2017

Annual Report 2017

European Central Bank (ECB)

EUROPEAN CENTRAL BANK

EUROSYSTEM

Annual Report

2017

Contents

The year at a glance

In 2017, the economic recovery in the euro area developed into a solid and broad-based expansion. The **economy grew by 2.5%** and by the end of the year had recorded 18 straight quarters of growth. This represented the strongest expansion for a decade, and the broadest for two decades. The **dispersion of growth rates among euro area countries fell** to its lowest level since the start of Monetary Union.

Robust growth ensured that the recovery in the labour market continued apace. **Employment rose by 1.6%** to reach its highest level ever, buoyed by record participation rates for women and older people. Unemployment fell to its lowest level since January 2009. Overall, 7.5 million jobs have been created since mid-2013, offsetting the total number of jobs lost during the crisis.

As in previous years, the ECB's monetary policy played a central role in this recovery and convergence story. In 2017, past asymmetries in the transmission of our monetary policy largely disappeared and financing conditions stabilised at record lows across the euro area. This contributed to the strongest increase in the growth of credit to the private sector since the crisis began in 2008.

The robust performance of the real economy, however, was not matched by developments in inflation. While **headline inflation** recovered from its past lows, **averaging 1.5%** over the year, domestic price pressures remained muted and underlying inflation lacked signs of a sustained upward trend.

The differing outlooks for growth and inflation shaped the ECB's **monetary policy decisions** during the year, leading us to recalibrate our asset purchase programme.

In October, the Governing Council decided to further reduce the pace of asset purchases from €60 billion to €30 billion per month, but to extend the programme by at least nine months until September 2018. Additionally, in March 2018 the Governing Council removed from its official communication the explicit reference to its readiness to expand the asset purchase programme if the outlook became less favourable.

The Governing Council's decisions reflected its increased confidence in the outlook for the economy, in which context an unchanged policy stance would have become increasingly expansionary. But they also acknowledged that patience was needed for inflationary pressures to build up, and that persistence was necessary in our monetary policy for inflation dynamics to become durable and self-sustained.

Though monetary policy is having its intended effects, it can also produce side effects. The ECB therefore continued to closely monitor **financial stability risks** in 2017, which appeared to be contained.

Stronger nominal growth helped reduce risks by improving the debt sustainability of firms and households. Debt ratios in both sectors dropped to their early 2008 levels, indicating that the recovery has not come at the price of re-leveraging in the private sector. In fact, for virtually the first time since the start of Monetary Union, private spending has risen while private indebtedness has fallen.

For banks, too, the improving economy offered a window of opportunity to further strengthen their balance sheets. The stronger economy helped stabilise profitability through higher business volumes and lower impairment costs. Banks' shock-absorbing capacity continued to rise, with Common Equity Tier 1 ratios reaching 14.5% in the third quarter of 2017, and asset quality improved.

Euro area banks accelerated their reduction of **non-performing loans (NPLs)**, which decreased from 8% of total loans in 2014 to 5.2% in the third quarter of 2017. NPLs fell by €119 billion in the first three quarters of 2017 alone, with loan sales in secondary markets making up an increasing share of disposals. This was helped by ECB initiatives to improve transparency in NPL markets. However, further efforts to reduce high NPL stocks remain necessary.

The ECB also continued to monitor financial market conditions. Markets were relatively calm in 2017, but remained vulnerable to an abrupt repricing of risk and increases in financial market volatility. These risks materialised in global equity markets in early 2018, although to date without significant spillovers to euro area credit markets and hence broader financial conditions.

2017 saw important developments in the payments architecture of the euro area as well. The final wave of migration to **TARGET2-Securities** was completed, and the platform processed an average of 556,684 transactions per day thereafter. The new €50 banknote was launched, improving payment security for euro area citizens, for whom cash remains the primary means of payment at points of sale.

Finally, the ECB took a number of steps to improve its **transparency and accountability** towards EU citizens. We answered 138 questions from Members of the European Parliament in 2017. We opened our new Visitor Centre, which is expected to host 40,000 people a year. Our website had visitors from all over the world and was viewed over 17 million times.

Looking ahead, we expect the pace of economic expansion to remain strong in 2018. While we remain confident that inflation will converge towards our aim over the medium term, there are still uncertainties about the degree of slack in the economy.

A patient, persistent and prudent monetary policy therefore remains necessary to ensure that inflation will return to our objective.

Frankfurt am Main, April 2018

Mario Draghi
President

The year in figures

Solid and broad-based economic growth

2.5%

Year-on-year growth in euro area gross domestic product profited from stronger net exports and robust domestic spending on goods and services.

Inflation on a recovery path

1.5%

Average headline inflation in the euro area increased, largely reflecting rising energy and – to a lesser extent – food prices.

Employment above the pre-crisis level

1.6%

The recovery in the labour market continued with robust employment growth, reflecting both the positive economic climate and the success of policy measures.

Dispersion of growth rates at a historical low

1998: 1.47σ

2017: 0.75σ

In 2017 the difference in economic growth rates across the euro area, measured in standard deviations in gross value added, was the smallest ever recorded in the history of Monetary Union.

Improved bank solvency

14.5%

The solvency positions of euro area banks continued to improve, with Common Equity Tier 1 ratios reaching 14.5% in the third quarter of 2017.

Accelerated reduction of non-performing loans

– €119 billion

The total value of non-performing loans of euro area banks decreased notably in the first three quarters of the year.

Growing number of T2S transactions

556,684 per day

Completing the migration to TARGET2-Securities has been a significant step towards the integration of the European securities settlement infrastructure, as indicated by the average number of transactions per day following the final wave of migration.

Many answers given to the European Parliament

138

ECB President Mario Draghi answered more than 130 questions asked by the Members of the European Parliament, reflecting the ECB's high standards of accountability and transparency.

The ECB's policies and activities in the economic and financial environment of 2017

1 The euro area's economic recovery was supported by tailwinds and monetary policy

The economic expansion in the euro area that started in 2013 proceeded in 2017, while demonstrating resilience in the face of uncertainties. Output growth firmed and became broader based, with the dispersion of growth rates across both countries and sectors standing at its lowest level for two decades. Euro area labour markets continued to benefit from the ongoing recovery. Employment increased to the highest level since the establishment of the euro area, while the unemployment rate declined to a level last seen in the first quarter of 2009.

The euro area recovery was supported by a number of favourable cyclical and structural factors. Global output growth gathered pace and helped export demand, while years of balance sheet repair, institution-building and structural reforms in the euro area were also bearing fruit. Moreover, the aggregate fiscal policy stance was broadly neutral. The ECB's monetary policy measures continued to support money and credit dynamics and played a key role in supporting a pick-up in both household consumption and corporate investment by ensuring low interest rates and a continuation of the favourable financing conditions.

Despite the firm economic recovery, inflation dynamics had yet to show convincing signs of a sustained upward adjustment to a medium-term level below, but close to, 2% consistent with the ECB's definition of price stability. Underlying inflation pressures were still subdued as labour market slack remained significant. The observed labour market improvements still needed time to translate into more dynamic wage growth. Moreover, it was important to look through the volatility in short-term inflation data, which had limited (if any) implications for the medium-term outlook for price stability.

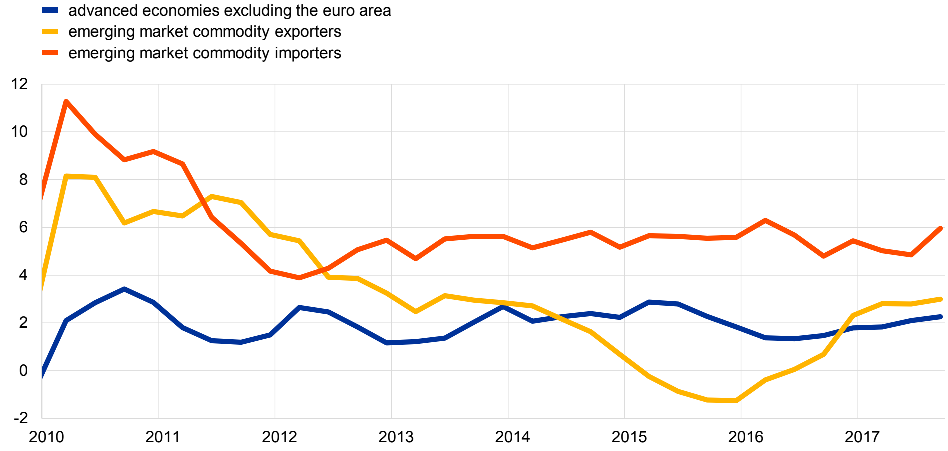
The solid and broad-based growth performance gave reason for confidence that inflation dynamics would strengthen over time. The Governing Council of the ECB emphasised in this respect that patience, persistence and prudence were needed, as this process was expected to take time and remained contingent on a very substantial degree of monetary policy accommodation.

1.1 Global economic growth gained momentum

In 2017 the cyclical upswing of the global economy continued (see Chart 1). The recovery also broadened across countries and components. While consumption continued to be a key driver of global growth, investment demand rebounded, particularly in advanced economies. The recovery in global trade coincided with strengthening business sentiment and a rotation of demand towards more import-intensive regions, in particular Europe.

Chart 1
Global real GDP

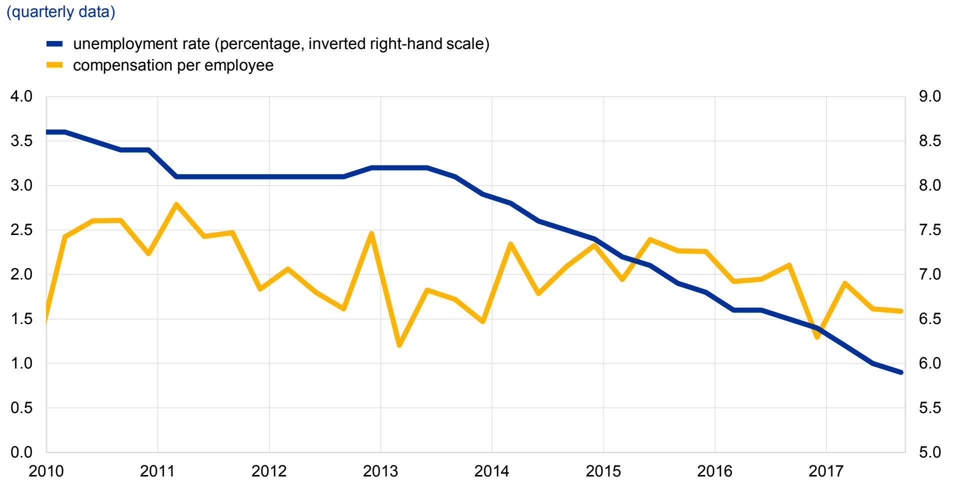
(annual percentage changes; quarterly data)



Sources: Haver Analytics, national sources and ECB calculations.
Notes: GDP adjusted using purchasing power parity (PPP) weights. Advanced economies include Australia, Canada, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States. Commodity exporters comprise Argentina, Brazil, Chile, Colombia, Indonesia, Malaysia, Mexico, Russia, Saudi Arabia, South Africa and Venezuela. Commodity importers include Hong Kong, India, Korea, Singapore, Taiwan, Thailand and Turkey.

The global economic recovery was supported by a number of tailwinds in advanced economies, while strong headwinds in emerging market economies eased. In advanced economies, slack diminished further in both productive capacity and labour markets, as the sources of growth became progressively endogenous. Accommodative policies, as well as rising confidence in both the corporate and household sectors, supported economic activity in advanced economies. In emerging markets, accommodative policies continued to support robust growth in commodity-importing countries, while growth rebounded in commodity-exporting countries thanks to higher commodity prices and a resumption of capital inflows.

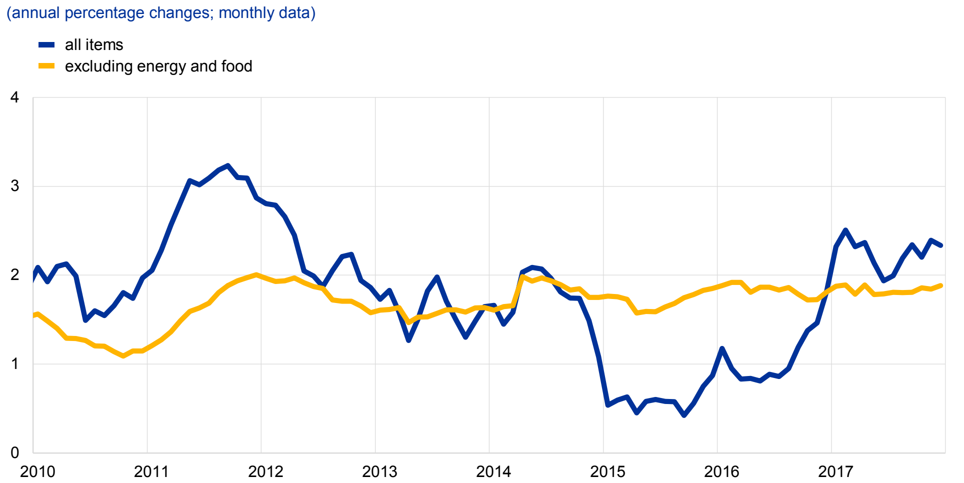
Chart 2
OECD labour market developments



Sources: Haver Analytics, Organisation for Economic Co-operation and Development (OECD) and ECB calculations.
Note: Compensation per employee is calculated as the sum of the (seasonally adjusted) annual changes in unit labour costs and labour productivity.

The pick-up in national demand and the declines observed in unemployment had not yet translated into higher wages (see Chart 2), and into stronger core inflation across most major economies. Compared with last year, global inflation excluding food and energy remained broadly stable. Global headline inflation nevertheless moved up, on account of recovering commodity prices (see Chart 3).

Chart 3
OECD inflation rates



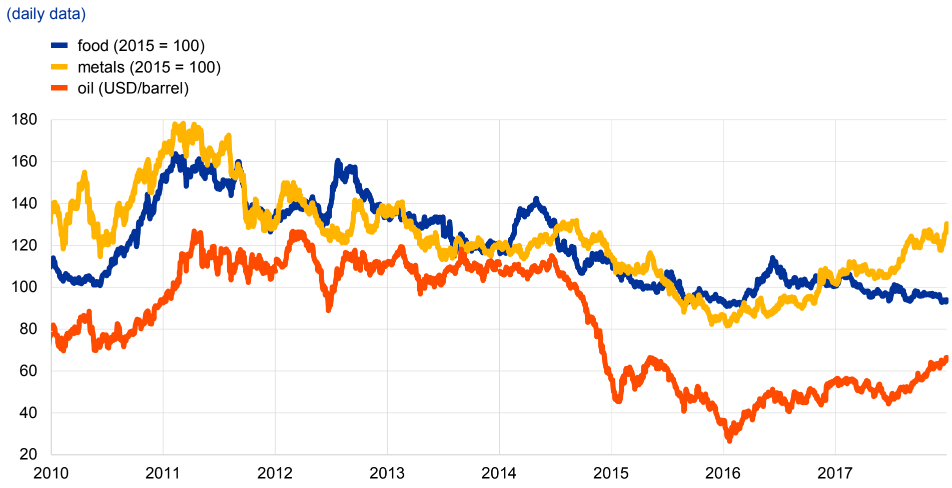
Sources: Haver Analytics, OECD and ECB calculations.

Higher commodity prices pushed up global inflation

After trending downwards in the first half of the year from USD 56 per barrel in January to USD 44 per barrel in June, mainly reflecting doubts about the effectiveness of the agreement in 2016 between the Organization of the Petroleum Exporting Countries (OPEC) and major non-OPEC oil-producing countries on production cuts amid strong oil supply from the United States, Brent crude oil prices recovered in the second half of 2017 (see Chart 4). Supporting global inflation developments, they increased to USD 67 per barrel at the end of December, pointing to a market rebalancing on account of stronger than expected demand in 2017, the May 2017 extension of the OPEC/non-OPEC production cuts and outages in some producing countries, leading to a continued reduction in oil inventories. At the end of the year, prices were further supported by geopolitical tensions, expectations of a further extension of the OPEC/non-OPEC supply cut agreement, confirmed by the actual extension to end-2018 on 30 November 2017, as well as strong global demand for oil.

Chart 4

Main developments in commodity prices



Sources: Bloomberg, Hamburg Institute of International Economics, ECB and ECB calculations.

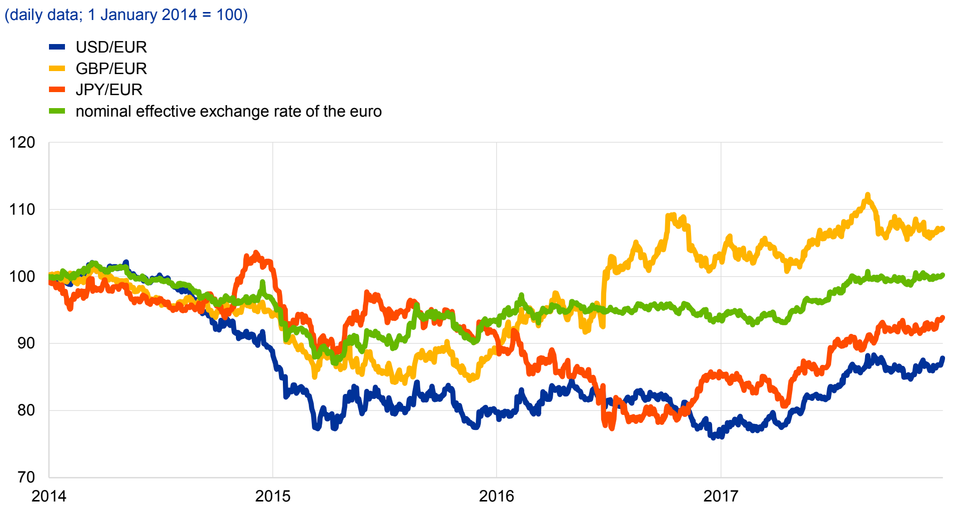
Non-oil commodity prices increased overall in 2017, mainly driven by increasing metal prices. Following a short-lived decline during the summer, metal prices increased, especially in the third quarter, driven by strong demand as well as supply disruptions in some exporting countries. By contrast, food prices retreated overall in 2017, mainly owing to an abundant global supply of soybeans, wheat, palm oil and corn. However, the food price developments were largely outweighed by the increase in metal prices.

Effective exchange rate of the euro appreciated

In 2017 the exchange rate of the euro appreciated in nominal effective terms (see Chart 5). In bilateral terms, the euro appreciated vis-à-vis most other major currencies. The appreciation of the euro was particularly pronounced against the US dollar. The euro also appreciated significantly against the Japanese yen and – albeit to a lesser extent – the pound sterling.

Chart 5

The euro exchange rate



Sources: Bloomberg, Hamburg Institute of International Economics, ECB and ECB calculations.
Note: Nominal effective exchange rate against 38 major trading partners.

The Danish krone is currently the only currency in the European exchange rate mechanism II (ERM II). The Danish krone traded close to its central rate within ERM II in 2017. Česká národní banka discontinued the Czech koruna's exchange rate floor against the euro in April 2017 and the euro subsequently depreciated against the koruna. Hrvatska narodna banka continued to conduct interventions in foreign exchange markets under its managed floating exchange rate regime and the Croatian kuna remained broadly stable vis-à-vis the euro. The Bulgarian lev remained fixed to the euro. The euro also remained broadly stable vis-à-vis the Hungarian forint and the Romanian leu, while it appreciated against the Swedish krona and the Swiss franc and depreciated against the Polish zloty.

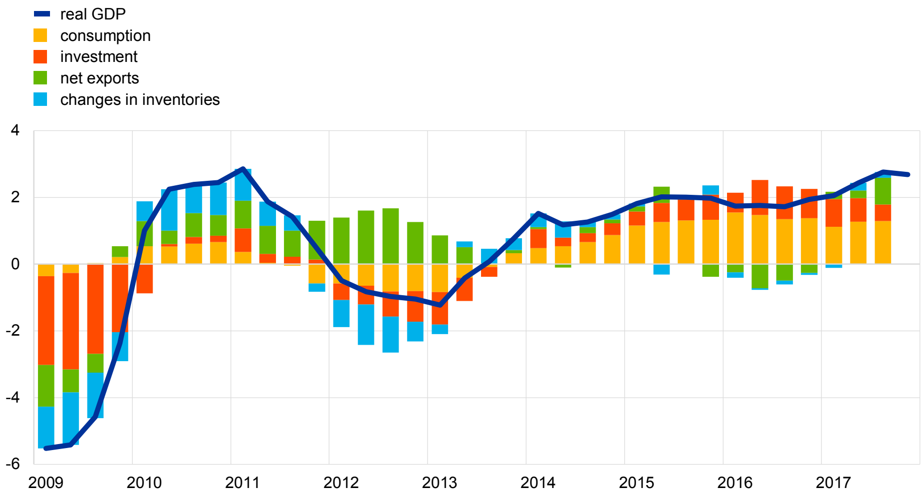
1.2 Euro area macroeconomic, fiscal and structural developments

The economic expansion in the euro area gathered pace in 2017 as a positive contribution from net exports, supported by the broad-based global recovery, added to the strength of domestic demand (see Chart 6). Private consumption was underpinned by increasing household wealth and rising employment, which also benefited from past labour market reforms (see Box 1). At the same time, government consumption rose further, thus contributing positively to economic growth. Business investment continued its upswing, benefiting from very favourable financing conditions and improvements in corporate profitability. Construction investment, after having clearly bottomed out in 2015, kept strengthening. In addition, government investment also rose in 2017, following a decline in the previous year.

Chart 6

Euro area real GDP

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: Annual GDP growth for the fourth quarter of 2017 refers to the preliminary flash estimate, while the latest observations for the components are for the third quarter of 2017.

The euro area economy showed increased resilience in 2017

Euro area private consumption strengthened further in 2017, with an average annual growth rate of around 1.8%. The main factor driving the increase in consumption was the rise in labour income. In this respect, it was mainly the growth in the number of employed people, rather than higher wages, which contributed to total nominal labour income growth. At the same time, growth of real disposable income was somewhat lower than in the previous year. Low interest rates also continued to support private consumption. Finally, the ratio of household sector debt to GDP did not increase and housing investment remained at low levels compared with the pre-crisis period.

The strength in euro area domestic and external demand in 2017 supported business investment. The latter also benefited from rising corporate profits, increasing capacity utilisation and very accommodative monetary policy, which reduced firms' net interest payments and eased financing conditions. Looking through the volatility caused by the Irish statistical reclassifications of intangible investment, the recovery was broad-based across assets such as transport equipment, other machinery and equipment and intellectual property products. Nevertheless, some factors continued to weigh on firms' investment activities, such as the stabilisation of euro area long-term growth expectations at relatively low rates (as illustrated by Consensus Economics forecasts six to ten years ahead), geopolitical uncertainty, unfavourable institutional and regulatory features, as well as ongoing corporate balance sheet adjustments related to firms' high indebtedness in some euro area countries.

Construction investment also continued improving, albeit from low levels, alongside the recovery in euro area housing markets. The latter reflected growing demand, which was supported by real income growth and improving consumer confidence, as well as favourable mortgage rates and lending conditions. The recovery of the housing market was widespread across euro area countries, although substantial differences in construction investment levels compared with pre-crisis levels remained.

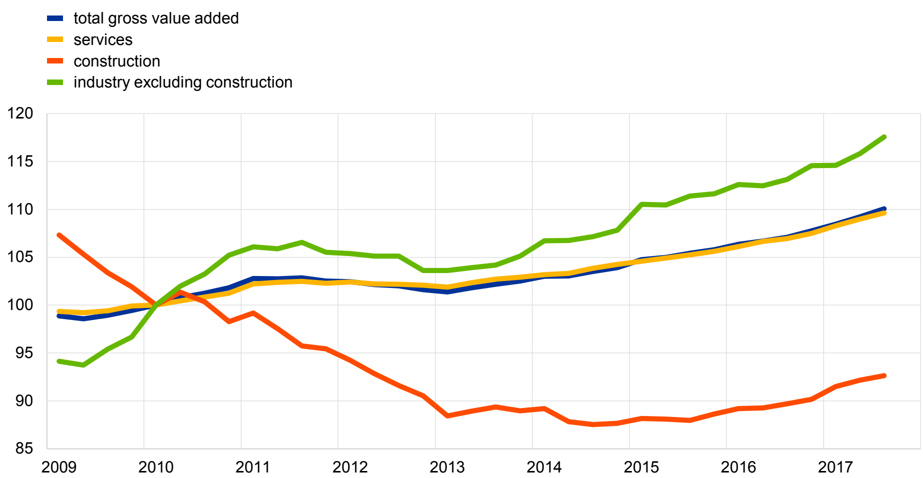
Economic growth was supported by an improving external performance of the euro area in 2017, despite some headwinds from the euro effective exchange rate. Exports of goods increased, mainly to trading partners in Europe, but also to China and the United States, whereas trade in goods with the United Kingdom and OPEC countries remained subdued. As in the previous year, export growth was mainly driven by trade in final and intermediate goods. Trade momentum within the euro area strengthened and mirrored the underlying unabated growth dynamics in domestic demand.

The rise in output in 2017 was broad-based across economic sectors (see Chart 7). Total gross value added, which surpassed its pre-crisis peak already in 2015, rose by around 2.4% on average. Value-added growth in industry (excluding construction) increased to around 2.9% in 2017, while the services sector expanded by some 2.2% on an annual basis, which was also higher than in 2016. At the same time, value added in construction, albeit still far below its pre-crisis level, gained further momentum, rising by around 3.0% – the highest growth rate recorded since 2006. This confirmed that the construction sector is increasingly recovering from the protracted period of contraction or slow growth that started following the onset of the financial crisis in 2008.

Chart 7

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 2017.

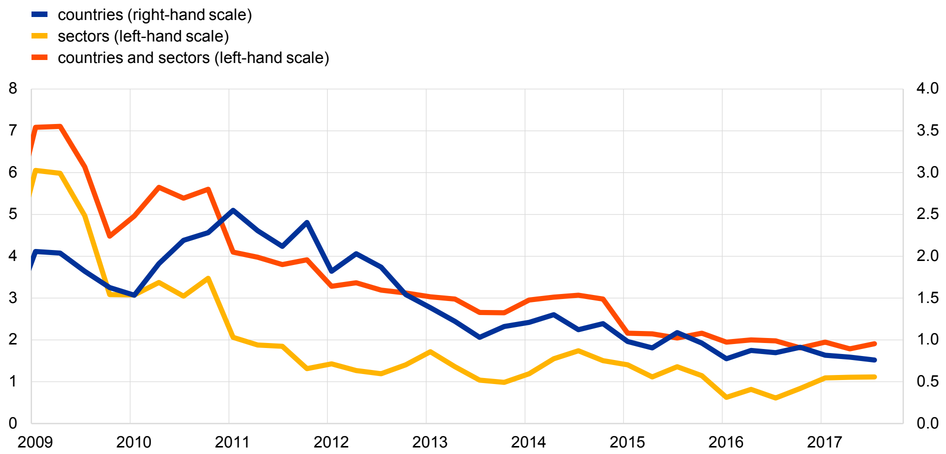
Although the economic recovery that began in 2013 started off as gradual and moderate, it has over time firmed and reached all parts of the euro area. These favourable developments stand in sharp contrast to the short-lived recovery in 2009-10, when output growth was relatively uneven. The present broadening of the economic expansion has manifested itself in a significantly lower dispersion of value-added growth rates across countries and sectors. The monetary policy of the ECB and the associated easing of financing conditions have played a central role in this recovery and the convergence among countries.

Since 2009 the weighted standard deviation of year-on-year value-added growth across the 19 euro area countries, as well as the nine main economic sectors of the euro area (excluding agriculture), has shown a declining trend (see Chart 8). The peak in dispersion across sectors in 2009 was related to the collapse in global trade (affecting the industrial sector) and the bust in the housing market (affecting the construction sector), whereas the peak in dispersion across countries in 2011 was related to the sovereign debt crisis. Recent data show that the combined dispersion of value-added growth across sectors and countries has reached low levels not seen since the start of Economic and Monetary Union. This bodes well for economic growth going forward, as expansions tend to be stronger and more resilient when growth is based on a broader foundation.

Chart 8

Dispersion of value-added growth across euro area countries and sectors

(standard deviation; percentage points)



Sources: Eurostat and ECB calculations.
Notes: The dispersion of growth across countries is measured as the weighted standard deviation of year-on-year growth in value added (data for Malta are not available, while value added for Ireland is excluded from 2015 onwards). The dispersion of growth across sectors is measured as the weighted standard deviation of year-on-year growth in value added in the nine main euro area economic sectors, excluding agriculture. The latest observations are for the third quarter of 2017.

Euro area unemployment continued to decline

Euro area labour markets recovered further in 2017 (see Chart 9). By the third quarter of the year the number of persons employed in the euro area stood 1.7% above the level at the same time in 2016, or 5.0% above the last trough in the second quarter of 2013. Over the whole recovery period, employment has increased by around 7.5 million persons. This has taken the level of employment above its pre-crisis peak reached in the first quarter of 2008 and to its highest level since the introduction of the euro. Employment growth over the recovery has been broad-based, both across countries and sectors.

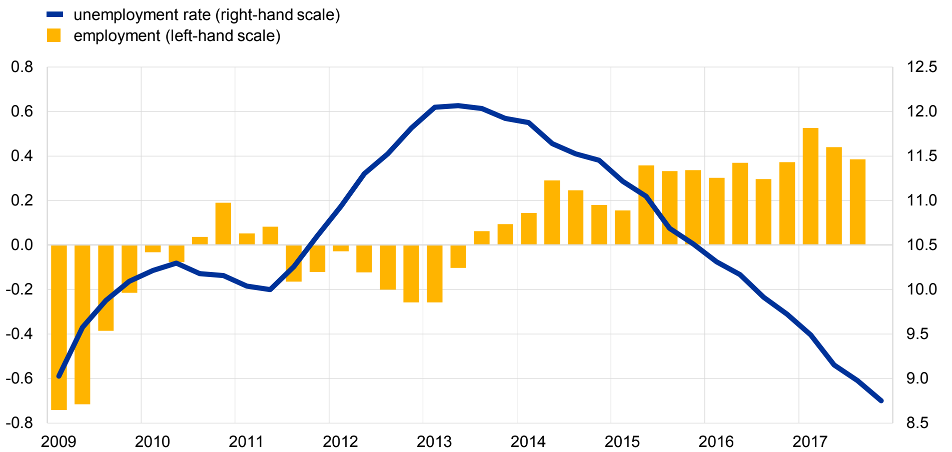
In the first three quarters of 2017 total hours worked rose at around the same rate as headcount employment, reflecting broadly stable average hours worked per person employed. Annual productivity growth per person employed remained low, averaging around 0.8% over the first three quarters of 2017, compared with an annual rise of 0.4% in 2016.

The unemployment rate continued to decline in 2017 and stood at 8.7% in December, which was the lowest rate recorded since early 2009 (see Chart 9). The decline in unemployment, which started in the second half of 2013, has been broad-based across gender and age groups, and occurred against the background of further increases in labour supply. However, broader measures of labour underutilisation remained elevated (see also Box 1).

Chart 9

Labour market indicators

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



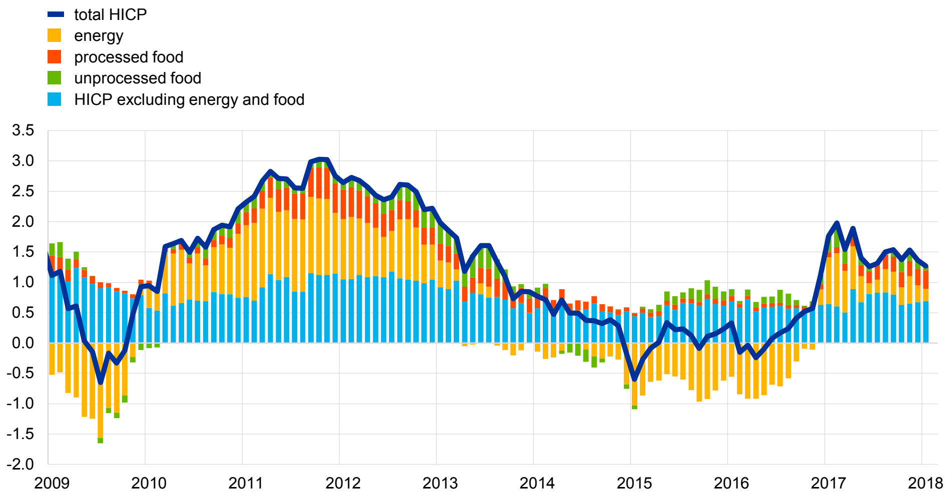
Source: Eurostat.

Wage increases and inflation remained subdued

Average headline inflation in the euro area, as measured by the Harmonised Index of Consumer Prices (HICP), increased to 1.5% in 2017 from 0.2% the year before. This increase largely reflected higher contributions of energy prices, and to a lesser extent, food prices. Underlying inflation, as measured by HICP inflation excluding energy and food, recorded only a marginal increase to 1.0% on average in 2017 from 0.9% in 2016, as domestic cost pressures remained rather subdued (see Chart 10).

Chart 10
HICP inflation and contributions by components

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

The intra-year profile of headline HICP inflation was also significantly influenced by developments in energy prices. Higher oil prices at the turn of the year and base effects associated with developments one year earlier pushed up headline inflation to a peak of 2.0% in February 2017. As oil prices moderated again, much of that inflation boost was unwound by mid-year. Weather-related sharp increases in fruit and vegetable prices resulted in a strong contribution of unprocessed food prices at the beginning of the year, while in the second half of the year the contribution mostly came from processed food prices. This partly reflected earlier developments at the stage of food commodity and farm gate prices, which passed through slowly to consumer prices.

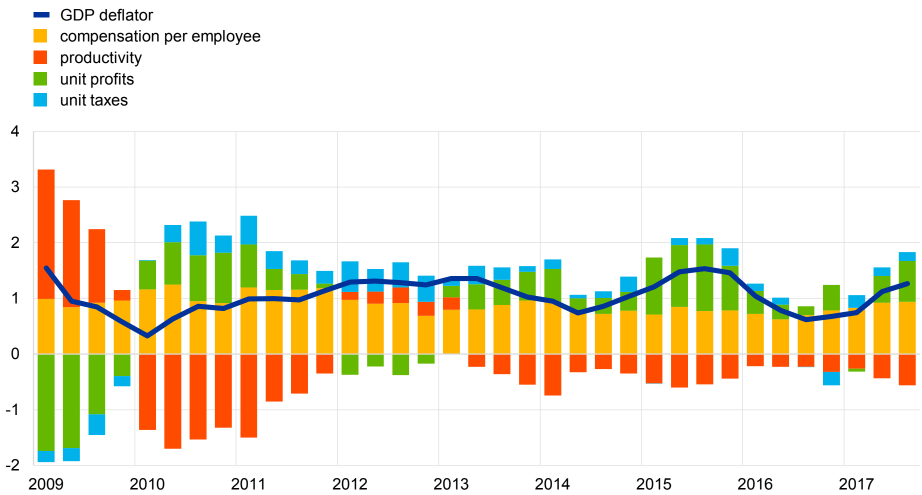
Looking through the impacts of these typically more volatile components, HICP inflation excluding energy and food continued to hover around the subdued rates observed in 2016, although it recorded a moderate and temporary uptick around mid-year. Both HICP inflation excluding energy and food and other measures of underlying inflation failed to show more convincing signs of a sustained upward trend in the second half of the year (see Box 2 for a discussion of the euro area's experience of low underlying inflation).

The lack of convincing signs of a sustained upward trend also held for the inflation rates of the two main categories of HICP inflation excluding energy and food, namely non-energy industrial goods and services. Non-energy industrial goods inflation remained, on balance, relatively stable, with an average of 0.4% in 2017 which was the same as in 2016. This implied rather weak pipeline pressures, as neither the earlier oil price increases nor the previous depreciation of the euro seemed to have generated noticeable pass-through effects on final consumer prices. While the annual rate of change in import prices for non-food consumer goods showed the expected response to exchange rate developments, the impact of these variations was mitigated by the fact that the annual rate of change in producer prices for domestic sales of non-food consumer goods remained subdued throughout the year. The subdued pressures emerging along the domestic production and retail pricing chains likely also reflected a buffering by profit margins at the different stages. Services price inflation was 1.4% on average in 2017 and thus higher than in 2016, but it remained well below its long-term average. The halt in the pick-up in the last part of 2017 was partially due to special factors, but services prices appear to have remained more generally influenced by subdued domestic cost pressures.

Domestic cost pressures as measured by the GDP deflator picked up somewhat, but overall remained subdued in 2017 (see Chart 11). The annual growth in compensation per employee had reached a turning point in mid-2016 and gradually increased to stand at 1.7% in the third quarter of 2017. Factors that may have contained wage growth included the still significant slack in the labour market (especially when also taking into account labour underutilisation), weak productivity growth, the impact of low past inflation via formal and informal indexation schemes, as well as the ongoing impact of labour market reforms implemented in some countries during the financial crisis. The higher wage growth did not translate into higher unit labour cost growth, as labour productivity growth also increased. Cost pressures stemming from profit developments (measured in terms of the gross operating surplus) remained relatively muted, partly reflecting the dampening negative impact of the terms-of-trade deterioration related to higher oil prices.

Chart 11
Breakdown of the GDP deflator

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.

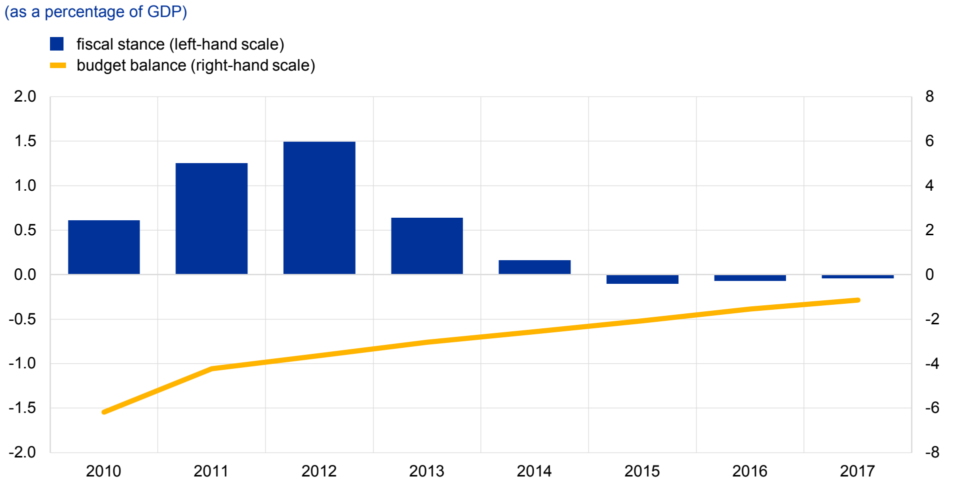
Longer-term inflation expectations increased throughout 2017 compared with 2016. Expectations for inflation five years ahead from the ECB Survey of Professional Forecasters remained unchanged at 1.8% for a succession of quarters and ticked up to 1.9% in the survey for the last quarter of the year. Market-based measures of long-term inflation expectations, such as the five-year inflation-linked swap rate five years ahead, also mostly increased and the probability of deflation implied by inflation options markets remained very low. At the same time, the forward profile of market-based measures of inflation expectations continued to signal a prolonged period of low inflation, with only a very gradual return to inflation levels below, but close to, 2%.

Neutral fiscal stance and supportive structural reforms

Favourable cyclical conditions and low interest payments led to a further decline of the general government nominal budget deficit in 2017 for the euro area as a whole. Based on the December 2017 Eurosystem staff macroeconomic projections, the budget deficit declined from 1.5% of GDP in 2016 to 1.1% of GDP in 2017 (see Chart 12). The contribution of structural consolidation measures was, on average, limited.

Chart 12

Budget balance and fiscal stance



Sources: Eurostat and December 2017 Eurosystem staff macroeconomic projections.
Notes: The fiscal stance is measured as the change in the cyclically adjusted primary balance ratio net of temporary measures, such as government support for the financial sector. A positive value for the fiscal stance implies a tightening of fiscal policy, and vice versa.

The Eurosystem staff macroeconomic projections suggest that the fiscal stance for the euro area was broadly neutral in 2017, as measured by the change in the cyclically adjusted primary balance (see Chart 12).[1] For the euro area as a whole, a neutral fiscal stance can be seen as appropriate to balance the need for economic stabilisation with that for fiscal sustainability. However, from an individual country perspective, the composition of the euro area aggregate fiscal stance appeared to be sub-optimal. Some euro area countries in need of further fiscal tightening, namely those with still high public debt-to-GDP ratio levels, did not implement the structural fiscal adjustments needed to contain the risks to public debt sustainability. At the same time, some other countries with a sustainable fiscal position did not make use of their available fiscal space.

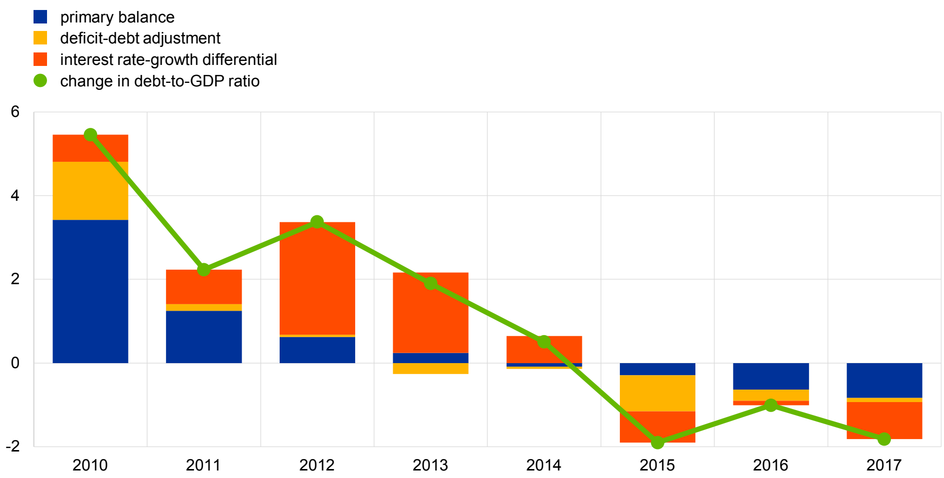
[1] For information on the concept of the euro area fiscal stance, see the article entitled “The euro area fiscal stance”, *Economic Bulletin*, Issue 4, ECB, 2016.

The improving primary budget balance, favourable economic growth and low interest rates led to a further reduction of the euro area aggregate general government debt-to-GDP ratio, from 88.9% in 2016 to 87% in 2017, according to the Eurosystem staff projections (see Chart 13). However, public debt levels were still high in a number of euro area countries, thereby making them vulnerable to a sudden reversal in interest rates or any renewed financial market instability.

Chart 13

Drivers of general government debt

(change as a percentage of GDP)



Sources: Eurostat and December 2017 Eurosystem staff macroeconomic projections.
Note: The primary balance ratio has a negative impact on the general government debt ratio, i.e. a primary surplus reduces the debt ratio.

Member States' compliance with the requirements of the Stability and Growth Pact (SGP) continued to be mixed. On the positive side, compliance with the nominal deficit criterion improved further. Following the closing of the excessive deficit procedure (EDP) for Greece and Portugal in 2017, and with France expected to have corrected its excessive fiscal deficit in 2017, Spain will be the only euro area country that remains subject to an EDP in 2018. On the negative side, however, compliance with the structural fiscal effort requirements as foreseen under the preventive arm of the SGP was in general relatively poor, as also confirmed by the European Commission's autumn 2017 economic forecast.

By and large, the experience of the crises has shown that more flexible economies are more resilient to shocks and tend to experience faster recoveries and higher long-term growth. Moreover, euro area countries that reformed their product and/or labour markets have since seen good results; the full effects are still materialising, helped also by supportive financial and macroeconomic policies.

While the economic recovery has been continuing and broadening, more could be done to overcome key impediments to more sustained and more inclusive growth in the euro area, for example structural reforms boosting labour productivity growth – a key factor in raising living standards[2] – or measures facilitating balance sheet repair and enhanced efficiency of judicial and out-of-court procedures.[3]

As discussed in Box 3, the evidence suggests that monetary accommodation does not hinder the implementation of reform, but major reforms are less likely to be undertaken in a more benign macroeconomic environment with fewer external pressures. At the same time, the barriers to reform implementation, notably political constraints and vested interests, are still perceived as being important.[4]

The European Commission, in its assessment of reform implementation based on its 2017 country-specific recommendations (CSRs), concluded that very few of the CSRs had either been “fully addressed” or had “substantial progress” made towards them, with the vast majority showing “some progress”, “limited progress” or “no progress”. This suggests that there is significant scope for further progress on reform implementation.

Box 1
Structural policies in the euro area labour market

The euro area labour market further improved during 2017. The employment-rich recovery has led to an increase in the number of persons employed of around 7.5 million since the middle of 2013 and a sustained reduction in unemployment. Moreover, there has been a notable broadening of the labour market recovery, including across sectors (see Chart A). Nevertheless, both total and youth unemployment remain high and broad measures of unemployment point to a high level of labour underutilisation.[5]

2 See the article entitled “The slowdown in euro area productivity in a global context”, *Economic Bulletin*, Issue 3, ECB, 2017.

3 See the box entitled “Private sector indebtedness and deleveraging in the euro area countries”, *Economic Bulletin*, Issue 4, ECB, 2017.

4 See the box entitled “Structural reform needs in the euro area: insights from a survey of large companies”, *Economic Bulletin*, Issue 6, ECB, 2017.

5 In addition to the official unemployment rate, broad measures of underutilisation comprise: (i) those who are not currently seeking work, despite being available; (ii) those who are actively seeking work, but are not (yet) available to begin work; and (iii) those working fewer hours than they would like. See the box entitled “Assessing labour market slack”, *Economic Bulletin*, Issue 3, ECB, 2017.

Chart A

Employment growth by sector

Sources: ECB calculations based on Eurostat data.
Notes: Selected sectors are shown. Market services comprise: trade, transport and accommodation; information and communications technology (ICT) services; finance and insurance; real estate; and business services.

Euro area labour markets have benefited from the broadening of the recovery in economic activity. In addition, some evidence suggests that structural policy measures have contributed to an increase in the responsiveness of employment to GDP during the recovery in some euro area countries.[6] These include measures which increase labour market flexibility by loosening employment protection, for example by reducing severance payments or making wages more flexible. Meanwhile, product market reforms – including reforms which aim to reduce red tape or make it easier for new firms to enter the market, as well as those which reduce the protection of incumbent firms or professions – may also have helped to increase the speed or strength of firms' employment adjustment.

Looking ahead, reforms aimed at further improving workforce flexibility and the quality of education were deemed important by respondents to an ad hoc ECB survey of leading euro area businesses on structural reform in the euro area (see Chart B).[7] Efforts to make working time arrangements more flexible, to make it easier to use temporary contracts and to loosen employment protection legislation were three of the top four reform priorities highlighted by at least 80% of the respondents. Moreover, around 50% of the respondents suggested that reforms aimed at enhancing workforce flexibility were likely to have the single greatest impact on business outcomes – given their importance for regaining competitiveness and also because they would allow companies to better respond to growing volatility in demand and changing demand patterns. In addition, reforms to improve the quality of education and training systems were highlighted by over 90% of businesses. This was considered particularly relevant in the light of shifts towards knowledge-intense skill sets, digitalisation and long-standing structural deficits in engineering skills. The survey results also indicated the need for product market reforms and for further progress with the Single Market, both of which are necessary to fully reap the benefits of labour market reforms.[8]

6 See Box 3 in the article entitled "The employment-GDP relationship since the crisis", *Economic Bulletin*, Issue 6, ECB, 2016.

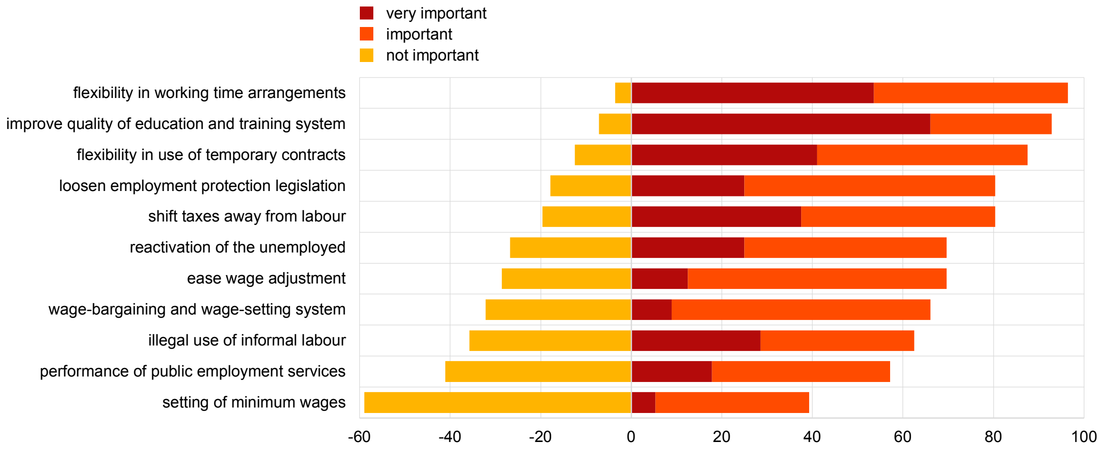
7 See the box entitled "Structural reform needs in the euro area: insights from a survey of large companies", *Economic Bulletin*, Issue 6, ECB, 2017.

8 See the box entitled "Structural indicators of the euro area business environment", *Economic Bulletin*, Issue 8, ECB, 2016.

Chart B

Labour market reform needs in the euro area according to an ad hoc corporate survey

(percentage of corporate respondents; responses ranked by overall rating)



Sources: ECB Structural Reforms Survey and ECB calculations.
Notes: Based on corporate responses to the question "How do you assess labour market reform needs in the euro area countries in your sector?" Negative percentages refer to respondents reporting elements as "not important".

Overall, the euro area labour markets continued to improve during 2017. Employment and labour supply increased and unemployment declined. The improvements were broad-based across countries and sectors. Structural reforms contributed to these developments, but further efforts to enhance labour force skills and flexibility are needed in an economic environment which is continuously changing.

Box 2
Understanding the subdued inflation dynamics

The recent prolonged period of low inflation despite the economic recovery has raised questions about the limits of traditional models. In particular, the Phillips curve – one of the fundamental relationships in macroeconomics – has come under intense scrutiny.

What are the drivers of inflation within the Phillips curve framework?

