and immediately reflected in pre-€STR data and, since the start of the €STR publication, the rate and distribution of the underlying transactions in the middle range have remained fairly stable. Second, the bank holiday in Germany on 3 October 2019 had a negligible impact on the rate and its various metrics. While the value of the reported transactions declined by €4.3 billion on that day compared with the day before, the number of participating banks as well as the concentration of the turnover reported by the five banks with the largest share of the volume remained at a comfortable distance from the thresholds that define the data sufficiency policy as explained above. Furthermore, the volatility of the €STR remained contained, illustrating the robustness of the methodology in the face of such events.

Chart 23

The €STR since 9 September 2019

(left-hand scale: EUR billions; right-hand scale: basis points)

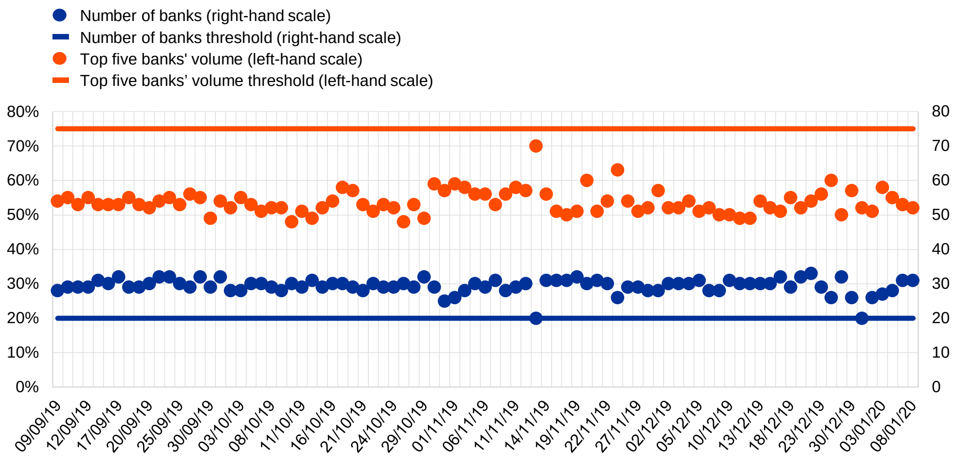


Source: ECB.
Note: Pre-€STR until 30 September, €STR from 1 October onwards.

Chart 24

€STR data sufficiency metrics since 9 September 2019

(left-hand scale: percentages; right-hand scale: number of banks)



Source: ECB.
Note: Pre-€STR until 30 September, €STR from 1 October onwards.

More effort on the part of market participants is required to build sufficiently liquid €STR cash and derivatives markets

While the use of the €STR is gaining momentum, more effort on the part of market participants is required to build sufficiently liquid €STR cash and derivatives markets. The use of the €STR should be broad-based across market segments – that is, it should not only be seen as the replacement for EONIA in the derivatives market, but also be used in cases in which other benchmark rates would normally be used. Examples of such use on both sides of the balance sheet include bond issuances and the origination of loans.

The €STR could function as a fallback in EURIBOR-linked contracts and as an alternative rate to EURIBOR

The €STR also offers a way to address risks related to the “interbank offered rates”, or “IBORs”, in the context of the global reform of these indices. As recommended by the

Financial Stability Board[45], the use of overnight near-risk-free rates should be encouraged across global interest rate markets where appropriate, and contracts referencing IBORs should have robust fallback provisions. In the euro area, the authorisation of EURIBOR's administrator on 3 July 2019 allowed for the continued use of the benchmark; furthermore, unlike LIBOR, EURIBOR is not scheduled to be discontinued. Nevertheless, the long-term sustainability of EURIBOR cannot be taken for granted: first, it depends on the stability of the panel of contributing banks, and second, it depends on the evolution of the money market activity that EURIBOR aims to measure. While competent authorities under the EU Benchmarks Regulation can provide a temporary backstop in the form of mandatory contributions to the benchmark or mandatory administration of the benchmark, this backstop is limited in nature and time. Therefore, the €STR – and term structures based on the €STR – could function as a fallback in EURIBOR-linked contracts and also as an alternative rate to EURIBOR. There are already good examples in other jurisdictions such as the United States, the United Kingdom and Switzerland of the use of overnight rates similar to the €STR gaining traction and being well promoted as a way to address uncertainties related to LIBOR.

5.2 Administration of EU borrowing and lending operations

The ECB is responsible for the administration of the borrowing and lending operations of the EU under the medium-term financial assistance (MTFA) facility[46] and the European Financial Stabilisation Mechanism (EFSM)[47]. In 2019 the ECB processed interest payments in relation to the loans under the MTFA. As at 31 December 2019 the total outstanding amount under this facility was €200 million. In 2019 the ECB also processed various payments and interest payments in relation to the loans under the EFSM. As at 31 December 2019 the total outstanding amount under this mechanism was €46.8 billion.

The ECB processes payments for various EU loan programmes

Similarly, the ECB is responsible for the administration of payments arising in connection with operations under the European Financial Stability Facility (EFSF)[48] and the European Stability Mechanism (ESM)[49]. In 2019 the ECB processed various interest and fee payments in relation to two loans under the EFSF. The ECB also processed payments in relation to subscriptions by ESM members to the ESM's authorised capital stock.

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45 See "Reforming major interest rate benchmarks – Progress report", Financial Stability Board, 18 December 2019.

46 In accordance with Article 141(2) of the Treaty on the Functioning of the European Union, Articles 17, 21.2, 43.1 and 46.1 of the Statute of the ESCB, and Article 9 of Council Regulation (EC) No 332/2002 of 18 February 2002.

47 In accordance with Articles 122(2) and 132(1) of the Treaty on the Functioning of the European Union, Articles 17 and 21 of the Statute of the ESCB, and Article 8 of Council Regulation (EU) No 407/2010 of 11 May 2010.

48 In accordance with Articles 17 and 21 of the Statute of the ESCB (in conjunction with Article 3(5) of the EFSF Framework Agreement).

49 In accordance with Articles 17 and 21 of the Statute of the ESCB (in conjunction with Article 5.12.1 of the ESM General Terms for Financial Assistance Facility Agreements).

Finally, the ECB is responsible for processing all payments in relation to the loan facility agreement for Greece.[50] As at 31 December 2019 the total outstanding amount under this agreement was €52.9 billion.

5.3 Eurosystem Reserve Management Services

A number of Eurosystem central banks provide services under the ERMS framework

In 2019 a comprehensive set of financial services continued to be offered within the Eurosystem Reserve Management Services (ERMS) framework established in 2005 for the management of customers' euro-denominated reserve assets. A number of Eurosystem national central banks (the Eurosystem service providers) offer the complete set of investment services, under harmonised terms and conditions and in line with market standards, to central banks, monetary authorities and government agencies located outside the euro area, and to international organisations. The ECB performs an overall coordinating role, monitors the smooth functioning of the services, promotes changes to improve the framework and prepares related reports for the ECB Governing Council.

In 2019 one additional central bank started offering ERMS services, bringing the total number of Eurosystem service providers to ten. The number of customer accounts in the ERMS was 273 at the end of 2019, compared with 277 at the end of 2018. The total aggregated holdings (including cash assets and securities holdings) managed within the ERMS framework decreased by approximately 7.5% in 2019 compared with 2018.

Box 6
ECB enhances reporting on foreign exchange interventions

On 26 September 2019 the Governing Council of the ECB decided to publish additional data on the ECB's foreign exchange interventions (FXIs) as of April 2020. The aim of this new publication is to enhance communication and transparency in this domain in line with the accountability practices in other policy areas while safeguarding the ECB's ability to carry out interventions in the foreign exchange market in an effective manner. In the case of the asset purchase programme, as an example of accountability practices, the Eurosystem provides regular data on the volume and the distribution of purchases across programmes and jurisdictions.

The exchange rate is not a policy target for the ECB. Since the inception of the euro, the ECB has intervened in the foreign exchange market twice – in 2000 and 2011 (see Table A). The ECB intervened first in 2000 owing to concerns about the global and domestic repercussions of the exchange rate of the euro, including its impact on price stability. Initially the ECB and the US and Japanese authorities intervened in a coordinated manner on 22 September, and then the ECB intervened unilaterally in November. Second, at the request of the Japanese authorities, the ECB and

[50] In the context of the loan facility agreement between the Member States whose currency is the euro (other than Greece and Germany) and Kreditanstalt für Wiederaufbau (acting in the public interest, subject to the instructions of and with the benefit of the guarantee of the Federal Republic of Germany) as lenders and the Hellenic Republic as borrower and the Bank of Greece as agent to the borrower, and pursuant to Articles 17 and 21.2 of the Statute of the ESCB and Article 2 of Decision ECB/2010/4 of 10 May 2010.

the US, UK and Canadian authorities intervened in a coordinated manner on 18 March 2011 in response to movements in the exchange rate of the yen associated with the tragic events in Japan.

Table A

ECB foreign exchange interventions to date

Period	Date	Intervention type	Currency pair	Currency bought	Gross amount (EUR millions)	Net amount (EUR millions)
Q3 2000	22/09/2000	Coordinated	EUR/USD	EUR	1,640	1,640
	22/09/2000	Coordinated	EUR/JPY	EUR	1,500	1,500
Q4 2000	03/11/2000	Unilateral	EUR/USD	EUR	2,890	2,890
	03/11/2000	Unilateral	EUR/JPY	EUR	680	680
	06/11/2000	Unilateral	EUR/USD	EUR	1,000	1,000
	09/11/2000	Unilateral	EUR/USD	EUR	1,700	1,700
	09/11/2000	Unilateral	EUR/JPY	EUR	800	800
Q1 2011	18/03/2011	Coordinated	EUR/JPY	EUR	700	700

Source: ECB.

With the change in the publication policy, the ECB will provide data on FXIs using a structured and systematic approach in terms of frequency and data coverage. The ECB has previously used several channels to disclose FXI information, including its weekly financial statements, Annual Accounts and Annual Report. Going forward, the ECB will publish FXI data in a table on its website and in the ECB's Annual Report. The table on the website will be updated quarterly, with a delay of one quarter. With the first publication, the table will disclose all FXI historical data since 1999. The ECB's Annual Report will from now on also provide additional background information and summarise any new developments in FXIs, as appropriate. In addition, the ECB Annual Accounts will state whether or not any FXIs were carried out during the year under review. The commentary on the weekly financial statement will also contain a general reference to any intervention occurring the week before, as in previous occurrences in 2000 and 2011.

The new reporting framework will cover FXIs carried out by the ECB unilaterally and in coordination with other authorities, as well as exchange rate mechanism (ERM II) FX interventions "at the margins"[51]. It will encompass the total amount (net and gross), the direction (sale or purchase), the breakdown per currency and the date(s) of intervention. In the interests of full transparency, the absence of any FXIs will also be explicitly stated in the quarterly table.

This step brings the ECB's communication policy on FXIs into line with the accountability practices it has developed in other areas over the years. These practices go beyond what is strictly required by the Treaty on the Functioning of the European Union. In this way the ECB is providing relevant information on its strategy, assessments and policy decisions to the broader public and the financial markets. This helps the ECB foster credibility by being transparent about how it performs its tasks. Each ERM II member central bank remains responsible for disclosing FXI data according to its own practice.

[51] Exchange rate mechanism (ERM II) interventions at the margins are interventions that take place when a currency's exchange rate against the euro reaches the margins of its pre-agreed fluctuation band (i.e. the band within which ERM II member currencies are allowed to fluctuate against the euro). These interventions are, in principle, automatic and unlimited.

6 More banknotes and low level of counterfeiting

The ECB and the euro area national central banks (NCBs) are responsible for issuing euro banknotes within the euro area, for guaranteeing the availability of cash and for maintaining confidence in the currency. The number and value of euro banknotes in circulation have been rising since their introduction in 2002, and generally at a faster pace than economic growth. In 2019 the number of counterfeits remained at a low level, owing to a combination of factors, including enhanced security features in the new Europa series, continuous cooperation with law enforcement, regular communication with the public and training offered to professional cash handlers. In May 2019 the new €100 and €200 banknotes were introduced with new, innovative security features, completing the Europa series of banknotes.

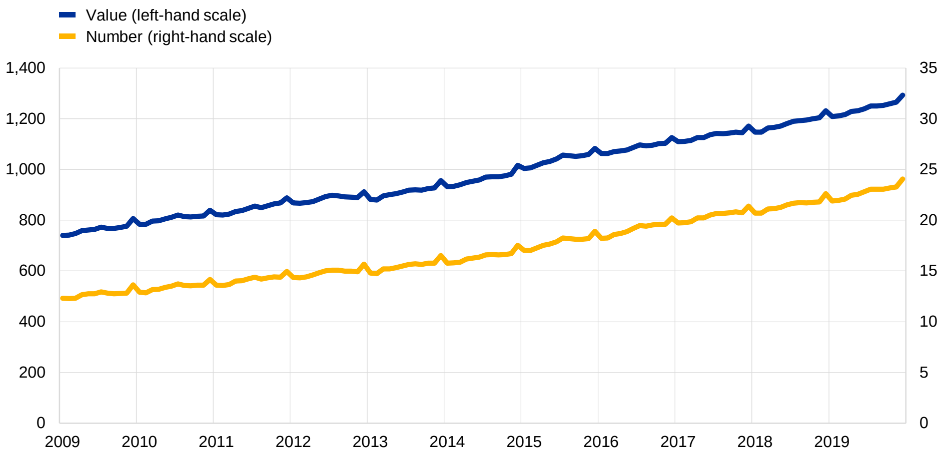
6.1 Banknote circulation continued to increase

In 2019 the number and value of euro banknotes in circulation grew by around 6.4% and 5.0% respectively. At the end of the year there were 24.1 billion euro banknotes in circulation, with a total value of €1,293 billion (see Charts 25 and 26). The €50 banknote accounted for nearly half of both the number and value of banknotes in circulation. The €200 banknote had by far the highest annual growth rate, reaching 61.4% in 2019, as it fulfilled part of the demand for the €500 banknote, the issuance of which was stopped. The total value of €100 banknotes in circulation at the end of 2019 stood at €305 billion, which is equal to the combined value of all euro banknote denominations in circulation in July 2002. Growth in the €100 and €50 banknotes remained high, at 8.8% and 7.4% respectively.

Chart 25

Number and value of euro banknotes in circulation

(left-hand scale: EUR billions; right-hand scale: billions)

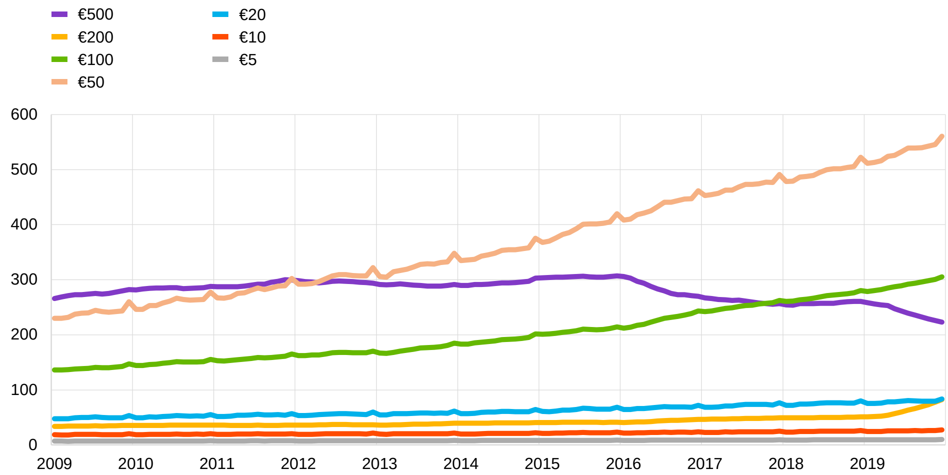


Source: ECB.

Chart 26

Value of euro banknotes in circulation by denomination

(EUR billions)



Source: ECB.

In terms of value, one-third of euro banknotes are held outside the euro area

It is estimated that, in terms of value, around one-third of the euro banknotes in circulation are held outside the euro area. These notes are predominantly held in neighbouring countries and are mainly the higher denominations. They are used as a store of value and for settling transactions in international markets.

The production of euro banknotes is shared among euro area NCBs, which were altogether allocated the production of around 3.7 billion banknotes in 2019.

The total number of euro coins in circulation increased by 3.3% in 2019, to 135.1 billion at the end of the year. The value of coins in circulation rose to €30 billion, 3.4% higher than at the end of 2018.

In 2019 euro area NCBs checked the authenticity and condition of some 30 billion banknotes, withdrawing around 5 billion from circulation as unfit. The Eurosystem also continued its efforts to help banknote equipment manufacturers to ensure that their machines meet the ECB's standards for checking euro banknotes for authenticity and condition prior to recirculation. In 2019 credit institutions and other professional cash handlers checked some 38 billion euro banknotes for authenticity and condition.

Introduction of the new €100 and €200 banknotes and stopping issuance of the €500

New €100 and €200 banknotes were released

On 28 May 2019 the new €100 and €200 banknotes entered into circulation. The introduction of the new notes completed the Europa series, which was launched in 2013 with the €5 banknote.

The issuance of the €500 banknote was stopped between January and April 2019 by all euro area NCBs. As is the case for the other denominations of the first series of euro banknotes, the €500 banknotes will remain legal tender and can therefore continue to be used as a means of payment and store of value. Banknotes of the first series (including the €500) will always retain their value, as they can be exchanged for an unlimited period of time at the euro area NCBs.

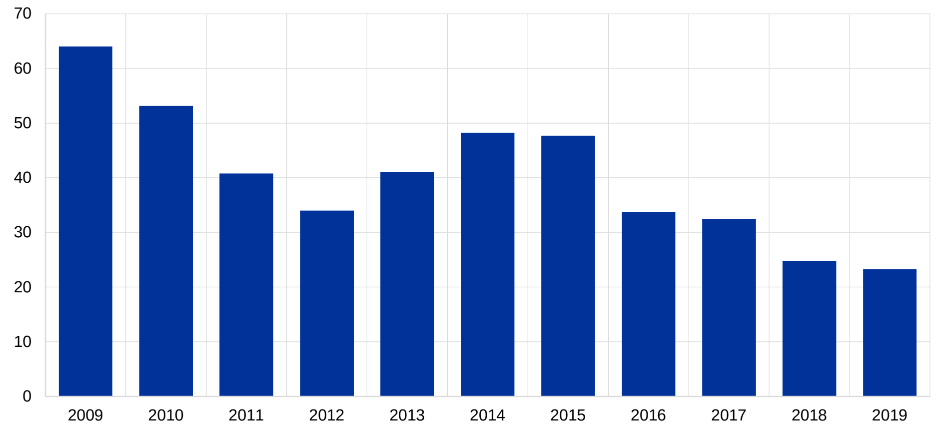
6.2 Euro banknote counterfeiting remained low in 2019

The number of counterfeit euro banknotes remained low in 2019, with around 559,000 counterfeits being withdrawn from circulation. This low number is the result of a combination of factors, including enhanced security features in the new Europa series, cooperation with law enforcement, and communication and training efforts at European and national level. Compared with the number of genuine euro banknotes in circulation, the proportion of counterfeits further decreased and is very low. Long-term developments in the number of counterfeits removed from circulation are shown in Chart 27.

Chart 27

Number of counterfeit banknotes per million genuine euro banknotes in circulation

(parts per million)



Source: ECB.

Counterfeiters mainly produce counterfeit €20 and €50 banknotes, which together accounted for more than 70% of the total number of counterfeits withdrawn from circulation in 2019. The share of counterfeit €50 banknotes declined in 2019.

The ECB advises the public to remain vigilant when receiving banknotes and remember the “feel-look-tilt” test

In spite of a decline in the deceptiveness of counterfeits withdrawn from circulation, the ECB continues to advise the public to remain vigilant when receiving banknotes, to remember the “feel-look-tilt” test, and not to rely on just one security feature. In addition, training is offered to professional cash handlers on a continuous basis, both in Europe and beyond, and up-to-date information material is made available to the public to support the Eurosystem’s fight against counterfeiting. The ECB also cooperates with Europol, Interpol and the European Commission in pursuit of this goal.

6.3 Pursuing greener banknotes

In 2004 the Eurosystem conducted a life cycle assessment of euro banknotes based on the ISO 14040 series of standards, pioneering in assessing the environmental impact of banknotes over their whole life cycle. This complex assessment has been the main source of information for implementing measures to reduce the environmental impact of euro banknotes. For instance, the Eurosystem has put in place an accreditation system for manufacturers of euro banknotes and their components which includes an environmental management system and has focused, among other things, on moving gradually towards the target of 100% use of sustainable cotton fibres in euro banknote paper.

The Eurosystem has also been monitoring on an annual basis key consumption and emissions data from all accredited manufacturers, seeking to improve the environmental performance of the production process.

7 Statistics

The ECB – assisted by the national central banks (NCBs) – develops, collects, compiles and disseminates a wide range of statistics and data which are needed to support the monetary policy of the euro area, financial stability and various other tasks of the European System of Central Banks (ESCB) and the tasks of the European Systemic Risk Board (ESRB). These statistics are also used by public authorities, financial market participants, the media and the general public, contributing to the fulfilment of the ECB's transparency objective.

This chapter focuses on how to contain the reporting burden for banks and on statistics relating to fintech, including crypto-assets. Two boxes focus respectively on the independent determination process for the euro short-term rate (€STR) based on the relevant Guideline (Box 7) and on the medium-term strategy for financial accounts statistics, setting out objectives for the coming years (Box 8).

7.1 Containing the reporting burden

The financial crisis led to a heavier reporting burden

The financial crisis revealed the limitations of aggregated statistics in providing the necessary information to serve policymakers in a situation of increased fragmentation across countries, sectors and markets. The ECB responded to these limitations by enacting new legal acts allowing it to obtain additional granular data which meet monetary policy, microprudential and macroprudential data needs, for example statistical datasets like the AnaCredit dataset, securities holdings statistics and money market statistics. This resulted in an increase in the reporting burden for banks.

Another issue that the banking industry is facing is the lack of cross-country harmonisation in reporting schemes, which originates from the ESCB's traditional approach whereby NCBs can fulfil European statistical requirements through their national reporting frameworks.

While there is a high degree of conceptual harmonisation in statistical reporting across the euro area, in practice, a large number of separate statistical reports are to be submitted to NCBs, with different transmission frequencies and timelines, and different levels of aggregation.

Moreover, the statistical reports partly overlap with a wide range of reports required by banking supervisors. This leads to redundancies and overlaps as well as complex reporting schedules and processes.

Understandably, the banking industry has highlighted this situation and called for a much more cost-efficient design and implementation of reporting requirements[52] while

[52] For instance, see "Boosting Europe", European Banking Federation, 2019.

maintaining the effectiveness of regulation and at the same time even further increasing data quality.

The Integrated Reporting Framework consolidates the existing ESCB statistical requirements for banks

Against this background, in 2016 the ESCB began working on consolidating the existing statistical requirements for banks through the development of an Integrated Reporting Framework (IReF), designed to establish an integrated solution for ESCB statistical reporting across countries and statistical domains. Under the new framework, which is expected to be implemented between 2024 and 2027, more granular data will be collected than in the existing datasets[53], allowing the coverage of the existing requirements in a unique framework and avoiding duplications of the requirements wherever possible. This means that, while the data volume will significantly increase, banks will have fewer statistical classifications and aggregations to perform, which are frequently resource-intensive activities; such tasks will instead be carried out by the ESCB, with an expected overall increase in data quality. The IReF will use a unique data model and dictionary, which are expected to fully standardise definitions and ensure methodological soundness. Granular data are inherently flexible in that they can be combined in different ways to provide new products and services, and it is expected that this may reduce the frequency of changes in the legal reporting framework and, at the same time, decrease the need for ad hoc data requests by the authorities.

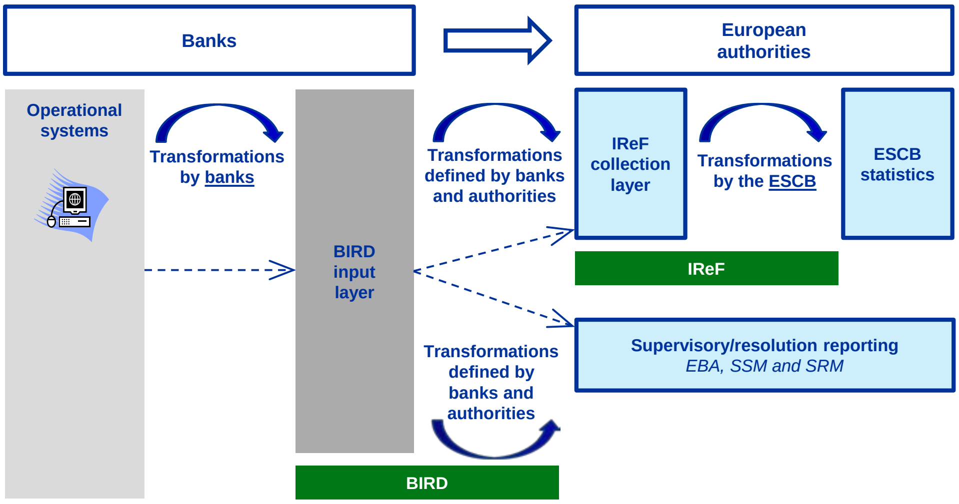
The Banks' Integrated Reporting Dictionary complements the Integrated Reporting Framework

As shown in Figure 2, the ESCB's overall strategy for collecting data from banks also foresees supporting reporting agents in optimising the organisation of the information stored in their internal operational systems (e.g. for accounting, risk management, securities or deposits) in an "input layer", which could then provide the basis for fulfilling all applicable reporting requirements based on standardised transformation rules. With this aim, a group composed of representatives of the ECB, some euro area NCBs and the banking industry is developing a Banks' Integrated Reporting Dictionary (BIRD). The scope of the BIRD goes beyond ESCB statistical datasets to cover supervisory and resolution reporting.

53 Here we refer primarily to the datasets related to the reporting obligations of deposit-taking corporations set out in: the ECB statistical regulations on balance sheet items and interest rates of monetary financial institutions; the sectoral module of the Regulation concerning statistics on holdings of securities; and the AnaCredit Regulation on granular credit and credit risk data.

Figure 2

ESCB strategy for collecting data from banks



Notes: EBA: European Banking Authority; SSM: Single Supervisory Mechanism; SRM: Single Resolution Mechanism.

The ESCB is conducting a cost-benefit analysis of the Integrated Reporting Framework

In 2018 the ESCB decided to launch a cost-benefit analysis of the IReF in close cooperation with the banking industry and other relevant stakeholders, with a view to assessing the impact of the initiative on the supply and demand sides. The first step consisted of a qualitative stock-taking questionnaire on the state of play of statistical reporting across domains and countries in order to identify the main cost factors and potential benefits of the IReF. In 2019 the ESCB Statistics Committee assessed the results of the qualitative stock-taking questionnaire and designed concrete scenarios for the IReF as regards various data collection and statistical production aspects. The next step in 2020 will be to assess, by means of a questionnaire, the costs and benefits of these scenarios. The scenarios were developed by focus groups that involved field experts from the ESCB and, on selected topics, representatives from the banking industry. The new questionnaire will be based on a draft IReF reporting scheme, which will allow respondents to rate scenarios based on concrete proposals for reporting requirements. The ESCB will then assess the results and, if they show support for the IReF, identify the optimal features that would best suit the industry and the ESCB users and compilers.

If the outcome of the overall cost-benefit analysis is satisfactory, the Governing Council of the ECB may decide to proceed with the IReF. A draft ECB regulation would be developed for a public consultation before its adoption and implementation. IReF requirements would be mandatory for all euro area banks.

7.2 New and enhanced euro area statistics

Fintech and crypto-assets

The ECB monitors the crypto-asset phenomenon and fintech

Statistics on technological innovation that is used to support or provide financial services (fintech) are being developed and enhanced, in order to continue meeting statistics users' needs in a digitally transformed world. In particular, in early 2019 the Directorate General Statistics of the ECB set up an internal crypto-asset dataset and established a set of indicators based in the first instance on publicly available aggregated data. This dataset and set of indicators, after undergoing quality checks and being complemented with other data from commercial sources[54], provided input into the ECB's monitoring of the crypto-asset phenomenon[55]. Using big data technologies, it was possible for the ECB to create an automated set of procedures for collecting, handling and integrating several crypto-asset data collections. An important component of this work is the investigation of the statistical classification of crypto-assets. With respect to fintech, while the discussion on fintech statistical definitions as well as related data needs is also taking place in international fora[56], the ECB has been building an experimental internal dataset on fintech entities in the euro area[57], in line with similar initiatives implemented at some euro area NCBs. The aim is to gain insights into linkages between the financial sector and fintech, the opportunities the latter unlocks and the risks it poses.

Box 7

Independent determination process for the euro short-term rate (€STR)

Following two years of intensive preparations by the Eurosystem and reporting banks, the ECB published the euro short-term rate (€STR) for the first time on 2 October 2019 (see Section 5.1). The €STR, which reflects the wholesale euro unsecured overnight borrowing costs of euro area banks, is calculated and published by the ECB's statistical function, ensuring that the determination of the rate is separate from the ECB policy functions. In line with the €STR Guideline a control framework has been created to protect the integrity and independence of the determination process and to deal with any existing or potential conflicts of interest.

The €STR Guideline establishes the ECB's responsibility for the administration of the rate, as well as the tasks and responsibilities of the ECB and the NCBs with respect to their contribution to the €STR determination process and other business procedures. Pursuant to the €STR Guideline an internal Oversight Committee was created to review, challenge and report on all aspects of the €STR

54 See "Dataset and indicators to monitor the crypto-assets phenomenon", ECB staff presentation; an ECB staff article on this topic will also feature in the forthcoming Irving Fisher Committee on Central Bank Statistics (IFC) Working Group on Fintech data report (H1 2020).

55 See ECB Crypto-Assets Task Force, "Crypto-Assets: Implications for financial stability, monetary policy, and payments and market infrastructures", *Occasional Paper Series*, No 223, ECB, May 2019, and the article entitled "Understanding the crypto-asset phenomenon, its risks and measurement issues", *Economic Bulletin*, Issue 5, ECB, 2019.

56 See "2018 IFC Annual Report", Irving Fisher Committee on Central Bank Statistics, Bank for International Settlements, March 2019.

57 See "Characterisation of the euro area fintech scene", *Financial Integration and Structure in the Euro Area*, ECB, March 2020.

determination process. Furthermore, the €STR determination process is subject to regular internal and external audits. In order to ensure that the €STR procedures are in line with international best practice, the International Organization of Securities Commissions (IOSCO) Principles for Financial Benchmarks are transposed into the €STR Guideline – where relevant and appropriate.

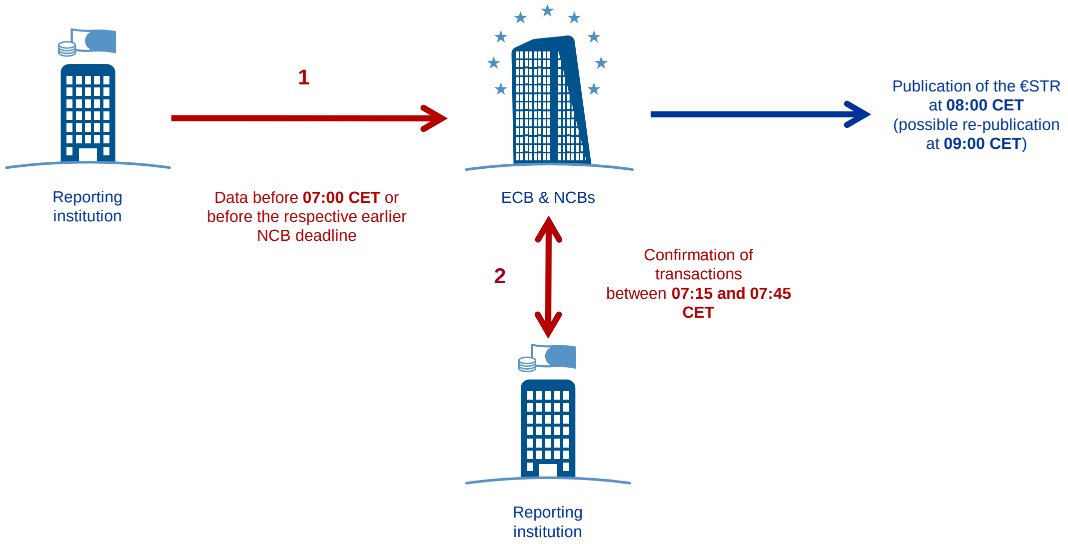
The ECB published the €STR for the first time on 2 October 2019, reflecting trading activity on 1 October 2019. The €STR is published on the ECB's website[58] at 08:00 CET on every TARGET2 business day based on transactions conducted and settled on the previous TARGET2 business day. If errors are detected following the publication of the €STR that affect it by more than 2 basis points, the €STR is revised and re-published on the same day at 09:00 CET. The €STR is not revised after that time. Immediately after publication by the ECB, the €STR is made available by commercial data providers via real-time market data feeds. To support the transparency of the benchmark determination process, the ECB periodically publishes summary information on errors larger than 0.1 basis point that are detected after the standard publication and do not meet the re-publication criteria.

The €STR is based entirely on actual transactions in euro that are reported by banks in accordance with the Money Market Statistical Reporting (MMSR) Regulation, as recently amended to enhance the availability of high-quality statistics on the euro money market.[59] The MMSR reporting agents – numbering 50 at the cut-off date for data in this report – submit data either indirectly via the respective NCB (the Deutsche Bundesbank, the Banco de España, the Banque de France or the Banca d'Italia) or directly to the ECB before 07:00 CET (see Figure A). The data then go through a quality assurance process, which includes a set of technical checks, a large number of consistency checks, and a set of targeted data quality checks to identify which transactions, if any, should be excluded from the calculation of the €STR. The process of confirming the transactions takes place between 07:15 and 07:45 CET. During this process the ECB, in cooperation with the NCBs, asks the reporting institutions to verify that the identified transactions are correct.

58 The €STR is published on the ECB's website, via the ECB's Market Information Dissemination (MID) platform, and in the ECB's Statistical Data Warehouse (SDW), with the MID platform being the main publication channel.

59 The reporting requirements for the MMSR as well as a list of the current reporting agents are available on the ECB's website. The regular MMSR data collection started on 1 July 2016.

Figure A
€STR business process



Source: ECB.

Box 8
Medium-term strategy for financial accounts statistics

In 2019 the ESCB's Statistics Committee finalised the development of a new medium-term strategy for quarterly financial accounts statistics. The aim of this initiative was to plan how to further develop financial accounts statistics taking into account new analytical needs and ongoing improvements in statistical capacity (e.g. the increased granularity of data), and how to meet the challenges posed by globalisation and increased international interdependencies. The design of the medium-term strategy involved thorough examinations of analytical needs, data sources and compilation options, in close cooperation with data users and experts from the different statistical domains, e.g. compilers of balance of payments statistics or MFI balance sheet data.

The strategy sets out five objectives to be addressed in the coming years. First, the challenges globalisation poses for financial accounts statistics, linked to the deepening of international interdependencies and economic integration, will be addressed by an increased alignment of these statistics with balance of payments and international investment position statistics, an increase in the granularity of data on cross-border activities, and a specific statistical focus on multinational enterprises. Second, the need to shed further light on non-bank financial intermediation will be met through a more detailed sectoral breakdown and increased granularity of data on financial instruments. Third, increasing analytical needs related to understanding interconnectedness at the macro level with a focus on investment and financing interdependencies, policy spillover channels and contagion chains will be served by enhancing the "from-who-to-whom" framework, which shows creditor-debtor links, through a more detailed sectoral and/or geographical breakdown. Fourth, the statistical analysis of the household sector will be enhanced by introducing distributional measures for household wealth and indebtedness as well as developing an analysis to identify the indirect exposure of households to the underlying investment of funds in securities, equity and other assets (known as investment funds "look-through"). Fifth, the strategy aims to increase the serviceability of financial accounts data, for instance in terms of timeliness and back-data availability.

The workstreams aiming to achieve these objectives take into account the requirements in the context of the second phase of the G20 Data Gaps Initiative[60] and will exploit ongoing initiatives in supporting statistical fields. The development phase, which began in 2019, is generally scheduled for the next three to five years, and will also involve a review of existing ECB statistical regulations and guidelines where this is relevant for implementing the new financial accounts statistical outputs. In a fast-changing environment, the strategy should be seen from the outset as dynamic and adjustable.

The implementation of the medium-term strategy for financial accounts statistics will be a collective effort to face the various challenges in a coordinated manner and with a clear set of objectives, taking advantage of the opportunities emerging from changes in data availability and statistical capacity, and aiming to keep financial accounts statistics relevant and fit for purpose.

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[60] For further details, see "G20 Data Gaps Initiative (DGI-2): The Fourth Progress Report – Countdown to 2021", Financial Stability Board and International Monetary Fund, 2019.

8 Research at the ECB

Economic research makes an important contribution to the analysis of economic developments and of the transmission of policy interventions and thereby underpins the achievement of policy objectives. In the light of the economic environment in 2019, inflation dynamics, household finance, and the interplay between monetary policy, financial stability and the real sectors of the economy remained at the core of the 2019 research priorities.

8.1 Research networks

Three research clusters and various research networks play an important role in coordinating the research efforts within the European System of Central Banks (ESCB) and in maintaining relations with academic researchers. In 2019 the three ESCB research clusters on monetary policy, financial stability and the competitiveness of euro area economies continued to organise workshops on related issues. In addition, a Research and Policy Network on Central Bank Communication, co-led by the ECB, was established within the framework of the Centre for Economic Policy Research (see also Section 11.2).

What is the interplay between monetary and macroprudential policies?

One particular focus of research at the ECB is macroprudential policies and their interaction with monetary policies. In 2019 a taskforce studied the various spillovers between the two kinds of policy, including the effects of monetary policy on financial stability and the impact of macroprudential policy on the real economy. In 2020 the focus will be on the optimal coordination between the two kinds of policy.[61]

What can price-setting microdata tell us about inflation dynamics?

The PRISMA (price-setting microdata analysis) Research Network studies the price-setting behaviour of individual firms and in the retail sector using micro price datasets. Research addresses the relationship between the price setting of individual firms and aggregate inflation dynamics, in particular whether price-setting behaviour is affected by low inflation, the monetary policy stance and the state of the business cycle.

What does household heterogeneity mean for monetary policy transmission?

The Household Finance and Consumption Network (HFCN) has finished its work on the third wave of the Household Finance and Consumption Survey (HFCS), the results of which will be released in 2020. Research has, among other things, studied the implications of household heterogeneity for the transmission of monetary policy, for example its role in policy transmission across the income distribution. The HFCS has also been used as an essential input into micro-simulation models which quantify the effects of stress-testing scenarios on households.

61 See Cozzi, G. et al., "Macroprudential policy measures: macroeconomic impact and interaction with monetary policy", *Working Paper Series,* No 2376, ECB, February 2020, and Albertazzi, U. et al., "Monetary policy and bank stability: the analytical toolbox reviewed", *Working Paper Series*, No 2377, ECB, February 2020.

The Competitiveness Research Network (CompNet), a research forum for the study of productivity and competitiveness in EU countries, completed a new wave of data collection to improve the coverage and cross-country comparability of its firm-level dataset of competitiveness indicators. In 2019, the CompNet dataset was, for instance, used in studies on the role of trade and fiscal and labour market policies in the reallocation of capital and labour.

In 2019 the ECB launched a project to collect data on consumer expectations in the euro area via a regular online survey. The survey will be conducted in cooperation with national central banks and will cover expectations on inflation, the labour market, consumption and savings behaviour, and consumer finances. It will enable the ECB to study the role of consumers' expectations in their economic and financial decisions.

8.2 Conferences and publications

The ECB again organised a number of conferences, among them the Sintra forum on 20 years of EMU

The ECB again organised several high-level research events in 2019. The 2019 ECB Forum on Central Banking in Sintra discussed the lessons of 20 years of European Economic and Monetary Union (EMU), with a focus on the diverse progress of economic convergence and the role of fiscal and monetary policies in macroeconomic stabilisation (see also Box 12 in Chapter 12). The ECB's fourth Annual Research Conference featured innovative research related to secular stagnation, financial market structures and the role of big data in economics. Other important conferences were related to structural reforms in the euro area, inflation developments, global trade, labour markets, fiscal policy and EMU governance, consumer expectation surveys, gender and career progression, and monetary and macroprudential policies.

The ECB released its research in various publication series

In 2019, 129 papers prepared by ECB staff were published in the ECB's Working Paper Series. In addition, a number of more policy-oriented or methodological studies were published via the ECB's Occasional Paper Series, Statistics Paper Series and Discussion Paper Series. Many of the ECB's research activities also resulted in the publication of papers in scientific journals. Furthermore, research findings were reported to a wider audience, for instance via 12 articles published in the ECB's Research Bulletin. Boxes 9 and 10 summarise two sets of research findings from 2019.

Box 9

Market concentration, market power and employment dynamism in the euro area

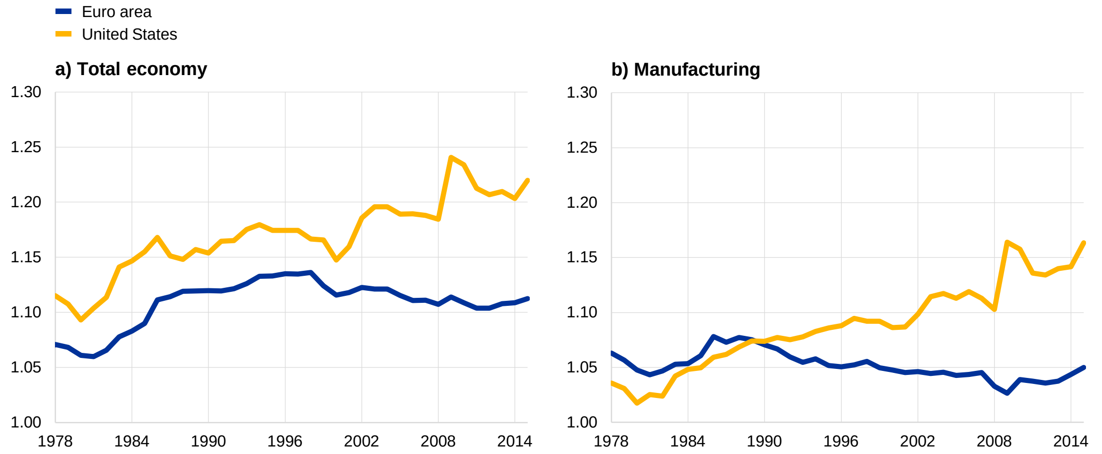
There is an extensive public debate on whether the market power of firms has become excessive over the last decades. For the United States, studies have documented that firm concentration ratios have increased, with a larger market share accounted for by a few firms. In relation to this, the level of competition has declined, allowing firms to increase the mark-up of prices above their marginal costs, while employment dynamism has weakened.

A recent ECB study[62] examined related developments in the four largest euro area economies (Germany, France, Italy and Spain). It did not find evidence of an increase in the market power of firms since the 1990s in these countries. In fact, while the mark-up of prices over costs has increased to a level of above 20% from close to 15% in the United States since the 1990s, it has declined marginally in the euro area (see Chart A). This is largely the result of developments in manufacturing, possibly driven by the impact of deeper trade and monetary integration in the euro area. Moreover, in apparent contrast to developments in the United States, concentration ratios have remained broadly stable in the euro area in recent years, both at the aggregate and the national level.

Chart A

Developments in mark-ups in the euro area and the United States

(mark-up of prices over production costs)



Source: Cavalleri et al. (2019).
Note: A mark-up of 15% corresponds to a gross mark-up value of 1.15 as shown in the chart.

While market power is generally regarded as welfare-reducing (as it results in firms raising prices and producing less), it may also have beneficial effects in innovative sectors, as the prospect of enjoying market power is a major incentive for firms to innovate. Indeed, the study found that in high-tech industries high concentration is associated with higher growth rates of total factor productivity.

Finally, job market dynamism, measured by the rates of job creation and destruction, has weakened substantially over the past two decades in the United States, but has remained stable in the euro area. Still, the labour market in the United States remains substantially more dynamic than the one in the euro area. Overall, there are no signs of major shifts in market power and employment dynamism in the large euro area economies.

[62] Cavalleri, M. C., Eliet, A., McAdam, P., Petroulakis, F., Soares, A. and Vansteenkiste, I., "Concentration, market power and dynamism in the euro area", *Working Paper Series*, No 2253, ECB, March 2019.

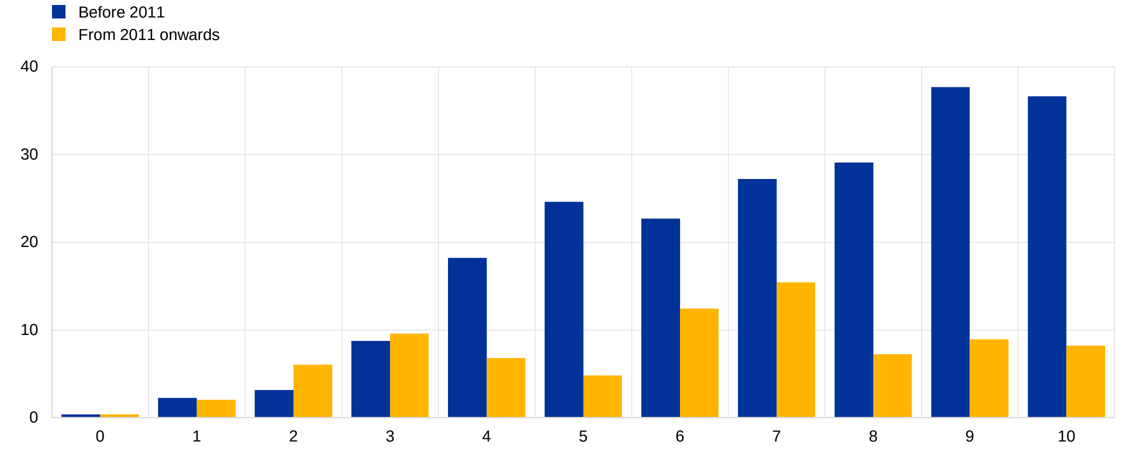
Box 10
Gender balance in career progression at the ECB

The gender gap in labour markets has attracted increasing attention in recent years. A recent ECB working paper[63] explores this gap in central banking, a stereotypical male-dominated occupation. The paper analyses the career progression of men and women at the ECB using confidential anonymised personnel data on professional staff between 2003 and 2017. The analysis focuses on expert staff across four different salary bands in comparable business areas related to economic analysis, thereby achieving a homogeneous pool of staff in terms of human capital and experience.[64]

The study finds that, before 2011, women were less likely to be promoted to a higher salary band than men. The difference largely disappeared after 2011, when the ECB took several measures to support gender balance and issued a public statement supporting diversity. Chart A shows the evolution of the gender gap in the probability of promotion to a higher salary band in the ten years after entry to the F/G salary band (the entry-level salary band for expert staff at the ECB). The gap ten years after entry stood at 36% before 2011, but decreased to 8% thereafter.

Chart A
Gender promotion gap before and after 2011

(percentages; number of years after entry)



Source: Hospido, Laeven and Lamo (2019).
Notes: The chart shows the evolution of the gender gap in the average annual probability of promotion from the F/G salary band in the ten years after entry before and after 2011. The gender promotion gap is defined as the difference in the average annual promotion rates of men and women relative to the promotion probability of men.

Data after 2011 allow for a more detailed exploration of the promotion process. This reveals that, after having applied for promotion, women were actually more likely than men to be promoted. They also performed better in terms of subsequent salary progression, suggesting that the higher probability of being promoted was based on merit, not on positive discrimination.

However, women were less likely to apply for a promotion in the first place. Some evidence indicates that such a gender gap in applications reflects the reluctance of women to apply when they expect the

63 Hospido, L., Laeven, L. and Lamo, A., "The gender promotion gap: evidence from central banking", *Working Paper Series*, No 2265, ECB, April 2019.

64 More precisely, the analysis includes the Directorates General Economics, Macroprudential Policy & Financial Stability, International & European Relations, Market Infrastructure & Payments, Market Operations, Monetary Policy, Research, and Statistics, and the Directorate Risk Management.

level of competition to be high. For instance, women were less likely to apply in a campaign open to external candidates or when competing with a large number of immediate colleagues with relatively high salary levels. Taken together, these results suggest that institutional efforts to foster gender balance may have to include measures aimed at lowering the barriers to women seeking and applying for promotion opportunities. (See Section 12.1 for information on the ECB's efforts to promote gender diversity in 2019.)

9 Legal activities and duties

This chapter deals with the jurisdiction of the Court of Justice of the European Union concerning the ECB; reports on ECB opinions and cases of non-compliance with the obligation to consult the ECB on draft legislation falling within its fields of competence; and reports on the ECB's monitoring of compliance with the prohibition of monetary financing and privileged access.

9.1 Jurisdiction of the Court of Justice of the European Union concerning the ECB

The Court of Justice annulled a decision of the Latvian Anti-Corruption Office in so far as it prohibited Mr Ilmārs Rimšēvičs from performing his duties as Governor of Latvijas Banka

On 26 February 2019 the Court of Justice of the European Union (CJEU) annulled the decision of the Korupcijas novēršanas un apkarošanas birojs (Latvian Anti-Corruption Office) of 19 February 2018 in so far as it prohibited Mr Ilmārs Rimšēvičs from performing his duties as the Governor of Latvijas Banka. The separate actions brought by Mr Rimšēvičs (C-202/18) and the ECB (C-238/18) against that decision were the first cases which the CJEU had heard on the basis of the jurisdiction conferred on it by the second subparagraph of Article 14.2 of the Statute of the European System of Central Banks and of the European Central Bank (Statute of the ESCB). First, the CJEU found that a prohibition, even a temporary one as in this case, of a governor of a national central bank from performing his duties constitutes a relieving from office and that it is therefore for the CJEU to review the lawfulness of that prohibition. Second, the CJEU held that the action referred to in the second subparagraph of Article 14.2 of the Statute of the ESCB had as its purpose the annulment of an act of national law because of the "particular institutional context" in which the ESCB operates. Third, the CJEU concluded that Latvia had not established that the relieving of Mr Rimšēvičs from office was based on the existence of sufficient indications that he had engaged in serious misconduct for the purposes of the second subparagraph of Article 14.2 of the Statute of the ESCB.

The General Court dismissed an action for damages against the ECB relating to an ECB opinion issued in the context of the Greek debt restructuring in 2012

On 23 May 2019 the General Court dismissed the action for damages against the ECB brought by several bondholders (Case T-107/17). The damages claimed related to the haircut affecting certain Greek government bonds in the context of a partial restructuring of Greece's sovereign debt in 2012. The applicants had argued that the ECB, in its Opinion of 17 February 2012 (CON/2012/12), failed to point to the illegality of the Hellenic Republic's intended debt restructuring. The ECB Opinion was on the draft Greek law retrofitting collective action clauses into sovereign bonds governed by Greek law. The General Court found that the restructuring did not violate the applicants' fundamental right to property protected by Article 17 of the Charter of Fundamental Rights. It also rejected all other illegality claims made by the applicants. Accordingly, the General Court concluded that the ECB was not liable for damages for not pointing to the alleged illegality of the Greek law in its Opinion. The judgement has been appealed before the Court of Justice.

The General Court ruled that an assessment by the ECB regarding whether a credit institution is failing or likely to fail is a preparatory act that cannot be challenged before the EU Courts

On 6 May 2019 the General Court in two different cases (T-283/18 Bernis and Others v ECB and T-281/18 ABLV Bank v ECB) ruled that a “failing or likely to fail” assessment adopted in the context of the resolution of a credit institution is a preparatory measure that is not open to independent judicial review. In these cases, actions were brought by a credit institution and its direct and indirect shareholders against an assessment by the ECB concerning whether ABLV Luxembourg was failing or likely to fail within the meaning of Article 18(1) of Regulation (EU) No 806/2014 of the European Parliament and of the Council of 15 July 2014 establishing uniform rules and a uniform procedure for the resolution of credit institutions and certain investment firms in the framework of a Single Resolution Mechanism and a Single Resolution Fund. The General Court upheld the position of the ECB that such assessment should be considered as a mere factual assessment that has in itself no legal effect and is therefore not challengeable before the EU Courts.

The Court of Justice confirmed the ECB’s exclusive competence for the supervision of all credit institutions within the SSM

On 8 May 2019 the CJEU in case C-450/17 P (Landeskreditbank Baden-Württemberg v ECB) upheld the judgement of the General Court by which the General Court dismissed an action seeking the annulment of a decision of the ECB. In that decision, the ECB had informed the Landeskreditbank that on account of its size it was subject solely to the ECB’s supervision rather than shared supervision under the Single Supervisory Mechanism (SSM), pursuant to Article 6(4) of Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions. The Landeskreditbank’s challenge to this decision was dismissed by the General Court. The CJEU confirmed that the ECB is exclusively competent for the supervision of all credit institutions on the basis of Article 4 of Regulation No 1024/2013. The national competent authorities assist the ECB in carrying out the tasks conferred on it by Regulation No 1024/2013, through a decentralised implementation of some of those tasks in relation to less significant credit institutions, within the meaning of the first subparagraph of Article 6(4) of that Regulation.

The Court of Justice partially reversed the ruling from the General Court whereby shareholders of a credit institution were granted standing to challenge a decision of the ECB to withdraw the banking licence of that credit institution

On 5 November 2019 the CJEU partially reversed the ruling from the General Court whereby shareholders of a credit institution were granted standing before the EU Courts to challenge an ECB decision to withdraw the banking licence of that credit institution (joined cases C-663/17 P, C-665/17 P and C-669/17 P, Trasta Komercbanka and Others v ECB). Following an appeal from the ECB, the CJEU had to rule for the first time on the admissibility of an action for annulment brought by shareholders of a credit institution against an ECB supervisory decision addressed to the credit institution in which they hold shares. The CJEU ruled that the decision did not directly concern the shareholders for the purposes of the fourth paragraph of Article 263 of the Treaty on the Functioning of the European Union and, consequently, the action brought on their behalf was declared inadmissible. The CJEU also ruled that the action brought on behalf of Trasta Komercbanka by the legal representative of the former management should be considered admissible to comply with the right to an effective judicial protection as provided by Article 47 of the Charter of Fundamental Rights.

9.2 ECB opinions and cases of non-compliance

Articles 127(4) and 282(5) of the Treaty on the Functioning of the European Union require that the ECB be consulted on any proposed EU or draft national legislation falling within its fields of competence. All ECB opinions are published on the ECB's website. ECB opinions on proposed EU legislation are also published in the Official Journal of the European Union.

In 2019 the ECB adopted six opinions on proposed Union acts and 40 opinions on draft national legislation falling within its fields of competence.

Clear and important cases of non-consultation

Eight cases of non-compliance with the obligation to consult the ECB on draft national legislation were recorded, with seven cases being considered clear and important[65]. The ECB was not consulted by: (i) the Bulgarian authorities on a law amending the Law on credit institutions in relation to the supervisory powers of Българска народна банка (Bulgarian National Bank) and its powers to impose administrative penalties; (ii) the Italian authorities on a decree law on urgent fiscal matters and other urgent needs; (iii) the Lithuanian authorities on a law on corporate income tax for financial market participants; (iv) the Portuguese authorities on a law amending the bank secrecy rules in the context of parliamentary enquiry committees and determining the disclosure of operations involving the use of public funds in credit institutions, and on a law reforming and extending the State's Organisation and Information System (SOIS); (v) the Romanian authorities on a law amending the Statute of Banca Naţională a României with respect to the holding of gold reserves managed by Banca Naţională a României; and (vi) the Swedish authorities on a law on the obligations of certain credit institutions and branches to provide cash services. No case of non-compliance with the consultation obligation in respect of proposed Union legal acts was identified.

The ECB adopted opinions on proposed EU and national legislation

The ECB adopted opinions on EU proposals concerning a governance framework for the budgetary instrument for convergence and competitiveness for the euro area, the conclusion of the Agreement on the withdrawal of the United Kingdom from the European Union, and the appointment of a new ECB President and new members of the ECB Executive Board.

The ECB adopted opinions on draft national legislation concerning national central banks (NCBs), including: reforms of the governance structures of the Nationale Bank van België/Banque Nationale de Belgique, the Central Bank of Cyprus, the Banca d'Italia, Latvijas Banka and the Banco de Portugal; the participation of Българска народна банка (Bulgarian National Bank) in the Single Resolution Mechanism; the financial independence of the Central Bank of Cyprus; lobbying requirements applicable to Česká národní banka; the ownership of Italy's gold reserves; the role of the Banque centrale du Luxembourg in the protection of the euro against counterfeiting and the authentication of euro coins; the Central Bank of Malta's oversight of payment services; freedom of information requirements applicable to De

[65] Cases of non-compliance include: (i) cases where a national authority failed to submit draft legislative provisions within the ECB's fields of competence for consultation to the ECB; and (ii) cases where a national authority formally consulted the ECB, but did not afford it sufficient time to examine the draft legislative provisions and to adopt its opinion prior to adoption of these provisions.

Nederlandsche Bank; the remuneration of executives and senior management of Narodowy Bank Polski; audit requirements applicable to the Banco de Portugal; the liability of Banka Slovenije for extraordinary measures regarding bank write-downs; and the conferral of new tasks on NCBs regarding the supervision of micro-credit lenders (the Bank of Greece), credit reference agencies (the Central Bank of Malta) and credit institutions' compliance with requirements relating to the restructuring of Swiss franc-denominated loans (Banka Slovenije).

The ECB adopted opinions on draft national legislation concerning prudential and financial supervisory matters, including: the establishment of close cooperation arrangements between the ECB and Hrvatska narodna banka within the framework of the Single Supervisory Mechanism; reforms of the institutional framework for banking and financial supervision in Austria, Latvia and Portugal; reforms of the institutional framework for macroprudential supervision in Portugal and Spain; reforms of the supervision of entities acquiring and selling credit facilities (including non-performing loans) in Cyprus, of micro-credit providers in Greece and of credit reference agencies in Malta; and the exchange of information between the ECB and the Danish authorities in relation to anti-money laundering.

The ECB adopted opinions on draft national legislation concerning means of payment, including cash limitations in Greece, Spain and the Netherlands, the ban of the €500 banknote in Denmark, and the expanded provision of cash services in Sweden.

The ECB adopted opinions on draft national legislation concerning banking and financial regulation, including: the legal framework for covered bonds in Estonia; a guarantee scheme for securitisations of non-performing loans originated by credit institutions in Greece; the protection of primary residences in Greece and Ireland; restrictions on transfers of residential mortgage loans in Ireland and Poland; special taxes or levies applicable to banks and/or financial institutions in Lithuania, Romania and Slovakia; macroprudential tools for residential mortgages in Luxembourg; requirements applicable to financial undertakings' remuneration policies in the Netherlands; the interest rate benchmark for consumer credit agreements in Romania; and the restructuring of Swiss franc consumer loans in Slovenia. The ECB also issued opinions on the impact of draft national legislation in the cybersecurity field on market infrastructures and credit institutions in Cyprus and Spain.

9.3 Compliance with the prohibition of monetary financing and privileged access

Pursuant to Article 271(d) of the Treaty on the Functioning of the European Union, the ECB is entrusted with the task of monitoring the compliance of the EU national central banks (NCBs) with the prohibitions implied by Articles 123 and 124 of the Treaty and Council Regulations (EC) Nos 3603/93 and 3604/93. Article 123 prohibits the ECB and the NCBs from providing overdraft facilities or any other type of credit facility to governments and EU institutions or bodies, as well as from purchasing in the primary market debt instruments issued by these institutions. Article 124 prohibits any measure, not based on prudential considerations, which establishes privileged access by governments and EU institutions or bodies to financial institutions. In parallel with the Governing Council of the ECB, the European Commission monitors Member States' compliance with the above provisions.

The ECB also monitors the EU central banks' secondary market purchases of debt instruments issued by the domestic public sector, the public sector of other Member States and EU institutions and bodies. According to the recitals of Council Regulation (EC) No 3603/93, the acquisition of public sector debt instruments in the secondary market must not be used to circumvent the objective of Article 123 of the Treaty. Such purchases should not become a form of indirect monetary financing of the public sector.

The prohibitions laid down in Articles 123 and 124 of the Treaty were in general respected

The ECB's monitoring exercise conducted for 2019 confirmed that Articles 123 and 124 of the Treaty were in general respected.

The monitoring exercise revealed that most NCBs in 2019 had remuneration policies for public sector deposits in place that fully complied with the remuneration ceilings. However, a few NCBs need to ensure that the remuneration rate for public sector deposits is not above the ceiling.

Following up on the concerns raised in the ECB's Annual Reports as of 2014, the ECB has continued to monitor programmes launched by the Magyar Nemzeti Bank in 2014 and 2015. In 2019 the Magyar Nemzeti Bank continued taking actions to alleviate the ECB's concerns as regards the scope of its engagement in the Pallas Athéné Public Thinking Programme. The case should, however, not serve as a precedent. The ECB will continue monitoring the involvement of the Magyar Nemzeti Bank in the Budapest Stock Exchange as the purchase of the majority ownership of the Budapest Stock Exchange by the Magyar Nemzeti Bank in November 2015 may still be seen as giving rise to monetary financing concerns.

The Central Bank of Ireland's reduction of assets related to the Irish Bank Resolution Corporation during 2019 through sales of long-duration floating rate notes is a significant step in the direction of the necessary full disposal of these assets. Continued sales at an appropriate pace would further mitigate the persisting serious monetary financing concerns.

10 The ECB in an EU and international context

In 2019 the ECB maintained its close dialogue with various European institutions, including the European Parliament which plays a key role in holding it accountable for its decisions. In international fora, the ECB engaged constructively in G20 discussions on the outlook for the global economy and, at the International Monetary Fund (IMF), the ECB actively contributed to a European perspective on international monetary and financial system issues as well as on the IMF's reviews of its policies under its surveillance and lending framework. The ECB continues to cooperate with and assist non-EU central banks across the world.

10.1 The ECB's accountability to the public

Accountability is the necessary counterpart to independence

The Treaty on the Functioning of the European Union gives a clear mandate to the ECB to maintain price stability in the euro area and states that the ECB is independent in using the relevant instruments for this purpose. The ECB's mandate and independence were enshrined in the Treaty through a democratic process. By being independent, the ECB is able to carry out its tasks free of political pressures and short-term considerations that could divert it from fulfilling its mandate. At the same time, accountability is the necessary counterpart to independence: to ensure the legitimacy of its decisions, the ECB has the obligation to explain them to the public and to their elected representatives. This is complemented by the judicial review of ECB decisions by the Court of Justice of the European Union. In other words, independence and accountability ensure respectively that the ECB *can* and *does* act in accordance with its mandate. In an environment where central bank independence has received renewed attention, in 2019 several speeches were delivered by ECB Executive Board members on the link between independence and accountability.[66]

The ECB is accountable to the European Parliament through multiple channels

The European Parliament plays a central role in holding the ECB accountable. In 2019 the Committee on Economic and Monetary Affairs of the European Parliament (ECON) held three of its regular hearings with the ECB President, including the first with Christine Lagarde (see Figure 3 below).[67] In January 2019 President Mario Draghi also attended the Parliament's plenary debate on the ECB Annual Report 2017, following which the European Parliament issued a resolution. The ECB provided feedback on this resolution. In 2019, 28 MEP letters containing written questions were sent to the ECB, the replies to which were published on the ECB's website, providing an opportunity to clarify the ECB's stance on a broad range of issues. The ECB is held

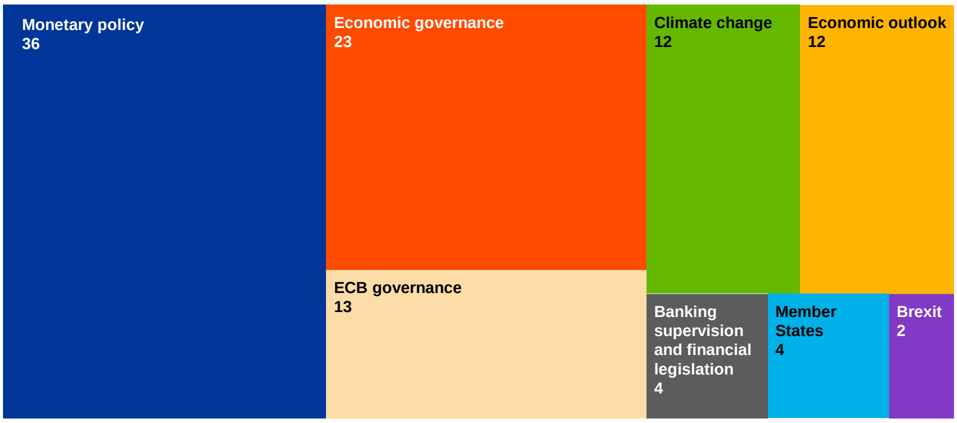
[66] In particular, Yves Mersch reflected on the principles of necessity, proportionality and probity with regard to central bank independence at the ECB and its Watchers XX conference in Frankfurt in March. He also provided the ECB's perspective on international trends in central bank independence during a roundtable discussion that took place in Frankfurt in November.

[67] For more information on the implications of Brexit, which was one of the issues discussed in the hearings, please refer to Box 11 below.

accountable for its banking supervision activities by both the European Parliament and the EU Council.[68] Furthermore, the European Court of Auditors and the ECB have agreed a Memorandum of Understanding that establishes practical information-sharing arrangements between the two institutions regarding audits on the ECB's supervisory tasks.

Figure 3

Number of questions addressed to the ECB President in ECON regular hearings in 2019 by topic



Source: ECB staff calculations.

2019 saw an all-time high in support for the euro

In 2019, the year of the 20th anniversary of the euro, Eurobarometer surveys reported that euro area citizens' support for the euro had reached a new all-time high, with more than 75% of respondents in favour of the single currency. This trend is encouraging to the ECB, which will continue to strengthen its dialogue with the citizens and their representatives.

10.2 International relations

G20

In 2019, G20 discussions under the Japanese Presidency focused on the outlook for the global economy and the policy measures that can be used to address a synchronised slowdown amid geopolitical uncertainties, trade conflicts and diminishing room for manoeuvre for macroeconomic policies. Trade tensions were discussed in each G20 meeting, though with limited progress. While leaders shared concerns about the risks to the global economy, they were divided on a number of topics, including the need for further action on climate change. The G20 continued its efforts to foster strong, sustainable, inclusive and balanced growth to improve the medium-term economic outlook. The group acknowledged progress in the financial regulatory reform agenda but also identified challenges still to be addressed, including

68 More detailed information is provided in the 2019 ECB Annual Report on supervisory activities.

the risks from growing non-bank financial intermediation. The G20 fostered considerable progress in international tax cooperation, with the aim of finalising an agreement by the end of 2020.

The G20 also followed up on the report of the G20 Eminent Persons Group on Global Financial Governance (EPG) entitled "Making the Global Financial System Work for All", with a focus in 2019 on development issues. Work is continuing under the current G20 Presidency. Among the EPG proposals, those for improving global financial resilience are of particular interest to the ECB.

Policy issues related to the IMF and the international financial architecture

The ECB continued to play an active role in discussions about the international monetary and financial system at the IMF and in other fora, promoting the central bank perspective in common European positions. A key topic of debate in 2019 was the Fund's resources. The ECB supports an adequately resourced IMF as a core component of the global financial safety net. In October 2019 the IMF membership endorsed a package of actions on IMF resources and governance reform, as part of which the membership expressed its support for maintaining the current level of resources through a doubling of the New Arrangements to Borrow and a further temporary round of bilateral borrowing beyond 2020. The package of actions needs to be implemented in the course of 2020 to avoid a decrease in IMF resources. The IMF's Executive Board proposed to its Board of Governors a resolution concluding the 15th General Review of Quotas without a quota increase, which was adopted in February 2020. The 16th General Review of Quotas, which will conclude by mid-December 2023, will revisit the adequacy of quotas and continue the process of IMF governance reform.

The IMF continued a number of important reviews of policies under its surveillance and lending framework. First, it concluded its latest review of conditionality and the design of Fund-supported programmes, for which a report by the International Relations Committee of the European System of Central Banks (ESCB) helped shape the European position. The review recommended that programme conditionality should be more realistic, gradual and parsimonious, with sharper debt sustainability analysis, while ensuring strong national ownership and recognising country-specific circumstances. Second, there was progress on the debt sustainability framework review for market access countries, i.e. countries with significant access to international capital markets. Third, the IMF also started the quinquennial comprehensive surveillance review and the review of the Financial Sector Assessment Program.

International central bank cooperation

The ECB continued to cooperate with non-EU central banks across the globe. This reflects the global interest in ECB views, analytical frameworks and working processes. Staff-level discussions, also involving policymakers, covered core tasks of the ECB as well as technical and governance issues. Relations with key African, Asian and Latin American central banks were further developed based on existing bilateral Memoranda of Understanding, while cooperation with regional organisations and the IMF continued under the existing arrangements. In addition, a Eurosystem high-level policy dialogue with central banks from Latin America took place in Colombia in November.

The ECB continued to contribute to the EU enlargement process as an EU institution through targeted discussions with central banks in countries in the Western Balkan region that are working towards joining the EU. A regional workshop series serves as the main platform for this, where discussions are organised in close collaboration with EU national central banks where possible. In addition, an EU-funded programme was launched in March 2019 to the benefit of these central banks. It aims to strengthen central bank capacities in the Western Balkans, with a view to the integration of these central banks into the ESCB.

Box 11
Implications of Brexit

While not party to the negotiations, the ECB has been following Brexit developments closely and assessing the risks to the euro area economy and financial system posed by all possible scenarios. The ECB acted to ensure its operational preparedness ahead of the initially foreseen end date of the Article 50 process, i.e. 29 March 2019, as well as ahead of the end dates of multiple extensions to the Article 50 process (12 April 2019, 31 October 2019 and 31 January 2020). Following the United Kingdom's orderly withdrawal from the European Union on 31 January 2020, the ECB has been focusing on monitoring the negotiations around the future EU-UK relationship and assessing the consequences of Brexit for the EU financial sector, in particular as regards the need to complete the capital markets union.

The analysis in the May and November 2019 editions of the ECB Financial Stability Review discussed the risks stemming from a potential no-deal Brexit scenario, and the extent to which the private sector was prepared for such an event.

In the area of banking supervision, the ECB and national supervisors have continued to communicate supervisory expectations on Brexit-related issues, assessed banks' operational readiness for a no-deal scenario, completed the majority of the Brexit-related authorisation procedures and monitored the implementation of banks' Brexit plans (see the 2019 ECB Annual Report on supervisory activities).

In March 2019, the Bank of England decided to offer to lend euro to UK banks in weekly operations on the basis of the standing swap line with the ECB. In a related press release the Eurosystem stated its readiness to lend pound sterling to euro area banks, should the need arise. So far, these pound sterling lending operations have not been activated by the ECB. At his September 2019 European Parliament hearing, ECB President Mario Draghi emphasised the continuous cooperation between the ECB and the Bank of England in addressing all contingencies, including a no-deal Brexit.

The situation at the cut-off date for data in this report was that a withdrawal agreement had been ratified by both parties, leading to the initiation of a transition period.

11 Enhancing communication

“The ECB needs to listen and understand the people. Because a currency is after all a public good that belongs to the people.” – President Christine Lagarde

Communication is a core element of the ECB’s policy toolbox. Providing financial market experts with information about its current policy stance and the expected path for future decisions has bolstered the effectiveness of ECB policies. There is broad evidence that the ECB’s communication with financial markets and experts is successful. The new frontier in central bank communication is engagement with the general public. Central banks, including the ECB, need to be better understood by the people whom they ultimately serve. This is key to rebuilding people’s trust in the ECB, especially against the backdrop of increased public scrutiny and controversial debates over its policy decisions.

With the change in the leadership of the ECB during 2019, the bank’s communication to audiences beyond the traditional group of experts and financial market specialists received renewed impetus. The ECB invested in further enhancing its communications, so as to make itself better understood and to explain why its actions matter to people and their lives. It also built further on its efforts to reach out to groups in society that had not traditionally been the focus of ECB communications, such as young people or civil society organisations, and started to listen more attentively to people’s concerns. Looking ahead, there is great potential in connecting the ECB to the topics that are of particular concern to people, such as inequality, digital currencies or climate change – and in providing clearer answers on how the ECB can contribute, within the limits of its mandate, in these areas. Communication will also be a key element of the ECB’s monetary policy strategy review.

11.1 Innovation in ECB communications

In order to reach out to broader and younger audiences, the ECB uses innovative forms of communication.

For instance, in early 2019, as part of the initiatives marking the 20th anniversary of the euro, the ECB launched a campaign in cooperation with the popular app QuizClash. The #EUROat20 competition aimed to raise awareness and understanding of the ECB’s mission, especially among young people. Over 1.6 million people across the European Union took part in the quiz, engaging with and learning about issues related to the euro and the ECB through playful interaction.

The #EUROat20 competition on the QuizClash app

Making the ECB relevant to the broader public by connecting its work to topics that people are interested in, using simple, relatable messages

While the campaign was a great success in terms of its reach, it also revealed certain misconceptions and knowledge gaps in relation to the ECB's institutional set-up and mission. This showed that the ECB needs to fill these gaps by connecting its work to topics that people are interested in, using simple, relatable messages. In September 2019 a new one-minute "ECB explains" video series was launched in which ECB staffers explain, in simple and accessible language, particular topics, such as crypto-assets or accountability, and describe why their work matters to people. The series runs on the ECB's Instagram account, itself an innovation aimed at increasing understanding of the ECB among broader audiences, which reached the one-year mark in 2019.

In September 2019 the ECB also launched the monthly ECB Podcast. Given the rapidly increasing popularity of podcasts, this presents an opportunity for the ECB to connect with new audiences, engaging in in-depth discussions on key issues relevant to the ECB, while also allowing for a more informal tone.

During 2019 an effort was made in ECB communications to address topics and trends beyond core monetary policy which are important for the ECB and matter to people in the euro area. In May, for example, the ECB published a webpage on climate change. The webpage contains information on the ECB's actions to mitigate climate change, listing internal initiatives as well as relevant publications (see also Box 3).

The ECB's aim to communicate with non-expert audiences also foresees an increase in the use of national languages in order to foster a closer connection with the euro area citizens. To be able to do this in a cost-efficient way, the ECB adopted machine-learning technology to support internal translation processes.

On Twitter and LinkedIn, Christine Lagarde's accounts more than doubled the ECB's reach to over 2.5 million followers

With Christine Lagarde's arrival as ECB President in November 2019 the bank's digital footprint and outreach expanded markedly. For instance, on Twitter and LinkedIn, where the ECB already had an institutional presence, Christine Lagarde's personal accounts more than doubled the ECB's reach to over 2.5 million followers. Furthermore, Ms Lagarde's presence on the Chinese platform Weibo added yet another 5.8 million followers. These accounts serve as powerful amplifiers for the ECB's efforts to make itself understood.

11.2 Analytics to enhance the impact of ECB communications

Data and analytics at the heart of an evidence-based design of ECB communication activities

For ECB communications to be effective and achieve the desired impact, it is essential to better understand who the target audiences are, what resonates with them, and what the most useful channels are to reach them. In addition, deeper analysis of the entire communications process is needed, i.e. analysis of what happens between the sending and the receiving of central bank communications, of the related dynamics and feedback mechanisms, and of the role of intermediaries such as the media or financial markets. Finally, through advanced analytics, the ECB can gain robust insights into the performance of its own communications efforts, finding out whether its messages do in fact "get through" and lead to a change in attitudes and greater trust.

In 2019 the ECB intensified its internal research and analytics activities and expanded its external research collaboration.

An ECB study indicates that young people have a superficial understanding of the ECB and little interest in economic and financial matters

In order to gain insights into how its communications resonate with the general public, in particular with younger people, the ECB launched a focus group study among participants aged 18 to 35 years in six euro area countries. Besides assessing awareness, knowledge and perception of the ECB among young people, the research also aimed to identify topics of interest with regard to economic, financial and social issues, as well as preferred ways of engagement. The findings suggest that young people not only have a very superficial understanding of the ECB but also a limited interest in economic and financial matters. They find issues like climate change and social responsibility more relevant. The research also indicated that the majority of young people prefer to engage with the ECB via social media, which – together with their own social networks (word of mouth) – are their main sources of information.

Successful "layered" presentation of core messages from ECB publications to attract broader interest

In evaluating its own communications efforts, the ECB also tested and analysed how best to present information across digital platforms. For example, it pursued a "layered" approach to its publications, whereby the publication of key ECB reports is complemented by landing pages on the ECB's website and social media campaigns, making findings more accessible, visual and easy to digest. The results provide empirical evidence that this approach is a success, as it induces more people to access the actual publication and, once they access it, to spend 50% more time reading it. Such insights are the basis for future, adapted communications.

New landing page for the ECB Financial Stability Review

Fruitful interaction with academia to advance interdisciplinary research on central bank communication

In expanding and deepening its research efforts regarding central bank communication, the ECB initiated, and is co-chairing, a Research and Policy Network on Central Bank Communication, established within the framework of the Centre for Economic Policy Research (see also Section 8.1). In October 2019 the ECB hosted a two-day workshop of the network which brought together communications practitioners from the ECB and other central banks, financial market analysts, journalists, and academics from a variety of disciplines, such as economics, psychology and sociology. Discussions focused on the risks and opportunities involved in communicating with the wider public, the boundaries of central bank transparency, and the changing role of the media as intermediaries of central bank communication. In this context, in October 2019 the ECB was the first – and is as yet the only – central bank to make available a precompiled, easy-to-use and regularly updated dataset comprising all speeches of its policymakers. By providing the dataset, the ECB intends to incentivise and facilitate novel research on its communications, for instance through text analysis.

12 Organisation and good governance

The ECB is an EU institution at the heart of the Eurosystem and the Single Supervisory Mechanism. More than 3,500 staff from all over Europe work for the ECB. The ECB is committed to inspiring and engaging its people and to their development, and in 2019 it continued its efforts to foster diversity and inclusion as key drivers of improved organisational performance. Moreover, the ECB further strengthened its commitment to the highest level of integrity and governance standards. The entry into force of its Single Code of Conduct for high-level ECB officials on 1 January 2019 was a milestone in this respect. Last but not least, in 2019 the ECB proudly celebrated the 20th anniversary of the euro, the currency of 340 million Europeans (see Box 12).

12.1 Unlocking excellence through leadership, inclusion and people development

Fostering diverse teams and inclusive behaviour is vital to ensuring the ECB can deliver the best possible outcomes for its staff and for the EU. That is why diversity, respect, an ethical culture and the well-being of its staff are strategic objectives for the ECB.

Diversity and inclusion are key drivers of improved organisational performance

In 2019 the ECB continued its efforts to foster diversity and inclusion as key drivers of improved organisational performance. The ECB has a number of long-standing diversity networks that engage frequently with Human Resources and aim to serve the needs of all aspects of diversity. In 2019 a new network was founded called DiversAbility, the ECB's professional network for those with long-term health-related impairments and those who support them.

At the level of the European System of Central Banks (ESCB) and the Single Supervisory Mechanism (SSM), the ECB continues to conduct exchanges with national central banks and national supervisory authorities regarding best practices in diversity and inclusion, an example of which was the fourth annual meeting of the ESCB/SSM Diversity Network, hosted by the Bundesbank in Eltville am Rhein in September 2019. The ECB also participated in a summit on gender diversity in May 2019, joining the Human Resources heads of the G7 central banks along with colleagues from across the ESCB/SSM and from the International Monetary Fund.

In 2019 the ECB's comprehensive programme of inclusion activities included for the first time participating in Frankfurt's Christopher Street Day (Pride) parade and holding events to mark the International Day of People with Disabilities, Coming Out Day and the International Day of Commemoration in memory of the victims of the Holocaust. Regular highlights on the ECB calendar included events held to mark the International Women's Day and the International Day against Homophobia, Biphobia, Interphobia and Transphobia (IDAHOBIT).

The ECB is continuing to work towards achieving a more gender-balanced working environment and in 2019 was independently assessed in this area, receiving in February an ASSESS level (level 1) Economic Dividends for Gender Equality (EDGE) Certification, which recognises the ECB's commitment to fostering gender equality in the workplace.

To improve gender balance, the ECB's Executive Board had set targets for the end of 2019. At the end of the year, 30.3% of management positions were held by women, compared with a target of 35%. For senior management roles, the share was 30.8%, against a target of 28% (see Table 2). The overall share of female staff at the ECB at all levels was 45.3%. See Box 10 in Chapter 8 for information on gender balance in career progression at the ECB.

Table 2

Gender targets and share of female staff at the ECB

	Share of female staff at the end of 2019	Gender target for the end of 2019
Senior managers	30.8%	28%
All managers	30.3%	35%

Source: ECB.
Notes: The share of female staff is measured based on staff holding permanent and fixed-term positions. Data as at 1 January 2020.

In order to attract diverse talent, in 2019 the ECB redesigned its vacancy notices to be more inclusive by explicitly encouraging candidates to apply irrespective of age, disability, ethnicity, gender, gender identity, religion, sexual orientation or other characteristics. The ECB also continued to reach out to candidates via inclusive recruitment platforms, including participating in Sticks & Stones, Europe's largest LGBT+ career fair, and the European Women in Tech Conference.

The ECB is committed to the growth and development of its staff and has consistently offered a wide range of learning and development opportunities to support them in facing the challenges of a constantly changing world. Over the last year the ECB worked at the ESCB/SSM level to develop a cohesive system-wide strategy for learning and development in order to support its talent across the system in delivering for Europe. This builds upon existing local learning initiatives which have been open to colleagues throughout the ESCB and SSM, and aims to foster a learning culture that links learning and development with productivity, capability and efficiency.

Leaders play a central role in enhancing the performance of both individuals and teams for the benefit of the organisation. With this in mind, the ECB successfully ran a modular Leadership Growth Programme over the last few years, which came to an end in November 2019. The programme engaged with more than 600 leaders at all levels, including non-managerial team leads, with the aim of strengthening leadership behaviours and thereby improving organisational performance and building strong teams around a shared vision, purpose and aspiration to create a stronger ECB.

In 2019 the ECB performed a fundamental review of how it supports the professional growth of its staff, the result of which was the implementation of a new comprehensive career framework. The framework comprises new methods for promoting staff and changes to the processes and policies that facilitate and incentivise mobility (i.e. changing roles within the bank or gaining experience outside the bank) as an opportunity for growth. These changes position the ECB as an employer of choice, whilst maintaining staff engagement and supporting the development of the individuals who make up the ECB.

12.2 Further strengthening integrity and governance standards

The monthly calendars and Declarations of Interests of all high-level officials are published on the ECB's website

With the entry into force of its Single Code of Conduct for high-level ECB officials (the "Single Code") on 1 January 2019, the ECB reconfirmed its commitment to the highest level of integrity and governance standards. Introducing specific rules for post-employment activities, private financial transactions and relations with interest groups, the Single Code also obliges all members of high-level ECB bodies to publish their monthly calendars (as of January 2019) and on an annual basis to submit their signed Declarations of Interests to the Ethics Committee for assessment and subsequent publication on the ECB's website.

The Ethics Committee[69], moreover, advises members of high-level ECB bodies on any other questions of professional ethics, in particular with regard to post-employment activities and gainful occupational activities of family members[70]. Commensurate with the increasing relevance of matters relating to good conduct and good governance the ECB introduced, for all incoming and outgoing members of high-level ECB bodies, dedicated on-boarding and end-of-term meetings with the ECB's Chief Compliance and Governance Officer to address obligations stemming from the Single Code.

The cooperation among euro area central banks and national supervisory authorities via the Ethics and Compliance Officers' Task Force (ECTF) gained further momentum in 2019. The ECTF developed into a hub for information exchange and a forum supporting coherent implementation of the Single Code across the Eurosystem and European banking supervision. With a view to generating additional reciprocal learning opportunities, the ECTF organised thematic sessions with external counterparts including the UN Ethics Office, the Office of the European Ombudsman and the European Court of Auditors, with the latter presenting its report on the ethical frameworks of selected audited EU institutions.

As regards members of staff, in 2019 the annual compliance check of their private financial transactions covered a random sample consisting of 10% of all staff, including the ECB members of ECB high-level bodies. In addition, the ECB followed the advice of its external service provider and conducted an ad hoc compliance check in 2019, which concentrated on a specific group of staff members.

In accordance with its mandate, the ECB's Audit Committee continued to assist the Governing Council in its tasks and responsibilities related to the integrity of financial information; the oversight of internal controls; the compliance with applicable laws,

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69 In summer 2019 Mr Patrick Honohan succeeded Mr Jean-Claude Trichet as Chairman of the Ethics Committee.

70 See Decision (EU) 2015/433 of the European Central Bank of 17 December 2014 concerning the establishment of an Ethics Committee and its Rules of Procedure (ECB/2014/59).

regulations and codes of conduct; and the performance of audit functions. In 2019 the Audit Committee focused in particular on cyber risks, on the adequacy of the Eurosystem's financial risk management framework and on incentivising a proactive approach when monitoring the follow-up to audit recommendations.

Guided by the principles of transparency and accountability, the members of the ECB's high-level bodies maintain regular contacts and interaction with the public as well as specialised audiences from the public and private sectors, academia, interest groups and representative associations. These dialogues and debates take place under a well-established and public framework that guarantees a robust level of transparency and good governance.

In 2019 the ECB responded to 113 public access requests from EU citizens and gave access to over 200 documents (some of which were partially disclosed).

Furthermore, as part of its continuous commitment to good governance and transparency, in 2019 the ECB decided to introduce a new policy under which the documents from the Committee of Governors and the European Monetary Institute – predating the establishment of the ECB in June 1998 – would be declared as historical records, thus making it easier for the general public to access them.

Box 12
The euro at 20

On 1 January 2019 our common currency, the euro, celebrated its 20th anniversary. Twenty years before, on 1 January 1999, 11 countries of the European Union (EU) fixed their exchange rates and adopted a shared monetary policy, the conduct of which was entrusted to the ECB. The euro started as an electronic currency, used for cashless payments and by financial markets. Euro banknotes and coins entered into circulation three years later, on 1 January 2002. Today, the euro is the currency of 19 EU countries and over 340 million Europeans. As the second most important currency in the world – with the US dollar being the first – it is part of our everyday life and the most tangible symbol of the European project. Support for the euro among euro area citizens stands at an all-time high, with 76% of Eurobarometer survey respondents thinking that the single currency is good for the EU (Eurobarometer survey, November 2019).

20 years of the common currency

The EU countries that adopted the euro on 1 January 1999, and those that joined subsequently, have travelled a long way together. The last 20 years were exceptional for the euro area. The first decade could be seen as the culmination of a 30-year upswing in the global financial cycle. The second decade, by contrast, saw the worst economic and financial crises since the 1930s – first a global financial crisis, then a sovereign debt crisis.

The European project including Economic and Monetary Union (EMU) is a process that is evolving over time. Taking a closer look at the economic structures 20 years into the euro, it can be argued that the global financial and sovereign debt crises revealed the resilience of the euro area's economic structures. Significant efforts were made by countries in the euro area to react to the crisis and to strengthen this resilience. Crisis momentum was also used to strengthen EMU. In particular, the establishment of European banking supervision was a major achievement. However, EMU is still incomplete. Further progress is needed to optimise the advantages of the common currency to the benefit of all Europeans.

ECB celebrated the #EUROat20

The 20th anniversary of the euro was an important milestone for the ECB, which celebrated on several occasions. With events including art and music performances (as part of the European Cultural Days of the ECB, dedicated to Europe's common culture and identity in 2019), social media campaigns – see the ECB-QuizClash competition – and high-level central banking conferences, in particular the ECB Forum on Central Banking in Sintra on 17-19 June 2019, the euro's 20th birthday provided a good opportunity to connect with European citizens.

Most notably, the theme of the above-mentioned ECB Forum in Sintra was "20 years of European Economic and Monetary Union". It covered the experience of EMU so far and crucial factors for its success going forward. Participants discussed diverse progress with economic convergence, the role of fiscal policies relative to monetary policy in macroeconomic stabilisation in the incomplete monetary union, and selected key determinants of future growth in the euro area (such as demographic forces). The main themes are represented in the illustration below.

20 years of European Economic and Monetary Union – a graphic illustration from the ECB Forum on Central Banking in Sintra

Source: ECB.

Annual Accounts

Contents

1 Management report

1.1 Purpose of the ECB's management report

The management report[1] is an integral part of the ECB's Annual Accounts and is designed to provide readers with contextual information related to the financial statements.[2] Given that the ECB's activities and operations are undertaken in support of its policy objectives, the ECB's financial position and result should be viewed in conjunction with its policy actions.

To this end, the management report presents the ECB's key activities and operations, as well as their impact on its financial statements. Furthermore, it analyses the main developments in the Balance Sheet and the Profit and Loss Account during the year and includes information on the ECB's financial resources. Finally, it describes the risk environment in which the ECB operates, providing information on the financial and operational risks to which the ECB is exposed, and the risk management policies used to mitigate risks.

1.2 Activities

The ECB is part of the Eurosystem, which has the primary objective of maintaining price stability. The ECB's main tasks, as described in the Statute of the ESCB,[3] comprise the implementation of the monetary policy of the euro area, the conduct of foreign exchange operations, the management of the official foreign reserves of the euro area countries and the promotion of the smooth operation of payment systems.

The ECB is also responsible for the effective and consistent functioning of the Single Supervisory Mechanism (SSM), with a view to carrying out intrusive and effective banking supervision, contributing to the safety and soundness of the banking system and the stability of the financial system.

The Eurosystem's monetary policy operations are recorded in the financial statements of the ECB and of the euro area national central banks (NCBs), reflecting the principle of decentralised implementation of monetary policy in the Eurosystem. Table 1 below provides an overview of the main operations and functions of the ECB in pursuit of its mandate, and their impact on the ECB's financial statements.

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[1] Throughout this document, the numbers presented may not add up precisely to the totals and percentages may not precisely reflect the absolute figures owing to rounding.

[2] The "financial statements" comprise the Balance Sheet, the Profit and Loss Account and the related notes. The "Annual Accounts" comprise the financial statements, the management report, the auditor's report and the note on profit distribution/allocation of losses.

[3] Protocol on the Statute of the European System of Central Banks and of the European Central Bank.

Table 1

The ECB's key activities and their impact on its financial statements

<table>
<tr><th colspan="2">Implementation of monetary policy</th></tr>
<tr><th>Standard monetary policy operations in euro</th><th>Liquidity-providing operations in foreign currency</th></tr>
<tr><td>Monetary policy operations conducted with the standard set of instruments (i.e. open market operations, standing facilities and minimum reserve requirements for credit institutions) are implemented in a decentralised manner by the NCBs of the Eurosystem. Accordingly, these operations are not reflected in the ECB's financial statements.</td><td>The ECB acts as an intermediary between non-euro area central banks and the Eurosystem NCBs by means of swap transactions aimed at offering short-term foreign currency funding to Eurosystem counterparties.

These operations are recorded in the balance sheet items "Liabilities to non-euro area residents denominated in euro" and "Other claims within the Eurosystem" or "Other liabilities within the Eurosystem" and have no impact on the ECB's Profit and Loss Account.</td></tr>
<tr><th>Securities held for monetary policy purposes</th><th>Securities lending</th></tr>
<tr><td>Purchases of these securities are conducted by the ECB and the NCBs of the Eurosystem and are recorded under the balance sheet item "Securities held for monetary policy purposes". The securities currently held are accounted for at amortised cost, subject to impairment.

Coupon accruals and amortised premiums and discounts are included in the Profit and Loss Account on a net basis under either "Other interest income" or "Other interest expense", depending on whether the net amount is positive or negative.</td><td>Securities held for monetary policy purposes are available for lending by the Eurosystem.[1] For the ECB, these operations are conducted via specialised institutions. These operations are recorded in the balance sheet items "Other liabilities to euro area credit institutions denominated in euro" and "Liabilities to non-euro area residents denominated in euro" if collateral is provided in the form of cash and this cash is still uninvested. Otherwise, the related securities lending operations are recorded in off-balance-sheet accounts.</td></tr>
<tr><th colspan="2">Conduct of foreign exchange operations and management of the official foreign reserves of the euro area countries</th></tr>
<tr><th colspan="2">Foreign exchange operations and management of foreign reserves</th></tr>
<tr><td colspan="2">The ECB's foreign reserves are presented on the Balance Sheet, mainly under "Gold and gold receivables", "Claims on non-euro area residents denominated in foreign currency", "Claims on euro area residents denominated in foreign currency", "Liabilities to euro area residents denominated in foreign currency" and "Liabilities to non-euro area residents denominated in foreign currency". Foreign exchange transactions are reflected in off-balance-sheet accounts until the settlement date.

Net interest income, including coupon accruals and amortised premiums and discounts, is included in the Profit and Loss Account under the item "Interest income on foreign reserve assets".

Unrealised price and exchange rate losses exceeding previously recorded unrealised gains on the same items, and realised gains and losses arising from the sale of foreign reserves, are also included in the Profit and Loss Account under the items "Write-downs on financial assets and positions" and "Realised gains/losses arising from financial operations" respectively. Unrealised gains are recorded on the Balance Sheet under the item "Revaluation accounts".</td></tr>
<tr><th colspan="2">Promotion of the smooth operation of payment systems</th></tr>
<tr><th colspan="2">Payment systems (TARGET2)</th></tr>
<tr><td colspan="2">Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET2[2] are presented together on the Balance Sheet of the ECB as a single net asset or liability position. These balances are remunerated at the latest available rate on the main refinancing operations and the related interest is included in the Profit and Loss Account under the items "Other interest income" and "Other interest expense".</td></tr>
<tr><th colspan="2">Contributing to the safety and soundness of the banking system and the stability of the financial system</th></tr>
<tr><th colspan="2">Banking supervision – the Single Supervisory Mechanism</th></tr>
<tr><td colspan="2">The annual expenses of the ECB in relation to its supervisory tasks are recovered via annual supervisory fees levied on the supervised entities. The supervisory fees are included in the Profit and Loss Account under the heading "Net income from fees and commissions".

Furthermore, the ECB is entitled to impose administrative penalties on supervised entities for failure to comply with obligations under EU banking prudential regulation (including ECB supervisory decisions). The related income is recorded in the Profit and Loss Account under the heading "Net income from fees and commissions".</td></tr>
<tr><th colspan="2">Other</th></tr>
<tr><th>Banknotes in circulation</th><th>Own funds portfolio</th></tr>
<tr><td>The ECB has been allocated a share of 8% of the total value of euro banknotes in circulation. This share is backed by claims on the NCBs, which bear interest at the rate on the main refinancing operations. This interest is included in the Profit and Loss Account under the item "Interest income arising from the allocation of euro banknotes within the Eurosystem".

Expenses arising from the cross-border transportation of euro banknotes between banknote printing works and NCBs, for the delivery of new banknotes, and between NCBs, for the compensation of shortages with surplus stocks, are borne centrally by the ECB. These expenses are presented in the Profit and Loss Account under the heading "Banknote production services".</td><td>The own funds portfolio of the ECB is presented on the Balance Sheet, mainly under the item "Other financial assets".

Net interest income, including coupon accruals and amortised premiums and discounts, is included in the Profit and Loss Account under "Other interest income" and "Other interest expense".

Unrealised price losses exceeding previously recorded unrealised price gains on the same items, and realised gains and losses arising from the sale of securities, are also included in the Profit and Loss Account under the items "Write-downs on financial assets and positions" and "Realised gains/losses arising from financial operations" respectively. Unrealised price gains are recorded on the Balance Sheet under the item "Revaluation accounts".</td></tr>
</table>

1) Further details on securities lending can be found on the ECB's website.
2) Further details on TARGET2 can be found on the ECB's website.

1.3 Financial developments

1.3.1 Balance Sheet

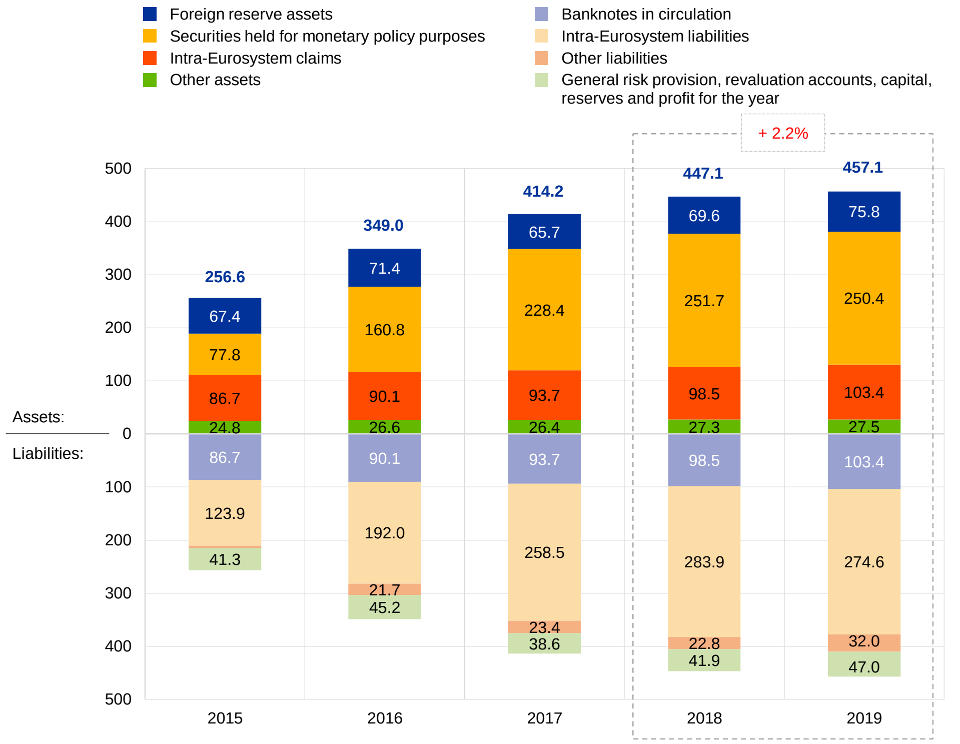
The ECB's Balance Sheet expanded significantly in the period 2015-2018 due the acquisition of securities under the asset purchase programme (APP)[4].

€10.0 billion
Increase in total assets in 2019

In 2019 the **ECB's total assets** increased by €10.0 billion to €457.1 billion. This increase was mainly due to (i) the rise in the market value of the ECB's foreign reserve assets, owing to the increase in the price of gold and the appreciation of the US dollar and the Japanese yen vis-à-vis the euro during the year, and (ii) the rise in the value of euro banknotes in circulation.[5]

Chart 1
Main components of the ECB's Balance Sheet

(EUR billions)



Source: ECB.

4 The APP consists of the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP) and the corporate sector purchase programme (CSPP). The ECB does not acquire securities under the CSPP. Further details on the APP can be found on the ECB's website.

5 In 2019 the total value of euro banknotes in circulation in the Eurosystem grew by 5% to €1,293 billion. The ECB holds 8% of the total value of euro banknotes in circulation. This share is recorded under the items "Banknotes in circulation" and "Intra-Eurosystem claims".

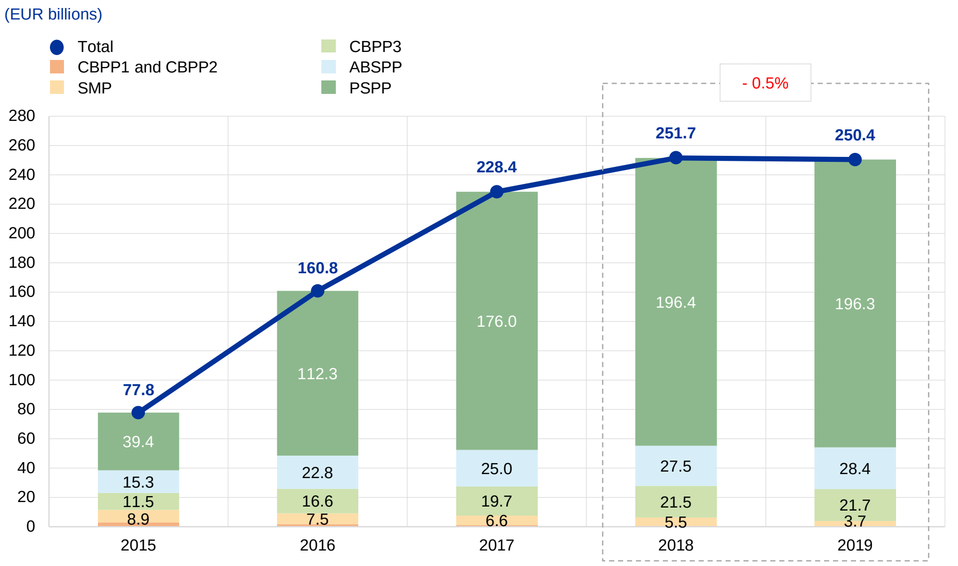
55%
of total assets are securities held for monetary policy purposes

Euro-denominated securities held for monetary policy purposes constituted 55% of the ECB's total assets as at the end of 2019. Under this balance sheet position, the ECB holds securities acquired in the context of the Securities Markets Programme (SMP), the three covered bond purchase programmes (CBPP1, CBPP2 and CBPP3), the ABSPP and the PSPP. During 2019 the ECB fully reinvested the principal payments from maturing securities held in its APP portfolios. In addition, from 1 November 2019 the ECB restarted net purchases of securities under the APP on the basis of the Governing Council's decision of 12 September 2019 on overall monthly Eurosystem purchases[6] and subject to predetermined eligibility criteria.

€1.3 billion
Decrease in securities held for monetary policy purposes

As at the end of 2019 the portfolio of securities held by the ECB for monetary policy purposes decreased by €1.3 billion to €250.4 billion (see Chart 2), mainly owing to redemptions of securities held under the SMP, CBPP1 and CBPP2. The total decrease in these holdings amounted to €2.2 billion. The €0.1 billion decrease in the PSPP portfolio was mainly due to the net impact of the amortisation of premiums and discounts[7] on securities held in the portfolio, which more than offset the net purchases conducted in the last two months of 2019.

Chart 2
Securities held for monetary policy purposes



Source: ECB.

The value of the ECB's foreign reserve assets increased owing to the depreciation of the euro

In 2019 the total euro equivalent value of the **ECB's foreign reserve assets**, which consist of gold, special drawing rights, US dollars, Japanese yen and Chinese renminbi, increased by €6.2 billion to €75.8 billion.

The euro equivalent value of the ECB's holdings of gold and gold receivables increased by €3.8 billion to €22.0 billion in 2019 (see Chart 3), owing to an increase in

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6 See the press release of 12 September 2019 on the Governing Council's decisions.

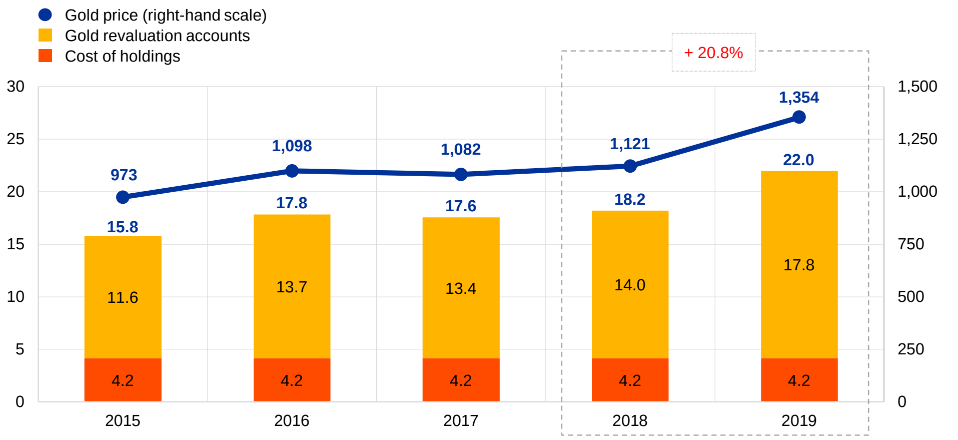
7 The amortisation emerges from the accounting principle that requires securities to be revalued upwards or downwards over time towards their maturity date depending on whether they have been purchased at prices below or above their face value. The APP holdings were bought, on average, at a premium, and, consequently, all other things being equal, the book value of the holdings is decreasing over time.

the market price of gold in euro terms, while the size of these holdings in fine ounces remained unchanged. This increase also led to a rise in the ECB's revaluation accounts, which increased by the same amount (see Section 1.3.2 "Financial resources").

Chart 3

Gold holdings and gold prices

(left-hand scale: EUR billions; right-hand scale: euro per fine ounce of gold)



Source: ECB.
Note: "Gold revaluation accounts" does not include the contributions of the central banks of the Members States that joined the euro area after 1 January 1999 to the accumulated gold revaluation accounts of the ECB as at the day prior to their entry into the Eurosystem.

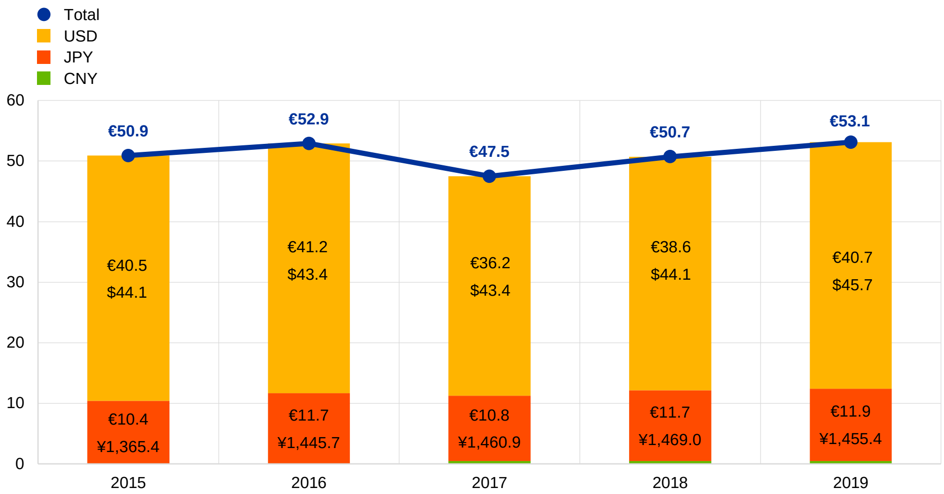
The ECB's net foreign currency holdings[8] of US dollars, Japanese yen and Chinese renminbi increased in euro terms by €2.4 billion to €53.1 billion (see Chart 4), owing to the reinvestment of the income received during the year from these holdings and the depreciation of the euro against the US dollar and Japanese yen. The depreciation of the euro is also reflected in the higher balances in the ECB's revaluation accounts (see Section 1.3.2 "Financial resources").

8 These holdings comprise assets included under the balance sheet positions "Claims on non-euro area residents denominated in foreign currency – Balances with banks and security investments, external loans and other external assets" and "Claims on euro area residents denominated in foreign currency".

Chart 4

Foreign currency holdings

(EUR billions)



Source: ECB.

The US dollar continued to be the main component of the ECB’s foreign currency holdings, accounting for approximately 77% of the total at the end of 2019.

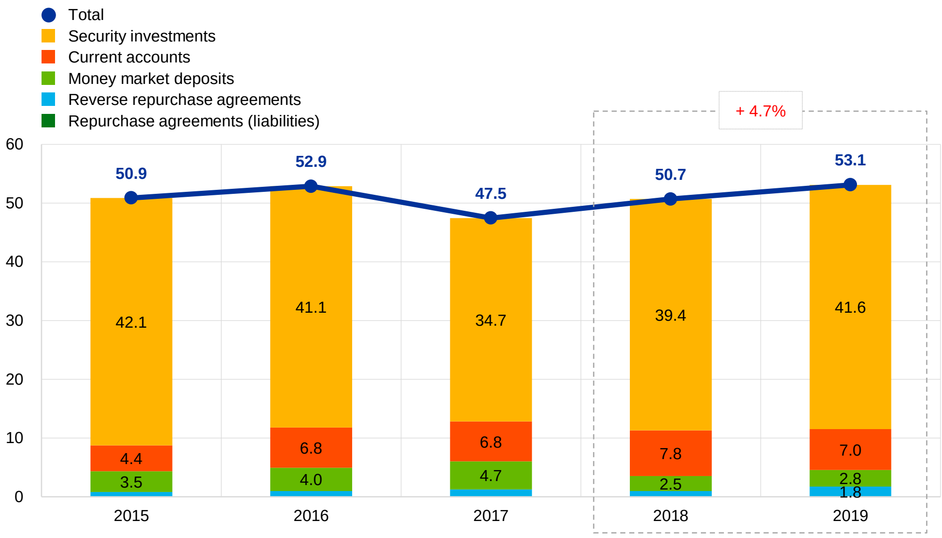
The ECB manages the investment of its foreign currency reserves using a three-step process. First, a strategic benchmark portfolio is designed by the ECB’s risk managers and approved by the Governing Council. Second, the ECB’s portfolio managers design the tactical benchmark portfolio, which is approved by the Executive Board. Third, day-to-day investment operations are conducted in a decentralised manner by the NCBs.