First of all, inflation expectations "anchor" inflation. The decline in survey-based measures of inflation expectations after 2013 raised concerns that the Phillips curve had shifted downwards, meaning that for each given level of output, a lower inflation rate emerged. However, the effects of the ECB's asset purchase programme and the improved prospects for euro area economic activity have contained such risks and supported the anchoring of inflation expectations. In the course of 2017 these concerns were further alleviated by a recovery in both survey and market-based measures of longer-term inflation expectations.

Economic slack is another key driver of inflation within the Phillips curve framework. Over the analysed period since 2012, characterised by subdued HICP inflation excluding energy and food, slack has made a negative contribution to inflation readings, but currently the euro area is undergoing a robust recovery and the labour market is improving markedly. As a consequence, the economic slack accumulated during the double-dip recession is being reabsorbed and its negative impact on inflation is diminishing.

A third relevant driver of inflation is import prices. While their role is more notable for headline inflation, when it comes to HICP inflation excluding energy and food, they made a limited negative contribution also in 2017.[9]

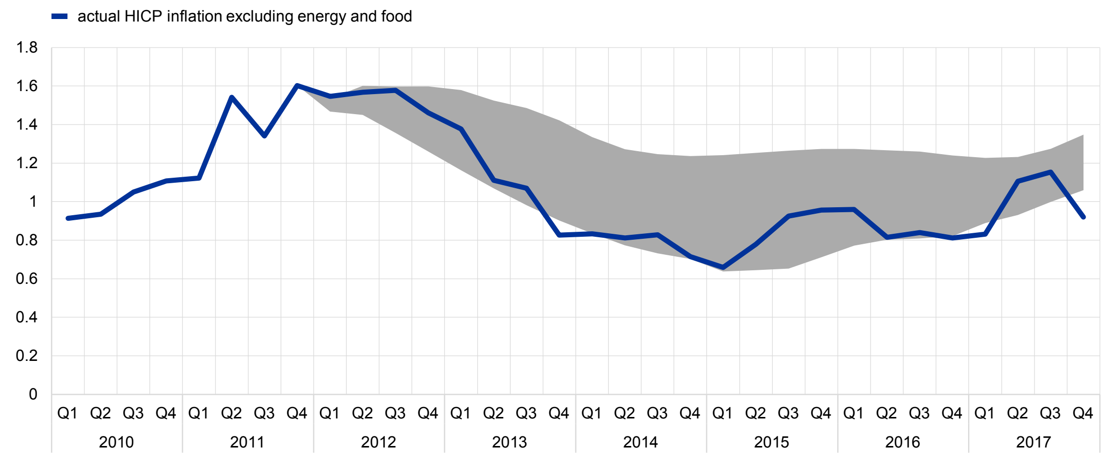
Is the Phillips curve still a valid tool for analysis?

Recent research by the European System of Central Banks suggests that it is.[10] Chart A shows the out-of-sample forecasts for HICP inflation excluding energy and food from a broad set of benchmark Phillips curve models conditioned on the actual outcomes of different measures of inflation expectations and slack, as well as import price developments. The range of estimates is relatively large, pointing to high model uncertainty. Nevertheless, over the period under review inflation dynamics have been quite consistent with what this set of models would have predicted. This supports the validity of the Phillips curve as a framework for understanding inflation dynamics.[11] Nevertheless, inflation has hovered closer to the lower range, pointing to the influence of other factors not captured by most of the models considered.

Chart A

Conditional Phillips curve forecast for the post-crisis period

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Notes: The starting point of the forecast is the first quarter of 2012. The grey range covers the conditional forecast of HICP inflation excluding energy and food from an equation where it is regressed on its lag, lagged import prices, a lagged measure of slack (an output gap model-based estimate, GDP growth, the unemployment rate, an unemployment gap model-based estimate and the European Commission estimate of the output gap, respectively) and a measure of inflation expectations (Consensus Economics measures with horizons from one to seven quarters and Survey of Professional Forecasters measures with horizons of one, two and five years, respectively).

9 For a model-based decomposition, see the article entitled "Domestic and global drivers of inflation in the euro area", *Economic Bulletin*, Issue 4, ECB, 2017.

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

11 The usefulness of the Phillips curve for understanding inflation in the euro area is also argued by Jarociński, M. and Lenza, M., "An inflation-predicting measure of the output gap in the euro area", *Working Paper Series*, No 1966, ECB, September 2016, and Bobeica, E. and Jarociński, M., "Missing disinflation and missing inflation: the puzzles that aren't", *Working Paper Series*, No 2000, ECB, January 2017.

The general tendency of the different Phillips curve models to overestimate inflation suggests that the benchmark models fail to reflect the impact of several drivers. Such factors include a possible mismeasurement of domestic slack or inflation expectations, a larger impact from global factors over and above what is covered by import prices or a change in the response of inflation to slack (i.e. the Phillips curve slope).

Domestic slack is unobservable and multidimensional. Looking at several economic slack indicators helps to hedge against the risk of mismeasurement, but does not eliminate it. The fact that HICP inflation excluding energy and food hovered closer to the lower range of the Phillips curve models could suggest that the amount of slack in the economy has been higher. Indeed, the unemployment rate has come down, but the share of underemployed people (i.e. those working on a part-time basis who would like to work more hours, as well as discouraged workers) has increased after the Great Recession and this is not fully captured by the observed unemployment rate.[12]

In addition, traditional Phillips curve models that include only domestic slack could miss a broader impact of global developments via increased economic integration and the contestability of labour and product markets. This theory is difficult to capture empirically,[13] with only limited support for including measures of global slack and measures of integration in global value chains in Phillips curve analyses when studying inflation in the euro area.[14] Finally, the overestimation of inflation by the standard model could reflect diminished nominal rigidities[15] owing to recent structural reforms, such as those related to lower collective bargaining coverage[16]. The Phillips curve slope might have changed as a consequence, but, in practice, it is statistically hard to distinguish changes in the Phillips curve slope from a mismeasurement of slack.

To sum up, while traditional models provide a good understanding of the drivers of inflation in the euro area, they do not fully capture the complexity of the current economic environment in generating inflation. Nevertheless, economic slack is still relevant and, in the euro area, the rebound in economic activity is expected to drive underlying inflation gradually upwards.

12 See the box entitled "Assessing labour market slack", *Economic Bulletin*, Issue 3, ECB, 2017, and Cœuré, B., "Scars or scratches? Hysteresis in the euro area", speech at the International Center for Monetary and Banking Studies, Geneva, 19 May 2017.

13 Equally hard to pin down is the impact of e-commerce on inflation; arguably, higher digitalisation has increased competition and lowered the costs of stock management, which would have a downward influence on inflation.

14 See the article entitled "Domestic and global drivers of inflation in the euro area", *Economic Bulletin*, Issue 4, ECB, 2017, and Nickel, C., "The role of foreign slack in domestic inflation in the Eurozone", VoxEU.org, 28 July 2017.

15 See Porqueddu, M. and Fabiani, S., "Changing prices… changing times: evidence for Italy", *Working Paper Series*, No 2002, ECB, January 2017, and Izquierdo, M., Jimeno, J.F., Kosma, T., Lamo, A., Millard, S., Rõõm, T. and Viviano, E., "Labour market adjustment in Europe during the crisis: microeconomic evidence from the Wage Dynamics Network survey", *Occasional Paper Series*, No 192, ECB, June 2017.

16 See the box entitled "Downward wage rigidity and the role of structural reforms in the euro area", *Economic Bulletin*, Issue 8, ECB, 2015.

Box 3
What drives structural reform implementation?

With the start of the crisis, the momentum of structural reform implementation increased, in particular in more vulnerable euro area countries. However, in recent years this momentum has stalled, raising the question “What drives the implementation of reforms?” To shed light on this issue, the literature on factors that could either promote or hinder the implementation of reforms is reviewed.

A country’s initial economic structures can have a significant bearing on the need to undertake reforms. A country far away from best practices in the respective policy areas will need to make greater reform efforts to improve the functioning of its institutions, compared with a country closer to best practices. This is indeed often found in the literature.[17]

Moreover, the economic situation seems to affect the likelihood of action being taken in the form of ambitious structural policies. In the literature, this has been related to the facts that the costs of the status quo are more visible and the resistance of vested interests to change is reduced in the presence of pronounced losses in economic welfare during deep recessions[18] and during episodes of high unemployment[19].

The influence of the political landscape could matter as well.[20] In particular, the point reached in the electoral cycle can be important: the proximity of an election could lead to fewer reforms (in particular those which are likely to exhibit significant short-term costs). By contrast, newly elected governments seem more inclined to implement reforms when the next elections are distant.[21] Similarly, reforms are more easily implementable if one party has the necessary majority in all houses of the parliament.[22] In relation to this, political support for reforms is sometimes scarce as the distributional consequences associated with their impact (i.e. who gains and who suffers from a reform) are not always clear ex ante. In such an environment, people tend to favour the status quo.[23] Moreover, insufficient transparency concerning (contingent) government liabilities can undermine reform momentum. Several analyses find that fiscal reporting and accounting is often

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17 See, for example, Bonfiglioli, A. and Gancia, G., “Economic Uncertainty and Economic Reforms”, mimeo, 2016, and Dias Da Silva, A., Givone, A. and Sondermann, D., “When do countries implement structural reforms?”, *Working Paper Series*, No 2078, ECB, June 2017.

18 See Bonfiglioli and Gancia, op. cit., Dias Da Silva et al. (op. cit.), Drazen, A. and Easterly, W., “Do Crises Induce Reform? Simple Empirical Tests of Conventional Wisdom”, *Economics and Politics*, Vol. 13, No 2, 2001, pp. 129-157, and Agnello, L., Castro, V., Jalles, J.T. and Sousa, R.M., “What determines the likelihood of structural reforms?”, *European Journal of Political Economy*, Vol. 37, Issue C, 2015, pp. 129-145.

19 See Dias Da Silva et al. (op. cit.) and Duval, R. and Elmeskov, J., “The effects of EMU on structural reforms in labour and product markets”, *Working Paper Series*, No 596, ECB, March 2006.

20 See Leiner-Killinger, N., López Pérez, V., Stiegert, R. and Vitale, G., “Structural reforms in EMU and the role of monetary policy – a survey of the literature”, *Occasional Paper Series*, No 66, ECB, July 2007.

21 See Alesina, A., Perotti, R. and Tavares, J., “The Political Economy of Fiscal Adjustments”, *Brookings Papers on Economic Activity*, Vol. 29(1), 1998, pp. 197-266, and Duval, R., “Is there a role for macroeconomic policy in fostering structural reforms? Panel evidence from OECD countries over the past two decades”, *European Journal of Political Economy*, Vol. 24, No 2, 2008, pp. 491-502.

22 See Dias Da Silva et al. (op. cit.).

23 See Fernandez, R. and Rodrik, D., “Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty”, *American Economic Review*, Vol. 81, No 5, 1991, pp. 1146-1155. An example is employees opposing privatisation because they do not know whether their respective skills will be required after the reform (see e.g. De Haan, J., Lundström, S. and Sturm, J.E., “Market-oriented institutions and policies and economic growth: A critical survey”, *Journal of Economic Surveys*, Vol. 20, No 2, 2006, pp. 157-191).

incomplete and that the understanding of governments' underlying fiscal position and the risks related to that position remains inadequate, also in advanced economies.[24]

The literature has so far not established a clear link between fiscal consolidation and structural reforms. On the one hand, a reform-minded government might use the times when it manages to improve its fiscal-structural balance to also undertake reforms in other areas.[25] On the other hand, the political capital might only be sufficient for action in one of the two areas, thus reducing the likelihood of structural reforms during times of fiscal consolidation.[26]

Not many studies look into the effect of interest rates on reform implementation. Dias Da Silva et al. find for some reform areas and specifications that lower short-term interest rates can be associated with a higher likelihood of reform implementation. In other specifications, there is no significant relationship. The significant negative relationship could be read as the anticipated positive effect of lower interest rates on the general government balance (through somewhat lower state financing costs) or on growth and jobs, in turn, offering fiscal policymakers more room for manoeuvre to compensate the part of the population affected by the reforms.[27]

Product market reforms tend to pave the way for labour market reforms.[28] This is in line with the argument that product market reforms improve the conditions for achieving an easing of employment protection legislation as they boost overall employment opportunities by facilitating the entry of new firms.[29] At the same time, product market reforms reduce rents and thereby likely also reduce resistance to labour market reforms.[30]

In addition to domestic determinants, external pressures also increase the structural reform momentum. Financial assistance programmes or the European directives in the context of the Single Market have put pressure on national governments to implement reforms in product markets.[31] Reform intensity has also been higher in the five years before EU accession (perhaps also linked to the incentive to meet the accession criteria), while the contrary holds for the years after accession.[32]

To conclude, these findings suggest that in particular weak initial conditions, an adverse macroeconomic environment and external pressures lead to a stronger reform stance. Moreover, a conducive political environment (e.g. where the ruling party has the majority in all houses and is sufficiently far away from major elections) seems, overall, to facilitate the implementation of

24 See Wyplosz, C., "Large and Unknown Implicit Liabilities: Policy Implications for the Eurozone", Graduate Institute of International Economics and Centre for Economic Policy Research, 2004.

25 Dias Da Silva et al. (op. cit.) find this for some areas.

26 See Duval and Elmeskov, op. cit.

27 See Gordon, R.J., "Macroeconomic Policy in the Presence of Structural Maladjustment", NBER Working Paper No 5739, National Bureau of Economic Research, 1996.

28 See Dias Da Silva et al. (op. cit.).

29 See Høj, J., Galasso, V., Nicoletti, G. and Dang, T.-T., "The Political Economy of Structural Reform: Empirical Evidence from OECD Countries", OECD Economics Department Working Paper No 501, OECD publishing, Paris, 2006, and Blanchard, O. and Giavazzi, F., "Macroeconomic Effects of Regulations and Deregulation in Goods and Labour Markets", *Quarterly Journal of Economics*, Vol. 118, No 3, 2003, pp. 879-907.

30 See Saint-Paul, G., *The Political Economy of Labour Market Institutions*, Oxford University Press, Oxford, 2000.

31 This is similar to the ideas found in Tompson, W. and Price, R., "The Political Economy of Reform: Lessons from Pensions, Product Markets and Labour Markets in Ten OECD Countries", OECD publishing, Paris, 2009, and in Bonfiglioli and Gancia, op. cit.

32 See Dias Da Silva et al. (op. cit.).

structural policies. Furthermore, an accommodative monetary policy is in some studies associated with more implementation of reforms, but the relationship is not always robust. With regard to fiscal policy, the direction of the impact on reform implementation seems to depend on the policy area analysed.

1.3 Financial and monetary developments

In 2017 the euro area financial markets were largely driven by the positive macroeconomic outlook as well as continued monetary policy accommodation provided by the ECB. As a result, money market rates and longer-term bond yields remained at very low levels. Furthermore, equity prices of both banks and non-financial corporations (NFCs) increased significantly as the improved macroeconomic outlook translated into higher earnings expectations and greater risk appetite. Money growth was robust, while the gradual recovery in credit growth continued.

Euro area money market rates stabilised at very low levels

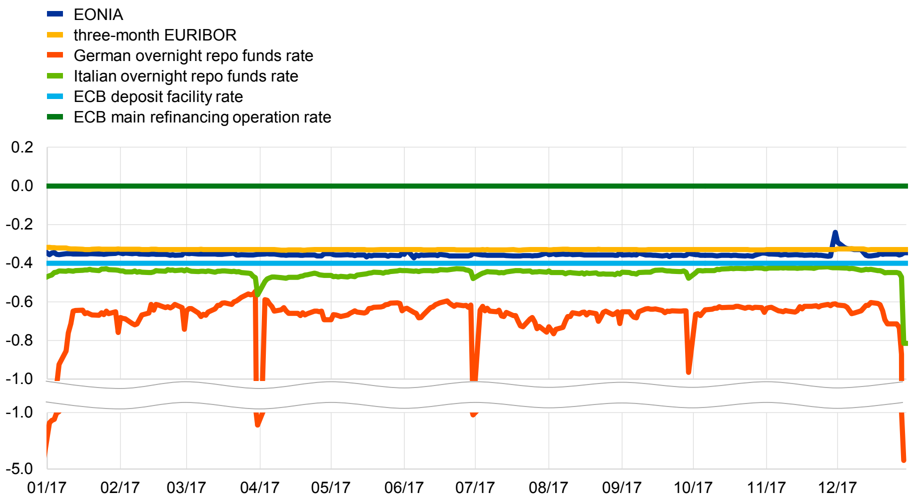
Against the background of unchanged ECB policy rates and continued accommodative monetary policy throughout 2017, money market rates remained exceptionally low.

The euro overnight index average (EONIA) remained stable and averaged around −36 basis points (see Chart 14), while the three-month euro interbank offered rate (EURIBOR) declined slightly and stabilised at around −33 basis points. This was consistent with the upward trend in excess liquidity held by the euro area banking sector resulting from the ECB’s non-standard monetary policy measures. Excess liquidity rose by €600 billion over the year and reached levels around €1,800 billion by the end of 2017 (see also Section 2.3). In the secured money market, repurchase agreement (repo) rates quoted for collateral issued by euro area sovereigns continued to remain at different levels. Some repo rates were close to the level of the ECB’s deposit facility rate, while others stood well below it, reflecting different market conditions in each segment. For instance, strong demand for high-quality collateral was reflected in significant changes in rates at the end of each quarter.

Chart 14

Money market rates

(percentages per annum; daily data)



Sources: ECB and Bloomberg.
Note: The latest observations are for 3 November 2017.

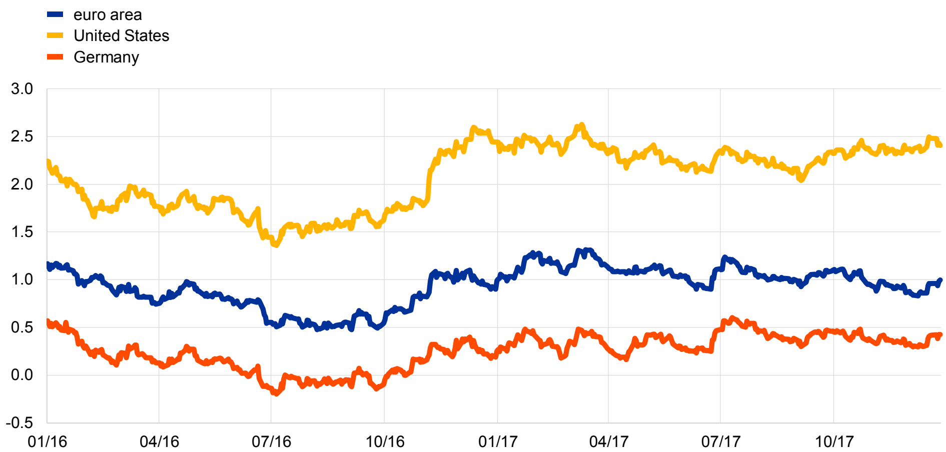
Euro area government bond yields remained broadly stable and equity prices rose significantly

Euro area government bond yields were broadly stable in 2017, albeit higher on average than in 2016, reflecting the net impact of the gradual strengthening of both the domestic and global macroeconomic outlook (see Chart 15), a related pricing out of the risk of deflation, and the continued monetary policy accommodation by the ECB. The euro area GDP-weighted average of ten-year sovereign bond yields stood at 1.0% on 29 December 2017, unchanged from the average level recorded in December 2016. The spread of euro area countries' ten-year sovereign bond yields against the German ten-year Bund yield declined, particularly for Portugal and Greece in the context of the improvement in their credit ratings in the course of 2017.

Chart 15

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 observation is for 29 December 2017.

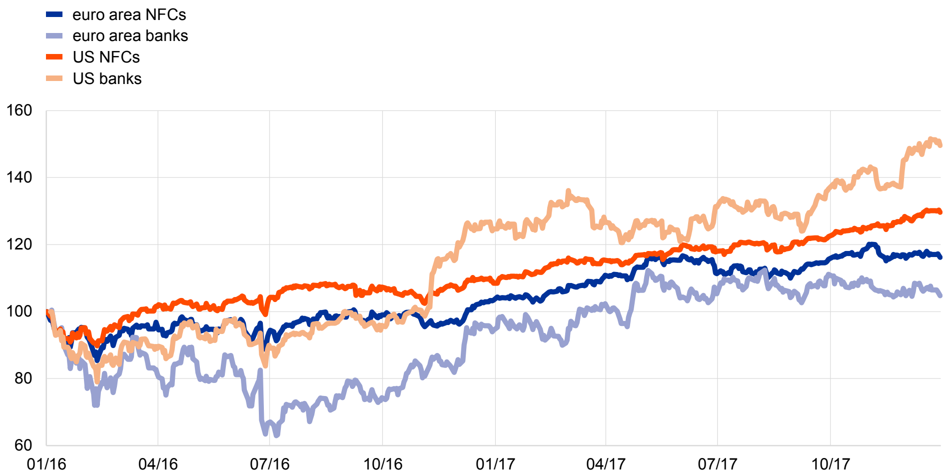
Euro area equity prices increased strongly in 2017, amid improved domestic and global economic growth and the low level of interest rates. More specifically, a broad index for the equity prices of NFCs rose by 12% over the course of 2017, while an index of bank equity prices increased by 14%. Equity prices of NFCs in the United States rose slightly faster than those in the euro area owing to the expected positive impact on earnings of a planned cut in corporate taxes. Nevertheless, in both the United States and the euro area, the equity risk premium[33], which measures the excess return required by investors for holding equity rather than long-term bonds, remained significantly higher than before the onset of the financial crisis in 2008.

[33] For details of the methodology used to calculate the equity risk premium, see the box entitled "Recent drivers of euro area equity prices", *Economic Bulletin*, Issue 5, ECB, 2017.

Chart 16

Equity market indices in the euro area and the United States

(index: 1 Jan. 2016 = 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 observation is for 29 December 2017.

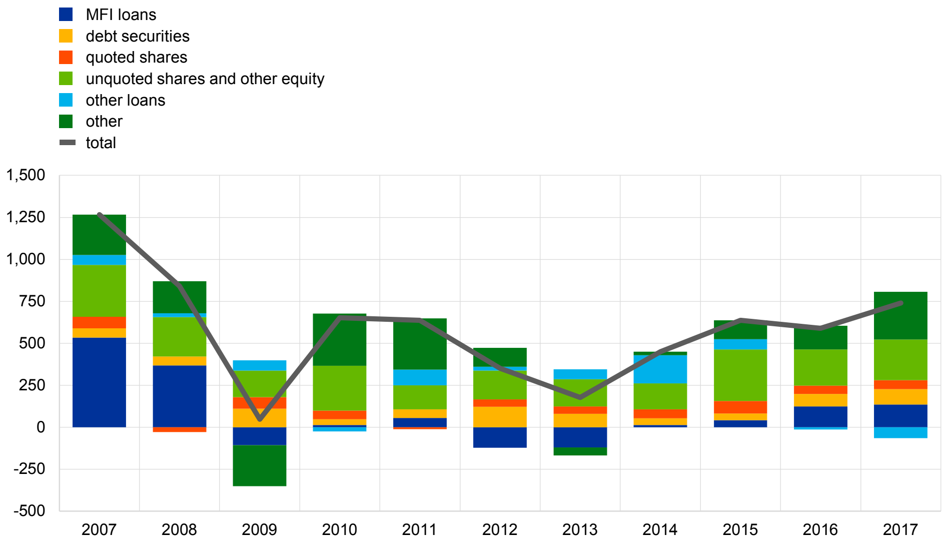
External financing flows of NFCs and households strengthened

Overall, financing conditions continued to be supportive of business investment. In 2017 NFCs' external financing flows strengthened and exceeded the average level recorded in 2016 (see Chart 17). From a longer-term perspective, the recovery in NFCs' external financing flows from the lows reached in the fourth quarter of 2013 has been supported by: (i) favourable financing costs, including an easing of bank lending conditions; (ii) the ongoing expansion of economic activity; and (iii) a large number of mergers and acquisitions. In addition, the ECB's accommodative monetary policy has also contributed to creating favourable conditions for NFCs' access to market-based financing. In particular, the corporate sector purchase programme (CSPP), which was introduced in June 2016, supported the net issuance of debt securities by NFCs (see Section 2.2).

Chart 17

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 and non-MFI loans are corrected for loan sales and securitisations. "Other" is the difference between the total and the instruments listed in the chart. It includes inter-company loans and trade credit. The latest observation is for the third quarter of 2017.

Non-bank financing sources have become significantly more important since the onset of the crisis.[34] While the net flow of monetary financial institution (MFI) loans tended to contract and turned negative in some years during and in the aftermath of the crisis, the flow of finance from other sources (e.g. the issuance of listed and unlisted shares and debt securities) remained positive. The increasing share of non-bank financing in total euro area NFC financing reflects both cyclical and structural factors (see Box 4). That said, the net flow of MFI loans to NFCs has been positive again since 2014.

In terms of stocks, loans continued to be the most important financing instrument provided by the overall euro area financial sector, accounting for about 56% of total loans granted to NFCs in the third quarter of 2017. Listed shares held by the financial sector accounted for about 29% of total listed shares issued by NFCs, which was a slightly higher share than in 2013. Debt securities held by the financial sector (excluding the Eurosystem) represented about 68% of total debt securities issued by NFCs in the third quarter of 2017, which was also slightly higher than in 2013. MFIs remained the most important providers of loan financing to NFCs, providing about 73% of the NFC loans held in the third quarter of 2017 by the overall financial sector, although this share was somewhat lower than in 2013.[35]

The annual growth rate of total loans to households also strengthened in 2017 and was driven in particular by bank loans. In terms of separate bank loan components,

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[34] For more details, see the article entitled "The role of euro area non-monetary financial institutions in financial intermediation", *Economic Bulletin*, Issue 4, ECB, 2016.

[35] For more details, see Section 1.2 of Report on financial structures, ECB, October 2017.

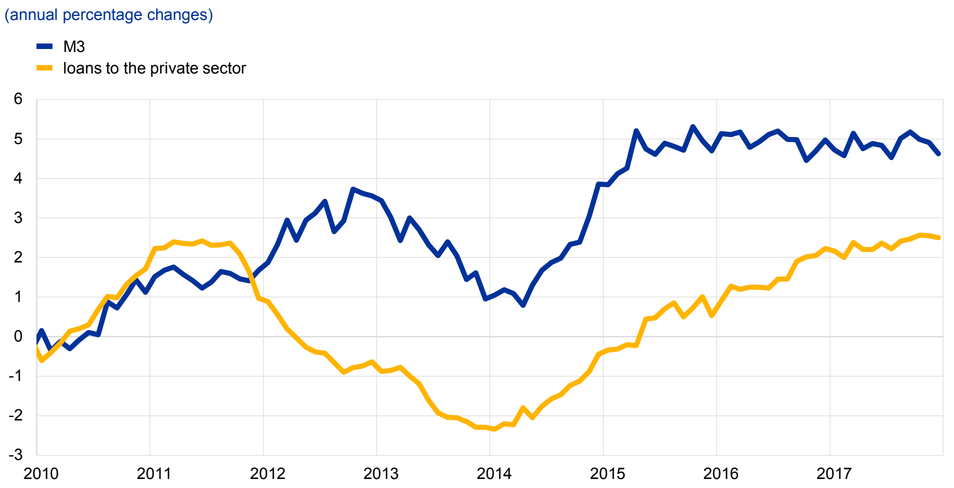
loans for house purchase remained by far the most significant contributor to overall household loan growth. At the same time, consumer loan growth gained momentum, while other lending contracted.

In addition, in the first three quarters of 2017 the net wealth of households grew at a robust pace. In particular, continuous house price increases resulted in significant valuation gains on households' real estate holdings (see Box 6). The increase in share prices in 2017 also led to gains in the value of households' financial asset holdings and made a significant positive contribution to net wealth growth. Household gross indebtedness – measured as a percentage of household nominal gross disposable income – continued to decline in 2017, but still stood well above its average pre-crisis level.

Money growth remained broadly stable

In 2017 broad money growth remained robust (see Chart 18). In December 2017 annual M3 growth stood at 4.6%, compared with 5.0% at the end of 2016. Broad money growth observed in 2017 was in line with the steady pace of monetary expansion since mid-2015. Growth in M3 continued to be driven by its most liquid components, given the low opportunity cost of holding liquid deposits in an environment characterised by very low interest rates and a flat yield curve. The ongoing expansion in economic activity and the ECB's non-standard measures, especially its asset purchase programme (APP), were additional important drivers of monetary developments in the euro area. Growth in M1, which benefited from the elevated growth of overnight deposits held by both households and NFCs, remained broadly unchanged at 8.6% in December 2017, compared with 8.8% in December 2016.

Chart 18
M3 and loans to the private sector



Source: ECB.

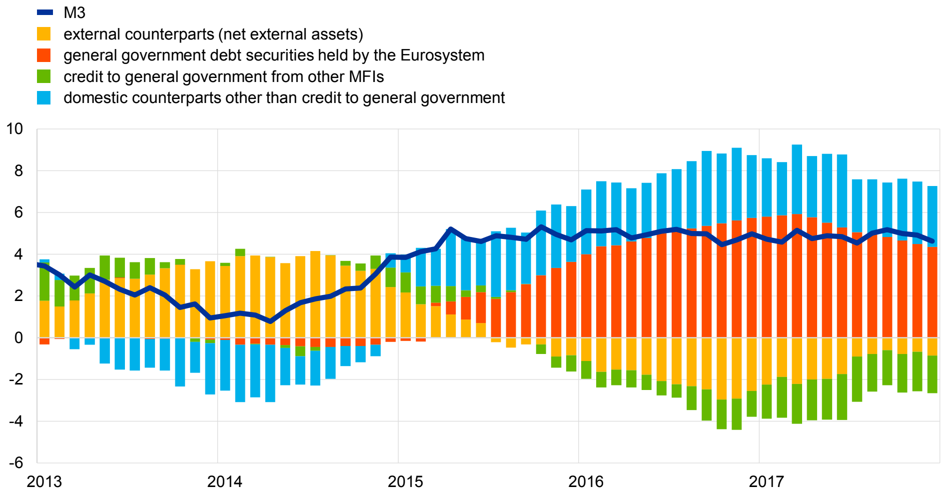
Domestic counterparts remained the main driver of broad money growth

Eurosystem purchases of government bonds (see the red bars in Chart 19), conducted mainly in the context of the public sector purchase programme, contributed positively to M3 growth. As of April 2017 average monthly APP purchases were scaled back by €20 billion, leading to a decrease in the impact of these purchases on M3 growth. Furthermore, domestic counterparts other than credit to general government exerted a positive impact on M3 growth during 2017 (see the blue bars in Chart 19). Two factors contributed to this. First, the ongoing recovery in credit to the private sector (see Chart 18) had a positive impact on M3 growth. This item includes both MFI loans to the private sector and MFI holdings of securities issued by the euro area non-MFI private sector. The latter also include the Eurosystem's purchases of non-MFI debt securities under the CSPP. Second, the persistent contraction in MFIs' longer-term financial liabilities (excluding capital and reserves), which are included in domestic counterparts other than credit to general government, supported M3 growth. The annual rate of change of such liabilities has been negative since the second quarter of 2012, partly owing to the impact of the ECB's targeted longer-term refinancing operations, which may have acted as a substitute for longer-term market-based funding. This development was also explained by the relatively flat yield curve, linked to the ECB's monetary policy measures, which made it less favourable for investors to hold long-term deposits and bank bonds. By contrast, government bond sales by euro area MFIs excluding the Eurosystem contributed to the negative annual rate of change in credit to general government by MFIs excluding the Eurosystem and thus dampened M3 growth (see the green bars in Chart 19). In addition, MFIs' net external assets continued to weigh on annual M3 growth (see the yellow bars in Chart 19).

Chart 19

M3 and its counterparts

(annual percentage changes; percentage point contributions)



Source: ECB.
Note: "Domestic counterparts other than credit to general government" include MFIs' longer-term financial liabilities (including capital and reserves), MFI credit to the private sector and other counterparts.

Box 4
The structural dimension of the financing of non-financial corporations and households in the euro area

The funding structure of the non-financial private sector plays a central role in the transmission of monetary policy to the real economy and in the latter's resilience to shocks. Unlike in the United States, where market-based financing plays a dominant role, the euro area non-financial private sector has relied mostly on banks when financing its expenditures.

The share of bank (or MFI) loans in the total stock of external financing of non-financial corporations (NFCs) has declined significantly in the euro area since 2007. In terms of stocks, bank loans formed 12.4% of NFC external financing in the third quarter of 2017 (see Table A), which is 4.1 percentage points lower than in 2007.[36] At the same time, the share of bank loans in NFC debt financing stood at 27.7% in the third quarter of 2017, which was 9.2 percentage points lower than in 2007.[37] The share of bank loans in NFC external financing and debt financing and the decrease in this share are significantly higher when intra-sectoral financing is excluded. Under this metric, the share of bank loans stood at 44.9% of NFC debt financing in 2017, down from 59.5% in 2007. The decline in bank financing for NFCs between 2007 and 2017 was primarily driven by developments in the financing structure of large enterprises. By contrast, small and medium-sized enterprises, which form the backbone of the euro area economy, continue to be financed mainly via bank credit. Debt securities issued by NFCs, loans from non-MFIs and loans from the rest of the world accounted together for 13.0% of the external financing and 29.2% of the debt financing of NFCs in the third quarter of 2017. Compared with 2007, their shares in NFC external financing and debt financing have increased by 4.0 and 9.1 percentage points, respectively. Loans from non-MFIs and the rest of the world include, inter alia, loans granted by financing special-purpose entities (SPEs) to their parent companies, financed by the issuance of debt securities by these subsidiaries.[38] Listed shares, unlisted shares and other equity issued by NFCs represented, in turn, 55.4% of NFC external financing in the third quarter of 2017. Their combined share is broadly unchanged from 2007 as the downward impact of the lower level of stock prices is offset by net issuance of shares and an increase in retained earnings during the crisis.[39]

36 Total external financing includes debt financing and equity financing of NFCs.

37 Debt financing is defined as total liabilities net of listed shares, unlisted shares and other equity issued.

38 Financing SPEs are typically resident in a different euro area country from the parent company or outside the euro area to benefit from a favourable tax regime and financial technology.

39 Retained earnings are classified as non-financial transactions in the sectoral accounts. As in business accounting, they are recorded as internal financing (not as financial transactions). The market value of the outstanding amounts of equity issued by NFCs might, however, increase via revaluations owing to the strengthening of NFC balance sheets.

Table A
The balance sheet structure of euro area non-financial corporations

(percentages of outstanding amounts of total liabilities)

	2007		2017		Change between 2007 and 2017	
	Total	Net of intra-sectoral financing	Total	Net of intra-sectoral financing	Total	Net of intra-sectoral financing
Loans from MFIs	16.5	19.9	12.4	14.9	-4.1	-5.0
Debt securities issued	2.5	3.0	4.1	5.0	1.6	1.9
Listed shares issued	19.7	23.7	17.9	21.6	-1.8	-2.1
Loans from non-MFIs	2.5	3.1	4.6	5.5	2.0	2.4
Loans from the rest of the world	3.9	4.7	4.4	5.2	0.4	0.5
Unlisted shares and other equity issued	35.6	42.8	37.5	45.2	1.9	2.4
Intra-sectoral financing	16.9	-	17.0	-	0.1	-
Other	2.3	2.7	2.2	2.6	-0.1	-0.1
Total	100.0	100.0	100.0	100.0	0.0	0.0
Memorandum item: shares in total debt financing						
Loans from MFIs	37.0	59.5	27.7	44.9	-9.2	-14.6
Debt securities issued	5.6	9.1	9.3	15.0	3.6	5.9
Loans from non-MFIs	5.7	9.2	10.2	16.5	4.5	7.4
Loans from the rest of the world	8.8	14.1	9.8	15.8	1.0	1.7
Intra-sectoral financing	37.8	-	38.2	-	0.4	-
Other	5.1	8.2	4.8	7.8	-0.3	-0.4
Total	100.0	100.0	100.0	100.0	0.0	0.0

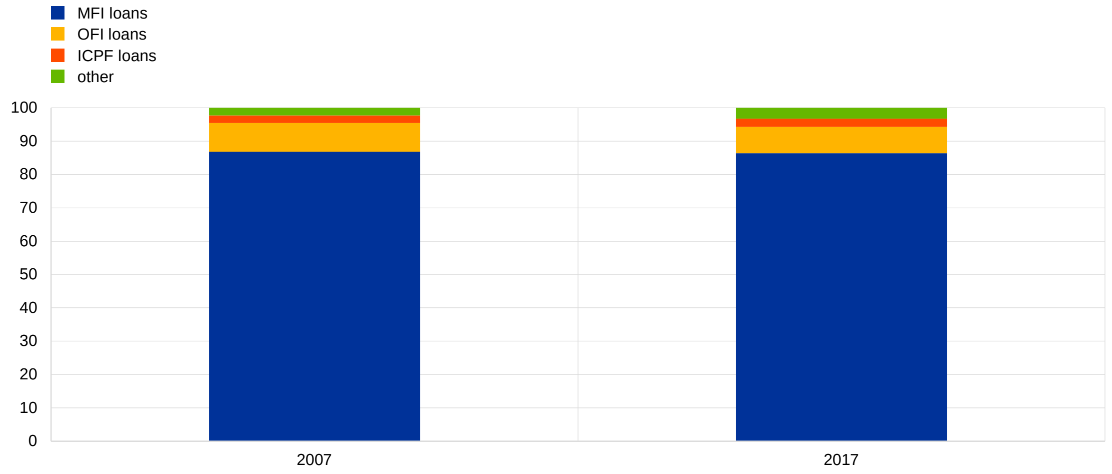
Source: ECB and ECB calculations.
Notes: The latest observation is for the third quarter of 2017. Total liabilities of NFCs include from other accounts payable only trade credit. In the national accounts, total liabilities include equity at market value. “Loans from non-MFIs” include loans granted by other financial institutions (OFIs) and insurance corporations and pension funds (ICPFs) to NFCs. “Intra-sectoral financing” includes inter-company loans and trade credit. “Other” refers to the difference between the total and the instruments included in the table. Total debt financing is defined as total financing net of listed shares and unlisted shares and other equity issued.

The shares of bank and OFI loans in total loans to euro area households have remained practically unchanged over the past ten years. In terms of stocks, bank loans and OFI loans formed 86.4% and 7.9% of total loans granted to households in the third quarter of 2017, respectively (see Chart A). The majority of bank loans to households (75.3% of all bank loans to the household sector) are for house purchase. The rest is accounted for by consumer credit (i.e. loans for personal consumption of goods and services), and by the residual category “other loans to households” (e.g. loans to family businesses, loans for educational purposes). They comprise 11.7% and 13.0% of total bank loans granted to households. Reflecting their composition by purpose, the large majority of bank loans to euro area households have a longer-term maturity. Other financing sources are loans from OFIs and ICPFs. OFIs include, for example, non-banks specialised in consumer credit and financial vehicle corporations (FVCs) involved in securitising mortgage and consumer loans originated by banks, while ICPFs provide housing loans. However, these institutions play a quantitatively relevant role in providing financing to households in only a small number of euro area countries.

Chart A

The balance sheet structure of euro area households

(percentages of outstanding amounts of total loans granted)



Source: ECB and ECB calculations.
Notes: The latest observation is for the third quarter of 2017. “Other” refers to the difference between the total and the creditor sectors included in the chart.

The increasing share of non-bank financing in total euro area NFC external financing since 2008 reflects both cyclical and structural factors. In the past, firms relied primarily on bank lending for their new external financing.[40] The net flow of finance from banks to firms contracted in the euro area at the height of the Great Recession and of the euro area financial and sovereign debt crisis, before recovering gradually (see Chart B). The decline in bank lending reflected both demand and supply factors. The contraction of economic activity and the need to repair balance sheets reduced loan demand by NFCs, while the deterioration in the debt servicing capacity of firms and balance sheets of banks led to the tightening of credit standards and a decline in loan supply.[41] Moreover, NFCs increased their net issuance of debt securities during the crisis to compensate for the decline in the availability of bank loans and, more recently, to benefit from the favourable market financing conditions supported by the ECB’s corporate sector purchase programme. Lending from OFIs to firms has also increased, mirroring an increase in loans granted by financing SPEs to their parent companies. At the same time, NFCs increased their recourse to trade credit and intra-sectoral loans and financed a larger share of their activities with internally generated funds and higher retained earnings to mitigate the negative impact of lower credit supply on the availability of external debt financing. Overall, since the onset of the crisis, non-bank financing sources have become significantly more important.

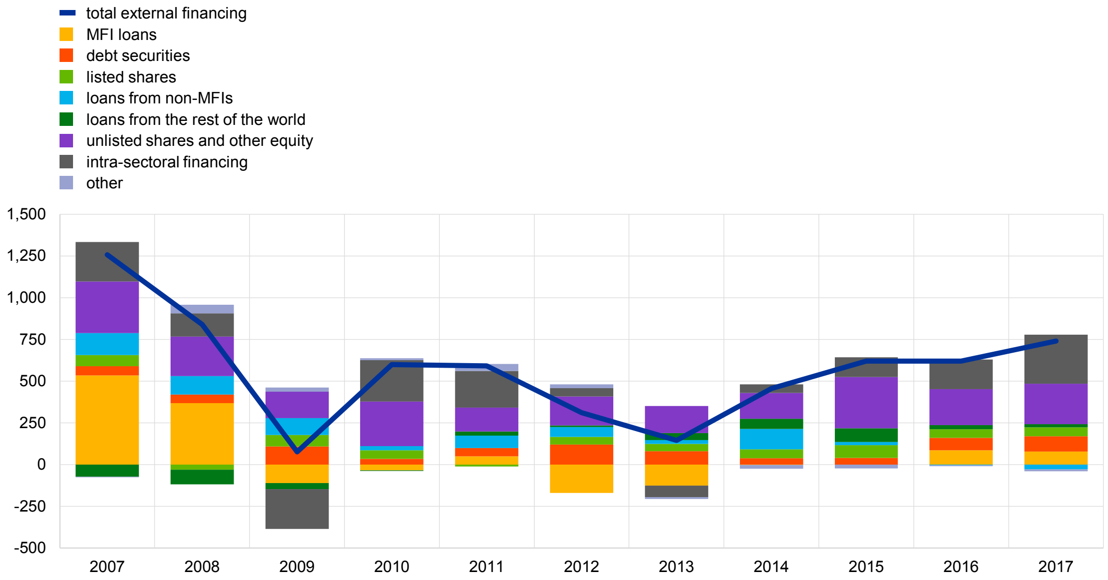
[40] See also the box entitled “Trends in the external financing structure of euro area non-financial corporations”, *Economic Bulletin*, Issue 5, ECB, 2016.

[41] See also the article entitled “The role of euro area non-monetary financial institutions in financial intermediation”, *Economic Bulletin*, Issue 4, ECB, 2016.

Chart B

External financing of euro area non-financial corporations by instrument

(annual flows; EUR billions)



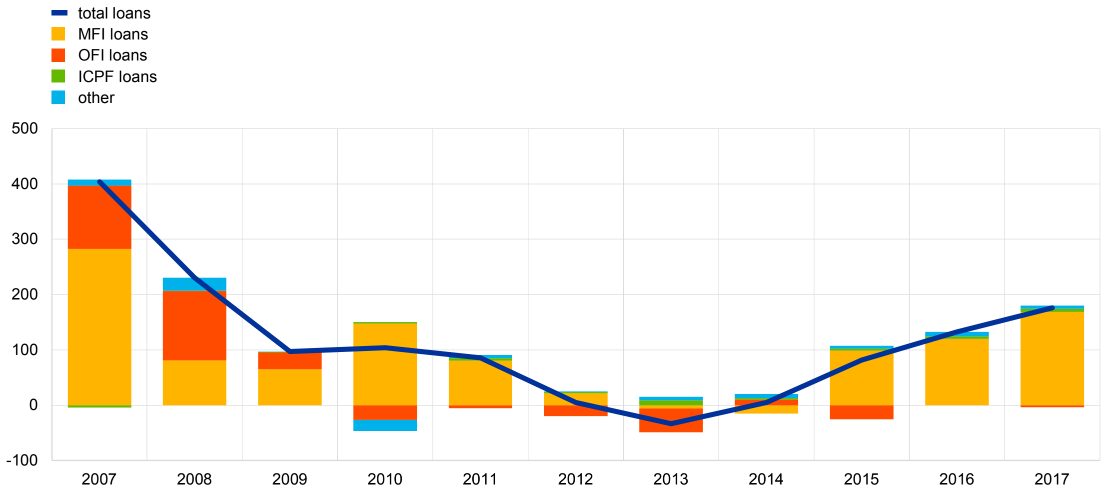
Source: ECB and ECB calculations.
Notes: The latest observation is for the third quarter of 2017. Total financing of NFCs includes from other accounts payable only trade credit. “Loans from non-MFIs” include loans granted by OFIs and ICPFs to NFCs. “Intra-sectoral financing” includes inter-company loans and trade credit. “Other” refers to the difference between the total and the instruments included in the chart.

The euro area household sector continues to finance its purchases of real estate and consumer durables mostly with bank loans and, unlike the enterprise sector, it has not shifted towards other financing sources. Total loans granted to households moderated in the euro area when the Great Recession erupted and turned negative in the aftermath of the euro area financial and sovereign debt crisis. Similarly to NFCs, the crisis resulted in a decline in bank lending to households (see Chart C), which reflected demand and supply factors. At the same time, the contraction in OFI loans to households was stronger than that in bank lending and, in contrast to bank loans, OFI loans have not recovered since the crisis. This mainly reflected two factors. First, the credit growth necessary for banks to sustain the securitisation of loans, which was behind a major part of OFI loans to households, evaporated. Second, the prominent role of FVCs in the financial market turmoil and regulatory changes led to a decline in the demand for and supply of securitised products.

Chart C

The provision of loans to euro area households by creditor sector

(annual flows; EUR billions)



Source: ECB and ECB calculations.
Notes: The latest observation is for the third quarter of 2017. “Other” refers to the difference between the total and the creditor sectors included in the chart.

Overall, a stronger role of non-bank financing sources in the external financing of NFCs may accelerate monetary policy transmission. In particular, some non-MFIs may adjust their risk exposures more flexibly than banks in response to changes in the business and financial cycles. However, it remains to be seen whether the current trend towards a more market-based financing pattern for the real economy will continue once bank lending has fully recovered. At the same time, a greater diversification of financing sources for firms may have left them less vulnerable to any future reduction in bank loan supply or in the availability of market-based sources of financing. By contrast, households remain dependent on bank lending in their external financing as financing from other sources remains limited.

2 Monetary policy: patience, persistence and prudence

The monetary policy measures taken by the ECB over recent years have been aimed at supporting the euro area economic recovery and a return of inflation to a level that is below, but close to, 2% over the medium term, consistent with price stability. These measures have effectively passed through to the funding conditions of households and firms. During 2017 the Eurosystem’s balance sheet continued to expand, primarily owing to the ongoing asset purchase programme (APP) and targeted longer-term refinancing operations.

2.1 The monetary policy stance: very substantial accommodation

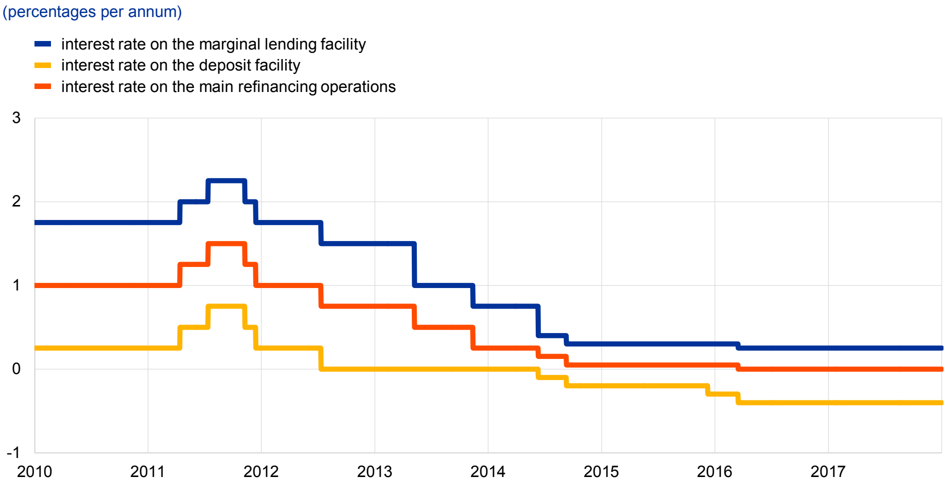
The economic recovery continued to firm up at the start of the year, but subdued underlying inflation called for steady policy

Following the decisions taken by the Governing Council in December 2016, the ECB's monetary policy measures continued to pass through effectively to market funding and credit conditions for euro area firms and households (see Section 2.2).[42] While overall the risks to the economic outlook became less pronounced at the start of the year, they remained tilted to the downside and related primarily to the global environment, political uncertainties and continued balance sheet weaknesses in some sectors. In addition, the prospect of an upward trend in inflation still depended on the prevailing very favourable financing conditions, which, to a large extent, were conditional on the accommodative monetary policy stance.

A cross-check of the outcome of the economic analysis with signals coming from the monetary analysis confirmed that a very substantial degree of monetary accommodation was necessary for euro area inflationary pressures to build up in a durable and self-sustained manner, despite the increasing resilience of the economic recovery. This called for a steady-hand policy by the Governing Council, reaffirming the decisions taken at its December 2016 monetary policy meeting. This entailed keeping the key ECB interest rates unchanged (see Chart 20) and confirming both the intended pace and horizon of APP purchases as well as the Governing Council's forward guidance on policy rates and the APP.

[42] In December 2016 the Governing Council decided to adjust the parameters of the APP as of January 2017 to ensure its continued smooth implementation and to accept limited amounts of cash collateral for the public sector purchase programme (PSPP) securities lending facilities to support euro area repo market liquidity and functioning. The changes to the APP parameters consisted of decreasing the minimum remaining maturity of securities eligible for the PSPP from two years to one year and permitting purchases of securities with a yield to maturity below the interest rate on the ECB's deposit facility to the extent necessary.

Chart 20
Key ECB interest rates



Source: ECB.
Note: The latest observation is for 31 December 2017.

Forward guidance evolved in response to an improved risk assessment and a diminished likelihood of adverse contingencies

By mid-2017 the economic recovery had strengthened further and output growth was projected to expand at a somewhat faster pace than previously expected while broadening across countries and sectors. Accordingly, in June 2017 the Governing Council changed its assessment of the risks to the growth outlook to being broadly balanced. In view of the more resilient and robust growth dynamics, downside tail risks to the price stability outlook had also diminished, whereby the probability of very adverse scenarios, such as those related to deflationary risks, had largely vanished.