The ECB’s foreign currency reserves are mainly invested in securities and money market deposits or are held in current accounts (see Chart 5). Securities in this portfolio are valued at year-end market prices.

Chart 5

Composition of foreign currency investments

(EUR billions)



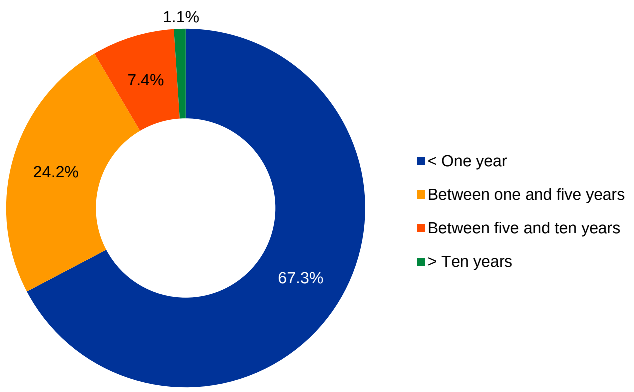
Source: ECB.

67%
Foreign currency-denominated securities with a maturity of less than one year

The purpose of the ECB's foreign currency reserves is to finance potential interventions in the foreign exchange market. For this reason, the ECB's foreign currency reserves are managed in accordance with three objectives: (in order of priority) liquidity, safety and return. Therefore, this portfolio mainly comprises securities with short maturities (see Chart 6).

Chart 6

Maturity profile of foreign currency-denominated securities

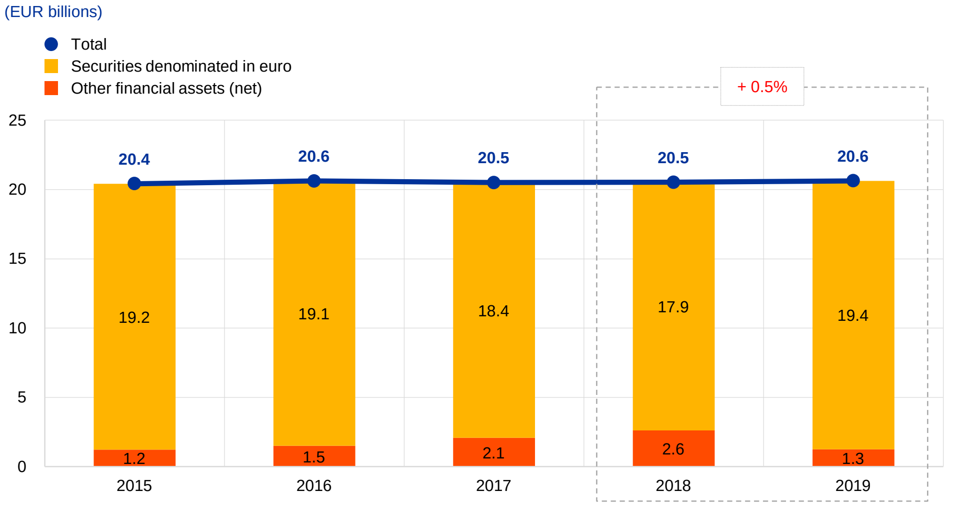


Source: ECB.

In 2019 the value of the **own funds portfolio** remained virtually unchanged (see Chart 7). This portfolio mainly consists of euro-denominated securities which are valued at year-end market prices.

Chart 7

The ECB's own funds portfolio

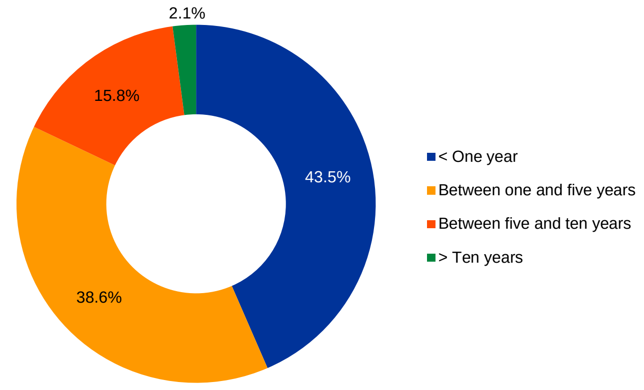


Source: ECB.

The ECB's own funds portfolio is held as a counterpart to its paid-up capital, the provision for financial risks and the general reserve fund. The purpose of this portfolio is to provide income to help fund the ECB's operating expenses which are not related to the performance of its supervisory tasks.[9] In this context, the objective of the management of the own funds portfolio is to maximise returns, subject to a number of risk limits. This results in a more diversified maturity structure (see Chart 8) than in the foreign currency reserves portfolio.

Chart 8

Maturity profile of the ECB's own funds securities



Source: ECB.

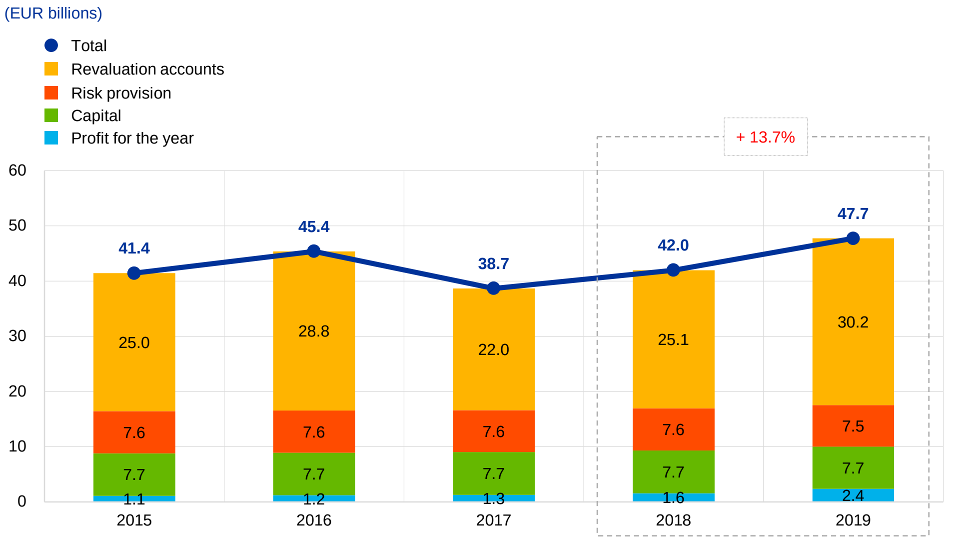
9 The expenses incurred by the ECB in the performance of its supervisory tasks are recovered via annual fees levied on supervised entities.

1.3.2 Financial resources

€47.7 billion
The ECB's financial resources

The ECB's financial resources consist of its capital, the general risk provision, the revaluation accounts and the profit for the year. These financial resources are (i) invested in assets that generate income and/or (ii) used to directly offset losses materialising from financial risks. As at 31 December 2019, the **ECB's financial resources** totalled €47.7 billion (see Chart 9). This was €5.7 billion higher than in 2018, mainly owing to an increase in the revaluation accounts following the depreciation of the euro.

Chart 9
The ECB's financial resources



Source: ECB.
Note: "Revaluation accounts" includes total revaluation gains on gold, foreign currency and securities holdings, but excludes the revaluation account for post-employment benefits.

2%
Depreciation of the euro against the US dollar in 2019

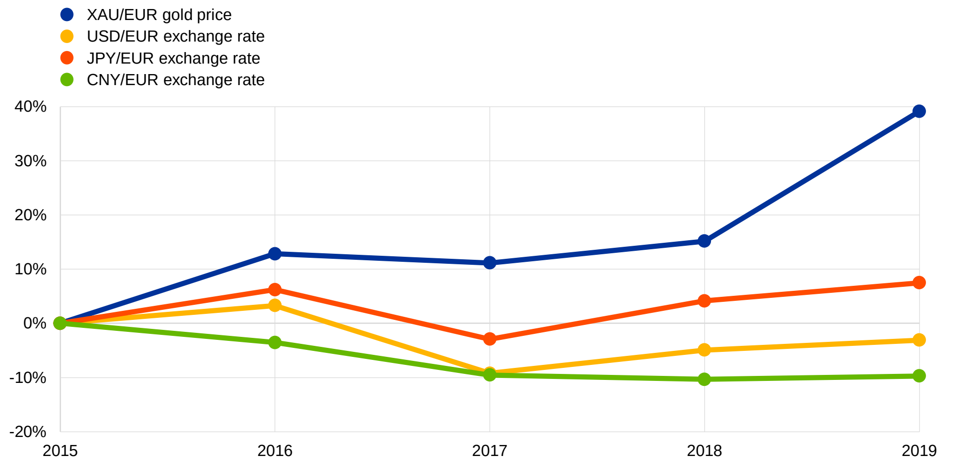
Unrealised gains on gold, foreign currencies and securities that are subject to price revaluation are not recognised as income in the Profit and Loss Account but are recorded directly in **revaluation accounts** shown on the liability side of the ECB's Balance Sheet. The balances in these accounts can be used to absorb the impact of any future unfavourable movement in the respective prices and/or exchange rates, and thus strengthen the ECB's resilience to the underlying risks. In 2019 the revaluation accounts for gold, foreign currencies and securities[10] increased by €5.1 billion to €30.2 billion, mainly owing to the increase in the price of gold and the depreciation of the euro against the US dollar and Japanese yen (see Chart 10).

[10] The balance sheet item "Revaluation accounts" also includes remeasurements in respect of post-employment benefits.

Chart 10

The main foreign exchange rates and gold price over the period 2015-19

(percentage changes vis-à-vis 2015; year-end data)



Source: ECB.

The profit resulting from the ECB's assets and liabilities in a given financial year can be used to absorb potential losses incurred in the same year. In 2019 the **ECB's profit** was €2.4 billion, €0.8 billion higher than in 2018.

The general risk provision stands at its maximum permitted level

In view of its exposure to financial risks (see Section 1.4.1 "Financial risks"), the ECB maintains a **provision for financial risks.** The size of this provision is reviewed annually, taking a range of factors into account, including the level of holdings of risk-bearing assets, the projected results for the coming year and a risk assessment. The risk provision, together with any amount held in the ECB's general reserve fund, may not exceed the value of the capital paid up by the euro area NCBs. Following the five-yearly adjustment of the key for subscription to the ECB's capital as at 1 January 2019 and the resulting reduction in the weightings of the euro area NCBs in the subscribed capital of the ECB, and taking into account the results of the assessment of the ECB's exposures to financial risks, the Governing Council decided to release €84 million from the ECB's provision for financial risks in order to comply with its maximum permitted level of €7.5 billion, which is equal to the value of the capital paid up by the euro area NCBs.

The **ECB's capital** paid up by euro area and non-euro area NCBs stood at €7.7 billion on 31 December 2019, €81 million lower than at the end of 2018. This reduction was a result of the five-yearly adjustment of the ECB's capital key that entered into force on 1 January 2019 and resulted in a decrease in the weighting of the euro area NCBs (with fully paid-up subscriptions).

In 2020 the shares of the NCBs in the capital of the ECB will change owing to the departure of the United Kingdom from the European Union and the consequent withdrawal of the Bank of England from the European System of Central Banks (ESCB). The ECB's subscribed capital will remain unchanged, as the share of the Bank of England in the ECB's subscribed capital will be reallocated among euro area and non-euro area NCBs. The ECB's paid-up capital will also remain unchanged in

2020, as the remaining NCBs will cover the Bank of England’s withdrawn share of the paid-up capital.

1.3.3 Profit and Loss Account

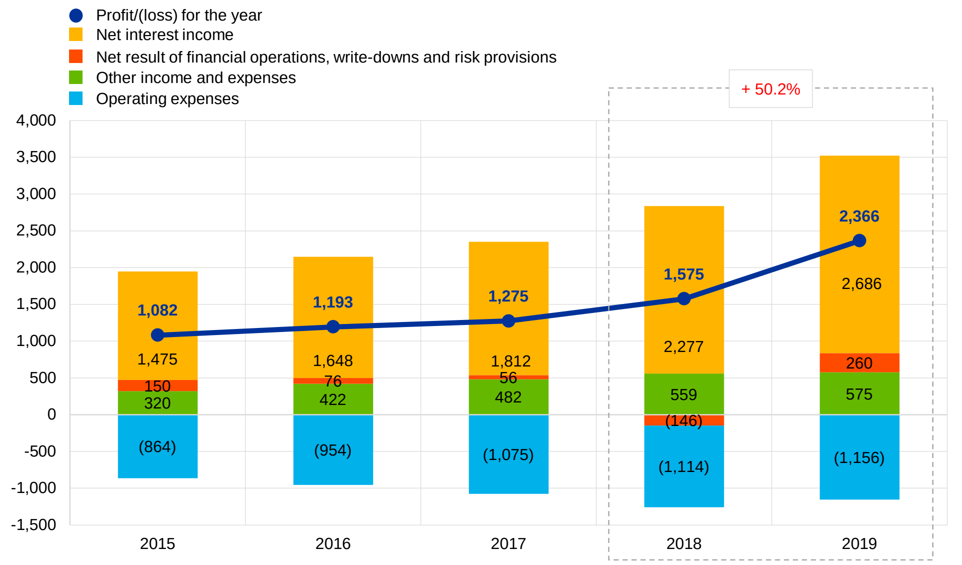
Over the period 2015-19 the annual profit of the ECB has gradually increased from around €1.1 billion to around €2.4 billion (see Chart 11), mainly due to higher interest income generated on foreign reserve assets and on securities held for monetary policy purposes, which more than offset a decline in interest income on banknotes in circulation[11] and on the own funds portfolio.

€2,366 million
The ECB’s profit in 2019

In 2019 the **ECB’s profit** was €2,366 million (2018: €1,575 million). The increase of €790 million compared with 2018 was due to both an increase in net interest income and better results from financial operations.

Chart 11
Main components of the ECB’s Profit and Loss Account

(EUR millions)



Source: ECB.
Note: “Other income and expenses” consists of “Net income/expense from fees and commissions”, “Income from equity shares and participating interests”, “Other income” and “Other expenses”.

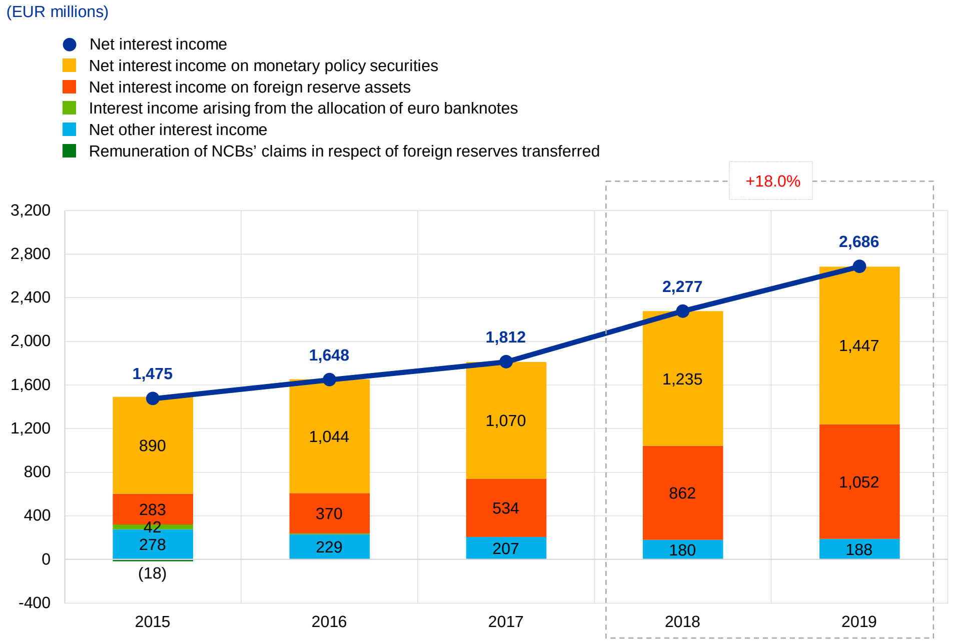
Increase in foreign reserve income and monetary policy income

The **net interest income** of the ECB increased by €410 million to €2,686 million (see Chart 12), mainly owing to higher interest income earned on both foreign reserve assets and securities held for monetary policy purposes.

[11] The ECB's income on euro banknotes in circulation comprises the interest income accruing to the ECB on the remuneration of its intra-Eurosystem claims on NCBs related to its 8% share of total euro banknotes in circulation.

Chart 12

Net interest income



Source: ECB.

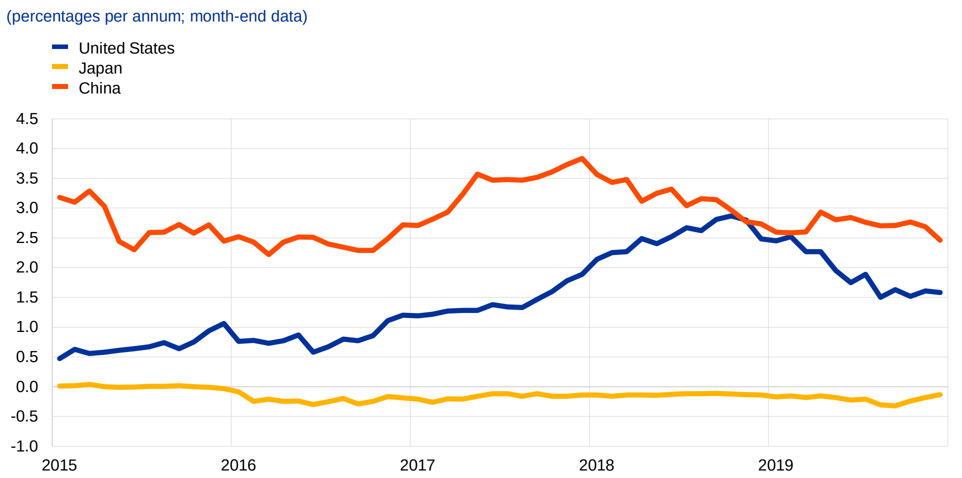
Increase in interest income on the US dollar portfolio, owing to the increase in US dollar yields observed throughout most of 2018

Net interest income on foreign reserve assets increased by €190 million to €1,052 million, mainly as a result of the higher interest income earned on securities denominated in US dollars.

Due to the increasing trend in US dollar securities yields throughout most of 2018 (see Chart 13), in particular for short maturities, the ECB acquired securities with higher yields, thereby increasing the average yield of its US dollar portfolio compared to the previous year. This had a positive impact on the interest income earned on this portfolio during 2019.

Chart 13

Two-year sovereign bond yields in the United States, Japan and China



Source: ECB.

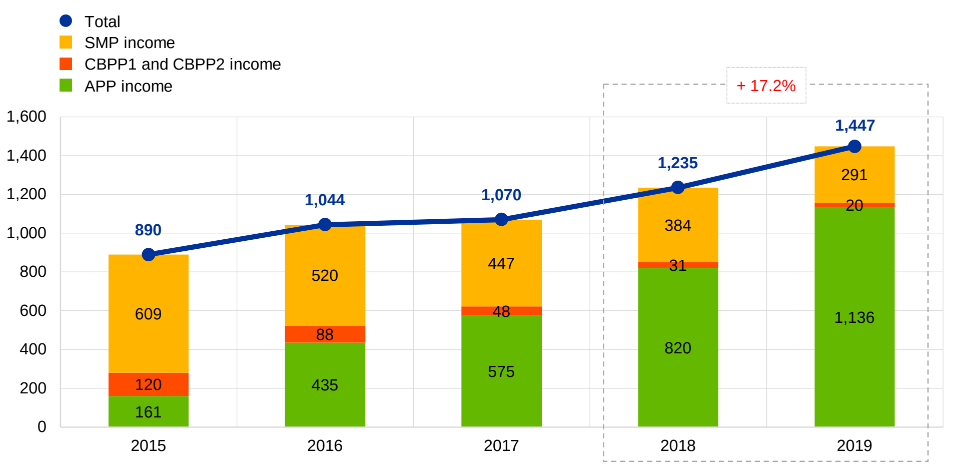
Higher APP income more than offset the reduction in income from ceased programmes

Net interest income generated on securities held for monetary policy purposes in 2019 was €1,447 million, which was €212 million higher than in 2018 (see Chart 14). Net interest income arising from APP securities increased by €316 million to €1,136 million. This increase stemmed mainly from the PSPP portfolio owing to the higher average holdings and average yield of the portfolio during the year compared to 2018. In particular, the average yield of the portfolio has increased in the last two years as a result of (i) the higher-yield securities acquired throughout 2018 compared to the historical average yield of the portfolio and (ii) the reinvestment of the principal payments in 2019 at a higher yield than that of the redeemed securities. At the same time, yields on euro area sovereign bonds remained low on average in 2019 (see Chart 15). The increased net interest income from APP securities more than offset the reduction in net interest income on the SMP, CBPP1 and CBPP2 portfolios, which fell by €104 million to €311 million, owing to the decline in the size of these portfolios as a result of the maturing of securities. In 2019 securities held for monetary policy purposes generated around 54% of the ECB's net interest income.

Chart 14

Net interest income on securities held for monetary policy purposes

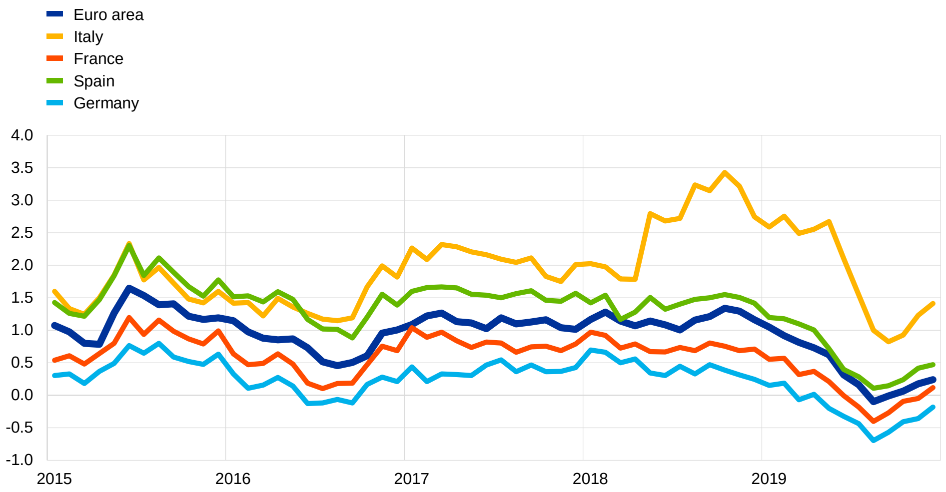
(EUR millions)



Source: ECB.

Chart 15
Ten-year sovereign bond yields in the euro area

(percentages per annum; month-end data)



Source: ECB.

0.0%
MRO rate in 2019

Both the **interest income on the ECB's share of total euro banknotes in circulation** and the **interest expense related to the remuneration of NCBs' claims in respect of foreign reserves transferred** were zero as a result of the 0% interest rate used by the Eurosystem in its main refinancing operations (MROs).

Net other interest income decreased, mainly owing to lower interest income earned on the own funds portfolio as a result of the low-yield environment in the euro area.

Net result of financial operations and write-downs was driven mainly by the change in US dollar bond yields

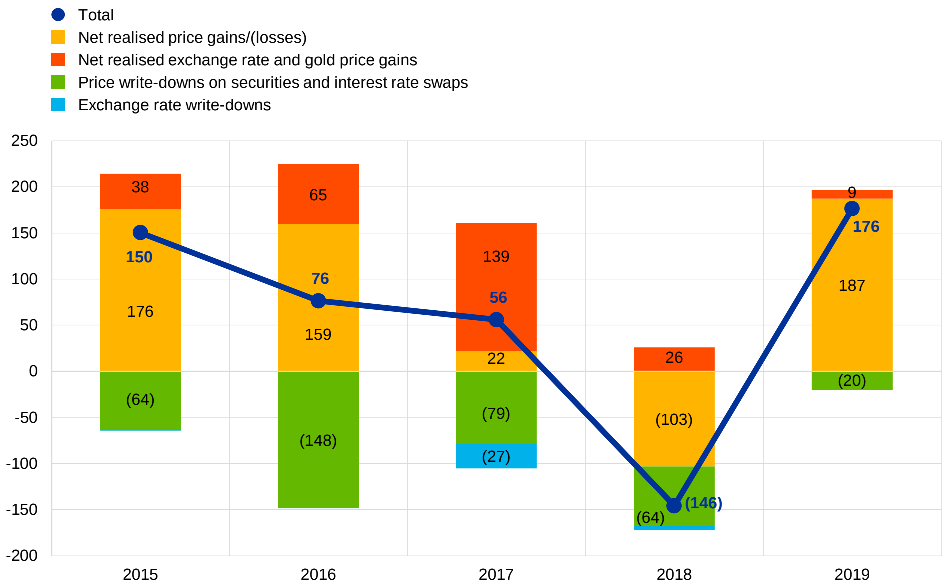
The **net result of financial operations and write-downs** on financial assets amounted to a gain of €176 million (see Chart 16). This result was €322 million higher than in 2018, mainly owing to better net realised price results.

In 2019 there was a net realised price gain on sales of securities, mainly owing to price gains on US dollar-denominated securities, as their market value was positively affected by the decrease in US dollar bond yields during the year.

Chart 16

Realised results and write-downs

(EUR millions)



Source: ECB.

In addition, an amount of €84 million was released from the ECB's general risk provision to the Profit and Loss Account as at 31 December 2019 in order to comply with the general risk provision upper limit as defined by the paid-up capital of the euro area NCBs (see Section 1.3.2 "Financial resources").

€537 million
Supervisory fee income in 2019

The **total operating expenses** of the ECB, including depreciation and banknote production services, increased by €42 million to €1,156 million (see Chart 17). The increase compared to 2018 is mainly due to higher staff costs as a result of (i) the higher average number of staff in 2019, predominately in banking supervision, and (ii) the higher expense in relation to other long-term benefits, mainly owing to the lower discount rate used for the actuarial valuation at the end of 2019. Owing to the implementation of the new policy for leases in 2019, rental expenses related to leases, which were previously recognised under administrative expenses, are now recorded as depreciation. As a result, the administrative expenses were lower, while the depreciation cost was higher than the previous year. Administrative expenses also decreased due to lower costs related to agency staff and external consultancy support.

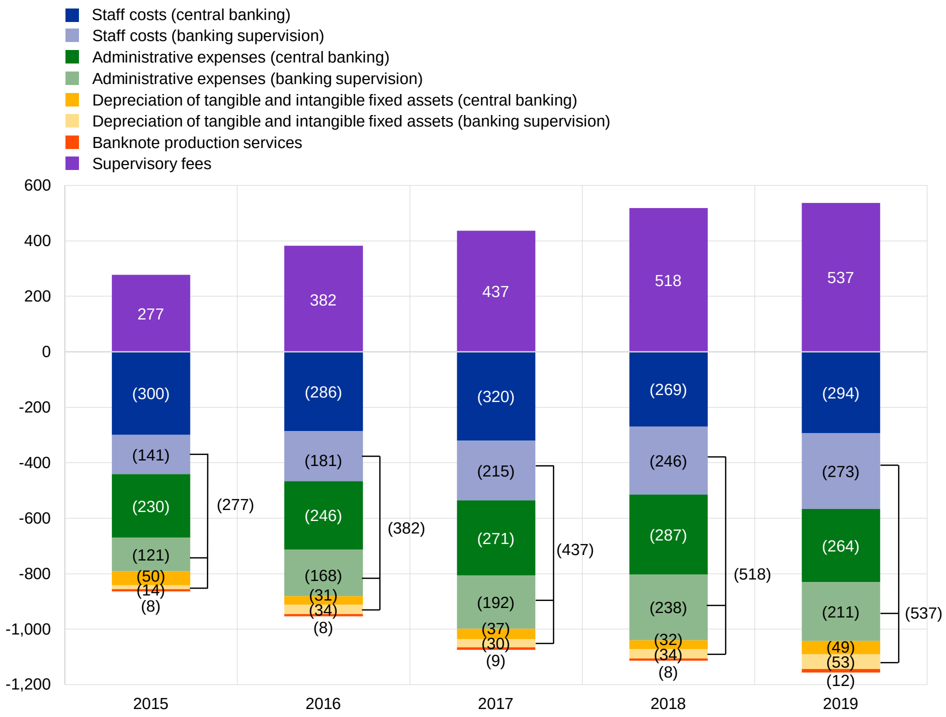
Banking supervision-related expenses are fully covered by fees levied on the supervised entities.[12]

[12] Supervisory fees are included under "Other income and expenses" (see Chart 11).

Chart 17

Operating expenses and supervisory fees

(EUR millions)

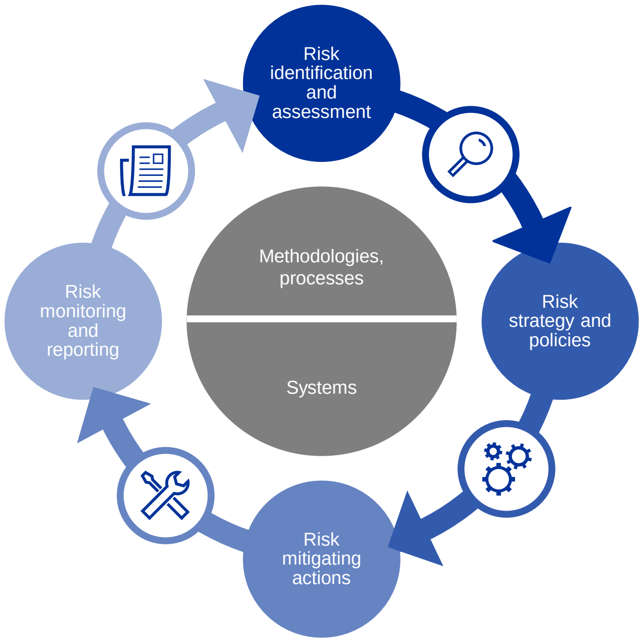


Source: ECB.
Notes: Operating expenses are split between central banking and banking supervision. The costs of shared services provided by the ECB's support business areas have been allocated among these two categories. These shared services are provided by the existing support business areas of the ECB, including premises, human resources management, administrative services, budgeting and controlling, accounting, legal, communication and translation services, internal audit, statistical and information technology services.

1.4 Risk management

Risk management is a critical part of the ECB's activities and is conducted through a continuous process of (i) risk identification and assessment, (ii) review of the risk strategy and policies, (iii) implementation of risk mitigating actions, and (iv) risk monitoring and reporting, all of which are supported by effective methodologies, processes and systems.

Figure 1
Risk management cycle



The ECB is exposed to both financial and operational risks. The following sections focus on these risks, their sources and the applicable risk control frameworks.

1.4.1 Financial risks

The Executive Board proposes policies and procedures that ensure an appropriate level of protection against the financial risks to which the ECB is exposed. The Risk Management Committee (RMC), which comprises experts from Eurosystem central banks, contributes, inter alia, to the monitoring and measuring of and reporting on financial risks related to the balance sheet of the Eurosystem, and it defines and reviews the associated methodologies and frameworks. In this way, the RMC helps the decision-making bodies to ensure an appropriate level of protection for the Eurosystem.

Financial risks arise from the ECB's core activities and associated exposures. The risk control frameworks and limits that the ECB uses to manage its risk profile differ across types of operation, reflecting the policy or investment objectives of the different portfolios and the risk characteristics of the underlying assets.

To monitor and assess the risks, the ECB relies on a number of risk estimation techniques developed in-house. These techniques are based on a joint market and credit risk simulation framework. The core modelling concepts, techniques and assumptions underlying the risk measures draw on industry standards and available market data. The risks are typically quantified by the expected shortfall (ES),[13] estimated at the 99% confidence level over a one-year horizon. Two approaches are used to calculate risks: (i) the accounting approach, under which the ECB's revaluation accounts are considered as a buffer in the calculation of risk estimates in line with all applicable accounting rules; and (ii) the financial approach, under which the revaluation accounts are not considered as a buffer in the risk calculation. The ECB also calculates other risk measures at different confidence levels, performs sensitivity and stress scenario analyses, and assesses longer-term projections of exposures and income to maintain a comprehensive picture of the risks.[14]

€8.1 billion
Total risk in 2019 (ES 99% accounting approach)

The total risks of the ECB decreased during the year. At the end of 2019 the total financial risks for all the ECB's portfolios combined, as measured by the ES at the 99% confidence level over a one-year horizon following the accounting approach, stood at €8.1 billion, which was €1.1 billion lower than the risks estimated as at the end of 2018. The decrease reflects lower currency and interest rate risk in the ECB's investment portfolios, improvements in the credit quality of securities held in the ECB's portfolios and redemptions of securities held under the SMP, CBPP1 and CBPP2.

Credit risk

Credit risk arises from the ECB's monetary policy portfolios, its euro-denominated own funds portfolio and its foreign reserve holdings. While securities held for monetary policy purposes are valued at amortised cost subject to impairment and are therefore, in the absence of sales, not subject to price changes associated with credit migrations, they are still subject to credit default risk. Euro-denominated own funds and foreign reserves are valued at market prices and, as such, are subject to credit migration and default risk. Credit risk decreased compared with the previous year owing to improvements in the credit quality of several European sovereigns and redemptions in the SMP holdings.

Credit risk is mitigated mainly through the application of eligibility criteria, due diligence procedures and limits that differ across portfolios.

Currency and commodity risks

Currency and commodity risks arise from the ECB's foreign currency and gold holdings. The currency risk decreased compared to the previous year owing to higher revaluation accounts, which act as buffers against adverse exchange rate and gold price movements.

In view of the policy role of these assets, the ECB does not hedge the related currency and commodity risks. Instead, these risks are mitigated through the existence of revaluation accounts and the diversification of the holdings across different currencies and gold.

Interest rate risk

The ECB's foreign reserves and euro-denominated own funds are mainly invested in fixed income securities and are subject to mark-to-market interest rate risk, given that they are valued at market prices. The ECB's foreign reserves holdings are mainly invested in assets with relatively short maturities (see Chart 6 in Section 1.3.1 "Balance Sheet"), while the assets in the own funds portfolio generally

13 The ES is defined as a probability-weighted average loss that occurs in the worst (1-p)% of scenarios, where p denotes the confidence level.
14 Further details on the risk modelling approach can be found in "The financial risk management of the Eurosystem's monetary policy operations", ECB, July 2015.

have longer maturities (see Chart 8 in Section 1.3.1 “Balance Sheet”). This risk component, as measured under the accounting approach, decreased compared to 2018, reflecting developments in market conditions.

The mark-to-market interest rate risk of the ECB is mitigated through asset allocation policies and the revaluation accounts.

The ECB is also subject to interest rate risk arising from mismatches between the interest rate earned on its assets and the interest rate paid on its liabilities, which has an impact on its net interest income. This risk is not directly linked to any particular portfolio but rather to the structure of the ECB’s Balance Sheet as a whole and, in particular, the existence of maturity and yield mismatches between assets and liabilities. It is monitored by means of projections of the ECB’s profitability, which indicate that the ECB is expected to continue to earn net interest income in the coming years.

This type of risk is managed through asset allocation policies and is further mitigated by the existence of unremunerated liabilities on the ECB’s Balance Sheet.

1.4.2 Operational risk

The ECB’s operational risk[15] management (ORM) covers all **non-financial risks.**

The Executive Board is responsible for and approves the ECB’s ORM policy and framework. The Operational Risk Committee (ORC) supports the Executive Board in the performance of its role in overseeing the management of operational risks. **ORM is an integral part of the ECB’s governance structure**[16] **and management processes.**

The main objective of the ECB’s ORM framework is to **contribute to ensuring that the ECB achieves its mission and objectives, while protecting its reputation and assets against loss, misuse and damage.** Under the ORM framework, each business area is responsible for identifying, assessing, responding to, reporting on and monitoring its operational risks, incidents and controls. In this context, the ECB’s risk tolerance policy provides guidance with regard to risk response strategies and risk acceptance procedures. It is linked to a five-by-five risk matrix based on impact and likelihood grading scales using quantitative and qualitative criteria.

The environment in which the ECB operates is exposed to increasingly complex threats and there are a wide range of operational risks associated with the ECB’s day-to-day activities. The main areas of concern for the ECB include a wide spectrum of non-financial risks resulting from people, information, systems, processes and external third-party providers. Consequently, the ECB has put in place processes to facilitate ongoing and effective management of its operational risks and to integrate

15 Operational risk is defined as the risk of a negative financial, business or reputational impact resulting from people, the inadequate implementation or failure of internal governance and business processes, the failure of systems on which processes rely, or external events (e.g. natural disasters or external attacks).

16 Further information about the ECB’s governance structure can be found on the ECB’s website.

risk information into the decision-making process. Moreover, the ECB focuses on enhancing its resilience. As such, response structures and contingency plans have been established to ensure the continuity of critical business functions in the event of any disruption.

2 Financial statements of the ECB

2.1 Balance Sheet as at 31 December 2019

ASSETS	Note number	2019 € millions	2018 € millions
Gold and gold receivables	1	**21,976**	**18,193**
Claims on non-euro area residents denominated in foreign currency	2		
Receivables from the IMF	2.1	710	692
Balances with banks and security investments, external loans and other external assets	2.2	50,478	49,723
		51,188	**50,415**
Claims on euro area residents denominated in foreign currency	2.2	**2,637**	**997**
Other claims on euro area credit institutions denominated in euro	3	**109**	**300**
Securities of euro area residents denominated in euro	4		
Securities held for monetary policy purposes	4.1	**250,377**	**251,656**
Intra-Eurosystem claims	5		
Claims related to the allocation of euro banknotes within the Eurosystem	5.1	**103,420**	**98,490**
Other assets	6		
Tangible and intangible fixed assets	6.1	1,330	1,148
Other financial assets	6.2	20,633	20,529
Off-balance-sheet instruments revaluation differences	6.3	619	579
Accruals and prepaid expenses	6.4	2,572	2,738
Sundry	6.5	2,221	2,039
		27,375	**27,033**
Total assets		**457,082**	**447,083**

Notes: Totals in the financial statements and in the tables included in the notes may not add up due to rounding. The figures 0 and (0) indicate positive or negative amounts rounded to zero, while a dash (-) indicates zero.

LIABILITIES	Note number	2019 € millions	2018 € millions
Banknotes in circulation	7	**103,420**	**98,490**
Other liabilities to euro area credit institutions denominated in euro	8	**1,325**	**1,399**
Liabilities to other euro area residents denominated in euro	9		
Other liabilities	9.1	**20,466**	**9,152**
Liabilities to non-euro area residents denominated in euro	10	**7,245**	**10,361**
Intra-Eurosystem liabilities	11		
Liabilities equivalent to the transfer of foreign reserves	11.1	40,344	40,793
Other liabilities within the Eurosystem (net)	11.2	234,288	243,115
		274,632	**283,907**
Other liabilities	12		
Off-balance-sheet instruments revaluation differences	12.1	709	641
Accruals and income collected in advance	12.2	66	54
Sundry	12.3	2,188	1,178
		2,962	**1,873**
Provisions	13	**7,586**	**7,663**
Revaluation accounts	14	**29,420**	**24,922**
Capital and reserves	15		
Capital	15.1	**7,659**	**7,740**
Profit for the year		**2,366**	**1,575**
Total liabilities		**457,082**	**447,083**

2.2 Profit and Loss Account for the year ending 31 December 2019

	Note number	2019 € millions	2018 € millions
Interest income on foreign reserve assets	22.1	1,052	862
Interest income arising from the allocation of euro banknotes within the Eurosystem	22.2	-	-
Other interest income	22.4	1,828	1,642
Interest income		2,879	2,503
Remuneration of NCBs' claims in respect of foreign reserves transferred	22.3	-	-
Other interest expense	22.4	(193)	(226)
Interest expense		(193)	(226)
Net interest income	22	**2,686**	**2,277**
Realised gains/losses arising from financial operations	23	197	(77)
Write-downs on financial assets and positions	24	(20)	(69)
Transfer to/from provisions for financial risks		84	-
Net result of financial operations, write-downs and risk provisions		**260**	**(146)**
Net income/expense from fees and commissions	25	**531**	**511**
Income from equity shares and participating interests	26	**1**	**1**
Other income	27	**43**	**47**
Total net income		**3,522**	**2,690**
Staff costs	28	(566)	(515)
Administrative expenses	29	(476)	(525)
Depreciation of tangible and intangible fixed assets		(102)	(66)
Banknote production services	30	(12)	(8)
Profit for the year		**2,366**	**1,575**

Frankfurt am Main, 11 February 2020

European Central Bank

Christine Lagarde

President

2.3 Accounting policies

Form and presentation of the financial statements

The financial statements of the ECB have been drawn up in accordance with the following accounting policies,[17] which the Governing Council of the ECB considers to achieve a fair presentation of the financial statements, reflecting at the same time the nature of central bank activities.

Accounting principles

The following accounting principles have been applied: economic reality and transparency, prudence, recognition of post-balance sheet events, materiality, going concern, the accruals principle, consistency and comparability.

Recognition of assets and liabilities

An asset or liability is only recognised in the Balance Sheet when it is probable that any associated future economic benefit will flow to or from the ECB, substantially all of the associated risks and rewards have been transferred to the ECB, and the cost or value of the asset or the amount of the obligation can be measured reliably.

Basis of accounting

The accounts have been prepared on a historical cost basis, modified to include the market valuation of marketable securities (other than securities currently held for monetary policy purposes), gold and all other on-balance-sheet and off-balance-sheet assets and liabilities denominated in foreign currency.

Transactions in financial assets and liabilities are reflected in the accounts on the basis of the date on which they were settled.

With the exception of spot transactions in securities, transactions in financial instruments denominated in foreign currency are recorded in off-balance-sheet accounts on the trade date. At the settlement date the off-balance-sheet entries are reversed and transactions are booked on-balance-sheet. Purchases and sales of foreign currency affect the net foreign currency position on the trade date, and realised

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17 The detailed accounting policies of the ECB are laid down in Decision (EU) 2016/2247 of the ECB of 3 November 2016 on the annual accounts of the ECB (ECB/2016/35) (OJ L 347, 20.12.2016, p. 1), as amended. In order to ensure the harmonised accounting and financial reporting of Eurosystem operations, the Decision is based on Guideline (EU) 2016/2249 of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (OJ L 347, 20.12.2016, p. 37), as amended. These policies, which are reviewed and updated regularly as deemed appropriate, are consistent with the provisions of Article 26.4 of the Statute of the ESCB, which require a harmonised approach to the rules governing the accounting and financial reporting of Eurosystem operations.

results arising from sales are also calculated on that date. Accrued interest, premiums and discounts related to financial instruments denominated in foreign currency are calculated and recorded daily, and the foreign currency position is also affected daily by these accruals.

Gold and foreign currency assets and liabilities

Assets and liabilities denominated in foreign currency are converted into euro at the exchange rate prevailing on the balance sheet date. Income and expenses are converted at the exchange rate prevailing on the recording date. The revaluation of foreign exchange assets and liabilities, including on-balance-sheet and off-balance-sheet instruments, is performed on a currency-by-currency basis.

Revaluation to the market price for assets and liabilities denominated in foreign currency is treated separately from the exchange rate revaluation.

Gold is valued at the market price prevailing at the balance sheet date. No distinction is made between the price and currency revaluation differences for gold. Instead, a single gold valuation is accounted for on the basis of the price in euro per fine ounce of gold, which, for the year ending 31 December 2019, was derived from the exchange rate of the euro against the US dollar on 31 December 2019.

The special drawing right (SDR) is defined in terms of a basket of currencies and its value is determined by the weighted sum of the exchange rates of five major currencies (the US dollar, euro, Chinese renminbi, Japanese yen and pound sterling). The ECB’s holdings of SDRs were converted into euro using the exchange rate of euro per SDR as at 31 December 2019.

Securities

Securities held for monetary policy purposes

Securities currently held for monetary policy purposes are accounted for at amortised cost subject to impairment.

Other securities

Marketable securities (other than securities currently held for monetary policy purposes) and similar assets are valued either at the mid-market prices or on the basis of the relevant yield curve prevailing on the balance sheet date, on a security-by-security basis. Options embedded in securities are not separated for valuation purposes. For the year ending 31 December 2019, mid-market prices on 30 December 2019 were used. Illiquid equity shares and any other equity instruments held as permanent investments are valued at cost subject to impairment.

Income recognition

Income and expenses are recognised in the period in which they are earned or incurred.[18] Realised gains and losses arising from the sale of foreign currency, gold and securities are taken to the Profit and Loss Account. Such realised gains and losses are calculated by reference to the average cost of the respective asset.

Unrealised gains are not recognised as income and are transferred directly to a revaluation account.

Unrealised losses are taken to the Profit and Loss Account if, at the year-end, they exceed previous revaluation gains registered in the corresponding revaluation account. Such unrealised losses on any one security or currency or on gold are not netted against unrealised gains on other securities or currencies or gold. In the event of such unrealised losses on any item taken to the Profit and Loss Account, the average cost of that item is reduced to the year-end exchange rate or market price. Unrealised losses on interest rate swaps that are taken to the Profit and Loss Account at the year-end are amortised in subsequent years.

Impairment losses are taken to the Profit and Loss Account and are not reversed in subsequent years unless the impairment decreases and the decrease can be related to an observable event that occurred after the impairment was first recorded.

Premiums or discounts arising on securities are amortised over the securities' remaining contractual life.

Reverse transactions

Reverse transactions are operations whereby the ECB buys or sells assets under a repurchase agreement or conducts credit operations against collateral.

Under a repurchase agreement, securities are sold for cash with a simultaneous agreement to repurchase them from the counterparty at an agreed price on a set future date. Repurchase agreements are recorded as collateralised deposits on the liability side of the Balance Sheet. Securities sold under such an agreement remain on the Balance Sheet of the ECB.

Under a reverse repurchase agreement, securities are bought for cash with a simultaneous agreement to sell them back to the counterparty at an agreed price on a set future date. Reverse repurchase agreements are recorded as collateralised loans on the asset side of the Balance Sheet, but are not included in the ECB's security holdings.

Reverse transactions (including securities lending transactions) conducted under a programme offered by a specialised institution are recorded on the Balance Sheet only where collateral has been provided in the form of cash and this cash remains uninvested.

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[18] A minimum threshold of €100,000 applies for administrative accruals and provisions.

Off-balance-sheet instruments

Currency instruments, namely foreign exchange forward transactions, forward legs of foreign exchange swaps and other currency instruments involving an exchange of one currency for another at a future date, are included in the net foreign currency position for the purpose of calculating foreign exchange gains and losses.

Interest rate instruments are revalued on an item-by-item basis. Daily changes in the variation margin of open interest rate futures contracts, as well as interest rate swaps that are cleared via a central counterparty, are recorded in the Profit and Loss Account. The valuation of forward transactions in securities and of interest rate swaps that are not cleared via a central counterparty is carried out by the ECB based on generally accepted valuation methods using observable market prices and rates, as well as discount factors from the settlement dates to the valuation date.

Post-balance sheet events

The values of assets and liabilities are adjusted for events that occur between the annual balance sheet date and the date on which the Executive Board authorises the submission of the ECB's Annual Accounts to the Governing Council for approval, if such events materially affect the condition of assets and liabilities at the balance sheet date.

Important post-balance sheet events that do not affect the condition of assets and liabilities at the balance sheet date are disclosed in the notes.

Intra-ESCB balances/intra-Eurosystem balances

Intra-ESCB balances result primarily from cross-border payments in the European Union (EU) that are settled in central bank money in euro. These transactions are for the most part initiated by private entities (i.e. credit institutions, corporations and individuals). They are settled in TARGET2 – the Trans-European Automated Real-time Gross settlement Express Transfer system – and give rise to bilateral balances in the TARGET2 accounts of EU central banks. These bilateral balances are netted and then assigned to the ECB on a daily basis, leaving each national central bank (NCB) with a single net bilateral position vis-à-vis the ECB only. Payments conducted by the ECB and settled in TARGET2 also affect the single net bilateral positions. These positions in the books of the ECB represent the net claim or liability of each NCB against the rest of the European System of Central Banks (ESCB). Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET2, as well as other intra-Eurosystem balances denominated in euro (e.g. the ECB's interim profit distribution to NCBs), are presented on the Balance Sheet of the ECB as a single net asset or liability position under either "Other claims within the Eurosystem (net)" or "Other liabilities within the Eurosystem (net)". Intra-ESCB balances of non-euro area NCBs vis-à-vis the ECB, arising from their participation in

TARGET2,[19] are disclosed under “Liabilities to non-euro area residents denominated in euro”.

Intra-Eurosystem balances arising from the allocation of euro banknotes within the Eurosystem are included as a single net asset under “Claims related to the allocation of euro banknotes within the Eurosystem” (see “Banknotes in circulation” below).

Intra-Eurosystem balances arising from the transfer of foreign reserve assets to the ECB by NCBs joining the Eurosystem are denominated in euro and reported under “Liabilities equivalent to the transfer of foreign reserves”.

Fixed assets

Fixed assets, including intangible assets, but with the exception of land and works of art, are valued at cost less depreciation. Land and works of art are valued at cost. The ECB’s main building is valued at cost less depreciation subject to impairment. For the depreciation of the ECB’s main building, costs are assigned to the appropriate asset components, which are depreciated in accordance with their estimated useful lives. Depreciation is calculated on a straight-line basis over the expected useful life of the asset, beginning in the quarter after the asset is available for use. The useful lives applied for the main asset classes are as follows:

Buildings	20, 25 or 50 years
Plant in building	10 or 15 years
Technical equipment	4, 10 or 15 years
Computers, related hardware and software, and motor vehicles	4 years
Furniture	10 years

The depreciation period for capitalised refurbishment expenditure relating to the ECB’s existing rented premises is adjusted to take account of any events that have an impact on the expected useful life of the affected asset.

The ECB performs an annual impairment test of its main building and right-of-use assets relating to office buildings (see “Leases” below) based on International Accounting Standard (IAS) 36 “Impairment of assets”. If an impairment indicator is identified, signalling that the asset may be impaired, the recoverable amount is estimated. An impairment loss is recorded in the Profit and Loss Account if the recoverable amount is less than the net book value.

Fixed assets costing less than €10,000 are written off in the year of acquisition.

Fixed assets that comply with the capitalisation criteria, but are still under construction or development, are recorded under the heading “Assets under construction”. The related costs are transferred to the relevant fixed asset headings once the assets are available for use.

[19] As at 31 December 2019 the non-euro area NCBs participating in TARGET2 were Българска народна банка (Bulgarian National Bank), Danmarks Nationalbank, Hrvatska narodna banka, Narodowy Bank Polski and Banca Naţională a României.

Leases

For all leases involving a tangible asset, the related right-of-use asset and lease liability are recognised on the Balance Sheet at the lease commencement date and included under “Tangible and intangible fixed assets” and “Sundry” (liabilities), respectively.

Right-of-use assets are valued at cost less depreciation. In addition, right-of-use assets relating to office buildings are subject to impairment (regarding annual impairment test, see “Fixed assets” above). Depreciation is calculated on a straight-line basis from the commencement date to either the end of the useful life of the right-of-use asset or the end of the lease term, whichever is earlier.

The lease liability is initially measured at the present value of the future lease payments (comprising only lease components), discounted using the ECB's incremental borrowing rate. Subsequently, the lease liability is measured at amortised cost using the effective interest method. The related interest expense is recorded in the Profit and Loss Account under “Other interest expense”. When there is a change in future lease payments arising from a change in an index or other reassessment of the existing contract, the lease liability is remeasured. Any such remeasurement results in a corresponding adjustment to the carrying amount of the right-of-use asset.

Short-term leases with duration of 12 months or less and leases of low-value assets below €10,000 (consistent with the threshold used for the recognition of fixed assets) are recorded as an expense in the Profit and Loss Account.

The ECB’s post-employment benefits, other long-term benefits and termination benefits

The ECB operates defined benefit plans for its staff and the members of the Executive Board, as well as for the members of the Supervisory Board employed by the ECB.

The staff pension plan is funded by assets held in a long-term employee benefit fund. The compulsory contributions made by the ECB and the staff are reflected in the defined benefit pillar of the plan. Staff can make additional contributions on a voluntary basis in a defined contribution pillar that can be used to provide additional benefits.[20] These additional benefits are determined by the amount of voluntary contributions together with the investment returns arising from those contributions.

Unfunded arrangements are in place for the post-employment and other long-term benefits of members of the Executive Board and members of the Supervisory Board employed by the ECB. For staff, unfunded arrangements are in place for post-employment benefits other than pensions and for other long-term benefits and termination benefits.

[20] The funds accumulated by a staff member through voluntary contributions can be used at retirement to purchase an additional pension. This pension is included in the defined benefit obligation from that point on.

Net defined benefit liability

The liability recognised in the Balance Sheet under “Sundry” (liabilities) in respect of the defined benefit plans, including other long-term benefits and termination benefits, is the present value of the defined benefit obligation at the balance sheet date, less the fair value of plan assets used to fund the related obligation.

The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is calculated by discounting the estimated future cash flows using a rate which is determined by reference to market yields at the balance sheet date on high-quality euro-denominated corporate bonds that have similar terms to maturity to the related obligation.

Actuarial gains and losses can arise from experience adjustments (where actual outcomes are different from the actuarial assumptions previously made) and changes in actuarial assumptions.

Net defined benefit cost

The net defined benefit cost is split into components reported in the Profit and Loss Account and remeasurements in respect of post-employment benefits shown in the Balance Sheet under “Revaluation accounts”.

The net amount charged to the Profit and Loss Account comprises:

1. the current service cost of the defined benefits accruing for the year;
2. the past service cost of the defined benefits resulting from a plan amendment;
3. net interest at the discount rate on the net defined benefit liability;
4. remeasurements in respect of other long-term benefits and termination benefits of a long-term nature, if any, in their entirety.

The net amount shown under “Revaluation accounts” comprises the following items:

1. actuarial gains and losses on the defined benefit obligation;
2. the actual return on plan assets, excluding amounts included in the net interest on the net defined benefit liability;
3. any change in the effect of the asset ceiling, excluding amounts included in the net interest on the net defined benefit liability.

These amounts are valued annually by independent actuaries to establish the appropriate liability in the financial statements.

Banknotes in circulation

The ECB and the euro area NCBs, which together comprise the Eurosystem, issue euro banknotes.[21] The total value of euro banknotes in circulation is allocated to the Eurosystem central banks on the last working day of each month in accordance with the banknote allocation key.[22]

The ECB has been allocated a share of 8% of the total value of euro banknotes in circulation, which is disclosed in the Balance Sheet under the liability item "Banknotes in circulation". The ECB's share of the total euro banknote issue is backed by claims on the NCBs. These claims, which bear interest,[23] are disclosed under the sub-item "Intra-Eurosystem claims: claims related to the allocation of euro banknotes within the Eurosystem" (see "Intra-ESCB balances/intra-Eurosystem balances" above). Interest income on these claims is included in the Profit and Loss Account under the item "Interest income arising from the allocation of euro banknotes within the Eurosystem".

Interim profit distribution

An amount that is equal to the sum of the ECB's income on euro banknotes in circulation and income arising from the securities held for monetary policy purposes purchased under (a) the Securities Markets Programme; (b) the third covered bond purchase programme; (c) the asset-backed securities purchase programme; and (d) the public sector purchase programme is distributed in January of the following year by means of an interim profit distribution, unless otherwise decided by the Governing Council.[24] It is distributed in full unless it is higher than the ECB's net profit for the year and subject to any decisions by the Governing Council to make transfers to the provision for financial risks. The Governing Council may also decide to reduce the amount of the income on euro banknotes in circulation to be distributed in January by the amount of the costs incurred by the ECB in connection with the issue and handling of euro banknotes.

Changes to accounting policies

Until the end of 2018 the ECB recorded costs related to rental contracts under "Administrative expenses" in the Profit and Loss Account over the contract duration. Following the issue of the International Financial Reporting Standard (IFRS) 16 "Leases", the ECB has modified its accounting policy as from 1 January 2019. On the initial application, the ECB reassessed all rental contracts involving fixed assets to

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21 Decision of the ECB of 13 December 2010 on the issue of euro banknotes (recast) (ECB/2010/29) (2011/67/EU) (OJ L 35, 9.2.2011, p. 26), as amended.

22 "Banknote allocation key" means the percentages that result from taking into account the ECB's share in the total euro banknote issue and applying the subscribed capital key to the NCBs' share in that total.

23 Decision (EU) 2016/2248 of the ECB of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (ECB/2016/36) (OJ L 347, 20.12.2016, p. 26).

24 Decision (EU) 2015/298 of the ECB of 15 December 2014 on the interim distribution of the income of the ECB (recast) (ECB/2014/57) (OJ L 53, 25.2.2015, p. 24), as amended.

determine whether they meet the definition of a lease according to the new accounting policy. The identified leases were recognised using the modified retrospective approach, according to which a right-of-use asset is equal to the related lease liability. As a result, the comparative information has not been restated.

The resulting right-of-use assets and lease liabilities recognised on the Balance Sheet as at 1 January 2019 under “Tangible and intangible fixed assets” and “Sundry” (liabilities) are as follows:

	Balance as at 31 December 2018 € millions	Adjustment due to policy change on 1 January 2019 € millions	Balance as at 1 January 2019 € millions
Tangible and intangible fixed assets	1,148	271	1,419
Sundry (liabilities)	1,178	271	1,450

The related expenses will be recorded in the Profit and Loss Account under “Other interest expense” and “Depreciation of tangible and intangible fixed assets”.

Other issues

In accordance with Article 27 of the Statute of the ESCB, and on the basis of a recommendation of the Governing Council, the EU Council has approved the appointment of Baker Tilly GmbH & Co. KG Wirtschaftsprüfungsgesellschaft, Düsseldorf (Federal Republic of Germany) as the external auditors of the ECB for a five-year period up to the end of the financial year 2022. This five-year period can be extended for up to two additional financial years.

2.4 Notes on the Balance Sheet

Note 1 - Gold and gold receivables

As at 31 December 2019 the ECB held 16,229,522 ounces[25] of fine gold, the market value of which amounted to €21,976 million (2018: €18,193 million). No gold operations took place in 2019 and the ECB's holdings therefore remained unchanged compared with their level as at 31 December 2018. The increase in the euro equivalent value of these holdings was due to the rise in the market price of gold in euro terms (see "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies" and note 14 "Revaluation accounts").

Note 2 - Claims on non-euro area and euro area residents denominated in foreign currency

Note 2.1 - Receivables from the IMF

This asset represents the ECB's holdings of SDRs and amounted to €710 million as at 31 December 2019 (2018: €692 million). It arises as the result of a two-way SDR buying and selling arrangement with the International Monetary Fund (IMF), whereby the IMF is authorised to arrange sales or purchases of SDRs against euro, on behalf of the ECB, within minimum and maximum holding levels. For accounting purposes, SDRs are treated as a foreign currency (see "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies"). The increase in the value of the ECB's holdings of SDRs was due to the appreciation of the SDR against the euro during 2019 and the interest income received during the year.

Note 2.2 - Balances with banks and security investments, external loans and other external assets; and claims on euro area residents denominated in foreign currency

These two items consist of balances with banks and loans denominated in foreign currency, and investments in securities denominated in US dollars, Japanese yen and Chinese renminbi.

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25 This corresponds to 504.8 tonnes.

Claims on non-euro area residents	2019 € millions	2018 € millions	Change € millions
Current accounts	6,947	7,755	(808)
Money market deposits	1,650	1,942	(292)
Reverse repurchase agreements	296	611	(316)
Security investments	41,585	39,415	2,170
Total	**50,478**	**49,723**	**755**

Claims on euro area residents	2019 € millions	2018 € millions	Change € millions
Current accounts	19	1	18
Money market deposits	1,128	602	526
Reverse repurchase agreements	1,490	393	1,097
Total	**2,637**	**997**	**1,640**

The total value of these items increased in 2019, owing to the reinvestment of income received during the year, primarily on the US dollar portfolio, and the appreciation of both the US dollar and the Japanese yen against the euro.

The ECB's net foreign currency holdings[26] as at 31 December 2019 were as follows:

	2019 Currency in millions	2018 Currency in millions
US dollars	48,879	47,551
Japanese yen	1,093,739	1,093,460
Chinese renminbi	4,043	3,886

Note 3 - Other claims on euro area credit institutions denominated in euro

As at 31 December 2019 this item consisted of current account balances with euro area residents amounting to €109 million (2018: €300 million).

Note 4 - Securities of euro area residents denominated in euro

Note 4.1 - Securities held for monetary policy purposes

As at 31 December 2019 this item consisted of securities acquired by the ECB within the scope of the three covered bond purchase programmes (CBPPs), the Securities

26 These holdings comprise assets minus liabilities denominated in the given foreign currency that are subject to foreign currency revaluation. They are included under the headings "Claims on non-euro area residents denominated in foreign currency", "Claims on euro area residents denominated in foreign currency", "Accruals and prepaid expenses", "Off-balance-sheet instruments revaluation differences" (liabilities side) and "Accruals and income collected in advance" and take into account foreign exchange forward and swap transactions included in off-balance-sheet items. Price gains on financial instruments denominated in foreign currency arising as a result of revaluations are not included.

Markets Programme (SMP), the asset-backed securities purchase programme (ABSPP) and the public sector purchase programme (PSPP).[27]

Purchases under the first CBPP were completed on 30 June 2010, while the second CBPP ended on 31 October 2012. The Governing Council decided to cease SMP purchases on 6 September 2012.

On 1 November 2019 the Eurosystem restarted its net purchases of securities under the asset purchase programme (APP)[28] at a monthly pace of €20 billion on average. This followed a period of ten months since the end of 2018 during which the Eurosystem only reinvested, in full, the principal payments from maturing securities purchased under the APP. The Governing Council expects net purchases to run for as long as necessary to reinforce the accommodative impact of its policy rates, and to end shortly before it starts raising the key ECB interest rates. The Governing Council also intends to continue the reinvestments for an extended period of time past the date when the Governing Council starts raising the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

The securities purchased under all of these programmes are valued on an amortised cost basis subject to impairment (see “Securities” in Section 2.3 “Accounting policies”).

The amortised cost of the securities held by the ECB and their market value[29] (which is not recorded on the Balance Sheet or in the Profit and Loss Account and is provided for comparison purposes only) are as follows:

	2019 € millions		2018 € millions		Change € millions	
	Amortised cost	Market value	Amortised cost	Market value	Amortised cost	Market value
First covered bond purchase programme (CBPP1)	79	83	348	363	(269)	(280)
Second covered bond purchase programme (CBPP2)	218	235	341	365	(122)	(130)
Third covered bond purchase programme (CBPP3)	21,678	22,347	21,545	21,706	133	640
Securities Markets Programme (SMP)	3,692	4,121	5,484	6,051	(1,792)	(1,930)
Asset-backed securities purchase programme (ABSPP)	28,403	28,362	27,511	27,262	891	1,100
Public sector purchase programme (PSPP)	196,308	205,782	196,428	198,401	(120)	7,381
Total	**250,377**	**260,929**	**251,656**	**254,148**	**(1,280)**	**6,781**

The decrease in the amortised cost value of the portfolios held under the first and second CBPPs and the SMP was due to redemptions. The decrease in the amortised cost value of securities held under the PSPP was due to the net result of the

27 The ECB does not acquire securities under the corporate sector purchase programme (CSPP).

28 The APP consists of the third covered bond purchase programme (CBPP3), the ABSPP, the PSPP and the CSPP. Further details on the APP can be found on the ECB’s website.

29 Market values are indicative and are derived on the basis of market quotes. When market quotes are not available, market prices are estimated using internal Eurosystem models.

amortisation of premiums and discounts, which more than offset the net purchases conducted in the last two months of 2019.

The Governing Council assesses on a regular basis the financial risks associated with the securities held under all these programmes.

Impairment tests are conducted on an annual basis, using data as at the year-end, and are approved by the Governing Council. In these tests, impairment indicators are assessed separately for each programme. In cases where impairment indicators were observed, further analysis has been performed to confirm that the cash flows of the underlying securities have not been affected by an impairment event. Based on the results of this year’s impairment tests, no losses have been recorded by the ECB for the securities held in its monetary policy portfolios in 2019.

Note 5 - Intra-Eurosystem claims

Note 5.1 - Claims related to the allocation of euro banknotes within the Eurosystem

This item consists of the claims of the ECB vis-à-vis the euro area NCBs relating to the allocation of euro banknotes within the Eurosystem (see “Banknotes in circulation” in Section 2.3 “Accounting policies”) and as at 31 December 2019 amounted to €103,420 million (2018: €98,490 million). The remuneration of these claims is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations[30] (see note 22.2 “Interest income arising from the allocation of euro banknotes within the Eurosystem”).

Note 6 - Other assets

Note 6.1 - Tangible and intangible fixed assets

These assets comprised the following items on 31 December 2019:

[30] Since 16 March 2016 the interest rate used by the Eurosystem in its tenders for main refinancing operations has been 0.00%.

	2019 € millions	2018 € millions	Change € millions
Cost			
Land and buildings	1,009	1,012	(2)
Right-of-use buildings	268	-	268
Plant in building	221	221	0
Computer hardware and software	133	124	9
Equipment, furniture and motor vehicles	98	93	4
Right-of-use equipment	3	-	3
Assets under construction	0	1	(1)
Other fixed assets	11	11	0
Total cost	**1,744**	**1,463**	**281**
Accumulated depreciation			
Land and buildings	(141)	(118)	(23)
Right-of-use buildings	(39)	-	(39)
Plant in building	(80)	(64)	(16)
Computer hardware and software	(103)	(89)	(14)
Equipment, furniture and motor vehicles	(50)	(43)	(7)
Right-of-use equipment	(1)	-	(1)
Other fixed assets	(2)	(2)	(0)
Total accumulated depreciation	**(414)**	**(315)**	**(100)**
Net book value	**1,330**	**1,148**	**182**

As at 1 January 2019 the ECB recognised under right-of-use buildings mainly leased office buildings and under right-of-use equipment the related building operating facilities, as well as office and other equipment.

In respect of the ECB's main building and right-of-use office buildings, an impairment test was conducted at the end of the year and no impairment loss has been recorded.

Note 6.2 - Other financial assets

This item consists mainly of the investment of the ECB's own funds held as a counterpart to the capital and reserves and the provision for financial risks. It also includes 3,211 shares in the Bank for International Settlements (BIS) at the acquisition cost of €42 million.

The components of this item are as follows:

	2019 € millions	2018 € millions	Change € millions
Current accounts in euro	0	0	(0)
Securities denominated in euro	19,372	17,913	1,459
Reverse repurchase agreements in euro	1,219	2,575	(1,356)
Other financial assets	42	42	(0)
Total	**20,633**	**20,529**	**103**

The net increase in this item in 2019 was mainly due to the reinvestment of interest income generated on the ECB's own funds portfolio and the increase in the market value of the securities held in this portfolio.

Note 6.3 - Off-balance-sheet instruments revaluation differences

This item is composed of valuation changes in swap and forward transactions in foreign currency that were outstanding on 31 December 2019 (see note 19 "Foreign exchange swap and forward transactions"). These valuation changes amounted to €619 million (2018: €578 million) and are the result of the conversion of such transactions into their euro equivalents at the exchange rates prevailing on the balance sheet date, compared with the euro values resulting from the conversion of the transactions at the average cost of the respective foreign currency on that date (see "Off-balance-sheet instruments" and "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies").

Note 6.4 - Accruals and prepaid expenses

On 31 December 2019 this item stood at €2,572 million (2018: €2,738 million). It comprised mainly accrued coupon interest on securities, including outstanding interest paid at acquisition, amounting to €2,431 million (2018: €2,589 million) (see note 2.2 "Balances with banks and security investments, external loans and other external assets; and claims on euro area residents denominated in foreign currency", note 4 "Securities of euro area residents denominated in euro" and note 6.2 "Other financial assets").

Moreover, this item includes (a) accrued income from common Eurosystem projects (see note 27 "Other income"); (b) miscellaneous prepayments; and (c) accrued interest income on other financial assets and liabilities.

Note 6.5 - Sundry

On 31 December 2019 this item amounted to €2,221 million (2018: €2,039 million) and mainly included the accrued amount of the ECB's interim profit distribution of €1,431 million (2018: €1,191 million) (see "Interim profit distribution" in Section 2.3 "Accounting policies" and note 11.2 "Other liabilities within the Eurosystem (net)").

It also included balances with a value of €757 million (2018: €567 million) related to swap and forward transactions in foreign currency outstanding on 31 December 2019 that arose from the conversion of such transactions into their euro equivalents at the respective currency's average cost on the balance sheet date, compared with the euro values at which the transactions were initially recorded (see "Off-balance-sheet instruments" in Section 2.3 "Accounting policies").

As at 31 December 2018 this item also included an amount of €244 million which corresponded to the annual supervisory fees receivable from the supervised entities, as the ECB invoiced these fees to the supervised entities in December 2018 with a payment date in January 2019. The supervisory fees for the current year were invoiced in October 2019 with a due date in December 2019, and as a result the majority was collected within the same financial year.

Note 7 - Banknotes in circulation

This item consists of the ECB's share (8%) of total euro banknotes in circulation (see "Banknotes in circulation" in Section 2.3 "Accounting policies") and as at 31 December 2019 amounted to €103,420 million (2018: €98,490 million).

Note 8 - Other liabilities to euro area credit institutions denominated in euro

The Eurosystem central banks have the possibility of accepting cash as collateral in their PSPP securities lending facilities without having to reinvest it. In the case of the ECB, these operations are conducted via a specialised institution.

As at 31 December 2019 the outstanding value of such PSPP securities lending transactions conducted with euro area credit institutions was €1,325 million (2018: €1,399 million). Cash received as collateral was transferred to TARGET2 accounts. As the cash remained uninvested at the year-end, these transactions were recorded on the Balance Sheet (see "Reverse transactions" in Section 2.3 "Accounting policies").[31]

Note 9 - Liabilities to other euro area residents denominated in euro

Note 9.1 - Other liabilities

As at 31 December 2019 this position amounted to €20,466 million (2018: €9,152 million). This item includes deposits of the European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM). In accordance with Article 21 of

[31] Securities lending transactions that do not result in uninvested cash collateral at the year-end are recorded in off-balance-sheet accounts (see note 16 "Securities lending programmes").

the Statute of the ESCB, the ECB may act as fiscal agent for Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States.

This item also includes deposits or payments of funds accepted by the ECB and made by or on behalf of the participants in EURO1 and RT1[32] which are used as a guarantee fund for EURO1 or to support settlement in RT1.

Note 10 - Liabilities to non-euro area residents denominated in euro

As at 31 December 2019 this position amounted to €7,245 million (2018: €10,361 million). The largest component was an amount of €3,350 million (2018: €3,682 million) arising from the standing reciprocal currency arrangement with the Federal Reserve Bank of New York. Under this arrangement, US dollars are provided by the Federal Reserve System to the ECB by means of swap transactions, with the aim of offering short-term US dollar funding to Eurosystem counterparties. The ECB simultaneously enters into back-to-back swap transactions with euro area NCBs, which use the resulting funds to conduct US dollar liquidity-providing operations with Eurosystem counterparties in the form of reverse transactions. The back-to-back swap transactions result in intra-Eurosystem balances between the ECB and the NCBs (see note 11.2 “Other liabilities within the Eurosystem (net)”). Furthermore, the swap transactions conducted with the Federal Reserve System and the euro area NCBs result in forward claims and liabilities that are recorded in off-balance-sheet accounts (see note 19 “Foreign exchange swap and forward transactions”).

This item also includes an amount of €3,271 million (2018: €4,619 million) consisting of balances held with the ECB by non-euro area central banks that arise from, or are the counterpart of, transactions processed via the TARGET2 system. The decrease in these balances in 2019 was due to payments from non-euro area residents to euro area residents.

The remainder of this item consists of an amount of €625 million (2018: €2,059 million) arising from outstanding PSPP securities lending transactions conducted with non-euro area residents in which cash was received as collateral and transferred to TARGET2 accounts (see note 8 “Other liabilities to euro area credit institutions denominated in euro”).

[32] EURO1 and RT1 are payment systems operated by ABE CLEARING S.A.S à capital variable (EBA Clearing).

Note 11 - Intra-Eurosystem liabilities

Note 11.1 - Liabilities equivalent to the transfer of foreign reserves

These represent the liabilities to euro area NCBs that arose from the transfer of foreign reserve assets to the ECB when they joined the Eurosystem. Pursuant to Article 30.2 of the Statute of the ESCB, these contributions are fixed in proportion to NCBs' share in the subscribed capital of the ECB. Following the five-yearly adjustment of the NCBs' weightings in the key for subscription to the ECB's capital on 1 January 2019, the weighting of the euro area NCBs in the ECB's subscribed capital decreased (see note 15 "Capital and reserves"). This resulted in a reduction in these liabilities by €448 million to €40,344 million, as shown in the table below.

	Since 1 January 2019 € millions	As at 31 December 2018 € millions
Nationale Bank van België/Banque Nationale de Belgique	1,465	1,436
Deutsche Bundesbank	10,644	10,430
Eesti Pank	114	112
Central Bank of Ireland	681	673
Bank of Greece	1,002	1,178
Banco de España	4,833	5,123
Banque de France	8,233	8,217
Banca d'Italia	6,840	7,134
Central Bank of Cyprus	87	88
Latvijas Banka	158	163
Lietuvos bankas	235	239
Banque centrale du Luxembourg	132	118
Central Bank of Malta	42	38
De Nederlandsche Bank	2,357	2,320
Oesterreichische Nationalbank	1,178	1,138
Banco de Portugal	948	1,010
Banka Slovenije	195	200
Národná banka Slovenska	464	448
Suomen Pankki – Finlands Bank	736	728
Total	**40,344**	**40,793**

The remuneration of these liabilities is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations, adjusted to reflect a zero return on the gold component (see note 22.3 "Remuneration of NCBs' claims in respect of foreign reserves transferred").

Note 11.2 - Other liabilities within the Eurosystem (net)

In 2019 this item consisted of the TARGET2 balances of euro area NCBs vis-à-vis the ECB and the amount due to euro area NCBs in respect of the ECB's interim profit distribution (see "Intra-ESCB balances/intra-Eurosystem balances" and "Interim profit distribution", respectively, in Section 2.3 "Accounting policies").

	2019 € millions	2018 € millions
Net TARGET2 liability	232,857	241,923
Due to euro area NCBs in respect of TARGET2	*1,282,370*	*1,349,908*
Due from euro area NCBs in respect of TARGET2	*(1,049,513)*	*(1,107,984)*
Due to euro area NCBs in respect of the ECB's interim profit distribution	1,431	1,191
Other liabilities within the Eurosystem (net)	**234,288**	**243,115**

The decrease in the net TARGET2 liability resulted mainly from (a) the increase in the deposits accepted by the ECB in its role as fiscal agent (see note 9 "Liabilities to other euro area residents denominated in euro"); (b) the interest income received from securities held for monetary policy purposes; and (c) redemptions of securities purchased under the SMP and the first two covered bonds purchase programmes, which were settled via TARGET2 accounts. The impact of these factors was partially offset by (a) the APP net purchases, which were also settled via TARGET2 accounts; (b) the payment of the ECB's profit distribution for 2018; (c) the decrease in cash received as collateral against the lending of PSPP securities (see note 8 "Other liabilities to euro area credit institutions denominated in euro" and note 10 "Liabilities to non-euro area residents denominated in euro"); and (d) the settlement in TARGET2 of payments from euro area residents to non-euro area residents (see note 10 "Liabilities to non-euro area residents denominated in euro").

The remuneration of TARGET2 positions, with the exception of balances arising from back-to-back swap transactions in connection with US dollar liquidity-providing operations, is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations.

Note 12 - Other liabilities

Note 12.1 - Off-balance-sheet instruments revaluation differences

This item is composed of valuation changes in swap and forward transactions in foreign currency that were outstanding on 31 December 2019 (see note 19 "Foreign exchange swap and forward transactions"). These valuation changes amounted to €709 million (2018: €641 million) and are the result of the conversion of such transactions into their euro equivalents at the exchange rates prevailing on the balance sheet date, compared with the euro values resulting from the conversion of the transactions at the average cost of the respective foreign currency on that date (see "Off-balance-sheet instruments" and "Gold and foreign currency assets and liabilities" in Section 2.3 "Accounting policies").

Note 12.2 - Accruals and income collected in advance

This item comprised the following components on 31 December 2019:

	2019 € millions	2018 € millions	Change € millions
Administrative accruals	41	48	(7)
Financial instruments	2	5	(2)
Income collected in advance	22	1	21
Total	**66**	**54**	**12**

Note 12.3 - Sundry

On 31 December 2019 this item stood at €2,188 million (2018: €1,178 million). It included balances amounting to €662 million (2018: €580 million) related to swap and forward transactions in foreign currency that were outstanding on 31 December 2019 (see note 19 “Foreign exchange swap and forward transactions”). These balances arose from the conversion of such transactions into their euro equivalents at the respective currency’s average cost on the balance sheet date, compared with the euro values at which the transactions were initially recorded (see “Off-balance-sheet instruments” in Section 2.3 “Accounting policies”).

The item also included a lease liability of €232 million, resulting from the implementation of the new accounting policy for leases from 1 January 2019 (see “Leases” and “Changes to accounting policies” in Section 2.3 “Accounting policies”).

In addition, this item includes the ECB’s net defined benefit liability in respect of the post-employment and other long-term benefits of its staff and the members of the Executive Board, as well as the members of the Supervisory Board employed by the ECB. The termination benefits of ECB staff are also included.

The ECB’s post-employment benefits, other long-term benefits and termination benefits

Balance Sheet

The amounts recognised in the Balance Sheet under the item “Sundry” (liabilities) in respect of post-employment, other long-term and staff termination benefits were as follows:

	2019 € millions			2018 € millions		
	Staff	Boards	Total	Staff	Boards	Total
Defined benefit obligation	2,497	39	2,537	1,608	29	1,637
Fair value of plan assets	(1,307)	-	(1,307)	(1,080)	-	(1,080)
Net defined benefit liability included under “Sundry” (liabilities)	**1,191**	**39**	**1,230**	**528**	**29**	**558**

Note: The columns labelled “Boards” report amounts in respect of both the Executive Board and the Supervisory Board.

In 2019 the present value of the defined benefit obligation vis-à-vis staff of €2,497 million (2018: €1,608 million) included unfunded benefits amounting to €323 million (2018: €226 million) relating to post-employment benefits other than pensions, to other long-term benefits and to staff termination benefits. The present value of the defined benefit obligation vis-à-vis the members of the Executive Board and the members of the Supervisory Board of €39 million (2018: €29 million) relates solely to unfunded arrangements in place for post-employment and other long-term benefits.

Remeasurements of the ECB's net defined benefit liability in respect of post-employment benefits are recognised in the Balance Sheet under liability item "Revaluation accounts". In 2019, remeasurement losses under that liability item amounted to €749 million (2018: €129 million) (see note 14 "Revaluation accounts").

Changes in the defined benefit obligation, plan assets and remeasurement results

Changes in the present value of the defined benefit obligation were as follows:

	2019 € millions			2018 € millions		
	Staff	Boards	Total	Staff	Boards	Total
Opening defined benefit obligation	1,608	29	1,637	1,510	29	1,539
Current service cost	90	2	92	96	2	98
Interest cost on the obligation	37	1	38	32	1	33
Contributions paid by plan participants[1]	31	(1)	30	33	0	33
Benefits paid	(22)	(2)	(24)	(43)	(3)	(46)
Remeasurement (gains)/losses	754	9	763	(19)	1	(19)
Closing defined benefit obligation	**2,497**	**39**	**2,537**	**1,608**	**29**	**1,637**

Note: The columns labelled "Boards" report amounts in respect of both the Executive Board and the Supervisory Board.
1) Net figure including compulsory contributions and transfers into/out of the plans. The compulsory contributions paid by staff are 7.4%, whilst those paid by the ECB are 20.7% of the basic salary.

The total remeasurement losses of €763 million on the defined benefit obligation in 2019 arose primarily as a result of the decrease in the discount rate from 2.3% in 2018 to 1.2% in 2019. Additional sources of remeasurement losses included the application of new mortality tables and, to a much lesser extent, experience adjustments reflecting the difference between the actuarial assumptions made in the previous year's report and actual experience.

Benefits paid decreased to €24 million in 2019 (2018: €46 million), mainly owing to lower one-off termination payments to staff members accepted for the temporary Career Transition Support (CTS) scheme. This scheme was introduced in 2017 for long-serving staff members to facilitate their voluntary transition to a career outside the ECB under specified conditions.

Changes in 2019 in the fair value of plan assets in the defined benefit pillar relating to staff were as follows:

	2019 € millions	2018 € millions
Opening fair value of plan assets	1,080	1,017
Interest income on plan assets	26	22
Remeasurement gains/(losses)	125	(34)
Contributions paid by employer	59	56
Contributions paid by plan participants	31	33
Benefits paid	(14)	(13)
Closing fair value of plan assets	**1,307**	**1,080**

The remeasurement gain on plan assets in 2019 reflected the fact that the actual return on the fund units was materially higher than the assumed interest income on plan assets.

Changes in 2019 in the remeasurement results were as follows:

	2019 € millions	2018 € millions
Opening remeasurement losses	(129)	(103)
Gains/(losses) on plan assets	125	(34)
Gains/(losses) on obligation	(763)	19
(Gains)/losses recognised in the Profit and Loss Account	18	(11)
Closing remeasurement losses included under “Revaluation accounts”	**(749)**	**(129)**

Profit and Loss Account

The amounts recognised in the Profit and Loss Account in 2019 were as follows:

	2019 € millions			2018 € millions		
	Staff	Boards	Total	Staff	Boards	Total
Current service cost	90	2	92	96	2	98
Net interest on the net defined benefit liability	12	1	13	10	1	11
Interest cost on the obligation	*37*	*1*	*38*	*32*	*1*	*33*
Interest income on plan assets	*(26)*	*-*	*(26)*	*(22)*	*-*	*(22)*
Remeasurement (gains)/losses on other long-term and termination benefits	18	0	18	(11)	(0)	(11)
Total included in “Staff costs”	**119**	**3**	**123**	**96**	**3**	**98**

Note: The columns labelled “Boards” report amounts in respect of both the Executive Board and the Supervisory Board.

The total remeasurement losses on other long-term and termination benefits recognised directly in the Profit and Loss Account amounted to €18 million in 2019. The majority of this amount related to other long-term benefits and arose primarily as a result of the decrease in the discount rate from 2.3% in 2018 to 1.2% in 2019.

The current service cost declined in 2019 to €92 million (2018: €98 million), mainly owing to an increase in the discount rate from 2.1% in 2017 to 2.3% in 2018.[33]

Key assumptions

In preparing the valuations referred to in this note, the independent actuaries have used assumptions which the Executive Board has accepted for the purposes of accounting and disclosure. The principal assumptions used for the purposes of calculating the liability for post-employment benefits and other long-term benefits are as follows:

	2019 %	2018 %
Discount rate	1.20	2.30
Expected return on plan assets[1]	2.20	3.30
General future salary increases[2]	2.00	2.00
Future pension increases[3]	1.00	1.30

1) These assumptions were used for calculating the part of the ECB's defined benefit obligation which is funded by assets with an underlying capital guarantee.
2) In addition, allowance is made for prospective individual salary increases of up to 1.8% per annum, depending on the age of the plan participants.
3) In accordance with the ECB's pension plan rules, pensions will be increased annually. If general salary adjustments for ECB employees are below price inflation, any increase in pensions will be in line with the general salary adjustments. If the general salary adjustments exceed price inflation, they will be applied to determine the increase in pensions, provided that the financial position of the ECB's pension plans permits such an increase.

Furthermore, voluntary contributions made by staff in a defined contribution pillar in 2019 amounted to €171 million (2018: €140 million). These contributions are invested in the plan assets and give rise to a corresponding obligation of equal value.

Note 13 - Provisions

This item consists mainly of a provision for financial risks. In 2019 its scope was extended to cover all financial risks (i.e. market, liquidity and credit risks). It previously covered foreign exchange rate, interest rate, credit and gold price risks only.

The provision for financial risks will be used to the extent deemed necessary by the Governing Council to offset future realised and unrealised losses. The size of and continuing requirement for this provision is reviewed annually, based on the ECB's assessment of its exposure to these risks and taking a range of factors into account. Its size, together with any amount held in the general reserve fund, may not exceed the value of the ECB's capital paid up by the euro area NCBs.

Taking into account (i) the reduction in the weighting of the euro area NCBs in the subscribed capital of the ECB as a result of the five-yearly adjustment of the key for subscription to the ECB's capital as at 1 January 2019 (see note 15 "Capital and reserves") and (ii) the results of the assessment of the ECB's exposures to financial risks, the Governing Council decided to release €84 million from the ECB's provision for financial risks on 31 December 2019 in order to comply with the maximum allowed ceiling. Thus the provision for financial risks as at 31 December 2019 amounted to

33 The current service cost is estimated using the discount rate that applied in the previous year.

€7,536 million, which corresponds to the value of the ECB's capital paid up by the euro area NCBs as at that date.

Note 14 - Revaluation accounts

This item consists mainly of revaluation balances arising from unrealised gains on assets, liabilities and off-balance-sheet instruments (see "Income recognition", "Gold and foreign currency assets and liabilities", "Securities" and "Off-balance-sheet instruments" in Section 2.3 "Accounting policies"). It also includes remeasurements of the ECB's net defined benefit liability in respect of post-employment benefits (see "The ECB's post-employment benefits, other long-term benefits and termination benefits" in Section 2.3 "Accounting policies" and note 12.3 "Sundry").

	2019 € millions	2018 € millions	Change € millions
Gold	18,082	14,298	3,784
Foreign currency	11,377	10,300	1,077
Securities and other instruments	710	453	257
Net defined benefit liability in respect of post-employment benefits	(749)	(129)	(620)
Total	**29,420**	**24,922**	**4,498**

The increase in the size of the revaluation accounts is predominately due to the rise in the price of gold and the depreciation of the euro against the US dollar and Japanese yen in 2019.

The foreign exchange rates used for the year-end revaluation were as follows:

Exchange rates	2019	2018
US dollars per euro	1.1234	1.1450
Japanese yen per euro	121.94	125.85
Chinese renminbi per euro	7.8205	7.8751
Euro per SDR	1.2339	1.2154
Euro per fine ounce of gold	1,354.104	1,120.961

Note 15 - Capital and reserves

Note 15.1 - Capital

Change to the ECB's capital key

Pursuant to Article 29 of the Statute of the ESCB, the weightings assigned to the NCBs in the key for subscription to the ECB's capital are adjusted every five years[34] according to the shares of the respective Member States in the total population and

[34] These weights are also adjusted whenever there is a change in the composition of the NCBs that contribute to the ECB's capital. These are the NCBs of EU Member States.

gross domestic product of the EU, in equal measure.[35] The fourth such adjustment following the establishment of the ECB was made on 1 January 2019, and the NCBs' capital key shares were adjusted as follows:

	Capital key since 1 January 2019 %	Capital key as at 31 December 2018 %
Nationale Bank van België/Banque Nationale de Belgique	2.5280	2.4778
Deutsche Bundesbank	18.3670	17.9973
Eesti Pank	0.1968	0.1928
Central Bank of Ireland	1.1754	1.1607
Bank of Greece	1.7292	2.0332
Banco de España	8.3391	8.8409
Banque de France	14.2061	14.1792
Banca d'Italia	11.8023	12.3108
Central Bank of Cyprus	0.1503	0.1513
Latvijas Banka	0.2731	0.2821
Lietuvos bankas	0.4059	0.4132
Banque centrale du Luxembourg	0.2270	0.2030
Central Bank of Malta	0.0732	0.0648
De Nederlandsche Bank	4.0677	4.0035
Oesterreichische Nationalbank	2.0325	1.9631
Banco de Portugal	1.6367	1.7434
Banka Slovenije	0.3361	0.3455
Národná banka Slovenska	0.8004	0.7725
Suomen Pankki – Finlands Bank	1.2708	1.2564
Subtotal for euro area NCBs	**69.6176**	**70.3915**
Българска народна банка (Bulgarian National Bank)	0.8511	0.8590
Česká národní banka	1.6172	1.6075
Danmarks Nationalbank	1.4986	1.4873
Hrvatska narodna banka	0.5673	0.6023
Magyar Nemzeti Bank	1.3348	1.3798
Narodowy Bank Polski	5.2068	5.1230
Banca Naţională a României	2.4470	2.6024
Sveriges Riksbank	2.5222	2.2729
Bank of England	14.3374	13.6743
Subtotal for non-euro area NCBs	**30.3824**	**29.6085**
Total	**100.0000**	**100.0000**

Paid-up capital of the ECB

The subscribed capital of the ECB is €10,825 million. Following the five-yearly adjustment of the ECB's capital key, the weighting of the euro area NCBs (with fully paid-up subscriptions) in the ECB's subscribed capital was reduced by 0.7739 percentage points, while that of the non-euro area NCBs (which only pay up 3.75% of their subscriptions) increased by the same amount. As a result, the ECB's paid-up

35 The statistical data used for this adjustment were notified to the ECB by the European Commission in accordance with the rules laid down in Council Decision 2003/517/EC of 15 July 2003 on the statistical data to be used for the adjustment of the key for subscription to the capital of the ECB (OJ L 181, 19.7.2003, p. 43).

capital decreased by €81 million to €7,659 million on 1 January 2019, as shown in the table below:

	Since 1 January 2019 € millions		As at 31 December 2018 € millions	
	Subscribed capital	Paid-up capital	Subscribed capital	Paid-up capital
Nationale Bank van België/ Banque Nationale de Belgique	274	274	268	268
Deutsche Bundesbank	1,988	1,988	1,948	1,948
Eesti Pank	21	21	21	21
Central Bank of Ireland	127	127	126	126
Bank of Greece	187	187	220	220
Banco de España	903	903	957	957
Banque de France	1,538	1,538	1,535	1,535
Banca d'Italia	1,278	1,278	1,333	1,333
Central Bank of Cyprus	16	16	16	16
Latvijas Banka	30	30	31	31
Lietuvos bankas	44	44	45	45
Banque centrale du Luxembourg	25	25	22	22
Central Bank of Malta	8	8	7	7
De Nederlandsche Bank	440	440	433	433
Oesterreichische Nationalbank	220	220	213	213
Banco de Portugal	177	177	189	189
Banka Slovenije	36	36	37	37
Národná banka Slovenska	87	87	84	84
Suomen Pankki – Finlands Bank	138	138	136	136
Subtotal for euro area NCBs	**7,536**	**7,536**	**7,620**	**7,620**
Българска народна банка (Bulgarian National Bank)	92	3	93	3
Česká národní banka	175	7	174	7
Danmarks Nationalbank	162	6	161	6
Hrvatska narodna banka	61	2	65	2
Magyar Nemzeti Bank	144	5	149	6
Narodowy Bank Polski	564	21	555	21
Banca Naţională a României	265	10	282	11
Sveriges Riksbank	273	10	246	9
Bank of England	1,552	58	1,480	56
Subtotal for non-euro area NCBs	**3,289**	**123**	**3,205**	**120**
Total	**10,825**	**7,659**	**10,825**	**7,740**

2.5 Off-balance-sheet instruments

Note 16 - Securities lending programmes

As part of the management of the ECB's own funds, the ECB has a securities lending programme agreement in place under which a specialised institution enters into securities lending transactions on behalf of the ECB.

In addition, in accordance with the Governing Council's decisions, the ECB has made available for lending its holdings of securities purchased under the first, second and third CBPPs, as well as its holdings of securities purchased under the PSPP and those purchased under the SMP that are also eligible for purchase under the PSPP.[36]

Unless these securities lending operations are conducted against cash collateral that remains uninvested at the end of the year, they are recorded in off-balance-sheet accounts.[37] Such securities lending operations with a value of €10,076 million (2018: €9,646 million) were outstanding as at 31 December 2019. Of this amount, €5,502 million (2018: €4,440 million) related to the lending of securities held for monetary policy purposes.

Note 17 - Interest rate futures

As at 31 December 2019 the following foreign currency transactions, presented at year-end market rates, were outstanding:

Foreign currency interest rate futures	2019 Contract value € millions	2018 Contract value € millions	Change € millions
Purchases	6,103	13,780	(7,678)
Sales	20	22,731	(22,711)

These transactions were conducted in the context of the management of the ECB's foreign reserves.

Note 18 - Interest rate swaps

Interest rate swap transactions with a notional value of €703 million (2018: €519 million), presented at year-end market rates, were outstanding as at 31 December 2019. These transactions were conducted in the context of the management of the ECB's foreign reserves.

36 The ECB does not purchase securities under the CSPP and consequently has no related holdings available for lending.

37 If cash collateral remains uninvested at the year-end, these transactions are recorded in on-balance-sheet accounts (see note 8 "Other liabilities to euro area credit institutions denominated in euro" and note 10 "Liabilities to non-euro area residents denominated in euro").

Note 19 - Foreign exchange swap and forward transactions

Management of foreign reserves

Foreign exchange swap and forward transactions were conducted in 2019 in the context of the management of the ECB's foreign reserves. Claims and liabilities resulting from these transactions that were outstanding as at 31 December 2019 are presented at year-end market rates as follows:

Foreign exchange swap and forward transactions	2019 € millions	2018 € millions	Change € millions
Claims	2,972	2,905	67
Liabilities	2,967	2,981	(14)

Liquidity-providing operations

US dollar-denominated claims and liabilities with a settlement date in 2019 arose in connection with the provision of US dollar liquidity to Eurosystem counterparties (see note 10 "Liabilities to non-euro area residents denominated in euro").

Note 20 - Administration of borrowing and lending operations

In 2019 the ECB continued to be responsible for the administration of the borrowing and lending operations of the EU under the medium-term financial assistance facility and the European Financial Stabilisation Mechanism, for the loan facility agreement for Greece, and for the administration of payments relating to two EFSF loans. In 2019 the ECB processed payments related to these operations, as well as payments linked to member subscriptions to the ESM's authorised capital stock.

Note 21 - Contingent liabilities from pending lawsuits

Several lawsuits have been filed against the ECB and other EU institutions by a number of depositors, shareholders and bondholders of Cypriot credit institutions. The applicants allege that they have suffered financial losses as a result of acts that they deem to have led to the restructuring of these credit institutions in the context of the financial assistance programme for Cyprus. Two of these cases were dismissed on substance by the General Court of the EU in 2018, and an appeal against these judgments is currently pending before the Court of Justice of the EU. This follows orders of the General Court in 2014 which found twelve similar cases inadmissible in their entirety and, following appeals, judgments of the Court of Justice in 2016 which either confirmed the inadmissibility or ruled in favour of the ECB. The ECB's involvement in the process leading up to the conclusion of the financial assistance programme was limited to the provision of technical advice, pursuant to the ESM Treaty, acting in liaison with the European Commission, as well as the issuance of a non-binding opinion on the Cypriot draft resolution law. It is therefore considered that no losses will be incurred by the ECB as a result of these cases.

2.6 Notes on the Profit and Loss Account

Note 22 - Net interest income

Note 22.1 - Interest income on foreign reserve assets

This item includes interest income, net of interest expense, in respect of the ECB's net foreign reserve assets, as follows:

	2019 € millions	2018 € millions	Change € millions
Interest income on current accounts	22	8	13
Interest income on money market deposits	69	74	(5)
Interest expense on repurchase agreements	(1)	(6)	5
Interest income on reverse repurchase agreements	71	44	28
Interest income on securities	812	673	140
Interest income on interest rate swaps	1	0	1
Interest income on forward and swap transactions in foreign currencies	77	68	9
Interest income on foreign reserve assets (net)	**1,052**	**862**	**190**

The overall increase in net interest income in 2019 was mainly due to higher interest income generated on the US dollar portfolio. The appreciation of the US dollar against the euro also contributed to this increase.

Note 22.2 - Interest income arising from the allocation of euro banknotes within the Eurosystem

This item consists of the interest income relating to the ECB's 8% share of the total euro banknote issue (see "Banknotes in circulation" in Section 2.3 "Accounting policies" and note 5.1 "Claims related to the allocation of euro banknotes within the Eurosystem"). For 2019 this interest income was zero, owing to the fact that the rate on the main refinancing operations remained at 0% during the entire year.

Note 22.3 - Remuneration of NCBs' claims in respect of foreign reserves transferred

Remuneration paid to euro area NCBs on their claims in respect of the foreign reserve assets transferred to the ECB (see note 11.1 "Liabilities equivalent to the transfer of foreign reserves") is disclosed under this heading. The remuneration in 2019 was zero, reflecting the fact that the rate on the main refinancing operations was 0% during the entire year.

Note 22.4 - Other interest income; and other interest expense

Other interest income and other interest expense in 2019 were as follows:

	2019 € millions	2018 € millions	Change € millions
Net interest income on monetary policy securities	1,447	1,235	212
CBPP1 and CBPP2	*20*	*31*	*(11)*
SMP[1]	*291*	*384*	*(93)*
APP	*1,136*	*820*	*316*
Net interest income on monetary policy security lending	16	33	(17)
Net interest income on own funds	95	109	(14)
Net interest income on other assets/liabilities	76	39	38
Net other interest income	**1,635**	**1,415**	**220**

1) The ECB's net interest income on SMP holdings of Greek government bonds amounted to €94 million (2018: €127 million).

Note 23 - Realised gains/losses arising from financial operations

Net realised gains/losses arising from financial operations in 2019 were as follows:

	2019 € millions	2018 € millions	Change € millions
Net realised price gains/(losses)	187	(103)	290
Net realised exchange rate and gold price gains	9	26	(17)
Net realised gains/(losses) arising from financial operations	**197**	**(77)**	**274**

Net realised price gains/losses include realised gains and losses on securities, interest rate futures and interest rate swaps. The net realised price gains in 2019 were mainly due to realised price gains generated in the US dollar portfolio as a result of the lower US dollar securities yields compared to 2018.

Note 24 - Write-downs on financial assets and positions

Write-downs on financial assets and positions in 2019 were as follows:

	2019 € millions	2018 € millions	Change € millions
Unrealised price losses on securities	(20)	(64)	44
Unrealised exchange rate losses	-	(4)	4
Total write-downs	**(20)**	**(69)**	**49**

The market value of a number of securities held in the own funds and US dollar portfolios declined, alongside an increase in the corresponding yields towards the end of 2019. This resulted in unrealised price losses at the year-end.

Note 25 - Net income/expense from fees and commissions

	2019 € millions	2018 € millions	Change € millions
Income from fees and commissions	544	524	20
Expenses relating to fees and commissions	(13)	(13)	(0)
Net income from fees and commissions	**531**	**511**	**20**

In 2019 income under this heading consisted mainly of supervisory fees and administrative penalties imposed on supervised entities for non-compliance with the EU banking regulations on prudential requirements (including ECB supervisory decisions). Expenses consisted mainly of custody fees.

Income and expenses related to supervisory tasks

The ECB levies annual fees on supervised entities in order to recover expenditure incurred in the performance of its supervisory tasks. The ECB announced in April 2019 that the annual supervisory fees in 2019 would amount to €576 million. This figure was based on estimated annual expenses for supervisory tasks of €559 million in 2019, adjusted for (i) the deficit of €15 million carried forward from the 2018 fee period and (ii) amounts reimbursed to individual banks for previous fee periods[38] (€2 million).

Based on the actual expenses incurred by the ECB in the performance of its banking supervisory tasks, the supervisory fee income for 2019 stood at €537 million. The resulting surplus of €22 million arising from the difference between the estimated expenses (€559 million) and the actual expenses (€537 million) for 2019 is shown under the heading "Accruals and income collected in advance" (see note 12.2 "Accruals and income collected in advance"). It will reduce the total amount to be levied for the fee period 2020, which, following the implementation of ex post invoicing under the revised fee framework,[39] will take place in 2021.

The ECB is also entitled to impose administrative penalties on supervised entities for failure to comply with the EU banking regulations on prudential requirements (including ECB supervisory decisions). The related income is not considered in the calculation of the annual supervisory fees. Instead, it is recorded as income in the ECB's Profit and Loss Account and is distributed to euro area NCBs as part of the ECB's profit distribution regime. In 2019 the income arising from penalties on supervised entities amounted to €7 million.

[38] See Article 5(3) of Regulation (EU) No 1163/2014 of the European Central Bank of 22 October 2014 on supervisory fees (ECB/2014/41) (OJ L 311, 31.10.2014, p. 23).

[39] As of the fee period 2020, the ECB's supervisory fees will be calculated after the closure of the fee period in accordance with Regulation (EU) 2019/2155 of the ECB of 5 December 2019 amending Regulation (EU) No 1163/2014 on supervisory fees (ECB/2019/37) (OJ L 327, 17.12.2019, p. 70).

Thus, the related income of the ECB for supervisory tasks in 2019 was as follows:

	2019 € millions	2018 € millions	Change € millions
Supervisory fees	537	518	19
Fees relating to significant entities or significant groups	*485*	*473*	*12*
Fees relating to less significant entities or less significant groups	*52*	*45*	*8*
Imposed administrative penalties	7	6	1
Total income related to banking supervision tasks	**544**	**524**	**20**

Banking supervision-related expenses result from the direct supervision of significant entities, the oversight of the supervision of less significant entities and the performance of horizontal tasks and specialised services. They also include expenses arising from support areas needed to fulfil the ECB's supervisory responsibilities, including premises, human resources management, administrative services, budgeting and controlling, accounting, legal, communication and translation services, internal audit, and statistical and information technology services.

For 2019 the total actual expenses related to the ECB's supervisory tasks, which are recovered via the annual supervisory fees, were as follows:

	2019 € millions	2018 € millions	Change € millions
Salaries and benefits	273	246	27
Rent and building maintenance	61	59	2
Other operating expenditure	204	213	(9)
Total expenses related to banking supervision tasks	**537**	**518**	**19**

The increase in the average number of staff working for ECB Banking Supervision led to a corresponding increase in salaries and benefits. The higher staff numbers also drove the increase in premises-related costs, while the decrease in other operating expenditure was mainly due to lower consultancy expenses in relation to supervisory tasks, most notably the Targeted Review of Internal Models (TRIM), which will conclude in 2020.

Note 26 - Income from equity shares and participating interests

Dividends received on shares which the ECB holds in the BIS (see note 6.2 "Other financial assets") are shown under this heading.

Note 27 - Other income

Other miscellaneous income during 2019 arose mainly from contributions of euro area NCBs to costs incurred by the ECB in connection with joint Eurosystem projects.

Note 28 - Staff costs

Staff costs in 2019 were as follows:

	2019 € millions	2018 € millions	Change € millions
Salaries and allowances[1]	423	398	26
Staff insurance	20	19	1
Post-employment, other long-term and termination benefits	123	98	24
Other staff costs	0	1	(0)
Total	**566**	**515**	**51**

1) Salaries and allowances are, in essence, modelled on, and comparable with, the remuneration scheme of the European Union.

The average number of employees, expressed in full-time equivalents (FTEs)[40], amounted to 3,770 (2018: 3,546), of which 349 were managerial staff (2018: 337).

Staff costs increased in 2019 mainly owing to the higher average number of staff employed by the ECB and higher costs in relation to other long-term benefits, mainly as a result of the use of a lower discount rate for the actuarial valuation at the end of 2019 (see note 12.3 "Sundry").

Remuneration of the Executive and Supervisory Boards

Members of the Executive Board and the members of the Supervisory Board employed by the ECB receive a basic salary and allowances for residence and representation. In the case of the President, a residence is provided in lieu of a residence allowance. Subject to the Conditions of Employment for Staff of the European Central Bank, members of both boards may be entitled to household, child and education allowances, depending on their individual circumstances. Salaries are subject to a tax for the benefit of the EU, as well as to deductions in respect of contributions to the pension, medical, long-term care and accident insurance schemes. Allowances are non-taxable and non-pensionable.

In 2019 the basic salaries of the members of the Executive Board and members of the Supervisory Board employed by the ECB (i.e. excluding representatives of national supervisors) were as follows:[41]

40 A full-time equivalent (FTE) is a unit equivalent to one employee working full-time for one year. Staff with permanent, fixed or short-term contracts and participants in the ECB's Graduate Programme are included in proportion to their hours worked. Staff on maternity or on long-term leave are also included, while staff on unpaid leave are excluded.

41 Amounts are presented gross, i.e. before any tax deductions for the benefit of the EU.

	2019 €	2018 €
Mario Draghi (President until October 2019)	339,950	401,400
Christine Lagarde (President since November 2019)	67,990	-
Vítor Constâncio (Vice-President until May 2018)	-	143,360
Luis de Guindos Jurado (Vice-President since June 2018)	349,680	200,704
Peter Praet (Board Member until May 2019)	121,410	286,704
Philip R. Lane (Board Member since June 2019)	169,974	-
Benoît Cœuré (Board Member)	291,384	286,704
Yves Mersch (Board Member)	291,384	286,704
Sabine Lautenschläger (Board Member until October 2019)	242,820	286,704
Total Executive Board	**1,874,592**	**1,892,280**
Total Supervisory Board (members employed by the ECB)[1]	**769,189**	**793,064**
of which:		
Danièle Nouy (Chair of the Supervisory Board until December 2018)	-	*286,704*
Andrea Enria (Chair of the Supervisory Board since January 2019)	*291,384*	-
Total	**2,643,781**	**2,685,344**

1) This total excludes the salary of the Vice-Chair of the Supervisory Board (Sabine Lautenschläger until February 2019 and Yves Mersch since October 2019), which is reported with those of the other members of the Executive Board.

Total allowances paid to members of both boards and the ECB's contributions to medical, long-term care and accident insurance schemes on their behalf amounted to €1,182,767 (2018: €835,371). Transitional payments may be made to former members of both boards for a limited period after the end of their terms of office. In 2019 these payments, the related family allowances and the ECB's contributions to the medical, long-term care and accident insurance schemes of former members of both boards amounted to €864,287 (2018: €169,346). The increase in total allowances and transitional payments is mainly due to a higher number of board members leaving/joining the ECB in 2019 than in the previous year.

Pension payments, including post-employment allowances, and contributions to the medical, long-term care and accident insurance schemes for former board members and their dependants amounted to €1,848,157 (2018: €3,047,064).[42] In 2019 this amount included a transfer out to another pension scheme on the retirement of a former board member. In 2018 it included a lump sum payment on retirement to a former board member in lieu of future pension payments.

Note 29 - Administrative expenses

This item, amounting to €476 million (2018: €525 million), covers all other current expenses relating to consultancy, information technology, maintenance of premises, goods and equipment of a non-capital nature, and other services and supplies together with staff-related expenses, including training, recruitment, relocation and accommodation expenses.

42 For the net amount charged to the Profit and Loss Account in relation to the pension arrangements for current members of the Executive Board and current members of the Supervisory Board employed by the ECB, see note 12.3 "Sundry".

The decrease in 2019 was mainly due to lower expenses in relation to rent of space, agency staff and external consultancy support. Lower rental expenses resulted from the on-balance-sheet recognition of the right-of-use buildings (see “Changes to accounting policies” in Section 2.3 “Accounting policies” and note 6.1 “Tangible and intangible fixed assets”) and the recording of the related expenses as depreciation.

Note 30 - Banknote production services

This expense arises predominantly from the cross-border transportation of euro banknotes between banknote printing works and NCBs, for the delivery of new banknotes, and between NCBs, for the compensation of shortages with surplus stocks. These costs are borne centrally by the ECB.