To align its communication with the improved risk assessment, the Governing Council decided in June 2017 to remove the reference to further rate cuts from its forward guidance on the expected path of the key ECB interest rates, which had been signalling a potential policy response to very severe contingencies. At the same time, however, the Governing Council emphasised that patience was needed for inflationary pressures to gradually build up. It also reiterated its commitment to be persistent with its policy measures in order to preserve the very substantial degree of monetary accommodation still needed for a sustained adjustment in inflation to materialise.

The provision of forward guidance on both the level of policy rates and the pace of asset purchases generally reflects the importance of the interaction of individual policy tools in affecting the stance of monetary policy. Indeed, the different elements of the comprehensive package of monetary policy measures complement and reinforce each other in preserving the very accommodative financing conditions needed to support a sustainable return of inflation to levels below, but close to, 2%

over the medium term. In this respect, the forward guidance provided by the Governing Council in 2017 related not only to the conditions under which stimulus measures would be withdrawn, but also to the sequencing of changes in policy measures.

Monetary policy measures were recalibrated in October, while preserving very favourable financing conditions

Incoming information during the third quarter of 2017, including the September ECB staff macroeconomic projections, continued to signal a solid and broad-based economic expansion across countries and sectors. The unabated growth momentum further supported the Governing Council’s confidence that inflation would gradually head towards a medium-term level of below, but close to, 2%, provided that very favourable financing conditions were preserved. At the same time, inflation developments continued to be subdued and measures of underlying inflation had yet to show more convincing signs of a sustained upward trend. The subdued inflation developments could be considered indicative of the still sizeable degree of slack in product and labour markets, despite somewhat increased wage growth. Hence, prudence suggested that an ample degree of monetary stimulus was still required to secure a sustained adjustment in inflation, thereby warranting a recalibration of the monetary policy instruments beyond the year-end.

Accordingly, the Governing Council took a number of decisions in pursuit of its price stability objective in October 2017.

- First, it reiterated that the key ECB interest rates were expected to remain at their present levels for an extended period of time, and well past the horizon of net asset purchases.
- Second, the improved economic outlook and growing confidence in inflation convergence allowed the Governing Council to scale down the intensity of the APP. Purchases would continue at a monthly pace of €30 billion from January 2018 until the end of September 2018, or beyond, if necessary, and in any case until it saw a sustained adjustment in the path of inflation. In addition, the Governing Council restated its commitment to increase the APP in terms of size and/or duration if the outlook were to become less favourable, or if financial conditions were to become inconsistent with further progress towards a sustained adjustment in inflation.
- Third, it announced that reinvestments of the principal payments from maturing securities purchased under the APP would continue for an extended period of time after the end of net asset purchases, and in any case for as long as necessary. Preserving the size of the stock of purchased assets would contribute to maintaining both the favourable liquidity conditions and an appropriate monetary policy stance.
- Fourth, the fixed rate full allotment tender procedures for refinancing operations were extended at least until the end of the last reserve maintenance period of

2019 to ensure the continued smooth implementation of monetary policy, while also safeguarding favourable conditions in euro area money markets.

The continued sizeable monetary support provided by the additional net asset purchases, by the large stock of acquired assets and the forthcoming reinvestments, and by the forward guidance on interest rates, would preserve the very favourable financing conditions still needed to support a sustained return of inflation towards a medium-term level that is below, but close to, 2%, consistent with price stability.

Box 5
Euro area money market benchmarks: recent developments

Financial benchmarks can be defined broadly as indices used as a reference to determine the amount payable under a financial instrument or contract, or the value of a financial instrument. One of the most widely used money market benchmarks worldwide is LIBOR (London interbank offered rate), while the most widely used in Europe are EURIBOR (euro interbank offered rate) and EONIA (euro overnight index average). These benchmarks are determined based on the voluntary contributions from panels of banks in the form of expert judgement on the prevailing market pricing ("quotes") in the case of EURIBOR or based on effective transactions in the case of EONIA.

Over recent years the ECB has closely followed and played an active role in the reform of benchmark rates, as sound benchmarks are necessary for the efficient functioning of the financial system and the transmission of monetary policy. Financial markets rely heavily on benchmarks as a reference in financial contracts, for example mortgage loans, floating rate securities or derivative instruments. Benchmarks are also at the core of the daily valuation for a number of financial instruments. As a consequence, failure to maintain robust and reliable benchmarks might trigger market disruptions, with possibly significant implications for financial stability.

Benchmark rates in the euro area, and elsewhere, have been undergoing in-depth reforms. These reforms have been guided largely by a set of principles issued by the International Organization of Securities Commissions (IOSCO) in 2013 as a response to the scandals related to the manipulation of LIBOR, but also by the adoption of the EU Benchmarks Regulation. In Europe, the most widely used benchmarks, EURIBOR and EONIA, are both undergoing reforms initiated by their administrator, the European Money Markets Institute (EMMI). As a result of those reforms, market practices and contracts might need to be adapted to a new environment in the years to come.

As regards EURIBOR, which is the interbank unsecured benchmark in euro published for maturities ranging from 1 week to 12 months, EMMI has put forward plans to anchor its methodology in transactions rather than quotes. At the beginning of 2017 a test failed to ascertain the feasibility of a fully transaction-based methodology owing to insufficient money market volumes. For that reason, EMMI is now working with market participants on a possible hybrid methodology for EURIBOR which would combine transaction data with expert judgement. The development of the hybrid methodology and the impact assessment should take until the first half of 2018 and would be followed by a stakeholder consultation. In the meantime, the current quote-based methodology will continue to be used to calculate EURIBOR.

As regards EONIA, which is an overnight fully transaction-based interbank unsecured benchmark, EMMI announced on 1 February 2018, following a study on the unsecured money market, that pursuing a thorough EONIA review was no longer appropriate as interbank lending volumes were low while activity remained concentrated. EMMI also highlighted that should market conditions remain unchanged, the compliance of the benchmark with the EU Benchmarks Regulation would not be warranted. Still, EMMI pointed out that it could assess the possibility of adapting methodological parameters with the intention of enhancing EONIA's robustness if necessary.

The robustness of both EURIBOR and EONIA, which rely on the voluntary contributions of banks, is becoming a growing source of concern as the support of the contributing banks has been declining over time. These banks are expected to report daily either quotes based on expert judgement (in the case of EURIBOR) or their overnight unsecured interbank lending transactions (in the case of EONIA). However, recently several banks have left one or the other panel, citing as the main reason for their departure that the reform process is overburdening their procedures. Involvement in benchmarks also carries liability and reputational risks.

The EU Benchmarks Regulation may only provide a temporary backstop, should banks continue leaving the contributor panels. Special provisions of the Regulation apply to benchmarks such as EURIBOR and EONIA that are designated as "critical"[43]. Notably the regulator, which in the case of EONIA and EURIBOR is the Belgian Financial Services and Markets Authority, can require mandatory contributions to the benchmark if its representativeness is threatened, e.g. by the departure of panel banks. While this mechanism might provide a backstop solution, its application is limited to a maximum two-year period, and hence cannot be considered a long-term solution if the viability of such a benchmark is threatened.

In view of how important it is for markets to have robust and reliable benchmarks, on 21 September 2017 the ECB announced that it will publish an overnight unsecured rate before 2020 on the basis of data collected under the Money Market Statistical Reporting Regulation. The interest rate would complement existing benchmark rates produced by the private sector and serve as a backstop reference rate. Over the next two years the ECB will define the high-level features of the interest rate, develop the calculation methodology and test the robustness of the rate. During this time the ECB will engage in transparent communication involving public consultations. The first public consultation was launched on 28 November 2017 with the aim to collect views of stakeholders regarding the main features of the rate and its publication time.

A separate initiative has also been launched in the euro money market, where a newly established working group on euro risk-free rates will provide a platform for the private sector to discuss fallback rates and issues related to the transition to possible alternative euro short-term rates. The work of this group is aimed at following up on the recommendation of the Financial Stability Board's Official Sector Steering Group of July 2014 to identify and adopt one or more risk-free rates in each main currency area. The working group will be composed of private sector entities and chaired by a representative of the private sector. It will be supported by public authorities and its secretariat will be provided by the ECB[44].

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[43] On 11 August 2016 and 28 June 2017, respectively, EURIBOR and EONIA were designated as "critical benchmarks'' by the European Commission under the Benchmarks Regulation in the light of their crucial importance for markets and the high number of contracts using them as a reference.

[44] The terms of reference of the working group as well as additional information can be found on the ECB's website.

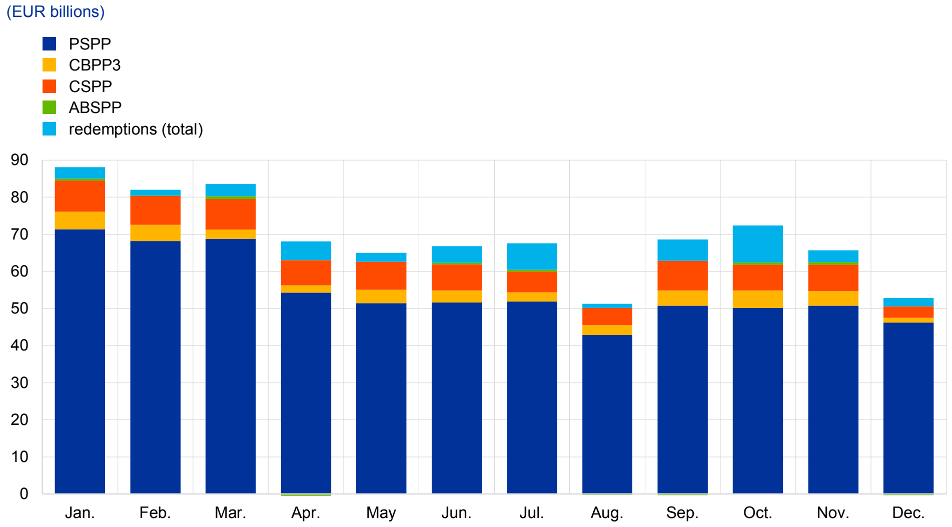
2.2 The effective pass-through of the ECB's monetary policy measures

The pass-through of the monetary policy measures implemented since June 2014 continued to support borrowing conditions for firms and households, and strengthened credit flows across the euro area in 2017. The ongoing asset purchases under the APP, the unchanged low policy rates, the forward guidance on these two instruments, as well as the targeted longer-term refinancing operations (TLTROs), secured very favourable financing conditions and remained a key factor behind the strengthening of the economic recovery in the euro area.

The implementation of the APP proceeded smoothly, both in the private sector purchase programmes, encompassing the asset-backed securities purchase programme (ABSPP), the corporate sector purchase programme (CSPP) and the third covered bond purchase programme (CBPP3), as well as in the public sector purchase programme (PSPP). The latter pertains to bonds issued by euro area central governments, regional governments, agencies and supranational entities. Purchase volumes were, on average, in line with the monthly targets set by the Governing Council, running at €80 billion per month from January to March and at €60 billion per month from April to December (see Chart 21). Owing to seasonal fluctuations in market liquidity, purchase volumes were below the monthly target in August and December, but this was offset by slightly higher purchase volumes during the rest of the year. At the individual country level, monthly purchase volumes also varied slightly owing to the increasing relevance of the reinvestment of maturing bond redemptions, which started in March 2017 for securities purchased under the PSPP. Overall, monthly purchases deviated only marginally from the target volumes in relative terms. The stock of PSPP holdings, as the relevant metric to assess the distribution of purchase volumes, remained closely in line with the intended capital key-based allocation, taking into account substitute purchases and the smoothing of reinvestments of maturing bonds.

Chart 21

Monthly net asset purchases and redemptions under the APP in 2017



Source: ECB.
Notes: Monthly net purchases at book value; monthly actual redemption amounts. Principal redemptions on securities purchased under the PSPP are reinvested by the Eurosystem in a flexible and timely manner in the month they fall due on a best-efforts basis, or in the subsequent two months if warranted by market liquidity conditions.

The last TLTRO-II operation, which was settled in March 2017, saw a gross take-up of €233.5 billion, which implied a net liquidity increase of €204 billion.[45] In all of the TLTRO-II operations (TLTRO-II.1 to TLTRO-II.4), euro area banks borrowed a total of €740.2 billion, or 62% of a total borrowing allowance of €1,200 billion.

The monetary policy measures have an impact on the economy via three transmission channels: the signalling channel, the portfolio rebalancing channel, and the direct pass-through channel.[46] First, the APP has supported the credibility of the ECB's forward guidance concerning its expectation to keep key interest rates at present levels for an extended period of time. The negative deposit facility rate has reinforced the effect of the APP on the entire yield curve by reducing the expectations component of longer-term interest rates. Second, the APP has induced investors to rebalance their portfolios towards riskier market segments. The ongoing asset purchases have replaced holdings of medium and long-term bonds with central bank reserves, held by the banking sector, which implies a reduction of investors' duration risk (see Section 2.3). The accompanying reduction in term premia creates incentives to allocate investments to other assets, such as loans to households and companies. This ensures a transmission of the monetary policy measures also to borrowers without direct access to capital markets. Finally, the TLTROs are effective

45 The gross amount was allotted to 474 banks. The bid limit, which corresponds to the allowance minus the take-up in previous TLTROs, was €693 billion. The utilisation rate, which is the ratio of the take-up at the TLTRO-II.4 operation in March 2017 to the bid limit, was 34%. The net liquidity impact is calculated taking into account voluntary TLTRO-I repayments and the decline in main refinancing operation bids as a consequence of shifts into the TLTRO. See also the box entitled "The targeted longer-term refinancing operations: an overview of the take-up and their impact on bank intermediation", *Economic Bulletin*, Issue 3, ECB, 2017.

46 For a more detailed review of the three main transmission channels, see the box entitled "Impact of the ECB's non-standard measures on financing conditions: taking stock of recent evidence", *Economic Bulletin*, Issue 2, ECB, 2017.

via a direct pass-through mechanism. The interest rates that banks need to pay on these funds are dependent on extending loans to firms and households, ensuring that the favourable financing conditions are passed on. Furthermore, the additional net liquidity has helped reduce the marginal funding costs of participating banks.

Together, the monetary policy measures introduced by the ECB since June 2014 have had a substantial positive impact on economic performance in the euro area. The overall impact on euro area real GDP growth and euro area inflation is estimated to be – in both cases – around 1.9 percentage points cumulatively between 2016 and 2020.[47]

The ECB's measures kept financing conditions very favourable

The monetary policy measures have anchored market rates at low levels. Euro area short-term money market rates as well as longer-term government bond yields were relatively stable throughout the year (see Section 1.3). These conditions were passed on to the financing conditions in the wider economy via the three transmission channels outlined above.

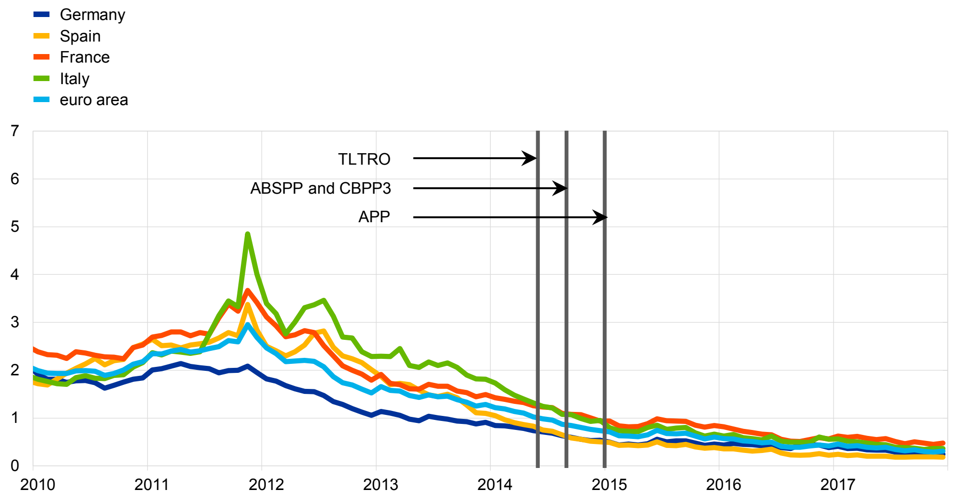
Banks' funding costs remained very favourable throughout 2017, significantly below the levels prior to the launch of the ECB's credit easing package in June 2014 (see Chart 22). Spreads on bonds issued by euro area banks continued to compress significantly (see Chart 23). The latter development was supported by the last TLTRO-II operation in March, through which banks were able to replace some of their market funding with TLTRO funding. Together, these developments continued to reduce banks' overall funding costs and led to a reduction of funding cost heterogeneity across banks located in different euro area countries.

[47] See Draghi, M., "The state and prospects of the euro area recovery", speech at the European Banking Congress, Frankfurt, 18 November 2016. See also Gambetti, L. and Musso, A., "The macroeconomic impact of the ECB's expanded asset purchase programme (APP)", *Working Paper Series*, No 2075, ECB, June 2017, which finds a significant impact of the APP on both real GDP (0.18 percentage point in the first quarter of 2015 and becoming very small by the fourth quarter of 2016) and HICP inflation (increasing from a very small impact in the first quarter of 2015 to 0.18 percentage point by the end of 2015 and 0.36 percentage point by the fourth quarter of 2016), compared with a counterfactual situation without these policy measures.

Chart 22

Composite cost of debt financing for banks

(composite cost of deposit and unsecured market debt funding; percentages per annum)

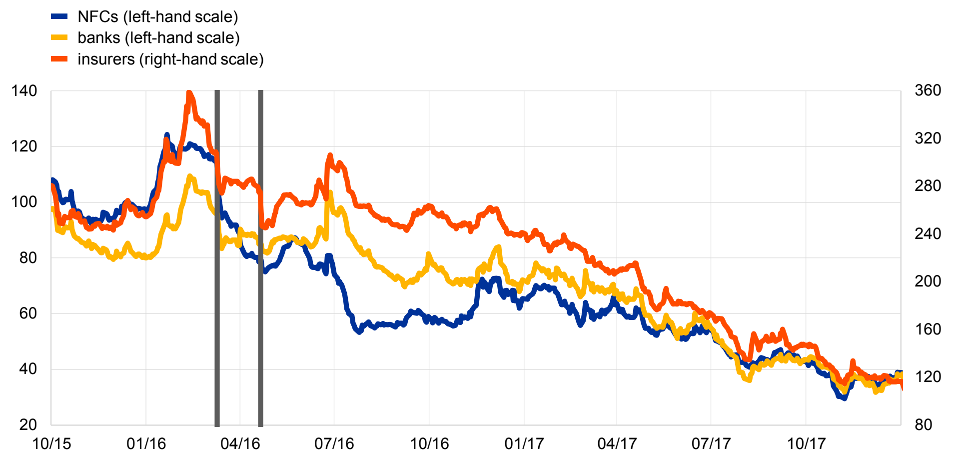


Sources: ECB, Merrill Lynch Global Index and ECB calculations.

Chart 23

Investment-grade corporate bond spreads

(basis points)



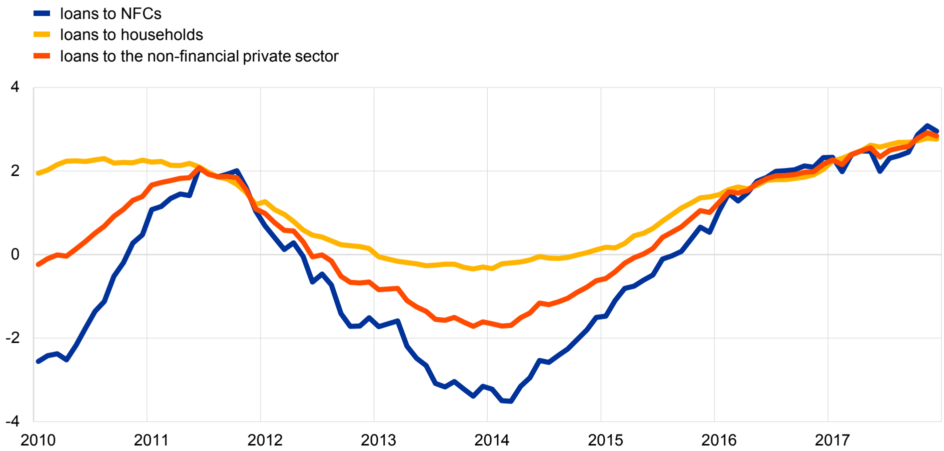
Sources: Markit and Bloomberg.

Notes: Corporate bond spreads are measured by asset swap spreads. The vertical lines indicate the Governing Council meetings on 10 March 2016 and 21 April 2016. The indices also contain subordinated bonds. The latest observation is for 4 January 2018.

The decreasing funding costs for banks also exerted downward pressure on corporate refinancing costs via the direct pass-through channel as well as lower risk-free rates. Composite lending rates for non-financial corporations (NFCs) and households have decreased more than market reference rates since the announcement of the ECB's credit easing measures. Bank lending rates for loans to NFCs and households declined by 123 and 108 basis points, respectively, between June 2014 and December 2017. NFCs with direct access to capital markets also benefited from the lower corporate bond yields brought about by the CSPP. Spreads on investment-grade NFC bonds fell by 26 basis points during 2017, in line with the developments for banks and insurers (see Chart 23). These effects also extended to non-investment-grade corporate bonds, which are not eligible for purchases under the CSPP, as investors adjusted their portfolios.[48]

Chart 24
MFI loans to NFCs and households

(annual percentage changes; loans to NFCs and households adjusted for seasonal and calendar effects; loans to the non-financial private sector are unadjusted)



Source: ECB.

Credit growth recovery is progressing

The ongoing improvements in credit conditions in the euro area were not only reflected in declining interest rates and spreads, but also in rising loan volumes to the private sector and stable bond market access for companies. Banks participating in the euro area bank lending survey indicated that they used the additional liquidity generated through the APP mainly to grant loans, suggesting that credit supply continued to improve in 2017.[49] Furthermore, net loan demand increased, while banks eased credit standards and overall terms and conditions on new loans, in particular for loans to households. Consequently, the gradual recovery in lending to the euro area private sector continued. At the same time, despite some progress, the consolidation of bank balance sheets and still high levels of non-performing loans in some countries continued to weigh on loan growth.

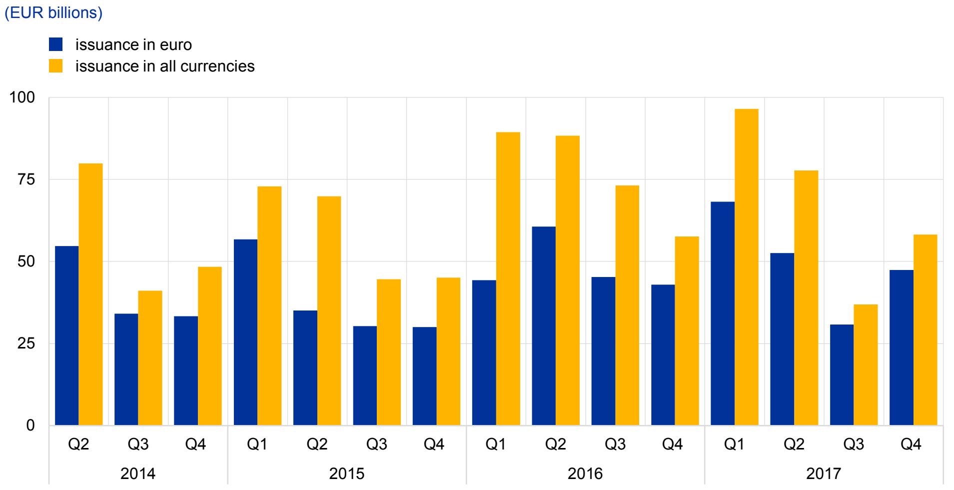
The annual growth rate of bank loans to the non-financial private sector comprising households and NFCs was 2.8% in December 2017, up from 2.2% in December 2016. The annual growth of loans to NFCs increased to 2.9%, from 2.3% a year before, while the annual growth of loans to households rose to 2.8% in December 2017 compared with 2.0% in December 2016. Bond issuance by NFCs headquartered in the euro area remained stable, with new issues denominated in euro amounting to €199 billion, compared with €193 billion over the course of 2016

48 See "Corporate sector purchase programme (CSPP) – Questions & answers" for more information about CSPP eligibility criteria.

49 See "The euro area bank lending survey – Third quarter of 2017", ECB, October 2017.

(see Chart 25). NFCs' capital market access continued to be supported by the net purchases of corporate bonds under the CSPP.

Chart 25
Gross debt issuance by euro area NFCs



Sources: Dealogic and ECB calculations.
Notes: The data include both investment-grade and non-investment-grade bonds. "Issuance in euro" denotes new issues denominated in euro by NFCs headquartered in the euro area. "Issuance in all currencies" refers to all new issues by NFCs headquartered in the euro area.

The ECB's monetary policy measures also substantially improved the credit conditions for small and medium-sized enterprises (SMEs), which typically do not have direct access to bond markets. The latest results of the Survey on the Access to Finance of Enterprises (SAFE) signalled further improvements in external financing conditions, continuing a trend observed in previous rounds of the survey.[50] SMEs confirmed a better availability of funding by banks, including an increasing willingness to provide credit at lower interest rates. SMEs in all large euro area countries reported positive net changes in the availability of bank loans. For the first time since the launch of SAFE, SMEs perceived the general economic outlook as being conducive to the availability of external finance. SMEs' funding costs also declined. The spread between the interest rates charged on very small loans and those charged on large loans declined by 118 basis points between end-May 2014 and December 2017.

2.3 Developments in the Eurosystem's balance sheet

Size and composition of the Eurosystem's balance sheet

Since the onset of the 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

[50] See "Survey on the Access to Finance of Enterprises in the euro area – October 2016 to March 2017", ECB, May 2017.

direct impact on the size and composition of the Eurosystem's balance sheet over time. These measures have included collateralised operations to provide funding to counterparties with an initial maturity of up to four years, as well as asset purchases in various market segments, in order to improve the transmission of monetary policy and ease financing conditions in the euro area. By the end of 2017 the size of the Eurosystem's balance sheet had reached a historical high of €4.5 trillion, growing by €0.8 trillion compared with the end of 2016.

The expanded asset purchase programme and the allotment of the last targeted longer-term refinancing operation in March 2017 led to both an expansion and a change in the composition of the balance sheet. At the end of 2017 monetary policy-related items on the assets side accounted for €3.2 trillion or 70% of the total assets on the Eurosystem's balance sheet, up from 61% at the end of 2016. These included loans to euro area credit institutions, which accounted for 17% of total assets (up from 16% at the end of 2016), and securities purchased for monetary policy purposes, which represented around 53% of total assets (up from 45% at the end of 2016), as Chart 26 shows. Other financial assets were mainly composed of: (i) foreign currency and gold held by the Eurosystem; (ii) euro-denominated non-monetary policy portfolios; and (iii) emergency liquidity assistance provided by some Eurosystem national central banks (NCBs) to solvent financial institutions facing temporary liquidity problems. These other financial assets are subject to internal Eurosystem reporting requirements and restrictions arising in particular from the monetary financing prohibition and the requirement that they should not interfere with monetary policy, which are set out in various legal texts.[51]

On the liabilities side, the main impact was observed in counterparties' reserve holdings, which on account of the continued accommodative monetary policy in 2017 increased by €0.6 trillion to €1.9 trillion and represented 42% of the liabilities side at the end of 2017, up from 36% at the end of 2016. Banknotes in circulation declined in relative terms to 26% (compared with 31% at the end of 2016), although in absolute terms they grew in line with the historical growth trend. Other liabilities, including capital and revaluation accounts, accounted for 32%, down from 33% at the end of 2016, but in absolute amounts they increased by €0.2 trillion (see Chart 26).

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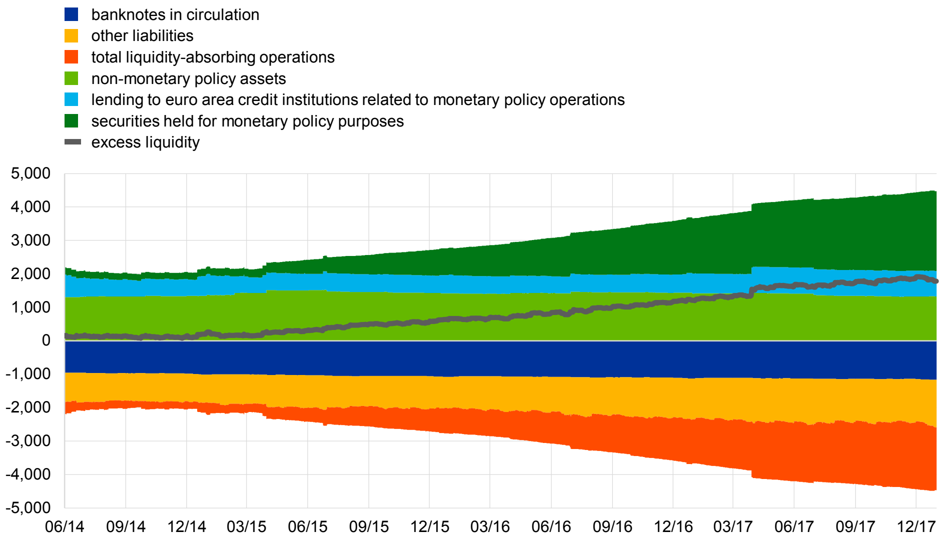
[51] The monetary financing prohibition is laid down in Article 123 of the Treaty on the Functioning of the European Union. For restrictions on non-monetary policy assets, see in particular the ECB Guideline on domestic asset and liability management operations by the national central banks (ECB/2014/9), the Agreement of 19 November 2014 on net financial assets, as well as the Agreement of 17 May 2017 on emergency liquidity assistance.

Chart 26

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 portfolio maturity and distribution across assets and jurisdictions

Since the start of the APP, the ECB has published the evolution of holdings under the various programmes that constitute the APP on a weekly basis. In addition, on a monthly basis, it has published the breakdown of holdings purchased in the primary and secondary markets for the CBPP3, the ABSPP and the CSPP. Under the PSPP, the ECB has been providing securities holdings data by country of issuer[52], including the weighted average maturity.

At the end of 2017 the APP amounted to €2.3 trillion.[53] Of this amount, the ABSPP holdings represented €25 billion (1% of the total APP portfolio) and the CBPP3 holdings accounted for €241 billion (11% of the total APP portfolio). Out of the private sector purchase programmes, the CSPP contributed the most to the APP in 2017, with €82 billion of net purchases. This brought total CSPP holdings to €132 billion, or 6% of total APP holdings. In 2017 the ECB started publishing a full list of all CSPP holdings, including the names of issuers, the maturity dates and the bond coupon rates, as well as aggregated data on CSPP holdings by country of risk, rating and sector. CSPP purchases are made based on a benchmark which reflects proportionally all eligible outstanding issues. This implies that market capitalisation

52 The holdings of supranational issuers are published at an aggregate level.

53 The APP holdings are presented at amortised cost.

provides a weighting for each of the different jurisdictions of issuance within the benchmark.

The PSPP accounted for the biggest part of the APP, amounting to €1.9 trillion or 83% of total APP securities holdings, compared with 82% at the end of 2016. Under the PSPP, the allocation of purchases to jurisdictions is guided by the ECB's capital key. Within the individual allocations assigned to them, the ECB and the euro area NCBs have flexibility to choose between purchases of central, regional and local government securities, securities issued by certain agencies established in the respective jurisdictions and, if necessary, securities issued by supranational institutions.

The weighted average maturity of the PSPP stood at 7.7 years at the end of 2017, somewhat lower than the 8.3 years at the end of 2016, with some variation across jurisdictions. The decline in the weighted average maturity is mainly a reflection of the December 2016 decisions of the Governing Council to (i) decrease the minimum remaining maturity for PSPP-eligible securities from two years to one year and (ii) allow, to the extent necessary, purchases of securities with a yield to maturity below the interest rate on the ECB's deposit facility.

The duration of the assets purchased by the Eurosystem is relevant in two regards: on the one hand, it allows interest rate risk to be absorbed from the market, providing incentives for investors to rebalance their portfolios; on the other hand, 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.

The Eurosystem reinvests principal payments on the securities purchased under the APP as they mature. The reinvestments under the private sector purchase programmes continued in 2017 and amounted to €24.3 billion, while the reinvestments under the PSPP started in March 2017 and amounted to €24.9 billion during the year. Reflecting the increasing relevance of reinvestments, in November 2017 the ECB started to publish the expected monthly redemption amounts for the APP over a rolling 12-month horizon.

The securities purchased under the APP are made available for lending, in order to support bond and repurchase agreement (repo) market liquidity, without unduly curtailing normal repo market activity. The ECB publishes the aggregate monthly average on-loan balance for the Eurosystem on a monthly basis. To further alleviate collateral scarcity in the market, as of December 2016 the Eurosystem started accepting limited amounts of cash as collateral for lending operations in addition to securities, which had previously been the only accepted form of collateral. Data on the aggregate monthly average amount of cash collateral received are also published by the ECB on a monthly basis.

Developments in Eurosystem refinancing operations

The outstanding amount of Eurosystem refinancing operations has increased by €168.3 billion since the end of 2016, standing at €764.0 billion at the end of 2017. This can be largely attributed to the allotment of €233.5 billion in the last TLTRO-II operation in March 2017, which despite being partly offset by lower main refinancing operation volumes and TLTRO-I repayments in 2017 still led to a sizeable net increase in outstanding liquidity. The weighted average maturity of liquidity provided through liquidity-providing reverse transactions decreased from around 3 years at the end of 2016 to around 2.7 years at the end of 2017. As the allotment of the last TLTRO-II operation (with an initial maturity of four years) took place early in 2017 (March), the weighted average maturity of the Eurosystem's refinancing operations decreased over the rest of the year.

3 The European financial sector: resilient but confronted with challenges

The ECB assesses financial stability developments in the euro area and EU financial systems to identify any vulnerabilities and sources of systemic risk. The ECB also provides analytical support to the European Systemic Risk Board (ESRB) in the area of financial stability and contributes to important regulatory initiatives. The emergence of possible systemic risks is addressed through macroprudential policies.

The ECB carries out these tasks together with the other central banks of the Eurosystem and the European System of Central Banks (ESCB). Within the ECB, the macro- and microprudential functions work closely together on the identification of the main risks and vulnerabilities in the European financial sector and on regulatory issues.

3.1 Risks and vulnerabilities in the euro area financial system

The ECB presents its analysis of systemic risks in its semi-annual Financial Stability Review.[54] Most euro area systemic stress indicators remained contained in 2017 (see Chart 27), indicating that the financial stability situation evolved positively over the year under review. Improved economic conditions in the euro area supported asset markets and contributed to low volatility across asset classes during 2017 (see also Section 1). Stress in the euro area banking sector remained low as investors expected bank profitability to improve on account of higher loan volumes and lending margins, should economic growth prospects continue to improve and interest rates rise. By contrast, systemic stress in sovereign bond markets rose in early 2017,

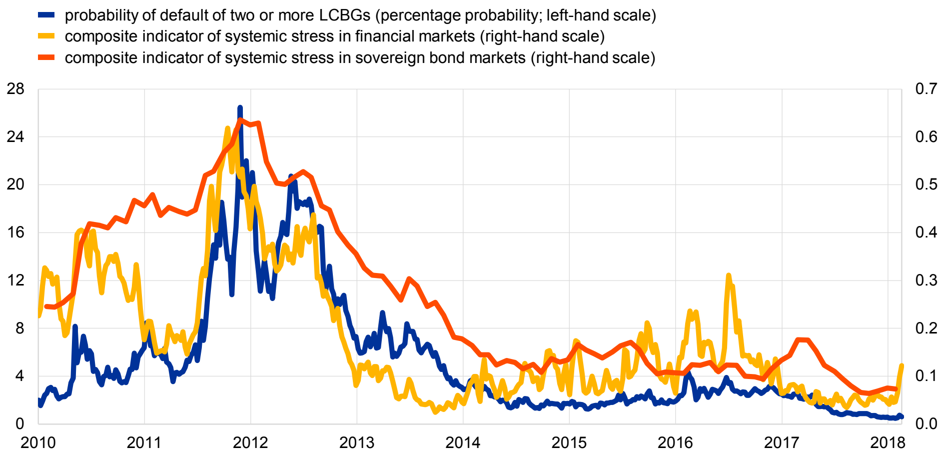
[54] See Financial Stability Review, ECB, May 2017, and Financial Stability Review, ECB, November 2017. In its microprudential function, ECB Banking Supervision – in cooperation with the national competent authorities – regularly identifies and assesses risks to the banking sector in the euro area in order to ensure that directly supervised banks address key risks effectively. The key risks are reflected in the SSM (Single Supervisory Mechanism) supervisory priorities, which are published annually (see Supervisory priorities 2018).

partly owing to higher political uncertainty in some euro area countries. The election outcomes in major euro area countries subsequently eased this uncertainty, which resulted in a decline in the sovereign stress indicator in the second half of 2017. Euro area systemic stress indicators otherwise remained muted, despite elements of higher geopolitical uncertainty at the global level, for example in relation to increasing tensions on the Korean peninsula.

Chart 27

Composite indicators of systemic stress in financial markets and sovereign bond markets, and the probability of default of two or more banking groups

(Jan. 2010-Feb. 2018)



Sources: Bloomberg and ECB calculations.
Note: "Probability of default of two or more LCBGs" refers to the probability of simultaneous defaults in the sample of 15 large and complex banking groups (LCBGs) over a one-year horizon.

In this environment, four main risks to euro area financial stability were identified during 2017.

To start with, the possibility of a sudden and sizeable repricing of global risk premia remained the key risk in 2017. The year saw overall low financial market volatility, elevated asset valuations and compressed risk premia in some markets, pointing to increased risk-taking. In particular, spreads for the most risky issuers in the bond markets remained very low, reflecting beliefs by market participants that weaknesses had a low probability of emerging. Although part of these developments was related to improved macroeconomic conditions and was, as such, fundamentally driven, the signs that financial markets might not be fully alert to the possibility that market sentiment could change quickly were increasing.

The second key risk related to the profitability prospects of euro area banks. Euro area banks' profitability improved slightly on account of an increase in non-interest income. Banks' return on equity was 3.2% in the first three quarters of 2017, compared with 2.5% in the same period of the previous year. Solvency positions also continued to improve, with Common Equity Tier 1 ratios reaching 14.5% in the third quarter of 2017, up from 13.9% in 2016.[55]

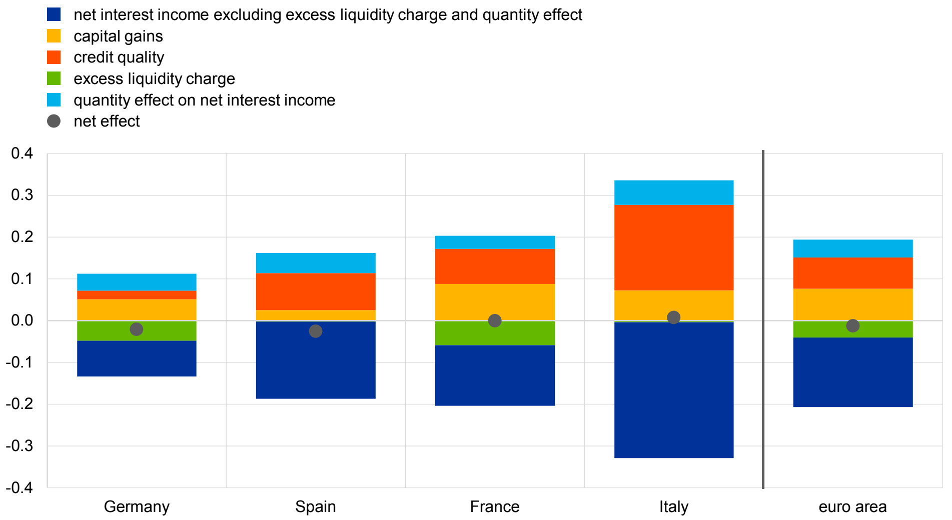
55 Data for all domestic banking groups as reported in the ECB's consolidated banking data.

The ECB's monetary policy measures could have an impact on bank profitability via two main channels. First, the low interest rate environment contributes to the compression of banks' interest rate margins, thereby reducing net interest income. Second, the negative rate on the ECB's deposit facility gives rise to a direct charge on excess liquidity for the euro area banking system as a whole. However, such negative aspects have, to date, been generally offset by the positive effects that a solid and broad-based economic expansion has on banks' profitability. In particular, banks' provisioning costs fall as borrowers' credit quality rises owing to improvements in the economic outlook. Moreover, increasing lending volumes amid the economic recovery as well as capital gains from rising asset prices bolster bank profitability. Finally, while there is downward rigidity in retail deposit rates, wholesale deposits – in particular those by non-residents – are often remunerated at negative rates, thereby mitigating the downward impact of negative nominal interest rates on banks' net interest income. Overall, the net impact of monetary policy measures on euro area banks' profitability from 2014 to 2017 (see Chart 28) remained limited, although it differed slightly across countries.

Chart 28

Components of bank profitability

(2014-17; percentage point contributions to banks' return on assets)



Source: Altavilla, C., Andreeva, D., Boucinha, M. and Holton, S., "Monetary policy, credit institutions and the bank lending channel in the euro area", *Occasional Paper Series*, ECB, forthcoming.
Notes: The impact of monetary policy on bond yields and the respective effects on lending rates and volumes are consistent with the Eurosystem staff macroeconomic projections. Capital gains are calculated based on data published by the European Banking Authority. Euro area figures are calculated as the weighted average for the countries included in the sample using consolidated banking data for the weight of each country's banking system in the euro area aggregate.

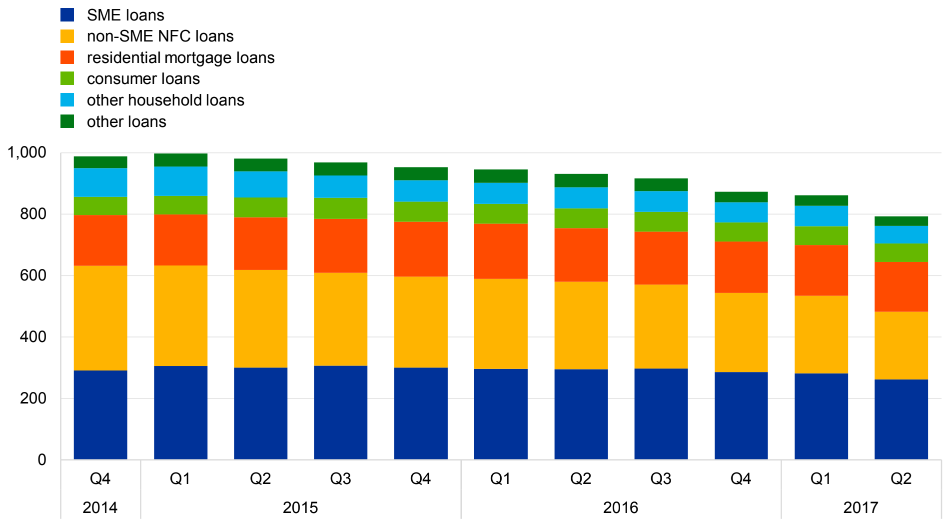
Notwithstanding these positive developments, the prospects of the banking sector remained subdued. This was also reflected in relatively low stock prices of euro area banks – with the market value of euro area banks remaining significantly below book value. The doubts expressed by the markets related mainly to two factors. First, a number of structural challenges continued to have an impact on the cost-efficiency of many euro area banks and on the possibilities for revenue diversification. Second, although significant progress was made during the year in tackling the high stock of non-performing loans (NPLs) (see Chart 29), it remained uneven across banks and countries, with some lagging behind. The high NPL ratios continued to put pressure on bank profitability – both directly through high provisions and indirectly because NPLs consume balance sheet capacity.

The ECB contributed to the debate on how the remaining challenges in the banking sector could be addressed. For example, an NPL transaction platform could help contribute to a faster clean-up of bank balance sheets.[56] In a similar vein, co-investments by the private sector and the state (in accordance with state-aid rules) could reduce information asymmetries between the potential buyers and sellers of NPLs.[57] As regards structural challenges, further banking sector consolidation and digitalisation could help improve cost-efficiency. Action to reduce the stock of NPLs could also help increase cross-border banking activity, which in turn could lead to a greater geographical diversification of revenues.[58] Cross-border mergers and acquisitions, in particular, could enhance retail banking integration. Completing the banking union, as well as other financial sector policy measures such as harmonising taxation and insolvency rules, would be helpful in this regard.[59]

Chart 29

Non-performing loans by sector and loan type

(Q4 2014-Q2 2017; quarterly data; EUR billions)



Source: ECB supervisory data.
Notes: Based on significant institutions. SME stands for small and medium-sized enterprise; NFC stands for non-financial corporation.

The two remaining financial stability risks identified emanated from outside the banking sector. First, public and private sector debt sustainability concerns increased in the first half of the year before stabilising thereafter, notably as economic prospects improved and economic policy uncertainty receded following national elections in major euro area countries. Private sector indebtedness in the euro area remained high by both historical and international standards, making firms in particular vulnerable to a sharp increase in interest rates. Second, in the non-bank

56 See Special Feature A in Financial Stability Review, ECB, November 2017.

57 See Special Feature C in Financial Stability Review, ECB, May 2017.

58 See Special Feature B in Financial Stability Review, ECB, November 2017.

59 See the special feature in Financial integration in Europe, ECB, May 2017.

financial sector, investment funds continued to expand as inflows were supported by improving economic growth prospects and low financial market volatility. Investment funds also increasingly exposed themselves to lower-rated and longer-dated securities, while liquidity buffers in bond funds continued to decrease. Flows into and out of investment funds can be particularly sensitive to changes in market sentiment. Unlike for UCITS funds, the European regulation currently does not foresee strict statutory leverage limits for alternative investment funds. To prevent the build-up of sector-wide risks, developing a framework for the harmonised implementation of macroprudential leverage limits for alternative investment funds remained a key initiative in the process of extending macroprudential policy beyond banking.[60]

An analysis of the structure of the broader euro area financial sector, including insurers, pension funds and shadow banking entities, confirmed that the non-bank financial sector continued to expand. This took place against the background of a continuing rationalisation of banking sector assets, which arguably continued to have a limited impact on the overall efficiency of the financial system, with still high bank cost-to-income ratios on aggregate.[61]

Box 6
Developments in residential and commercial real estate markets in the euro area

The cyclical expansion of residential real estate (RRE) markets in the euro area continued in 2017, with prices and mortgage lending rising moderately on aggregate. Overall, vulnerabilities in RRE markets appear to be contained in the euro area as a whole, although they are gradually rising. More specifically, while nominal RRE price growth accelerated to above 4% year on year in the third quarter of 2017, it remained below the historical average and well below pre-crisis values (see Chart A). RRE price growth was driven by strong demand and was increasingly supported by the recovery in personal income. Prices appeared to be in line with or slightly above fundamental values on aggregate in the euro area (see Chart A).[62] While the annual growth in lending for house purchase continued to increase, rising above 3% year on year towards the end of 2017, household indebtedness remained on a declining path, reaching 58% of GDP in the third quarter of 2017 (see Chart B).

60 See Special Feature A in Financial Stability Review, ECB, November 2016.

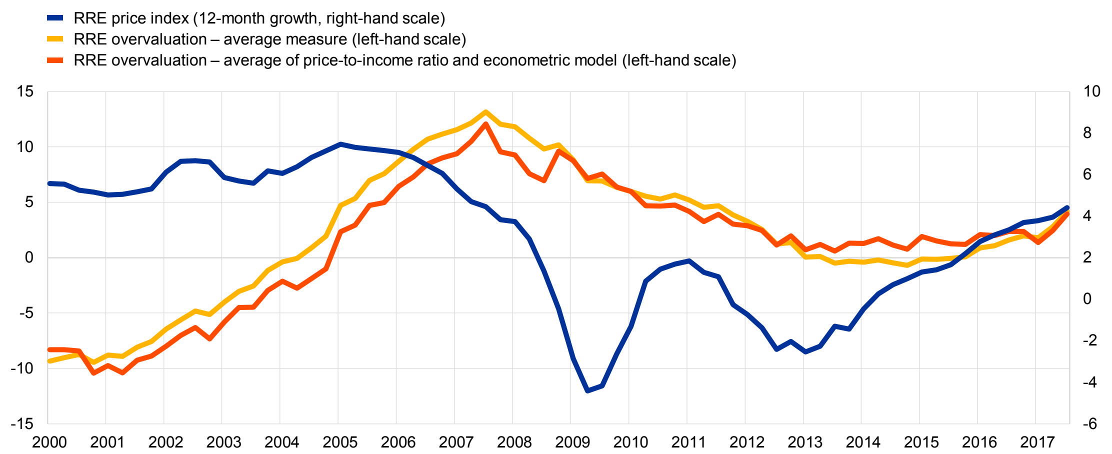
61 See Report on financial structures, ECB, October 2017.

62 Valuation estimates are surrounded by a high degree of uncertainty and their interpretation may be complicated at the country level given specific national features (e.g. the fiscal treatment of real estate or structural factors, such as tenure status).

Chart A

Annual RRE price growth and overvaluations in the euro area

(percentages)

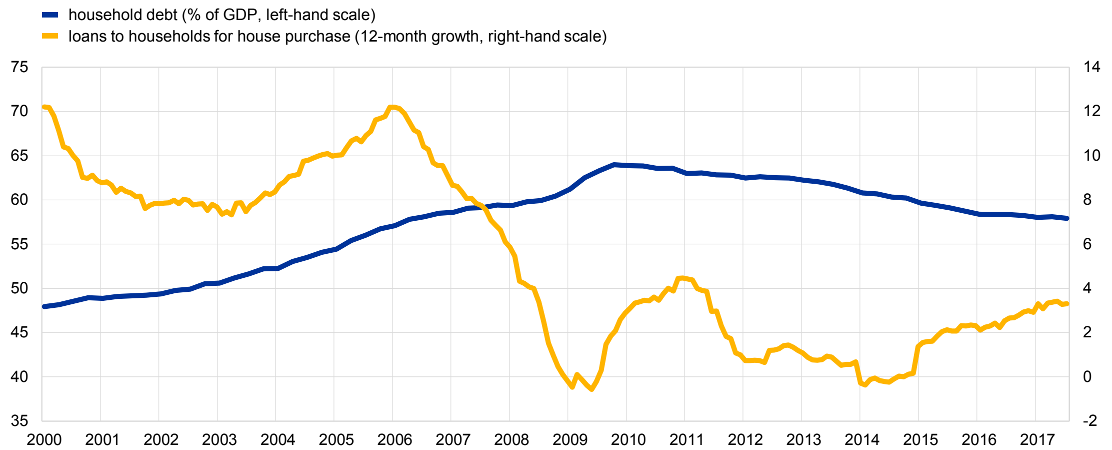


Source: ECB and ECB calculations.
Notes: The first overvaluation measure (yellow line) is the average of four different valuation indicators (the price-to-income ratio, the price-to-rent ratio, the output of an asset pricing model and the output of an econometric (BVAR) model) and the second overvaluation measure (red line) is the average of two valuation indicators (the price-to-income ratio and the output of the econometric model).