2.7 Post-balance sheet events

Note 31 - Adjustment of the ECB's capital key following the departure of the United Kingdom from the EU

As a result of the departure of the United Kingdom from the EU and the consequent withdrawal of the Bank of England from the ESCB, the weightings assigned to the remaining NCBs in the key for subscription to the ECB's capital were adjusted with effect from 1 February 2020 as follows:

	Capital key since 1 February 2020 %	Capital key as at 31 January 2020 %
Nationale Bank van België/Banque Nationale de Belgique	2.9630	2.5280
Deutsche Bundesbank	21.4394	18.3670
Eesti Pank	0.2291	0.1968
Central Bank of Ireland	1.3772	1.1754
Bank of Greece	2.0117	1.7292
Banco de España	9.6981	8.3391
Banque de France	16.6108	14.2061
Banca d'Italia	13.8165	11.8023
Central Bank of Cyprus	0.1750	0.1503
Latvijas Banka	0.3169	0.2731
Lietuvos bankas	0.4707	0.4059
Banque centrale du Luxembourg	0.2679	0.2270
Central Bank of Malta	0.0853	0.0732
De Nederlandsche Bank	4.7662	4.0677
Oesterreichische Nationalbank	2.3804	2.0325
Banco de Portugal	1.9035	1.6367
Banka Slovenije	0.3916	0.3361
Národná banka Slovenska	0.9314	0.8004
Suomen Pankki – Finlands Bank	1.4939	1.2708
Subtotal for euro area NCBs	**81.3286**	**69.6176**
Българска народна банка (Bulgarian National Bank)	0.9832	0.8511
Česká národní banka	1.8794	1.6172
Danmarks Nationalbank	1.7591	1.4986
Hrvatska narodna banka	0.6595	0.5673
Magyar Nemzeti Bank	1.5488	1.3348
Narodowy Bank Polski	6.0335	5.2068
Banca Naţională a României	2.8289	2.4470
Sveriges Riksbank	2.9790	2.5222
Bank of England	0.0000	14.3374
Subtotal for non-euro area NCBs	**18.6714**	**30.3824**
Total	**100.0000**	**100.0000**

Impact on the ECB's capital

The ECB kept its subscribed capital unchanged at €10,825 million after the Bank of England's withdrawal from the ESCB. The share of the Bank of England in the ECB's subscribed capital, which stood at 14.3%, was reallocated among both euro area and remaining non-euro area NCBs.

The ECB's paid-up capital will remain unchanged at €7,659 million in 2020, as the remaining NCBs covered the Bank of England's former paid-up capital of €58 million. Over the next two years euro area NCBs will pay up, in two annual instalments, the remainder of their increased subscriptions to the ECB's capital following the Bank of England's withdrawal from the ESCB. This will lead to an increase in the ECB's paid-up capital from €7,659 million in 2020 to €8,270 million in 2021 and €8,880 million in 2022.

Impact on NCBs' claims equivalent to the foreign reserve assets transferred to the ECB

Pursuant to Article 30.2 of the Statute of the ESCB, the contributions of the NCBs to the transfer of foreign reserve assets to the ECB are fixed in proportion to their share in the ECB's subscribed capital. Following (a) the increase in the weighting of the euro area NCBs (which have transferred foreign reserve assets to the ECB) in the ECB's subscribed capital resulting from Bank of England's withdrawal from the ESCB and (b) the decision of the Governing Council to reduce the proportion of the euro area NCBs' contributions, so that the total amount of foreign reserve assets transferred by the euro area NCBs remains at the same level as before the Bank of England's withdrawal from the ESCB, the NCBs' total claim equivalent to these transfers remains virtually unchanged.

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INDEPENDENT AUDITOR'S REPORT

To the President and Governing Council
of the European Central Bank
Frankfurt am Main

Report on the Audit of the ECB's Financial Statements 2019

Opinion

We have audited the Financial Statements of the European Central Bank (ECB) for the year ended 31 December 2019 – included in the ECB's Annual Accounts – which comprise the balance sheet, the profit and loss account, and a summary of significant accounting policies and other explanatory notes.

In our opinion, the accompanying Financial Statements give a true and fair view of the financial position of the ECB as at 31 December 2019, and of the results of its financial operations for the year then ended in accordance with the principles established by the Governing Council, which are laid down in Decision (EU) 2016/2247 of the ECB of 3 November 2016 on the annual accounts of the ECB (ECB/2016/35), as amended, which is based on Guideline (EU) 2016/2249 of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34), as amended.

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing ("ISAs"). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the ECB in accordance with the German ethical requirements that are relevant to our audit of the Financial Statements, which are consistent with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants ("IESBA Code") and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other Information

The ECB's Executive Board ("Executive Board") is responsible for the other information included in the ECB's Annual Accounts. The other information comprises all the information included in the ECB´s Annual Accounts except the Financial Statements of the ECB and our auditor's report.

Our opinion on the Financial Statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the Financial Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Financial Statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

Responsibilities of the Executive Board and those charged with Governance for the Financial Statements

The Executive Board is responsible for the preparation and fair presentation of the Financial Statements in accordance with the principles established by the Governing Council, which are laid down in Decision (EU) 2016/2247 of the ECB of 3 November 2016 on the annual accounts of the ECB (ECB/2016/35), as amended, which is based on Guideline (EU) 2016/2249 of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34), as amended, and for such internal control as the Executive Board determines is necessary to enable the preparation of Financial Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, the Executive Board is responsible for assessing the ECB's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting.

Those charged with governance are responsible for overseeing the ECB's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the planning and performance of the audit. We also:

- Identify and assess the risks of material misstatement of the Financial Statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the ECB's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ECB's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report.
- Evaluate the overall presentation, structure and content of the Financial Statements, including the disclosures, and whether the Financial Statements represent the underlying transactions and events in a manner that achieves fair presentation.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Frankfurt am Main, 12 February 2020

Baker Tilly GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
(Düsseldorf)

Ralph Hüsemann
Wirtschaftsprüfer

Dr. Stefan Wolfgang Fischer
Wirtschaftsprüfer

4 Note on profit distribution/allocation of losses

This note is not part of the financial statements of the ECB for the year 2019.

Pursuant to Article 33 of the Statute of the ESCB, the net profit of the ECB shall be transferred in the following order:

1. an amount to be determined by the Governing Council, which may not exceed 20% of the net profit, shall be transferred to the general reserve fund, subject to a limit equal to 100% of the capital; and

2. the remaining net profit shall be distributed to the shareholders of the ECB in proportion to their paid-up shares.[43]

In the event of a loss incurred by the ECB, the shortfall may be offset against the general reserve fund of the ECB and, if necessary, following a decision by the Governing Council, against the monetary income of the relevant financial year in proportion and up to the amounts allocated to the NCBs in accordance with Article 32.5 of the Statute of the ESCB.[44]

The ECB's net profit for 2019 was €2,366 million. Following a decision by the Governing Council, an interim profit distribution, amounting to €1,431 million, was paid out to the euro area NCBs on 31 January 2020. Furthermore, the Governing Council decided to distribute the remaining profit of €935 million to the euro area NCBs.

	2019 € millions	2018 € millions
Profit for the year	2,366	1,575
Interim profit distribution	(1,431)	(1,191)
Profit after the interim profit distribution	935	384
Distribution of the remaining profit	(935)	(384)
Total	**0**	**0**

[43] Non-euro area NCBs are not entitled to receive any share of the ECB's distributable profits, nor are they liable to cover any loss of the ECB.

[44] Under Article 32.5 of the Statute of the ESCB, the sum of the NCBs' monetary income shall be allocated to the NCBs in proportion to their paid-up shares in the capital of the ECB.

Consolidated balance sheet of the Eurosystem as at 31 December 2019

Assets

(EUR millions)

		31 December 2019	31 December 2018
1	**Gold and gold receivables**	**470,742**	**389,765**
2	**Claims on non-euro area residents denominated in foreign currency**	**349,657**	**334,369**
2.1	Receivables from the IMF	80,524	76,943
2.2	Balances with banks and security investments, external loans and other external assets	269,132	257,426
3	**Claims on euro area residents denominated in foreign currency**	**22,074**	**20,499**
4	**Claims on non-euro area residents denominated in euro**	**17,491**	**21,276**
4.1	Balances with banks, security investments and loans	17,491	21,276
4.2	Claims arising from the credit facility under ERM II	0	0
5	**Lending to euro area credit institutions related to monetary policy operations denominated in euro**	**624,232**	**734,381**
5.1	Main refinancing operations	7,904	9,573
5.2	Longer-term refinancing operations	616,188	723,837
5.3	Fine-tuning reverse operations	0	0
5.4	Structural reverse operations	0	0
5.5	Marginal lending facility	140	971
5.6	Credits related to margin calls	0	0
6	**Other claims on euro area credit institutions denominated in euro**	**18,816**	**17,637**
7	**Securities of euro area residents denominated in euro**	**2,847,140**	**2,899,300**
7.1	Securities held for monetary policy purposes	2,632,057	2,651,281
7.2	Other securities	215,083	248,018
8	**General government debt denominated in euro**	**23,380**	**23,947**
9	**Other assets**	**299,670**	**261,559**
Total assets		**4,673,202**	**4,702,733**

Liabilities

(EUR millions)

		31 December 2019	31 December 2018
1	**Banknotes in circulation**	**1,292,742**	**1,231,134**
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	**1,813,377**	**1,853,802**
2.1	Current accounts (covering the minimum reserve system)	1,537,667	1,230,153
2.2	Deposit facility	275,710	623,531
2.3	Fixed-term deposits	0	0
2.4	Fine-tuning reverse operations	0	0
2.5	Deposits related to margin calls	0	118
3	**Other liabilities to euro area credit institutions denominated in euro**	**9,869**	**19,759**
4	**Debt certificates issued**	**0**	**0**
5	**Liabilities to other euro area residents denominated in euro**	**311,768**	**338,668**
5.1	General government	178,894	216,040
5.2	Other liabilities	132,874	122,629
6	**Liabilities to non-euro area residents denominated in euro**	**321,429**	**459,332**
7	**Liabilities to euro area residents denominated in foreign currency**	**7,934**	**4,331**
8	**Liabilities to non-euro area residents denominated in foreign currency**	**7,408**	**11,016**
8.1	Deposits, balances and other liabilities	7,408	11,016
8.2	Liabilities arising from the credit facility under ERM II	0	0
9	**Counterpart of special drawing rights allocated by the IMF**	**57,371**	**56,510**
10	**Other liabilities**	**277,456**	**247,138**
11	**Revaluation accounts**	**466,640**	**376,082**
12	**Capital and reserves**	**107,205**	**104,960**
Total liabilities		**4,673,202**	**4,702,733**

Notes: Based on provisional unaudited data. The annual accounts of all the Eurosystem national central banks will be finalised by the end of May 2020, and the final annual consolidated balance sheet of the Eurosystem will be published thereafter.
Totals/sub-totals may not add up due to rounding.

Statistical section

Further information

ECB statistics:	http://sdw.ecb.europa.eu/
Methodological definitions can be found in the General Notes to the Statistics Bulletin:	http://sdw.ecb.europa.eu/reports.do?node=10000023
Details on calculations can be found in the Technical Notes to the Statistics Bulletin:	http://sdw.ecb.europa.eu/reports.do?node=10000022
Explanations of terms and abbreviations can be found in the ECB's statistics glossary:	http://www.ecb.europa.eu/home/glossary/html/glossa.en.html

Specific methodological note

Multi-annual averages of growth rates are calculated using the geometric mean. For all the other indicators included in this section, the multi-annual averages are computed using the arithmetic mean.

Cut-off date for the Statistical section

The cut-off date for the statistics included in the Statistical section was 10 March 2020.

Conventions used in the tables

-	data do not exist/data are not applicable	(p)	provisional
.	data are not yet available	s.a.	seasonally adjusted
...	nil or negligible	n.s.a.	non-seasonally adjusted

1 Financial and monetary developments

1.1 Key ECB interest rates

(levels in percentages per annum; changes in percentage points)

With effect from: [1]	Deposit facility		Main refinancing operations			Marginal lending facility	
			Fixed rate tenders	Variable rate tenders			
			Fixed rate	Minimum bid rate			
	Level	Change	Level	Level	Change	Level	Change
	1	2	3	4	5	6	7
1999 1 Jan.	2.00	-	3.00	-	-	4.50	-
4 Jan. [2]	2.75	0.75	3.00	-	...	3.25	-1.25
22 Jan.	2.00	-0.75	3.00	-	...	4.50	1.25
9 Apr.	1.50	-0.50	2.50	-	-0.50	3.50	-1.00
5 Nov.	2.00	0.50	3.00	-	0.50	4.00	0.50
2000 4 Feb.	2.25	0.25	3.25	-	0.25	4.25	0.25
17 Mar.	2.50	0.25	3.50	-	0.25	4.50	0.25
28 Apr.	2.75	0.25	3.75	-	0.25	4.75	0.25
9 June	3.25	0.50	4.25	-	0.50	5.25	0.50
28 June [3]	3.25	...	-	4.25	...	5.25	...
1 Sep.	3.50	0.25	-	4.50	0.25	5.50	0.25
6 Oct.	3.75	0.25	-	4.75	0.25	5.75	0.25
2001 11 May	3.50	-0.25	-	4.50	-0.25	5.50	-0.25
31 Aug.	3.25	-0.25	-	4.25	-0.25	5.25	-0.25
18 Sep.	2.75	-0.50	-	3.75	-0.50	4.75	-0.50
9 Nov.	2.25	-0.50	-	3.25	-0.50	4.25	-0.50
2002 6 Dec.	1.75	-0.50	-	2.75	-0.50	3.75	-0.50
2003 7 Mar.	1.50	-0.25	-	2.50	-0.25	3.50	-0.25
6 June	1.00	-0.50	-	2.00	-0.50	3.00	-0.50
2005 6 Dec.	1.25	0.25	-	2.25	0.25	3.25	0.25
2006 8 Mar.	1.50	0.25	-	2.50	0.25	3.50	0.25
15 June	1.75	0.25	-	2.75	0.25	3.75	0.25
9 Aug.	2.00	0.25	-	3.00	0.25	4.00	0.25
11 Oct.	2.25	0.25	-	3.25	0.25	4.25	0.25
13 Dec.	2.50	0.25	-	3.50	0.25	4.50	0.25
2007 14 Mar.	2.75	0.25	-	3.75	0.25	4.75	0.25
13 June	3.00	0.25	-	4.00	0.25	5.00	0.25
2008 9 July	3.25	0.25	-	4.25	0.25	5.25	0.25
8 Oct.	2.75	-0.50	-	-	-	4.75	-0.50
9 Oct. [4]	3.25	0.50	-	-	-	4.25	-0.50
15 Oct. [5]	3.25	...	3.75	-	-0.50	4.25	...
12 Nov.	2.75	-0.50	3.25	-	-0.50	3.75	-0.50
10 Dec.	2.00	-0.75	2.50	-	-0.75	3.00	-0.75
2009 21 Jan.	1.00	-1.00	2.00	-	-0.50	3.00	...
11 Mar.	0.50	-0.50	1.50	-	-0.50	2.50	-0.50
8 Apr.	0.25	-0.25	1.25	-	-0.25	2.25	-0.25
13 May	0.25	...	1.00	-	-0.25	1.75	-0.50
2011 13 Apr.	0.50	0.25	1.25	-	0.25	2.00	0.25
13 July	0.75	0.25	1.50	-	0.25	2.25	0.25
9 Nov.	0.50	-0.25	1.25	-	-0.25	2.00	-0.25
14 Dec.	0.25	-0.25	1.00	-	-0.25	1.75	-0.25
2012 11 July	0.00	-0.25	0.75	-	-0.25	1.50	-0.25
2013 8 May	0.00	...	0.50	-	-0.25	1.00	-0.50
13 Nov.	0.00	...	0.25	-	-0.25	0.75	-0.25
2014 11 June	-0.10	-0.10	0.15	-	-0.10	0.40	-0.35
10 Sep.	-0.20	-0.10	0.05	-	-0.10	0.30	-0.10
2015 9 Dec.	-0.30	-0.10	0.05	-	...	0.30	...
2016 16 Mar.	-0.40	-0.10	0.00	-	-0.05	0.25	-0.05
2019 18 Sep.	-0.50	-0.10	0.00	-	0.00	0.25	0.00

Source: ECB.

1) From 1 January 1999 to 9 March 2004, the date refers to the deposit and marginal lending facilities. For main refinancing operations, changes in the rate are effective from the first operation following the date indicated. The change on 18 September 2001 was effective on that same day. From 10 March 2004 the date refers both to the deposit and marginal lending facilities, and to the main refinancing operations (with changes effective from the first main refinancing operation following the Governing Council decision), unless otherwise indicated.

2) On 22 December 1998 the ECB announced that, as an exceptional measure between 4 and 21 January 1999, a narrow corridor of 50 basis points would be applied between the interest rates for the marginal lending facility and the deposit facility, aimed at facilitating the transition to the new monetary regime by market participants.

3) On 8 June 2000 the ECB announced that, starting from the operation to be settled on 28 June 2000, the main refinancing operations of the Eurosystem would be conducted as variable rate tenders. The minimum bid rate refers to the minimum interest rate at which counterparties may place their bids.

4) As of 9 October 2008 the ECB reduced the standing facilities corridor from 200 basis points to 100 basis points around the interest rate on the main refinancing operations. The standing facilities corridor was restored to 200 basis points as of 21 January 2009.

5) On 8 October 2008 the ECB announced that, starting from the operation to be settled on 15 October, the weekly main refinancing operations would be carried out through a fixed rate tender procedure with full allotment at the interest rate on the main refinancing operations. This change overrode the previous decision (made on the same day) to cut by 50 basis points the minimum bid rate on the main refinancing operations conducted as variable rate tenders.

1 Financial and monetary developments

1.2 Eurosystem monetary policy operations allotted through tender procedures
(EUR millions; interest rates in percentages per annum)

1.2.1 Main and longer-term refinancing operations 1), 2), 3)

Date of settlement	Bids (amount)	Number of participants	Allotment (amount)	Fixed rate tender procedures	Variable rate tender procedures			Running for (...) days
				Fixed rate	Minimum bid rate	Marginal rate 4)	Weighted average rate	
	1	2	3	4	5	6	7	8
				Main refinancing operations				
2019 16 Oct.	1,882	26	1,882	0.00	-	-	-	7
23 Oct.	1,070	24	1,070	0.00	-	-	-	7
30 Oct.	2,236	31	2,236	0.00	-	-	-	7
6 Nov.	1,560	24	1,560	0.00	-	-	-	7
13 Nov.	1,547	22	1,547	0.00	-	-	-	7
20 Nov.	1,894	31	1,894	0.00	-	-	-	7
27 Nov.	2,531	30	2,531	0.00	-	-	-	7
11 Dec.	1,395	25	1,395	0.00	-	-	-	7
18 Dec.	2,484	26	2,484	0.00	-	-	-	5
23 Dec.	7,904	46	7,904	0.00	-	-	-	10
				Longer-term refinancing operations 5), 6)				
2019 30 May	1,399	16	1,399	0.00	-	-	-	91
27 June	966	17	966	0.00	-	-	-	91
1 Aug.	790	11	790	0.00	-	-	-	91
29 Aug.	1,138	15	1,138	0.00	-	-	-	91
25 Sep. 7)	3,396	28	3,396	.	-	-	-	1,099
26 Sep.	848	16	848	0.00	-	-	-	84
31 Oct.	592	9	592	0.00	-	-	-	91
28 Nov.	1,424	13	1,424	0.00	-	-	-	91
18 Dec. 7)	97,718	122	97,718	.	-	-	-	1,099
19 Dec. 7)	2,282	14	2,282	.	-	-	-	98

Source: ECB.

1) Only the last ten operations of 2019 are displayed in each category.

2) With effect from April 2002, split tender operations (i.e. operations with a one-week maturity conducted as standard tender procedures in parallel with a main refinancing operation) are classified as main refinancing operations.

3) On 8 June 2000 the ECB announced that, starting from the operation to be settled on 28 June 2000, the main refinancing operations of the Eurosystem would be conducted as variable rate tender procedures. The minimum bid rate refers to the minimum interest rate at which counterparties may place their bids. On 8 October 2008 the ECB announced that, starting from the operation to be settled on 15 October 2008, the weekly main refinancing operations would be carried out through a fixed rate tender procedure with full allotment at the interest rate on the main refinancing operations. On 4 March 2010 the ECB decided to return to variable rate tender procedures in the regular three-month longer-term refinancing operations, starting with the operation to be allotted on 28 April 2010 and settled on 29 April 2010.

4) In liquidity-providing (absorbing) operations, the marginal rate refers to the lowest (highest) rate at which bids were accepted.

5) For the operations settled on 22 December 2011 and 1 March 2012, after one year counterparties have the option to repay any part of the liquidity that they have been allotted in these operations, on any day that coincides with the settlement day of a main refinancing operation.

6) Targeted longer-term refinancing operations. Further information can be found on the ECB's website (https://www.ecb.europa.eu/mopo/implement/omo/html/index.en.html).

7) In this longer-term refinancing operation, the rate at which all bids are satisfied is indexed to the average minimum bid rate in the main refinancing operations over the life of the operation. The interest rates displayed for these indexed longer-term refinancing operations have been rounded to two decimal places. For the precise calculation method, please refer to the Technical Notes.

1.2.2 Other tender operations 1)

Date of settlement	Type of operation	Bids (amount)	Number of participants	Allotment (amount)	Fixed rate tender procedures	Variable rate tender procedures				Running for (...) days
					Fixed rate	Minimum bid rate	Maximum bid rate	Marginal rate 2)	Weighted average rate	
	1	2	3	4	5	6	7	8	9	10
2014 9 Apr.	Collection of fixed-term deposits	192,515	156	172,500	-	-	0.25	0.24	0.22	7
16 Apr.	Collection of fixed-term deposits	153,364	139	153,364	-	-	0.25	0.25	0.23	7
23 Apr.	Collection of fixed-term deposits	166,780	139	166,780	-	-	0.25	0.25	0.23	7
30 Apr.	Collection of fixed-term deposits	103,946	121	103,946	-	-	0.25	0.25	0.24	7
7 May	Collection of fixed-term deposits	165,533	158	165,533	-	-	0.25	0.25	0.23	7
14 May	Collection of fixed-term deposits	144,281	141	144,281	-	-	0.25	0.25	0.24	7
21 May	Collection of fixed-term deposits	137,465	148	137,465	-	-	0.25	0.25	0.24	7
28 May	Collection of fixed-term deposits	102,878	119	102,878	-	-	0.25	0.25	0.25	7
4 June	Collection of fixed-term deposits	119,200	140	119,200	-	-	0.25	0.25	0.24	7
11 June	Collection of fixed-term deposits	108,650	122	108,650	-	-	0.15	0.15	0.13	7

Source: ECB.

1) Only the last ten operations of 2014 are displayed in each category.

2) In liquidity-providing (absorbing) operations, the marginal rate refers to the lowest (highest) rate at which bids were accepted.

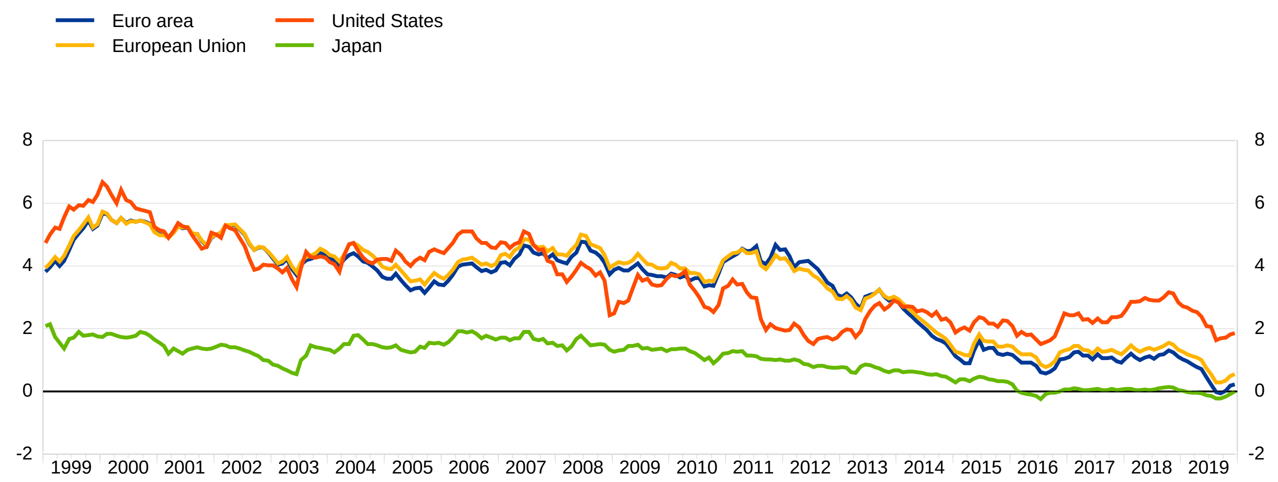
1 Financial and monetary developments

1.3 Long-term government bond yields [1)]
(percentages per annum; period averages)

	1999-2019 [2)]	1999-2008 [2)]	2009-2019	2016	2017	2018	2019
Belgium	3.2	4.5	2.0	0.5	0.7	0.8	0.2
Germany	2.7	4.3	1.3	0.1	0.3	0.4	-0.3
Estonia [3)]	.	.	.	.	.	.	.
Ireland	3.9	4.4	3.4	0.7	0.8	1.0	0.3
Greece	7.1	4.8	9.1	8.4	6.0	4.2	2.6
Spain	3.7	4.4	3.1	1.4	1.6	1.4	0.7
France	3.0	4.4	1.8	0.5	0.8	0.8	0.1
Italy	3.9	4.6	3.3	1.5	2.1	2.6	2.0
Cyprus	4.8	5.3	4.4	3.8	2.6	2.2	1.1
Latvia	4.5	5.3	3.9	0.5	0.8	0.9	0.3
Lithuania	4.3	5.2	3.6	0.9	0.3	0.3	0.3
Luxembourg	2.7	4.1	1.5	0.3	0.5	0.6	-0.1
Malta	3.6	5.0	2.6	0.9	1.3	1.4	0.7
Netherlands	2.9	4.4	1.5	0.3	0.5	0.6	-0.1
Austria	3.0	4.4	1.7	0.4	0.6	0.7	0.1
Portugal	4.6	4.5	4.7	3.2	3.1	1.8	0.8
Slovenia	3.8	5.1	3.0	1.1	1.0	0.9	0.3
Slovakia	3.6	5.3	2.4	0.5	0.9	0.9	0.2
Finland	2.9	4.4	1.6	0.4	0.5	0.7	0.1
Euro area	3.3	4.4	2.3	0.9	1.1	1.1	0.4
Bulgaria	4.0	5.0	3.4	2.3	1.6	0.9	0.4
Czech Republic	3.2	4.6	2.2	0.4	1.0	2.0	1.5
Denmark	2.9	4.5	1.4	0.3	0.5	0.5	-0.2
Croatia	4.6	5.1	4.4	3.5	2.8	2.2	1.3
Hungary	6.1	7.3	5.2	3.1	3.0	3.1	2.5
Poland	5.1	6.6	4.1	3.0	3.4	3.2	2.3
Romania	6.0	7.3	5.5	3.3	4.0	4.7	4.5
Sweden	2.9	4.5	1.5	0.5	0.7	0.7	0.0
United Kingdom	3.3	4.8	2.0	1.2	1.2	1.4	0.9
European Union	3.5	4.6	2.5	1.1	1.3	1.4	0.7
United States	3.5	4.7	2.5	1.8	2.3	2.9	2.1
Japan	1.0	1.5	0.6	0.0	0.1	0.1	-0.1

Sources: ECB calculations based on daily data from national central banks. Refinitiv data for the United States and Japan.
1) Further information can be found on the ECB's website (https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/long_term_interest_rates/html/index.en.html).
2) Data for Cyprus, Latvia, Lithuania, Malta, Slovenia, Slovakia, the Czech Republic, Hungary and Poland available since January 2001. Data for Bulgaria available since January 2003; for Romania since April 2005; and for Croatia since December 2005.
3) There are no Estonian sovereign debt securities that comply with the definition of long-term interest rates for convergence purposes. No suitable proxy indicator has been identified.

Chart 1.3 Long-term government bond yields [1), 2)]
(percentages per annum; monthly averages)



Sources: ECB calculations based on daily data from national central banks. Refinitiv data for the United States and Japan.
1) Further information can be found on the ECB's website (https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/long_term_interest_rates/html/index.en.html).
2) Data for Cyprus, Latvia, Lithuania, Malta, Slovenia, Slovakia, the Czech Republic, Hungary and Poland available since January 2001. Data for Bulgaria available since January 2003; for Romania since April 2005; and for Croatia since December 2005.

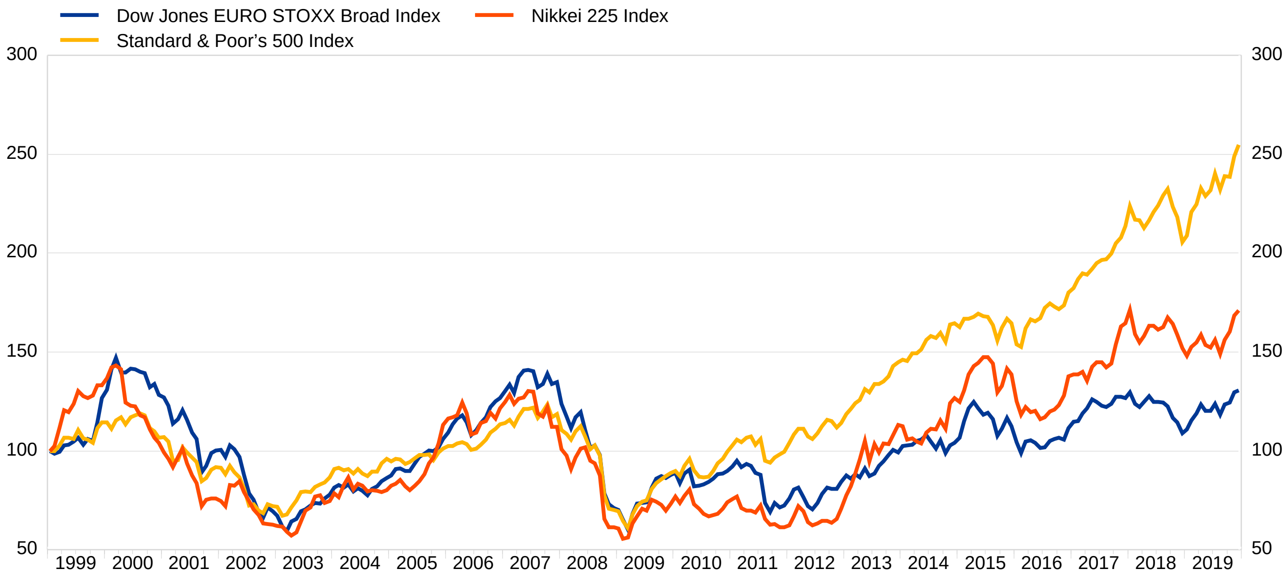
1 Financial and monetary developments

1.4 Selected stock market indices
(percentage changes)

	1999-2019 1)	1999-2008 1)	2009-2019	2016	2017	2018	2019
Belgium - BEL 20 Index	18.4	-42.9	57.5	-2.5	10.3	-18.5	22.0
Germany - DAX 30 Index	90.4	-30.9	122.4	6.9	12.5	-18.3	25.5
Estonia - OMXT Index	919.6	119.0	216.3	19.6	15.5	-6.4	10.0
Ireland - ISEQ Index	43.2	-53.3	141.5	-4.0	8.0	-22.1	31.1
Greece - ASE Index	-83.9	-68.7	-58.3	1.9	24.7	-23.6	49.5
Spain - IBEX 35 Index	-18.0	-21.0	-20.0	-2.0	7.4	-15.0	11.8
France - CAC 40 Index	0.3	-46.0	51.9	4.9	9.3	-11.0	26.4
Italy - FTSEMIB Index	-44.8	-54.3	1.1	-10.2	13.6	-16.1	28.3
Cyprus - CSE Index	-93.5	9.4	-95.9	-2.0	4.7	-3.9	-2.6
Latvia - OMXR Index	565.1	74.1	271.5	23.5	35.8	-6.7	11.5
Lithuania - OMXV Index	612.1	79.3	172.0	14.9	17.0	-5.6	15.4
Luxembourg - LuxX Index	-1.3	-29.8	0.5	20.0	-1.8	-19.6	4.7
Malta - MSE Index	36.9	-6.8	36.2	4.5	-2.6	0.1	4.4
Netherlands - AEX Index	-10.0	-63.4	80.3	9.4	12.7	-10.4	23.9
Austria - ATX Index	166.1	46.2	27.7	9.2	30.6	-19.7	16.1
Portugal - PSI 20 Index	-56.4	-47.0	-38.4	-11.9	15.2	-12.2	10.2
Slovenia - SBITOP Index	-37.1	-42.0	-5.8	3.1	12.4	-0.3	15.1
Slovakia - SAX Index	355.6	366.0	31.5	9.0	2.2	2.1	5.6
Finland - OMXH Index	-32.3	-62.9	53.0	3.6	6.4	-8.0	13.4
Euro area - Dow Jones EURO STOXX Broad Index	-3.0	-46.5	47.0	1.5	10.1	-14.8	23.0
Bulgaria - SOFIX Index	432.3	236.0	33.0	27.2	15.5	-12.3	-4.4
Czech Republic - PX 50 Index	127.8	75.3	-0.1	-3.6	17.0	-8.5	13.1
Denmark - OMXC 20 Index	344.2	-3.1	237.3	-12.8	15.9	-13.0	27.4
Croatia - CROBEX Index	72.0	46.9	0.7	18.1	-7.6	-5.1	15.4
Hungary - BUX Index	422.5	38.8	117.1	33.8	23.0	-0.6	17.7
Poland - WIG Index	219.8	50.6	44.6	11.4	23.2	-9.5	0.2
Romania - BET Index	2,124.4	546.8	112.7	1.2	9.4	-4.8	35.1
Sweden - OMXS 30 Index	47.8	-44.8	86.2	4.9	3.9	-10.7	25.8
United Kingdom - FTSE 100 Index	8.8	-36.0	39.3	14.4	7.6	-12.5	12.1
United States - S&P 500 Index	119.9	-38.5	189.7	9.5	19.4	-6.2	28.9
Japan - Nikkei 225 Index	24.9	-53.2	124.3	0.4	19.1	-12.1	18.2

Sources: ECB calculations based on Refinitiv and Bloomberg Finance L.P. daily data.
1) Data for Latvia and Bulgaria available since 2000; for Croatia since 2002; for Cyprus since 2004; and for Slovenia since 2007.

Chart 1.4 Dow Jones EURO STOXX Broad Index, Standard & Poor's 500 Index and Nikkei 225 Index
(index: January 1999 = 100; monthly averages)



Sources: ECB calculations based on Refinitiv and Bloomberg Finance L.P. daily data.

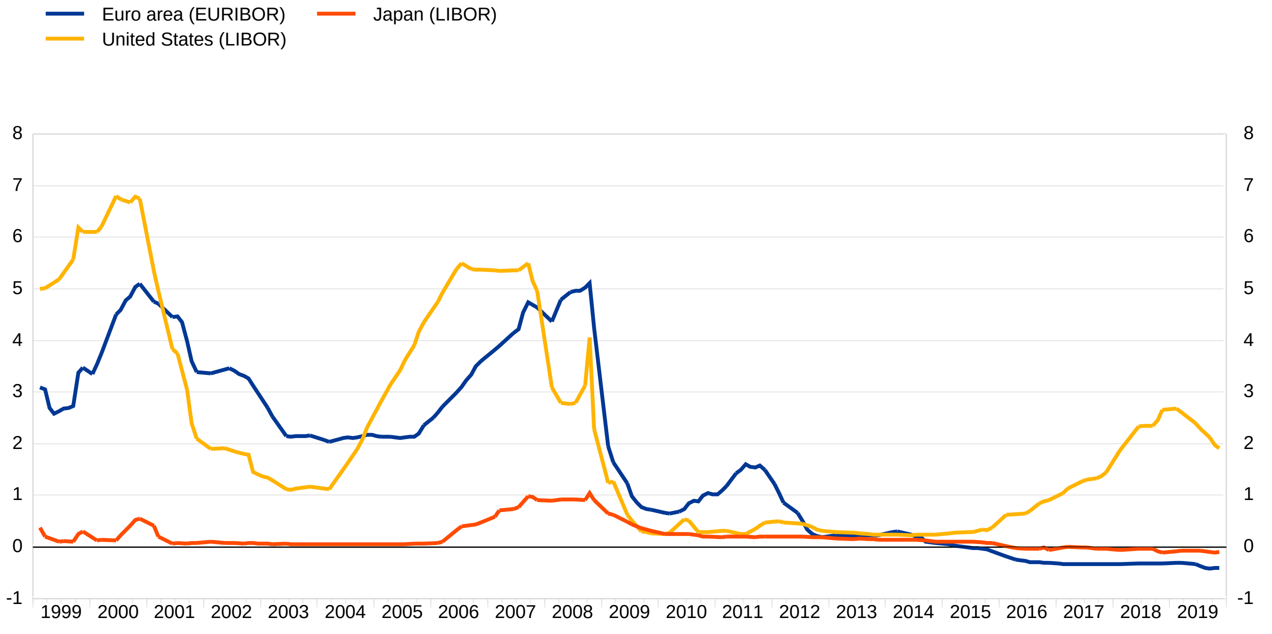
1 Financial and monetary developments

1.5 Money markets: Three-month interbank offered rates [1)]
(percentages per annum; period averages)

	1999-2019 [2)]	1999-2008 [2)]	2009-2019	2016	2017	2018	2019
Euro area - EURIBOR	1.75	3.35	0.29	-0.26	-0.33	-0.32	-0.36
Bulgaria - SOFIBOR [3)]	2.87	4.57	1.95	0.15	0.09	-0.01	.
Czech Republic - PRIBOR	2.34	3.70	0.84	0.29	0.41	0.76	2.12
Denmark - CIBOR	2.00	3.64	0.48	-0.15	-0.26	-0.30	-0.37
Croatia - ZIBOR	4.75	7.54	2.19	0.85	0.60	0.50	0.46
Hungary - BUBOR	6.39	9.70	3.38	0.99	0.15	0.12	0.19
Poland - WIBOR	5.86	9.11	2.91	1.70	1.73	1.71	1.72
Romania - ROBOR	13.55	24.65	4.16	0.78	1.15	2.79	3.13
Sweden - STIBOR	1.95	3.44	0.60	-0.49	-0.50	-0.40	-0.03
United Kingdom - LIBOR	1.73	3.35	0.25	-0.28	-0.37	-0.36	-0.39
United States - LIBOR	2.22	3.73	0.84	0.74	1.26	2.31	2.33
Japan - LIBOR	0.20	0.29	0.12	-0.02	-0.02	-0.05	-0.08

Sources: ECB calculations based on Refinitiv daily data.
1) Interbank offered rates for the currency of each reference area.
2) Data for Bulgaria available since 2003.
3) Data up to June 2018 are for the SOFIBOR reference rate. Effective as of 1 July 2018 the Bulgarian National Bank discontinued the activities relating to the calculation and publication of the SOFIBOR reference rate.

Chart 1.5 Money markets: Three-month interbank offered rates
(percentages per annum; monthly averages)



Sources: ECB calculations based on Refinitiv daily data.

1 Financial and monetary developments

1.6 Composite cost of borrowing
(percentages per annum; new business; period averages)

1.6.1 Non-financial corporations [1)]

	2003-2019 [3)]	2003-2008 [3)]	2009-2019 [3)]	2016	2017	2018	2019
Belgium	2.86	4.24	2.11	1.76	1.69	1.61	1.55
Germany	3.27	4.75	2.47	1.88	1.74	1.63	1.54
Estonia	3.93	5.44	3.38	2.49	2.57	2.62	3.08
Ireland	3.94	5.10	3.30	2.80	2.82	2.81	3.06
Greece	5.44	5.78	5.26	4.92	4.51	4.11	3.96
Spain	3.26	4.21	2.74	2.12	1.89	1.77	1.67
France	2.81	4.11	2.10	1.60	1.52	1.48	1.45
Italy	3.61	4.90	2.91	2.15	1.87	1.78	1.68
Cyprus	5.40	6.76	5.28	4.18	3.89	3.52	3.27
Latvia	3.14	-	3.14	2.87	2.85	3.01	3.28
Lithuania	2.50	-	2.50	2.32	2.30	2.59	2.81
Luxembourg	2.61	4.03	1.83	1.34	1.35	1.37	1.28
Malta	4.37	6.12	4.22	3.50	3.66	3.78	3.78
Netherlands	2.88	4.30	2.10	1.52	1.47	1.32	1.18
Austria	2.80	4.26	2.01	1.71	1.56	1.50	1.45
Portugal	4.65	5.34	4.28	3.28	2.81	2.48	2.34
Slovenia	4.01	4.36	3.82	2.43	2.36	2.19	1.86
Slovakia	2.92	5.60	2.68	2.24	2.15	2.24	2.11
Finland	2.76	4.05	2.05	1.71	1.71	1.79	1.87
Euro area [2)]	3.23	4.51	2.53	1.92	1.76	1.66	1.58

Source: ECB MFI interest rate statistics.
1) The composite cost of borrowing indicator for non-financial corporations combines interest rates on all loans to corporations, including overdrafts. This indicator is derived from the MFI interest rate statistics.
2) Data refer to the changing composition of the euro area.
3) Data for Estonia available since 2005; for Cyprus, Malta and Slovakia since 2008; for Latvia since 2014; and for Lithuania since 2015.

1.6.2 Households for house purchase [1)]

	2003-2019 [3)]	2003-2008 [3)]	2009-2019 [3)]	2016	2017	2018	2019
Belgium	3.44	4.38	2.94	2.11	2.09	1.92	1.79
Germany	3.41	4.81	2.64	1.76	1.83	1.87	1.52
Estonia	3.33	4.72	2.83	2.32	2.38	2.50	2.59
Ireland	3.56	4.13	3.24	3.25	3.18	3.01	2.96
Greece	3.70	4.53	3.25	2.69	2.78	2.99	3.11
Spain	3.13	4.16	2.57	1.94	1.90	1.94	1.98
France	3.29	4.25	2.76	1.87	1.60	1.55	1.36
Italy	3.44	4.49	2.88	2.13	2.05	1.86	1.69
Cyprus	4.12	5.79	3.97	3.08	2.77	2.39	2.11
Latvia	2.91	-	2.91	2.88	2.68	2.75	2.73
Lithuania	2.14	-	2.14	1.94	2.09	2.38	2.44
Luxembourg	2.71	4.02	2.00	1.68	1.74	1.75	1.53
Malta	3.20	4.98	3.04	2.81	2.82	2.68	2.64
Netherlands	3.84	4.54	3.46	2.58	2.41	2.41	2.28
Austria	3.03	4.28	2.35	1.90	1.85	1.79	1.62
Portugal	3.12	4.17	2.54	1.90	1.64	1.41	1.24
Slovenia	3.91	5.55	3.02	2.20	2.34	2.42	2.38
Slovakia	3.65	6.12	3.43	2.04	1.82	1.55	1.37
Finland	2.41	3.85	1.63	1.16	1.03	0.90	0.80
Euro area [2)]	3.33	4.42	2.73	1.97	1.86	1.82	1.63

Source: ECB MFI interest rate statistics.
1) The cost of borrowing indicator for new loans to households combines interest rates on loans to households for house purchase. This indicator is derived from the MFI interest rate statistics.
2) Data refer to the changing composition of the euro area.
3) Data for Estonia available since 2005; for Cyprus, Malta and Slovakia since 2008; for Latvia since 2014; and for Lithuania since 2015.

1 Financial and monetary developments

1.7 Aggregated deposit rate

(percentages per annum; period averages)

1.7.1 Non-financial corporations 1)

	2003-2019 3)	2003-2008 3)	2009-2019 3)	2016	2017	2018	2019
Belgium	1.15	2.79	0.25	-0.04	-0.12	-0.17	-0.09
Germany	1.22	2.86	0.33	0.02	-0.04	-0.04	-0.07
Estonia	1.35	2.75	0.58	0.17	0.13	0.43	0.63
Ireland	1.38	2.75	0.63	0.05	0.01	0.00	-0.02
Greece	-	-	-	-	-	0.90	0.69
Spain	1.67	2.90	1.00	0.21	0.21	0.27	-0.06
France	1.47	2.89	0.70	0.21	0.13	0.13	0.11
Italy	1.74	2.88	1.12	1.04	0.64	0.46	0.60
Cyprus	2.44	4.83	2.23	1.41	1.38	0.76	0.42
Latvia	-	-	-	-	-	0.14	0.04
Lithuania	1.18	2.70	0.49	0.19	0.16	0.17	0.14
Luxembourg	-	-	-	-	-	-0.14	-0.14
Malta	-	-	-	-	-	0.57	0.48
Netherlands	0.22	-	0.22	-0.03	-0.20	-0.20	-0.02
Austria	1.40	2.92	0.56	0.26	0.14	0.16	0.03
Portugal	1.76	2.97	1.10	0.25	0.23	0.13	0.10
Slovenia	1.50	2.75	0.96	0.11	0.08	0.06	0.04
Slovakia	1.08	4.63	0.43	0.17	0.12	0.12	0.08
Finland	1.26	2.80	0.42	0.39	0.23	0.22	0.16
Euro area 2)	1.43	2.86	0.66	0.18	0.11	0.10	0.04

Source: ECB MFI interest rate statistics.

Note: Data on deposit interest rates for Greece, Latvia, Luxembourg and Malta are available, but are treated as confidential under ECB rules.

1) New deposits with agreed maturity excluding overnight deposits and deposits redeemable at notice.

2) Data refer to the changing composition of the euro area.

3) Data for Estonia and Slovenia available since 2005; for Cyprus and Slovakia since 2008; for the Netherlands since 2010; and for Lithuania since 2015.

1.7.2 Households 1)

	2003-2019 3)	2003-2008 3)	2009-2019 3)	2016	2017	2018	2019
Belgium	1.59	2.75	0.95	0.65	0.42	0.37	0.34
Germany	1.53	2.80	0.84	0.42	0.28	0.34	0.30
Estonia	1.53	2.75	0.86	0.54	0.63	0.68	0.83
Ireland	1.49	2.64	0.87	0.16	0.09	0.05	0.04
Greece	-	-	-	-	-	0.59	-
Spain	1.84	2.89	1.27	0.21	0.10	0.06	0.04
France	2.13	2.89	1.71	1.24	0.96	0.88	0.91
Italy	1.69	2.07	1.48	1.08	0.86	0.71	0.88
Cyprus	2.85	6.01	2.56	1.53	1.33	0.87	0.27
Latvia	1.70	3.03	1.10	0.56	0.61	0.82	0.81
Lithuania	1.52	3.07	0.81	0.24	0.29	0.31	0.26
Luxembourg	-	-	-	-	-	0.19	0.20
Malta	1.86	3.92	1.67	1.17	0.82	0.83	0.66
Netherlands	2.14	2.50	2.07	1.64	1.42	1.41	1.27
Austria	1.60	2.89	0.89	0.37	0.31	0.29	0.28
Portugal	1.89	2.67	1.46	0.39	0.28	0.17	0.11
Slovenia	1.78	2.90	1.38	0.33	0.24	0.27	0.26
Slovakia	1.90	3.69	1.57	1.13	0.70	0.88	1.00
Finland	1.72	2.97	1.05	0.56	0.40	0.28	0.24
Euro area 2)	1.91	2.81	1.41	0.56	0.40	0.35	0.34

Source: ECB MFI interest rate statistics.

Note: Data on deposit interest rates for Greece and Luxembourg are available, but are treated as confidential under ECB rules.

1) New deposits with agreed maturity excluding overnight deposits and deposits redeemable at notice.

2) Data refer to the changing composition of the euro area.

3) Data for Estonia and Slovenia available since 2005; for Cyprus and Slovakia since 2008; for the Netherlands since 2010; and for Lithuania since 2015.

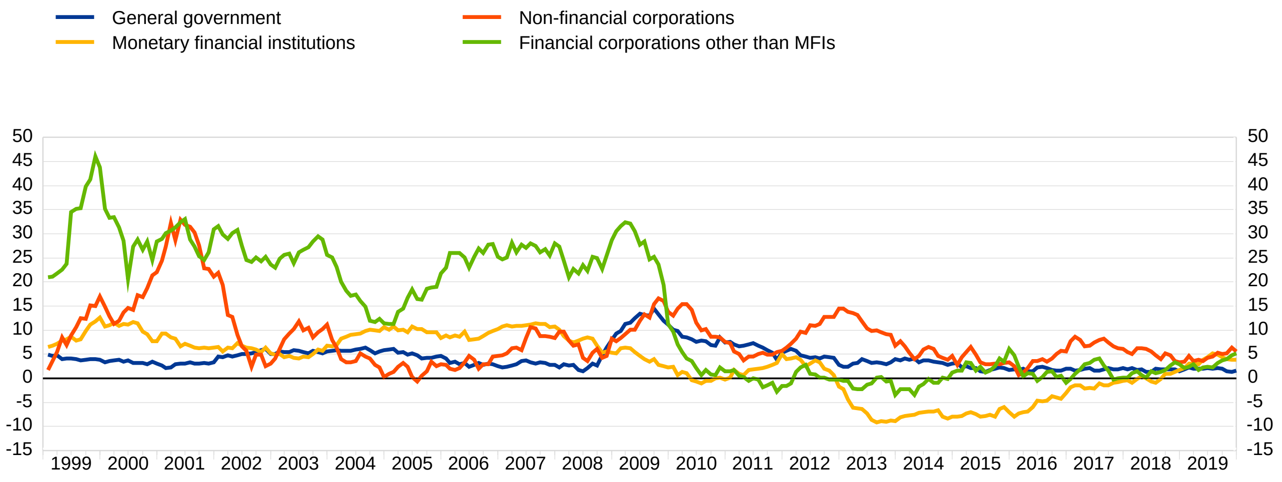
1 Financial and monetary developments

1.8 Debt securities issued by euro area residents in all currencies
(annual percentage changes; period averages)

	1999-2019	1999-2008	2009-2019	2016	2017	2018	2019
Belgium	3.2	2.6	2.5	4.2	4.7	-1.1	3.0
Germany	1.9	4.8	-0.6	-1.3	0.3	-0.1	1.6
Estonia	-	-	8.8	2.4	4.6	14.8	16.8
Ireland	4.8	9.9	-0.5	-1.4	2.7	0.4	1.3
Greece	1.9	12.6	-7.9	-28.3	-20.3	5.6	7.3
Spain	7.5	15.6	0.2	-0.7	0.7	2.4	2.5
France	5.8	8.4	3.4	1.5	3.2	3.5	4.1
Italy	3.7	6.4	0.8	-2.2	0.1	0.3	2.1
Cyprus	-	-	7.8	4.7	35.6	27.7	25.7
Latvia	-	-	17.2	12.2	9.7	0.6	13.3
Lithuania	-	-	3.3	-	8.7	1.2	10.5
Luxembourg	5.8	0.2	10.1	2.3	2.2	1.3	7.2
Malta	-	-	8.2	11.1	4.7	3.5	5.3
Netherlands	6.1	12.5	0.8	0.6	0.4	1.7	-0.1
Austria	3.9	9.6	-0.8	-0.8	-2.4	-0.9	1.4
Portugal	5.7	10.4	0.2	0.4	1.7	1.8	0.4
Slovenia	-	-	6.1	1.6	2.1	-1.1	-2.2
Slovakia	10.7	13.7	8.0	3.1	4.5	7.0	2.7
Finland	5.0	3.6	5.7	1.3	2.6	4.9	9.5
Euro area	4.5	7.7	1.3	-0.2	1.3	1.5	2.7

Source: ECB.

Chart 1.8 Debt securities issued by euro area residents, by sector
(annual percentage changes)



Source: ECB.

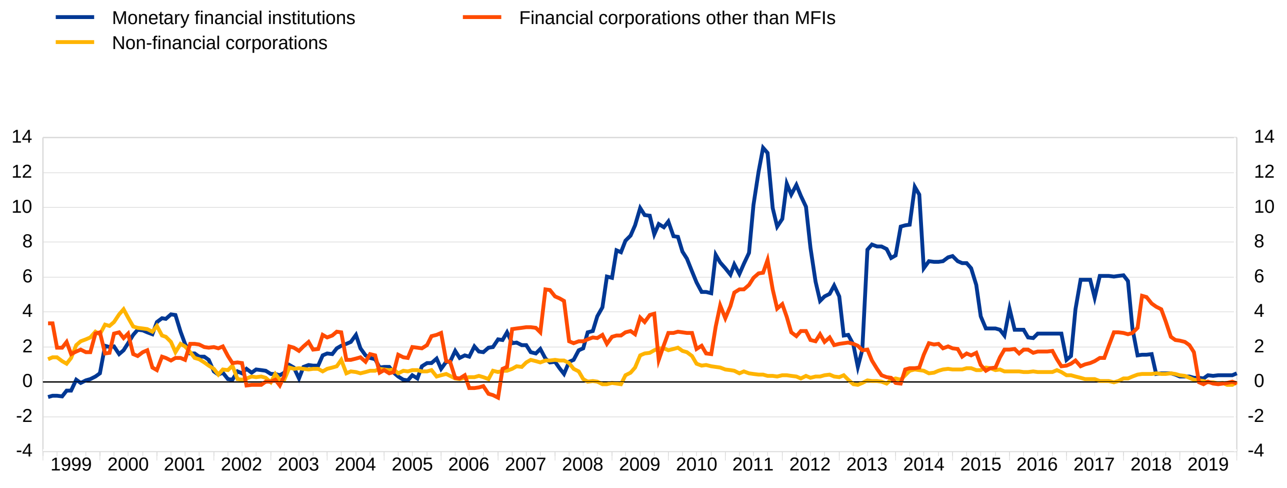
1 Financial and monetary developments

1.9 Listed shares issued by euro area residents
(annual percentage changes; period averages)

	1999-2019	1999-2008	2009-2019	2016	2017	2018	2019
Belgium	0.4	0.1	0.6	1.1	0.6	0.8	1.0
Germany	1.2	1.4	0.8	0.3	0.5	1.0	0.5
Estonia	-	-	-4.3	-4.0	-2.2	3.3	2.9
Ireland	2.0	1.0	0.0	-0.1	-2.3	-0.1	-1.8
Greece	7.3	1.5	13.1	40.9	0.3	0.5	0.0
Spain	1.1	1.1	1.0	1.1	1.0	0.8	-0.1
France	0.8	0.7	0.6	0.5	0.7	0.7	0.2
Italy	1.6	1.1	1.7	1.4	3.1	0.9	0.7
Cyprus	-	-	14.4	9.2	23.3	15.1	5.3
Latvia	-	-	3.1	1.7	2.5	29.4	0.0
Lithuania	-	-	-0.1	-	-0.2	1.0	1.5
Luxembourg	7.0	5.7	8.9	11.5	5.5	23.5	10.3
Malta	-	-	9.4	6.0	38.5	11.4	8.0
Netherlands	0.2	0.3	0.0	0.7	0.5	-0.5	-1.4
Austria	5.0	8.7	2.0	0.4	1.7	3.2	0.3
Portugal	2.1	2.3	1.9	0.5	2.7	0.8	0.0
Slovenia	-	-	0.6	0.0	0.0	0.0	-0.1
Slovakia	-	-	0.4	-0.2	0.0	0.0	0.3
Finland	0.1	-0.5	0.8	0.8	0.6	-0.1	0.2
Euro area	1.1	1.1	1.0	0.9	0.7	1.0	0.1

Source: ECB.