Chart B

Loans to households for house purchase and household debt in the euro area

(percentages)



Source: ECB and ECB calculations.
Note: The latest observation is for September 2017 for loan data and the second quarter of 2017 for household debt.

Despite there being few signs of vulnerabilities building up in the overall euro area RRE market, the situation has been heterogeneous across countries and the ECB actively monitored individual euro area countries during 2017 in the context of its macroprudential function. This was especially the case for the countries that received warnings from the ESRB in late 2016.[63]

[63] In November 2016 the ESRB issued country-specific warnings on medium-term vulnerabilities in the RRE sectors of the following euro area countries: Belgium, Luxembourg, the Netherlands, Austria and Finland.

A number of macroprudential measures targeting RRE vulnerabilities were adopted by national authorities or became effective in several countries during 2017:

- In Finland, a new minimum average risk weight level of 15% for residential mortgage loans applicable to credit institutions that have adopted the internal ratings-based approach was introduced, effective from January 2018. The measure will last two years, will cover loans for the purchase of housing property located in Finland and will be applied on a consolidated basis.

- In Lithuania, regulations that set the main lending standards (including the requirement to calculate loan-to-value (LTV) and debt service-to-income (DSTI) ratios) were extended to natural persons who are carrying out construction or leasing activities for business purposes.

- In Belgium, it was recommended that banks which apply the internal ratings-based approach maintain a 5 percentage point add-on to the risk weights of Belgian residential mortgage loans. This recommendation followed the expiry of a similar macroprudential measure.

- In Slovakia, the borrower-based measures were tightened as of the beginning of 2017 (i.e. LTV, DSTI and maturity limits) in the context of a "responsible lending package".

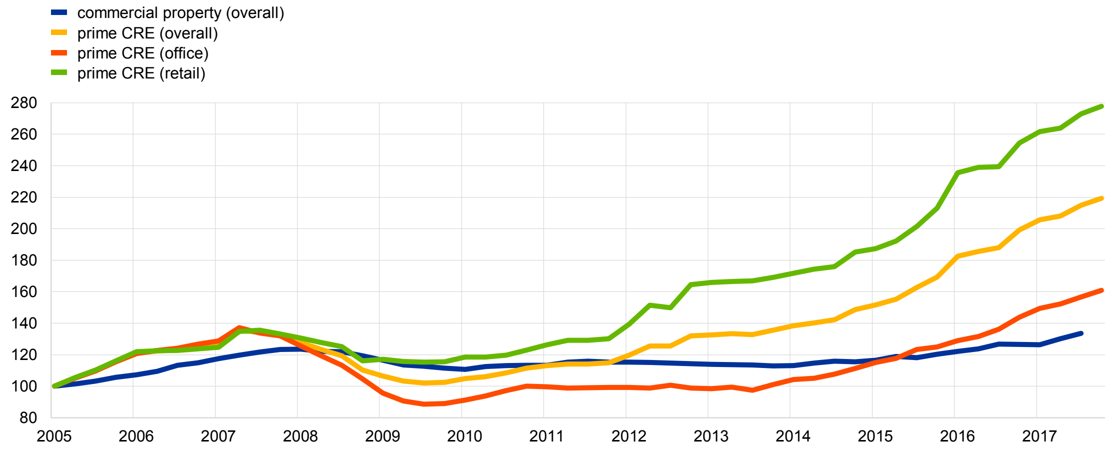
- In Ireland, the borrower-based measures were reviewed and recalibrated. In particular, from January 2017, 5% of new lending to first-time buyers has been allowed above the 90% LTV limit and 20% of new lending to second-time and subsequent buyers has been allowed above the 80% LTV limit.

The euro area commercial real estate (CRE) market has experienced strong growth in prices and transaction volumes in recent years. In 2016 euro area CRE prices recorded an annual growth rate of 5.1%, up from 3.8% and 1.9% in 2015 and 2014, respectively. These price increases were led by the prime CRE segment (where prices grew 18% year on year in 2016, compared with 14% in the previous year) and, in particular, by the prime retail segment (see Chart C), where prices continued to increase also in 2017.

Chart C

CRE price indices in the euro area

(Q1 2005-Q4 2017; index: Q1 2005 = 100)



Sources: Jones Lang LaSalle and experimental ECB estimates based on MSCI and national data.
Notes: Retail establishments include restaurants, shopping centres and hotels. The euro area aggregate comprises Belgium, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, the Netherlands, Austria, Portugal and Finland.

In many of the countries experiencing the largest increases in CRE prices in 2017, CRE investment was primarily financed with direct investment by institutional investors and funds, and was less fuelled by bank lending. Real estate investment funds and real estate investment trusts have gained importance as vehicles through which US asset managers and other foreign investors in search of yield in a low interest rate environment are channelling their investments into the sector. In principle, the growing reliance on foreign sources of equity finance should reduce the potential for direct negative spillovers to the banking system of any abrupt fall in CRE valuations. However, an increase in foreign direct investment could also lead to more volatile boom/bust cycles. Even though bank credit to the CRE sector is not expanding, the banking sector retains large CRE lending exposures in some countries, leaving it vulnerable to potential negative CRE price corrections. Clearly, in view of its nature and size, the CRE sector is not as systemic as the RRE sector. The ECB will continue to monitor developments in the euro area CRE market, paying particular attention to the very different national contexts in which these developments are taking place.

3.2 The ECB's macroprudential function

The responsibility for decisions on macroprudential measures in the euro area is shared between national authorities (the national competent authority or the national designated authority) and the ECB. The national authorities within the euro area retain the power to activate and implement macroprudential measures. The ECB regularly assesses the appropriateness of such measures, which should be duly notified by the national authorities to the ECB. It can object to the measures taken by national authorities and has the power to top them up (i.e. strengthen them or apply higher requirements) for those macroprudential instruments assigned to it through EU legislation. The asymmetric nature of the powers reflects the role that the ECB is required to play to overcome a potential inaction bias at national level.

In 2017 the ECB and the national authorities continued to engage in broad and open discussions, at both the technical and the policy level, on the use of macroprudential instruments and on the development of methods for assessing different types of systemic risk. These efforts improved the process for assessing the adequacy of the macroprudential stance in the euro area overall and across the individual countries covered by European banking supervision.

Macroprudential policy during 2017

During 2017 the ECB continued its activities related to strengthening its coordination role in macroprudential policy and its public communication on macroprudential issues to improve transparency and to underscore the important role that macroprudential policy plays.

The ECB also fulfilled its legal mandate to assess the macroprudential decisions of national authorities in the countries covered by European banking supervision. It received notifications of more than a hundred such decisions during 2017, most of which were related to the setting of countercyclical capital buffers and the identification of systemically important credit institutions and the calibration of their capital buffers. In addition, the ECB received notifications on the implementation of the systemic risk buffer, and on the use of Article 458 of the Capital Requirements Regulation in some countries.

On a quarterly basis all 19 euro area countries assess cyclical systemic risks and set the level of the countercyclical capital buffer. Cyclical systemic risks have remained contained in most of the euro area countries and the Governing Council of the ECB agreed with all of the countercyclical capital buffer decisions taken by the national authorities during the year. Apart from Slovakia and Lithuania, all other countries have decided to set the countercyclical capital buffer rate at 0%. In July 2016 Slovakia introduced a countercyclical capital buffer of 0.5%, effective from 1 August 2017, and – owing to the continued build-up of cyclical systemic risks – increased it to 1.25% in July 2017, applicable from 1 August 2018. The countercyclical capital buffer rate of 0.5% in Lithuania will be applicable from 31 December 2018.

In 2017 the ECB, national authorities and the Financial Stability Board, in consultation with the Basel Committee on Banking Supervision, updated the yearly assessment of global systemically important banks (G-SIBs) in euro area countries. The assessment resulted in seven banks in Germany, Spain, France, Italy and the Netherlands being allocated to the internationally agreed G-SIB buckets 1, 2 and 3, which entail capital buffer rates of 1.0%, 1.5% and 2.0%, respectively.[64] These buffer rates are applicable from 1 January 2019 and are subject to phase-in requirements.

The ECB also assessed national authorities' decisions on capital buffers for 109 other systemically important institutions (O-SIIs).[65] The Governing Council agreed with the national authorities' decisions.

With the aim of enhancing transparency regarding the ECB's macroprudential policy work, the ECB continued publishing its biannual Macroprudential Bulletin. The third issue of this publication provided insights into the ECB's macroprudential tools and its thinking on macroprudential issues by focusing on: (i) the ECB floor methodology for setting the capital buffers for identified O-SIIs; (ii) stress-test quality assurance from a top-down perspective; and (iii) the exposure of a prospective European deposit insurance scheme to bank failures and the benefits of risk-based contributions. The fourth issue looked at: (i) the short-term impact of the minimum requirement for own funds and eligible liabilities (MREL) on financial markets and banks from a financial stability perspective; (ii) a model developed to assess the impact of bank capitalisation changes conditional on whether a bail-in or a bail-out regime applies; and (iii) the macroprudential policy aspects of the recently published ECB Opinions on the European Commission's proposals for amending the EU banking rules.

64 The 2017 list of G-SIBs is available on the Financial Stability Board's website.

65 See "ECB floor methodology for setting the capital buffer for an identified Other Systemically Important Institution (O-SII)", Macroprudential Bulletin, Issue 3, ECB, June 2017.

In order to further enhance its public communication, the ECB started in 2017 to publish on its website an overview of currently active macroprudential measures in countries subject to ECB Banking Supervision. The ESRB website provides the same information, also for non-euro area EU Member States.

Cooperation with the European Systemic Risk Board

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 operations of the ESRB. The ECB contributed to the ESRB's ongoing identification and monitoring of potential systemic risks. Among other things, the ECB co-chaired the expert group of the ESRB Advisory Technical Committee that prepared the report entitled "Resolving non-performing loans in Europe", which was published in July 2017. The report identifies macroprudential and financial stability issues stemming from elevated levels of NPL stocks and impediments to NPL resolution. The report also provides practical guidance for policymakers with respect to the steps that need to be taken to design the overall response to the NPL issue.

The ECB also contributed to the ESRB's report on the "Financial stability implications of IFRS 9", which was also published in July 2017. The report was prepared following a request by the European Parliament's Committee on Economic and Monetary Affairs and analyses the potential financial stability implications of the introduction of a new accounting standard, IFRS (International Financial Reporting Standard) 9. The report concludes that, overall, IFRS 9 is expected to be significantly beneficial for financial stability, as it entails an earlier recognition of credit losses. Nevertheless, the report identifies several practical challenges in reaping the expected benefits, as well as some potential procyclical effects.

The ECB also supported the ESRB in its analysis of data which are available to the ESRB under the European Market Infrastructure Regulation. Four research papers based on these data were published in 2017.[66]

More detailed information on the ESRB can be found on its website and in its Annual Report 2016.

3.3 The ECB's contributions to regulatory initiatives

As one of its responsibilities under its mandate, the ECB made substantial analytical and policy contributions to a number of regulatory initiatives at the international and European levels in 2017. The key regulatory issues for the ECB in 2017 included: (i) the finalisation of the Basel capital and liquidity framework (Basel III); (ii) the revision of the micro- and macroprudential regulation for banks in the EU; (iii) the

66 "Compressing over-the-counter markets", "Networks of counterparties in the centrally cleared EU-wide interest rate derivatives market", "Syndicated loans and CDS positioning" and "Discriminatory pricing of over-the-counter derivatives".

revision of the crisis management and resolution framework; (iv) work on the completion of the banking union; and (v) the creation of a regulatory framework for non-bank activities. In addition, the ECB contributed to the discussions on the future EU regulatory framework regarding the recovery, resolution and supervision of central counterparties (see Sections 4.2 and 9.2), as well as to the review of the European System of Financial Supervision (ESFS).

Finalisation of the Basel capital and liquidity framework

On 7 December 2017 the Group of Governors and Heads of Supervision of the Basel Committee on Banking Supervision (BCBS) agreed upon a package of reforms to finalise Basel III. The ECB was actively engaged in the policy discussions on the finalisation of Basel III and fully participated in the impact analyses. Looking ahead, it will be essential to implement the finalised Basel III package across all jurisdictions and monitor progress carefully. In this regard, the ECB deems it important to maintain the high level of international cooperation that has characterised the post-crisis work, as globally agreed standards are key to ensuring financial stability.

Revision of the micro- and macroprudential regulation for banks in the EU

On 23 November 2016 the European Commission published a comprehensive package of banking regulation reforms, with the aim of further enhancing banking sector resilience and promoting financial integration within the EU.[67] The proposal implements in European legislation key elements of the global regulatory reform agenda. These global standards include bank capital adequacy and liquidity requirements developed by the BCBS, such as the net stable funding ratio, the leverage ratio and the fundamental review of the trading book. Furthermore, the proposal introduces additional changes to the supervisory framework regarding a number of issues, including the powers available to supervisors (the Pillar 2 framework), as well as provisions on capital waivers, intermediate parent undertakings (IPUs), national options and discretions, proportionality and the treatment of third-country groups.

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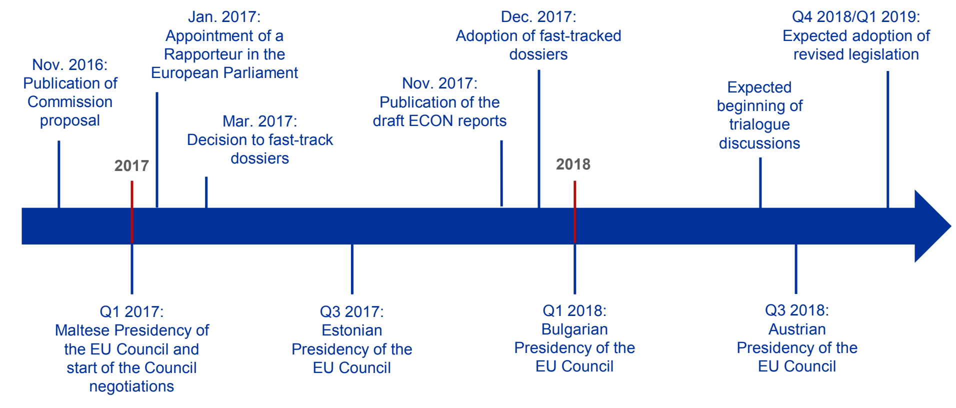
67 Proposal for a directive of the European Parliament and of the Council amending Directive 2013/36/EU as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers and capital conservation measures; and proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements and amending Regulation (EU) No 648/2012.

Figure 1
Timeline of key events



Source: ECB.
Note: ECON refers to the European Parliament's Committee on Economic and Monetary Affairs.

In November 2017 the ECB published its Opinion on the proposals. The Opinion underlines the importance of the implementation of BCBS standards in the EU legislative framework in order to ensure a global level playing field. In addition, the ECB proposes that review clauses be introduced for all standards on which discussions are ongoing at the BCBS level.

With regard to the review of the Pillar 2 framework, the ECB takes the view that the Commission proposal, while rightly seeking to further supervisory convergence, frames supervisory action too tightly in essential aspects. It is important that supervisors are provided with enough flexibility to measure risks, to determine the institution-specific amount of additional own funds requirements to be imposed and to retain discretion over their composition.

The Commission's package includes a number of proposals that have an impact on the design and operation of the macroprudential framework. The proposed changes clarify the institution-specific nature of the Pillar 2 framework, which should not be used to address systemic or macroprudential risks. These changes are of particular importance for the ECB as they contribute to a better delineation of the tasks and instruments of micro- and macroprudential authorities. However, the ECB takes the view that the removal of Pillar 2 from the macroprudential toolkit should be accompanied by targeted revisions to the macroprudential framework and that macroprudential authorities should be provided with a sufficient set of instruments to be able to effectively address systemic risks.

Revision of the crisis management and resolution framework

The Commission proposal on banking regulation reforms included several revisions to the EU recovery and resolution framework to refine the existing regime, addressing key issues by: (i) amending the minimum requirement for own funds and eligible liabilities (MREL) and implementing the total loss-absorbing capacity (TLAC) standard for global systemically important banks; (ii) introducing two new harmonised moratorium powers for the competent authority and the resolution authority, respectively; and (iii) increasing the harmonisation of the creditor hierarchy by introducing a new "non-preferred" senior debt class, ranking below existing senior unsecured liabilities but above subordinated liabilities.

The ECB Opinions on various aspects of the Commission proposals were published in March and November 2017.

As regards the amendment of MREL and the implementation of TLAC, the following aspects are important for the ECB: (i) the introduction of a safety margin in the MREL requirement and the elimination of the MREL guidance; (ii) a clearer distinction of the tasks and powers of the resolution authority and the supervisor for specific issues (e.g. MREL breaches, the imposition of a moratorium); (iii) the application of the proposed exemption from maximum distributable amount (MDA) restrictions – in the event of a breach of the combined buffer requirement stacked on top of the MREL requirement – for a twelve-month period; and (iv) the introduction of an adequate minimum transition period for MREL compliance for all credit institutions, extendable by the resolution authority on a case-by-case basis.

Though the Commission proposal concerning the two new harmonised moratorium powers is broadly supported, further amendments to the scope and duration of the pre-resolution moratorium, as well as the decoupling of the moratorium power from early intervention, are suggested in the ECB Opinion of 8 November 2017.

As regards the proposals on the ranking of unsecured debt instruments in the insolvency hierarchy, the introduction of a general depositor preference based on a tiered approach, by means of a third priority ranking for deposits other than those which are currently preferred under the Bank Recovery and Resolution Directive, is suggested in the ECB Opinion of 8 March 2017.

At the international level, the ECB actively contributed to the discussions of the Financial Stability Board (FSB) leading to the publication of guiding principles to assist authorities in implementing the FSB's standard on "internal TLAC" (i.e. the loss-absorbing capacity that resolution entities have to commit to material sub-groups) and the sixth report on the implementation of post-crisis resolution reforms.

Work on the completion of the banking union

The ECB contributed to the continued discussions on completing the banking union. In this regard, the ECB supports the long-term objectives of the Commission Communication published on 11 October 2017.

It is important that further decisive steps towards the completion of the banking union be made in order to reap the benefits of a fully fledged banking union. In this context, risk reduction and risk-sharing should advance in parallel, as they are mutually reinforcing elements. The ECB is participating in the discussions on the proposed risk-reduction measures and issued Opinions on the subject. In addition, achieving a fully fledged European deposit insurance scheme in the steady state is an indispensable element of a complete banking union, as stated in the related ECB Opinion. It is also important for the ECB that a common backstop to the Single Resolution Fund be established as soon as possible and, to this end, the ECB is providing technical support to the quantitative work currently being undertaken to estimate the banking sector's capacity to repay such a backstop. Finally, as regards non-performing loans, the actions taken by the ECB to help address this issue include, inter alia, the publication of guidance for banks and the call for the preparation of a blueprint for an asset management company, to be implemented at the national level.

Creation of a regulatory framework for non-bank activities

At the global level, the ECB contributed to the work undertaken under the aegis of the Committee on the Global Financial System of the Bank for International Settlements on the functioning of the repurchase agreement (repo) market by providing an in-depth analysis of the impact of regulatory reforms on repo markets. The ECB also actively supported the work of the FSB and the International Organization of Securities Commissions to address the structural vulnerabilities arising from asset management activities, given the growing importance of this part of the financial system and the need to extend the macroprudential toolkit to mitigate risks to financial stability coming from beyond the banking sector.

At the European level, the European Banking Authority published its Opinion on the design and calibration of the new prudential framework for investment firms, which is to be tailored to the different business models of investment firms and their inherent risks. The ECB supports the work aimed at ensuring that the prudential regime correctly captures all of the risks relevant to prudential supervision, as well as any systemic risks posed by investment firms. In this regard, in its Communication published on 11 October 2017, the Commission made clear that it will propose that large investment firms carrying out bank-like activities be considered credit institutions and be subject to European banking supervision.

Review of the European System of Financial Supervision

The ECB contributed to the discussions on the review of the ESFS. The Commission adopted a package of proposals to strengthen the ESFS in September 2017. The proposals amend the regulations establishing the three European Supervisory Authorities (ESAs) and the ESRB, and introduce modifications to the Directive on Insurance and Reinsurance (Solvency II) and the European Market Infrastructure Regulation II as well. The general objectives of the review are to ensure intensified supervisory convergence across the EU, enhance the governance and funding structure of the ESAs, promote further market integration, strengthen the efficiency of the ESRB and reinforce macroprudential coordination. The ECB published its Opinion on the review of the ESRB Regulation on 2 March 2018.

3.4 The ECB's microprudential function

Throughout 2017 ECB Banking Supervision continued to contribute to a stable European banking sector and a level playing field for all banks in the euro area. While banks in the euro area have increased their resilience over the past years, they still face considerable challenges.

High levels of non-performing loans continued to pose a serious challenge in some euro area countries. They curb banks' profits and reduce their ability to finance the economy. Resolving the NPL problem has thus been one of ECB Banking Supervision's priorities since its inception, and in 2017 it took important steps towards achieving that goal. In March 2017 ECB Banking Supervision published qualitative guidance to banks on how to deal with NPLs. And with the aim of preventing insufficiently covered NPLs from building up in the future, an addendum to the guidance was submitted to public consultation in October-December 2017. It sets out, in a transparent manner, the ECB's general supervisory expectations with regard to the provisioning of new NPLs, to be used as a basis for a case-by-case assessment of individual banks' provisioning policies.

Another challenge stemmed from the decision of the United Kingdom to withdraw from the European Union, which will affect banks in both the United Kingdom and the euro area. The ECB thus sought to ensure that all affected banks have adequate contingency plans in place. To this end, the ECB developed policy stances on issues such as authorisations, internal models, internal governance, risk management and recovery planning. To ensure transparency, detailed FAQs were published on the ECB Banking Supervision website, and workshops with affected banks from the United Kingdom and the euro area were held to inform them about the ECB's supervisory expectations.

Given the importance of internal models for calculating banks' capital requirements, ECB Banking Supervision continued its targeted review of internal models (TRIM) in 2017. TRIM aims to: (i) ensure that internal models used by banks comply with regulatory standards; (ii) harmonise the supervisory treatment of internal models; and (iii) ensure that the results of internal models are driven by actual risks, and not by modelling choices. Once completed, TRIM will increase trust in the adequacy of banks' capital requirements.

In 2017 the ECB determined that three large euro area banks were failing or likely to fail. These were the first failures of significant institutions since the establishment of the Single Resolution Mechanism, and the new system passed its first test. The ECB, the Single Resolution Board, the European Commission and the national resolution authorities cooperated smoothly and effectively.

However, the third pillar of banking union – a European deposit insurance scheme (EDIS) – still needs to be erected. Deposits across the EU must be equally well protected. This is crucial for a truly European banking sector.

More detailed information on ECB Banking Supervision can be found in the 2017 ECB Annual Report on supervisory activities.

4 Market infrastructure and payments

The Eurosystem plays a central role in market infrastructure and payments in three functions – as operator, catalyst and overseer. As operator and catalyst, it drives innovation and integration of market infrastructure and payments in Europe. Through its oversight role, the Eurosystem promotes the safety and efficiency of financial market infrastructure and payments. Overall, the smooth functioning of the Eurosystem's market infrastructure is crucial for maintaining confidence in the euro and supporting monetary policy operations. In relation to market infrastructure and payments, the Eurosystem also plays an important role in ensuring the stability of the European financial system and in boosting economic activity.

4.1 Innovation and integration of market infrastructure and payments

For over a decade the Eurosystem, in close conjunction with the European Commission and the private sector, has been working towards transforming what was a very fragmented financial market infrastructure and payments landscape in Europe into a more integrated one. This work is still ongoing and requires more effort. However, the Eurosystem is at a point now where progress has become tangible.

TARGET2, the Eurosystem's gross settlement system for euro payment transactions, has greatly contributed to driving forward the European integration process and is often referred to as the "real-time gross settlement (RTGS) system of the euro". In November 2017 it celebrated ten years of successful service. TARGET2 processed 89% of the value and 63% of the volume settled by large-value payment systems in euro in 2017. This makes it one of the biggest payment systems in the world and the market share leader in Europe.

The final wave of migration to TARGET2-Securities (T2S) has marked the completion of the project, which brought more integration into the previously highly fragmented European securities settlement market infrastructure. As of the end of October 2017, 21 central securities depositories (CSDs) from 20 European markets were operating on T2S. After the last migration wave, T2S processed an average of 556,684 transactions per day with an average value of €812.02 billion settled per day[68].

In addition to the completion of T2S migration, the Eurosystem has been driving harmonisation work in T2S markets in its catalyst role. This harmonisation work contributes substantially to making the European market a truly domestic single market from the post-trade perspective.

Furthermore, the Eurosystem has agreed on proposals for harmonised collateral management business processes and workflows. This substantive harmonisation

68 Figures are based on daily data ranging from 19 September to 29 December 2017 and include settled and partially settled transactions and liquidity transfers.

work has established the basis for the development of a Eurosystem Collateral Management System (ECMS), which was approved as a project by the Governing Council of the ECB in December 2017. The ECMS will provide a harmonised system for collateral operations across the Eurosystem and will replace the existing systems of the 19 national central banks for those functions which can be harmonised before the time of the launch. Changes to the existing collateral framework will be implemented consistently across the euro area. The risk control framework will be applied using the same data. The launch is planned for November 2022.

While European market integration is progressing, financial market infrastructure and payments are subject to rapid technological change. To keep the Eurosystem's financial infrastructure fit for purpose for the years to come, the Governing Council decided in December 2017 that TARGET2 and T2S should be consolidated. This consolidation will mark a major upgrade of the TARGET2 RTGS services. It will facilitate enhanced liquidity management procedures for market participants across the Eurosystem, reduce operational costs and enhance cyber resilience (see Box 8).

In conjunction with the consolidation of TARGET2 and T2S services, the Eurosystem is developing a pan-European instant payment settlement service in central bank money. The TARGET instant payment settlement (TIPS) service, which is due to be launched in November 2018, will ensure that payments can be settled instantly across Europe. This will further facilitate integration and innovation in the euro retail payments market.

The creation of the Single Euro Payments Area (SEPA) integrated the euro retail payments market for basic retail payment instruments, thereby laying the foundation for the development of innovative payment solutions. The Eurosystem – in its role as catalyst – has been continuously driving European retail payment integration and innovation. Under the auspices of the Euro Retail Payments Board – a high-level forum for European dialogue between payment service providers and end users that is chaired by the ECB – the SEPA Instant Credit Transfer scheme was launched in November 2017. Work is also under way to facilitate person-to-person mobile payments, payment initiation services (in the context of the revised Payment Services Directive – PSD2[69]), card standardisation, accessibility for retail payment users to retail payment services, and e-invoicing across Europe.

The implications of distributed ledger technology (DLT) for Europe's financial market infrastructure have been further investigated. An ECB-internal "fintech" group monitors analytical work on the potential digital representation of cash. Work is also being carried out at Eurosystem level to understand what implications fintech may have for payments, oversight activities, the implementation of monetary policy and financial risk. Furthermore, extensive analysis has been undertaken on whether specific existing functionalities of an RTGS system could be run in a DLT environment in a safe and efficient manner[70]. While the test series produced

[69] The provisions of PSD2 became applicable in January 2018.

[70] See "Payment systems: liquidity saving mechanisms in a distributed ledger environment", ECB/Bank of Japan, September 2017, and "BOJ/ECB joint research project on distributed ledger technology", ECB/Bank of Japan, September 2017.

promising results, no direct conclusions can be drawn with regard to a potential usage in production. A report on the potential impact of DLT on securities post-trading harmonisation and on the wider integration of the EU financial markets[71] investigates the application of DLT in areas such as settlement finality, cyber security and reporting, adding to the discussion on how to harness this technology for better integrated EU financial markets.

4.2 Safety of market infrastructure and payments

The ECB is the lead overseer of three systemically important payment systems (SIPS), namely TARGET2, EURO1 and STEP2, while the Banque de France oversees CORE (FR), the fourth SIPS in the euro area. The Eurosystem continued work on the first comprehensive assessment exercise for these systems under the SIPS Regulation. The Eurosystem also continued with the coordinated assessment of non-systemically important retail payment systems, as well as domestic and international card payment schemes, and launched the assessment of the SEPA Instant Credit Transfer scheme.

In relation to T2S, the Eurosystem, in collaboration with other authorities, conducted oversight activities for T2S when it went live, and monitored the phased migration of the CSDs to T2S.

With regard to securities settlement systems (SSSs), the Eurosystem is involved in the authorisation process of the CSDs under the CSD Regulation, in its capacity as central bank of issue for the euro. Furthermore, the Eurosystem has developed a new regime for assigning eligibility to SSSs and links for their use in Eurosystem credit operations. The new regime is to be introduced in 2018 and significantly relies on the authorisation process laid down by the CSD Regulation.

In the field of central counterparties (CCPs), the Eurosystem has continued to contribute to the activities of the supervisory colleges established under the European Market Infrastructure Regulation (EMIR). In particular it has supported the national competent authorities in the authorisation of the extension of activities and services by CCPs, and of significant changes to their models.

On the regulatory side, amendments to the SIPS Regulation as well as supporting legal acts relating to sanctions and corrective measures were published in November 2017. The main changes to the SIPS Regulation relate to additional requirements on liquidity risk mitigation and cyber resilience, as well as the assignment of additional powers to the competent authorities.

In the field of retail payments regulation, the European Banking Authority, in close collaboration with the ECB, prepared, among other things, the draft regulatory technical standards (RTS) on strong customer authentication and on common and secure communication under PSD2. Once approved, the security measures outlined

71 See "The potential impact of DLTs on securities post-trading harmonisation and on the wider EU financial market integration", ECB, September 2017.

in the RTS will become applicable 18 months after the date of entry into force of the RTS.

Looking to the future, the risks posed by clearing systems, in particular CCPs, to the smooth operation of payment systems are expected to increase. These risks could ultimately affect the Eurosystem's primary objective of maintaining price stability. With regard to CCPs, two proposals for a revised EMIR were adopted by the European Commission in 2017 (see also Sections 3.3 and 9.2). The first proposal aims to alleviate the reporting and clearing obligations for some counterparties, applying the principle of proportionality; the second proposal seeks to enhance the EU framework for authorising and supervising EU CCPs and to strengthen the requirements applicable to systemically important third-country CCPs. The latter aspect is particularly important in the light of the significant volumes of euro-denominated transactions that are cleared by CCPs established in the United Kingdom which, following the eventual withdrawal of the United Kingdom from membership of the European Union, will no longer be subject to the EMIR regulatory and supervisory framework. The European Commission proposal, if adopted, would, among other things, give the Eurosystem a greater role in the supervision of both EU and third-country CCPs. To ensure that the Eurosystem can carry out this role, it is of the utmost importance that it has the relevant powers under the Treaty and the Statute of the European System of Central Banks and of the European Central Bank. To provide the ECB with clear legal competence in the area of central clearing, the Governing Council has adopted a Recommendation to amend Article 22 of the above-mentioned Statute.

Box 7
Instant payments and retail payments innovation

Instant payments

The SEPA Instant Credit Transfer (SCT Inst) scheme was launched in November 2017. It gives the retail payments market a common basis for the provision of innovative products and services that create value for customers and enable more competition among the payment service providers (PSPs). From the outset, about 600 PSPs from eight euro area countries have registered as participants in the SCT Inst scheme, i.e. they are at least reachable for SCT Inst payments. More PSPs from other countries will follow in 2018, 2019 and beyond.

Retail payment solutions based on the SCT Inst scheme allow customers – consumers, businesses and public administrations – to send and receive cashless payments across Europe in less than 10 seconds. Payments are immediately credited to the account of the recipient and can thus be used instantly to make further transactions.

Based on the SCT Inst scheme, innovative solutions could follow for person-to-person payments, person-to-business payments at terminals and in e-commerce, and also for business-to-business payments. Such innovative solutions include, for example, person-to-person mobile payments using the recipient's mobile telephone number as a proxy for the International Bank Account Number (IBAN). The innovative solutions have the potential to be extended to person-to-business payments as well, for example to pay for services provided at home or at the point of sale. In e-commerce, instant payments allow online merchants to synchronise the release of goods and services with payment. For business-to-business payments, instant payments improve cash flow and optimise working capital management. More generally, they reduce instances of late payment and speed up the payment of invoices.

SCT Inst payments not only fulfil the requirement of being fast, but are also safe and efficient. The SCT Inst scheme is subject to Eurosystem oversight. The underlying market infrastructure, which is also subject to Eurosystem oversight, ensures that SCT Inst payments are safely and efficiently processed and settled across Europe. Settlement takes place in central bank money.

Retail payments innovation

In the context of innovation in retail payments, it is important to distinguish clearly between, on the one hand, the development of payment instruments and solutions that are regulated by EU legislation and that are denominated in a currency that represents a dedicated claim on the issuing central bank; and, on the other hand, the emergence of virtual currency schemes such as Bitcoin. The term “virtual currency” is a misnomer in that, unlike a genuine currency, a virtual currency does not constitute a claim on an issuer. Furthermore, it has no clear legal basis and is unregulated. Thus, the ECB considers “virtual currencies” as merely a “digital representation of value”[72].

Users should be mindful that the value of “virtual currencies” may fluctuate widely and be fuelled by speculative activity. What is also noteworthy is that, compared with other digital payment methods, electricity consumption of some virtual currencies is very high, as the algorithm for verifying transactions requires a considerable amount of processing power and thus electricity.

The roll-out of instant payments across the euro area will further enhance the competitiveness and innovative potential of the retail payments ecosystem in Europe. They are backed by the safety and trust in the currency – the euro. “Virtual currencies”, in contrast, may be considered as speculative assets and are thus subject to risks. They are not backed by an issuing authority and therefore their use as a means of payment, unit of account and store of value cannot be taken for granted.

Box 8
Cyber resilience of the financial ecosystem

Digitalisation and globalisation have opened up new opportunities for individuals, companies and public institutions to obtain and manage information, conduct business and communicate. At the same time the increase in the interconnectedness, the complexity of the IT landscape, the number of users, and the amount of data on digital platforms and across networks has also created an increased exposure to cyber attacks. Cyber attacks on banks, financial market infrastructures and service providers are a serious concern, as they negatively impact consumers and businesses, could lead to systemic risk, affect financial stability and eventually impair economic growth.

The increasing sophistication of attackers, who explore new opportunities and employ new methods to compromise IT systems, is putting constant pressure on organisations to improve their security

72 See further Virtual currency schemes – a further analysis, ECB, February 2015.

controls. Such controls include collecting and analysing threat intelligence and implementing defensive measures, as well as augmenting the detective and reactive capabilities.

Operational resilience – and, within that, cyber resilience – requires particular attention. Operational resilience refers to an organisation's ability to anticipate, withstand, contain and rapidly recover from disruption. This implies that an organisation is able to continue its business before, during and after an incident; in addition, it strives to minimise the associated impacts that may arise during and after disruption.

The significant interconnectedness of the financial system, both in terms of business relations and the supporting IT infrastructure, implies that cyber resilience cannot be achieved in isolation. Collaboration and cooperation is essential at operational and policy level. The entire ecosystem (financial market infrastructures, market participants and critical service providers) needs to be involved, notably in the areas of information sharing, recovery and testing. The Eurosystem welcomes the cooperation at the European level on cyber security.

Among the measures that have been implemented to address and promote cyber resilience at Eurosystem level, the following initiatives are noteworthy:

1. Promoting the ECB's cyber resilience

For the ECB, it is of primary importance to protect the confidentiality and integrity of its data and safeguard the availability of its systems. This involves not only the implementation of a sound operational risk management and IT security framework and technical recovery capabilities but also the elaboration of business continuity plans. These plans outline how – in the event of persistent attacks – the ECB would prioritise its operations and resources, protect its key assets and restore functionalities. Furthermore, systematic cooperation between central banks has been established for developing common IT security risk management and policy frameworks, undertaking continuous analysis of recent cyber security developments, and responding to threats and incidents.

2. Promoting operational/cyber resilience of (supervised) banks

The Single Supervisory Mechanism (SSM) has introduced mandatory reporting of significant cyber incidents in its supervised banks. This allows a better understanding of the global landscape of cyber incidents that are affecting banks. Most aspects of cyber security are part of the SSM's IT risk supervision. This comprises continuous off-site supervision and risk assessments, thematic and horizontal reviews on focus areas (cyber security, IT outsourcing, data quality, etc.) and targeted on-site inspections (on IT risk areas in general, but also focusing on IT security and cyber risk). Work is ongoing to issue guidance on what expectations the SSM may have regarding IT risk in significant institutions under its supervision. In addition, the SSM is actively collaborating with peer supervisors across the globe and in particular at European level by sharing best practices and aligning policies.

3. Ensuring cyber resilience of financial market infrastructures

The Eurosystem's cyber resilience strategy for financial market infrastructures (FMIs) consists of three pillars: FMI readiness, sectoral resilience, and strategic regulator – industry engagement. Under the first pillar, the Eurosystem is implementing a harmonised approach to assessing payment systems in the euro area against the principle-based "Guidance on cyber resilience for financial market infrastructures" of the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO). In addition, the Eurosystem is developing a range of tools that can be used by FMI operators to enhance their cyber resilience maturity, such as a European red team testing[73] framework. This testing framework, which will be rolled out in 2018, aims to ensure standardisation and mutual recognition of cyber testing across the EU, so that FMIs are not subject to similar tests in every Member State and/or by different competent authorities. Under the second pillar, the Eurosystem aims to enhance the collective cyber resilience capability of the financial sector, through cross-border/cross-authority collaboration, information sharing, sector mapping and market-wide business continuity exercises. Under the third pillar, a forum has been created to bring together market players, competent authorities and cyber security service providers. The aim of the forum is to establish trust and collaboration among participants, and to catalyse joint initiatives to enhance sector capabilities and capacities.

Cyber resilience of the financial ecosystem requires the joint effort of institutions, infrastructures and authorities, but overall responsibility for ensuring cyber resilience lies with the respective financial institutions and FMIs.

5 Financial services provided to other institutions

5.1 Administration of 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[74] and the European Financial Stabilisation Mechanism (EFSM)[75]. In 2017 the ECB processed interest payments in relation to the loans under the MTFA. As at 31 December 2017 the total outstanding amount under this facility was €3.05 billion. In 2017 the ECB also processed various payments and interest payments in relation to the loans under the EFSM. As at 31 December 2017 the total outstanding amount under this mechanism was €46.8 billion.

Similarly, the ECB is responsible for the administration of payments arising in connection with the operations under the European Financial Stability Facility (EFSF)[76] and the European Stability Mechanism (ESM)[77]. In 2017 the ECB

73 The term “red team testing” was originally used by the military to describe a team tasked with penetrating the security of “friendly” installations, and thus testing their security measures. In the context of cyber resilience, it is an exercise which mimics the tactics, techniques and procedures of real attackers and seeks to target the people, processes and technologies of an FMI or firm, in order to test its protection, detection and response capabilities.

74 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 European System of Central Banks and of the European Central Bank (hereafter “the Statute of the ESCB”), and Article 9 of Council Regulation (EC) No 332/2002 of 18 February 2002.

75 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.

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

77 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).

processed various interest and fee payments in relation to loans under the EFSF. The ECB also processed ESM member contributions and various interest and fee payments in relation to the loans under this mechanism.

Finally, the ECB is responsible for processing all payments in relation to the loan facility agreement for Greece.[78] As at 31 December 2017 the total outstanding amount under this agreement was €52.9 billion.

5.2 Eurosystem Reserve Management Services

In 2017 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 these services, under harmonised terms and conditions in line with general market standards, to central banks, to monetary authorities and government agencies located outside the euro area, and to international organisations. The ECB performs an overall coordinating role, promoting the smooth functioning of the framework and reporting to the Governing Council.

The number of customers maintaining an ERMS business relationship with the Eurosystem was 278 in 2017, compared with 286 in 2016. With regard to the services themselves, in the course of 2017 the total aggregated holdings (which include cash assets and securities holdings) managed within the ERMS framework increased by approximately 7% compared with the end of 2016.

6 Banknotes and coins

The ECB and the euro area national central banks (NCBs) are responsible for issuing euro banknotes within the euro area and for maintaining confidence in the currency.

6.1 The circulation of banknotes and coins

In 2017 the number and value of euro banknotes in circulation grew by around 5.9% and 4.0% respectively. At the end of the year there were 21.4 billion euro banknotes in circulation, with a total value of €1,171 billion (see Charts 30 and 31). The €100 banknote showed the highest annual growth rate, which reached 7.9% in 2017.

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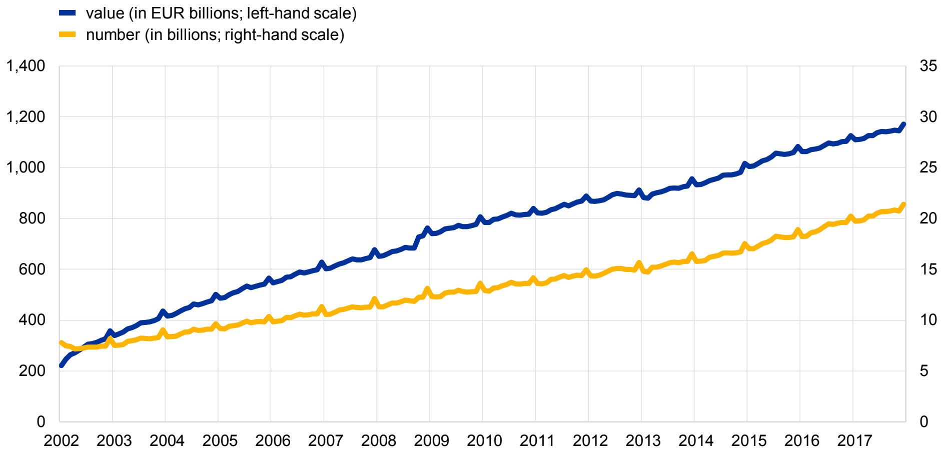
78 In the context of the loan facility agreement between the Member States whose currency is the euro (other than Greece and Germany) and Kreditanstalt für Wiederaufbau (acting in the public interest, subject to the instructions of and with the benefit of the guarantee of the Federal Republic of Germany) 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.

Growth in the €50 banknote remained dynamic, at 6.4%, but was slower than in the previous year.

Chart 30

Number and value of euro banknotes in circulation

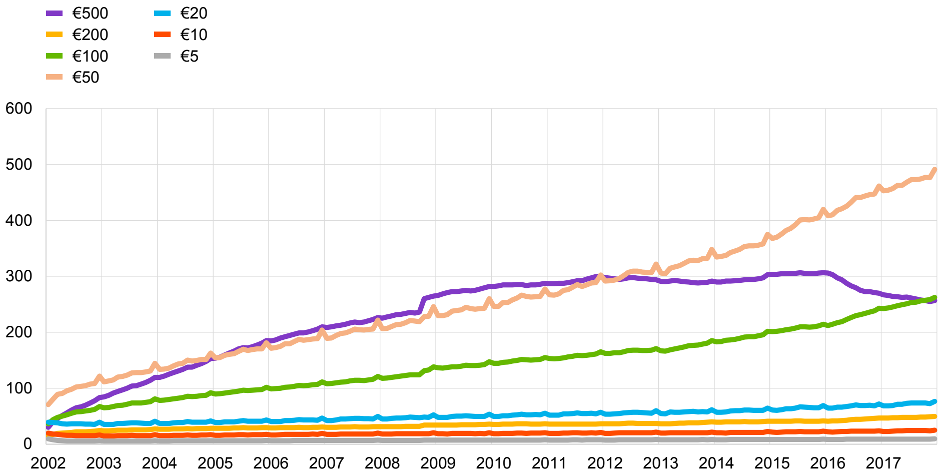


Source: ECB.

Chart 31

Value of euro banknotes in circulation by denomination

(EUR billions)



Source: ECB.

Following the decision to stop issuing €500 banknotes with the completion of the ES2 series, the circulation of the €500 banknote decreased further in 2017. This decrease was partly offset by a higher demand for the €200, €100 and €50 banknotes.

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 on international markets.

The production of euro banknotes is shared between the euro area NCBs, which were altogether allocated the production of 5.72 billion banknotes in 2017.

In 2017 the total number of euro coins in circulation increased by 4.2%, standing at 126.0 billion at end-2017. At the end of 2017 the value of coins in circulation stood at €28.0 billion, 4.0% higher than at the end of 2016.

In 2017 the euro area NCBs checked the authenticity and fitness for circulation of some 32.3 billion banknotes, withdrawing around 6.1 billion of them 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 fitness prior to recirculation. In 2017 credit institutions and other professional cash handlers checked some 36 billion euro banknotes for authenticity and fitness using such machines.

Box 9
The use of cash by households in the euro area

With the increase in card payments and the rise of alternative payment methods, the future of cash is under discussion and the relevance of cash in society is being challenged. However, although euro banknotes and coins have been in circulation for 15 years, not much is known about the actual use of cash by households. Therefore, the ECB conducted a comprehensive study[79] to analyse the use of cash, cards and other payment instruments at points of sale[80] (POS) by euro area consumers in 2016. The study is based on the findings of a survey for all euro area countries except Germany and the Netherlands, which carried out similar surveys independently in 2014 and 2016 respectively. The results for these two countries have been integrated with the ECB survey findings to present an estimation of the numbers and values of payments for all 19 euro area countries.

In 2016, in terms of the number of transactions, 79% of all POS transactions in the euro area were carried out using cash, 19% using cards and 2% using other instruments such as cheques, credit transfers or mobile means of payment. In terms of the value of transactions, 54% of all POS transactions were conducted using cash, 39% using cards and 7% using other payment instruments (e.g. cheques). However, large differences in payment behaviour are evident across the different countries, both in terms of the number and the value of transactions (see Chart A).

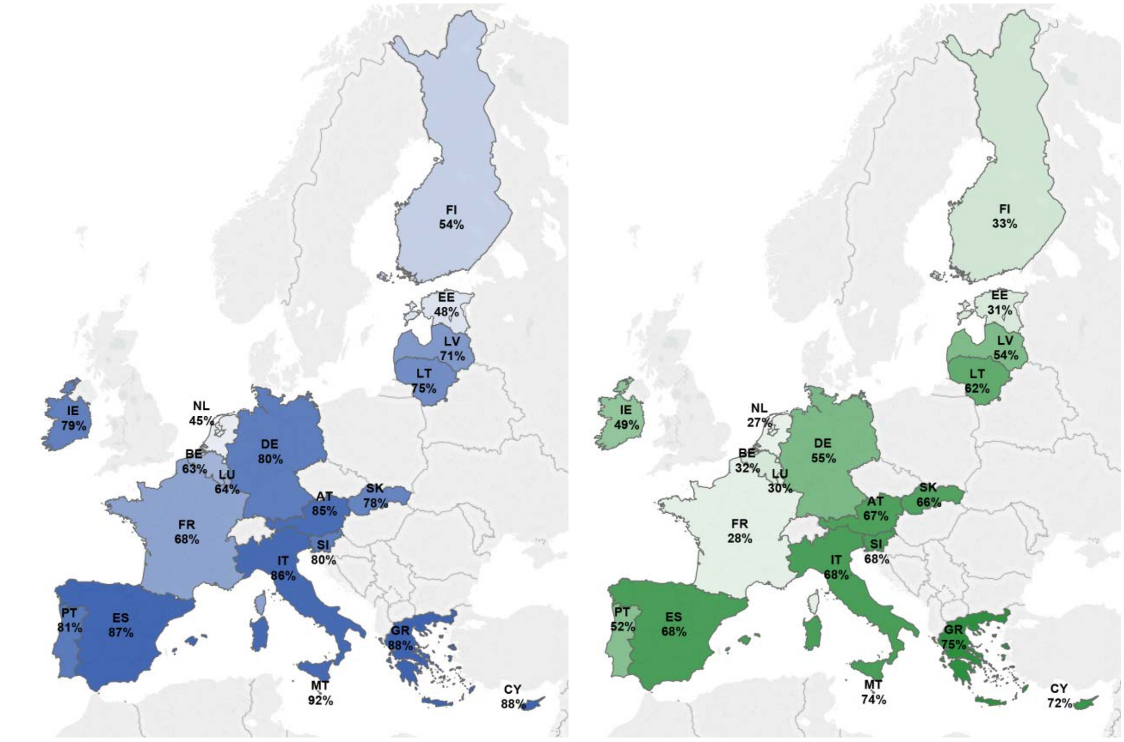
[79] See Esselink, H. and Hernández, L., "The use of cash by households in the euro area", *Occasional Paper Series*, No 201, ECB, November 2017.

[80] Points of sale are all physical places where consumers can buy products or services (see Chart B).

Chart A

Share of cash transactions at points of sale by country

(number of transactions) (value of transactions)



Sources: ECB, Deutsche Bundesbank and De Nederlandsche Bank.

Cash was the most commonly used payment instrument in the euro area for transactions of up to €45. For amounts above €45, cards were the most frequently used means of payment. However, only 9% of all recorded payments had a value above €45. Indeed, the results show that consumers spent on average only €18 every time they made a payment at a POS using cash, cards or other means of payment. Over one-third of payments were even lower than €5, and two-thirds were lower than €15.