Chart 1.9 Listed shares issued by euro area residents, by sector
(annual percentage changes)



Source: ECB.

1 Financial and monetary developments

1.10 Monetary aggregates, components and counterparts 1)

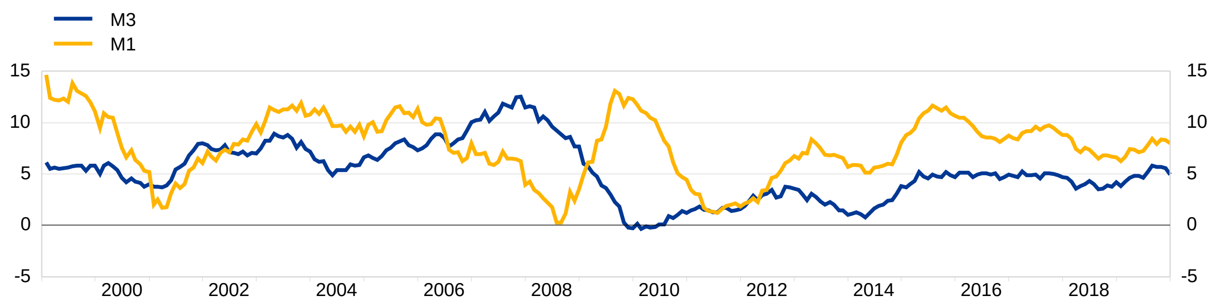
(annual percentage changes at the end of each year; period averages; seasonally adjusted)

	1999-2019	1999-2008	2009-2019	2016	2017	2018	2019
Components of M3							
M3	5.2	7.5	3.1	5.0	4.7	4.2	4.9
M2	5.5	7.3	3.8	4.8	5.2	4.3	5.7
M1	7.6	7.8	7.4	8.7	8.8	6.6	8.0
Currency in circulation	6.9	8.9	5.0	3.7	3.3	4.5	4.8
Overnight deposits	7.7	7.6	7.8	9.7	9.8	7.0	8.5
M2-M1 (other short-term deposits)	2.4	7.0	-1.7	-2.5	-2.1	-0.8	0.1
Deposits with an agreed maturity of up to two years	0.7	10.2	-7.3	-7.4	-8.3	-6.2	-5.3
Deposits redeemable at notice of up to three months	3.4	3.3	3.5	0.7	1.6	2.0	2.8
M3-M2 (marketable instruments)	1.7	8.7	-4.4	7.7	-3.3	1.2	-7.9
Repurchase agreements	0.2	6.3	-5.2	-5.9	9.5	-1.3	5.4
Money market fund shares	3.5	9.4	-1.7	7.0	-2.1	2.4	-0.4
Debt securities issued with a maturity of up to two years	-9.5	11.6	-25.1	26.6	-21.1	-4.8	-83.2
Counterparts of M3 2)							
MFI liabilities:							
Central government holdings	4.0	7.4	1.0	7.7	12.6	11.8	-7.4
Longer-term financial liabilities vis-à-vis other euro area residents	3.3	6.6	0.4	-1.7	-1.1	0.8	1.6
Deposits with an agreed maturity of over two years	2.2	5.8	-1.0	-3.4	-4.0	-1.9	-0.3
Deposits redeemable at notice of over three months	-3.8	-0.9	-6.5	-10.9	-9.6	-8.1	-5.4
Debt securities issued with a maturity of over two years	2.2	7.3	-2.3	-5.3	-3.4	0.8	1.3
Capital and reserves	6.0	7.2	4.8	2.9	3.4	3.1	3.2
MFI assets:							
Credit to euro area residents	4.3	6.9	1.9	4.9	3.8	2.6	2.0
Credit to general government	3.1	0.6	5.5	12.4	6.6	2.0	-1.9
of which: loans	-0.2	-0.1	-0.3	-3.1	-4.1	-2.8	-2.3
Credit to the private sector 3)	4.6	8.7	1.0	2.5	2.8	2.9	3.4
of which: loans 4)	4.5	8.3	1.1	2.4	2.9	3.4	3.7

Source: ECB.
1) Data refer to the changing composition of the euro area.
2) The table presents only selected counterparts of M3, i.e. net external assets and "other counterparts" (residual) are not included.
3) Private sector refers to euro area non-MFIs excluding general government.
4) Adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

Chart 1.10 Monetary aggregates 1)

(annual percentage changes at the end of each month; seasonally adjusted)



Source: ECB.
1) Data refer to the changing composition of the euro area.

1 Financial and monetary developments

1.11 MFI loans to non-financial corporations [1)]

(annual percentage changes at the end of each year; period averages; not seasonally adjusted)

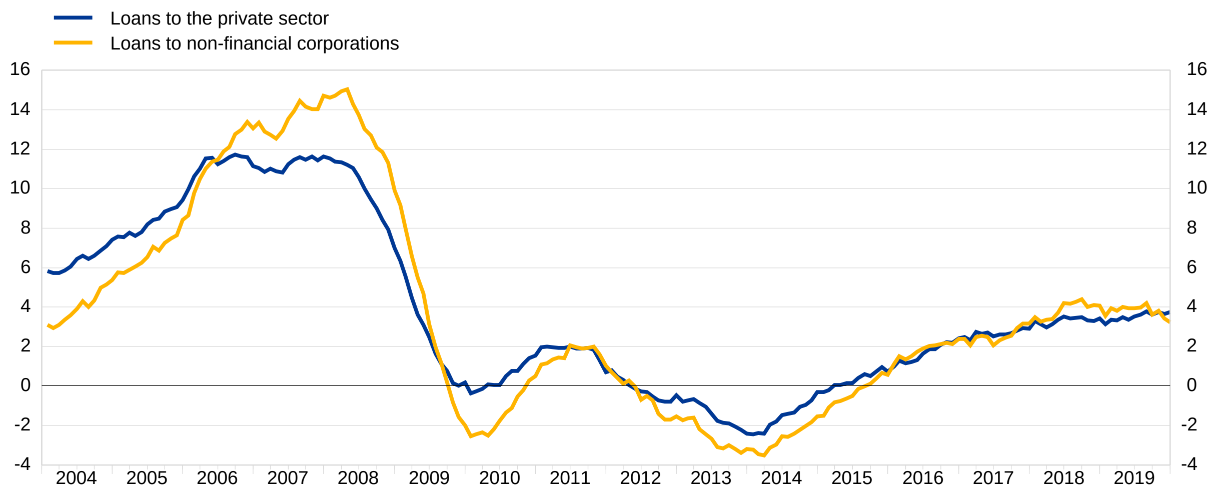
	2004-2008	2009-2019	2014	2015	2016	2017	2018	2019
Belgium	9.5	3.5	0.7	3.8	6.9	6.5	9.5	7.4
Germany	3.6	1.3	-0.5	0.8	3.5	4.2	6.5	5.8
Estonia	39.2	1.8	3.6	6.2	6.6	5.5	4.0	2.9
Ireland	24.2	-2.2	-6.4	-5.2	0.2	1.2	3.9	3.2
Greece	13.6	-1.0	-3.2	-1.2	-0.2	0.0	0.2	1.8
Spain	19.3	-3.3	-6.6	-1.2	-0.8	0.2	-1.9	0.0
France	10.2	3.2	2.9	3.3	5.3	6.6	6.4	5.6
Italy	9.2	-0.7	-2.5	-0.5	0.3	0.4	1.5	-1.8
Cyprus	26.1	1.5	-0.8	0.8	-8.0	0.3	3.5	2.3
Latvia	-	0.2	-6.7	1.1	5.9	2.1	3.6	-0.7
Lithuania	33.6	0.1	-1.2	3.3	9.8	5.4	5.1	-0.7
Luxembourg	12.3	0.0	2.9	7.5	12.0	3.2	4.4	4.9
Malta	11.0	1.1	4.1	-10.3	7.3	14.8	3.6	2.3
Netherlands	9.7	0.2	-3.6	-3.4	-0.1	-0.7	-0.1	-0.9
Austria	6.9	2.9	1.1	0.7	2.5	6.9	9.3	7.0
Portugal	7.8	-1.3	-6.8	-1.2	-1.4	-0.3	1.8	0.9
Slovenia	24.0	-2.8	-13.9	-7.6	0.4	1.9	1.5	2.7
Slovakia	20.3	3.5	1.9	7.3	4.2	7.8	8.2	4.4
Finland	11.7	4.8	4.9	5.2	4.5	4.2	8.4	7.2
Euro area	10.2	0.6	-1.5	0.6	2.4	3.2	4.1	3.2
Bulgaria	-	4.1	2.4	-0.1	2.2	4.8	8.6	7.6
Czech Republic	-	4.7	2.3	6.4	8.0	6.1	6.3	4.0
Denmark	-	0.4	0.5	-0.1	3.1	1.1	4.1	3.4
Croatia	-	0.5	-3.4	-3.2	1.5	5.0	2.2	4.4
Hungary	-	2.1	1.8	-7.1	4.9	10.2	13.6	14.1
Poland	-	5.5	5.1	7.9	5.1	8.6	6.6	2.9
Romania	-	3.7	2.1	-1.6	2.9	7.9	7.7	4.1
Sweden	-	3.9	2.5	3.7	4.6	5.7	6.1	3.6
United Kingdom	-	-1.6	-3.4	-0.3	3.2	3.7	2.5	2.7

Source: ECB.

1) Data for euro area countries refer to loans granted by other MFIs to euro area non-financial corporations, while data for non-euro area EU countries refer to loans granted to domestic non-financial corporations. Data are adjusted for loan sales and securitisations (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs. Data for euro area countries are available for the years since 2004, with the exception of Estonia, Lithuania and Slovenia (from 2005), Cyprus and Malta (from 2006), Slovakia (from 2007) and Latvia (from 2011). Data for non-euro area EU countries are available for the years since 2010, with the exception of Croatia (from 2011).

Chart 1.11 MFI loans to the private sector and to non-financial corporations [1)]

(annual percentage changes at the end of each month; seasonally adjusted)



Source: ECB.

1) Private sector refers to euro area non-MFIs excluding general government. Data are adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

1 Financial and monetary developments

1.12 MFI loans to households 1)

(annual percentage changes at the end of each year; period averages; not seasonally adjusted)

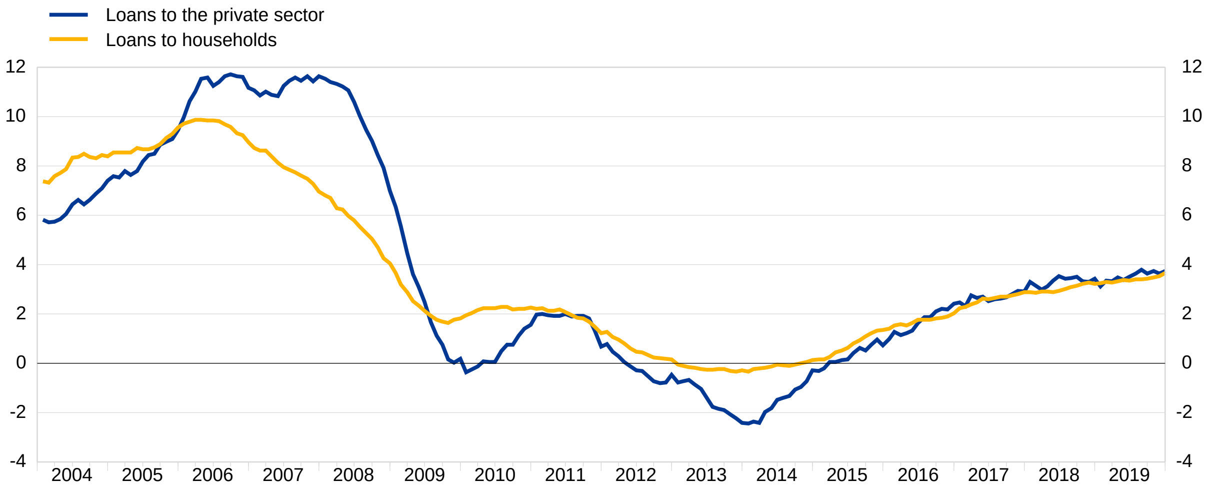
	2004-2008	2009-2019	2014	2015	2016	2017	2018	2019
Belgium	10.2	4.9	3.8	4.3	5.1	5.0	5.7	7.1
Germany	0.0	2.1	1.5	2.8	2.8	3.2	3.9	4.4
Estonia	42.3	1.9	2.5	3.9	5.3	7.0	6.6	6.4
Ireland	18.7	-2.8	-3.6	-3.6	-2.6	-1.5	-0.8	0.1
Greece	24.3	-2.3	-2.6	-2.9	-2.8	-2.0	-2.2	-2.8
Spain	15.3	-1.8	-3.9	-2.2	-1.2	-0.5	0.4	0.3
France	10.4	4.3	1.9	3.5	4.4	6.0	5.6	6.4
Italy	11.1	1.8	-0.5	0.7	1.9	2.8	2.8	2.5
Cyprus	15.9	1.2	-2.7	-1.0	-0.9	0.0	-0.2	-0.2
Latvia	-	-2.2	-3.9	-2.5	0.6	0.6	0.7	0.9
Lithuania	56.9	2.2	1.5	4.9	8.2	7.6	8.6	7.0
Luxembourg	4.4	4.9	4.2	4.8	4.1	7.8	7.3	2.5
Malta	11.1	6.4	6.8	6.5	5.0	6.5	7.5	8.9
Netherlands	7.2	0.1	-1.3	-1.0	-0.6	0.0	0.3	0.5
Austria	5.9	1.9	1.1	1.9	3.1	3.0	3.6	4.3
Portugal	8.2	-1.1	-3.5	-2.6	-1.6	-0.2	0.9	1.2
Slovenia	22.7	3.3	-1.5	0.6	4.9	7.2	6.8	6.1
Slovakia	26.9	11.5	13.2	13.1	13.3	12.4	10.8	8.6
Finland	12.1	3.5	1.9	2.6	2.5	2.7	2.2	2.9
Euro area	7.6	1.6	0.1	1.3	2.0	2.9	3.2	3.6
Bulgaria	-	3.1	-1.0	-0.1	4.2	8.9	9.1	10.6
Czech Republic	-	6.7	4.7	6.9	8.3	8.4	7.9	6.6
Denmark	-	0.7	0.2	0.8	1.0	0.4	1.3	1.8
Croatia	-	1.2	-1.0	-1.8	0.6	4.8	5.8	7.5
Hungary	-	-2.9	-7.3	-11.5	-0.1	2.6	7.3	16.5
Poland	-	5.6	4.7	5.2	3.9	6.4	5.6	6.6
Romania	-	4.7	2.3	1.3	7.7	10.5	9.6	5.4
Sweden	-	6.1	6.0	7.7	7.1	7.0	5.5	5.1
United Kingdom	-	1.5	2.8	3.3	4.0	3.9	3.1	2.8

Source: ECB.

1) Data for euro area countries refer to loans granted by other MFIs to euro area households, while data for non-euro area EU countries refer to loans granted to domestic households. Data are adjusted for loan sales and securitisations (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs. Data for euro area countries are available for the years since 2004, with the exception of Estonia, Lithuania and Slovenia (from 2005), Cyprus and Malta (from 2006), Slovakia (from 2007) and Latvia (from 2011). Data for non-euro area EU countries are available for the years since 2010, with the exception of Croatia (from 2011).

Chart 1.12 MFI loans to the private sector and to households 1)

(annual percentage changes at the end of each month; seasonally adjusted)



Source: ECB.

1) Private sector refers to euro area non-MFIs excluding general government. Data are adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

2 Economic activity

2.1 GDP

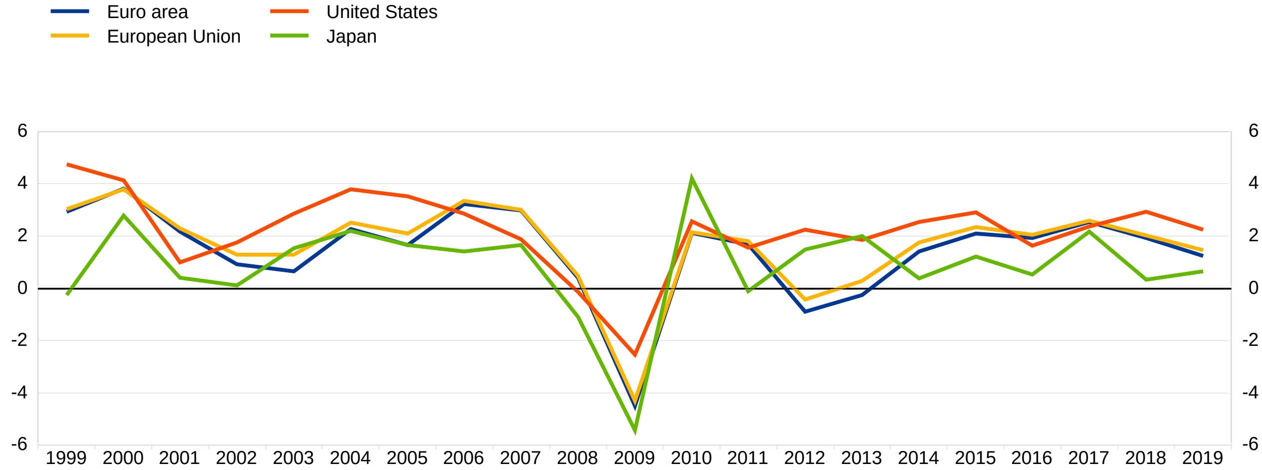
(chain-linked volumes; annual percentage changes)

	1999-2019 [1),2)]	1999-2008 [1)]	2009-2019 [2)]	2016	2017	2018	2019
Belgium	1.8	2.4	1.2	1.5	2.0	1.5	1.4
Germany	1.4	1.5	1.2	2.2	2.5	1.5	0.6
Estonia	3.7	5.7	1.9	2.6	5.7	4.8	4.3
Ireland	5.1	5.2	5.0	3.7	8.1	8.2	5.5
Greece	0.4	3.5	-2.3	-0.2	1.5	1.9	1.9
Spain	1.9	3.5	0.6	3.0	2.9	2.4	2.0
France	1.5	2.1	1.0	1.1	2.3	1.7	1.3
Italy	0.4	1.2	-0.3	1.3	1.7	0.8	0.3
Cyprus	2.6	4.5	0.9	6.7	4.4	4.1	3.2
Latvia	3.6	6.7	0.9	1.8	3.8	4.3	2.2
Lithuania	3.8	6.1	1.7	2.6	4.2	3.6	3.9
Luxembourg	3.4	4.3	2.4	4.6	1.8	3.1	.
Malta	3.8	2.4	4.8	5.8	6.5	7.3	4.4
Netherlands	1.7	2.5	1.0	2.2	2.9	2.6	1.7
Austria	1.7	2.4	1.1	2.1	2.5	2.4	1.6
Portugal	1.0	1.6	0.4	2.0	3.5	2.6	2.2
Slovenia	2.5	4.3	0.9	3.1	4.8	4.1	2.4
Slovakia	3.6	5.1	2.2	2.1	3.0	4.0	2.3
Finland	1.7	3.3	0.3	2.7	3.1	1.7	1.0
Euro area	1.4	2.1	0.8	1.9	2.5	1.9	1.2
Bulgaria	3.0	4.3	1.8	3.8	3.5	3.1	3.4
Czech Republic	2.8	4.0	1.6	2.5	4.4	2.8	2.4
Denmark	1.5	1.8	1.2	3.2	2.0	2.4	2.2
Croatia	1.8	3.7	0.2	3.5	3.1	2.7	2.9
Hungary	2.6	3.5	1.8	2.2	4.3	5.1	4.9
Poland	3.8	4.2	3.5	3.1	4.9	5.1	4.1
Romania	3.8	5.5	2.3	4.8	7.1	4.4	4.1
Sweden	2.4	3.0	1.9	2.4	2.4	2.2	1.2
United Kingdom	1.9	2.6	1.3	1.9	1.9	1.3	1.4
European Union	1.6	2.3	1.0	2.0	2.6	2.0	1.5
United States	2.2	2.6	1.8	1.6	2.4	2.9	2.2
Japan	0.8	1.0	0.6	0.5	2.2	0.3	0.7

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.1 GDP

(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

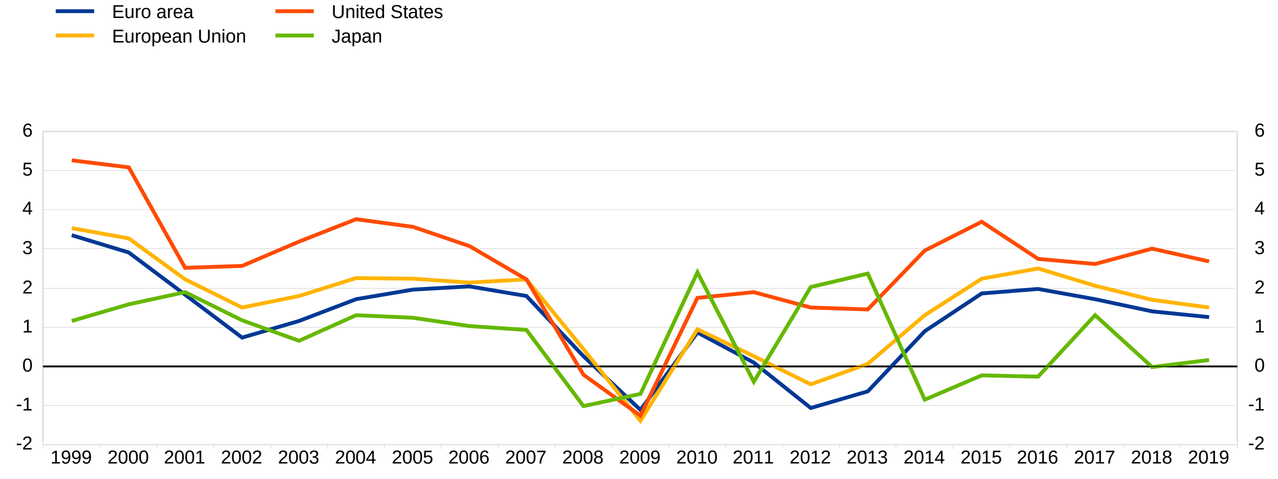
2 Economic activity

2.2 Private consumption
(chain-linked volumes; annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	1.5	1.5	1.5	1.9	1.8	1.5	1.1
Germany	1.0	0.7	1.2	2.3	1.3	1.3	1.6
Estonia	4.1	6.7	1.7	4.6	2.8	4.3	3.1
Ireland	3.2	5.5	1.2	5.4	3.1	3.4	2.8
Greece	0.4	3.7	-2.4	0.0	0.9	1.1	0.8
Spain	1.6	3.3	0.1	2.7	3.0	1.8	1.1
France	1.6	2.3	1.0	1.8	1.4	0.9	1.2
Italy	0.5	1.0	-0.1	1.2	1.5	0.9	0.4
Cyprus	2.9	5.8	0.4	4.4	4.5	3.3	3.0
Latvia	3.6	6.5	1.1	1.5	3.1	4.2	2.9
Lithuania	4.3	8.1	1.0	4.0	3.5	3.7	3.2
Luxembourg	2.6	2.8	2.4	3.4	2.2	3.3	.
Malta	2.3	1.7	2.6	2.4	3.4	7.6	2.4
Netherlands	1.1	1.7	0.5	1.1	2.1	2.3	1.4
Austria	1.3	1.8	0.9	1.6	1.4	1.1	1.4
Portugal	1.1	2.0	0.3	2.6	2.1	2.9	2.3
Slovenia	2.1	3.0	1.2	4.4	2.0	2.8	2.7
Slovakia	3.0	4.6	1.5	3.9	4.3	3.9	2.2
Finland	2.0	3.1	1.0	2.4	1.0	1.9	1.0
Euro area	1.2	1.8	0.7	2.0	1.7	1.4	1.3
Bulgaria	4.7	7.6	2.1	3.5	3.8	4.4	5.8
Czech Republic	2.5	3.3	1.8	3.6	4.3	3.2	3.0
Denmark	1.3	1.7	0.9	2.4	1.6	2.6	1.9
Croatia	1.7	3.9	-0.3	3.1	3.1	3.2	3.5
Hungary	2.4	3.6	1.2	4.9	4.7	4.8	5.1
Poland	3.4	3.9	2.9	3.9	4.5	4.2	3.8
Romania	5.3	8.0	3.0	7.9	10.0	7.3	5.9
Sweden	2.4	2.8	2.1	2.0	2.1	1.7	1.2
United Kingdom	2.1	2.8	1.5	3.6	2.2	1.6	1.3
European Union	1.5	2.2	1.0	2.5	2.1	1.7	1.5
United States	2.6	3.1	2.1	2.7	2.6	3.0	2.7
Japan	0.7	1.0	0.5	-0.3	1.3	0.0	0.2

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.2 Private consumption
(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

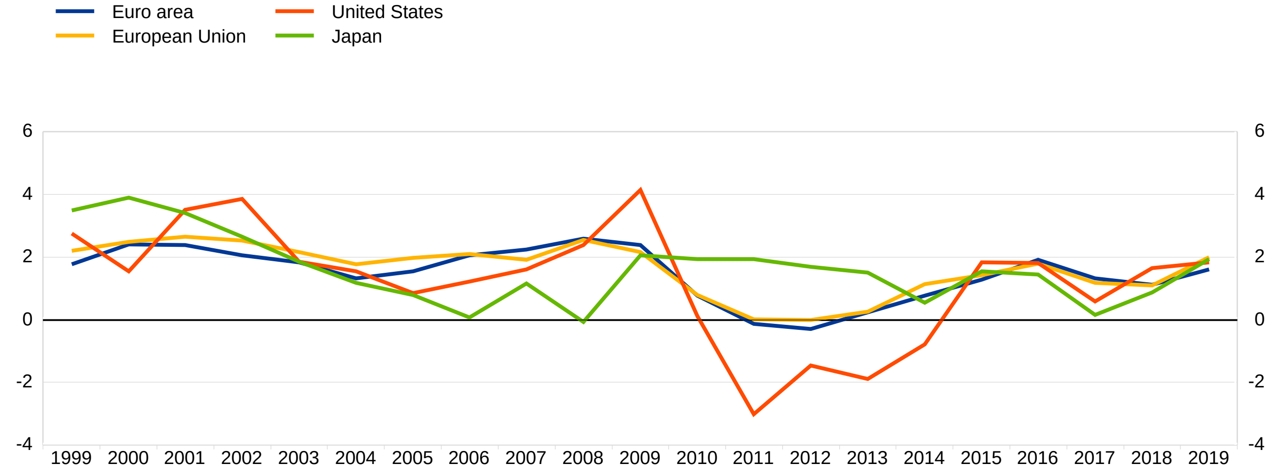
2 Economic activity

2.3 Government consumption
(chain-linked volumes; annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	1.4	2.1	0.8	0.4	0.3	0.9	1.6
Germany	1.7	1.2	2.1	4.1	2.4	1.4	2.6
Estonia	2.1	2.8	1.4	2.4	1.1	0.9	2.9
Ireland	2.9	5.3	0.9	3.4	3.5	4.4	5.1
Greece	0.5	3.5	-2.1	-0.7	-0.4	-2.5	2.1
Spain	2.6	5.0	0.6	1.0	1.0	1.9	2.2
France	1.5	1.6	1.4	1.4	1.5	0.8	1.4
Italy	0.5	1.5	-0.5	0.7	-0.1	0.1	-0.4
Cyprus	2.2	3.8	0.8	-0.9	2.1	3.5	11.3
Latvia	1.4	2.7	0.3	2.9	3.2	4.0	2.6
Lithuania	0.6	1.4	-0.1	0.1	-0.3	0.5	0.7
Luxembourg	3.4	4.1	2.6	1.0	4.7	4.1	.
Malta	3.3	2.8	3.6	-3.0	1.8	12.7	12.0
Netherlands	2.0	3.2	0.9	1.3	0.9	1.6	1.3
Austria	1.3	1.7	0.9	1.8	1.1	0.9	0.9
Portugal	0.8	2.2	-0.5	0.8	0.2	0.9	0.8
Slovenia	1.9	3.3	0.6	2.5	0.3	3.2	1.6
Slovakia	2.0	2.2	1.9	1.9	1.0	0.2	3.8
Finland	1.1	1.7	0.6	0.7	-0.2	2.4	-0.3
Euro area	1.5	2.0	1.0	1.9	1.3	1.1	1.6
Bulgaria	1.6	1.7	1.4	2.2	4.3	5.3	5.5
Czech Republic	1.6	2.0	1.2	2.7	1.3	3.4	2.9
Denmark	1.5	2.0	0.9	0.2	1.0	0.4	0.6
Croatia	1.4	2.0	0.8	0.5	2.2	1.3	3.3
Hungary	1.9	2.4	1.4	0.7	2.4	0.9	1.7
Poland	3.2	4.1	2.4	1.9	2.9	3.6	4.2
Romania	1.2	0.9	1.4	2.2	4.2	2.1	7.3
Sweden	1.1	0.7	1.4	3.7	0.1	0.4	0.4
United Kingdom	2.2	3.4	1.1	1.0	0.3	0.4	3.6
European Union	1.6	2.2	1.1	1.8	1.2	1.1	2.0
United States	1.2	2.1	0.4	1.8	0.6	1.7	1.8
Japan	1.6	1.8	1.4	1.4	0.2	0.9	1.9

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.3 Government consumption
(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

2 Economic activity

2.4 Gross capital formation

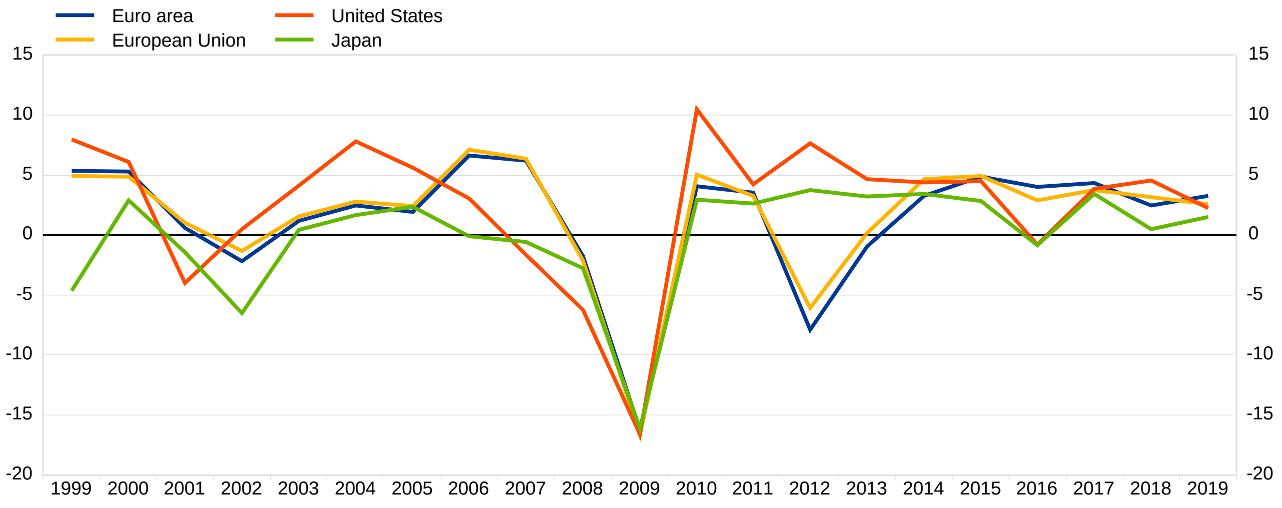
(chain-linked volumes; annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	2.6	3.6	1.6	4.7	0.8	5.0	2.1
Germany	0.9	0.8	1.0	4.1	5.1	4.9	-1.8
Estonia	5.2	8.8	2.0	7.9	10.8	5.2	11.1
Ireland	8.2	5.1	11.0	48.4	-5.2	-24.7	93.3
Greece	-2.4	4.4	-8.2	6.1	10.0	1.8	0.7
Spain	1.5	4.9	-1.5	1.4	5.6	6.1	2.4
France	2.0	3.4	0.7	0.7	5.3	1.6	1.7
Italy	0.0	2.2	-1.9	5.3	4.2	2.7	-1.9
Cyprus	2.2	8.4	-3.1	38.0	22.1	-1.0	-3.8
Latvia	4.2	11.6	-2.1	1.3	11.8	11.5	0.9
Lithuania	3.6	8.9	-1.0	-2.9	3.3	4.6	-1.6
Luxembourg	3.4	4.9	1.9	3.3	-0.2	-1.0	.
Malta	2.5	0.9	3.7	1.9	-14.0	6.0	8.2
Netherlands	1.6	2.5	0.8	-6.7	4.2	2.2	4.7
Austria	1.5	1.8	1.3	3.9	4.5	3.6	2.5
Portugal	-0.5	0.3	-1.2	2.5	11.9	6.2	6.5
Slovenia	1.4	6.8	-3.3	-0.5	13.8	9.3	1.2
Slovakia	2.2	3.6	0.9	-2.7	2.8	5.8	4.8
Finland	1.6	3.3	0.0	8.9	4.5	5.7	-5.3
Euro area	1.3	2.5	0.2	4.0	4.4	2.4	3.3
Bulgaria	4.7	14.2	-3.3	-4.5	6.5	10.4	-3.5
Czech Republic	2.8	5.4	0.4	-4.3	4.0	5.6	2.7
Denmark	1.8	2.5	1.2	7.6	2.5	6.7	1.2
Croatia	2.8	7.7	-1.4	6.2	7.2	11.0	1.7
Hungary	1.8	2.4	1.3	-4.1	9.0	18.3	9.5
Poland	3.9	5.0	2.9	-2.0	7.9	10.1	1.8
Romania	5.4	12.2	-0.5	-0.2	6.9	3.9	3.9
Sweden	3.1	4.1	2.2	3.4	5.9	5.6	-2.1
United Kingdom	1.6	2.0	1.4	-0.6	-1.7	1.4	0.4
European Union	1.5	2.7	0.5	2.9	3.7	3.2	2.6
United States	2.3	2.2	2.4	-0.8	3.9	4.5	2.2
Japan	-0.2	-0.9	0.5	-0.9	3.5	0.5	1.5

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.4 Gross capital formation

(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

2 Economic activity

2.5 Exports of goods and services

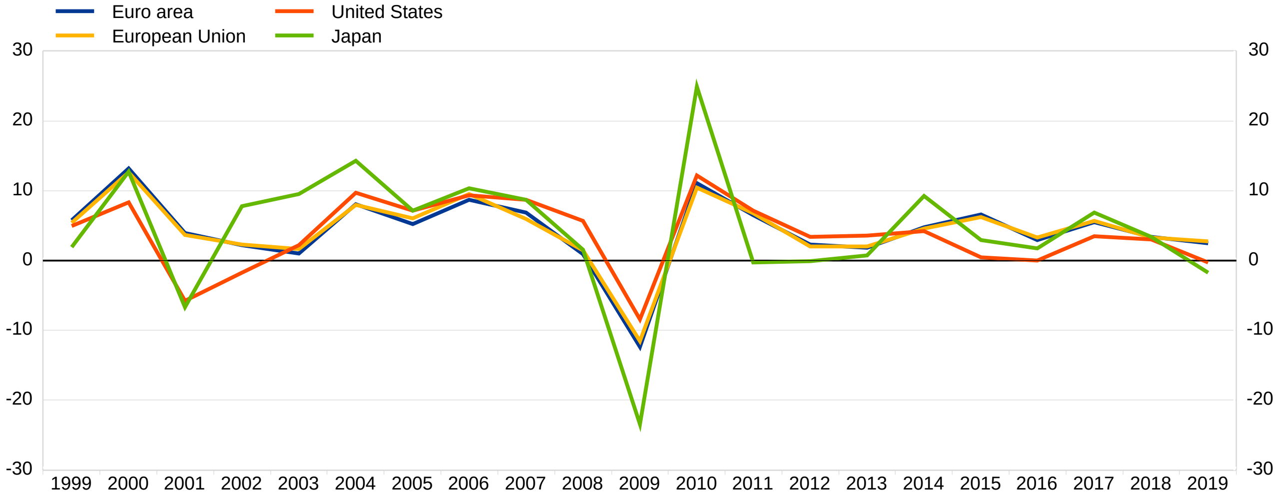
(chain-linked volumes; annual percentage changes)

	1999-2019 [1),2)]	1999-2008 [1)]	2009-2019 [2)]	2016	2017	2018	2019
Belgium	3.4	4.7	2.3	6.5	5.3	1.2	1.0
Germany	4.8	7.1	2.8	2.4	4.9	2.1	0.9
Estonia	5.6	7.0	4.4	5.1	3.8	4.3	4.9
Ireland	8.4	7.6	9.1	4.1	9.2	10.4	11.1
Greece	4.3	7.5	1.4	-1.8	6.8	8.7	4.8
Spain	3.8	4.5	3.1	5.4	5.6	2.2	2.3
France	3.2	4.0	2.4	1.8	3.9	3.5	2.0
Italy	2.2	2.9	1.5	1.9	5.4	2.3	1.2
Cyprus	3.1	1.9	4.2	7.2	8.7	4.6	2.0
Latvia	6.2	8.4	4.2	4.0	6.4	4.0	2.0
Lithuania	7.7	9.6	6.1	4.9	13.6	6.3	9.3
Luxembourg	5.7	8.1	3.3	2.6	0.7	0.5	.
Malta	5.2	6.2	4.5	4.5	4.8	3.5	1.7
Netherlands	4.3	5.3	3.4	1.7	6.5	3.7	2.6
Austria	4.3	6.3	2.5	3.1	5.0	5.9	2.7
Portugal	4.3	4.4	4.2	4.4	8.4	4.5	3.7
Slovenia	6.1	8.8	3.6	6.5	10.5	6.1	4.4
Slovakia	8.4	12.9	4.5	5.0	3.5	5.4	1.7
Finland	3.7	7.2	0.5	3.7	8.8	2.2	7.1
Euro area	4.2	5.5	3.0	2.9	5.5	3.4	2.5
Bulgaria	4.1	3.7	4.5	8.6	5.8	1.7	1.9
Czech Republic	7.7	11.4	4.4	4.3	6.7	4.4	1.2
Denmark	3.8	5.8	2.0	4.1	4.6	2.4	1.9
Croatia	4.4	5.9	3.2	7.0	6.8	3.7	4.6
Hungary	8.2	12.9	4.1	3.8	6.9	4.3	6.0
Poland	7.5	8.8	6.2	8.8	9.5	7.0	4.2
Romania	8.5	9.3	7.9	16.0	7.6	6.2	3.5
Sweden	4.0	5.8	2.4	2.8	4.3	3.2	4.2
United Kingdom	3.1	4.0	2.2	2.7	6.1	1.2	3.7
European Union	4.3	5.6	3.1	3.3	5.7	3.3	2.7
United States	3.6	4.7	2.5	0.0	3.5	3.0	-0.3
Japan	3.9	6.6	1.6	1.7	6.8	3.4	-1.8

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.5 Exports of goods and services

(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

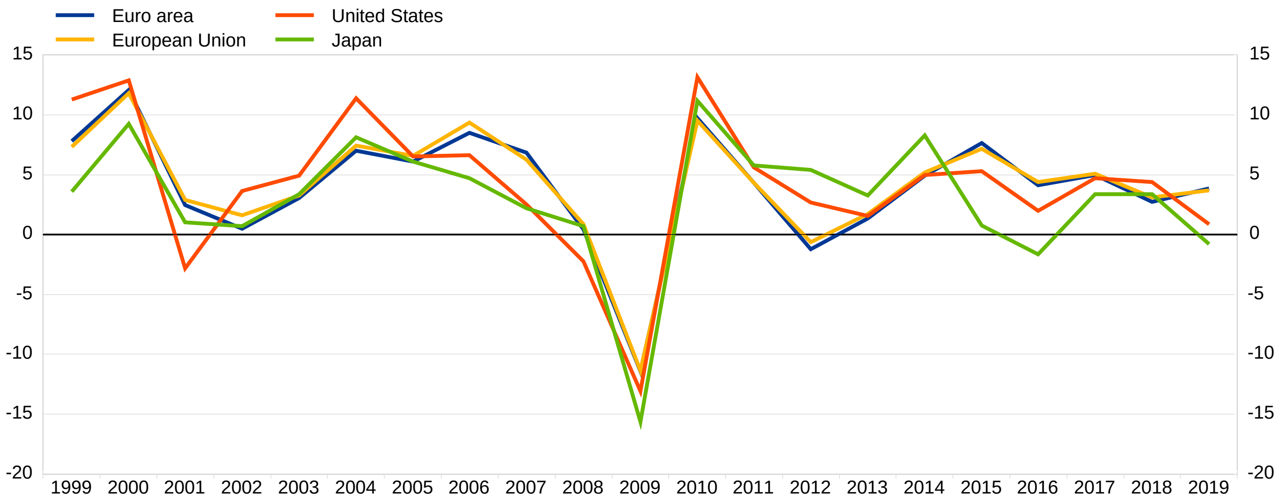
2 Economic activity

2.6 Imports of goods and services
(chain-linked volumes; annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	3.4	4.5	2.4	7.5	4.4	2.1	1.2
Germany	4.4	5.6	3.3	4.3	5.2	3.6	1.9
Estonia	5.9	8.4	3.6	6.0	4.2	5.7	3.7
Ireland	8.2	7.8	8.5	18.4	1.1	-2.9	35.6
Greece	2.1	7.2	-2.4	0.3	7.1	4.2	2.5
Spain	3.2	6.3	0.4	2.6	6.6	3.3	1.2
France	3.8	5.2	2.5	2.9	3.9	1.2	2.2
Italy	2.1	3.6	0.8	3.9	6.1	3.4	-0.4
Cyprus	3.3	4.7	2.0	9.0	12.8	2.4	1.5
Latvia	5.3	8.8	2.2	3.8	8.4	6.4	2.3
Lithuania	7.1	11.0	3.8	4.0	11.5	6.0	6.7
Luxembourg	5.9	8.4	3.5	1.6	0.6	-0.3	.
Malta	4.2	5.6	3.3	1.6	-0.5	3.4	2.1
Netherlands	4.2	5.2	3.3	-2.0	6.2	3.3	3.2
Austria	3.7	4.9	2.6	3.7	5.0	4.6	2.8
Portugal	3.2	4.0	2.6	5.0	8.1	5.7	5.2
Slovenia	5.2	8.5	2.3	6.7	10.1	6.6	4.2
Slovakia	6.7	10.3	3.5	4.8	3.9	5.0	2.6
Finland	3.9	7.0	1.2	5.8	4.1	5.0	2.5
Euro area	4.0	5.4	2.7	4.1	5.0	2.7	3.8
Bulgaria	6.8	12.0	2.2	5.2	7.4	5.7	2.4
Czech Republic	7.2	10.9	4.0	2.8	5.9	5.9	1.7
Denmark	4.0	6.6	1.7	3.7	4.3	3.6	0.2
Croatia	4.2	7.3	1.5	6.5	8.4	7.5	4.8
Hungary	7.5	12.0	3.6	3.4	8.2	6.8	6.9
Poland	6.2	7.9	4.7	7.6	9.8	7.6	3.0
Romania	10.3	15.5	5.8	16.5	10.8	9.1	7.2
Sweden	3.8	5.0	2.6	3.8	4.8	3.6	1.8
United Kingdom	3.6	4.7	2.6	4.4	3.5	2.0	3.6
European Union	4.2	5.7	2.8	4.4	5.1	3.1	3.7
United States	4.0	5.3	2.7	2.0	4.7	4.4	0.9
Japan	2.9	3.9	1.9	-1.6	3.4	3.4	-0.8

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.6 Imports of goods and services
(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

2 Economic activity

2.7 Nominal GDP
(current prices; EUR billions)

	1999-2019 [1]	1999-2008	2009-2019 [1]	2016	2017	2018	2019
Belgium	354.3	294.5	408.6	430.4	446.4	459.8	473.6
Germany	2,624.3	2,273.3	2,943.4	3,134.1	3,245.0	3,344.4	3,435.8
Estonia	15.5	10.3	20.3	21.7	23.8	26.0	28.0
Ireland	193.4	150.1	232.8	271.7	297.1	324.0	347.2
Greece	190.0	186.3	193.4	176.5	180.2	184.7	187.5
Spain	979.1	847.2	1,099.1	1,113.8	1,161.9	1,202.2	1,244.8
France	1,939.7	1,688.8	2,167.8	2,234.1	2,295.1	2,353.1	2,419.0
Italy	1,550.5	1,421.7	1,667.6	1,695.8	1,736.6	1,766.2	1,787.7
Cyprus	16.7	13.9	19.3	18.9	20.0	21.1	21.9
Latvia	18.9	13.5	23.8	25.1	26.8	29.1	30.5
Lithuania	28.4	19.3	36.6	38.9	42.3	45.3	48.3
Luxembourg	38.5	28.6	48.5	54.9	56.8	60.1	.
Malta	7.1	5.0	9.1	10.3	11.3	12.4	13.2
Netherlands	615.2	529.8	692.8	708.3	738.1	774.0	810.7
Austria	293.5	243.9	338.7	357.3	370.3	385.7	398.5
Portugal	167.9	150.4	183.8	186.5	195.9	204.3	212.3
Slovenia	34.0	27.9	39.6	40.4	43.0	45.8	48.0
Slovakia	58.2	36.4	77.9	81.0	84.5	89.7	94.2
Finland	185.5	158.6	210.0	217.5	225.8	234.4	240.9
Euro area	9,312.0	8,099.5	10,414.3	10,817.2	11,200.9	11,562.2	11,905.4
Bulgaria	34.7	22.2	46.1	48.6	52.3	56.1	60.7
Czech Republic	138.9	100.8	173.6	176.4	191.7	207.6	219.9
Denmark	237.6	202.8	269.3	283.1	292.4	301.3	310.6
Croatia	40.2	33.3	46.5	46.6	49.1	51.6	53.9
Hungary	95.9	78.2	112.1	115.3	125.6	133.8	143.8
Poland	331.9	236.7	418.4	426.6	467.3	496.4	527.0
Romania	118.4	73.0	159.6	170.4	187.8	204.6	222.1
Sweden	371.6	305.1	432.0	466.3	479.6	471.2	474.7
United Kingdom	2,083.5	1,933.1	2,220.3	2,435.1	2,363.1	2,423.7	2,523.3
European Union	12,764.8	11,084.7	14,292.1	14,985.5	15,409.9	15,908.6	16,441.5
United States	12,568.9	10,549.6	14,404.7	16,907.6	17,278.7	17,426.8	19,140.4
Japan	4,144.7	4,072.2	4,210.7	4,455.5	4,308.2	4,195.9	4,540.5

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

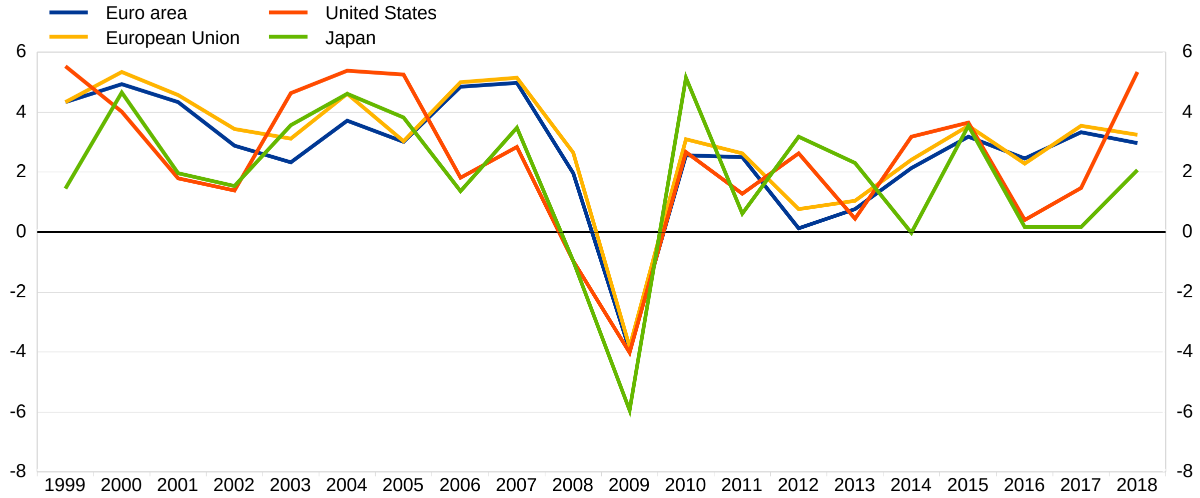
2 Economic activity

2.8 GDP per capita
(current prices; purchasing power parities [1] in EUR thousands)

	1999-2018	1999-2008	2009-2018	2015	2016	2017	2018
Belgium	30.3	26.9	33.8	34.9	35.6	36.6	37.6
Germany	30.7	26.7	34.7	36.0	36.8	37.9	38.9
Estonia	16.8	12.5	21.2	22.2	23.0	24.6	26.4
Ireland	37.6	31.7	43.5	52.2	52.5	56.6	60.8
Greece	20.9	20.8	20.9	20.3	20.3	20.8	21.7
Spain	24.2	22.3	26.1	26.4	27.2	28.4	29.1
France	27.6	25.0	30.2	30.8	31.3	32.1	33.1
Italy	26.8	25.3	28.3	27.9	29.1	30.0	30.6
Cyprus	23.9	22.4	25.4	24.0	25.6	26.8	28.2
Latvia	14.4	11.3	17.5	18.7	19.2	20.5	22.1
Lithuania	15.6	10.9	20.3	21.8	22.6	24.3	25.9
Luxembourg	65.1	55.8	74.5	78.4	80.1	80.4	82.8
Malta	21.8	18.2	25.3	27.2	28.5	30.1	31.2
Netherlands	34.3	31.0	37.5	38.0	38.2	39.7	41.2
Austria	32.5	28.5	36.6	37.7	38.5	39.3	40.6
Portugal	20.3	18.5	22.1	22.4	23.1	23.9	24.5
Slovenia	21.8	19.9	23.8	23.9	24.7	26.3	27.8
Slovakia	16.0	10.5	21.6	22.6	22.9	23.5	24.7
Finland	29.3	26.4	32.2	32.1	32.7	34.0	35.4
Euro area	27.6	24.8	30.4	31.0	31.8	32.9	33.8
Bulgaria	10.6	7.8	13.3	13.8	14.6	15.4	16.3
Czech Republic	20.9	17.4	24.4	25.4	26.2	27.7	29.1
Denmark	32.1	27.9	36.2	37.0	37.8	39.5	40.8
Croatia	14.8	12.3	17.2	17.4	18.2	19.2	20.2
Hungary	16.2	13.3	19.1	20.1	20.2	21.2	22.8
Poland	15.1	11.3	19.0	20.0	20.4	21.5	22.7
Romania	11.9	7.8	16.0	16.3	17.7	19.4	20.8
Sweden	32.0	28.4	35.6	37.0	36.7	37.8	39.0
United Kingdom	28.5	26.2	30.8	32.1	32.3	33.0	33.7
European Union	25.5	22.5	28.5	29.3	29.9	31.0	32.0
United States	38.0	34.9	41.2	42.9	43.0	43.7	46.0
Japan	27.4	25.5	29.3	30.5	30.6	30.6	31.2

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) GDP in purchasing power standards in euro, calculated on the basis of purchasing power parity rates relative to the euro area (Euro 19 = 1).

Chart 2.8 GDP per capita
(current prices; purchasing power parities [1] in EUR thousands)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) GDP in purchasing power standards in euro, calculated on the basis of purchasing power parity rates relative to the euro area (Euro 19 = 1).