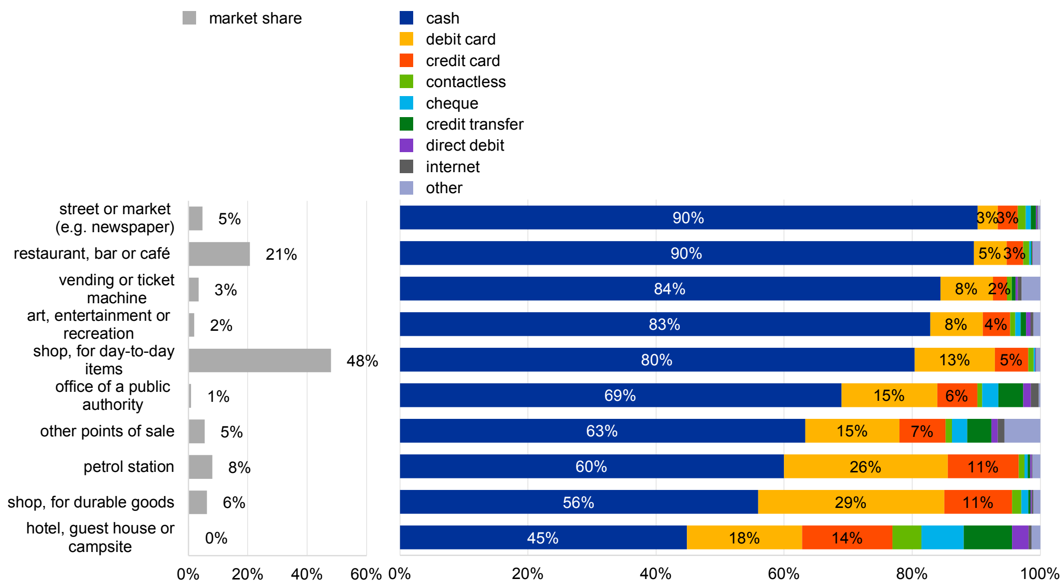
Most of the transactions took place in shops for day-to-day items (48%), followed by restaurants, bars or cafés (21%), petrol stations (8%) and shops for durable goods (6%) (see Chart B). The fact that most of the transactions took place in locations where between 80% and 90% of the payments were made with cash, together with the fact that two-thirds of all transactions were below €15, may explain to some extent why cash is more used than is often thought.

Chart B shows that 5% of all payments were made at other POS. This is typically in the services sector (e.g. for hairdressing, dry cleaning and plumbing services, the repair of cars and bicycles, or household services). For some countries, this item also includes payments which in other countries would typically be made using remote payment methods, such as credit transfers or direct debits. These are mainly recurrent payments, such as for rent, utilities and insurance policies, but also payments for the home delivery of oil or gas, or for medical services. In response to a survey question regarding such payments, on average in the euro area (excluding Germany) 6% of rents, 13% of electricity bills and 31% of medical bills were said to be paid in cash. In general, it can be concluded that in countries where the share of cash in overall payments is high, recurrent payments are more often made in cash.

Chart B

Market share of the main payment instruments used at points of sale – number of transactions

(percentages)



Sources: ECB, Deutsche Bundesbank and De Nederlandsche Bank.

Overall, the results indicate that the use of cash at POS is still widespread in most euro area countries. This seems to challenge the perception that cash is rapidly being replaced by cashless means of payment. Indeed, when asked about their preferred payment instrument, 32% of the respondents said that they preferred cash, 43% said that they preferred cards or other non-cash payment instruments and 25% said that they had no preference. This discrepancy between preferences and actual behaviour may be at least partly explained by the fact that people mostly seem to remember the larger-value payments, which they make less regularly, and tend to forget how frequently they make low-value payments using cash.

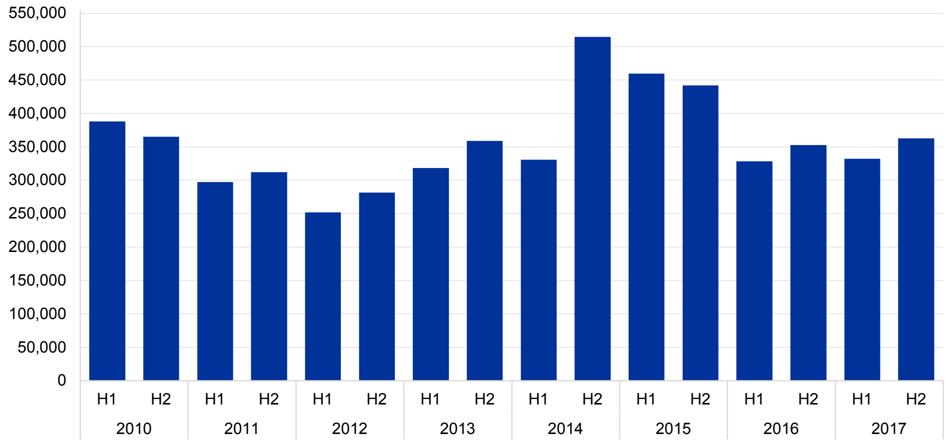
6.2 Counterfeit euro banknotes

The total number of counterfeit euro banknotes increased slightly in 2017, with around 694,000 counterfeits being withdrawn from circulation. Compared with the number of genuine euro banknotes in circulation, the proportion of counterfeits is very low. Long-term developments in the quantity of counterfeits removed from circulation are shown in Chart 32. Counterfeiters tend to target the €20 and €50 banknotes, which in 2017 accounted together for more than 85% of the total number of counterfeits seized. The share of counterfeit €20 banknotes fell in 2017.

The ECB continues to advise the public to remain alert to the possibility of fraud, 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 support the Eurosystem's fight against counterfeiting. The ECB also cooperates with Europol, Interpol and the European Commission in pursuit of this goal.

Chart 32

Number of counterfeit euro banknotes removed from circulation



Source: ECB.

6.3 The second series of euro banknotes

On 4 April 2017 the new €50 banknote entered into circulation. The introduction of the new note is the latest step in making euro banknotes even more secure. After the €5, €10 and €20, the new €50 is the fourth denomination of the second series of euro banknotes, known as the Europa series, that has been introduced. It contains enhanced security features, including the "emerald number", which displays an effect of the light that moves up and down when the banknote is tilted and also changes colour, and a "portrait window" – an innovative feature first used on the Europa series €20 banknote. When the banknote is held up to the light, a transparent window near the top of the hologram reveals a portrait of Europa (a figure from Greek mythology), which is visible on both sides of the note. The same portrait also appears in the watermark.

In the first half of 2019 it is planned to issue together the new €100 and €200 banknotes, the last two denominations of the Europa series. Following a review of the denominational structure of the euro banknotes, the Governing Council of the ECB decided to exclude the €500 from the Europa series, taking into account concerns that this denomination could facilitate illicit activities. The ECB and the euro area NCBs will conduct a campaign to inform the public and professional cash handlers about the introduction of the new €100 and €200 banknotes, both of which will have some new security features. The campaign will also include a reminder about the stopping of the issuance of the €500 denomination, which – in view of the international role of the euro and the widespread trust in euro banknotes – will, as with the other denominations of euro banknotes, remain legal tender and can therefore continue to be used as a means of payment and store of value. All of the 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.

The ECB and the euro area NCBs will continue to help the banknote handling machine industry prepare for the introduction of the new €100 and €200 banknotes.

7 Statistics

The ECB, assisted by the national central banks (NCBs), develops, collects, compiles and disseminates a wide range of statistics which are needed to support the monetary policy of the euro area, the supervisory functions of the ECB, various other tasks of the European System of Central Banks (ESCB) and the tasks of the European Systemic Risk Board. These statistics are also used by public authorities, financial market participants, the media and the general public. In 2017 the ESCB continued to provide regular euro area statistics in a smooth and timely manner. In addition, it devoted considerable effort to fulfilling new demands for very timely, high-quality and more granular statistics at the country, sector and instrument level.

7.1 New and enhanced euro area statistics

In 2017 the ECB began publishing euro money market statistics derived from granular data collected on the basis of Regulation ECB/2014/48. These statistics cover the unsecured market segment, and encompass the total turnover amount and weighted average rate over the reserve maintenance period (RMP), as well as average daily volumes during the RMP, broken down by counterparty sector, transaction type and maturity (63 new series). The purpose of this publication is to enhance market transparency and thereby improve the functioning of the money market.

The ECB also began publishing statistics on insurance corporations collected in accordance with Regulation ECB/2014/50. These statistics, describing the balance sheets of euro area insurance corporations, are updated on a quarterly basis.

In 2017 the ESCB established clear rules for the publication of monetary financial institution (MFI) interest rates and volumes, ensuring adequate and comparable disclosure of national MFI interest rate (MIR) statistics at the ESCB level. This led to an increase of 1,840 in the number of MIR series publicly available in the ECB's Statistical Data Warehouse.

The set of publicly available consolidated banking data was significantly expanded in November 2017 with new items covering balance sheets, profitability, asset quality, liquidity and capital adequacy.

The ECB also began publishing euro area aggregated balance sheet data on financial corporations engaged in lending to households and non-financial corporations resident in the euro area. The data are published annually and, for some countries, are also available at a quarterly frequency. Both outstanding amounts and differences in outstanding amounts adjusted for reclassifications are available.

The Macroprudential Database (MPDB) was enriched with a new set of indicators related mainly to the banking sector, bringing the total number of available indicators to more than 300. Work is ongoing on further expanding the MPDB, in particular in areas where there are data gaps.

7.2 Other statistical developments

A new ECB Regulation will directly address reporting requirements to all pension funds resident in the euro area that fall within the scope of the statistical definition set out in the Regulation. The ECB Regulation on statistical reporting requirements for pension funds will remedy shortcomings in the current quarterly statistics published since June 2011, in particular the limited dissemination of transaction data due to insufficient data quality. The new data will thus better support the ESCB in its monetary and financial analyses and in its contribution to the stability of the financial system.

During the drafting period, several meetings were held with the European Insurance and Occupational Pensions Authority (EIOPA) and the pensions industry, represented by PensionsEurope. The Regulation foresees the harmonised collection of breakdowns of pension funds' assets and liabilities by geographical counterparty, sector and maturity. Stock and transaction data will both be produced on a quarterly basis. Following the outcome of a public consultation that took place between the end of July and the end of September 2017, and the reply from the European Commission, an updated draft was submitted to the Governing Council in early 2018. The Regulation was adopted by the Governing Council on 26 January 2018 and published in the Official Journal on 17 February. The reporting of the new statistics to the ECB will start in 2019.

On 21 September 2017 the ECB announced that it will publish an overnight unsecured rate before 2020 on the basis of data collected under the Money Market Statistical Reporting Regulation. The interest rate would complement existing benchmark rates produced by the private sector and serve as a backstop reference rate. Over the next two years the ECB will define the high-level features of the interest rate, develop the calculation methodology and test the robustness of the rate. During this time the ECB will engage in transparent communication involving public consultations.

In 2017 the MIR quality assurance was strengthened with: (i) a set of best practices and a guidance document on performing quality checks; (ii) the first ESCB survey on NCBs' local data quality issues, which is to be updated on a biennial basis; and (iii) an enhanced MIR compliance framework. An updated version of the MIR

Manual[81] was published on the ECB's website in January 2017, reflecting enhancements in MIR statistics over recent years.

Work on the update of the ECB Regulation on payments statistics started in 2017. The aim of the exercise is to enhance statistical reporting in the field of payments in order to ensure that the statistics remain fit for purpose. This review will take into account recent developments in applicable European legislation, as well as the latest innovations in the retail payments market.

The long-term approach of the ESCB and its Statistics Committee to data collection from banks is aimed at standardising and integrating, insofar as possible, the existing ESCB statistical frameworks across domains and countries. This should reduce the reporting burden for banks, facilitate the automation of the processing of increasingly large and granular datasets, and enhance data quality. The two main initiatives are the Banks' Integrated Reporting Dictionary (BIRD)[82] and the European Reporting Framework (ERF). In 2017 the pilot phase of the BIRD, which provides banks with standard definitions and transformation rules to assist them in their reporting to authorities, was concluded with the description of requirements for AnaCredit and Securities Holdings Statistics. The next step on the inclusion of European Banking Authority (EBA) financial reporting requirements was also launched. The BIRD is made available as a "public good" to banks and all interested parties (e.g. software houses that develop software packages for financial reporting) and its adoption is voluntary. With regard to the ERF, which over time is intended to integrate reporting across domains and countries, the preparation of a cost-benefit analysis was started in 2017 with a view to assessing its impact on the supply and demand sides in close cooperation with the banking industry and all other stakeholders.

The capacity of the ESCB Register of Institutions and Affiliates Database (RIAD) is being extended to include the information needed to support the AnaCredit project (e.g. on non-financial corporations) and to meet other ESCB and European banking supervision user needs. As the key link between the different existing granular datasets (Securities Holdings Statistics Database – SHSDB, Centralised Securities Database – CSDB, and AnaCredit), RIAD allows all the information concerned to be brought together. Furthermore, the enhanced RIAD system was delivered at the end of the first quarter of 2018 and a dedicated ECB RIAD Guideline should be completed in the second quarter of 2018.

In June 2017 the Directorate General Statistics implemented a new organisational structure, paving the way for streamlined microdata production on a much larger scale than before and for progress in the production of high-quality macroeconomic statistics. The newly created Data Integration and Services Section provides a focal point for data integration and offers shared data services. One key achievement to date is the ECB data inventory, which helps users discover and access ECB data held in multiple applications. Several pilot projects are currently under way. These

81 See "Manual on MFI interest rate statistics", ECB, January 2017.

82 For more information, see the BIRD website.

are fostering collaboration and cross-comparability of studies from various business areas. The pilot projects focus on topics such as data access, bank identifiers and combining datasets to better analyse the funding and assets of banks. Considerable effort is being put into introducing international data standards to reduce the reporting burden and increase the quality and consistency of data.

The Executive Board of the ECB established a new Data Committee chaired by the Chief Services Officer in 2017. The Committee brings together senior managers from data-using and data-producing areas to establish and steer the implementation of the ECB data management strategy and coordinate ECB activities regarding data standardisation. An active Data Steward Group with representatives from all data-using and data-producing business areas is contributing to the ECB-wide development and alignment of data management topics, such as master and metadata and data access.

In 2017 the ECB continued to make its statistics more accessible and user-friendly. While ECB statistics are accessible via the Statistical Data Warehouse, new visualisations of euro area financing and investment dynamics, banking supervision data and statistical narratives have been added to the "Our statistics" website. Users can now share the visualisations by embedding them into websites, blogs and other digital fora. This sub-set of statistics can be viewed easily using any device, such as a PC, tablet, smartphone or other mobile device.

Box 10
Cooperation in the field of statistics at the European and international levels

The ECB, in close cooperation with Eurostat, has further developed the required quality assurance of statistics underlying the macroeconomic imbalance procedure (MIP). The MIP was established in 2011 as part of the "six-pack" of regulations on economic governance for the prevention and correction of macroeconomic imbalances in the EU.

The MIP includes a scoreboard of 14 main indicators (and 28 auxiliary indicators) that are used for the early detection of existing or emerging macroeconomic imbalances at Member State level. The MIP indicators are derived from economic and financial statistics which are produced by the European Statistical System (ESS) and the ESCB and then transmitted to Eurostat.

The ESS and the ESCB apply continuous statistical quality assurance to ensure that their statistics meet the quality standards required for policy use. The ESS, the ESCB, Eurostat and the ECB work closely together to ensure that reliable statistical data are available for the MIP.

Several MIP indicators (e.g. on the current account balance and private sector debt) are based on statistics that include balance of payments/international investment position data and financial accounts, i.e. statistics which in most Member States are compiled by the NCB. In November 2016 Eurostat and the ECB's Directorate General Statistics signed a Memorandum of Understanding (MoU) covering the quality assurance of these statistics. It lays down the working arrangements for cooperation between Eurostat and the ECB and stipulates that the datasets compiled by the NCBs have to be quality-assured by the ECB.

To this end, a three-level quality reporting system has now been fully implemented, including national self-assessment reports (level 3), which outline the key quality aspects of the statistics (self-assessment by national authorities); domain-specific quality reports (level 2), which are drafted by the ECB and Eurostat; and a joint Eurostat/ECB summary report assessing the quality of all statistics underpinning the MIP (level 1), which is published on an annual basis.

In 2017 the ECB began providing Eurostat with quality-assured datasets, including additional information detailing major events and revisions that have had an impact on national data. To further enhance statistical quality over time, the output quality and consistency of the datasets are analysed. The MoU also provides for visits by the ECB and Eurostat to NCBs and national statistical offices to help them to assess the output quality of the data. The first such visits started in late 2017.

The ECB has established a fruitful cooperation with the European Banking Authority (EBA), which has been further strengthened since 2014 following the introduction of the Single Supervisory Mechanism (SSM). This is particularly evident in the field of banking supervision data, as the ECB has become responsible for organising the processes relating to the collection and quality review of data reported by supervised entities in accordance with the SSM Framework Regulation. The EBA is responsible for preparing and maintaining implementing technical standards (ITS) on supervisory reporting and public disclosure, in close cooperation with the national competent authorities (NCAs).

The EBA is also an important stakeholder in the flow of supervisory data originating from reporting agents (the “sequential approach”), as the ECB forwards a sub-set of data to the EBA. This has generated a number of associated work processes, such as the generation of business cards for each reporting agent. At the same time, the ECB participates in the EBA Transparency Exercise as a stakeholder in the data flow and the associated data quality checks.

Cooperation with the EBA also includes participation by ECB staff in relevant EBA working groups in charge of supervisory reporting, as well as in joint work on data quality, for example maintenance and testing of data validation rules, development of plausibility checks, and interaction on data quality assessments, among other things. In addition, the ECB provides assistance in data quality governance matters, for instance by contributing to questions and answers (Q&As) on the interpretation of reporting requirements.

It is also worth mentioning that the EBA supports the ECB’s medium-term strategic initiatives to reduce the reporting burden on banks, for example the Banks’ Integrated Reporting Dictionary and the European Reporting Framework.

The ECB also cooperates with other organisations in several contexts, such as:

- data-sharing arrangements with the International Monetary Fund for the latter’s national and European Financial Sector Assessment Programs;
- participation in the United Nation’s Committee for the Coordination of Statistical Activities and the Bank for International Settlement’s Irving Fisher Committee on Central Bank Statistics – both of which are aimed at improving coordination and cooperation among statistical authorities, including central banks, at the European and/or global level, covering aspects such as the efficient functioning of the statistical system, common standards and platforms, and development of methodologies.

Finally, the ECB provides learning and training opportunities to other authorities through workshops, seminars and presentations. These are aimed both at organisations within the ESCB and SSM and those outside, such as NCAs and NCBs in non-EU countries, with a view to potential future EU membership.

Box 11

AnaCredit in the making: key features

AnaCredit, which stands for “analytical credit datasets”, is an initiative to collect and make available to a wide range of users granular analytical credit and credit risk information on individual bank loans to corporates and other legal persons. The new datasets will support the performance of ESCB tasks and will also substantially contribute to improving existing and developing new ESCB statistics. Granular data on credit to the economy and banks’ exposures will support a wide range of analyses, for which aggregated data can no longer be seen as sufficient. A very important aspect is the harmonisation of concepts and definitions, ensuring a high comparability of data across countries. AnaCredit will significantly enhance the value of analyses of credit and credit risk in the euro area by providing detailed, timely and fully harmonised information on loans to all legal entities. Furthermore, data confidentiality will be carefully protected by limiting access to granular data to users with a need to know. Other users will have access to semi-aggregated data, in which the underlying individual entities cannot be identified.

AnaCredit will offer a magnifying glass for the analysis of credit and credit risk in the euro area. With its coverage of loans to, in particular, non-financial corporations, AnaCredit will allow a better understanding of the monetary policy transmission channel, particularly in relation to the small and medium-sized enterprises that form the backbone of the economy in terms of investment and employment opportunities. AnaCredit may also be of benefit, via feedback loops, to reporting agents by enhancing their ability to assess borrowers’ creditworthiness across the euro area and will allow them to perform a broader and more robust analysis of their own exposures than at present. The feedback loops within the AnaCredit framework are currently being defined and will be implemented on a voluntary basis by NCBs.

In May 2016 the Governing Council of the ECB adopted the AnaCredit Regulation, which provides the legal framework for the ESCB to collect granular data on loans from credit institutions. According to the Regulation, more than 4,000 credit institutions in the euro area, and further ones in some other EU Member States, will start reporting from September 2018 to their NCBs (and via them to the ECB) data on individual credit exposures falling within the scope of the Regulation. Around 1,600 others, in particular small credit institutions, will be in part or in full exempt from reporting. It is estimated that 50 to 70 million records relating to around 15 million counterparties, most of them corporates, will be reported each month. In fact, counterparty data will start being reported six months earlier – from April 2018 – to help mitigate initial teething problems. Eurosystem members will share a common analytical credit dataset, and other EU NCBs may decide to report similar data based on the same definitions and would then have access on a reciprocal basis. The reporting framework is the outcome of in-depth analyses and discussions within the ESCB involving several rounds of consultations with users (including the financial industry and other stakeholders) in particular to assess costs and benefits and to calibrate the reporting, for example to ensure proportionality. The final reporting framework represents a balance between the needs of users in various areas of central banking and the associated costs of implementing, collecting and processing the necessary data.

AnaCredit will contain 88 loan attributes (mostly updated on a monthly basis) based on fully harmonised concepts and definitions applicable in all participating countries. The attributes cover all the parties in loan contracts (lenders, borrowers, guarantors) and include both structural data, for example economic activity, enterprise size, annual turnover or loan inception and redemption dates; and dynamic data, for example outstanding amount, default status of the instrument and of the counterparty, arrears or probability of default of the counterparty. The threshold for reporting is €25,000 at borrower level in a given credit institution.

Credit data will be combined with a register of all legal entities and other institutional units (such as foreign branches). This will enable the unique identification of about 15 million counterparties (lenders, borrowers and guarantors) and will offer a high degree of harmonisation of concepts and definitions, allowing a meaningful calculation of the total indebtedness of a borrower (legal entity or group) vis-à-vis its lenders (credit institutions). Credit institutions, as potential users of the granular credit information (via feedback loops where implemented), will also be able to perform a more detailed and robust analysis of their own exposures than at present.

Since the adoption of the AnaCredit Regulation in May 2016, significant methodological work has been carried out by the ESCB Statistics Committee, assisted by the Working Group on AnaCredit, including the preparation of the AnaCredit Manual, which provides 570 pages of detailed information and guidance on AnaCredit reporting requirements. The Manual's overall objective is to support the credit institutions in preparing the methodologically sound automation of the reporting and to ensure consistent and effective application across the euro area of the AnaCredit statistical framework as set out in the Regulation. The Manual consists of the following three parts:

- Part I, which explains the general AnaCredit methodology and provides information about the reporting population and set-up, including a general description of the underlying data model (published in November 2016);
- Part II, which describes all the datasets and data attributes of AnaCredit data collection in detail, providing specific reporting instructions (published in February 2017);
- Part III, which presents selected case studies and scenarios that require more in-depth explanation (published in May 2017).

The Manual, which was commented upon by the industry, is being complemented by further methodological work related to the provision of detailed explanations via the ongoing Q&A process. In particular, credit institutions and other stakeholders can submit questions to the relevant NCB at any time. The NCB prepares a response, often jointly with the ECB, and the content is usually also shared with other NCBs. A selection of these Q&As was published on the ECB's website in August 2017 and is updated on a regular basis.

The ESCB Statistics Committee and the Working Group on AnaCredit have also developed validation checks to help automate data transmission and establish minimum quality standards for data transmission by credit institutions. Validation checks allow the data to be identified and processed appropriately. A set of validation checks was published on the ECB's website in August 2017.

Finally, while the AnaCredit Regulation contains binding rules on primary reporting by credit institutions, an ECB Guideline sets out how NCBs have to report the required credit data to the ECB in the form of secondary reporting. In particular, the Guideline provides details on the transmission to the ECB of credit data and counterparty reference data collected pursuant to the Regulation.

As indicated in the preamble to the AnaCredit Regulation, the initiative may be expanded in future stages to cover additional lenders, borrowers and instruments.

8 Economic research

High-quality economic research helps ensure solid foundations for ECB policies. During 2017 research at the ECB provided new insights into a range of important policy challenges. In addition, the activities of three new research clusters and two research networks fostered collaboration across the European System of Central Banks (ESCB).[83]

8.1 ECB research priorities

In 2017 ECB research teams focused on a well-defined set of research priorities. One important focus was the transmission of non-standard monetary policy in an environment with negative policy rates. Studies highlighted the importance of non-standard measures in counterbalancing the economic consequences of adverse financial shocks by reducing market uncertainty and improving access to bank finance for small and medium-sized firms. Non-standard monetary policy and the interactions between the financial and real sectors of the economy also featured prominently in research aimed at improving multi-country and euro area-wide ECB models used for forecasting and monetary policy analysis. Other major priorities were the identification of factors that can help explain the persistence of low inflation in the euro area and research aimed at the design of institutional and policy arrangements to strengthen Economic and Monetary Union (EMU).

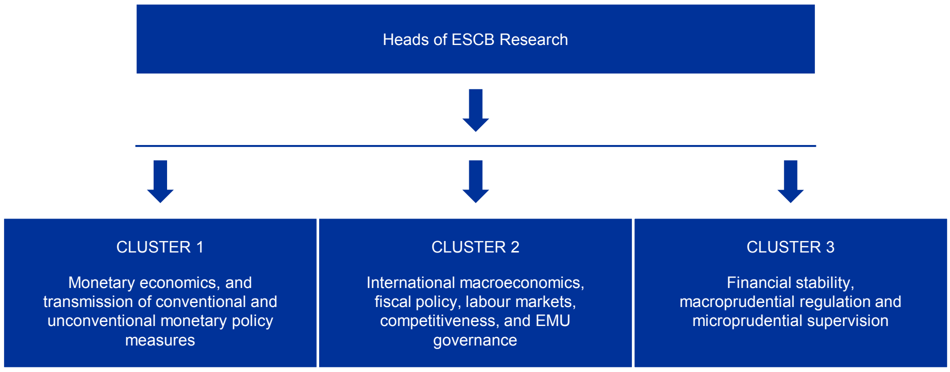
In 2017 significant research efforts were also devoted to macroprudential policy. An important step in this respect was the calibration of the so-called “3D model” to cover all Single Supervisory Mechanism countries. The model features three levels of default risk (for banks, non-financial firms and households) and is particularly useful for assessing bank capital adequacy. In addition, a model version featuring nominal rigidities was developed to analyse the interaction between monetary and macroprudential policies.

83 More detailed information on the ECB’s research activities, including information on research events, publications and networks, is provided on the ECB’s website.

8.2 Eurosystem/ESCB research clusters and networks

To further enhance collaboration among ESCB researchers, the Heads of ESCB Research Departments decided to launch three new research clusters in the course of 2017. The purpose of the clusters is to coordinate research efforts in high-priority research fields via regular workshops and joint research projects (see Figure 2). During the year, each of the clusters held an inaugural workshop attended by researchers from across the ESCB as well as by external experts.

Figure 2
ESCB research clusters



Source: ECB.
Note: Structure of the new ESCB research clusters as decided by the Heads of ESCB Research Departments in 2016.

Two Eurosystem/ESCB research networks made significant progress during 2017. The Wage Dynamics Network (WDN) concluded the third wave of its survey covering more than 25,000 firms from 25 EU countries. The third wave studies the cost and price-setting behaviour of firms and the impact of the various structural reforms that took place between 2010 and 2013 on labour market adjustment. One of the key findings of this new research is that the major labour market reforms in countries that were hit hard by the crisis have indeed facilitated labour market adjustment (see Chart 33).[84]

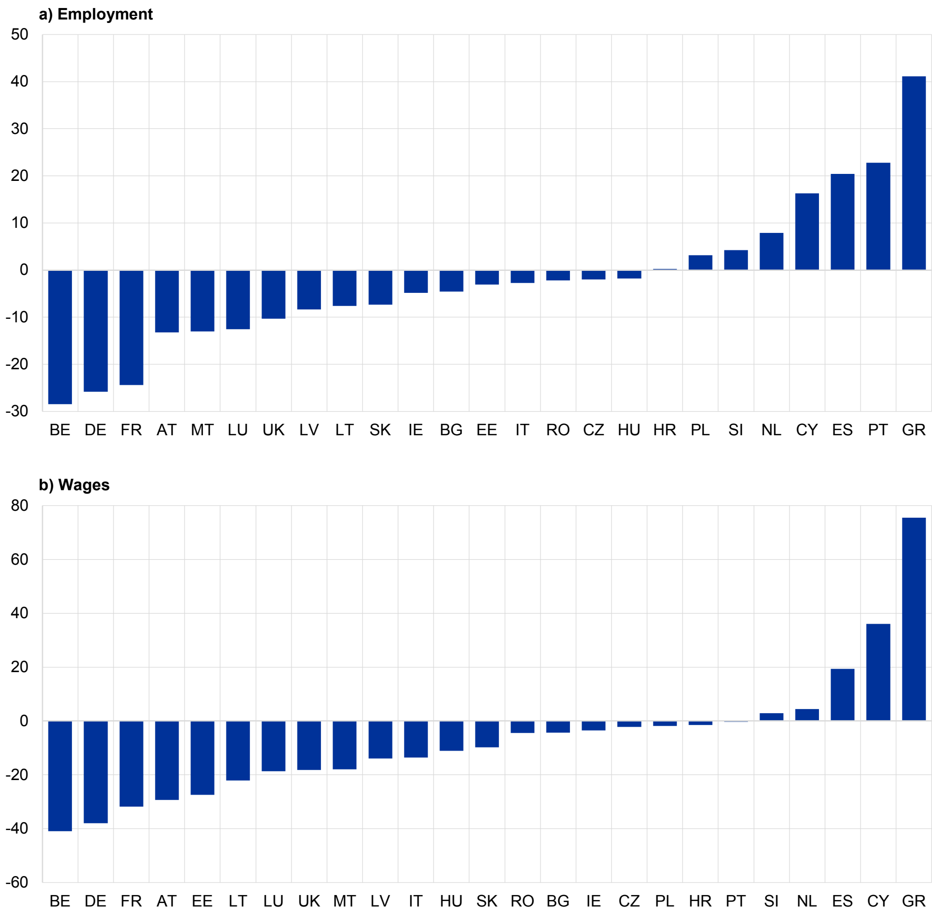
The Household Finance and Consumption Network (HFCN) coordinates the production of the Household Finance and Consumption Survey. Following the release of the results of the second wave of the survey in late 2016, HFCN research has, among other things, studied the role played by household heterogeneity in monetary policy transmission and financial stability. For example, researchers from the HFCN have estimated the effect of the ECB's recent asset purchase programme (APP) on income and wealth inequality. A key finding is that the APP measures affect wealth inequality only modestly, but reduce income inequality by lowering unemployment rates among low-income households.

[84] The results of the WDN survey are summarised in "Labour market adjustment in Europe during the crisis: microeconomic evidence from the Wage Dynamics Network survey", *Occasional Paper Series*, No 192, ECB, June 2017. Individual country reports and related working papers can be found on the WDN's website.

Chart 33

Net change in the ease of adjustment of employment and wages between 2010 and 2013

(percentages)



Source: Wage Dynamics Network.
Notes: Difference between the percentage of firms reporting that it has become easier and the percentage of firms reporting that it has become more difficult to adjust employment and wages, respectively, to changed business conditions. Positive values indicate that more firms found it easier rather than harder to adjust.

8.3 Conferences and publications

Dialogue with economists in academia and other policy institutions has taken on an increasing importance as the complexity of issues relevant to the ECB has risen sharply in recent years. With this in mind, the ECB organised several high-level research events in 2017, including the ECB Forum on Central Banking in Sintra and the ECB's second Annual Research Conference (ARC). The former conference focused on major real economic developments that are relevant for monetary policy, notably investment and productivity.[85] ARC 2017 featured innovative research on topics such as the costs of inflation, the effects of negative interest rates, the link

85 All papers, discussions and speeches of the Sintra Forum can be found in the conference e-book and video recordings of all sessions can be watched on the ECB's YouTube channel.

between economic agents' beliefs and economic stagnation, and wealth inequality. Other important conferences related to structural reforms in the euro area, macroprudential policy and central bank communication.

Many of the ECB's research activities also resulted in the publication of papers in scientific journals and working papers. In total, 132 papers were published in the ECB's Working Paper Series during 2017. In addition, a number of more policy-oriented analytical studies were published via the ECB's Occasional Paper Series, Statistics Paper Series and Discussion Paper Series. This pool of high-quality research and analytical work provided the basis for an enhanced communication of ECB research findings to a wider audience, with 12 articles being published in the ECB's Research Bulletin during 2017.[86]

9 Legal activities and duties

In 2017 the ECB took part in several judicial proceedings at the EU level. The ECB also adopted numerous opinions in response to the Treaty-based requirement for the ECB to be consulted on any proposed EU act or draft national legislation falling within its fields of competence, as well as monitoring compliance with the prohibition of monetary financing and privileged access.

9.1 ECB participation in judicial proceedings at the EU level

In January 2017 the General Court of the European Union (the "Court") dismissed the action for damages brought by two French entities (Nausicaa Anadyomène and Banque d'Escompte) against the ECB in Case T-749/15. The damages claimed by the two entities related to the haircut affecting certain Greek government bonds purchased by the two entities in the context of a partial restructuring of Greece's sovereign debt in 2012. The main pleas in law against the ECB were an alleged breach of the principles of: (i) legitimate expectations and legal certainty; (ii) equal treatment and non-discrimination; and (iii) good administration.

With its judgement, the Court dismissed the action and thus excluded all liability on the part of the ECB, confirming what it had already stated in respect of natural persons holding Greek debt instruments (see Case T-79/13, *Accorinti and Others* v *ECB*). The Court held that the ECB is not bound to make good the losses allegedly sustained by banks holding Greek debt instruments in connection with the restructuring of Greek debt in 2012. It found first of all that commercial banks may not rely upon the principle of the protection of legitimate expectations or upon the principle of legal certainty in a field such as that of monetary policy, the objective of which involves constant adjustment to reflect changes in economic circumstances. The Court found that none of the ECB's acts or statements could be interpreted as having encouraged investors to acquire or retain Greek debt instruments.

[86] The ECB's Research Bulletin is a web-based platform for the dissemination of important research findings to a wider audience. The issues of this publication are available on the ECB's website.

The Court also confirmed that the general principle of equal treatment could not apply, since commercial banks acquiring Greek debt instruments for profit, on the one hand, and the ECB and the national central banks (NCBs) acting in the pursuit of their public interest tasks, on the other, were not in a comparable situation.

In March 2017 the Court ruled on an action filed by a Portuguese company (Comprojecto – Projectos e Construções, Lda.) and others against the ECB, in Case T-22/16, for failure to act and simultaneously for the annulment of the corresponding ECB decision that was argued to be adopted tacitly by the ECB by refusing to act. The applicants also presented a claim for financial damages, as a result of the alleged ECB refusal to act.

The applicants had argued that they sent a letter containing a complaint to the ECB regarding a credit institution and that the ECB had refused to act upon it, given that said letter had been returned to the sender.

The action was considered by the Court to be manifestly inadmissible and lacking any foundation in law both regarding the claim for the declaration of a failure to act and the claim for annulment. Regarding the first claim, the Court considered that an action for failure to act is only admissible if, before proceedings are brought, the defendant Union institution has first been called upon to act, while the applicants failed to provide sufficient evidence that the ECB had in fact received the complaint. As far as the claim for annulment is concerned, the Court concluded that the attempt to notify the ECB was not successful and, consequently, the return of the complaint to the applicants by the postal services could not be interpreted as an act of the ECB by virtue of which this institution had refused to act. Finally, and consequently, by not having invited the ECB to act, the applicants did not demonstrate any omission or failure to act by this institution that could generate the Union's responsibility; therefore, the conditions for the claim for financial damages were deemed not to be fulfilled.

In July 2017 the German Federal Constitutional Court (the "Constitutional Court") stayed the proceedings of several constitutional complaints which had been lodged concerning the expanded asset purchase programme (APP). The Constitutional Court referred questions to the Court of Justice of the European Union (the "Court of Justice") and requested the application of the expedited procedure.

The Court of Justice rejected the request for an expedited procedure. In November 2017 the ECB submitted its written observations. A date for the oral hearing has not yet been set. On the basis of the Court of Justice's answer to the questions referred, the Constitutional Court will decide on the compatibility of the public sector purchase programme (PSPP), as interpreted by the Court of Justice, with Germany's constitution (the Basic Law).

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.[87] 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 2017 the ECB adopted 7 opinions on proposed EU legislation and 47 opinions on draft national legislation falling within its field of competence.

At the EU level, the most significant opinions[88] adopted by the ECB related to a proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) No 1095/2010 and Regulation (EU) No 648/2012 with regard to the procedures for and authorities involved in the authorisation of central counterparties and requirements for the recognition of third-country central counterparties (CON/2017/39), amendments to the Union framework for capital requirements of credit institutions and investment firms (CON/2017/46), revisions to the Union crisis management framework (CON/2017/47), a proposal for a directive of the European Parliament and of the Council on amending Directive 2014/59/EU as regards the ranking of unsecured debt instruments in insolvency hierarchy (CON/2017/6), and a proposal for a regulation of the European Parliament and of the Council on a framework for the recovery and resolution of central counterparties and amending Regulations (EU) No 1095/2010, (EU) No 648/2012, and (EU) 2015/2365 (CON/2017/38).

A number of consultations by national authorities concerned limitations to cash payments above certain thresholds[89] and the regulation and identification of critical infrastructures[90].

The ECB adopted opinions concerning NCBs, including the conferral of new tasks on NCBs[91], an NCB's participation in International Monetary Fund programmes[92], the financial independence of an NCB[93], the auditing of an NCB's business operations[94], the amendment of an NCB's statute changing the number of directors on the board[95], changes to the decision-making framework of an NCB[96], the potential liability of an NCB for damages caused in the exercise of supervisory powers over

87 The United Kingdom is exempt from the consultation obligation, pursuant to the Protocol (No 15) on certain provisions relating to the United Kingdom of Great Britain and Northern Ireland, annexed to the Treaties.

88 The other opinions are: CON/2017/22 on a proposal for a directive of the European Parliament and of the Council on preventive restructuring frameworks, second chance and measures to increase the efficiency of restructuring, insolvency and discharge procedures and amending Directive 2012/30/EU; and CON/2017/42 on a proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) No 648/2012 as regards the clearing obligation, the suspension of the clearing obligation, the reporting requirements, the risk-mitigation techniques for OTC derivatives contracts not cleared by a central counterparty, the registration and supervision of trade repositories and the requirements for trade repositories.

89 See CON/2017/8, CON/2017/18, CON/2017/20, CON/2017/27 and CON/2017/40.

90 See CON/2017/10 and CON/2017/31.

91 See CON/2017/2, CON/2017/3, CON/2017/12, CON/2017/19, CON/2017/32 and CON/2017/43.

92 See CON/2017/4.

93 See CON/2017/17.

94 See CON/2017/24.

95 See CON/2017/34.

96 See CON/2017/51.

payment service providers[97], the procedure applicable to an NCB's decisions within the framework of the Single Supervisory Mechanism[98], the oversight function of an NCB in relation to payment systems, payment schemes, securities depositories and clearing and settlement systems[99], pay and pension provisions for NCB employees[100], an NCB's manner of performing interbank clearing and interbank settlements[101], the ownership of a special purpose entity for manufacturing euro banknotes[102], the exclusion of set-off rights with respect to claims mobilised as collateral with an NCB[103], the independence of an NCB's decision-making bodies with regard to financial stability matters[104], the granting of additional power to an NCB to impose penalties on institutions that fail to comply with reporting requirements for the balance of payment statistics[105], the endowment by an NCB of a national foundation for research, technology and development[106], and the macroprudential tools[107] and monetary policy implementation[108] of non-euro area NCBs.

The ECB adopted opinions on various aspects of the activities of financial institutions, including improvements to the transparency and quality of a national supervisory regime[109], the restructuring of foreign currency-denominated or -linked loans[110], support to home loan borrowers in a difficult financial situation[111], the provision of extraordinary public support to the banking sector[112], the imposition of minimum funding requirements[113], mortgage amortisation requirements[114], macroprudential tools to counteract systemic risks arising from real estate lending[115], the tightening of restrictions on related party lending[116], central credit registers and a register of bank accounts[117], the reporting of credit data[118], the authorisation of payment systems[119], the legal framework for covered bonds[120], the reserve funds of

97 See CON/2017/44.
98 See CON/2017/36.
99 See CON/2017/5.
100 See CON/2017/49.
101 See CON/2017/37.
102 See CON/2017/25.
103 See CON/2017/23.
104 See CON/2017/23.
105 See CON/2017/23.
106 See CON/2017/26.
107 See CON/2017/14.
108 See CON/2017/30.
109 See CON/2017/35.
110 See CON/2017/9 and CON/2017/48.
111 See CON/2017/48.
112 See CON/2017/1.
113 See CON/2017/23.
114 See CON/2017/29.
115 See CON/2017/11, CON/2017/21 and CON/2017/36.
116 See CON/2017/50.
117 See CON/2017/13 and CON/2017/28.
118 See CON/2017/33 and CON/2017/36.
119 See CON/2017/15.
120 See CON/2017/36.

banking foundations[121], the creation of a new category of settlement institution[122], the creation of a new category of senior non-preferred debt instruments in the insolvency hierarchy of credit institutions[123], and deferred tax assets arising from debit differences[124].

In addition, the ECB issued opinions on judicial relief granted to holders of qualified bank credit[125].

Two cases of non-compliance with the obligation to consult the ECB on proposed Union legislation were recorded with one considered to be both clear and important. The ECB was not consulted by the European Commission on the Delegated Regulation on the final system of contributions to the administrative expenditures of the Single Resolution Board. Given that the act in question imposed legal obligations on the ECB, the ECB considers this to be both a clear and important case of non-compliance with the obligation to consult the ECB.

Five cases of non-compliance with the obligation to consult the ECB on draft national legislation were recorded, with four cases being considered clear and important.[126]

The ECB was consulted by the Italian Ministry of Economy and Finance on the Decree Law on urgent financial provisions, initiatives in favour of territorial authorities, further interventions for areas affected by seismic events and development measures, and in particular on provisions providing for a mandatory rounding of cash payments denominated in euro. However, the ECB was not afforded sufficient time to examine the draft legislative provisions and to adopt its opinion prior to adoption of the Decree Law.

The ECB was consulted by the Spanish Secretary of State for Economy and Business Support for an ECB opinion on a draft Royal Decree Law on urgent financial measures, which established a new category of bank debt. However, the ECB was not afforded sufficient time to examine the draft legislative provisions and to adopt its opinion prior to adoption of the Royal Decree Law.

The ECB was not consulted by the Croatian authorities on the Law on nullity of loan agreements with international features concluded in the Republic of Croatia with an unauthorised creditor.

Finally, the ECB was not consulted by the Dutch Government on the Law regulating the legal position of civil servants, which has potential implications for central bank independence.

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121 See CON/2017/19.

122 See CON/2017/23.

123 See CON/2017/23.

124 See CON/2017/7.

125 See CON/2017/16 and CON/2017/41.

126 These 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.

The failures to consult the ECB by the Netherlands, Spain and Croatia were considered to be clear and important, and the failure to consult the ECB by Italy was considered to be a clear and important and also a repetitive case of non-consultation.

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) and the ECB 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, 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 monitoring exercise conducted for 2017 confirms that the provisions of Articles 123 and 124 of the Treaty and the related Council Regulations were in general respected.

The monitoring exercise revealed that most EU NCBs in 2017 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 even when the latter is negative.

Last year's ECB Annual Report stated that the establishment and funding of MARK Zrt., an asset management company, by the Magyar Nemzeti Bank constituted a violation of the monetary financing prohibition that needs to be corrected. The MNB in 2017 has taken corrective actions and no longer owns or controls MARK Zrt., but given that the financial transaction has not yet been fully completed at this juncture, the corrective process cannot be considered as finalised and the case cannot be formally closed.

Following up on the concerns raised in the ECB's Annual Reports as of 2014, the ECB has continued to monitor several programmes launched by the Magyar Nemzeti Bank in 2014 and 2015. These programmes are not related to monetary policy and potentially conflict with the monetary financing prohibition, to the extent that they could be viewed as the Magyar Nemzeti Bank taking over state tasks or otherwise conferring financial benefits on the state. The programmes include a programme to promote financial literacy run through a network of foundations, the transfer to the central bank of staff formerly employed by the Hungarian Financial Supervisory Authority, and a programme of purchases of Hungarian artworks and cultural properties. In 2017, the Magyar Nemzeti Bank has taken several actions to alleviate ECB's concerns. However, in view of their multitude, scope and size, the ECB will continue to closely monitor compliance of these operations with the prohibition of monetary financing and of privileged access. Moreover, 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 reduction of IBRC-related assets by the Central Bank of Ireland during 2017, mainly through sales of long-duration floating rate notes, is a significant step in the direction of the necessary full disposal of these assets. A more ambitious sales schedule would further mitigate the persisting serious monetary financing concerns.

10 International and European cooperation

10.1 European relations

In 2017 the ECB maintained its close dialogue with European fora and institutions, including the European Council, the ECOFIN Council, the Eurogroup, the European Parliament and the European Commission. Completing the banking union, deepening Economic and Monetary Union (EMU) more broadly, and topics related to strengthening economic convergence in the euro area were some of the items that featured on the agendas of Eurogroup and ECOFIN Council meetings, in which the President of the ECB and other members of its Executive Board took part.

Deepening Europe's Economic and Monetary Union

In 2017 further discussions took place on strengthening EMU, as well as on the trajectory of European integration more broadly.

The ECB participated in various discussions on strengthening the economic and fiscal governance framework. In the context of these discussions, the ECB regularly underlined the need for the consistent application over time and across Member States of the provisions of the Stability and Growth Pact and the macroeconomic imbalance procedure. In this respect, progress has been less than satisfactory so far.

Full implementation of the budgetary rules and a more effective coordination of economic policies are prerequisites for creating the necessary trust among Member States to go ahead with EMU deepening.

As regards European financial integration, several steps were taken to advance the banking union. The ECB undertook a comprehensive exercise to create a level playing field for banks by further harmonising the national options and discretions in the Capital Requirements Directive and the Capital Requirements Regulation across the euro area countries. In its capacity as supervisor, the ECB also took further action to create a level playing field by harmonising supervisory practices across the euro area. For example, the ECB issued guidance to banks on how to address the problem of non-performing loans across the banking union.

At the same time, technical work continued in EU fora on moving towards a European deposit insurance scheme and a common backstop to the Single Resolution Fund, further supported by the European Commission's October 2017 Communication on completing the banking union.

In addition to the ECB's work in its capacity as supervisor, the ECB also took part in shaping the agreement on the bank creditor hierarchy, which ranks unsecured debt instruments in insolvency procedures, and a draft regulation on phasing in the regulatory capital impact of a new international accounting standard (IFRS 9).

As a complement to the banking union, a European capital markets union (CMU) could foster financial integration based on equity capital, which would increase EMU's resilience to shocks. In this respect, a mid-term review of CMU took place and several regulations were adopted, including rules on securitisation and on European venture capital.

Discharging democratic accountability

With the ratification of the EU treaties, EU Member States made the ECB independent and gave it a clear mandate to ensure price stability. Accountability is the necessary counterpart to that independence. Independence ensures that the ECB can act in line with its democratic mandate, being protected from political influence or short-sighted pressure of any form. Accountability, on the other hand, ensures that independence does not lead to arbitrariness and that the mandate is fulfilled.

The Treaty on the Functioning of the European Union provides that the ECB is primarily accountable to the European Parliament as the body composed of the elected representatives of the citizens of the EU. In 2017 the President of the ECB attended four regular hearings of the Committee on Economic and Monetary Affairs of the European Parliament.[127] At these hearings, Members of the European Parliament (MEPs) focused on the ECB's monetary policy (especially the non-

[127] The introductory statements are available on the ECB's website.

standard measures), the future of EMU and the EU, as well as financial sector policies. There were also questions about the external risks, including political uncertainty, to the economic outlook.

The ECB also discharges its accountability obligations through regular reporting and by answering written questions from MEPs. In 2017 the President of the ECB received 53 letters containing such questions, the replies to which were published on the ECB's website.[128] In total, he answered 138 questions asked by MEPs in writing or orally (during hearings), reflecting the ECB's high standards of accountability and transparency. Most of the questions focused on the implementation of the ECB's non-standard monetary policy measures, macroeconomic adjustment programmes and developments in TARGET2 balances.

The ECB is also held accountable for its banking supervision activities by both the European Parliament and the EU Council.[129] More detailed information is provided in the 2017 ECB Annual Report on supervisory activities.

10.2 International relations

G20

As the global economic recovery strengthened, Germany's G20 presidency focused on enhancing economic resilience and taking forward past commitments. In particular, G20 finance ministers and central bank governors reaffirmed their previous exchange rate commitments and G20 heads of government made known their intention to continue fighting against protectionism. The G20 also stepped up its efforts to monitor the effectiveness of policies to foster strong, sustainable, inclusive and balanced growth through a three-pronged approach, maintaining an emphasis on structural reforms, which remain critical to improving the medium-term economic outlook. Similarly, finalisation and implementation of the regulatory agenda proceeded, including efforts to enhance the resilience of the shadow banking sector and monitor the effects of financial regulatory reforms. The G20 has also moved forward in the field of international tax cooperation and financial transparency. It has moreover reiterated its commitment to enhancing the international financial architecture and global financial safety net. The G20 and other international institutions, such as the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development, have also strengthened their focus on improving the system underpinning international capital flows. Finally, the G20 has launched the Compact with Africa initiative to boost private investment across the African continent.

128 All of the ECB President's answers to MEPs' questions are published in the dedicated section of the ECB's website.

129 Written responses by the Chair of the Supervisory Board of the ECB to questions from MEPs are published on the ECB Banking Supervision website.

Policy issues related to the IMF and the international financial architecture

The ECB continued to play an active role in discussions on the international monetary and financial system at the IMF and in other fora, promoting a common European perspective from a central bank's position.

Several initiatives have been taken forward to strengthen the global financial safety net (GFSN). Within the review of its lending toolkit, the IMF introduced a new policy coordination instrument that allows countries to signal commitment to economic reform and unlock financing from other sources. The IMF Executive Board endorsed new principles and modalities for the collaboration between the IMF and regional financing arrangements (RFAs), reflecting the rising importance of RFAs in the GFSN.

In an important step for financial sector surveillance, the IMF launched its first euro area Financial Sector Assessment Program (FSAP) in 2017. The comprehensive exercise involving several European institutions, including the ECB – both its central banking and supervisory arms – will also inform and thus facilitate FSAP exercises at member country level.

As regards IMF quotas and governance, the work on the 15th Review of Quotas continued in 2017. A strong, quota-based and adequately resourced IMF at the centre of the international monetary system remains crucial.

International central bank cooperation

The ECB enhanced its cooperation with central banks outside the EU, in line with its important role in the global economy and also its role as a European institution.

On two occasions the Eurosystem had high-level meetings with central banks of Mediterranean countries and with central banks of the Gulf region. With regard to bilateral cooperation, the ECB intensified its cooperation with the South African Reserve Bank, while high-level contacts and expert discussion advanced with those central banks of G20 emerging market economies that have concluded a Memorandum of Understanding with the ECB. Finally, the ECB continued to broaden the geographical outreach of its cooperation, particularly in Latin America, Asia and Africa.