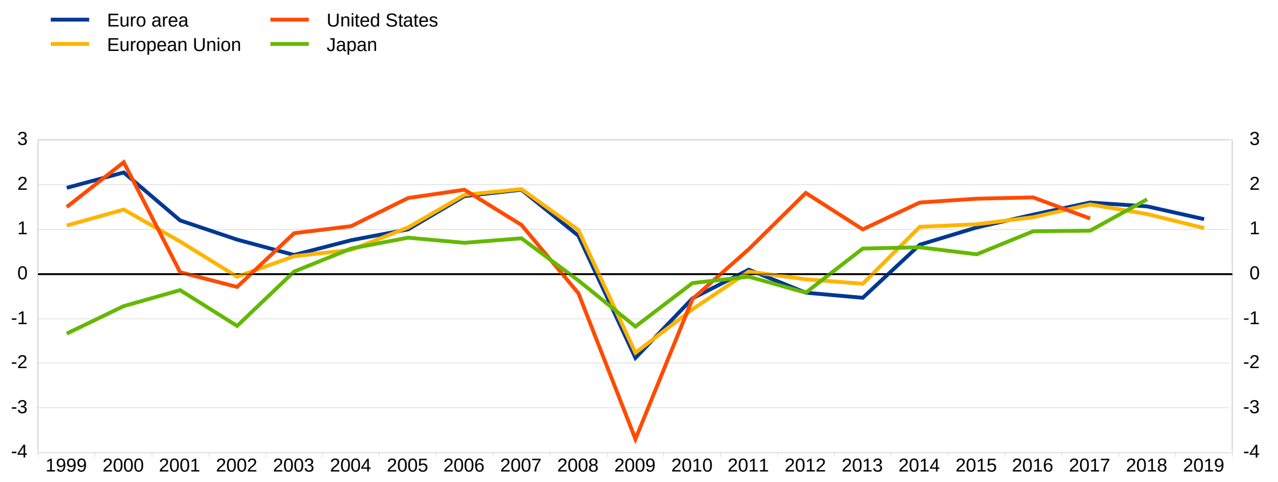
2 Economic activity

2.9 Employment
(persons employed; annual percentage changes)

	1999-2019 [1]	1999-2008	2009-2019 [1]	2016	2017	2018	2019
Belgium	1.0	1.2	0.8	1.3	1.6	1.4	1.5
Germany	0.8	0.6	0.9	1.2	1.4	1.4	0.9
Estonia	0.4	0.6	0.2	0.3	2.7	1.2	1.3
Ireland	1.9	3.4	0.6	3.7	3.0	3.2	2.9
Greece	0.0	1.2	-1.1	0.5	1.5	1.7	2.0
Spain	1.4	3.4	-0.4	2.1	2.7	2.2	2.1
France	0.7	1.1	0.4	0.6	1.0	1.0	1.2
Italy	0.6	1.3	0.1	1.4	1.2	0.8	0.6
Cyprus	1.7	2.9	0.7	4.7	5.3	4.1	3.1
Latvia	-0.4	0.8	-1.4	-0.3	0.0	1.6	-0.1
Lithuania	-0.4	-0.5	-0.3	2.0	-0.5	1.1	1.4
Luxembourg	3.2	3.9	2.5	3.0	3.4	3.7	.
Malta	2.5	0.9	4.0	4.3	8.1	6.0	5.6
Netherlands	0.9	1.3	0.6	1.5	2.2	2.5	1.8
Austria	1.0	1.1	1.0	1.3	1.7	1.7	1.2
Portugal	0.1	0.4	-0.2	1.6	3.3	2.3	0.8
Slovenia	0.8	1.2	0.4	1.8	3.0	3.2	2.4
Slovakia	0.7	0.6	0.8	2.4	2.2	2.0	1.2
Finland	0.9	1.6	0.2	0.5	1.0	2.3	0.9
Euro area	0.8	1.3	0.4	1.3	1.6	1.5	1.2
Bulgaria	0.1	1.0	-0.7	0.5	1.8	-0.1	0.3
Czech Republic	0.4	0.4	0.4	1.6	1.6	1.3	0.7
Denmark	0.5	0.8	0.2	1.7	1.6	1.4	1.2
Croatia	0.4	1.3	-0.5	0.3	2.2	1.8	1.4
Hungary	0.8	0.1	1.4	3.7	1.9	2.4	1.7
Poland	0.3	0.2	0.4	0.8	1.3	0.5	-0.2
Romania	-1.1	-1.6	-0.7	-1.1	2.4	0.2	-0.1
Sweden	1.1	1.0	1.1	1.9	2.5	1.6	0.6
United Kingdom	1.0	1.0	0.9	1.5	1.0	1.2	1.1
European Union	0.7	1.0	0.4	1.3	1.6	1.3	1.0
United States	0.8	1.0	0.6	1.7	1.2	.	.
Japan	0.1	-0.1	0.3	1.0	1.0	1.7	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018. However, for the United States the average refers to the periods 1999-2017 and 2009-2017.

Chart 2.9 Employment
(persons employed; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

2.10 Labour productivity

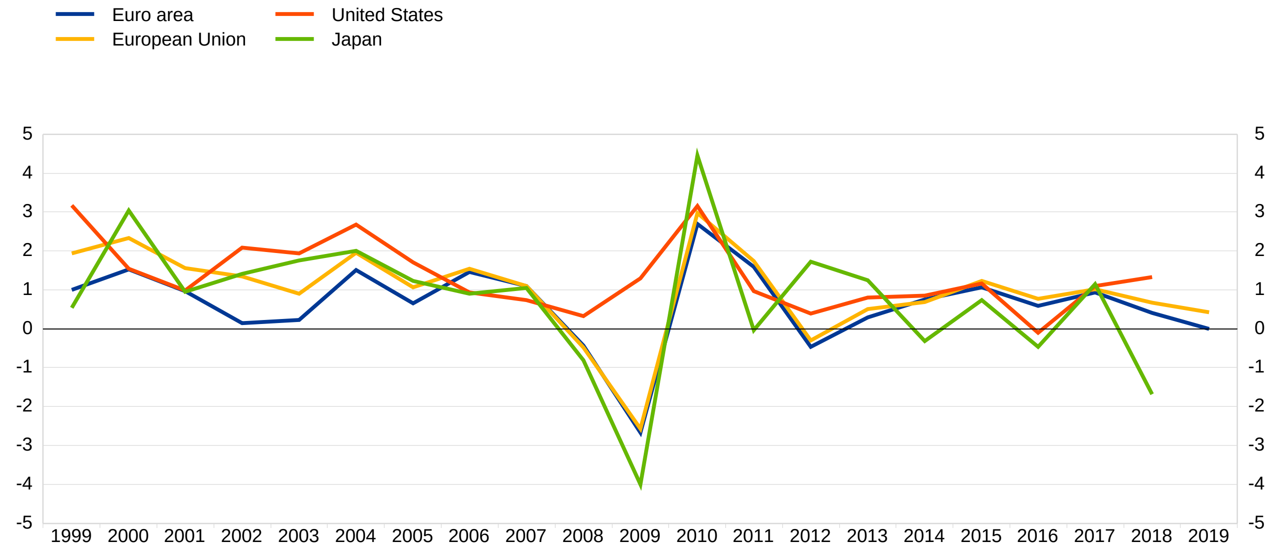
(per person employed; annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	0.8	1.2	0.4	0.3	0.3	0.1	-0.2
Germany	0.6	0.9	0.3	1.0	1.1	0.2	-0.3
Estonia	3.3	5.2	1.7	2.3	3.0	3.4	3.0
Ireland	3.1	1.7	4.4	0.0	5.0	4.8	2.6
Greece	0.4	2.2	-1.2	-0.7	0.0	0.2	-0.1
Spain	0.6	0.1	1.0	0.9	0.2	0.1	-0.1
France	0.7	1.0	0.5	0.4	1.3	0.5	0.3
Italy	-0.2	-0.1	-0.3	-0.1	0.5	0.0	-0.3
Cyprus	0.8	1.5	0.1	2.0	-0.9	0.0	0.1
Latvia	4.0	5.9	2.3	2.1	3.8	2.6	2.3
Lithuania	4.1	6.6	1.9	0.3	5.0	2.2	3.4
Luxembourg	0.2	0.5	-0.1	1.5	-1.6	-0.6	.
Malta	1.0	1.2	0.8	1.5	-1.5	1.2	-1.1
Netherlands	0.8	1.2	0.4	0.6	0.7	0.1	0.0
Austria	0.7	1.3	0.1	0.8	0.8	0.7	0.4
Portugal	0.9	1.2	0.6	0.4	0.2	0.3	1.4
Slovenia	1.7	3.0	0.5	1.3	1.8	0.9	0.1
Slovakia	2.8	4.5	1.4	-0.3	0.8	2.0	1.0
Finland	0.9	1.7	0.1	2.2	2.0	-0.6	0.0
Euro area	0.6	0.8	0.5	0.6	0.9	0.4	0.0
Bulgaria	2.9	3.4	2.5	3.3	1.7	3.2	3.0
Czech Republic	2.3	3.6	1.2	0.8	2.8	1.5	1.8
Denmark	1.0	0.9	1.0	1.5	0.4	1.0	1.1
Croatia	1.5	2.4	0.7	3.2	0.9	0.8	1.5
Hungary	1.8	3.4	0.4	-1.5	2.4	2.7	3.2
Poland	3.5	3.9	3.2	2.2	3.6	4.8	4.1
Romania	5.0	7.1	3.0	6.0	4.6	4.2	4.1
Sweden	1.3	1.9	0.8	0.5	0.0	0.7	0.6
United Kingdom	0.9	1.6	0.4	0.4	0.9	0.1	0.3
European Union	1.0	1.3	0.6	0.8	1.0	0.7	0.4
United States	1.3	1.6	1.1	-0.1	1.1	1.3	.
Japan	0.7	1.2	0.3	-0.5	1.1	-1.7	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.10 Labour productivity

(per person employed; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

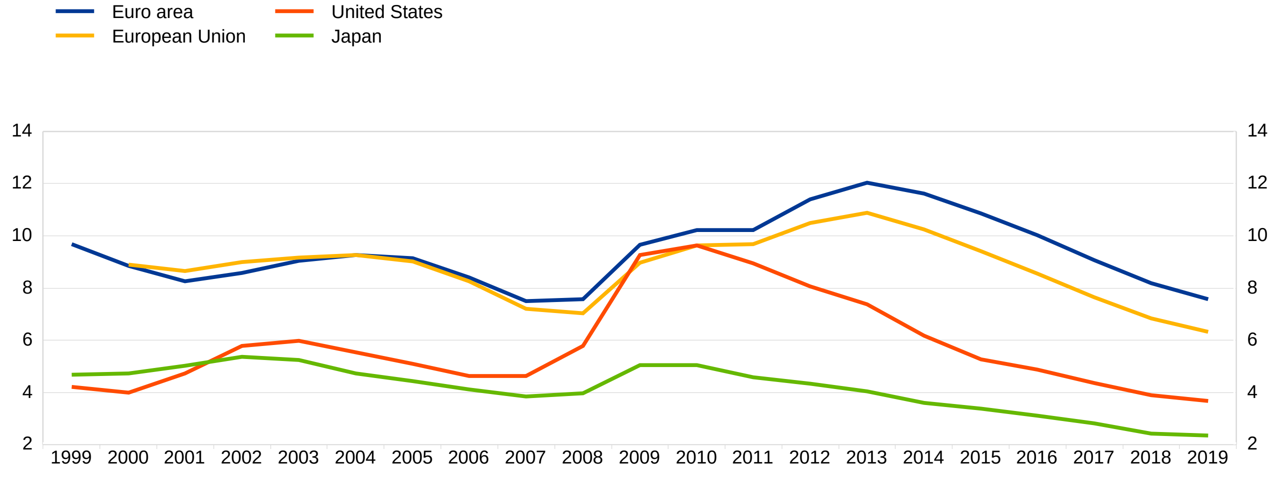
2 Economic activity

2.11 Unemployment
(percentage of the labour force)

	1999-2019 1), 2)	1999-2008 1)	2009-2019 1), 2)	2016	2017	2018	2019
Belgium	7.6	7.7	7.5	7.8	7.1	6.0	5.4
Germany	7.0	9.1	5.0	4.1	3.8	3.4	3.2
Estonia	9.0	9.3	8.8	6.8	5.8	5.4	4.5
Ireland	8.1	5.0	10.9	8.4	6.7	5.8	5.0
Greece	15.5	10.0	20.5	23.6	21.5	19.3	17.3
Spain	15.7	10.7	20.3	19.6	17.2	15.3	14.1
France	9.2	8.9	9.6	10.0	9.4	9.0	8.5
Italy	9.4	8.2	10.5	11.7	11.2	10.6	10.0
Cyprus	7.8	4.3	10.7	13.0	11.1	8.4	7.1
Latvia	11.5	10.9	12.1	9.6	8.7	7.4	6.3
Lithuania	10.9	11.0	10.9	7.9	7.1	6.2	6.3
Luxembourg	4.6	3.6	5.5	6.3	5.6	5.5	5.6
Malta	6.1	6.9	5.4	4.7	4.0	3.7	3.4
Netherlands	4.9	4.4	5.4	6.0	4.9	3.8	3.4
Austria	4.9	4.7	5.2	6.0	5.5	4.9	4.5
Portugal	9.6	7.3	11.7	11.2	9.0	7.0	6.5
Slovenia	6.9	6.1	7.6	8.0	6.6	5.1	4.6
Slovakia	13.5	16.0	11.2	9.7	8.1	6.5	5.8
Finland	8.3	8.5	8.2	8.8	8.6	7.4	6.7
Euro area	9.4	8.6	10.1	10.0	9.1	8.2	7.6
Bulgaria	10.5	12.4	8.9	7.6	6.2	5.2	4.2
Czech Republic	6.2	7.4	5.2	4.0	2.9	2.2	2.0
Denmark	5.6	4.6	6.6	6.0	5.8	5.1	5.0
Croatia	12.9	13.1	12.8	13.4	11.1	8.4	6.7
Hungary	7.2	6.6	7.7	5.1	4.2	3.7	3.4
Poland	11.3	15.5	7.5	6.2	4.9	3.9	3.3
Romania	6.6	7.2	6.1	5.9	4.9	4.2	3.9
Sweden	7.0	6.5	7.5	6.9	6.7	6.3	6.8
United Kingdom	5.8	5.2	6.4	4.8	4.3	4.0	.
European Union	8.8	8.5	9.0	8.6	7.6	6.8	6.3
United States	5.8	5.0	6.5	4.9	4.4	3.9	3.7
Japan	4.1	4.6	3.7	3.1	2.8	2.4	2.3

Source: Eurostat.
1) Data for Estonia, Cyprus, Malta, Bulgaria, Croatia and the European Union available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 2.11 Unemployment
(percentage of the labour force)



Source: Eurostat.

2.12 Household debt [1)]

(percentage of GDP)

	1999-2018 [2)]	1999-2008 [2)]	2009-2018	2015	2016	2017	2018
Belgium	49.7	42.7	56.7	58.4	58.7	59.4	60.1
Germany	61.7	67.5	55.9	53.5	53.3	53.3	53.6
Estonia	34.3	25.4	43.2	39.5	40.1	39.3	38.4
Ireland	80.5	80.2	80.7	55.8	52.5	46.5	42.4
Greece	44.5	28.4	60.6	61.9	60.0	56.8	56.5
Spain	67.8	61.9	73.7	68.0	64.5	61.2	59.0
France	47.7	39.6	55.9	56.1	57.1	58.5	60.0
Italy	36.0	29.6	42.3	41.8	41.1	40.8	40.8
Cyprus	101.0	83.1	118.9	127.3	116.6	105.1	97.0
Latvia	26.4	20.7	32.0	24.6	23.6	22.4	21.1
Lithuania	17.9	11.1	24.6	22.3	22.8	22.4	22.8
Luxembourg	53.0	44.3	61.7	62.1	62.8	65.3	65.8
Malta	47.2	38.2	56.3	53.0	52.2	50.5	49.2
Netherlands	106.7	99.8	113.7	111.7	110.0	107.1	103.4
Austria	50.0	48.3	51.7	50.8	51.1	50.2	49.6
Portugal	77.3	72.9	81.7	77.0	72.6	69.2	66.4
Slovenia	23.5	18.4	28.6	27.6	27.3	27.2	27.0
Slovakia	21.4	10.5	32.2	34.6	38.3	41.0	42.4
Finland	50.8	40.0	61.6	63.3	64.1	63.8	65.0
Euro area	57.4	54.0	60.8	58.9	58.4	57.8	57.6
Bulgaria	18.8	12.2	25.3	23.6	23.0	22.6	23.0
Czech Republic	22.4	14.3	30.4	30.2	31.2	31.6	32.2
Denmark	119.2	105.9	132.6	128.6	128.3	127.6	124.9
Croatia	34.4	29.0	38.7	38.4	35.1	34.1	34.1
Hungary	22.9	18.2	27.6	21.0	20.1	18.6	17.7
Poland	24.8	14.8	34.8	36.0	36.6	34.9	35.1
Romania	13.4	7.9	19.0	17.4	16.7	16.1	15.8
Sweden	69.0	56.4	81.6	82.7	85.7	87.4	87.9
United Kingdom	82.0	77.7	86.4	83.0	83.3	83.1	83.4
European Union	-	-	-	-	-	-	-
United States	82.5	83.4	81.6	76.5	76.8	76.5	74.8
Japan	60.7	62.4	59.0	56.9	57.4	57.8	58.3

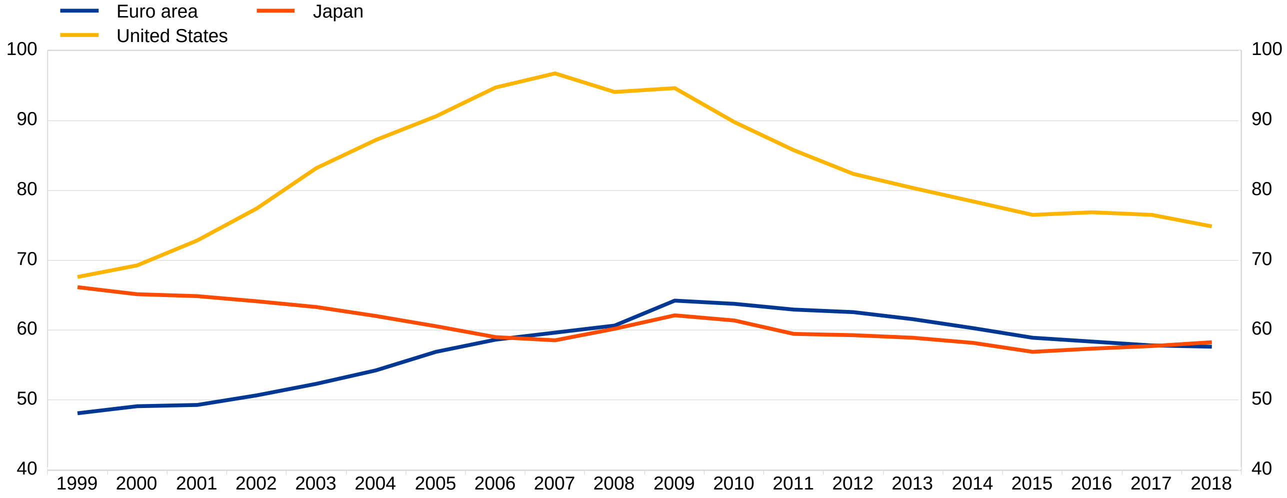
Sources: ECB, Eurostat and OECD (for the United States and Japan).

1) Defined as outstanding amounts of loans received by households and non-profit institutions serving households.

2) Data for the European Union are not available. Data for Croatia since 2001; for Ireland since 2002.

Chart 2.12 Household debt

(percentage of GDP)



Sources: ECB, Eurostat and OECD (for the United States and Japan).

2 Economic activity

2.13 Household savings ratio

(percentage of adjusted disposable income 1))

	1999-2018 2),3)	1999-2008 2)	2009-2018 3)	2015	2016	2017	2018
Belgium	15.6	17.3	13.9	12.4	12.2	12.0	11.8
Germany	17.0	16.6	17.4	17.5	17.6	17.9	18.5
Estonia	5.5	1.3	9.7	10.2	10.0	10.6	11.5
Ireland	8.5	7.0	10.0	8.5	8.0	10.5	10.2
Greece4)	2.2	6.7	-2.4	-5.1	-6.7	-7.0	-5.8
Spain	8.3	8.9	7.8	7.2	7.1	5.5	5.9
France	14.3	14.1	14.5	13.7	13.6	13.6	13.8
Italy	12.6	14.3	10.8	10.5	10.6	10.1	9.9
Cyprus	3.2	4.1	2.4	-1.5	1.3	3.7	2.4
Latvia	1.3	0.6	2.0	1.1	4.5	4.4	6.3
Lithuania	2.6	2.5	2.7	0.5	2.9	0.3	-1.2
Luxembourg	18.4	16.6	20.3	20.6	19.4	21.5	21.4
Malta	-	-	-	-	-	-	-
Netherlands	12.7	10.3	15.1	15.9	16.6	15.3	15.1
Austria	14.7	15.8	13.6	12.3	13.1	12.8	13.1
Portugal	9.6	10.8	8.3	6.9	7.0	6.6	6.5
Slovenia	12.6	16.0	11.3	11.1	11.5	12.4	12.6
Slovakia	7.9	7.9	7.8	8.7	8.6	8.2	8.4
Finland	7.9	8.1	7.8	7.0	6.3	6.7	6.8
Euro area	12.8	13.1	12.5	12.3	12.3	12.0	12.3
Bulgaria	-3.2	-6.2	0.1	-0.9	-0.3	0.6	.
Czech Republic	11.4	11.3	11.5	12.0	11.6	9.5	10.9
Denmark	7.3	5.5	9.0	10.0	11.5	12.3	12.3
Croatia	10.3	7.8	12.5	14.2	14.0	.	.
Hungary	10.8	10.1	11.6	12.2	11.9	11.4	11.6
Poland	5.8	8.7	2.9	2.3	4.2	2.8	1.5
Romania	2.8	3.2	2.3	1.7	1.6	2.6	0.8
Sweden	11.6	8.0	15.2	14.8	16.5	16.0	17.9
United Kingdom	8.6	8.3	9.0	9.9	7.2	5.3	5.8
European Union	11.3	11.6	11.0	10.8	10.5	9.9	10.1
United States4)	11.5	10.3	12.6	13.1	12.2	12.3	13.4
Japan	10.1	11.6	8.6	7.3	8.7	8.3	8.5

Sources: ECB, Eurostat and OECD (for the United States and Japan).

1) Disposable income adjusted for the change in the net equity of households in pension fund reserves.

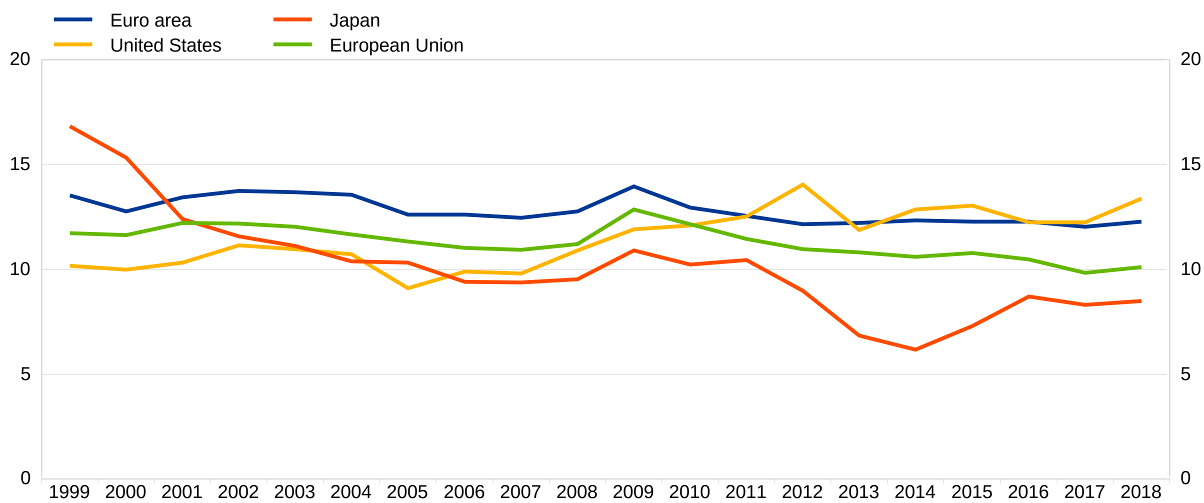
2) Data for Malta are not available. Data for Croatia since 2002; for Lithuania since 2004; and for Slovenia since 2005.

3) Where data are not available for 2018, the average indicated is for the periods 1999-2017 and 2009-2017. However, for Croatia the average refers to the periods 2002-2016 and 2009-2016.

4) Disposable income for Greece and the United States is not adjusted for the change in the net equity of households in pension fund reserves.

Chart 2.13 Household savings

(percentage of adjusted disposable income)



Sources: ECB, Eurostat and OECD (for the United States and Japan).

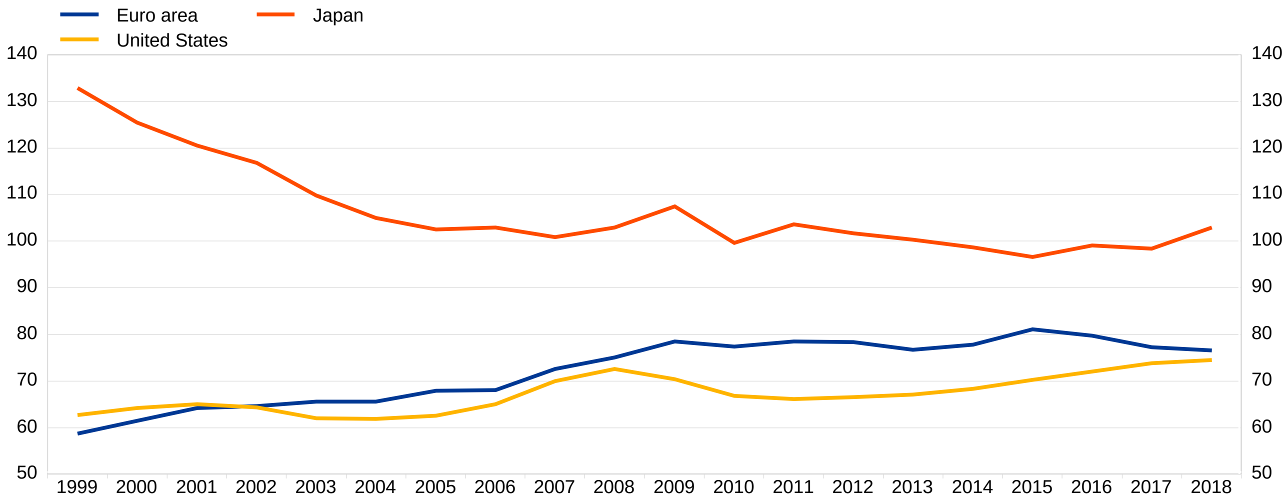
2 Economic activity

2.14 Non-financial corporations' debt [1]
(percentage of GDP)

	1999-2018 [2]	1999-2008 [2]	2009-2018	2015	2016	2017	2018
Belgium	100.6	80.5	120.7	118.2	136.6	126.1	118.8
Germany	48.9	51.2	46.6	44.3	44.9	46.7	48.5
Estonia	73.6	70.7	75.1	73.3	72.3	68.3	63.1
Ireland [3]	162.6	108.1	217.1	267.2	249.0	221.7	202.1
Greece	56.3	47.6	65.1	66.1	65.1	61.3	58.8
Spain	88.8	79.6	98.0	87.7	83.0	78.6	74.6
France	75.7	67.6	83.7	86.7	86.7	86.9	88.9
Italy	73.7	-	73.7	73.6	70.8	68.4	66.9
Cyprus	188.7	161.2	202.5	220.6	212.7	198.6	184.6
Latvia	63.6	61.9	64.4	55.9	56.9	54.5	49.4
Lithuania	38.6	41.2	37.3	33.0	33.7	33.7	33.6
Luxembourg	200.5	150.2	250.8	274.5	247.1	258.5	241.6
Malta	94.9	95.9	94.3	82.2	84.3	82.0	80.2
Netherlands	131.3	122.4	140.2	152.2	150.4	143.1	139.3
Austria	74.6	74.6	74.7	73.2	72.3	71.6	71.4
Portugal	97.9	89.7	106.2	102.2	96.5	93.0	88.7
Slovenia	67.5	64.5	69.0	59.7	53.8	49.1	45.7
Slovakia	47.1	44.1	48.6	45.9	51.0	53.2	48.7
Finland	76.4	68.1	84.6	88.3	83.4	80.8	77.9
Euro area	72.3	66.4	78.2	81.1	79.7	77.2	76.6
Bulgaria	94.4	93.8	94.6	85.7	81.5	76.4	72.0
Czech Republic	47.9	42.4	50.7	49.3	48.9	48.7	50.1
Denmark	86.4	-	86.4	85.4	83.9	82.7	83.7
Croatia [4]	71.0	-	71.0	73.4	69.0	63.7	59.9
Hungary	59.3	53.3	65.3	62.2	56.5	51.4	51.5
Poland	37.2	31.8	40.4	42.9	44.9	41.6	40.9
Romania	43.4	40.9	43.9	40.7	37.0	34.8	31.6
Sweden	103.4	94.5	112.3	108.8	106.6	111.4	114.3
United Kingdom [3]	119.1	117.0	121.2	116.3	123.4	120.2	114.6
European Union	-	-	-	-	-	-	-
United States [3]	67.3	65.0	69.6	70.2	72.0	73.8	74.4
Japan [3]	106.4	112.0	100.8	96.6	99.0	98.4	103.0

Sources: ECB, Eurostat and OECD (for the United States and Japan).
1) Defined as consolidated loans and debt securities liabilities.
2) Data for the European Union are not available. Data for Poland since 2003; for Estonia, Cyprus, Latvia, Lithuania, Malta, Slovenia, Slovakia and the Czech Republic since 2004; for Bulgaria since 2006; for Romania since 2007; and for Italy, Denmark and Croatia since 2012.
3) Figures for Ireland, the United Kingdom, the United States and Japan are non-consolidated (positions between non-financial corporations are not excluded).
4) Figures for Croatia are consolidated for loans, but not for debt securities (debt securities positions between non-financial corporations are not excluded).

Chart 2.14 Non-financial corporations' debt
(percentage of GDP)



Sources: ECB, Eurostat and OECD (for the United States and Japan).

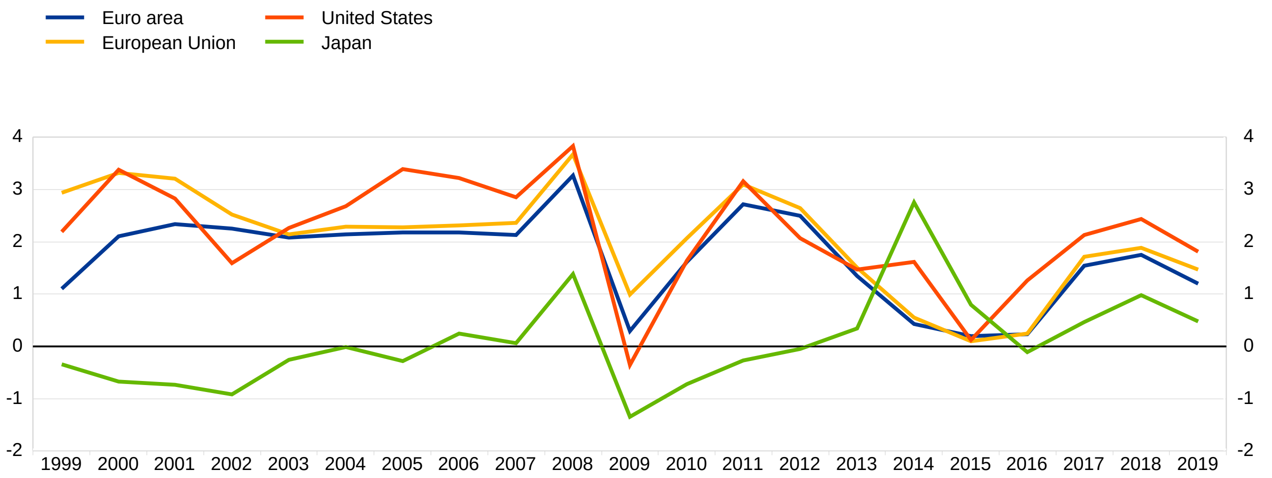
3 Prices and costs

3.1 Inflation as measured by the HICP
(annual percentage changes)

	1999-2019	1999-2008	2009-2019	2016	2017	2018	2019
Belgium	1.9	2.2	1.7	1.8	2.2	2.3	1.2
Germany	1.5	1.7	1.3	0.4	1.7	1.9	1.4
Estonia	3.4	4.6	2.4	0.8	3.7	3.4	2.3
Ireland	1.7	3.4	0.2	-0.2	0.3	0.7	0.9
Greece	2.0	3.3	0.8	0.0	1.1	0.8	0.5
Spain	2.1	3.2	1.1	-0.3	2.0	1.7	0.8
France	1.5	1.9	1.2	0.3	1.2	2.1	1.3
Italy	1.8	2.4	1.2	-0.1	1.3	1.2	0.6
Cyprus	1.7	2.7	0.8	-1.2	0.7	0.8	0.5
Latvia	3.5	5.6	1.6	0.1	2.9	2.6	2.7
Lithuania	2.4	2.7	2.0	0.7	3.7	2.5	2.2
Luxembourg	2.2	2.8	1.6	0.0	2.1	2.0	1.6
Malta	2.1	2.6	1.6	0.9	1.3	1.7	1.5
Netherlands	1.9	2.4	1.4	0.1	1.3	1.6	2.7
Austria	1.8	1.9	1.8	1.0	2.2	2.1	1.5
Portugal	1.9	2.9	1.0	0.6	1.6	1.2	0.3
Slovenia	3.3	5.5	1.3	-0.2	1.6	1.9	1.7
Slovakia	3.7	6.2	1.5	-0.5	1.4	2.5	2.8
Finland	1.6	1.8	1.5	0.4	0.8	1.2	1.1
Euro area	1.7	2.2	1.3	0.2	1.5	1.8	1.2
Bulgaria	3.8	6.7	1.3	-1.3	1.2	2.6	2.5
Czech Republic	2.1	2.7	1.6	0.6	2.4	2.0	2.6
Denmark	1.6	2.1	1.1	0.0	1.1	0.7	0.7
Croatia	2.3	3.4	1.3	-0.6	1.3	1.6	0.8
Hungary	4.6	6.7	2.6	0.4	2.4	2.9	3.4
Poland	2.7	3.9	1.7	-0.2	1.6	1.2	2.1
Romania	10.5	19.5	3.0	-1.1	1.1	4.1	3.9
Sweden	1.5	1.7	1.3	1.1	1.9	2.0	1.7
United Kingdom	2.0	1.8	2.2	0.7	2.7	2.5	1.8
European Union	2.1	2.7	1.5	0.2	1.7	1.9	1.5
United States[1)]	2.2	2.8	1.6	1.3	2.1	2.4	1.8
Japan[1)]	0.1	-0.2	0.3	-0.1	0.5	1.0	0.5

Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data refer to the consumer price index.

Chart 3.1 Inflation as measured by the HICP [1)]
(annual percentage changes)



Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for the United States and Japan refer to the consumer price index.

3 Prices and costs

3.2 Inflation as measured by the HICP excluding energy and food

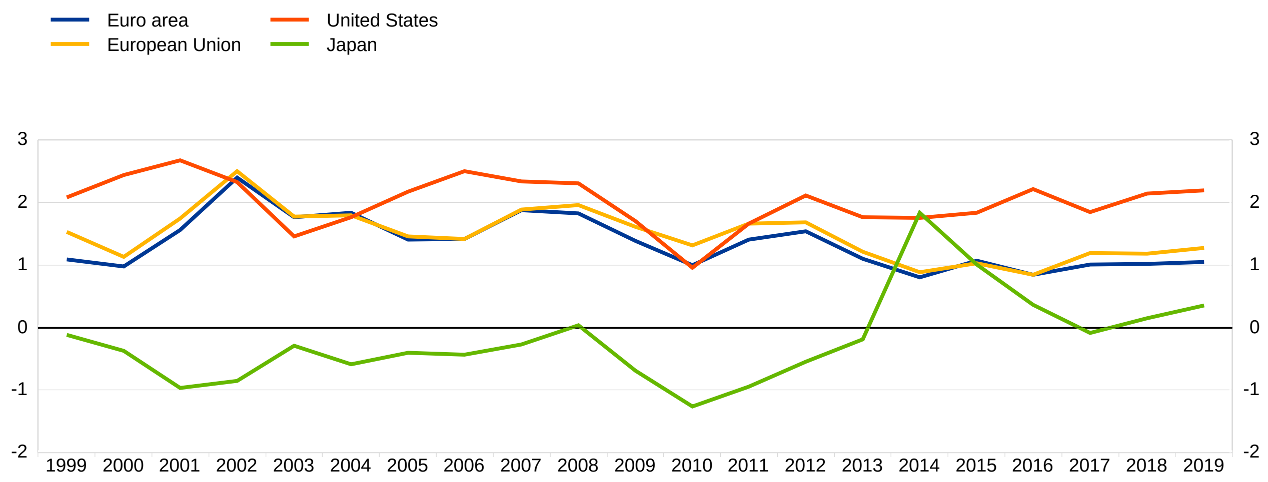
(annual percentage changes)

	1999-2019 [1]	1999-2008 [1]	2009-2019	2016	2017	2018	2019
Belgium	1.5	1.5	1.6	1.8	1.5	1.3	1.5
Germany	1.1	1.0	1.2	1.0	1.3	1.3	1.3
Estonia	2.7	3.8	1.6	1.2	2.0	1.7	2.4
Ireland	1.5	3.0	0.1	0.7	0.2	0.3	0.9
Greece	1.5	2.9	0.3	0.6	0.3	0.3	0.8
Spain	1.7	2.7	0.9	0.7	1.2	1.0	1.1
France	1.1	1.4	0.9	0.6	0.5	0.9	0.6
Italy	1.6	2.1	1.1	0.5	0.8	0.6	0.5
Cyprus	0.8	1.3	0.5	-0.8	0.4	0.1	0.9
Latvia	2.4	4.3	0.8	1.2	1.7	1.9	2.2
Lithuania	1.6	1.7	1.4	1.7	2.6	1.9	2.3
Luxembourg	1.8	1.9	1.6	1.0	1.4	0.9	1.8
Malta	1.6	2.1	1.2	1.0	0.9	1.7	1.1
Netherlands	1.6	1.9	1.3	0.6	0.8	1.0	1.9
Austria	1.7	1.5	1.9	1.6	2.1	1.8	1.7
Portugal	1.7	2.7	0.8	0.9	1.2	0.8	0.4
Slovenia	2.7	4.9	0.7	0.7	0.7	1.0	1.9
Slovakia	3.1	5.1	1.4	0.9	1.4	2.0	2.0
Finland	1.4	1.5	1.3	1.1	0.6	0.3	0.7
Euro area	1.3	1.6	1.1	0.8	1.0	1.0	1.0
Bulgaria	3.4	6.5	0.7	-1.0	-0.5	2.1	1.8
Czech Republic	1.4	2.0	0.9	1.2	1.9	1.8	2.2
Denmark	1.4	1.8	1.0	0.5	0.7	0.5	0.7
Croatia	1.9	3.0	0.8	0.2	1.0	1.0	0.8
Hungary	3.0	4.3	2.3	1.5	1.4	1.6	2.9
Poland	2.2	3.5	1.1	0.2	0.7	0.2	1.9
Romania	5.1	9.3	2.5	0.0	0.2	2.2	2.9
Sweden	1.1	1.1	1.1	1.2	1.4	1.0	1.3
United Kingdom	1.6	1.1	1.9	1.2	2.3	2.1	1.7
European Union	1.5	1.7	1.3	0.8	1.2	1.2	1.3
United States [2]	2.0	2.2	1.8	2.2	1.8	2.1	2.2
Japan [2]	-0.2	-0.4	0.0	0.4	-0.1	0.1	0.4

Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for the Czech Republic available since 2001; for Slovenia, Hungary and Romania since 2002.
2) Data refer to the consumer price index.

Chart 3.2 Inflation as measured by the HICP excluding energy and food [1]

(annual percentage changes)



Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for the United States and Japan refer to the consumer price index.

3 Prices and costs

3.3 GDP deflator

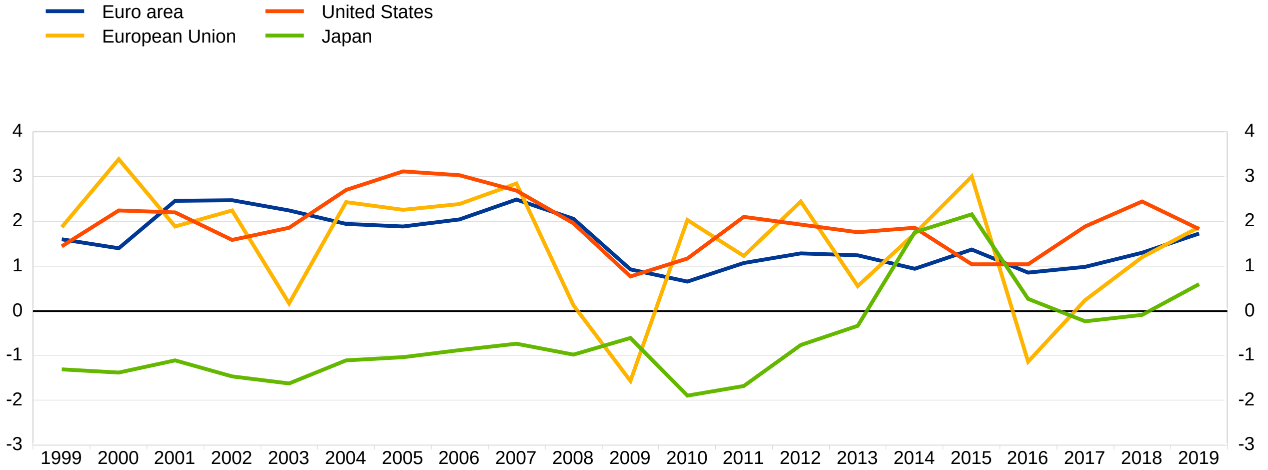
(annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	1.6	1.8	1.5	1.7	1.7	1.5	1.6
Germany	1.2	0.8	1.5	1.2	1.0	1.5	2.2
Estonia	4.6	6.5	2.9	1.7	3.6	4.5	3.2
Ireland	2.0	3.5	0.7	-0.3	1.1	0.8	1.5
Greece	1.5	3.2	0.0	-0.2	0.6	0.5	-0.4
Spain	1.9	3.6	0.5	0.3	1.4	1.1	1.6
France	1.3	1.8	0.8	0.5	0.5	0.8	1.5
Italy	1.7	2.4	1.1	1.1	0.7	0.9	0.9
Cyprus	1.7	3.1	0.4	-0.8	1.7	1.4	0.6
Latvia	4.3	7.8	1.2	0.9	3.0	4.0	2.6
Lithuania	2.6	3.3	1.9	1.6	4.3	3.3	2.8
Luxembourg	2.7	3.2	2.2	0.8	1.7	2.5	.
Malta	2.4	2.5	2.3	1.5	2.5	2.1	2.3
Netherlands	1.8	2.5	1.1	0.5	1.3	2.2	2.9
Austria	1.7	1.6	1.7	1.7	1.1	1.7	1.7
Portugal	2.1	3.2	1.1	1.7	1.5	1.6	1.7
Slovenia	3.0	5.0	1.3	0.8	1.6	2.2	2.4
Slovakia	2.5	4.6	0.7	-0.5	1.2	2.0	2.6
Finland	1.6	1.5	1.6	0.2	0.7	2.0	1.8
Euro area	1.6	2.1	1.1	0.8	1.0	1.3	1.7
Bulgaria	4.3	6.0	2.7	2.5	3.9	4.0	4.7
Czech Republic	1.9	2.4	1.5	1.3	1.4	2.6	3.5
Denmark	1.8	2.5	1.1	0.3	1.1	0.8	1.0
Croatia	2.5	4.1	1.1	-0.1	1.2	1.8	1.5
Hungary	4.7	6.4	3.1	1.0	3.7	4.5	4.5
Poland	2.5	3.5	1.7	0.3	1.9	1.1	2.9
Romania	13.0	24.0	3.9	2.5	4.7	6.3	6.3
Sweden	1.7	1.7	1.7	1.5	2.2	2.3	2.7
United Kingdom	1.9	2.1	1.7	2.1	1.9	2.1	1.9
European Union	1.5	1.9	1.0	-1.1	0.2	1.2	1.9
United States	1.9	2.3	1.6	1.0	1.9	2.4	1.8
Japan	-0.6	-1.2	-0.1	0.3	-0.2	-0.1	0.6

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 3.3 GDP deflator

(annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

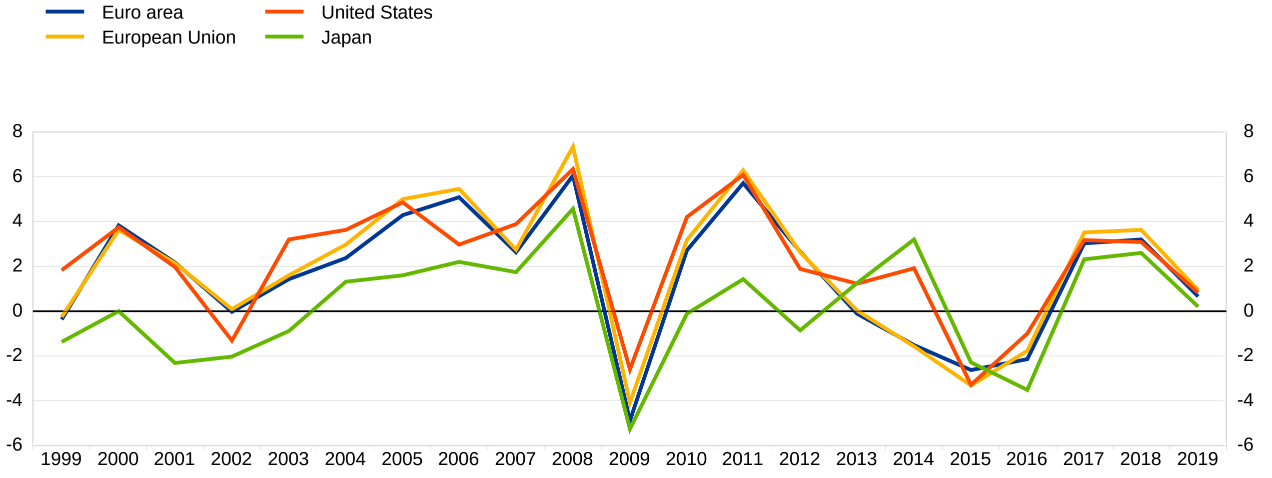
3 Prices and costs

3.4 Industrial producer prices
(annual percentage changes; domestic sales only)

	1999-2019 1)	1999-2008 1)	2009-2019	2016	2017	2018	2019
Belgium	2.4	3.8	1.4	-1.8	8.9	7.1	1.3
Germany	1.4	2.4	0.5	-1.6	2.4	2.6	1.3
Estonia	3.0	4.7	2.1	-2.1	3.3	7.1	1.5
Ireland	1.1	4.0	0.3	0.4	-0.4	-1.9	1.1
Greece	2.4	4.9	0.6	-5.4	4.2	3.3	0.7
Spain	2.1	3.3	1.0	-3.1	4.4	3.0	-0.4
France	1.4	2.4	0.5	-2.3	2.4	2.7	0.4
Italy	1.5	3.1	0.4	-2.2	2.6	3.9	0.0
Cyprus	2.5	4.8	0.8	-4.7	3.7	3.0	2.9
Latvia	4.3	8.4	1.8	-3.3	2.2	5.5	3.6
Lithuania	2.4	4.8	0.2	-3.5	4.0	4.2	0.7
Luxembourg	2.3	6.4	-0.5	-2.5	-1.9	0.5	2.5
Malta	3.4	5.2	2.1	-0.1	0.5	0.7	1.1
Netherlands	1.9	4.5	0.0	-2.5	4.4	3.1	1.7
Austria	1.1	1.9	0.5	-2.5	1.9	3.0	0.1
Portugal	1.6	3.5	0.2	-1.7	3.6	2.4	-0.9
Slovenia	2.4	4.6	0.8	-1.4	1.3	1.9	1.8
Slovakia	1.9	5.0	-0.2	-4.3	2.0	5.0	2.6
Finland	1.8	2.6	1.0	-1.5	2.7	3.9	0.9
Euro area	1.6	2.7	0.6	-2.1	3.0	3.2	0.7
Bulgaria	3.8	6.3	1.9	-2.8	4.2	4.1	3.8
Czech Republic	1.5	2.6	0.5	-3.3	1.8	2.0	2.6
Denmark	2.8	5.6	0.9	-1.5	3.3	6.4	-0.6
Croatia	1.9	3.0	1.1	-3.9	2.1	2.4	0.8
Hungary	4.4	7.4	2.3	-3.1	4.6	6.2	3.9
Poland	2.6	3.4	1.9	0.0	4.8	2.8	1.6
Romania	8.9	18.0	2.7	-2.6	3.1	5.2	5.1
Sweden	2.1	3.1	1.2	0.0	4.1	5.5	2.7
United Kingdom	2.9	4.3	1.6	-0.3	6.3	5.7	1.3
European Union	1.9	3.0	0.8	-1.8	3.5	3.6	0.9
United States 2)	2.2	3.1	1.4	-1.0	3.2	3.1	0.8
Japan 3)	0.2	0.5	-0.1	-3.5	2.3	2.6	0.2

Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for Belgium, Greece, Italy, Cyprus, Luxembourg, Malta, the Netherlands, Austria, Portugal, Slovenia, Slovakia, Bulgaria, Denmark, Croatia, Hungary, Poland and Romania available since 2001; for Latvia since 2002; for Estonia since 2003; and for Ireland since 2006.
2) Data refer to finished goods.
3) Data refer to the output price index in the manufacturing sector.

Chart 3.4 Industrial producer prices 1)
(annual percentage changes; domestic sales only)



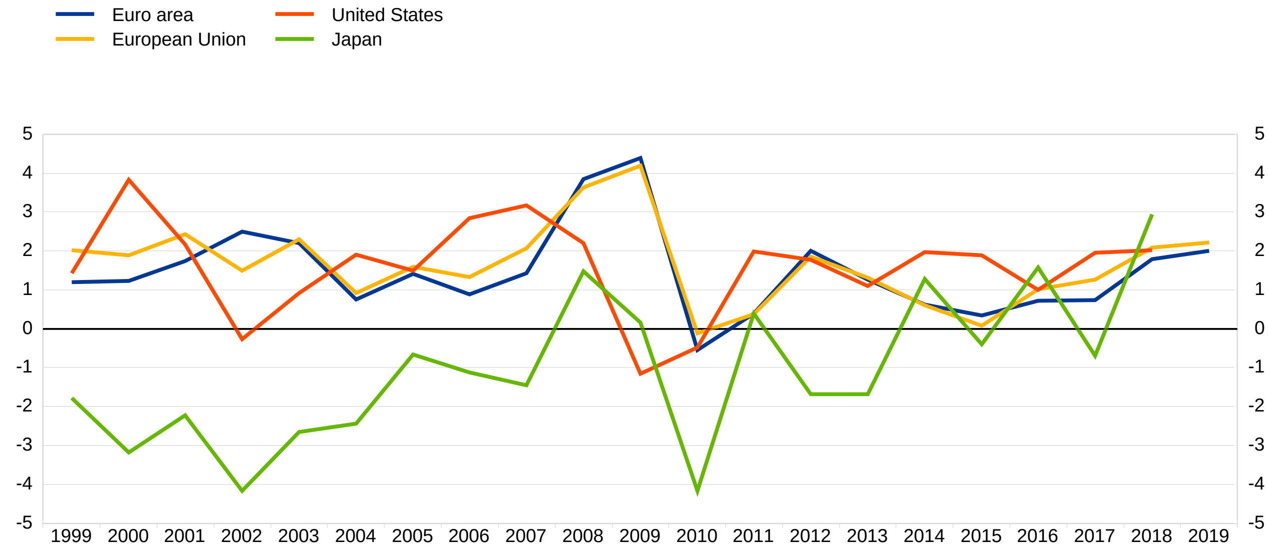
Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for the United States refer to finished goods; data for Japan refer to the output price index in the manufacturing sector.