As an EU institution, the ECB continued to cooperate with central banks in countries that have a prospect of joining the EU, mainly through a regional workshop series in close collaboration with EU national central banks. Finally, the ECB also continued its close cooperation with EU national central banks on the governance of its cooperation activities with non-EU central banks. In 2017 a document entitled "International Central Bank Cooperation: ESCB Best Practices" was approved by the Governing Council and the General Council.[130] The document sets out the rationale,

[130] The ESCB best practices can be found on the ECB's website.

principles and modalities for international central bank cooperation at expert and management level.

11 External communication

11.1 Communication at the heart of ECB policy

In recognition of the increasingly important role of communication for the policy effectiveness, accountability and reputation of central banks, the ECB organised, in November 2017, its first ECB Central Bank Communications Conference. The conference brought together representatives from central banks, politics, media, financial markets and academia to discuss the key themes in central bank communication today: how to leverage communication for policy effectiveness and reputation; how to enhance transparency to ensure central bank accountability; and how to craft clear messages for wider audiences to rebuild trust and strengthen public support for central bank independence.

Panel discussion at the ECB Central Bank Communications Conference

David Wessel (Brookings Institution), Janet Yellen (Federal Reserve), Mario Draghi (ECB), Mark Carney (Bank of England) and Haruhiko Kuroda (Bank of Japan) at the ECB Central Bank Communications Conference, 14 November 2017.

The conference brought home a number of core messages of key relevance to the ECB. First, communication cannot replace good policy. Second, communication as an explicit tool of monetary policy – such as "forward guidance" – has been effective and successful and will remain part of the ECB's toolbox. Third, central banks need to engage in genuine two-way communication, to make sure they do not end up in an "echo chamber" of their own making. Fourth, central banks need to reach out beyond their own comfort zone of markets, experts and specialised media, and connect with new audiences, and in new ways. To regain people's trust, central banks need to step up their efforts to explain what they do and how their actions ultimately serve the public good. These core findings are reflected in much of what the ECB does already in terms of communication activities, with a number of important initiatives undertaken in 2017. The main thrust of the ECB's efforts focuses on enhancing engagement with external and internal stakeholders, both in face-to-face interaction and digitally.

11.2 Enhancing outreach

In 2017 the ECB made further strides in enhancing outreach, most prominently with the opening of the ECB Visitor Centre in October. The new space, which is located in the main building of the ECB in Frankfurt, was created and developed over two years, and allows citizens from Europe and beyond to learn more about the ECB, and its tasks and mission.

Key visual elements of the ECB Visitor Centre

The concept behind the Visitor Centre rests on four main components, with the euro serving as the uniting theme. The "Maintain" section looks at how the ECB maintains price stability. The "Safeguard" section focuses on the ECB's role in promoting financial stability and supervising banks. The "Connect" section highlights the ECB's tasks in developing payment systems and supplying euro banknotes. The "Achieve" section offers a broader European perspective, highlighting Europe's achievements. The learning experience is intended to be hands-on and includes tangible objects, games, videos and a replica version of the Governing Council meeting room. The Visitor Centre is expected to welcome 40,000 visitors per year as of 2018, tripling the ECB's capacity for visitor groups. In 2017 the ECB welcomed 811 visitor groups in Frankfurt, hosting more than 22,700 external visitors from 42 countries. These visits usually involved tailored lectures to meet the specific interests of the audience and offer ample opportunity for genuine engagement and dialogue.

The ECB also invested further in its engagement with young people by launching its first two ECB Youth Dialogues (in Lisbon and Dublin) as a new interactive format where students can ask questions directly to the ECB President. Another innovative way to connect with young people was the Euro Video Challenge, where the ECB set young Europeans the challenge of creating a short, engaging film that makes an economics topic related to the ECB's work accessible to young people. These new forms of reaching out complement existing efforts, such as the Generation €uro Students' Award competition, held for the seventh time in 2017, and the open day for children aged 8-12 years, organised in partnership with the popular German children's TV show "Die Sendung mit der Maus".

In the same vein, the ECB continued to invest in its direct engagement online and on social media with people of all ages and educational backgrounds, and with different professional and personal interests. The ECB's website, consisting of over 137,000 pages, had some 18 million visitors in 2017 from all over the world. Among the most popular sections of the website are the so-called Explainers. These seek to give answers to questions about complex central bank policy issues – such as "Why are interest rates low?", "How quantitative easing works" or "What are NPLs?" – and make them accessible to all audiences in 24 languages. On social media, the ECB's Twitter account reached over 400,000 followers in 2017; on LinkedIn, the ECB engages with over 50,000 followers; and the Bank's YouTube channel has 16,000 followers.

In March 2017 the ECB received the European Ombudsman's "Excellence in communications" Award for Good Administration in recognition of its innovative approach to communication – both through its website and multimedia formats, as well as through its outreach activities. Explicit consideration was given to its efforts to make the ECB accessible to the citizens and help them understand its responsibilities and role, and, more generally, to stand as an example of "good public administration, a culture of service and commitment to deliver a visible and direct positive impact on the lives of EU citizens".

12 Institutional and corporate governance

In 2017 the decision-making bodies of the ECB (the Governing Council, the Executive Board and the General Council) continued to govern the European System of Central Banks (ESCB) in accordance with their respective responsibilities, as set out in the Treaty on European Union and the Treaty on the Functioning of the European Union, the Statute of the ESCB and of the ECB and the relevant Rules of Procedure. The President and the Vice-President of the ECB held regular press conferences to report on the outcomes of the Governing Council's eight monetary policy meetings in 2017. Accounts of these meetings as well as other Governing Council decisions were published on the ECB's website throughout the year.

In January 2017 the Executive Board celebrated its 1,000th meeting, continuing to perform its roles of implementing monetary policy in accordance with the decisions of the Governing Council and managing the current business of the ECB. The annual external meeting of the Governing Council was held in Tallinn – the first time such a meeting has been held in the Baltic region. The external meetings of the Governing

Council offer its members the possibility to witness the richness and diversity of the euro area, while giving the people of Europe an opportunity to learn more about the ECB and its mandate. The General Council continued discussing issues of relevance to the ESCB, including during a seminar on the cyber resilience of the financial ecosystem. To ensure the separation of the ECB's monetary policy and other tasks from the supervisory tasks conferred on the ECB by Council Regulation (EU) No 1024/2013, separate meetings of the Governing Council are held for supervisory issues. More information on the ECB's supervisory function and its steering body, the Supervisory Board, is available on the ECB Banking Supervision website and in the 2017 ECB Annual Report on supervisory activities.

The Eurosystem/ESCB committees continued to assist the ECB's decision-making bodies in the performance of their tasks, acting in Eurosystem composition, in ESCB composition or in Single Supervisory Mechanism (SSM) composition (i.e. with the participation of one representative from both the central bank and the national competent authority (NCA) of each participating Member State) when dealing with supervisory issues.

The governance structure of the ECB encompasses two high-level committees – the Audit Committee and the Ethics Committee – as well as other external and internal control layers. It is supported by state-of-the-art ethics rules, an anti-fraud investigation framework and a transparency regime.

Integrity, openness and good administration are essential to maintain the trust of stakeholders and the public at large. Reporting directly to the President of the ECB, the Compliance and Governance Office supports the Executive Board in protecting the integrity and reputation of the ECB, promoting ethical standards of behaviour.

To emphasise the importance of proper ethical conduct, the Executive Board introduced in 2017 mandatory ethics and integrity training courses for all ECB staff. At the Eurosystem and SSM levels, the Governing Council set up in 2017 an Ethics and Compliance Officers Task Force to implement common minimum standards of ethical conduct and to facilitate exchanges and collaboration among the ECB, NCBs and NCAs.

As part of its commitment to openness and accountability, the ECB maintains regular dialogues, at the highest level, with the banking industry, institutional investors and the non-financial business sector in order to obtain targeted feedback from experts on cyclical, structural, financial and real economy issues. These dialogues are complemented with regular contacts and interactions with policymakers, academia, representative associations and civil society, which provide relevant input and information on the dynamics of the economy and financial markets in their broader societal context. The ECB also engages with a similar wide range of stakeholders at the technical level.

Contacts with external parties take place under well-established and public frameworks that guarantee an adequate level of transparency and equal access.

As part of its commitment to transparency, the ECB also publishes the calendars of each of the Executive Board members and of the Chair and Vice-Chair of the Supervisory Board.

The ECB's transparency regime is in line with the objectives and standards applied by other EU institutions and bodies with regard to public access to their documents. The regime balances the right to transparency with the need to protect the confidentiality of certain matters specific to the performance of the ECB's tasks. Owing to the extended scope of the ECB's activities, the number and complexity of requests from citizens and national authorities for access to documents have increased substantially.

13 Organisational and human resources developments

In September 2017 the ECB finalised its new ECB Business Strategy 2018-2020. The business strategy lays out the vision for the institution and sets forth concrete priorities and objectives that will help the ECB to adapt and remain true to its mandate as the world continuously changes. It is founded on four priorities that reflect the institution's mission: (i) maintaining price stability; (ii) safeguarding the financial system; (iii) strengthening its reputation as a world-class institution; and (iv) inspiring, developing and engaging its people.

For this purpose, the Executive Board assessed internal and external trends and challenges relevant for the institution. Among others, external challenges include: an environment of low inflation requiring unconventional monetary policy instruments; Brexit-related uncertainty; and cyber security-related risks. Internally, the ECB looks at challenges such as further optimising services, strengthening organisational resilience and harnessing advances in technology, as well as improving collaboration and information-sharing across business functions.

For the strategy, representatives of each business area came together in groups to develop medium-term objectives based on the four strategic priorities, which were then broken down further for the various business functions. The ECB will review these objectives and the progress made at regular intervals.

The strategy represents a plan that enables the ECB to focus on what really matters. It sets the institution's direction for the next three years, helping the ECB to serve the citizens of the euro area.

Human resources developments

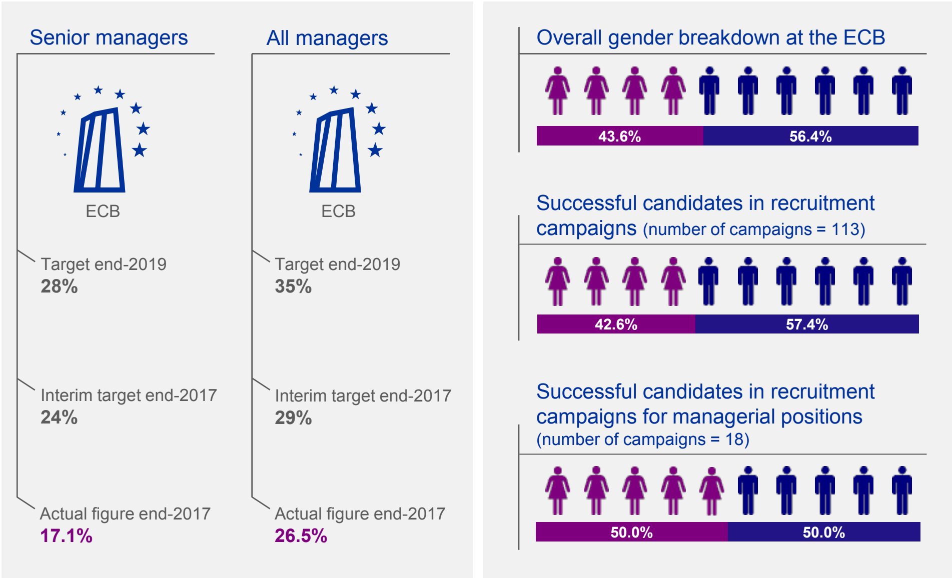
In 2017 the ECB continued to build on the foundations that were laid in 2016 to strengthen its talent culture, leadership and talent management capability. The Leadership Growth Programme – a key pillar in strengthening these skills – was launched at the beginning of the year and has been attended by more than 80% of those eligible. At the ESCB level, an induction programme for newly appointed senior managers was rolled out. The ECB Business Strategy 2018-2020 will continue to advance this significant shift towards enabling strong leadership, and fostering empowerment, across the ECB.

At the same time, numerous initiatives to embed an overall culture of professional excellence and talent in the ECB's everyday life were also introduced. These included a capability framework with a streamlined competency model; a strategic workforce-planning exercise; a revitalised Performance Management & Development framework, including a cascading of strategic priorities into staff objectives; the roll-out of mandatory e-learning on ethics, which has been completed by more than 4,000 people; and the roll-out of a new ECB Career Transition Support scheme, supporting staff in commencing alternative careers, from which almost 200 staff members will benefit. Implementing initiatives, within a tailored talent management framework, to attract, develop and retain top, diverse talent will continue as a key strategic objective for the ECB.

Furthermore, during 2017, the ECB continued its efforts to foster diversity as a key enabler for performance and success. Being a merit-based organisation, the ECB embodies diversity values, such as respect, fairness, inclusiveness and equal opportunities for its staff regardless of their gender, nationality, religion, sexual orientation, ethnic origin, age, cultural background and disability. Activities that took place in 2017 included a Diversity Days event, with speakers from academia and public life; the establishment of a diversity section on the ECB's website; and the raising of the rainbow flag for the International Day Against Homophobia, Transphobia and Biphobia (IDAHOT).

To achieve a greater gender balance – a strategic business objective of the ECB – gender targets have been set for the end of 2019, together with a series of supportive measures to help the ECB to reach them. These measures include a focus on inclusive leadership, diversity ambassadors in each business area, mentoring, a dedicated "women in leadership" training programme, an open day for female talent, and expanded opportunities for flexible working arrangements.

Figure 3
Gender targets and female share of staff at the ECB



Source: ECB.
Notes: The overall gender breakdown at the ECB refers to staff holding permanent and fixed-term positions. The figures on recruitment take into account recruitment campaigns, both internal and external, for fixed-term positions that were closed in 2017. Data as at 31 December 2017.

As a considerable effort to improve the social dialogue at the ECB, several aspects of the work in human resources in 2017 were undertaken within the context of a joint work programme with staff representatives. This programme covers six key areas of work, namely: well-being, and health and safety; career development and performance management; contractual policy; diversity and inclusion; hiring; and staff participation mechanisms. The staff representatives have provided valuable input to several areas of policy and decision-making on these topics.

At the level of the ESCB, the second cohort of trainees (31 in total) on the European banking supervision traineeship programme was launched, as was the Schuman Programme – a new initiative whereby over 30 staff members across the system have been nominated to contribute to a dedicated project in another institution and are seconded to that institution for up to 9 months. A Task Force on Mobility was also created to foster meaningful rotations of staff across the system.

On 31 December 2017 the ECB had 3,252 full-time equivalent approved headcount positions, compared with 2,898.5 positions at the end of 2016. The number of actual full-time equivalent staff holding employment contracts with the ECB stood at 3,384 (compared with 3,171 on 31 December 2016).[131] A total of 246 new fixed-term contracts (limited in nature or convertible to permanent contracts) were offered in 2017. In addition, 393 short-term contracts were issued, as well as a number of contract extensions, to cover absences of less than one year. Throughout 2017 the

[131] In addition to contracts based on full-time equivalent positions, this figure includes short-term contracts awarded to staff seconded from NCBs and international organisations, and contracts awarded to Graduate Programme participants.

ECB continued to offer short-term contracts for periods of up to 36 months to staff from national central banks (NCBs) and international organisations. On 31 December 2017, 232 employees from NCBs and international organisations were working at the ECB on various assignments, 7% less than at the end of 2016. In September 2017 the ECB welcomed 15 participants in the 12th intake into its Graduate Programme and, on 31 December 2017, 376 trainees were being hosted by the ECB (18% more than in 2016). The ECB also awarded 2 fellowships as part of the Wim Duisenberg Research Fellowship Programme, which is open to leading economists, and 5 fellowships to young researchers under its Lamfalussy Fellowship Programme.

While the organisation grew slightly in size, 113 members of staff employed on a fixed-term or permanent basis resigned or retired in 2017 (compared with 56 in 2016), and 344 short-term contracts expired in the course of the year.

Annual Accounts of the ECB

2017

Management report

1 Purpose of the ECB’s management report

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

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,[2] 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. Figure 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 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.

2 Protocol on the Statute of the European System of Central Banks and of the European Central Bank.

Figure 1

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

Implementation of monetary policy

Standard monetary policy operations in euro

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.

Liquidity-providing operations in foreign currency

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.

Securities held for monetary policy purposes

Purchases of these securities are conducted by the ECB and 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.

Securities lending

Securities held for monetary policy purposes are available for lending in the Eurosystem.* For the ECB, these operations are conducted via a specialised institution.
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.

* Further details on securities lending can be found on the ECB's website.

Conduct of foreign exchange operations and management of the official foreign reserves of the euro area countries

Foreign exchange operations and management of foreign reserves

The ECB's foreign reserves are presented on-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, as well as 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-balance sheet under the item "Revaluation accounts".

Promotion of the smooth operation of payment systems

Payment systems (TARGET2)

Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET2* are presented together on the Balance Sheet of the ECB as a single net asset or liability position. The remuneration of these balances is included in the Profit and Loss Account under the items “Other interest income” and “Other interest expense”.

* Further details on TARGET2 can be found on the ECB’s website.

Contributing to the safety and soundness of the banking system and the stability of the financial system

Banking supervision – the Single Supervisory Mechanism

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”.

Other

Banknotes in circulation

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”.

Own funds portfolio

The own funds portfolio of the ECB is presented on-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, as well as 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-balance sheet under the item “Revaluation accounts”.

3 Financial developments

3.1 Balance Sheet

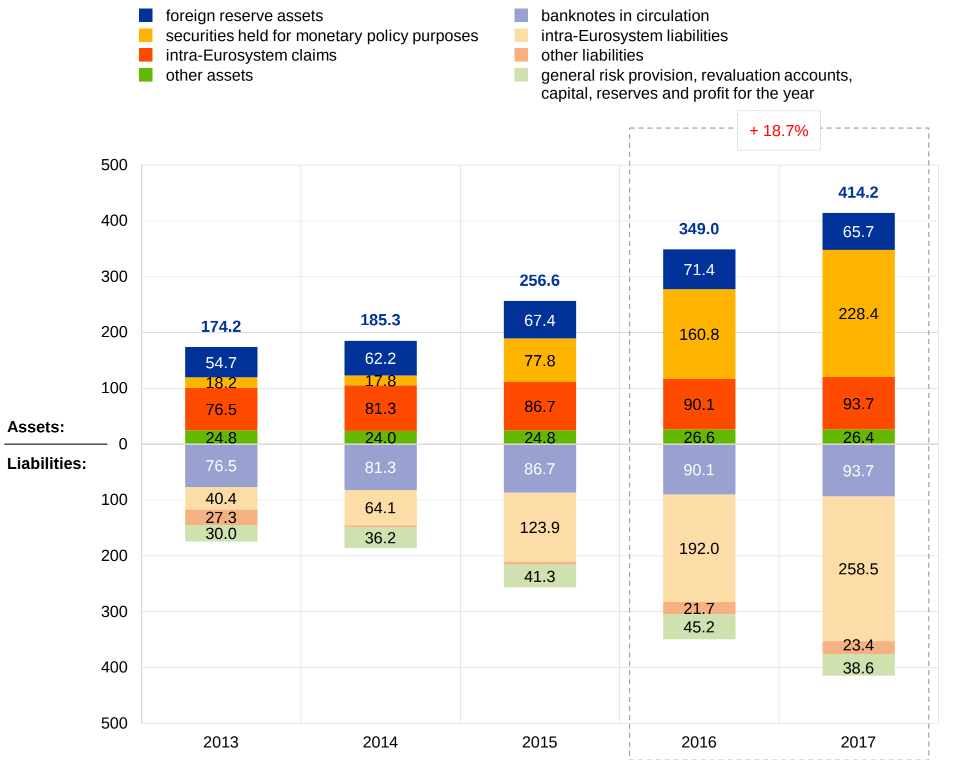
Chart 1 presents the main components of the ECB's Balance Sheet over the period 2013-17. The expansion of the ECB's Balance Sheet started in the fourth quarter of 2014, triggered by the acquisition of securities under the third covered bond purchase programme (CBPP3) and the asset-backed securities purchase programme (ABSPP). This expansion has continued in subsequent years, owing mainly to the acquisition of securities under the public sector purchase programme (PSPP).

€65.2 billion
Increase in total assets in 2017

In 2017 the **ECB's total assets** increased by €65.2 billion to €414.2 billion, mainly owing to its share of purchases of securities under the asset purchase programme (APP)[3]. These purchases resulted in an increase in the item "Securities held for monetary policy purposes", while the cash settlement of those purchases via TARGET2 accounts led to a corresponding increase in "Intra-Eurosystem liabilities".

Chart 1
The ECB's Balance Sheet

(EUR billions)



Source: ECB.

3 The APP consists of the CBPP3, the ABSPP, the PSPP and the corporate sector purchase programme (CSPP). Further details on the APP can be found on the ECB's website.

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

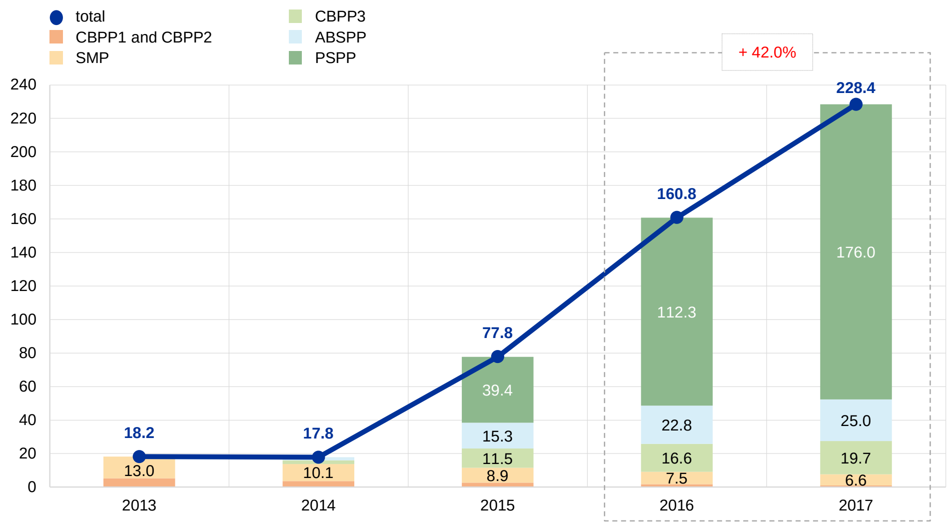
Euro-denominated securities held for monetary policy purposes constituted 55% of the ECB's total assets as at the end of 2017. Under this balance sheet position the ECB holds securities acquired in the context of the Securities Markets Programme (SMP), the three covered bond purchase programmes (CBPP1, CBPP2 and CBPP3), the ABSPP and the PSPP.[4] In 2017 purchases of securities under the CBPP3, ABSPP and PSPP[5] continued on the basis of the Governing Council's decisions on the overall monthly Eurosystem purchases and subject to predetermined eligibility criteria.

€67.6 billion
Increase in securities held for monetary policy purposes

As a result of the purchases, in 2017 the portfolio of securities held for monetary policy purposes by the ECB increased by €67.6 billion to €228.4 billion (see Chart 2), with PSPP purchases accounting for the majority of this increase. The decrease in holdings under the CBPP1, CBPP2 and SMP was due to redemptions, which amounted to €1.5 billion.

Chart 2
Securities held for monetary policy purposes

(EUR billions)



Source: ECB.

In 2017 the total euro equivalent value of the **ECB's foreign reserve assets**, which consist of gold, special drawing rights, US dollars, Japanese yen and, commencing in 2017, Chinese renminbi, decreased by €5.7 billion to €65.7 billion.

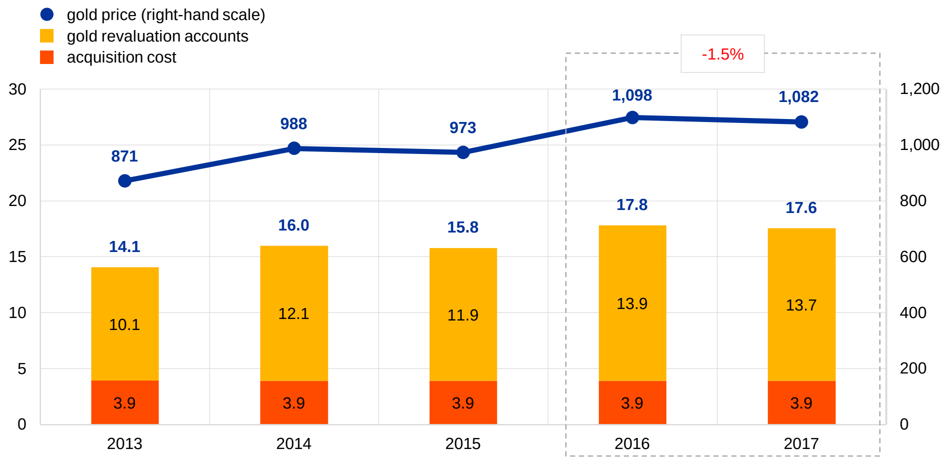
The euro equivalent value of the ECB's holdings of gold and gold receivables decreased by €0.3 billion to €17.6 billion in 2017 (see Chart 3), owing to a decline in the market price of gold in euro terms, while the size of these holdings in fine ounces remained unchanged. This decrease also led to a reduction in the ECB's revaluation accounts, which fell by the same amount (see Section 3.2).

4 The ECB does not acquire securities under the CSPP.

5 No further purchases were conducted under the first two covered bond purchase programmes or the SMP in 2017, as the Governing Council decided to cease these programmes.

Chart 3
Gold holdings and gold prices

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



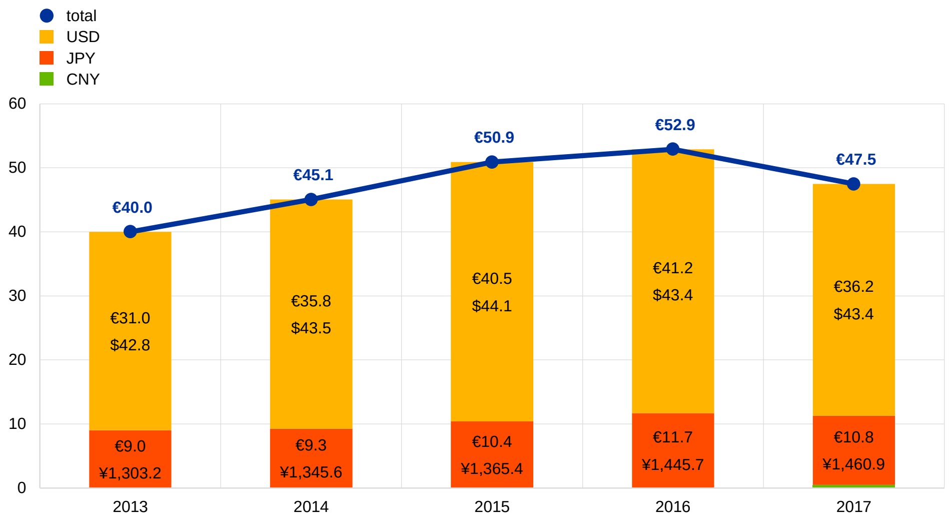
Source: ECB.

The value of the ECB's net foreign currency holdings decreased owing to the appreciation of the euro

The ECB's net foreign currency holdings of US dollar, Japanese yen and Chinese renminbi, decreased in euro terms by €5.4 billion to €47.5 billion (see Chart 4), mainly owing to the appreciation of the euro against the US dollar and Japanese yen. This reduction is also reflected in the smaller balances in the ECB's revaluation accounts (see Section 3.2).

Chart 4
Foreign currency holdings

(EUR billions)



Source: ECB.

The ECB added a Chinese renminbi component to its foreign reserves

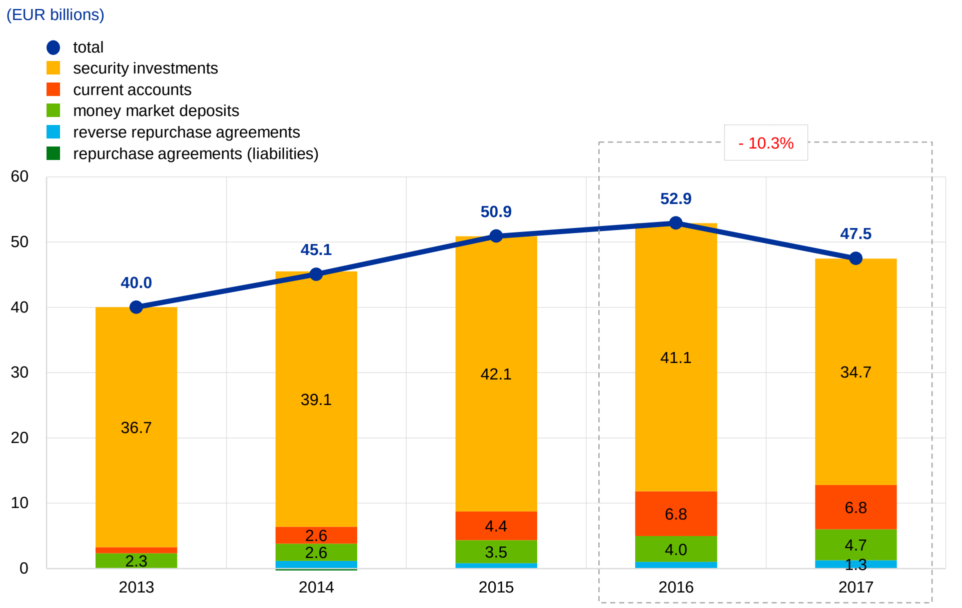
In 2017 the ECB invested the equivalent of €0.5 billion in Chinese renminbi, making it the third currency in its foreign currency reserves.[6] The ECB funded this investment by selling a small portion of its US dollar holdings and reinvesting the full amount in Chinese renminbi. US dollars continue to be the main component of the ECB's foreign currency holdings, accounting for approximately 76% of the total.

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



Source: ECB.

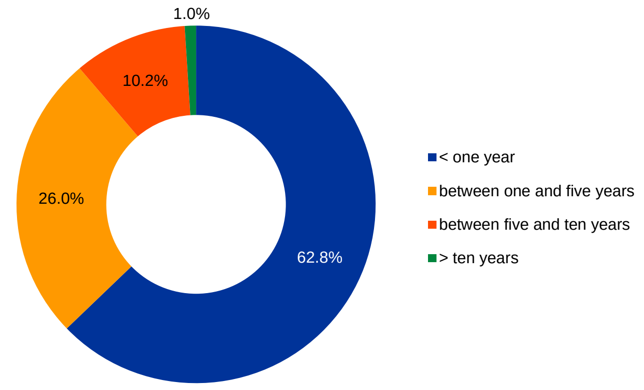
62.8%
Foreign currency-denominated securities with a maturity of less than one year

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, those objectives are liquidity, safety and return. Therefore, this portfolio mainly comprises securities with short maturities (see Chart 6).

6 See the ECB's press release of 13 June 2017.

Chart 6

Maturity profile of foreign currency-denominated securities



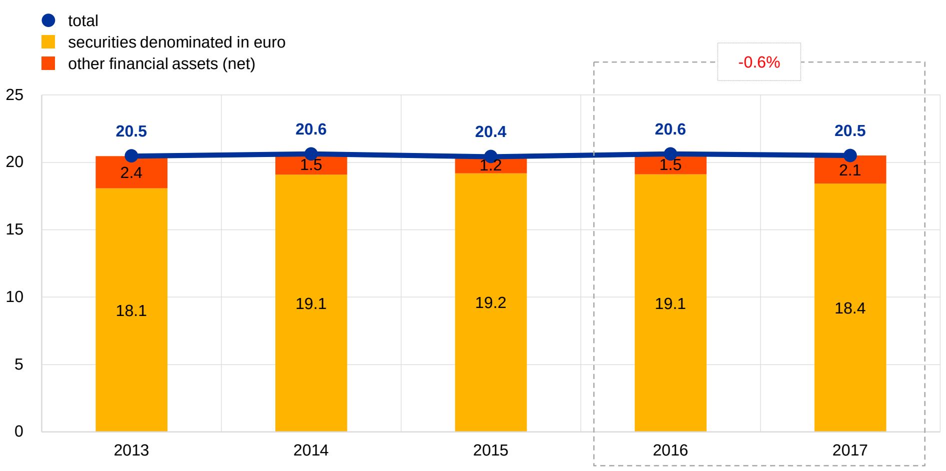
Source: ECB.

In 2017 the **own funds portfolio** remained virtually unchanged at €20.5 billion (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

(EUR billions)



Source: ECB.

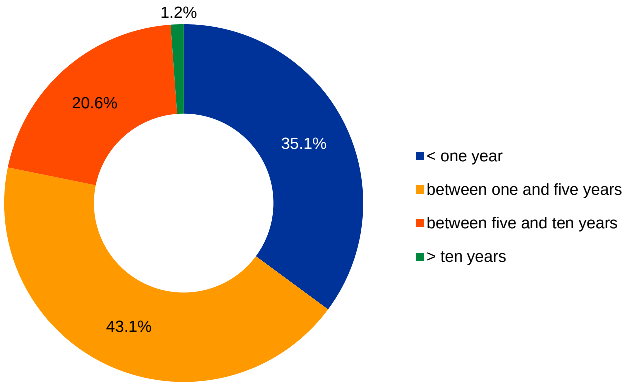
The ECB's own funds portfolio is held as a direct counterpart to its paid-up capital, the provision for foreign exchange rate, interest rate, credit and gold price risks, and its general reserve fund. The purpose of this portfolio is to provide income to help fund the ECB's operating expenses which are not related to the performance of its supervisory tasks.[7] 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

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

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.

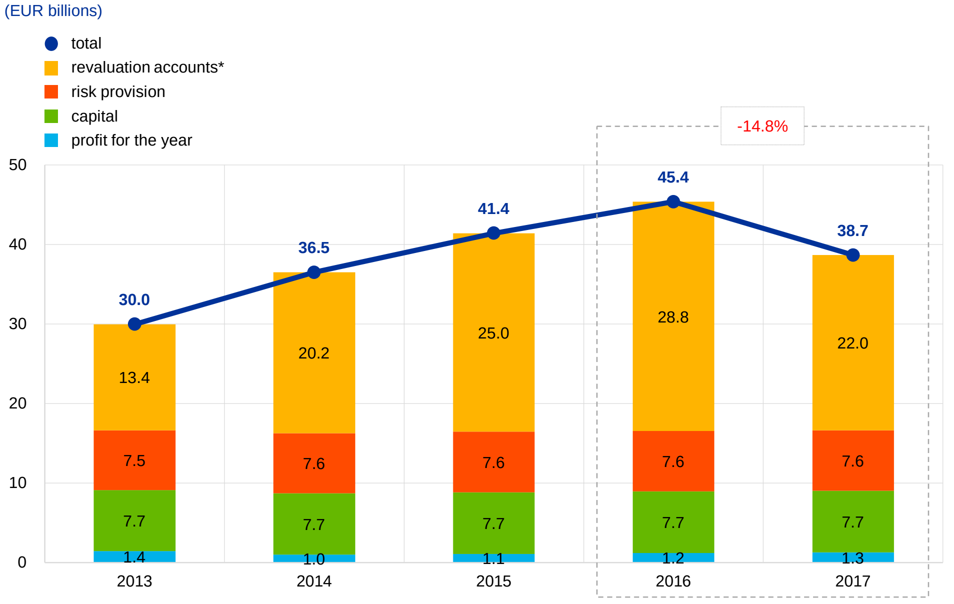
3.2 Financial resources

€38.7 billion
The ECB's financial resources

The ECB's financial resources consist of its capital, the general risk provision, the revaluation accounts and the net income 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 2017, the **ECB's financial resources** totalled €38.7 billion (see Chart 9). This amount was €6.7 billion lower than in 2016, owing to a reduction in the revaluation accounts following the appreciation of the euro.

Chart 9

The ECB's financial resources



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

+14%
Appreciation of the euro against the US dollar in 2017

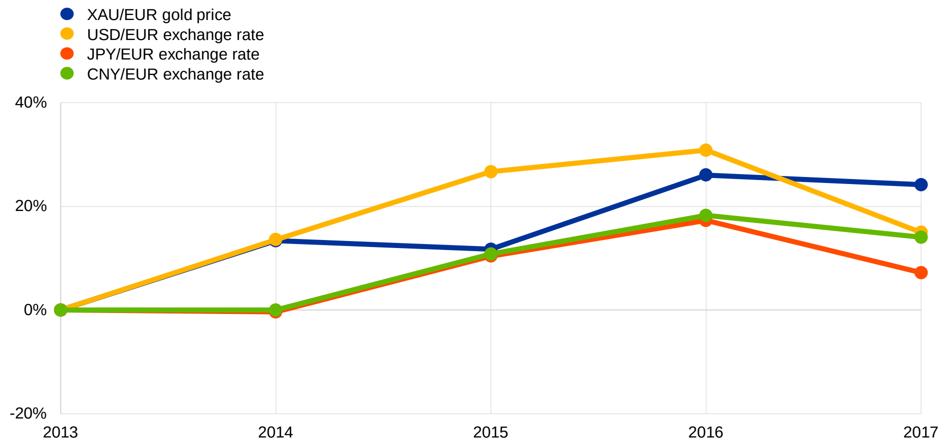
Unrealised gains on gold, foreign currencies and securities that are subject to price revaluation are not recognised as income in the Profit and Loss Account but are recorded directly in **revaluation accounts** shown on the liability side of the ECB's Balance Sheet. The balances in these accounts can 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 2017 the revaluation accounts for gold, foreign currencies and securities[8] decreased by €6.8 billion, to €22.0 billion, mainly owing to the appreciation of the euro against the US dollar and Japanese yen (see Chart 10).

8 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 2013-17

(percentage changes vis-à-vis 2013)



Source: ECB.

The net income 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 2017 the **ECB's net income** was €1.3 billion, €0.1 billion higher than in 2016.

The general risk provision stands at its maximum permitted level

In view of its exposure to financial risks (see Section 4.1), the ECB maintains a **provision for foreign exchange rate (currency), interest rate, credit and gold price (commodity) 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. Since 2015 this provision has stood at its maximum permitted level of €7.6 billion.

The **ECB's capital** paid up by euro area and non-euro area NCBs remained unchanged compared with its level at the end of 2016 and stood at €7.7 billion on 31 December 2017.

3.3 Profit and Loss Account

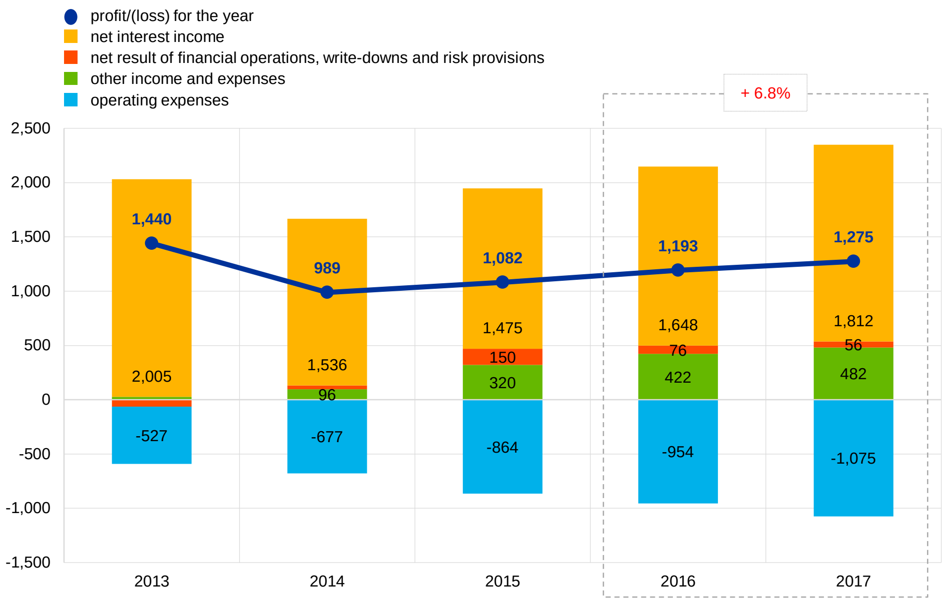
Chart 11 presents the main components of the ECB's Profit and Loss Account over the period 2013-17. During this period the profit of the ECB ranged from €1.0 billion to €1.4 billion. Over the past three years there has been a gradual increase in the ECB's profit, which is mainly attributable to higher interest income generated on foreign reserve assets and on securities held for monetary policy purposes. These increases more than offset the decline in interest income on banknotes in circulation[9] and on the own funds portfolio.

€1,275 million
The ECB's profit in 2017

In 2017, the **ECB's profit** was €1,275 million (2016: €1,193 million). The increase of €82 million compared with 2016 was mainly due to the increase in net interest income.

Chart 11
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

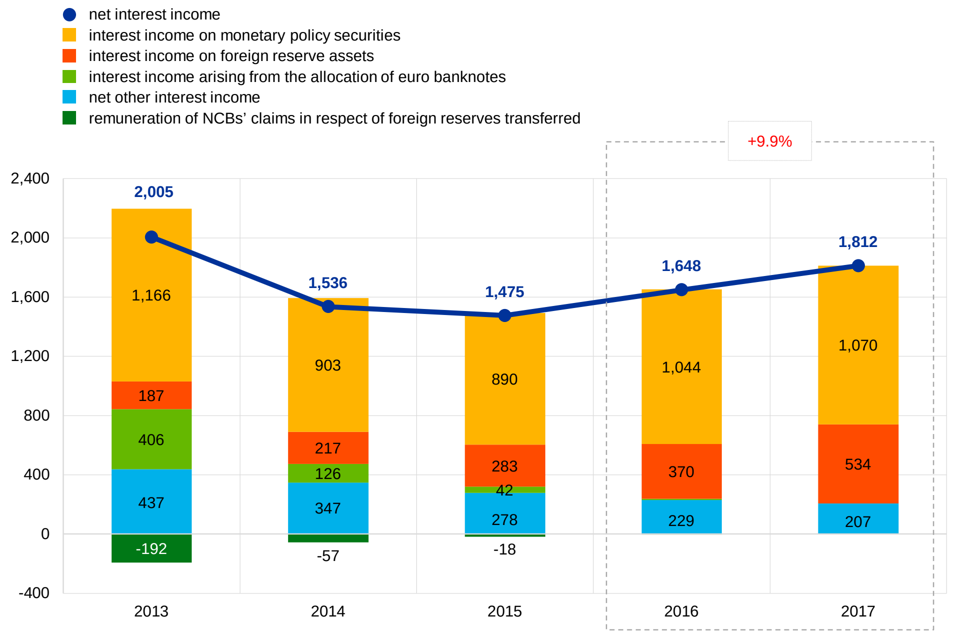
The **net interest income** of the ECB increased by €163 million to €1,812 million (see Chart 12), mainly owing to the higher interest income earned on the foreign reserve assets and on securities held for monetary policy purposes.

[9] The ECB's income on euro banknotes in circulation comprises the 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

(EUR millions)



Source: ECB.

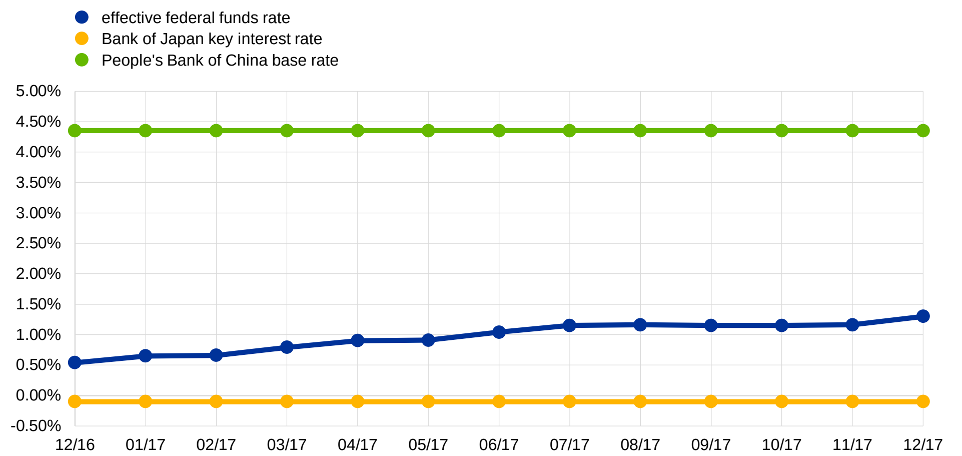
Increase in interest income on foreign reserve assets, mainly owing to increased US dollar yields

Interest income on foreign reserve assets increased by €164 million to €534 million, mainly as a result of the higher interest income earned on securities denominated in US dollars owing to the increasing yields of US dollar securities with short maturities (see Chart 13).

Chart 13

Key benchmark rates

(percentages per annum; monthly data)



Sources: Federal Reserve Board, Bank of Japan and People's Bank of China.

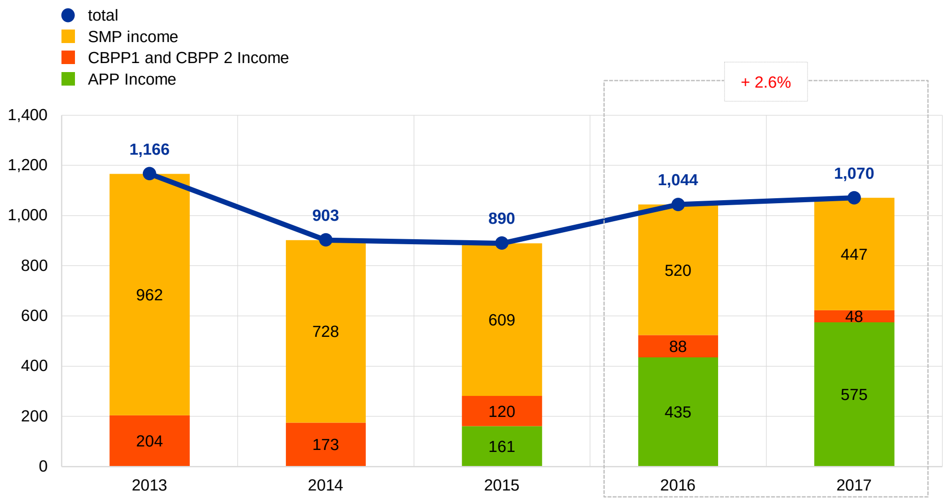
Higher APP income was partially offset by a reduction in the income from ceased programmes

Net interest income generated on securities held for monetary policy purposes in 2017 was €1,070 million, which was €27 million higher than in 2016 (see Chart 14). Net interest income arising from the APP securities increased by €140 million to €575 million. This was a result of the increased size of the holdings (see Chart 2), while euro area sovereign bond yields remained low on average during the year (see Chart 15). However, this increase was largely offset by a reduction in net interest income on the SMP, CBPP1 and CBPP2 portfolios, which fell by €113 million to €496 million, owing to the decline in the size of these portfolios as a result of the maturing of securities. In 2017, securities held for monetary policy purposes generated around 60% of the ECB's net interest income.

Chart 14

Net interest income on securities held for monetary policy purposes

(EUR millions)

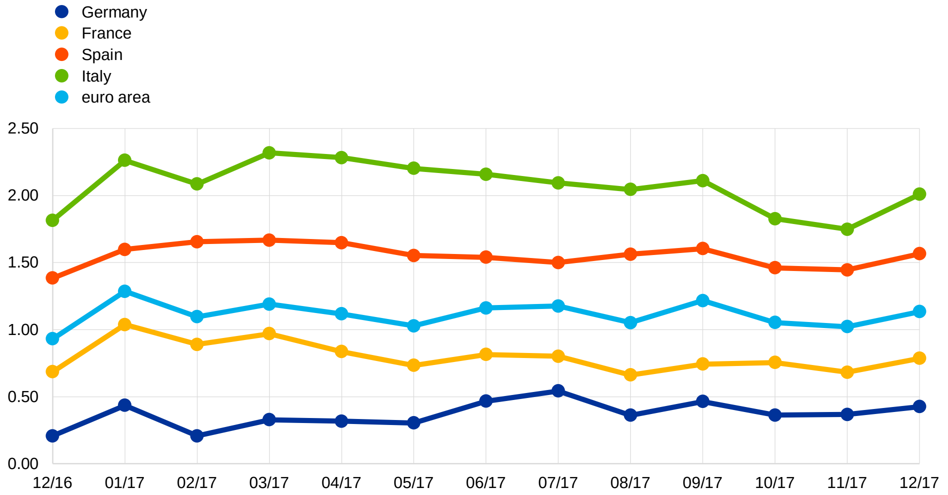


Source: ECB.

Chart 15

Ten-year sovereign bond yields

(percentages per annum; monthly data)



Source: ECB.

0.0%
MRO rate in 2017

The **interest income on the ECB's share of total euro banknotes in circulation** and **interest expense payable to the NCBs 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 the 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 yields

The **net result of financial operations and write-downs** on financial assets amounted to €56 million, which was €20 million lower than in 2016 (see Chart 16), mainly as a result of the lower net realised price gains.

The decrease in net realised price gains was mainly due to lower price gains on US dollar-denominated securities, as their market value was negatively affected by the increasing trend in US dollar yields which started in 2015.

This negative impact on the market price of the US dollar portfolio in 2017 was less than the corresponding impact in 2016, which explains the lower price write-downs in 2017 compared with the previous year.

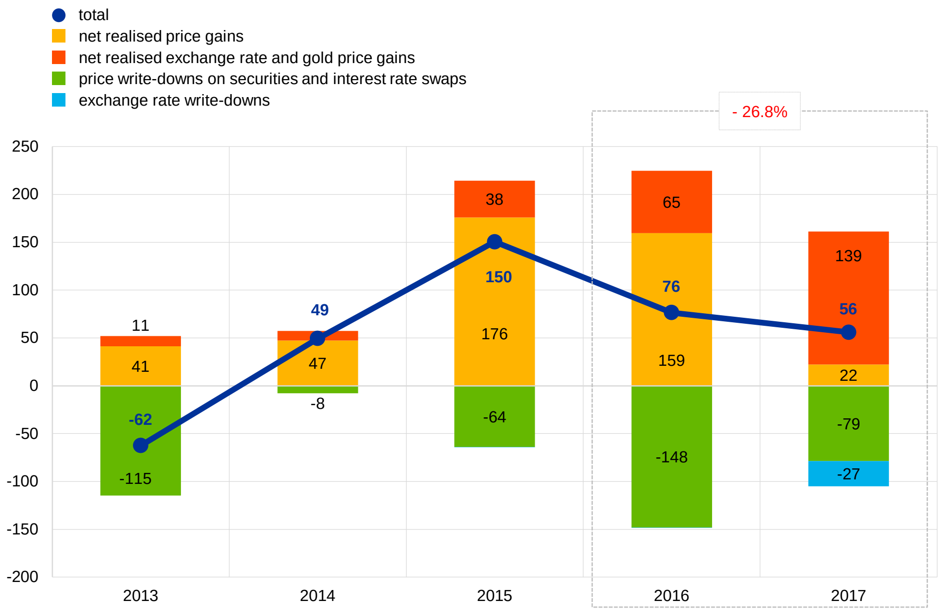
The increase in net realised exchange rate and gold price gains was due to the realised currency gains resulting primarily from the sale of US dollar holdings to fund the creation of the Chinese renminbi portfolio.

The exchange rate write-downs come from the Chinese renminbi holdings as a result of the depreciation of the Chinese renminbi against the euro since the investment in the currency was made.

Chart 16

Realised results and write-downs

(EUR millions)



Source: ECB.

€437 million
Fees levied by the ECB for conducting supervisory tasks

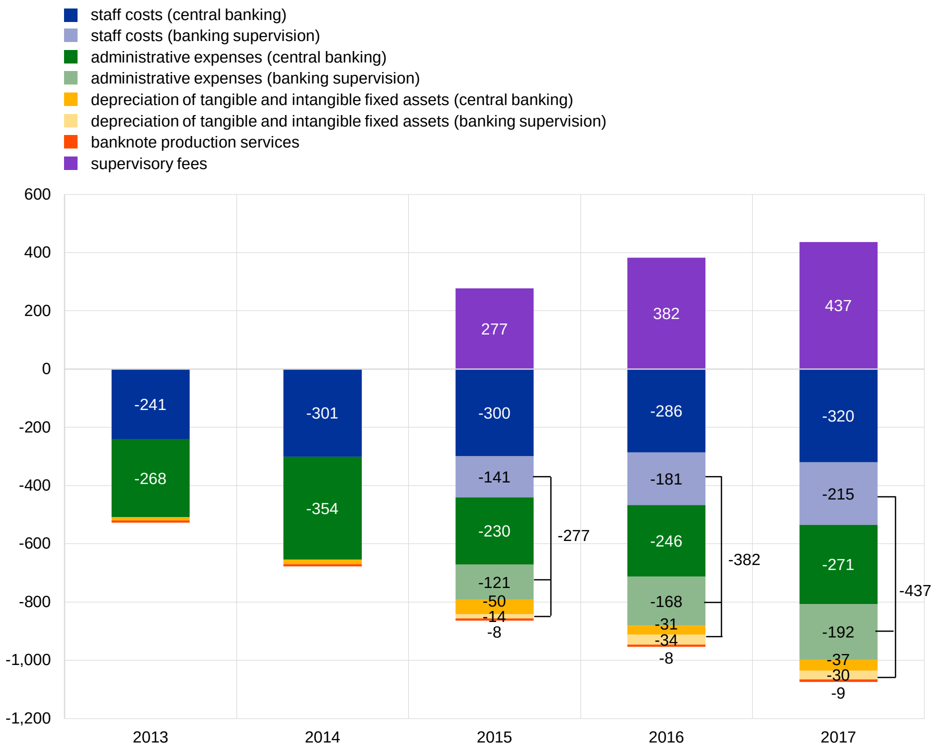
The **total operating expenses** of the ECB, including depreciation and banknote production services, increased by €121 million to €1,075 million (see Chart 17). This increase was mainly due to higher expenses incurred in connection with banking supervision and the introduction of a new career transition support (CTS) scheme, supporting staff members commencing alternative careers outside the ECB. The chart below shows that the establishment of the SSM in 2014 has contributed to a significant increase in staff and administrative expenses. However, these banking supervision-related expenses are fully covered via fees levied on the supervised entities.[10]

[10] Supervisory fees are included under the item “Other income and expenses” (see Chart 11).

Chart 17

Operating expenses and supervisory fees

(EUR millions)

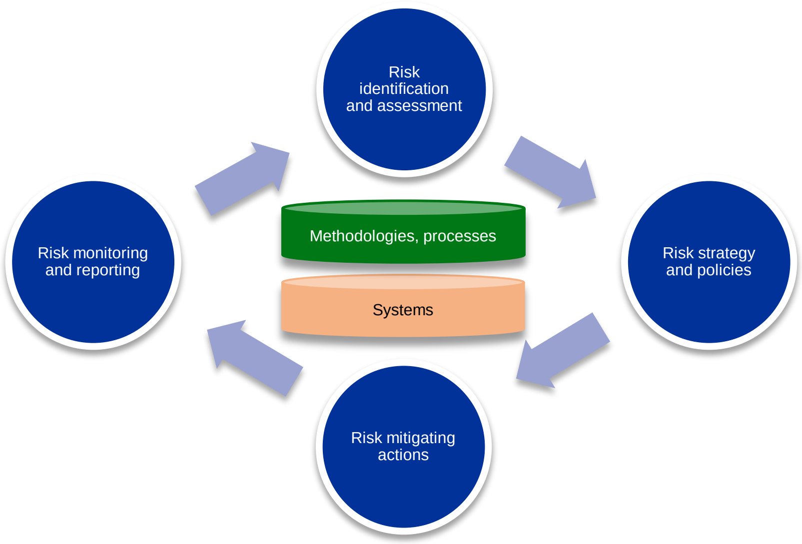


Source: ECB.

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 2
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.

4.1 Financial risks

The Executive Board proposes policies and procedures that ensure an appropriate level of protection against 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 exposures

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.

The ECB relies on a number of risk estimation techniques developed in-house

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),[11] estimated at the 99% confidence level, over a one-year horizon. Two approaches are

[11] The ES is defined as a probability-weighted average loss in the scenarios that occur with a frequency lower than the given confidence level.

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 regularly 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.[12]

€10.6 billion
Total risk in 2017
(ES 99% accounting approach)

The total risks of the ECB increased during the year. As at 31 December 2017 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 €10.6 billion, which was €1.4 billion higher than the risks estimated as at 31 December 2016. This increase was mainly due to the continued securities purchases in the context of the APP.

Box 1
Change in the risk measure disclosed in the Annual Accounts

Since 2007 the ECB has reported in its Annual Accounts the financial risks relating to all of its portfolios combined as measured by the financial Value at Risk (VaR) at a 95% confidence level over a one-year horizon. As at 31 December 2016 – as reported in the 2016 Annual Accounts – this amounted to €10.6 billion.

In recent years the ECB has enhanced its risk modelling framework. Some of the changes implemented include the following:

- the ECB now uses the Expected Shortfall (ES) at a 99% confidence level as the main measure for risk calculations, with other risk measures and confidence levels being used to provide complementary information;
- an "accounting approach" has been devised in addition to the existing "financial approach". Under the financial approach the revaluation accounts are not considered as a buffer in the calculation of risks, whereas under the accounting approach risks are quantified after considering the revaluation accounts, in line with the applicable accounting rules. Therefore, the two approaches reflect two different ways of looking at risks: the financial approach considers their impact on the ECB's net equity, whereas the accounting approach considers their impact on the ECB's Profit and Loss Account.

The accounting approach is deemed more appropriate in the context of the Annual Accounts as it offers a clearer picture of the risks in terms of their accounting consequences. Therefore, also seeking to align published data with the internal risk modelling and reporting approach, the ECB's Annual Accounts will, henceforth, report the ES at a 99% confidence level following the accounting approach, instead of the VaR at a 95% confidence level following the financial approach.

12 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.

Depending on the size of the ECB's revaluation accounts, the financial and accounting approaches for measuring risks can result in significantly different risk estimates in terms of their size and composition. In particular, the financial approach, using the same risk measure and confidence level, results in larger risk estimates, mainly dominated by sizeable market risks associated with foreign reserve holdings. Since significant revaluation accounts exist for such exposures, the accounting approach results in lower risk figures, mainly driven by potential credit risk events.

The changeover from the financial VaR 95% to the accounting ES 99% in the Annual Accounts for 2017 results in a higher risk estimate in nominal terms (see Table 1), as the increase in the risk estimate from choosing a higher confidence level (99% instead of 95%) and a more conservative risk measure (ES instead of VaR) more than compensates for the reduction in the risk estimate brought about by considering the revaluation accounts as a buffer.

Table 1

The financial VaR 95% and accounting ES 99% as at 31 December 2017 (EUR billions)

Financial VaR 95%	Accounting ES 99%
8.6	10.6

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. As a result of the continued purchases under the APP in 2017, the credit risk of the ECB increased compared with the previous year.

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. As a result of the decrease in revaluation accounts for these holdings, mainly owing to the appreciation of the euro against the US dollar, the currency and commodity risks, as measured following the accounting approach, increased compared with the previous year.

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 active 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 3.1), while the assets in the own funds portfolio generally have longer maturities (see Chart 8 in Section 3.1). This risk, as measured following the accounting approach, remained unchanged compared with 2016.

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 a forward-looking analysis of the ECB's profitability, which indicates that the ECB is expected to continue to earn net interest income in the coming years, despite the increasing share of monetary policy assets with low yields and long maturities on its Balance Sheet.

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.

4.2 Operational risk

The ECB's operational risk[13] management (ORM) covers all **non-financial risks**.

Operational risk management is an integral part of the governance and management processes

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[14] 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 applying quantitative and qualitative criteria.

The ECB operates in an increasingly complex threat landscape and there are a wide range of operational risks associated with its day-to-day activities. The main areas of concern for the ECB include: information security risks (e.g. cyber threats), IT-related risks, and premises and physical security-related risks. Consequently, the ECB has put in place processes to facilitate ongoing and effective management of its

[13] 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).

[14] Further information about the ECB's governance structure can be found on the ECB's website.

operational risks and to integrate risk information into the decision-making process. Moreover, contingency plans have been established to ensure the continuity of critical business functions in the event of any disruption.

Financial statements of the ECB

Balance Sheet as at 31 December 2017

ASSETS	Note number	2017 €	2016 €
Gold and gold receivables	1	**17,558,411,241**	**17,820,761,460**
Claims on non-euro area residents denominated in foreign currency	2		
Receivables from the IMF	2.1	670,290,069	716,225,836
Balances with banks and security investments, external loans and other external assets	2.2	43,760,643,939	50,420,927,403
		44,430,934,008	**51,137,153,239**
Claims on euro area residents denominated in foreign currency	2.2	**3,711,569,259**	**2,472,936,063**
Other claims on euro area credit institutions denominated in euro	3	**143,315,512**	**98,603,066**
Securities of euro area residents denominated in euro	4		
Securities held for monetary policy purposes	4.1	**228,386,260,874**	**160,815,274,667**
Intra-Eurosystem claims	5		
Claims related to the allocation of euro banknotes within the Eurosystem	5.1	**93,657,169,470**	**90,097,085,330**
Other assets	6		
Tangible and intangible fixed assets	6.1	1,196,018,177	1,239,325,587
Other financial assets	6.2	20,502,633,142	20,618,929,223
Off-balance-sheet instruments revaluation differences	6.3	451,129,972	839,030,321
Accruals and prepaid expenses	6.4	2,597,290,354	2,045,522,937
Sundry	6.5	1,527,699,142	1,799,777,235
		26,274,770,787	**26,542,585,303**
Total assets		**414,162,431,151**	**348,984,399,128**

LIABILITIES	Note number	2017 €	2016 €
Banknotes in circulation	7	**93,657,169,470**	**90,097,085,330**
Other liabilities to euro area credit institutions denominated in euro	8	**1,060,813,972**	**1,851,610,500**
Liabilities to other euro area residents denominated in euro	9		
Other liabilities	9.1	**1,150,056,196**	**1,060,000,000**
Liabilities to non-euro area residents denominated in euro	10	**19,549,390,872**	**16,730,644,177**
Intra-Eurosystem liabilities	11		
Liabilities equivalent to the transfer of foreign reserves	11.1	40,792,608,418	40,792,608,418
Other liabilities within the Eurosystem (net)	11.2	217,751,769,550	151,201,250,612
		258,544,377,968	**191,993,859,030**
Other liabilities	12		
Off-balance-sheet instruments revaluation differences	12.1	431,115,965	660,781,618
Accruals and income collected in advance	12.2	76,283,568	69,045,958
Sundry	12.3	1,063,113,810	1,255,559,836
		1,570,513,343	**1,985,387,412**
Provisions	13	**7,669,798,641**	**7,706,359,686**
Revaluation accounts	14	**21,945,472,247**	**28,626,267,808**
Capital and reserves	15		
Capital	15.1	**7,740,076,935**	**7,740,076,935**
Profit for the year		**1,274,761,507**	**1,193,108,250**
Total liabilities		**414,162,431,151**	**348,984,399,128**

Profit and Loss Account for the year ending 31 December 2017

	Note number	2017 €	2016 €
Interest income on foreign reserve assets	22.1	534,161,570	370,441,770
Interest income arising from the allocation of euro banknotes within the Eurosystem	22.2	0	8,920,896
Other interest income	22.4	1,527,294,605	1,604,648,023
Interest income		*2,061,456,175*	*1,984,010,689*
Remuneration of NCBs' claims in respect of foreign reserves transferred	22.3	0	(3,611,845)
Other interest expense	22.4	(249,812,879)	(332,020,205)
Interest expense		*(249,812,879)*	*(335,632,050)*
Net interest income	22	**1,811,643,296**	**1,648,378,639**
Realised gains/losses arising from financial operations	23	161,069,043	224,541,742
Write-downs on financial assets and positions	24	(105,133,331)	(148,172,010)
Transfer to/from provisions for foreign exchange rate, interest rate, credit and gold price risks		0	0
Net result of financial operations, write-downs and risk provisions		**55,935,712**	**76,369,732**
Net income/expense from fees and commissions	25	**440,069,889**	**371,322,769**
Income from equity shares and participating interests	26	**1,181,547**	**869,976**
Other income	27	**51,815,338**	**50,000,263**
Total net income		**2,360,645,782**	**2,146,941,379**
Staff costs	28	(535,251,909)	(466,540,231)
Administrative expenses	29	(463,232,194)	(414,207,622)
Depreciation of tangible and intangible fixed assets		(66,722,125)	(64,769,605)
Banknote production services	30	(9,478,047)	(8,315,671)
Other expenses	31	(11,200,000)	0
Profit for the year		**1,274,761,507**	**1,193,108,250**

Frankfurt am Main, 13 February 2018

European Central Bank

Mario Draghi
President

Accounting policies[15]

Form and presentation of the financial statements

The financial statements of the ECB have been drawn up in accordance with the following accounting policies,[16] 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 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

15 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).

16 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.

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 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 2017, was derived from the exchange rate of the euro against the US dollar on 29 December 2017.

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 29 December 2017.

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 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 2017, mid-market prices on 29 December 2017 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.[17] 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 loss 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

17 A minimum threshold of €100,000 applies for administrative accruals and provisions.

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.

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 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. interim profit distributions to NCBs), are presented on the Balance Sheet of the ECB as a single net asset or liability position and disclosed under “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,[18] 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” in the notes on accounting policies).

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”.

Treatment of 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 assets, 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.

Since 2017 the ECB has performed an annual impairment test of its main building based on International Accounting Standard (IAS) 36 “Impairment of assets”. If an impairment indicator is identified signalling that the main building may be impaired,

18 As at 31 December 2017 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.

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.

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.[19] 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.

Net defined benefit liability

The liability recognised in the Balance Sheet under "Other 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 of maturity to the related obligation.

19 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.

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:

(a) the current service cost of the defined benefits accruing for the year;

(b) the past service cost of the defined benefits resulting from a plan amendment;

(c) net interest at the discount rate on the net defined benefit liability;

(d) 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:

(a) actuarial gains and losses on the defined benefit obligation;

(b) the actual return on plan assets, excluding amounts included in the net interest on the net defined benefit liability;

(c) 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.[20] 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.[21]

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

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20 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.

21 “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.

"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,[22] 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" in the notes on accounting policies). 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.[23] 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 foreign exchange rate, interest rate, credit and gold price 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.

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 Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart (Federal Republic of Germany) as the external auditors of the ECB for a five-year period up to the end of the financial year 2017.

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22 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).

23 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.

Notes on the Balance Sheet

1 Gold and gold receivables

As at 31 December 2017 the ECB held 16,229,522 ounces[24] of fine gold. No transactions in gold took place in 2017 and the ECB's holdings therefore remained unchanged compared with their level as at 31 December 2016. The decrease in the euro equivalent value of these holdings was owing to a decline in the market price of gold in euro terms (see "Gold and foreign currency assets and liabilities" in the notes on accounting policies and note 14, "Revaluation accounts").

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

2.1 Receivables from the IMF

This asset represents the ECB's holdings of SDRs as at 31 December 2017. 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 the notes on accounting policies). The decrease in the euro equivalent value of the ECB's holdings of SDRs was due to the depreciation of the SDR against the euro during 2017.

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.

[24] This corresponds to 504.8 tonnes.

Claims on non-euro area residents	2017 €	2016 €	Change €
Current accounts	6,793,888,796	6,844,526,120	(50,637,324)
Money market deposits	2,316,566,582	2,005,810,644	310,755,938
Reverse repurchase agreements	0	503,747,273	(503,747,273)
Security investments	34,650,188,561	41,066,843,366	(6,416,654,805)
Total	**43,760,643,939**	**50,420,927,403**	**(6,660,283,464)**

Claims on euro area residents	2017 €	2016 €	Change €
Current accounts	1,022,379	1,211,369	(188,990)
Money market deposits	2,422,295,400	1,964,182,715	458,112,685
Reverse repurchase agreements	1,288,251,480	507,541,979	780,709,501
Total	**3,711,569,259**	**2,472,936,063**	**1,238,633,196**

The total value of these items decreased in 2017, mainly owing to the depreciation of both the US dollar and the Japanese yen against the euro.

The ECB's net foreign currency holdings[25] as at 31 December 2017 were as follows:

	2017 Currency in millions	2016 Currency in millions
US dollars	46,761	46,759
Japanese yen	1,093,563	1,091,844
Chinese renminbi	3,755	0

During the first half of 2017 the ECB implemented a decision taken by the Governing Council to invest a small part of its foreign reserves holdings in Chinese renminbi (CNY). The investment was made by changing the composition of the ECB's foreign reserves. The ECB sold a small portion of its US dollar holdings and reinvested the full amount in Chinese renminbi.[26]

3 Other claims on euro area credit institutions denominated in euro

As at 31 December 2017 this item consisted of current account balances with euro area residents amounting to €143.3 million (2016: €98.6 million).

25 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.

26 See the ECB's press release of 13 June 2017.

4 Securities of euro area residents denominated in euro

4.1 Securities held for monetary policy purposes

As at 31 December 2017 this item consisted of securities acquired by the ECB within the scope of the three covered bond purchase programmes (CBPPs), the Securities 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 further SMP purchases on 6 September 2012.

In 2017 the Eurosystem continued its securities purchases under the asset purchase programme (APP), which consists of the third CBPP, the ABSPP, the PSPP and the corporate sector purchase programme (CSPP).[28] The monthly pace of combined net APP purchases by the NCBs and the ECB was €80 billion on average until March 2017, and €60 billion from April 2017 until the end of the year. Based on the Governing Council decision in October 2017,[29] these purchases are intended to continue at a monthly pace of €30 billion from January to September 2018, or beyond, if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its inflation aim. The net purchases will be made alongside reinvestments of the principal payments from maturing securities purchased under the APP.

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

The amortised cost of the securities held by the ECB, as well as their market value[30] (which is not recorded on the Balance Sheet and is provided for comparison purposes only), are as follows:

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

28 Further details on the APP can be found on the ECB’s website.

29 See the ECB’s press release of 26 October 2017.

30 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.

	2017 €		2016 €		Change €	
	Amortised cost	Market value	Amortised cost	Market value	Amortised cost	Market value
First covered bond purchase programme	618,533,956	654,666,968	1,032,305,522	1,098,106,253	(413,771,566)	(443,439,285)
Second covered bond purchase programme	385,880,413	421,794,246	690,875,649	743,629,978	(304,995,236)	(321,835,732)
Third covered bond purchase programme	19,732,748,768	19,958,910,843	16,550,442,553	16,730,428,857	3,182,306,215	3,228,481,986
Securities Markets Programme	6,644,212,912	7,554,660,470	7,470,766,415	8,429,995,853	(826,553,503)	(875,335,383)
Asset-backed securities purchase programme	25,014,963,778	25,044,597,490	22,800,124,065	22,786,088,513	2,214,839,713	2,258,508,977
Public sector purchase programme	175,989,921,047	177,087,513,888	112,270,760,463	112,958,545,591	63,719,160,584	64,128,968,297
Total	**228,386,260,874**	**230,722,143,905**	**160,815,274,667**	**162,746,795,045**	**67,570,986,207**	**67,975,348,860**

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

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 2017.

5 Intra-Eurosystem claims

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 the notes on accounting policies). 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[31] (see note 22.2, “Interest income arising from the allocation of euro banknotes within the Eurosystem”).

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

6 Other assets

6.1 Tangible and intangible fixed assets

These assets comprised the following items on 31 December 2017:

	2017 €	2016 €	Change €
Cost			
Land and buildings	1,006,108,554	1,011,662,911	(5,554,357)
Plant in building	221,866,010	221,888,762	(22,752)
Computer hardware and software	109,919,236	88,893,887	21,025,349
Equipment, furniture and motor vehicles	95,383,187	96,197,706	(814,519)
Assets under construction	3,364,162	3,024,459	339,703
Other fixed assets	10,082,651	9,713,742	368,909
Total cost	**1,446,723,800**	**1,431,381,467**	**15,342,333**
Accumulated depreciation			
Land and buildings	(95,622,635)	(72,284,513)	(23,338,122)
Plant in building	(47,644,949)	(31,590,282)	(16,054,667)
Computer hardware and software	(74,188,322)	(57,935,440)	(16,252,882)
Equipment, furniture and motor vehicles	(31,856,677)	(29,107,438)	(2,749,239)
Other fixed assets	(1,393,040)	(1,138,207)	(254,833)
Total accumulated depreciation	**(250,705,623)**	**(192,055,880)**	**(58,649,743)**
Net book value	**1,196,018,177**	**1,239,325,587**	**(43,307,410)**

The net increase in the category “Computer hardware and software” reflected investments in servers, data storage, networking components and software, enhancing the current technological infrastructure.

In respect of the ECB’s main building, an impairment test was conducted at the end of the year and no impairment loss has been recorded.

6.2 Other financial assets

This item consists mainly of the investment of the ECB’s own funds held as a direct counterpart to the capital and reserves and the provision for foreign exchange rate, interest rate, credit and gold price risks. It also includes 3,211 shares in the Bank for International Settlements (BIS) at the acquisition cost of €41.8 million.

The components of this item are as follows:

	2017 €	2016 €	Change €
Current accounts in euro	30,000	30,000	0
Securities denominated in euro	18,416,779,029	19,113,074,101	(696,295,072)
Reverse repurchase agreements in euro	2,043,990,172	1,463,994,460	579,995,712
Other financial assets	41,833,941	41,830,662	3,279
Total	**20,502,633,142**	**20,618,929,223**	**(116,296,081)**

The net decrease in this item in 2017 was due mainly to the reduction in the market value of the euro-denominated securities held in the ECB's own funds portfolio.

6.3 Off-balance-sheet instruments revaluation differences

This item is composed primarily of valuation changes in swap and forward transactions in foreign currency that were outstanding on 31 December 2017 (see note 19, "Foreign exchange swap and forward transactions"). These valuation changes amount to €450.3 million (2016: €837.4 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 the notes on accounting policies).

Valuation gains on outstanding interest rate swap transactions are also included in this item (see note 18, "Interest rate swaps").

6.4 Accruals and prepaid expenses

In 2017 this item included accrued coupon interest on securities, including outstanding interest paid at acquisition, amounting to €2,476.3 million (2016: €1,924.5 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.

6.5 Sundry

This item includes the accrued amounts of the ECB's interim profit distribution (see "Interim profit distribution" in the notes on accounting policies and note 11.2, "Other liabilities within the Eurosystem (net)").

It also includes balances with a value of €491.6 million (2016: €804.3 million) related to swap and forward transactions in foreign currency outstanding on 31 December 2017 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 the notes on accounting policies).

7 Banknotes in circulation

This item consists of the ECB's share (8%) of total euro banknotes in circulation (see "Banknotes in circulation" in the notes on accounting policies).

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 2017 the outstanding value of such PSPP securities lending transactions conducted with euro area credit institutions was €1.1 billion (2016: €1.9 billion). 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 the notes on accounting policies).[32]

9 Liabilities to other euro area residents denominated in euro

9.1 Other liabilities

This item amounts to €1,150.1 million (2016: €1,060.0 million) and comprises deposits or payments of funds accepted by the ECB and made by or on behalf of the participants in EURO1 and RT1[33], which are used as a guarantee fund for EURO1 or to support settlement in RT1.

32 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").

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

10 Liabilities to non-euro area residents denominated in euro

As at 31 December 2017, the largest component was a liability amounting to €10.1 billion (2016: €4.1 billion) 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 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 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 €6.1 billion (2016: €9.5 billion), 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 2017 was due to payments from non-euro area residents to euro area residents.

The remainder of this item consists of an amount of €3.4 billion (2016: €3.1 billion) 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").

11 Intra-Eurosystem liabilities

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. No changes occurred in 2017.

	Since 1 January 2015 €
Nationale Bank van België/Banque Nationale de Belgique	1,435,910,943
Deutsche Bundesbank	10,429,623,058
Eesti Pank	111,729,611
Central Bank of Ireland	672,637,756
Bank of Greece	1,178,260,606
Banco de España	5,123,393,758
Banque de France	8,216,994,286
Banca d’Italia	7,134,236,999
Central Bank of Cyprus	87,679,928
Latvijas Banka	163,479,892
Lietuvos bankas	239,453,710
Banque centrale du Luxembourg	117,640,617
Central Bank of Malta	37,552,276
De Nederlandsche Bank	2,320,070,006
Oesterreichische Nationalbank	1,137,636,925
Banco de Portugal	1,010,318,483
Banka Slovenije	200,220,853
Národná banka Slovenska	447,671,807
Suomen Pankki – Finlands Bank	728,096,904
Total	**40,792,608,418**

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”).

11.2 Other liabilities within the Eurosystem (net)

In 2017 this item consisted mainly of the TARGET2 balances of euro area NCBs vis-à-vis the ECB (see “Intra-ESCB balances/intra-Eurosystem balances” in the notes on accounting policies). The increase in this position resulted mainly from net purchases of securities under the APP (see note 4, “Securities of euro area residents denominated in euro”), which were settled via TARGET2 accounts. The impact of the net purchases was partially offset by the increase in the amounts related to the back-to-back swap transactions conducted with NCBs in connection with US dollar liquidity-providing operations.

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.

This item also includes the amount due to euro area NCBs in respect of the ECB’s interim profit distribution (see “Interim profit distribution” in the notes on accounting policies).

	2017 €	2016 €
Due to euro area NCBs in respect of TARGET2	1,263,961,444,256	1,058,484,156,256
Due from euro area NCBs in respect of TARGET2	(1,047,197,405,166)	(908,249,140,203)
Due to euro area NCBs in respect of the ECB's interim profit distribution	987,730,460	966,234,559
Other liabilities within the Eurosystem (net)	**217,751,769,550**	**151,201,250,612**

12 Other liabilities

12.1 Off-balance-sheet instruments revaluation differences

This item is composed mainly of valuation changes in swap and forward transactions in foreign currency that were outstanding on 31 December 2017 (see note 19, "Foreign exchange swap and forward transactions"). These valuation changes 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 the notes on accounting policies).

Valuation losses on outstanding interest rate swaps are also included in this item (see note 18, "Interest rate swaps").

12.2 Accruals and income collected in advance

As at 31 December 2017 this item included administrative accruals, income collected in advance, primarily in connection with the Single Supervisory Mechanism (SSM) (see note 25, "Net income/expenses from fees and commissions"), and accruals on financial instruments.

	2017 €	2016 €	Change €
Administrative accruals	41,447,444	20,723,173	20,724,271
Financial instruments	6,767,861	3,621,142	3,146,719
Income collected in advance	28,068,263	41,089,798	(13,021,535)
Foreign reserves transferred to the ECB	0	3,611,845	(3,611,845)
Total	**76,283,568**	**69,045,958**	**7,237,610**

12.3 Sundry

In 2017, as in the previous year, this item included balances amounting to €498.3 million (2016: €714.9 million) related to swap and forward transactions in foreign currency that were outstanding on 31 December 2017 (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 the notes on 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[34]

Balance Sheet

The amounts recognised in the Balance Sheet in respect of post-employment, other long-term and staff termination benefits were as follows:

	2017 Staff € millions	2017 Boards € millions	2017 Total € millions	2016 Staff € millions	2016 Boards € millions	2016 Total € millions
Present value of obligation	1,510.0	28.9	1,538.9	1,361.3	27.7	1,388.9
Fair value of plan assets	(1,017.1)	-	(1,017.1)	(878.0)	-	(878.0)
Net defined benefit liability recognised in the Balance Sheet	**492.9**	**28.9**	**521.8**	**483.3**	**27.7**	**510.9**

In 2017 the present value of the obligation vis-à-vis staff of €1,510.0 million (2016: €1,361.3 million) included unfunded benefits amounting to €224.6 million (2016: €187.0 million) relating to post-employment benefits other than pensions, to other long-term benefits and to staff termination benefits. The present value of the obligation vis-à-vis the members of the Executive Board and the members of the Supervisory Board of €28.9 million (2016: €27.7 million) relates solely to unfunded arrangements in place for post-employment and other long-term benefits.

Profit and Loss Account

The amounts recognised in the Profit and Loss Account in 2017 were as follows:

34 In all the tables of this section, totals may not add up due to rounding. The columns labelled "Boards" report the amounts in respect of both the Executive Board and the Supervisory Board.

	2017 Staff € millions	2017 Boards € millions	2017 Total € millions	2016 Staff € millions	2016 Boards € millions	2016 Total € millions
Current service cost	153.2	1.9	155.1	104.4	1.6	106.0
Past service cost	4.1	-	4.1	-	-	-
Net interest on the net defined benefit liability	10.1	0.6	10.7	9.7	0.6	10.3
of which:						
Interest cost on the obligation	*28.3*	*0.6*	*28.9*	*29.1*	*0.6*	*29.8*
Interest income on plan assets	*(18.2)*	-	*(18.2)*	*(19.5)*	-	*(19.5)*
Remeasurement (gains)/losses on other long-term benefits	(0.9)	0.2	(0.7)	0.6	0.1	0.7
Total related to actuarial valuation	**166.5**	**2.7**	**169.2**	**114.6**	**2.4**	**117.0**
Release of CTS provision	(9.0)	-	(9.0)	-	-	-
Total included in "Staff costs" after the release of provision	**157.5**	**2.7**	**160.2**	**114.6**	**2.4**	**117.0**

The current service cost increased in 2017 to €155.1 million (2016: €106.0 million), mainly owing to the introduction of the temporary Career Transition Support (CTS) scheme in 2017 addressed to long-serving staff members to facilitate their voluntary transition to a career outside the ECB under specified conditions. The impact on staff costs was partially offset by the release of a dedicated provision amounting to €9.0 million that was set-up in 2016 for this purpose.

The past service cost in 2017 is due to the introduction of the long-term care plan, which is a defined benefit plan designed to cover non-medical assistance. The past service cost relates to the current pensioners who are entitled to receive benefits from the new plan with immediate effect.

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

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

	2017 Staff € millions	2017 Boards € millions	2017 Total € millions	2016 Staff € millions	2016 Boards € millions	2016 Total € millions
Opening defined benefit obligation	1,361.3	27.7	1,388.9	1,116.7	24.1	1,140.8
Current service cost	153.2	1.9	155.1	104.4	1.6	106.0
Past service cost	4.1	-	4.1	-	-	-
Interest cost on the obligation	28.3	0.6	28.9	29.1	0.6	29.8
Contributions paid by plan participants[35]	23.1	0.2	23.3	19.5	0.2	19.8
Benefits paid	(11.9)	(0.9)	(12.7)	(8.6)	(0.8)	(9.5)
Remeasurement (gains)/losses	(48.1)	(0.6)	(48.7)	100.2	1.9	102.1
Closing defined benefit obligation	**1,510.0**	**28.9**	**1,538.9**	**1,361.3**	**27.7**	**1,388.9**

The total remeasurement gains of €48.7 million on the defined benefit obligation in 2017 arose as a result of the increase in the discount rate from 2% in 2016 to 2.1% in 2017 and a reduction of assumed future pension increases from 1.4% in 2016 to 1.3% in 2017.

Changes in 2017 in the fair value of plan assets in the defined benefit pillar relating to staff were as follows:

	2017 € millions	2016 € millions
Opening fair value of plan assets	878.0	755.3
Interest income on plan assets	18.2	19.5
Remeasurement gains	54.6	44.7
Contributions paid by employer	51.8	45.0
Contributions paid by plan participants	23.1	19.5
Benefits paid	(8.6)	(6.0)
Closing fair value of plan assets	**1,017.1**	**878.0**

Remeasurement gains on plan assets in both 2017 and 2016 reflected the fact that actual returns on the fund units were higher than the estimated interest income on plan assets.

Changes in 2017 in the remeasurement results (see note 14, "Revaluation accounts") were as follows:

[35] The compulsory contributions paid by the staff are 7.4%, whilst those paid by the ECB are 20.7% of the basic salary.

	2017 € millions	2016 € millions
Opening remeasurement losses	(205.1)	(148.4)
Gains on plan assets	54.6	44.7
Gains/(losses) on obligation	48.7	(102.1)
Losses recognised in the Profit and Loss Account	(0.7)	0.7
Closing remeasurement losses included under “Revaluation accounts”	**(102.5)**	**(205.1)**

Key assumptions

In preparing the valuations referred to in this note, the 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:

	2017 %	2016 %
Discount rate	2.10	2.00
Expected return on plan assets [36]	3.10	3.00
General future salary increases [37]	2.00	2.00
Future pension increases [38]	1.30	1.40

Furthermore, voluntary contributions made by staff in a defined contribution pillar in 2017 amounted to €149.9 million (2016: €133.2 million). These contributions are invested in the plan assets and give rise to a corresponding obligation of equal value.

13 Provisions

This item consists mainly of a provision for foreign exchange rate, interest rate, credit and gold price risks.

The provision for foreign exchange rate, interest rate, credit and gold price 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

36 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.

37 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.

38 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.

amount held in the general reserve fund, may not exceed the value of the ECB's capital paid up by the euro area NCBs.

As at 31 December 2017 the provision for foreign exchange rate, interest rate, credit and gold risks amounted to €7,619,884,851, unchanged from 2016. This amount corresponds to the value of the ECB's capital paid up by the euro area NCBs as at that date.

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 the notes on accounting policies). It also includes the 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 the notes on accounting policies and note 12.3, "Sundry").

	2017 €	2016 €	Change €
Gold	13,664,030,012	13,926,380,231	(262,350,219)
Foreign currency	7,851,010,723	14,149,471,665	(6,298,460,942)
Securities and other instruments	532,971,621	755,494,021	(222,522,400)
Net defined benefit liability in respect of post-employment benefits	(102,540,109)	(205,078,109)	102,538,000
Total	**21,945,472,247**	**28,626,267,808**	**(6,680,795,561)**

The decrease in the size of the revaluation accounts is predominantly due to the appreciation of the euro against the US dollar and Japanese yen in 2017.

The foreign exchange rates used for the year-end revaluation were as follows:

Exchange rates	2017	2016
US dollars per euro	1.1993	1.0541
Japanese yen per euro	135.01	123.40
Chinese renminbi per euro	7.8044	7.3202
Euro per SDR	1.1876	1.2746
Euro per fine ounce of gold	1,081.881	1,098.046

15 Capital and reserves

15.1 Capital

The subscribed capital of the ECB is €10,825,007,069. The capital paid up by euro area and non-euro area NCBs amounts to €7,740,076,935.

The euro area NCBs have fully paid up their share of subscribed capital, which since 1 January 2015 has amounted to €7,619,884,851, as shown in the table.[39]

	Capital key since 1 January 2015[40] %	Paid-up capital since 1 January 2015 €
Nationale Bank van België/ Banque Nationale de Belgique	2.4778	268,222,025
Deutsche Bundesbank	17.9973	1,948,208,997
Eesti Pank	0.1928	20,870,614
Central Bank of Ireland	1.1607	125,645,857
Bank of Greece	2.0332	220,094,044
Banco de España	8.8409	957,028,050
Banque de France	14.1792	1,534,899,402
Banca d'Italia	12.3108	1,332,644,970
Central Bank of Cyprus	0.1513	16,378,236
Latvijas Banka	0.2821	30,537,345
Lietuvos bankas	0.4132	44,728,929
Banque centrale du Luxembourg	0.2030	21,974,764
Central Bank of Malta	0.0648	7,014,605
De Nederlandsche Bank	4.0035	433,379,158
Oesterreichische Nationalbank	1.9631	212,505,714
Banco de Portugal	1.7434	188,723,173
Banka Slovenije	0.3455	37,400,399
Národná banka Slovenska	0.7725	83,623,180
Suomen Pankki – Finlands Bank	1.2564	136,005,389
Total	**70.3915**	**7,619,884,851**

The non-euro area NCBs are required to pay up 3.75% of their subscribed capital as a contribution to the operational costs of the ECB. Since 1 January 2015 this contribution has amounted to a total of €120,192,083. Non-euro area NCBs are not entitled to receive any share of the distributable profits of the ECB, nor are they liable to cover any loss of the ECB.

The non-euro area NCBs have paid up the following amounts:

39 Individual amounts are shown rounded to the nearest euro. Consequently, totals in the tables of this note may not add up due to rounding.

40 The shares of the individual NCBs in the key for subscription to the ECB's capital were last changed on 1 January 2014. However, on 1 January 2015, owing to the entry of Lithuania into the euro area, the total capital key weight of euro area NCBs in the ECB's overall capital increased, whereas the total capital key weight of non-euro area NCBs decreased. No changes have taken place since then.

	Capital key since 1 January 2015 %	Paid-up capital since 1 January 2015 €
Българска народна банка (Bulgarian National Bank)	0.8590	3,487,005
Česká národní banka	1.6075	6,525,450
Danmarks Nationalbank	1.4873	6,037,512
Hrvatska narodna banka	0.6023	2,444,963
Magyar Nemzeti Bank	1.3798	5,601,129
Narodowy Bank Polski	5.1230	20,796,192
Banca Naţională a României	2.6024	10,564,124
Sveriges Riksbank	2.2729	9,226,559
Bank of England	13.6743	55,509,148
Total	**29.6085**	**120,192,083**

Off-balance-sheet instruments

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.[41]

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.[42] Such securities lending operations with a value of €13.4 billion (2016: €10.9 billion) were outstanding as at 31 December 2017. Of this amount, €7.2 billion (2016: €3.9 billion) related to the lending of securities held for monetary policy purposes.

17 Interest rate futures

As at 31 December 2017 the following foreign currency transactions, presented at year-end market rates, were outstanding:

Foreign currency interest rate futures	2017 Contract value €	2016 Contract value €	Change €
Purchases	6,518,052,197	558,770,515	5,959,281,682
Sales	6,584,789,977	2,258,798,975	4,325,991,002

These transactions were conducted in the context of the management of the ECB's foreign reserves.

18 Interest rate swaps

Interest rate swap transactions with a notional value of €415.9 million (2016: €378.3 million), presented at year-end market rates, were outstanding as at

41 The ECB does not purchase securities under the CSPP and consequently has no related holdings available for lending.

42 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").

31 December 2017. These transactions were conducted in the context of the management of the ECB's foreign reserves.

19 Foreign exchange swap and forward transactions

Management of foreign reserves

Foreign exchange swap and forward transactions were conducted in 2017 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 2017 are presented at year-end market rates as follows:

Foreign exchange swap and forward transactions	2017 €	2016 €	Change €
Claims	2,731,848,697	3,123,544,615	(391,695,918)
Liabilities	2,719,012,506	2,855,828,167	(136,815,661)

Liquidity-providing operations

US dollar-denominated claims and liabilities with a settlement date in 2017 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").

20 Administration of borrowing and lending operations

In 2017 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, the European Financial Stabilisation Mechanism, the European Financial Stability Facility and the European Stability Mechanism (ESM), as well as for the loan facility agreement for Greece. In 2017 the ECB processed payments related to these operations, as well as payments in the form of member subscriptions to the ESM's authorised capital stock.

21 Contingent liabilities from pending lawsuits

Four 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. The General Court of the EU found twelve similar cases inadmissible in their entirety in 2014. Appeals were brought against eight of these verdicts and in 2016 the Court of Justice of the European

Union either confirmed the inadmissibility of the cases or ruled in favour of the ECB in these appeals. 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.

Notes on the Profit and Loss Account

22 Net interest income

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:

	2017 €	2016 €	Change €
Interest income on current accounts	5,111,897	1,499,288	3,612,609
Interest income on money market deposits	54,839,007	18,095,835	36,743,172
Interest expense on repurchase agreements	(1,101,476)	(34,017)	(1,067,459)
Interest income on reverse repurchase agreements	37,067,062	12,745,338	24,321,724
Interest income on securities	389,779,270	304,958,993	84,820,277
Interest income/(expense) on interest rate swaps	(109,873)	19,080	(128,953)
Interest income on forward and swap transactions in foreign currencies	48,575,683	33,157,253	15,418,430
Interest income on foreign reserve assets (net)	**534,161,570**	**370,441,770**	**163,719,800**

The overall increase in net interest income in 2017 was due mainly to higher interest income generated on the US dollar portfolio.

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 the notes on accounting policies and note 5.1, "Claims related to the allocation of euro banknotes within the Eurosystem"). For 2017 this interest income was zero, owing to the fact that the rate on the main refinancing operations remained at 0% during the entire year.

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 2017 was zero, reflecting the fact that the rate on the main refinancing operations was 0% during the entire year.

22.4 Other interest income; and other interest expense

In 2017 these items comprised mainly net interest income of €1.1 billion (2016: €1.0 billion) on the securities held by the ECB for monetary policy purposes. Of this amount, €0.6 billion (2016: €0.4 billion) related to net interest income on securities purchased under the APP and €0.4 billion (2016: €0.5 billion) related to net interest income on securities purchased under the SMP, of which €154.5 million (2016: €185.3 million) arose from the ECB's SMP holdings of Greek government bonds.

The remainder of these items consisted mainly of interest income and expense on the ECB's own funds portfolio (see note 6.2, "Other financial assets") and on other miscellaneous interest-bearing balances.

23 Realised gains/losses arising from financial operations

Net realised gains arising from financial operations in 2017 were as follows:

	2017 €	2016 €	Change €
Net realised price gains	22,249,008	159,456,244	(137,207,236)
Net realised exchange rate and gold price gains	138,820,035	65,085,498	73,734,537
Net realised gains arising from financial operations	**161,069,043**	**224,541,742**	**(63,472,699)**

Net realised price gains include realised gains and losses on securities, interest rate futures and interest rate swaps. The decrease in net realised price gains in 2017 was due mainly to lower realised price gains generated on securities in the US dollar portfolio.

The overall increase in net realised exchange rate and gold price gains was due mainly to the sale of a small portion of US dollars holdings in order to fund the creation of the Chinese renminbi portfolio[43] (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").

24 Write-downs on financial assets and positions

Write-downs on financial assets and positions in 2017 were as follows:

[43] See the ECB's press release of 13 June 2017.

	2017 €	2016 €	Change €
Unrealised price losses on securities	(78,577,070)	(148,159,250)	69,582,180
Unrealised exchange rate losses	(26,556,261)	(12,760)	(26,543,501)
Total write-downs	**(105,133,331)**	**(148,172,010)**	**43,038,679**

The market value of a number of securities held in the US dollar portfolio further declined in 2017, alongside an increase in the corresponding yields. This resulted in unrealised price losses during the year.

The unrealised exchange rate losses are mainly due to the write-down of the average acquisition cost of the ECB's holding of Chinese renminbi to its 2017 year-end exchange rate owing to the depreciation of this currency against the euro since the purchases were made.

25 Net income/expense from fees and commissions

	2017 €	2016 €	Change €
Income from fees and commissions	452,095,734	382,191,051	69,904,683
Expenses relating to fees and commissions	(12,025,845)	(10,868,282)	(1,157,563)
Net income from fees and commissions	**440,069,889**	**371,322,769**	**68,747,120**

In 2017 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, as well as fees payable to the external asset managers for conducting purchases of eligible asset-backed securities on explicit instructions from, and on behalf of, the Eurosystem until the end of March 2017.[44]

Income and expenses related to supervisory tasks

On November 2014 the ECB assumed its supervisory tasks in accordance with Article 33 of the SSM Regulation.[45] In order to recover expenditure incurred for performing these tasks the ECB levies annual fees on supervised entities. The ECB announced in April 2017 that the annual supervisory fees in 2017 would amount to €425.0 million.[46] This figure was based on estimated annual expenses for supervisory tasks of €464.7 million in 2017, adjusted for (i) surplus supervisory fees

[44] See the ECB's press release of 15 December 2016.

[45] 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 (OJ L 287, 29.10.2013, p. 63).

[46] This amount was invoiced in October 2017 with a due date of 30 November 2017.

of €41.1 million charged in 2016; and (ii) amounts refunded in relation to changes in the number or status of supervised entities[47] (€1.4 million).

Based on the actual expenses incurred by the ECB in its performance of banking supervisory tasks, the supervisory fee income for 2017 stood at €436.7 million. The net surplus of €27.9 million arising from the difference between the estimated expenses (€464.7 million) and the actual expenses (€436.7 million) for 2017 is shown under the heading "Accruals and income collected in advance" (see note 12.2, "Accruals and income collected in advance"). It will be offset against the supervisory fees to be levied in 2018.

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).[48] 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 2017 penalties imposed by the ECB on supervised entities amounted to €15.3 million.

Thus, the related income of the ECB for supervisory tasks in 2017 was as follows: [49]

	2017 €	2016 €	Change €
Supervisory fees	436,746,219	382,151,355	54,594,864
of which:			
Fees relating to significant entities or significant groups	*397,493,784*	*338,418,328*	*59,075,456*
Fees relating to less significant entities or less significant groups	*39,252,435*	*43,733,027*	*(4,480,592)*
Imposed administrative penalties	15,300,000	0	15,300,000
Total income related to banking supervision tasks	**452,046,219**	**382,151,355**	**69,894,864**

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, including premises, human resources management, administrative services, budgeting and controlling, accounting, legal, internal audit, statistical and information technology services needed to fulfil the ECB's supervisory responsibilities.

In addition, the collection of an amount of €11.2 million related to administrative penalties imposed by the ECB on a supervised entity was considered uncertain, as

47 Based on Article 7 of Regulation (EU) No 1163/2014 of the ECB of 22 October 2014 on supervisory fees (ECB/2014/41) (OJ L 311, 31.10.2014, p. 23), in cases where (i) a supervised entity or a supervised group is supervised for only part of the fee period or (ii) the status of a supervised entity or a supervised group changes from significant to less significant, or vice versa, the individual supervisory fees are amended. Any such amounts received or refunded are taken into account for the calculation of the total annual supervisory fees to be levied in subsequent years.

48 Further details on the administrative penalties imposed by the ECB can be found on the ECB Banking Supervision website.

49 Individual amounts are shown rounded to the nearest euro. Consequently, totals in the tables of this note may not add up due to rounding.

the banking licence of this entity has been subsequently withdrawn and it is currently in liquidation. In accordance with the prudence principle, an allowance for the full amount of this claim was created at the year-end (see note 31, “Other expenses”). The related expense is not considered in the calculation of the annual supervisory fees, but it is recorded in the Profit and Loss Account of the ECB and reduces its net result.

For 2017 the total actual expenses related to the ECB’s supervisory tasks are broken down under the following headings:

	2017 €	2016 €	Change €
Salaries and benefits	215,017,183	180,655,666	34,361,517
Rent and building maintenance	52,959,161	58,103,644	(5,144,483)
Other operating expenditure	168,769,875	143,392,045	25,377,830
Expenses related to banking supervision tasks relevant for supervisory fees	**436,746,219**	**382,151,355**	**54,594,864**
Allowance for doubtful administrative penalties	11,200,000	0	11,200,000
Total expenses related to banking supervision tasks	**447,946,219**	**382,151,355**	**65,794,864**

The rise in the total number of staff working in ECB Banking Supervision and an increase in costs for external consultative support, primarily in connection with the Targeted Review of Internal Models (TRIM), contributed to the growth in actual banking supervision expenses in 2017 compared to 2016.

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.

27 Other income

Other miscellaneous income during 2017 mainly arose from the accrued contributions of the euro area NCBs to the costs incurred by the ECB in connection with joint Eurosystem projects.

28 Staff costs

The higher average number of staff employed by the ECB in 2017 and the expenses in relation to termination benefits arising under the CTS scheme introduced by the ECB in 2017 (see note 12.3, “Sundry”) led to an overall increase in staff costs.

Salaries, allowances, staff insurance and other miscellaneous costs of €366.0 million (2016: €349.5 million) are included under this heading. The item also includes an amount of €169.2 million (2016: €117.0 million) recognised in connection with the

ECB's post-employment benefits, other long-term benefits and termination benefits (see note 12.3, "Sundry").

Salaries and allowances are modelled in essence on, and are comparable with, the remuneration scheme of the European Union.

Members of the Executive Board and the members of the Supervisory Board employed by the ECB receive a basic salary, while part-time members of the Supervisory Board employed by the ECB may receive additional remuneration based on the number of meetings attended. Furthermore, the members of the Executive Board and the full-time members of the Supervisory Board employed by the ECB receive additional allowances for residence and representation. In the case of the President, an official residence owned by the ECB 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 European Union, as well as to deductions in respect of contributions to the pension, medical and accident insurance schemes. Allowances are non-taxable and non-pensionable.

In 2017 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:[50]

	2017 €	2016[51] €
Mario Draghi (President)	396,900	389,760
Vítor Constâncio (Vice-President)	340,200	334,080
Peter Praet (Board Member)	283,488	278,388
Benoît Cœuré (Board Member)	283,488	278,388
Yves Mersch (Board Member)	283,488	278,388
Sabine Lautenschläger (Board Member)	283,488	278,388
Total Executive Board	**1,871,052**	**1,837,392**
Total Supervisory Board (members employed by the ECB) [52]	**793,817**	**632,060**
of which:		
Danièle Nouy (Chair of the Supervisory Board)	*283,488*	*278,388*
Total	**2,664,869**	**2,469,452**

The part-time members of the Supervisory Board also received additional remuneration amounting to €96,470 in 2017 (2016: €343,341).