3.5 Unit labour costs
(annual percentage changes)

	1999-2019 [1),2)]	1999-2008 [1)]	2009-2019 [2)]	2016	2017	2018	2019
Belgium	1.5	1.8	1.3	0.3	1.5	1.8	1.9
Germany	1.3	0.4	2.2	1.3	1.5	2.7	3.5
Estonia	4.9	7.0	3.1	3.3	3.9	6.5	4.6
Ireland	0.1	3.9	-3.3	2.2	-2.3	-2.6	1.4
Greece	1.6	3.6	-0.3	-0.3	0.6	1.1	1.3
Spain	1.4	3.2	-0.2	-0.9	0.5	1.2	2.3
France	1.4	1.8	1.1	0.7	0.6	1.2	-0.1
Italy	1.8	2.7	1.1	0.4	-0.1	2.1	1.4
Cyprus	1.4	2.9	0.1	-2.9	1.9	0.6	2.8
Latvia	5.0	8.8	1.6	5.1	3.7	5.7	6.4
Lithuania	2.6	2.8	2.4	6.1	4.3	5.3	5.9
Luxembourg	2.8	3.3	2.3	-0.7	4.6	3.9	.
Malta	2.1	2.6	1.7	1.4	1.0	0.8	3.6
Netherlands	1.5	2.0	1.1	0.9	0.3	1.7	.
Austria	1.5	1.0	2.0	1.6	0.8	2.2	2.4
Portugal	1.3	2.6	0.2	0.8	2.1	2.2	1.2
Slovenia	3.1	4.7	1.7	1.8	1.2	3.0	4.5
Slovakia	2.9	3.6	2.2	2.5	4.5	3.5	5.1
Finland	1.4	1.4	1.4	-1.3	-3.1	1.6	1.5
Euro area	1.5	1.7	1.2	0.7	0.7	1.8	2.0
Bulgaria	5.3	5.5	5.1	2.4	8.7	6.3	2.9
Czech Republic	2.5	2.8	2.2	3.1	3.6	6.5	4.3
Denmark	1.7	2.7	0.8	-0.2	1.1	0.7	0.0
Croatia	1.5	3.3	-0.1	-2.7	-0.7	1.4	1.9
Hungary	4.4	6.5	2.5	4.0	4.5	3.4	6.0
Poland	1.7	1.8	1.5	2.5	2.2	3.3	2.8
Romania	11.5	21.1	3.3	8.5	9.7	8.8	4.9
Sweden	2.0	2.2	1.9	2.0	2.1	3.3	2.4
United Kingdom	2.4	2.9	1.9	2.7	2.2	2.7	3.4
European Union	1.6	2.0	1.3	1.0	1.3	2.1	2.2
United States	1.6	2.0	1.2	1.0	2.0	2.0	.
Japan	-1.0	-1.8	-0.2	1.6	-0.7	2.9	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 3.5 Unit labour costs
(annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

3 Prices and costs

3.6 Compensation per employee

(annual percentage changes)

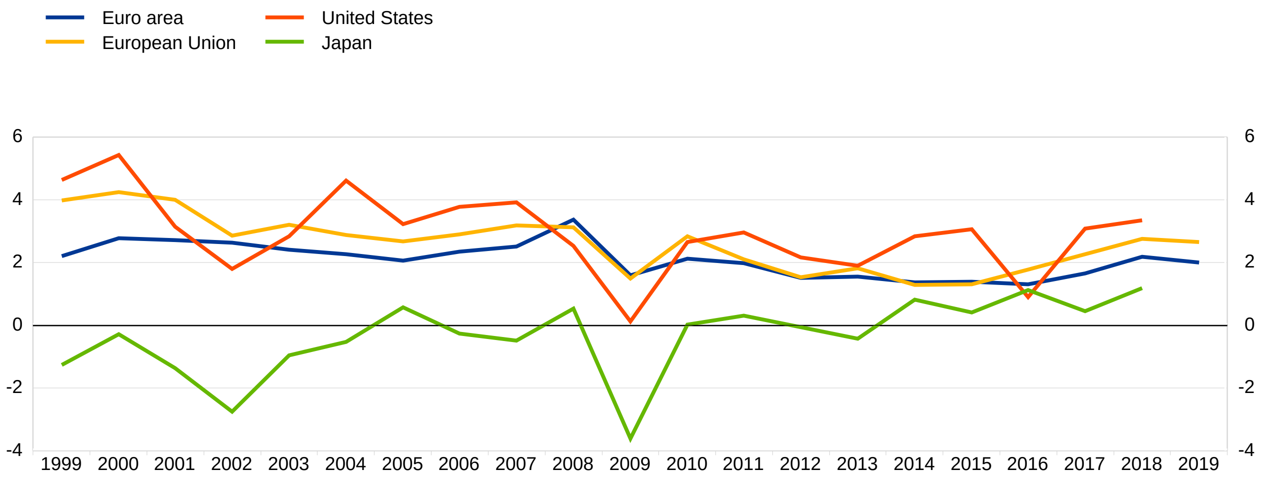
	1999-2019 1)	1999-2008	2009-2019 1)	2016	2017	2018	2019
Belgium	2.3	3.0	1.7	0.6	1.8	1.9	1.7
Germany	1.9	1.3	2.5	2.3	2.6	2.9	3.2
Estonia	8.4	12.5	4.9	5.7	7.0	10.2	7.7
Ireland	3.2	5.7	1.0	2.2	2.5	2.1	4.0
Greece	2.0	6.0	-1.5	-0.9	0.5	1.3	1.1
Spain	2.0	3.3	0.8	-0.1	0.7	1.3	2.2
France	2.2	2.8	1.6	1.2	1.9	1.7	0.2
Italy	1.6	2.6	0.8	0.4	0.4	2.1	1.1
Cyprus	2.3	4.5	0.3	-0.9	1.0	0.5	2.9
Latvia	9.1	15.1	4.0	7.3	7.6	8.5	8.8
Lithuania	6.8	9.6	4.4	6.4	9.5	7.7	9.5
Luxembourg	3.0	3.7	2.2	0.8	3.0	3.3	.
Malta	3.3	4.2	2.5	2.9	-0.5	2.1	2.4
Netherlands	2.3	3.2	1.5	1.6	1.0	1.9	.
Austria	2.2	2.3	2.1	2.4	1.6	2.9	2.9
Portugal	2.3	3.8	0.9	1.2	2.3	2.5	2.6
Slovenia	4.9	7.9	2.2	3.1	3.0	3.9	4.5
Slovakia	5.8	8.2	3.6	2.2	5.4	5.6	6.2
Finland	2.3	3.2	1.5	0.9	-1.1	1.0	1.5
Euro area	2.1	2.5	1.7	1.3	1.7	2.2	2.0
Bulgaria	8.3	9.1	7.7	5.8	10.5	9.7	6.1
Czech Republic	4.9	6.5	3.4	4.0	6.4	8.0	6.1
Denmark	2.7	3.6	1.8	1.3	1.6	1.7	1.1
Croatia	3.0	5.8	0.6	0.4	0.2	2.2	3.4
Hungary	6.3	10.1	2.9	2.4	7.0	6.2	9.4
Poland	5.3	5.9	4.7	4.8	5.8	8.2	7.1
Romania	17.0	29.8	6.5	15.0	14.8	13.4	9.2
Sweden	3.4	4.2	2.7	2.6	2.1	4.0	3.0
United Kingdom	3.3	4.6	2.3	3.2	3.2	2.9	3.7
European Union	2.6	3.3	2.0	1.8	2.3	2.8	2.7
United States	2.9	3.6	2.3	0.9	3.1	3.4	.
Japan	-0.3	-0.7	0.0	1.1	0.5	1.2	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

1) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 3.6 Compensation per employee

(annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

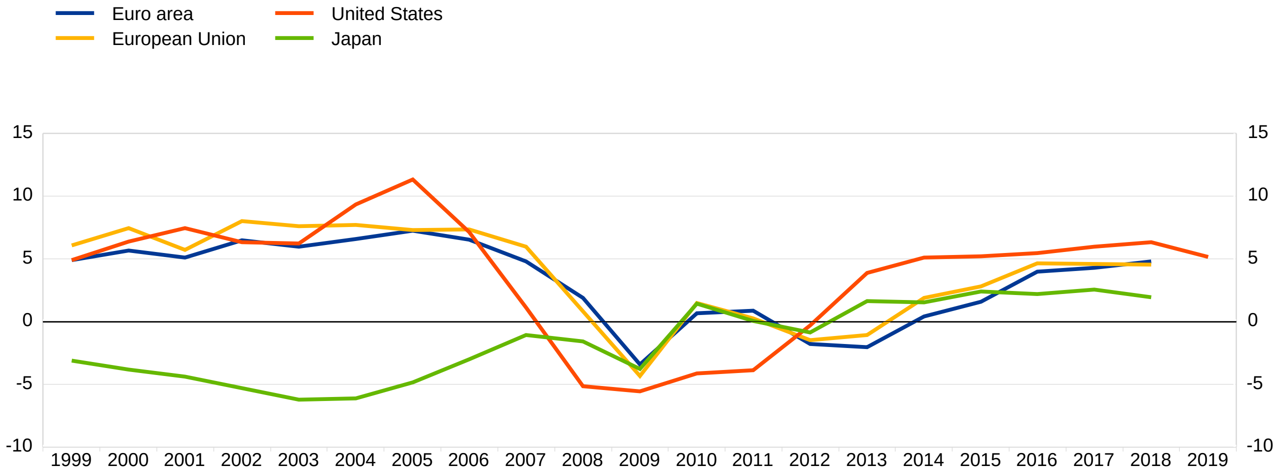
3 Prices and costs

3.7 Residential property prices
(annual percentage changes)

	1999-2019 1),2)	1999-2008 1)	2009-2019 2)	2016	2017	2018	2019
Belgium	5.1	7.8	2.4	1.6	3.7	3.6	.
Germany	3.1	1.5	3.8	6.0	5.8	7.7	6.8
Estonia	5.4	17.7	2.0	4.7	5.5	5.9	.
Ireland	0.0	4.7	-1.4	7.5	10.9	10.2	.
Greece	1.5	8.6	-5.1	-2.4	-1.0	1.6	.
Spain	4.3	11.1	-2.1	4.6	6.2	6.7	.
France	4.7	9.1	0.5	1.0	3.1	3.0	.
Italy	1.8	5.6	-1.9	0.2	-1.1	-0.6	.
Cyprus	3.3	15.3	-3.3	-1.4	1.2	2.1	.
Latvia	1.8	17.4	-1.1	8.5	8.8	9.6	.
Lithuania	2.3	17.3	-0.5	5.4	8.9	7.3	.
Luxembourg	4.4	3.4	4.5	5.9	5.6	7.1	.
Malta	5.5	17.2	2.2	5.4	5.3	5.8	.
Netherlands	3.8	7.4	0.4	5.0	7.5	9.5	.
Austria	3.3	1.0	5.5	7.3	3.8	6.9	3.9
Portugal	1.8	-	1.8	7.1	9.2	10.3	.
Slovenia	0.1	7.0	-0.5	3.3	8.0	9.8	.
Slovakia	4.2	20.9	-0.3	4.9	6.6	5.5	.
Finland	3.6	5.4	1.7	0.5	1.6	0.8	.
Euro area	3.2	5.5	0.9	4.0	4.3	4.8	.
Bulgaria	3.4	22.7	-1.8	7.0	8.7	6.6	.
Czech Republic	2.6	-	2.6	7.2	11.7	8.6	.
Denmark	4.4	7.5	1.4	5.2	4.5	4.4	.
Croatia	3.7	-	-1.1	0.9	3.8	6.1	.
Hungary	3.6	2.4	3.7	13.4	12.1	14.4	.
Poland	0.8	-	0.8	1.9	3.9	6.6	7.9
Romania	-1.0	-	-1.0	6.0	6.0	5.6	.
Sweden	7.0	8.5	5.6	8.2	6.6	-0.9	.
United Kingdom	6.0	9.5	2.6	7.0	4.6	3.1	1.3
European Union	3.8	6.4	1.3	4.7	4.6	4.6	.
United States	3.6	5.4	1.7	5.5	6.0	6.4	5.1
Japan	-1.6	-	0.9	2.2	2.5	1.9	.

Sources: National sources and ECB.
1) Data for Cyprus and Denmark available since 2002; for Germany since 2003; for Estonia, Ireland, Spain, Malta, Slovakia, Finland and Bulgaria since 2005; for Latvia and Lithuania since 2006; for Luxembourg, Slovenia and Hungary since 2007; for Portugal, the Czech Republic, Croatia and Japan since 2008; for Romania since 2009; and for Poland since 2010.
2) Where data are not available for 2019, the average indicated is for the periods 1999-2018 and 2009-2018.

Chart 3.7 Residential property prices
(annual percentage changes)



Sources: National sources and ECB.

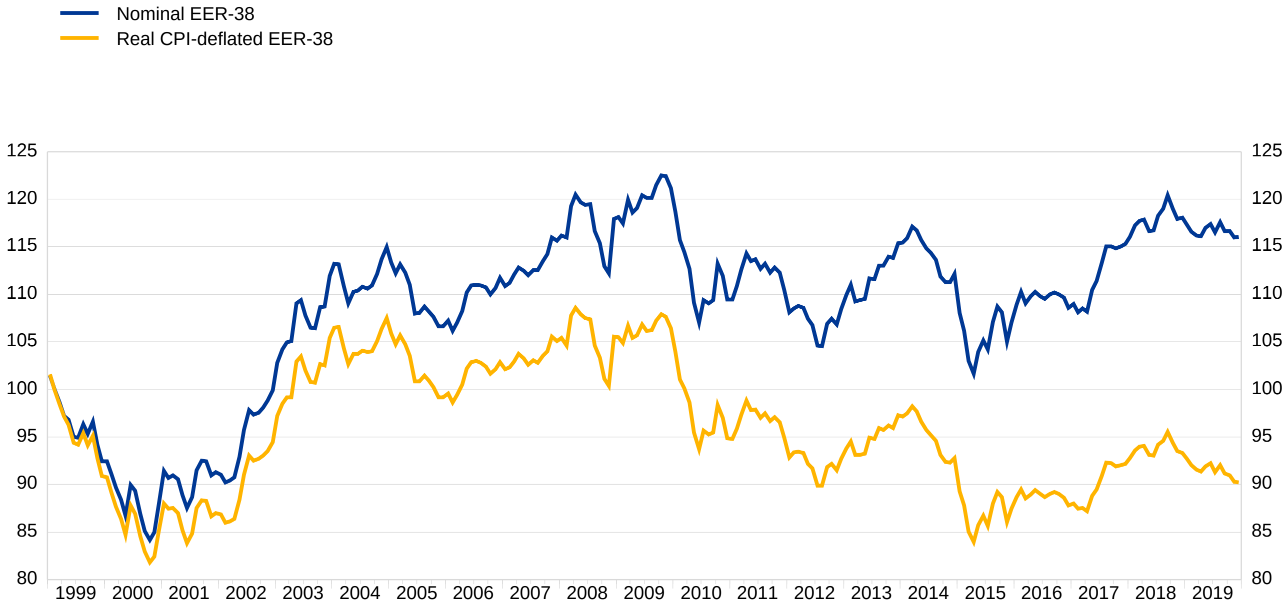
4 Exchange rates and balance of payments

4.1 Effective exchange rates of the euro
(period averages; index: Q1 1999 = 100)

	1999-2019	1999-2008	2009-2019	2016	2017	2018	2019
EER-19							
Nominal	99.3	98.8	99.7	94.4	96.6	98.9	97.3
Real CPI	97.0	98.6	95.6	89.5	91.4	93.4	91.2
Real PPI	96.7	98.6	95.0	90.9	91.9	93.4	91.8
Real GDP deflator	93.9	96.9	90.8	85.3	86.2	87.5	
Real ULCM	96.1	97.3	95.0	80.8	79.9	80.3	
Real ULCT	97.4	97.5	97.2	89.9	90.3	91.3	
EER-38							
Nominal	108.5	103.8	112.7	109.7	112.0	117.9	116.7
Real CPI	95.8	97.8	94.0	88.9	90.0	93.8	91.5
Real GDP deflator	91.4	95.3	87.6	83.4	83.5	86.5	

Source: ECB.
Note: The effective exchange rates (EERs) of the euro are either nominal or deflated by the consumer price index (CPI), the producer price index (PPI), the gross domestic product (GDP) deflator, unit labour costs in manufacturing (ULCM) or unit labour costs in the total economy (ULCT).

Chart 4.1 Effective exchange rates of the euro
(monthly averages; index: Q1 1999 = 100)



Source: ECB.

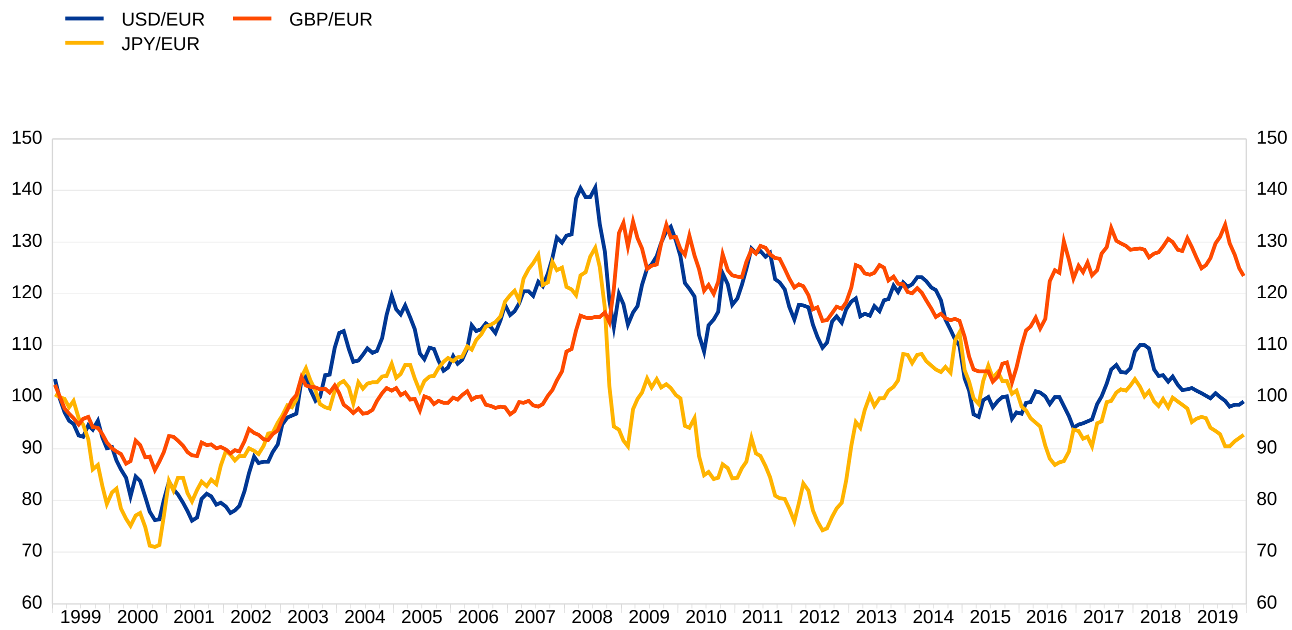
4 Exchange rates and balance of payments

4.2 Bilateral exchange rates of the euro
(units of national currency per euro; period averages)

	1999-2019 [1)]	1999-2008 [1)]	2009-2019	2016	2017	2018	2019
Chinese renminbi	8.694	9.468	8.132	7.352	7.629	7.808	7.735
Croatian kuna	7.447	7.406	7.477	7.533	7.464	7.418	7.418
Czech koruna	28.517	31.193	26.085	27.034	26.326	25.647	25.670
Danish krone	7.449	7.446	7.451	7.445	7.439	7.453	7.466
Hungarian forint	277.983	253.282	300.438	311.438	309.193	318.890	325.297
Japanese yen	127.292	130.952	123.965	120.197	126.711	130.396	122.006
Polish zloty	4.109	3.991	4.216	4.363	4.257	4.261	4.298
Pound sterling	0.762	0.674	0.842	0.819	0.877	0.885	0.878
Romanian leu	3.821	3.132	4.447	4.490	4.569	4.654	4.745
Swedish krona	9.346	9.132	9.540	9.469	9.635	10.258	10.589
Swiss franc	1.374	1.555	1.210	1.090	1.112	1.155	1.112
US dollar	1.202	1.155	1.245	1.107	1.130	1.181	1.119

Source: ECB.
1) Data for Chinese renminbi and Croatian kuna available since 2001.

Chart 4.2 Bilateral exchange rates
(monthly averages; index: Q1 1999 = 100)



Source: ECB.

4.3 Real effective exchange rates [1)]

(deflated by consumer price indices; period averages; index: Q1 1999 = 100)

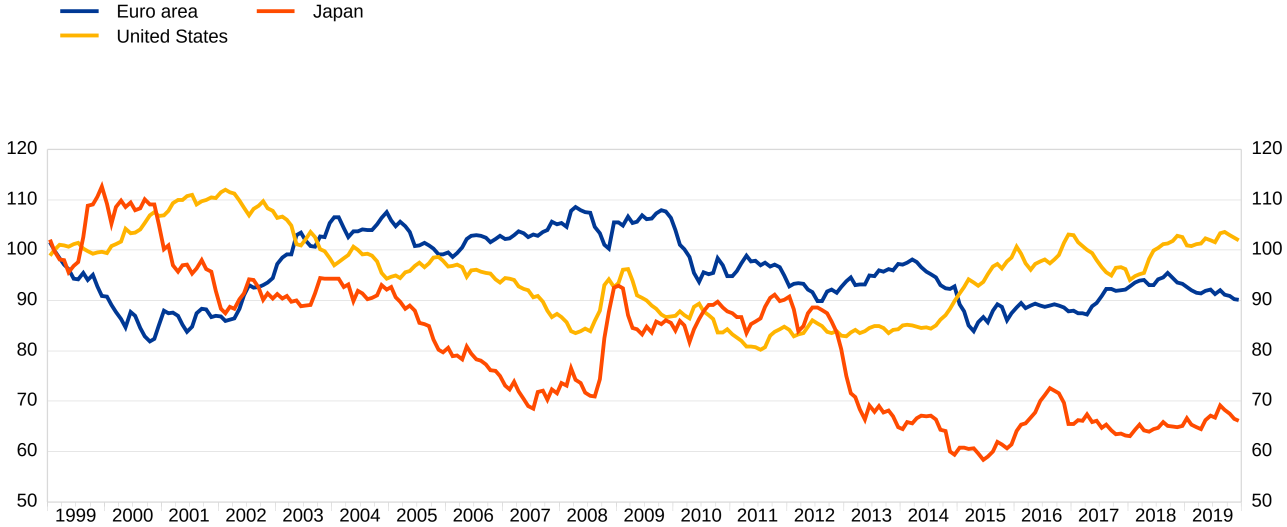
	1999-2019	1999-2008	2009-2019	2016	2017	2018	2019
Belgium	99.8	99.2	100.4	98.5	99.9	102.7	101.1
Germany	92.6	95.3	95.3	87.4	88.2	90.3	89.0
Estonia	116.5	106.5	125.6	126.0	128.1	132.8	133.1
Ireland	107.0	108.9	105.2	99.3	99.5	100.6	97.9
Greece	99.9	99.2	100.5	95.7	96.2	97.1	95.5
Spain	105.9	104.8	106.9	102.8	104.0	106.9	105.2
France	95.6	97.6	93.8	90.7	91.1	93.2	92.0
Italy	99.2	100.2	98.3	95.2	95.6	97.7	95.7
Cyprus	103.8	104.1	103.6	99.7	99.8	100.2	98.6
Latvia	110.1	104.7	115.0	113.5	113.8	116.6	117.1
Lithuania	123.4	115.7	130.4	129.2	130.7	134.3	134.1
Luxembourg	106.1	104.4	107.6	104.9	106.1	107.6	106.6
Malta	105.9	105.1	106.6	103.8	104.8	107.8	106.5
Netherlands	100.6	102.5	98.9	95.4	96.1	98.0	97.9
Austria	96.4	97.0	95.9	95.3	96.2	98.2	97.3
Portugal	102.4	103.1	101.7	99.9	100.2	102.1	100.5
Slovenia	99.8	99.4	100.1	97.6	97.9	99.7	99.2
Slovakia	166.1	139.3	190.4	186.4	185.9	189.3	190.5
Finland	95.8	96.9	94.7	93.9	93.3	95.2	94.1
Euro area	95.8	97.8	94.0	88.9	90.0	93.8	91.5
Bulgaria	134.4	121.0	146.6	139.7	140.6	145.2	145.4
Czech Republic	134.9	122.6	146.1	137.7	143.6	149.9	150.2
Denmark	98.2	99.5	97.1	94.4	94.8	95.8	94.4
Croatia	104.8	103.8	105.7	102.6	103.7	105.5	104.2
Hungary	128.6	125.4	131.6	124.6	127.2	126.6	125.4
Poland	116.5	117.4	115.6	108.7	112.1	113.3	112.2
Romania	133.4	127.6	138.8	135.8	133.7	136.7	136.3
Sweden	91.7	95.3	88.4	86.2	85.5	82.1	79.0
United Kingdom	88.1	97.9	79.2	78.9	74.9	76.5	76.2
European Union	-	-	-	-	-	-	-
United States	95.3	99.4	91.5	98.8	98.3	99.0	102.0
Japan	81.0	89.4	73.3	68.5	65.1	64.7	66.6

Source: ECB.

1) For the euro area as a whole, the real effective exchange rate of the euro vis-à-vis 38 trading partners is displayed.
For individual euro area countries, harmonised competitiveness indicators are calculated vis-à-vis these same trading partners plus the other euro area countries.
For non-euro area countries, the real effective exchange rate of the national currency is calculated vis-à-vis 38 trading partners (including the euro area).

Chart 4.3 Real effective exchange rates

(vis-à-vis 38 trading partners; deflated by consumer price indices; monthly averages; index: Q1 1999 = 100)



Source: ECB.

4 Exchange rates and balance of payments

4.4 Balance of payments: net current account

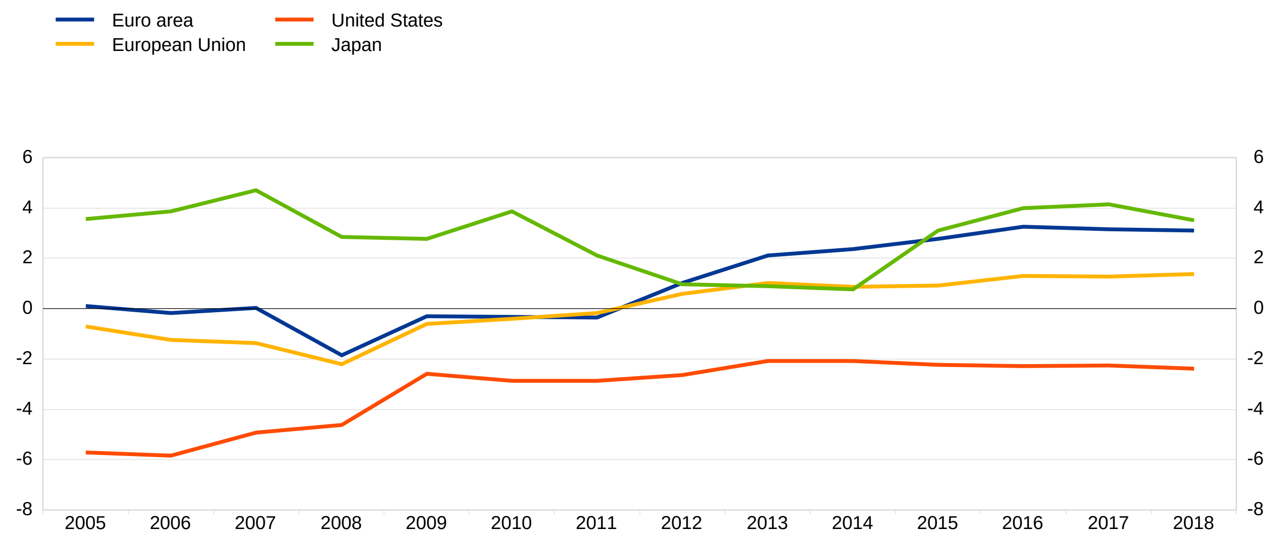
(percentage of nominal GDP; period averages; non-working day and non-seasonally adjusted)

	2005-2018	2005-2011	2012-2018	2015	2016	2017	2018
Belgium	0.7	0.9	0.5	1.4	0.6	1.2	-1.0
Germany	6.7	5.8	7.6	8.6	8.5	8.1	7.4
Estonia	-2.5	-5.9	1.0	1.8	1.7	2.7	2.0
Ireland	-1.3	-4.2	1.5	4.4	-4.2	0.5	10.6
Greece	-6.8	-11.7	-1.8	-0.8	-1.7	-1.9	-2.8
Spain	-2.2	-6.4	1.9	2.0	3.2	2.7	1.9
France	-0.5	-0.4	-0.7	-0.4	-0.5	-0.7	-0.6
Italy	-0.2	-2.1	1.7	1.4	2.6	2.7	2.6
Cyprus[1)]	-5.3	-8.6	-3.4	-0.4	-4.2	-5.1	-4.4
Latvia	-4.8	-8.5	-1.1	-0.9	1.4	1.0	-0.7
Lithuania	-3.4	-6.8	0.1	-2.4	-1.1	0.5	0.3
Luxembourg	6.7	8.3	5.1	5.1	4.9	4.9	4.8
Malta	-0.4	-5.6	4.7	2.8	3.8	10.5	10.4
Netherlands	8.1	7.0	9.2	6.3	8.1	10.8	10.9
Austria	2.5	3.0	2.0	1.7	2.7	1.6	2.3
Portugal	-4.6	-9.7	0.4	0.2	1.1	1.2	0.4
Slovenia	1.0	-2.2	4.3	3.8	4.8	6.1	5.7
Slovakia	-3.6	-6.5	-0.8	-2.1	-2.7	-1.9	-2.6
Finland	0.4	2.2	-1.5	-0.9	-2.0	-0.8	-1.4
Euro area	1.1	-0.4	2.5	2.8	3.3	3.1	3.1
Bulgaria	-5.0	-12.0	2.0	0.1	3.2	3.5	5.4
Czech Republic	-1.2	-2.7	0.3	0.2	1.6	1.6	0.3
Denmark	5.9	4.1	7.7	8.2	7.8	7.8	7.0
Croatia	-2.6	-6.4	1.1	3.2	2.1	3.4	1.9
Hungary	-1.0	-4.1	2.1	2.3	4.6	2.3	-0.5
Poland	-3.1	-4.9	-1.3	-0.6	-0.5	0.1	-1.0
Romania	-5.3	-8.5	-2.1	-0.6	-1.4	-2.8	-4.4
Sweden	5.4	6.8	4.0	4.1	3.5	3.1	1.9
United Kingdom	-3.6	-2.9	-4.3	-4.9	-5.2	-3.5	-3.9
European Union	0.0	-1.0	1.0	0.9	1.3	1.3	1.4
United States	-3.2	-4.2	-2.3	-2.2	-2.3	-2.3	-2.4
Japan	2.9	3.4	2.5	3.1	4.0	4.1	3.5

Sources: ECB, national data from the BIS databank (for the United States and Japan) and Eurostat.
1) Data for Cyprus available since 2008.

Chart 4.4 Balance of payments: net current account

(percentage of nominal GDP; non-working day and non-seasonally adjusted)



Sources: ECB, national data from the BIS databank (for the United States and Japan) and Eurostat.

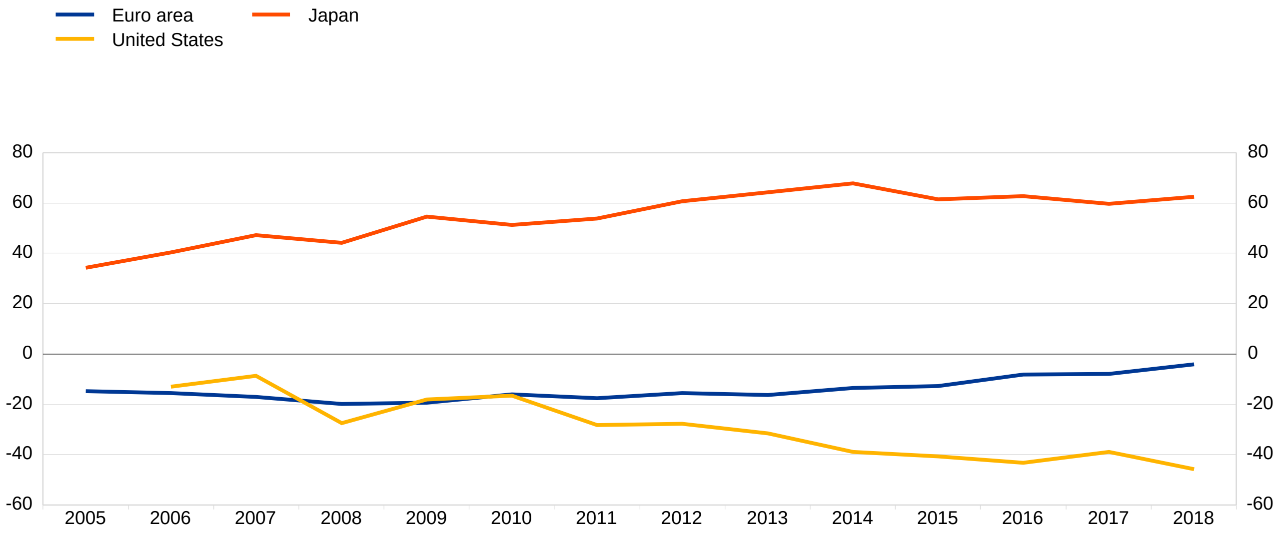
4 Exchange rates and balance of payments

4.5 Net international investment position
(percentage of nominal GDP; end-of-period averages)

	2005-2018	2005-2011	2012-2018	2015	2016	2017	2018
Belgium	45.9	45.1	46.7	45.2	54.5	56.7	41.3
Germany	33.1	20.6	45.6	46.6	51.4	55.2	62.0
Estonia	-56.5	-72.0	-40.9	-39.9	-39.2	-32.5	-27.7
Ireland	-121.8	-81.0	-162.6	-198.4	-171.7	-167.2	-165.0
Greece	-109.9	-86.1	-133.6	-135.4	-137.6	-140.7	-143.3
Spain	-86.3	-84.3	-88.3	-88.9	-85.5	-85.5	-80.4
France	-11.9	-8.9	-14.8	-12.9	-13.0	-16.6	-16.4
Italy	-17.8	-19.8	-15.8	-19.3	-11.9	-7.7	-4.7
Cyprus[1)]	-134.6	-119.2	-143.4	-154.5	-134.2	-126.5	-121.3
Latvia	-66.6	-71.9	-61.4	-64.1	-59.0	-56.2	-49.1
Lithuania	-49.0	-54.1	-43.9	-43.6	-42.9	-37.9	-31.0
Luxembourg	29.4	2.7	56.1	50.0	54.6	51.8	59.8
Malta	29.3	17.2	41.3	37.5	35.4	64.0	62.8
Netherlands	24.9	0.4	49.4	48.9	61.4	59.4	70.7
Austria	-3.3	-8.6	2.0	2.2	4.1	2.8	3.7
Portugal	-105.0	-94.6	-115.4	-118.9	-110.3	-109.9	-105.3
Slovenia	-31.5	-30.9	-32.1	-31.2	-28.9	-24.2	-18.9
Slovakia	-63.2	-61.7	-64.7	-63.9	-66.8	-68.3	-68.1
Finland	-3.3	-8.6	2.1	4.8	5.2	0.1	-6.0
Euro area	-14.2	-17.2	-11.2	-12.8	-8.3	-7.9	-4.0
Bulgaria	-68.1	-77.4	-58.8	-61.8	-47.9	-43.3	-35.2
Czech Republic	-35.0	-37.1	-33.0	-33.2	-26.9	-25.8	-23.4
Denmark	25.5	4.9	46.1	33.4	52.6	55.4	64.3
Croatia	-80.0	-82.7	-77.2	-78.1	-72.2	-65.8	-57.9
Hungary	-84.4	-99.5	-69.3	-66.6	-59.9	-54.7	-51.7
Poland	-58.2	-53.1	-63.4	-60.9	-60.9	-62.4	-55.2
Romania	-51.7	-49.2	-54.2	-53.7	-48.6	-46.5	-43.6
Sweden	-6.1	-7.8	-4.5	-5.3	-1.9	1.3	8.1
United Kingdom	-11.5	-6.9	-16.0	-22.4	0.3	-9.9	-10.3
European Union	-	-	-	-	-	-	-
United States	-29.1	-18.6	-38.0	-40.7	-43.1	-38.9	-45.7
Japan	54.7	46.5	62.8	61.6	62.6	59.8	62.4

Sources: ECB and national data from the BIS databank (for the United States and Japan).
1) Data for Cyprus available since 2008.

Chart 4.5 Net international investment position
(percentage of nominal GDP)



Sources: ECB and national data from the BIS databank (for the United States and Japan).

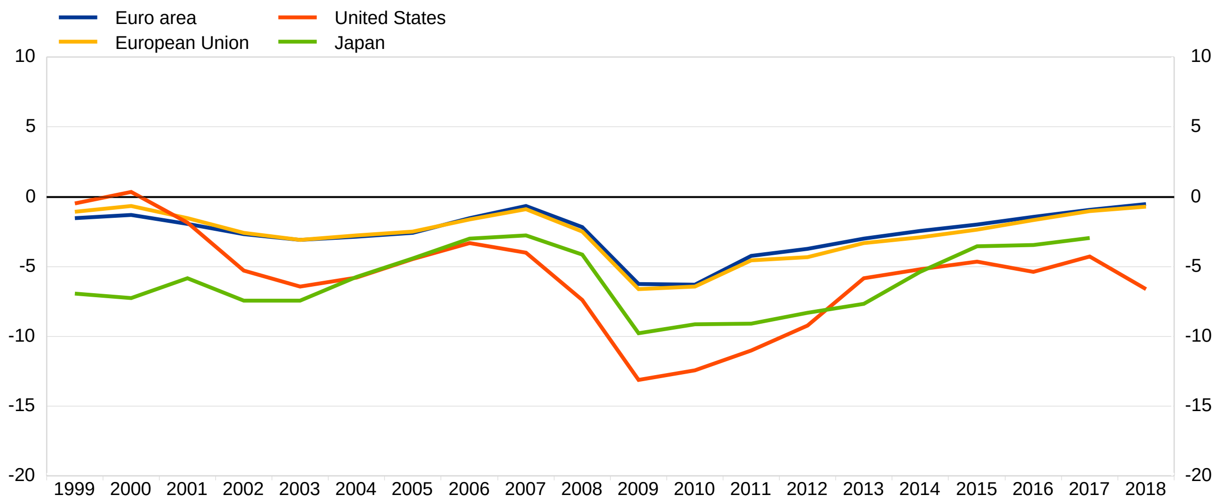
5 Fiscal developments

5.1 General government balance
(percentage of GDP)

	1999-2018 1)	1999-2008 1)	2009-2018	2015	2016	2017	2018
Belgium	-1.8	-0.6	-3.1	-2.4	-2.4	-0.7	-0.7
Germany	-1.2	-2.2	-0.3	0.9	1.2	1.2	1.9
Estonia	0.2	0.5	-0.2	0.1	-0.5	-0.8	-0.6
Ireland	-3.6	0.8	-8.0	-1.9	-0.7	-0.3	0.1
Greece	-6.6	-6.7	-6.6	-5.6	0.5	0.7	1.0
Spain	-3.6	-0.3	-6.9	-5.2	-4.3	-3.0	-2.5
France	-3.6	-2.7	-4.5	-3.6	-3.5	-2.8	-2.5
Italy	-3.0	-2.9	-3.1	-2.6	-2.4	-2.4	-2.2
Cyprus	-3.0	-2.1	-4.0	-1.0	0.1	1.7	-4.4
Latvia	-2.4	-1.9	-2.9	-1.4	0.1	-0.5	-0.7
Lithuania	-2.4	-1.9	-3.0	-0.3	0.2	0.5	0.6
Luxembourg	1.8	2.6	0.9	1.4	1.8	1.4	2.7
Malta	-3.0	-4.9	-1.0	-1.0	0.9	3.4	1.9
Netherlands	-1.5	-0.6	-2.3	-2.0	0.0	1.3	1.5
Austria	-2.2	-2.2	-2.2	-1.0	-1.5	-0.7	0.2
Portugal	-5.0	-4.3	-5.7	-4.4	-1.9	-3.0	-0.4
Slovenia	-3.4	-2.2	-4.6	-2.8	-1.9	0.0	0.8
Slovakia	-4.5	-5.2	-3.8	-2.7	-2.5	-1.0	-1.1
Finland	0.9	3.8	-1.9	-2.4	-1.7	-0.7	-0.8
Euro area	-2.6	-2.0	-3.1	-2.0	-1.4	-0.9	-0.5
Bulgaria	-0.4	0.6	-1.4	-1.7	0.1	1.1	1.8
Czech Republic	-2.6	-3.6	-1.7	-0.6	0.7	1.6	1.1
Denmark	0.7	2.4	-1.0	-1.2	0.2	1.7	0.8
Croatia	-3.8	-3.5	-4.0	-3.3	-1.1	0.8	0.3
Hungary	-4.5	-6.0	-3.0	-2.0	-1.8	-2.4	-2.3
Poland	-3.8	-3.9	-3.8	-2.6	-2.4	-1.5	-0.2
Romania	-3.3	-2.8	-3.7	-0.6	-2.6	-2.6	-3.0
Sweden	0.5	1.2	-0.2	0.0	1.0	1.4	0.8
United Kingdom	-3.9	-2.0	-5.9	-4.6	-3.4	-2.4	-2.3
European Union	-2.7	-1.9	-3.4	-2.4	-1.7	-1.0	-0.7
United States	-5.8	-3.9	-7.8	-4.6	-5.4	-4.3	-6.6
Japan	-6.0	-5.5	-6.6	-3.6	-3.5	-3.0	.

Sources: Eurostat, ESCB and OECD.
1) Data for Croatia available since 2002.

Chart 5.1 General government balance
(percentage of GDP)



Sources: ESCB and OECD.

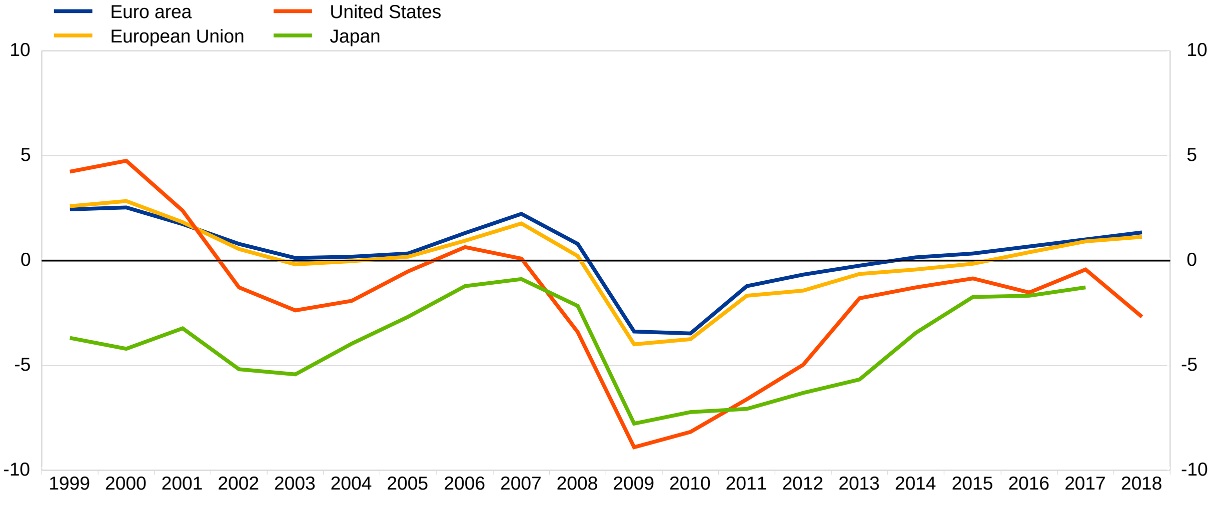
5 Fiscal developments

5.2 Primary general government balance [1)]
(percentage of GDP)

	1999-2018 [2)]	1999-2008 [2)]	2009-2018	2015	2016	2017	2018
Belgium	2.4	4.7	0.0	0.5	0.3	1.6	1.4
Germany	1.1	0.7	1.5	2.4	2.4	2.3	2.8
Estonia	0.3	0.8	-0.1	0.2	-0.5	-0.7	-0.5
Ireland	-1.4	2.2	-5.0	0.7	1.6	1.7	1.7
Greece	-1.7	-1.3	-2.1	-2.1	3.7	3.8	4.3
Spain	-1.1	2.0	-4.3	-2.2	-1.6	-0.5	-0.1
France	-1.0	0.2	-2.3	-1.6	-1.7	-1.0	-0.8
Italy	1.8	2.4	1.2	1.6	1.5	1.3	1.5
Cyprus	-0.2	0.9	-1.3	2.2	2.8	4.2	-2.0
Latvia	-1.4	-1.2	-1.5	0.0	1.1	0.4	0.0
Lithuania	-1.1	-0.8	-1.5	1.3	1.6	1.6	1.5
Luxembourg	2.1	2.9	1.3	1.8	2.1	1.7	3.0
Malta	0.2	-1.1	1.5	1.3	3.0	5.2	3.5
Netherlands	0.5	1.9	-0.8	-0.7	1.2	2.3	2.4
Austria	0.7	1.1	0.2	1.3	0.5	1.1	1.8
Portugal	-1.6	-1.5	-1.7	0.1	2.3	0.8	2.9
Slovenia	-1.3	-0.4	-2.3	0.4	1.1	2.5	2.8
Slovakia	-2.4	-2.6	-2.1	-0.9	-0.8	0.5	0.3
Finland	2.5	5.8	-0.7	-1.3	-0.7	0.3	0.1
Euro area	0.4	1.3	-0.5	0.3	0.7	1.0	1.3
Bulgaria	1.1	2.9	-0.6	-0.8	1.0	1.9	2.4
Czech Republic	-1.6	-2.6	-0.5	0.5	1.6	2.3	1.8
Denmark	2.8	5.0	0.5	0.2	1.3	2.5	1.6
Croatia	-1.4	-1.8	-1.1	0.1	2.0	3.5	2.6
Hungary	-0.4	-1.5	0.7	1.5	1.4	0.3	0.1
Poland	-1.4	-1.2	-1.7	-0.9	-0.7	0.1	1.2
Romania	-1.4	-0.7	-2.2	1.0	-1.1	-1.4	-1.8
Sweden	2.1	3.6	0.6	0.6	1.5	1.9	1.3
United Kingdom	-1.6	0.1	-3.3	-2.3	-0.9	0.2	0.2
European Union	0.1	1.1	-1.0	-0.1	0.4	0.9	1.1
United States	-1.7	0.3	-3.7	-0.9	-1.5	-0.4	-2.7
Japan	-3.9	-3.3	-4.7	-1.7	-1.7	-1.3	.

Sources: ESCB and OECD.
1) General government balance excluding interest expenditure.
2) Data for Croatia available since 2002.

Chart 5.2 Primary general government balance
(percentage of GDP)



Sources: ESCB and OECD.

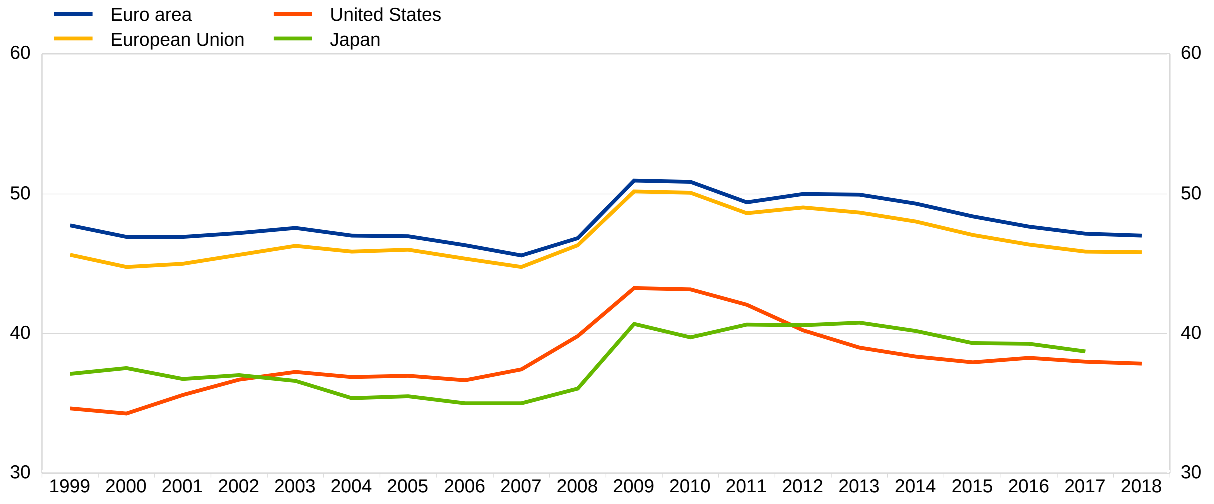
5 Fiscal developments

5.3 General government expenditure
(percentage of GDP)

	1999-2018 1)	1999-2008 1)	2009-2018	2015	2016	2017	2018
Belgium	52.1	50.0	54.3	53.7	53.1	51.9	52.1
Germany	46.0	46.6	45.3	44.0	44.3	44.4	44.6
Estonia	37.5	35.7	39.4	39.2	39.5	39.3	39.1
Ireland	36.4	34.1	38.7	28.9	27.7	26.1	25.4
Greece	49.7	46.7	52.6	53.6	49.0	47.4	47.0
Spain	41.9	39.1	44.7	43.9	42.4	41.2	41.7
France	54.7	52.7	56.8	56.8	56.6	56.4	56.0
Italy	48.5	47.1	49.9	50.3	49.0	48.7	48.4
Cyprus	39.7	37.4	41.9	40.6	37.6	36.9	43.6
Latvia	37.7	35.8	39.5	38.0	36.9	38.0	38.5
Lithuania	36.7	36.2	37.3	35.1	34.2	33.2	34.0
Luxembourg	41.6	40.5	42.7	41.5	40.7	41.8	41.9
Malta	41.0	42.1	39.9	39.5	36.5	35.9	36.7
Netherlands	44.2	43.1	45.4	44.6	43.6	42.4	42.1
Austria	51.2	51.1	51.2	51.1	50.1	49.1	48.6
Portugal	46.6	44.7	48.5	48.2	44.8	45.4	43.5
Slovenia	47.9	46.5	49.3	48.7	46.2	44.1	43.5
Slovakia	42.4	42.2	42.6	45.8	42.7	41.5	41.8
Finland	51.7	48.5	55.0	56.5	55.6	53.7	53.1
Euro area	48.0	46.9	49.1	48.4	47.7	47.2	47.0
Bulgaria	37.8	38.4	37.2	40.4	35.0	35.0	36.5
Czech Republic	42.4	42.7	42.1	41.7	39.5	38.9	40.7
Denmark	53.5	52.1	54.8	54.5	52.7	51.2	51.5
Croatia	47.9	47.8	47.9	48.6	47.6	45.4	46.1
Hungary	49.1	49.2	49.0	50.6	47.2	47.0	46.7
Poland	43.4	44.1	42.8	41.7	41.1	41.2	41.6
Romania	36.4	36.1	36.6	36.1	34.5	33.6	35.2
Sweden	51.6	52.7	50.5	49.5	49.7	49.3	49.8
United Kingdom	41.4	39.0	43.9	42.3	41.5	41.1	41.0
European Union	46.8	45.6	48.0	47.0	46.4	45.9	45.8
United States	38.2	36.6	39.8	37.9	38.3	38.0	37.8
Japan	38.0	36.2	40.0	39.3	39.3	38.7	.

Sources: Eurostat, ESCB and OECD.
1) Data for Croatia available since 2002.

Chart 5.3 General government expenditure
(percentage of GDP)



Sources: ESCB and OECD.

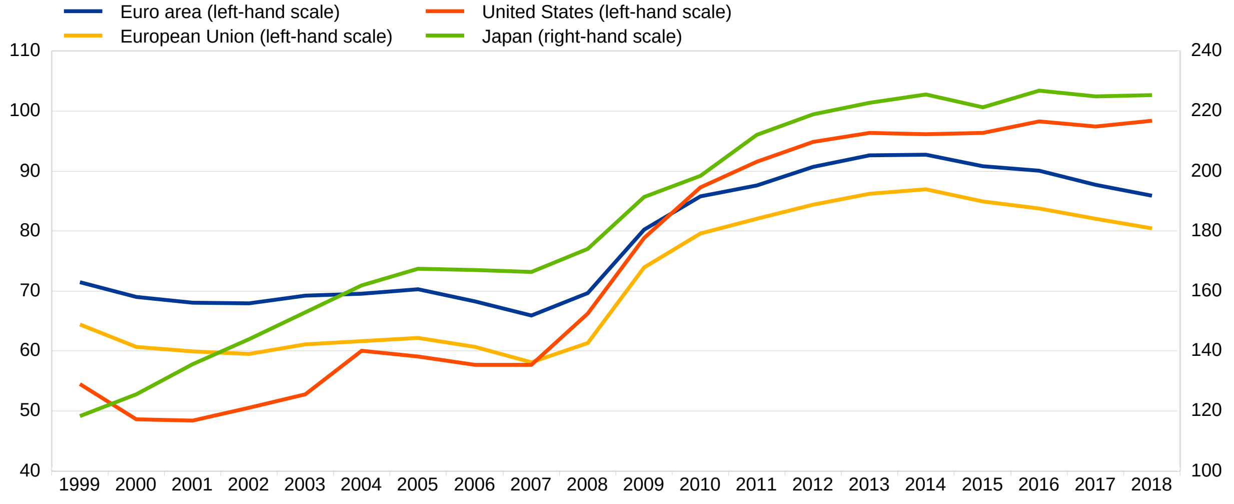
5 Fiscal developments

5.4 General government debt [1]
(percentage of GDP)

	1999-2018 [2]	1999-2008 [2]	2009-2018	2015	2016	2017	2018
Belgium	101.9	100.5	103.3	105.2	104.9	101.8	100.0
Germany	68.4	62.9	73.9	72.1	69.2	65.3	61.9
Estonia	6.9	5.0	8.8	10.0	10.2	9.3	8.4
Ireland	60.3	32.2	88.5	76.7	73.9	67.8	63.6
Greece	135.8	104.4	167.3	175.9	178.5	176.2	181.2
Spain	66.8	47.4	86.1	99.3	99.2	98.6	97.6
France	78.0	63.4	92.5	95.6	98.0	98.4	98.4
Italy	118.0	107.1	128.9	135.3	134.8	134.1	134.8
Cyprus	72.8	58.0	87.6	107.5	103.4	93.9	100.6
Latvia	26.3	12.6	40.0	36.7	40.2	38.6	36.4
Lithuania	28.6	19.6	37.7	42.7	39.9	39.3	34.1
Luxembourg	14.5	8.1	20.8	22.0	20.1	22.3	21.0
Malta	63.3	65.2	61.4	57.8	55.5	50.3	45.8
Netherlands	55.9	50.2	61.5	64.6	61.9	56.9	52.4
Austria	74.0	66.7	81.2	84.9	82.9	78.3	74.0
Portugal	93.0	65.2	120.7	131.2	131.5	126.0	122.2
Slovenia	44.1	25.4	62.9	82.6	78.7	74.1	70.4
Slovakia	44.5	40.4	48.5	51.9	52.0	51.3	49.4
Finland	47.5	39.8	55.2	63.0	62.6	60.9	59.0
Euro area	78.7	68.9	88.4	90.8	90.0	87.8	85.9
Bulgaria	31.3	41.8	20.8	26.0	29.3	25.3	22.3
Czech Republic	31.8	24.9	38.6	40.0	36.8	34.7	32.6
Denmark	41.8	42.7	40.9	39.8	37.2	35.5	34.2
Croatia	58.6	38.8	72.5	84.4	81.0	78.0	74.8
Hungary	68.5	60.4	76.7	76.1	75.5	72.9	70.2
Poland	47.6	43.0	52.2	51.3	54.2	50.6	48.9
Romania	26.6	18.9	34.4	37.8	37.3	35.1	35.0
Sweden	44.4	48.2	40.5	43.9	42.3	40.7	38.8
United Kingdom	60.3	38.9	81.7	86.9	86.8	86.2	85.9
European Union	71.7	61.0	82.4	84.9	83.8	82.1	80.4
United States	74.6	55.6	93.6	96.3	98.3	97.4	98.4
Japan	184.0	151.3	216.7	221.3	226.7	224.9	225.4

Sources: ESCB and OECD.
1) Gross debt (includes currency, deposits, debt securities and loans). The data are consolidated between the sub-sectors of general government, except for Japan.
2) Data for Croatia available since 2002.

Chart 5.4 General government debt
(percentage of GDP)



Sources: ESCB and OECD.

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For specific terminology please refer to the ECB glossary (available in English only).

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