The total allowances paid to members of both boards and the ECB's contributions to medical and accident insurance schemes on their behalf amounted to €852,998

50 Amounts are presented gross, i.e. before any tax deductions for the benefit of the European Union.

51 The salaries of the President and the Vice President published last year included the annual general salary adjustment (GSA). For other members of both boards, including the Chair of the Supervisory Board, the GSA was applied retroactively in 2017.

52 This total excludes the salary of Sabine Lautenschläger – the Vice-Chair of the Supervisory Board – which is reported with those of the other members of the Executive Board.

(2016: €807,475). The increase compared with 2016 was mainly the result of a new member joining the Supervisory Board in February 2017.

Pension payments, including post-employment allowances, and contributions to the medical and accident insurance schemes for former board members and their dependants, amounted to €857,476 (2016: €834,668).[53]

At the end of 2017 the actual full-time equivalent number of staff holding contracts with the ECB was 3,384,[54] including 330 with managerial positions. The change in the number of staff during 2017 was as follows:

	2017	2016
Total staff as at end of previous year	3,171	2,871
Starters	726	725
Leavers	(443)	(380)
Net increase/(decrease) due to changes in part-time working patterns	(70)	(45)
Total staff as at 31 December	**3,384**	**3,171**
of which:		
Leavers as at 31 December	*113*	*80*
Average number of staff employed	**3,254**	**3,007**

29 Administrative expenses

This item amounting to €463.2 million (2016: €414.2 million) covers all other current expenses relating to the renting and maintenance of premises, information technology, goods and equipment of a non-capital nature, professional fees and other services and supplies, together with staff-related expenses, including recruitment, relocation and training expenses.

30 Banknote production services

This expense arises predominantly owing to 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.

53 For the net amount charged to the Profit and Loss Account in relation to the pension arrangements for the current members of the Executive Board and members of the Supervisory Board see note 12.3, “Sundry”.

54 Staff on unpaid leave are excluded. This number includes staff with permanent, fixed or short-term contracts and participants in the ECB’s Graduate Programme. Staff on maternity or long-term sick leave are also included.

31 Other expenses

In 2017 this item comprised an allowance for administrative penalties imposed by the ECB on a supervised entity where collection was assessed as uncertain (see note 25, “Net income/expense from fees and commissions”).

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President and Governing Council
of the European Central Bank
Frankfurt am Main

14 February 2018

Independent auditor's report

Opinion
We have audited the financial statements of the European Central Bank, which comprise the balance sheet as at 31 December 2017, the profit and loss account for the year then ended, and a summary of significant accounting policies and other explanatory notes.
In our opinion, the accompanying financial statements of the European Central Bank give a true and fair view of the financial position of the European Central Bank as at 31 December 2017 and of the results of its 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.

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 European Central Bank 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.

Responsibilities of the European Central Bank's 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, 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 using the going concern basis of accounting in accordance with Article 4 of the applicable Decision (ECB/2016/35), as amended.
Those charged with governance are responsible for overseeing the European Central Bank'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 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 entity'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 entity'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 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.
We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Yours sincerely,

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Claus-Peter Wagner
Wirtschaftsprüfer

Victor Veger
Certified Public Accountant

Note on profit distribution/allocation of losses

This note is not part of the financial statements of the ECB for the year 2017.

Pursuant to Article 33 of the Statute of the ESCB, the net profit of the ECB shall be transferred in the following order:

(a) 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

(b) the remaining net profit shall be distributed to the shareholders of the ECB in proportion to their paid-up shares.[55]

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.[56]

The ECB's net profit for 2017 was €1,274.7 million. Following a decision by the Governing Council, an interim profit distribution, amounting to €987.7 million, was paid out to the euro area NCBs on 31 January 2018. Furthermore, the Governing Council decided to distribute the remaining profit of €287.0 million to the euro area NCBs.

	2017 €	2016 €
Profit for the year	1,274,761,507	1,193,108,250
Interim profit distribution	(987,730,460)	(966,234,559)
Profit after the interim profit distribution	287,031,047	226,873,691
Distribution of the remaining profit	(287,031,047)	(226,873,691)
Total	**0**	**0**

55 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.

56 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.

Abbreviations

ABSPP	asset-backed securities purchase programme
APP	asset purchase programme
BIS	Bank for International Settlements
CBPP	covered bond purchase programme
CNY	Chinese renminbi
CSPP	corporate sector purchase programme
CTS	career transition support
EBA	Euro Banking Association
ECB	European Central Bank
ES	expected shortfall
ESCB	European System of Central Banks
ESM	European Stability Mechanism
EU	European Union
GSA	general salary adjustment
IMF	International Monetary Fund
IT	information technology
NCB	national central bank
ORC	Operational Risk Committee
ORM	operational risk management
PSPP	public sector purchase programme
RMC	Risk Management Committee
SDR	special drawing right
SMP	Securities Markets Programme
SSM	Single Supervisory Mechanism
TARGET2	Trans-European Automated Real-time Gross settlement Express Transfer system
TRIM	Targeted Review of Internal Models
VaR	value at risk

Consolidated balance sheet of the Eurosystem as at 31 December 2017[1]

(EUR millions)[2]

	ASSETS	31 December 2017	31 December 2016
1	**Gold and gold receivables**	**376,300**	**382,061**
2	**Claims on non-euro area residents denominated in foreign currency**	**296,217**	**327,859**
2.1	Receivables from the IMF	70,214	78,752
2.2	Balances with banks and security investments, external loans and other external assets	226,002	249,107
3	**Claims on euro area residents denominated in foreign currency**	**38,058**	**30,719**
4	**Claims on non-euro area residents denominated in euro**	**19,364**	**19,082**
4.1	Balances with banks, security investments and loans	19,364	19,082
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**	**764,310**	**595,873**
5.1	Main refinancing operations	3,372	39,131
5.2	Longer-term refinancing operations	760,639	556,570
5.3	Fine-tuning reverse operations	0	0
5.4	Structural reverse operations	0	0
5.5	Marginal lending facility	299	172
5.6	Credits related to margin calls	0	0
6	**Other claims on euro area credit institutions denominated in euro**	**37,563**	**69,134**
7	**Securities of euro area residents denominated in euro**	**2,660,726**	**1,974,866**
7.1	Securities held for monetary policy purposes	2,386,012	1,653,995
7.2	Other securities	274,714	320,870
8	**General government debt denominated in euro**	**25,015**	**26,460**
9	**Other assets**	**254,010**	**235,384**
Total assets		**4,471,563**	**3,661,439**

1 Based on provisional unaudited data. The annual accounts of all the NCBs will be finalised by the end of May 2018 and the final consolidated annual balance sheet of the Eurosystem will be published thereafter.

2 Totals/sub-totals may not add up due to rounding.

LIABILITIES	31 December 2017	31 December 2016
1 Banknotes in circulation	**1,170,716**	**1,126,215**
2 Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	**1,881,596**	**1,313,264**
2.1 Current accounts (covering the minimum reserve system)	1,185,792	888,988
2.2 Deposit facility	695,801	424,208
2.3 Fixed-term deposits	0	0
2.4 Fine-tuning reverse operations	0	0
2.5 Deposits related to margin calls	2	69
3 Other liabilities to euro area credit institutions denominated in euro	**20,984**	**9,427**
4 Debt certificates issued	**0**	**0**
5 Liabilities to other euro area residents denominated in euro	**286,889**	**220,760**
5.1 General government	168,457	114,887
5.2 Other liabilities	118,432	105,873
6 Liabilities to non-euro area residents denominated in euro	**355,381**	**205,678**
7 Liabilities to euro area residents denominated in foreign currency	**3,830**	**3,644**
8 Liabilities to non-euro area residents denominated in foreign currency	**11,254**	**9,301**
8.1 Deposits, balances and other liabilities	11,254	9,301
8.2 Liabilities arising from the credit facility under ERM II	0	0
9 Counterpart of special drawing rights allocated by the IMF	**55,218**	**59,263**
10 Other liabilities	**225,543**	**218,929**
11 Revaluation accounts	**357,852**	**394,357**
12 Capital and reserves	**102,298**	**100,601**
Total liabilities	**4,471,563**	**3,661,439**

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 15 March 2018.

Conventions used in the table

-	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

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 [1)]
(EUR millions; interest rates in percentages per annum)

1.2.1 Main and longer-term refinancing operations [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				
2017 18 Oct.	3,821	40	3,821	0.00	-	-	-	7
25 Oct.	5,311	38	5,311	0.00	-	-	-	7
1 Nov.	2,995	34	2,995	0.00	-	-	-	7
8 Nov.	2,703	38	2,703	0.00	-	-	-	7
15 Nov.	2,844	38	2,844	0.00	-	-	-	7
22 Nov.	2,976	42	2,976	0.00	-	-	-	7
29 Nov.	4,994	44	4,994	0.00	-	-	-	7
6 Dec.	2,256	30	2,256	0.00	-	-	-	7
13 Dec.	1,919	29	1,919	0.00	-	-	-	7
20 Dec.	3,372	42	3,372	0.00	-	-	-	14
				Longer-term refinancing operations [5), 6)]				
2017 30 Mar.	1,314	28	1,314	0.00	-	-	-	91
27 Apr.	1,470	26	1,470	0.00	-	-	-	91
1 June	3,050	26	3,050	0.00	-	-	-	91
29 June	2,667	27	2,667	0.00	-	-	-	91
27 July	2,860	23	2,860	0.00	-	-	-	91
31 Aug.	2,899	24	2,899	0.00	-	-	-	91
28 Sep.	2,531	22	2,531	0.00	-	-	-	84
26 Oct.	2,498	18	2,498	0.00	-	-	-	98
30 Nov.	2,883	21	2,883	0.00	-	-	-	91
21 Dec. [7)]	2,367	21	2,367	.	-	-	-	98

Source: ECB.

1) Only the 10 last operations until the end of 2017 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 operation. Further information can be found in the "Monetary Policy" section of the ECB's website (https://www.ecb.europa.eu) under "Instruments" then "Open market operations".

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

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 10 last operations until the end of 2017 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)]

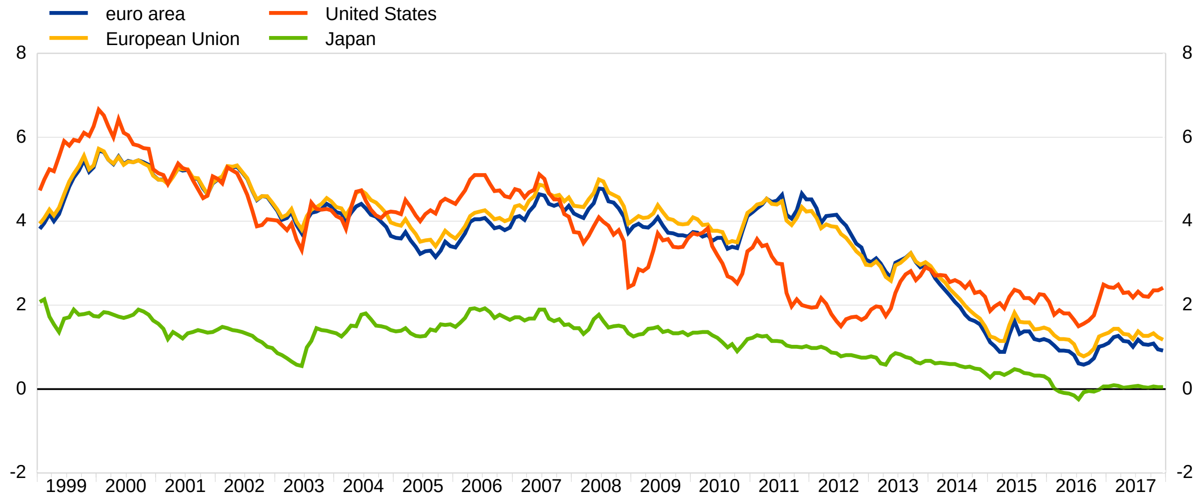
(percentages per annum; period averages)

	1999-2017 [2)]	1999-2008 [2)]	2009-2017	2014	2015	2016	2017
Belgium	3.4	4.5	2.3	1.7	0.8	0.5	0.7
Germany	3.0	4.3	1.5	1.2	0.5	0.1	0.3
Estonia [3)]	.	.	.	.	.	.	.
Ireland	4.2	4.4	4.0	2.4	1.2	0.7	0.8
Greece	7.5	4.8	10.4	6.9	9.7	8.4	6.0
Spain	4.0	4.4	3.5	2.7	1.7	1.4	1.6
France	3.3	4.4	2.1	1.7	0.8	0.5	0.8
Italy	4.1	4.6	3.5	2.9	1.7	1.5	2.1
Cyprus	5.2	5.3	5.0	6.0	4.5	3.8	2.6
Latvia	4.9	5.3	4.6	2.5	1.0	0.5	0.8
Lithuania	4.7	5.2	4.3	2.8	1.4	0.9	0.3
Luxembourg	3.0	4.1	1.8	1.3	0.4	0.3	0.5
Malta	3.9	5.0	3.0	2.6	1.5	0.9	1.3
Netherlands	3.2	4.4	1.8	1.5	0.7	0.3	0.5
Austria	3.3	4.4	2.0	1.5	0.7	0.4	0.6
Portugal	5.0	4.5	5.5	3.8	2.4	3.2	3.1
Slovenia	4.2	5.1	3.5	3.3	1.7	1.1	1.0
Slovakia	4.0	5.3	2.8	2.1	0.9	0.5	0.9
Finland	3.2	4.4	1.8	1.4	0.7	0.4	0.5
Euro area	3.6	4.4	2.7	2.0	1.2	0.9	1.1
Bulgaria	4.4	5.0	4.0	3.3	2.5	2.3	1.6
Czech Republic	3.4	4.6	2.3	1.6	0.6	0.4	1.0
Denmark	3.2	4.5	1.7	1.3	0.7	0.3	0.5
Croatia	5.1	5.1	5.0	4.1	3.6	3.5	2.8
Hungary	6.5	7.3	5.8	4.8	3.4	3.1	3.0
Poland	5.4	6.6	4.4	3.5	2.7	3.0	3.4
Romania	6.2	7.3	5.7	4.5	3.5	3.3	4.0
Sweden	3.2	4.5	1.8	1.7	0.7	0.5	0.7
United Kingdom	3.6	4.8	2.2	2.1	1.8	1.2	1.2
European Union	3.7	4.6	2.8	2.2	1.4	1.1	1.3
United States	3.6	4.7	2.5	2.5	2.1	1.8	2.3
Japan	1.1	1.5	0.7	0.6	0.4	0.0	0.1

Source: ECB calculations based on daily data from national central banks. Thomson Reuters data for the United States and Japan.
1) Further methodological 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, 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)



Source: ECB calculations based on daily data from national central banks. Thomson Reuters data for the United States and Japan.
1) Further methodological 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, 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.

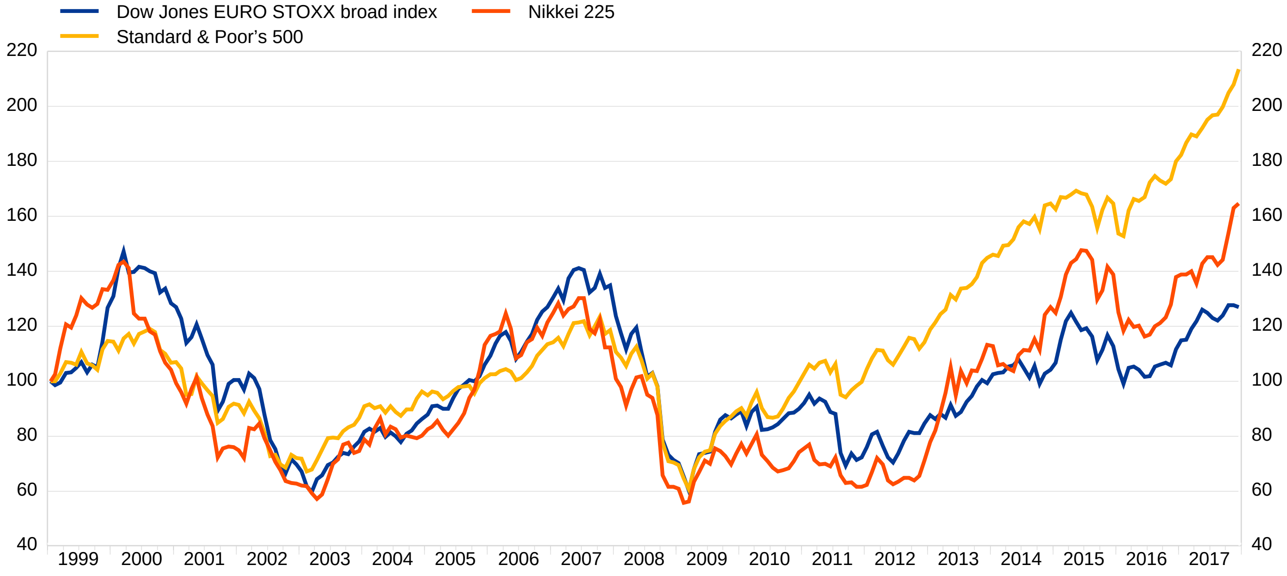
1 Financial and monetary developments

1.4 Selected stock market indices
(percentage changes)

	1999-2017 1)	1999-2008 1)	2009-2017	2014	2015	2016	2017
Belgium - BEL 20 Index	19.1	-42.9	58.4	12.4	12.6	-2.5	10.3
Germany - DAX 30 Index	85.6	-30.9	116.8	2.7	9.6	6.9	12.5
Estonia - OMXT Index	889.7	119.0	207.0	-7.7	19.1	19.6	15.5
Ireland - ISEQ Index	40.3	-53.3	136.6	15.1	30.0	-4.0	8.0
Greece - ASE Index	-85.9	-68.7	-63.5	-28.9	-23.6	1.9	24.7
Spain - IBEX 35 Index	-13.7	-21.0	-15.9	3.7	-7.2	-2.0	7.4
France - CAC 40 Index	-10.8	-46.0	35.0	-0.5	8.5	4.9	9.3
Italy - FTSEMIB Index	-48.7	-54.3	-6.0	0.2	12.7	-10.2	13.6
Cyprus - CSE Index	-93.1	9.4	-95.6	-17.0	-20.9	-2.0	4.7
Latvia - OMXR Index	539.4	74.1	257.1	-11.3	45.7	23.5	35.8
Lithuania - OMXV Index	553.3	79.3	149.6	7.3	7.4	14.9	17.0
Luxembourg - LuxX Index	17.3	-29.8	19.5	4.9	-8.5	20.0	-1.8
Malta - MSE Index	30.9	-6.8	30.3	-9.6	33.0	4.5	-2.6
Netherlands - AEX Index	-18.9	-63.4	62.4	5.6	4.1	9.4	12.7
Austria - ATX Index	185.5	46.2	37.0	-15.2	11.0	9.2	30.6
Portugal - PSI 20 Index	-54.9	-47.0	-36.3	-26.8	10.7	-11.9	15.2
Slovenia - SBITOP Index	-45.3	-42.0	-17.9	19.6	-11.2	3.1	12.4
Slovakia - SAX Index	322.5	366.0	22.0	12.4	31.5	9.0	2.2
Finland - OMXH Index	-35.0	-62.9	46.7	5.7	10.8	3.6	6.4
Euro area - DJ EURO STOXX Broad Index	-7.4	-46.5	40.3	1.7	8.0	1.5	10.1
Bulgaria - SOFIX Index	534.7	236.0	58.6	6.2	-11.7	27.2	15.5
Czech Republic - PX 50 Index	120.2	75.3	-3.5	-4.3	1.0	-3.6	17.0
Denmark - OMXC 20 Index	300.6	-3.1	204.2	20.9	36.2	-12.8	15.9
Croatia - CROBEX Index	57.2	46.9	-8.0	-2.7	-3.2	18.1	-7.6
Hungary - BUX Index	346.5	38.8	85.5	-10.4	43.8	33.8	23.0
Poland - WIG Index	252.5	50.6	59.4	0.3	-9.6	11.4	23.2
Romania - BET Index	1,628.7	546.8	65.3	9.1	-1.1	1.2	9.4
Sweden - OMXS 30 Index	31.5	-44.8	65.7	9.9	-1.2	4.9	3.9
United Kingdom - FTSE 100 Index	10.9	-36.0	42.0	-2.7	-4.9	14.4	7.6
United States - S&P 500 Index	82.0	-38.5	139.8	11.4	-0.7	9.5	19.4
Japan - Nikkei 225 Index	20.2	-53.2	115.9	7.1	9.1	0.4	19.1

Source: ECB calculations based on Thomson Reuters Datastream and Bloomberg 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 and Nikkei 225
(index: January 1999 = 100; monthly averages)



Source: ECB calculations based on Thomson Reuters Datastream and Bloomberg daily data.

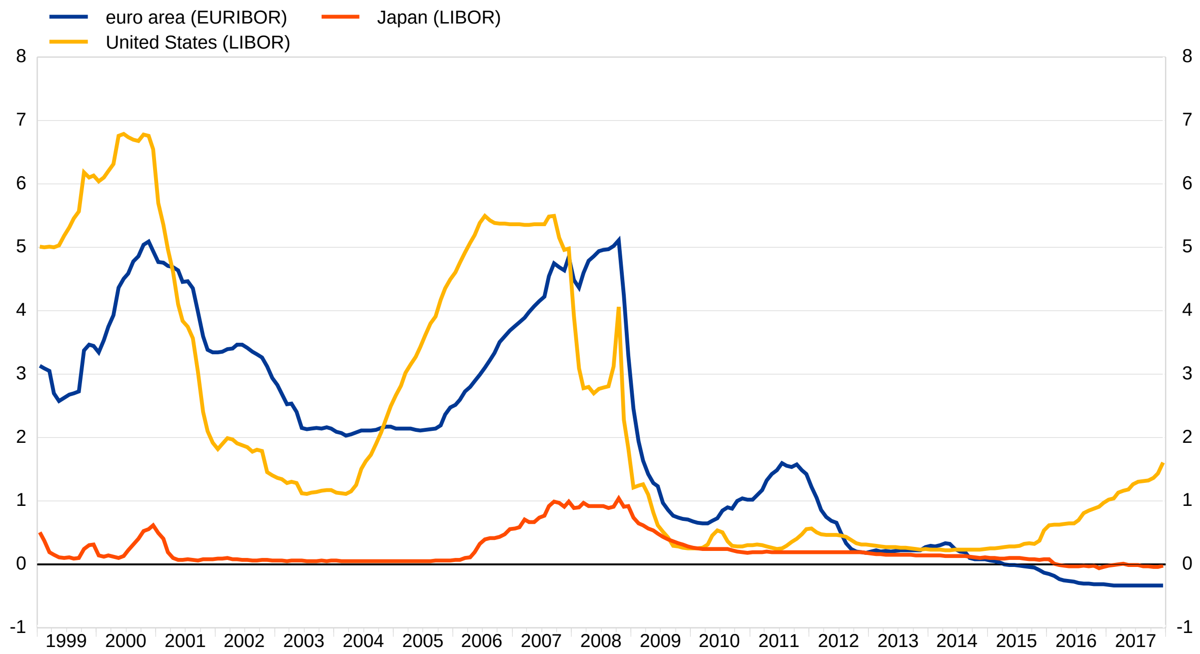
1 Financial and monetary developments

1.5 Money markets: 3-month interbank offered rates [1)]
(percentages per annum; period averages)

	1999-2017 [2)]	1999-2008 [2)]	2009-2017	2014	2015	2016	2017
Euro area - EURIBOR	1.97	3.35	0.43	0.21	-0.02	-0.26	-0.33
Bulgaria - SOFIBOR	2.97	4.57	2.06	0.78	0.54	0.15	0.09
Czech Republic - PRIBOR	2.35	3.70	0.84	0.36	0.31	0.29	0.41
Denmark - CIBOR	2.22	3.64	0.64	0.31	-0.12	-0.15	-0.26
Croatia - ZIBOR	5.19	7.54	2.57	0.97	1.23	0.85	0.60
Hungary - BUBOR	7.04	9.70	4.09	2.41	1.61	0.99	0.15
Poland - WIBOR	6.30	9.11	3.17	2.52	1.75	1.70	1.73
Romania - ROBOR	14.69	24.65	4.42	2.54	1.33	0.78	1.15
Sweden - STIBOR	2.18	3.44	0.77	0.66	-0.19	-0.49	-0.50
United Kingdom - LIBOR	1.95	3.35	0.39	0.18	-0.02	-0.28	-0.37
United States - LIBOR	2.21	3.73	0.51	0.23	0.32	0.74	1.26
Japan - LIBOR	0.23	0.29	0.16	0.13	0.09	-0.02	-0.02

Source: ECB calculations based on Thomson Reuters and Thomson Reuters Datastream daily data.
1) Interbank offered rates for the currency of each reference area.
2) Data for Bulgaria available since 2003.

Chart 1.5 Money markets: 3-month interbank offered rates
(percentages per annum; monthly averages)



Source: ECB calculation based on Thomson Reuters 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)]

	2003-2017	2003-2008	2009-2017	2014	2015	2016	2017
Belgium	3.13	4.24	2.30	2.26	1.98	1.76	1.69
Germany	3.62	4.75	2.78	2.48	2.09	1.88	1.74
Estonia	-	-	3.61	2.97	2.51	2.49	2.57
Ireland	4.16	5.10	3.46	3.69	3.06	2.81	2.71
Greece	5.71	5.78	5.66	5.83	5.13	4.92	4.51
Spain	3.58	4.21	3.10	3.36	2.61	2.12	1.89
France	3.10	4.11	2.33	2.11	1.74	1.60	1.52
Italy	4.00	4.90	3.34	3.56	2.67	2.15	1.87
Cyprus	-	-	5.92	5.82	4.78	4.18	3.89
Latvia	-	-	-	3.51	3.33	2.87	2.85
Lithuania	-	-	-	-	2.50	2.32	2.30
Luxembourg	2.88	4.03	2.02	1.65	1.56	1.34	1.35
Malta	-	-	4.39	4.26	3.94	3.51	3.66
Netherlands	3.21	4.30	2.40	2.31	1.86	1.52	1.41
Austria	3.08	4.26	2.20	1.97	1.82	1.71	1.64
Portugal	5.11	5.34	4.93	5.00	3.96	3.28	2.81
Slovenia	4.41	4.36	4.45	4.39	3.12	2.43	2.36
Slovakia	-	-	2.87	2.66	2.41	2.24	2.15
Finland	2.96	4.05	2.14	2.13	1.85	1.71	1.71
Euro area [2)]	3.56	4.51	2.85	2.78	2.25	1.92	1.76

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.

1.6.2 Households for house purchase [1)]

	2003-2017	2003-2008	2009-2017	2014	2015	2016	2017
Belgium	3.77	4.38	3.31	3.17	2.49	2.11	2.09
Germany	3.77	4.81	2.98	2.50	1.96	1.76	1.83
Estonia	-	-	2.96	2.52	2.30	2.32	2.38
Ireland	3.67	4.13	3.32	3.44	3.41	3.25	3.18
Greece	3.86	4.53	3.36	2.93	2.63	2.69	2.78
Spain	3.39	4.16	2.81	2.93	2.23	1.94	1.90
France	3.67	4.25	3.24	2.95	2.31	1.87	1.60
Italy	3.78	4.49	3.26	3.20	2.51	2.13	2.05
Cyprus	-	-	4.54	4.42	3.63	3.08	2.77
Latvia	-	-	-	3.33	3.08	2.88	2.68
Lithuania	-	-	-	-	1.88	1.94	2.09
Luxembourg	2.93	4.02	2.12	2.03	1.86	1.68	1.74
Malta	-	-	3.17	2.93	2.79	2.81	2.82
Netherlands	4.15	4.54	3.87	3.35	2.91	2.58	2.41
Austria	3.30	4.28	2.57	2.29	2.01	1.90	1.85
Portugal	3.48	4.17	2.96	3.19	2.38	1.90	1.64
Slovenia	4.24	5.55	3.26	3.21	2.53	2.20	2.34
Slovakia	-	-	4.12	3.42	2.74	2.04	1.82
Finland	2.74	3.85	1.90	1.81	1.36	1.16	1.03
Euro area [2)]	3.66	4.42	3.09	2.80	2.26	1.97	1.86

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.

1 Financial and monetary developments

1.7 Aggregated deposit rate
(percentages per annum; period averages)

1.7.1 Non-financial corporations 1)

	2003-2017	2003-2008	2009-2017	2014	2015	2016	2017
Belgium	1.42	2.79	0.40	0.35	0.15	-0.04	-0.12
Germany	1.49	2.86	0.47	0.24	0.16	0.02	-0.04
Estonia	-	-	0.65	0.31	0.23	0.17	0.13
Ireland	1.67	2.75	0.87	0.41	0.15	0.05	0.01
Greece	-	-	-	-	-	-	-
Spain	2.00	2.90	1.32	0.80	0.36	0.21	0.21
France	1.76	2.89	0.92	0.74	0.31	0.21	0.13
Italy	1.99	2.88	1.33	1.22	0.87	1.04	0.64
Cyprus	-	-	2.74	2.44	1.72	1.41	1.38
Latvia	-	-	-	-	-	-	-
Lithuania	-	-	0.62	0.22	0.17	0.19	0.16
Luxembourg	-	-	-	-	-	-	-
Malta	-	-	-	-	-	-	-
Netherlands	-	-	-	0.17	0.04	-0.03	-0.20
Austria	1.67	2.92	0.74	0.44	0.32	0.26	0.14
Portugal	2.10	2.97	1.46	0.96	0.46	0.25	0.23
Slovenia	-	-	1.29	0.72	0.27	0.11	0.08
Slovakia	-	-	0.55	0.39	0.24	0.17	0.12
Finland	1.48	2.80	0.50	0.42	0.30	0.39	0.23
Euro area (2)	1.72	2.86	0.87	0.61	0.32	0.18	0.11

Source: ECB MFI interest rate statistics.
Note: Data on deposit interest rates for Greece, Latvia, Luxembourg and Malta are available, but are being 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.

1.7.2 Households 1)

	2003-2017	2003-2008	2009-2017	2014	2015	2016	2017
Belgium	1.84	2.75	1.16	1.17	1.00	0.65	0.40
Germany	1.79	2.80	1.04	0.69	0.47	0.42	0.28
Estonia	1.70	2.75	0.92	0.55	0.58	0.54	0.63
Ireland	1.80	2.64	1.17	0.64	0.29	0.16	0.09
Greece	-	-	-	-	-	-	-
Spain	2.22	2.89	1.72	0.99	0.46	0.21	0.10
France	2.39	2.89	2.01	2.19	1.68	1.24	0.96
Italy	1.88	2.07	1.73	1.59	1.20	1.08	0.86
Cyprus	-	-	3.21	2.56	1.77	1.53	1.33
Latvia	-	-	1.23	0.50	0.56	0.56	0.61
Lithuania	-	-	1.01	0.43	0.28	0.24	0.29
Luxembourg	-	-	-	-	0.38	-	-
Malta	-	-	2.01	1.83	1.34	1.17	0.82
Netherlands	-	-	-	2.09	1.91	1.64	1.42
Austria	1.88	2.89	1.11	0.74	0.45	0.37	0.31
Portugal	2.25	2.67	1.94	1.59	0.75	0.39	0.28
Slovenia	-	-	1.80	1.25	0.58	0.33	0.24
Slovakia	-	-	1.83	1.67	1.68	1.13	0.70
Finland	2.03	2.97	1.32	1.09	0.96	0.56	0.40
Euro area (2)	2.24	2.81	1.80	1.35	0.81	0.56	0.40

Source: ECB MFI interest rate statistics.
Note: Data on deposit interest rates for Greece and Luxembourg are available, but are being 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.

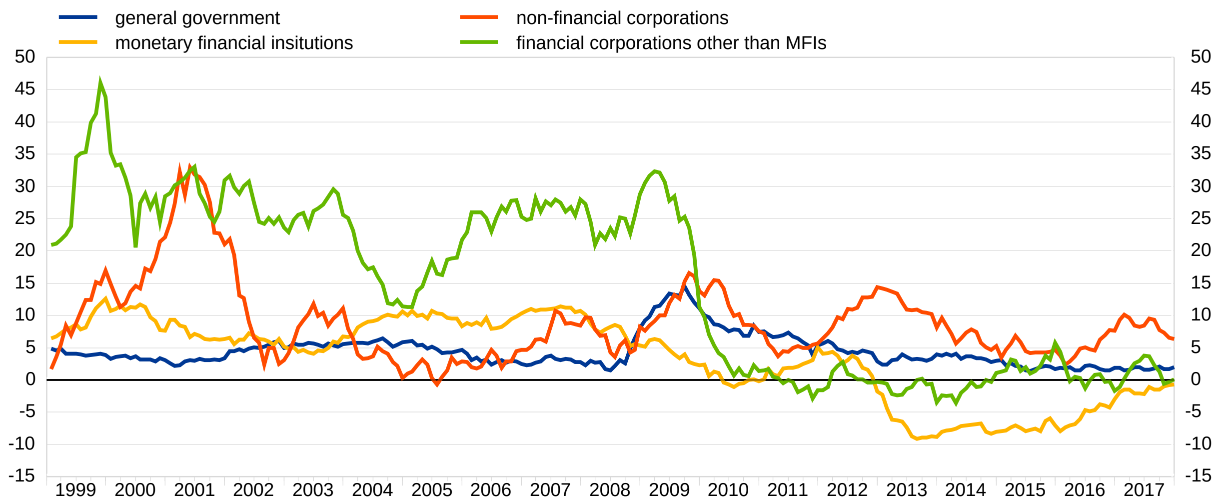
1 Financial and monetary developments

1.8 Debt securities issued by euro area residents in all currencies
(annual percentage changes; period averages)

	1999-2017	1999-2008	2009-2017	2014	2015	2016	2017
Belgium	3.4	2.6	2.8	1.4	1.3	4.2	4.7
Germany	2.0	4.8	-1.0	-2.6	-0.6	-1.3	0.3
Estonia	-	-	7.6	10.4	-0.5	2.4	4.6
Ireland	5.2	9.9	-1.1	-3.5	0.8	-1.4	2.7
Greece	1.5	12.6	-11.0	-11.4	-4.2	-28.3	-20.3
Spain	8.1	15.6	-0.3	-6.9	-4.5	-0.7	0.8
France	6.0	8.4	3.2	2.7	0.6	1.4	3.2
Italy	3.9	6.4	0.5	-1.3	-3.8	-2.3	0.0
Cyprus	-	-	4.0	-5.6	-2.9	4.7	35.3
Latvia	-	-	19.6	40.4	10.3	12.2	9.7
Lithuania	-	-	2.7	-	-2.1	6.7	8.7
Luxembourg	5.6	0.2	10.7	13.3	16.6	2.3	0.8
Malta	-	-	8.8	14.3	13.1	11.1	4.6
Netherlands	6.7	12.5	0.7	-0.5	1.4	0.5	0.9
Austria	4.2	9.6	-1.3	-1.7	-3.3	-0.8	-2.4
Portugal	6.5	10.4	0.4	-7.5	-6.7	0.9	1.6
Slovenia	-	-	7.7	29.6	3.6	1.6	2.1
Slovakia	11.5	13.7	9.1	7.7	1.6	3.1	4.5
Finland	4.9	3.6	5.5	7.2	-0.9	1.3	2.6
Euro area	4.7	7.7	1.0	-0.7	-0.5	-0.2	1.3

Source: ECB.

Chart 1.8 Debt securities issued by euro area residents, by sector
(annual percentage changes)



Source: ECB.

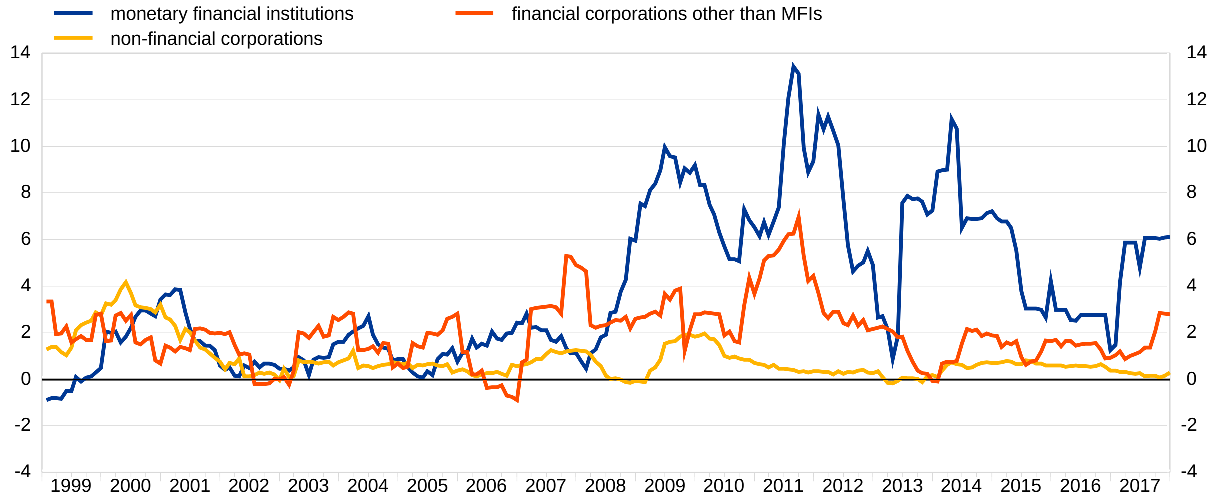
1 Financial and monetary developments

1.9 Listed shares issued by euro area residents
(annual percentage changes; period averages)

	1999-2017	1999-2008	2009-2017	2014	2015	2016	2017
Belgium	0.3	0.1	0.4	1.3	1.0	1.1	0.6
Germany	1.2	1.4	0.8	0.7	0.9	0.3	0.5
Estonia	-	-	-6.4	-3.8	-4.8	-4.0	-2.2
Ireland	2.3	1.0	0.2	-0.7	0.2	-0.1	-2.3
Greece	8.0	1.5	16.3	39.3	6.2	40.9	0.3
Spain	1.2	1.1	1.4	0.3	2.5	1.1	1.7
France	0.9	0.7	0.7	0.7	0.8	0.5	0.7
Italy	1.7	1.1	2.0	1.4	1.8	1.4	3.1
Cyprus	-	-	16.0	13.8	23.1	9.2	23.3
Latvia	-	-	3.9	0.1	0.6	1.7	2.5
Lithuania	-	-	-0.4	-	-3.9	0.3	-0.2
Luxembourg	6.2	5.7	7.5	9.6	6.9	11.5	5.5
Malta	-	-	9.1	5.1	8.0	6.0	38.5
Netherlands	0.3	0.3	0.3	0.6	0.0	0.5	0.5
Austria	5.5	8.7	2.4	5.2	2.3	0.4	1.7
Portugal	2.4	2.3	2.4	3.5	3.6	0.5	2.7
Slovenia	-	-	0.7	1.1	0.5	0.0	0.0
Slovakia	-	-	0.4	0.0	-0.1	-0.2	0.0
Finland	0.2	-0.5	1.0	2.3	0.9	0.8	0.6
Euro area	1.2	1.1	1.1	1.4	1.2	0.9	0.8

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)]

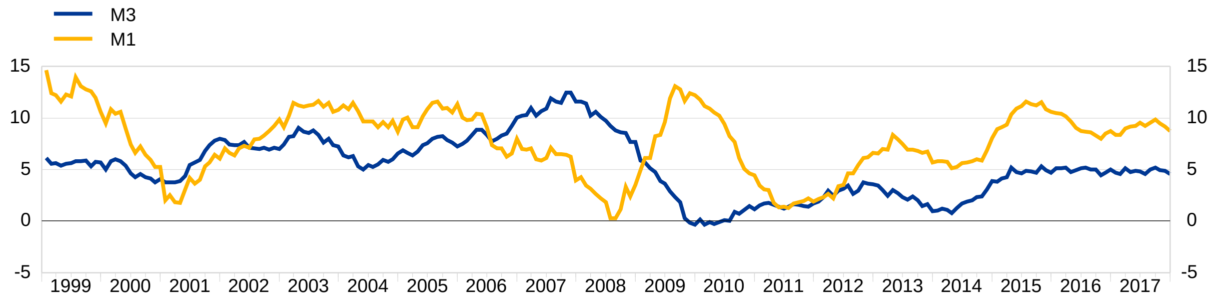
(annual percentage changes at the end of each year; period averages; seasonally adjusted)

	1999-2017	1999-2008	2009-2017	2014	2015	2016	2017
Components of M3							
M3	5.2	7.5	2.8	3.9	4.7	5.0	4.6
M2	5.5	7.3	3.5	3.8	5.3	4.8	5.1
M1	7.6	7.8	7.4	8.1	10.6	8.8	8.7
Currency in circulation	7.1	9.0	5.1	6.5	6.8	3.6	3.4
Overnight deposits	7.7	7.6	7.9	8.4	11.3	9.7	9.7
M2-M1 (other short-term deposits)	2.7	7.1	-2.0	-2.2	-3.3	-2.5	-2.1
Deposits with an agreed maturity of up to two years	1.4	10.3	-7.7	-5.2	-8.5	-7.4	-8.5
Deposits redeemable at notice of up to three months	3.5	3.3	3.7	0.2	0.6	0.7	1.6
M3-M2 (marketable instruments)	2.2	8.7	-4.6	4.6	-3.8	7.8	-4.3
Repurchase agreements	0.1	6.3	-6.5	3.1	-38.9	-5.7	9.8
Money market fund shares	3.7	9.4	-2.3	2.8	11.4	7.8	-2.6
Debt securities issued with a maturity of up to two years	-1.4	11.6	-14.1	18.5	-25.4	21.0	-24.0
Counterparts of M3 [2)]							
MFI liabilities:							
Central government holdings	4.5	7.4	1.3	-1.4	3.5	9.4	14.4
Longer-term financial liabilities vis-a-vis other euro area residents	3.5	6.6	0.2	-2.3	-3.0	-1.6	-1.1
Deposits with an agreed maturity of over two years	2.5	5.8	-0.9	-5.1	-4.8	-3.3	-3.8
Deposits redeemable at notice of over three months	-3.7	-0.9	-6.8	2.3	-14.4	-11.5	-12.4
Debt securities issued with a maturity of over two years	2.3	7.3	-3.0	-6.3	-8.8	-4.9	-3.4
Capital and reserves	6.3	7.4	5.2	4.5	4.8	2.9	3.3
MFI assets:							
Credit to euro area residents	4.5	6.9	1.8	-0.2	2.3	4.9	3.8
Credit to general government	3.5	0.6	6.7	2.1	8.2	12.5	6.7
of which: loans	0.1	-0.1	0.3	1.5	-1.8	-3.1	-4.0
Credit to the private sector [3)]	4.7	8.7	0.5	-0.8	0.7	2.5	2.9
of which: loans [4)]	4.6	8.3	0.6	-0.3	0.7	2.4	2.9

Source: ECB.
1) Data refer to the changing composition of the euro area.
2) The table presents only selected counterparts to 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)

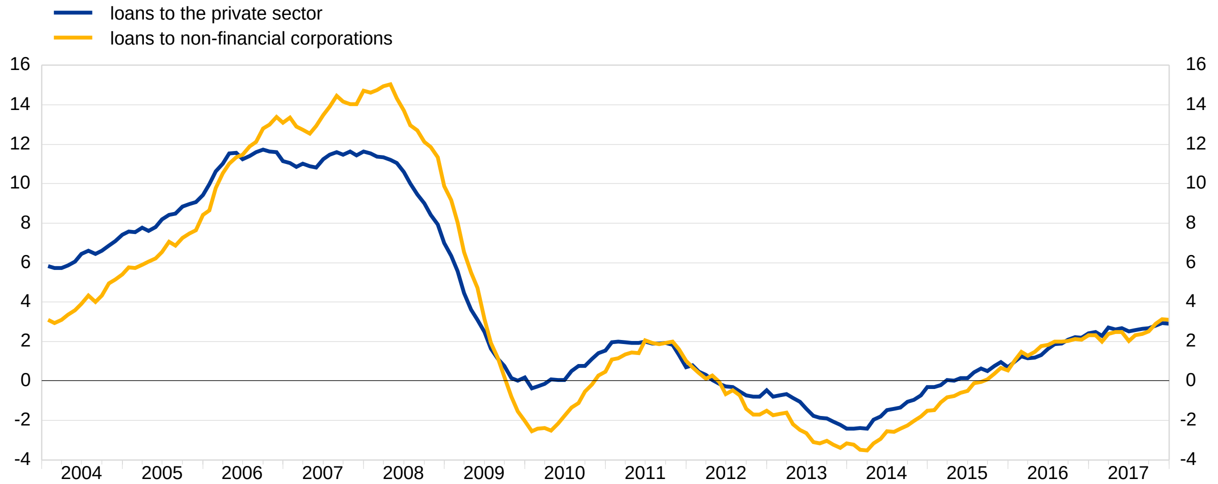
	2004-2008	2009-2017	2012	2013	2014	2015	2016	2017
Belgium	9.5	2.5	1.3	1.1	0.7	3.8	6.9	6.5
Germany	3.6	0.3	0.6	-1.9	-0.5	0.8	3.5	4.2
Estonia	39.2	1.5	3.1	3.6	3.6	6.4	6.6	5.5
Ireland	24.2	-3.4	-4.0	-5.7	-6.4	-5.2	0.2	1.3
Greece	13.6	-1.4	-6.2	-3.2	-2.8	-1.3	-0.1	-0.1
Spain	19.3	-3.8	-7.6	-9.8	-6.6	-1.2	-0.8	0.1
France	10.2	2.6	1.3	-0.2	2.9	3.3	5.3	6.6
Italy	9.2	-0.8	-2.2	-5.5	-2.5	-0.5	0.3	0.5
Cyprus	26.1	1.1	4.6	-5.7	-0.8	0.8	-8.0	0.3
Latvia	-	-0.1	3.3	-0.6	-6.7	1.1	5.9	2.1
Lithuania	33.6	-0.4	2.5	-3.2	-1.2	3.3	9.8	5.4
Luxembourg	12.3	-0.8	-7.5	-3.0	2.9	7.5	12.0	4.5
Malta	11.0	1.5	-1.7	-9.1	4.1	-10.3	7.2	24.4
Netherlands	9.7	0.3	2.8	1.7	-3.5	-3.9	-0.4	-1.3
Austria	6.9	1.6	0.5	-0.2	1.1	0.7	2.2	5.3
Portugal	7.8	-1.9	-5.2	-3.0	-6.8	-1.1	-1.5	0.1
Slovenia	24.0	-3.9	-4.8	-7.8	-13.9	-7.6	0.4	1.9
Slovakia	20.3	2.9	-2.3	1.7	1.9	7.3	4.2	7.8
Finland	11.7	4.1	4.7	5.7	4.9	5.3	4.4	4.2
Euro area	10.2	-0.1	-1.6	-3.2	-1.5	0.5	2.3	3.1
Bulgaria	-	3.1	5.4	1.4	2.4	-0.1	2.2	4.8
Czech Republic	-	4.5	2.7	2.5	2.3	6.4	8.0	6.1
Denmark	-	-0.4	-2.0	1.1	0.5	-0.1	3.3	1.0
Croatia	-	-0.3	-9.1	1.3	-3.4	-3.2	1.5	5.0
Hungary	-	-0.6	-3.6	-1.3	1.8	-7.1	4.9	10.2
Poland	-	5.7	5.6	1.8	5.1	7.9	5.1	8.6
Romania	-	3.1	2.0	-4.8	2.1	-1.6	2.9	6.7
Sweden	-	3.7	2.3	1.0	2.5	3.7	4.6	5.8
United Kingdom	-	-2.6	-5.1	-5.6	-3.4	-0.3	3.2	3.7

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)

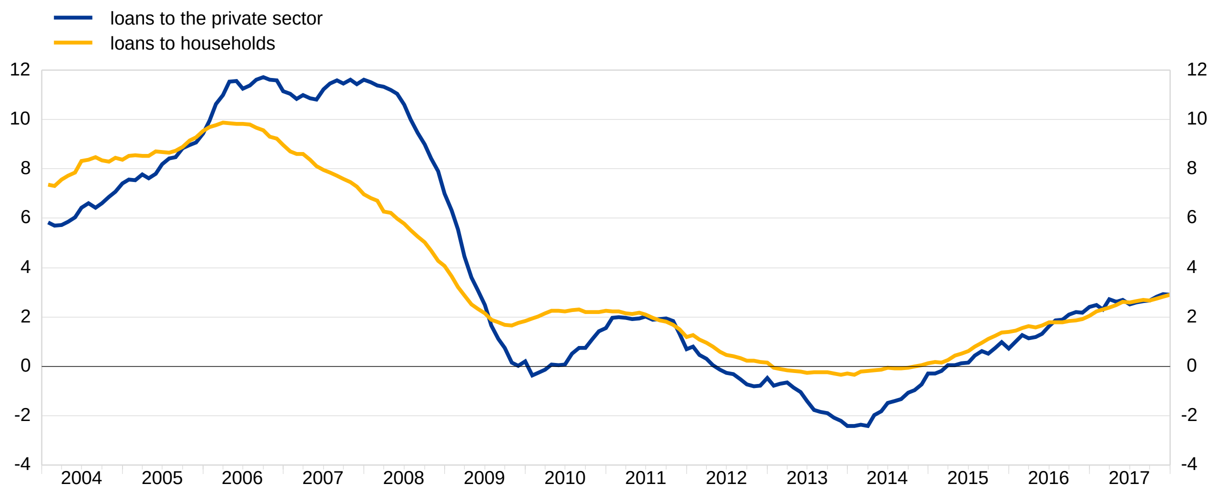
	2004-2008	2009-2017	2012	2013	2014	2015	2016	2017
Belgium	10.2	4.5	4.1	2.2	3.8	4.3	5.1	5.0
Germany	0.0	1.6	1.3	1.2	1.5	2.8	2.8	3.2
Estonia	42.3	0.9	-2.3	0.4	2.5	3.9	5.3	7.0
Ireland	18.7	-3.4	-3.8	-3.9	-3.6	-3.6	-2.6	-1.5
Greece	24.3	-2.2	-4.2	-3.0	-3.0	-2.9	-2.8	-1.9
Spain	15.3	-2.2	-3.9	-5.0	-3.9	-2.2	-1.2	-0.5
France	10.4	3.9	2.5	2.6	1.9	3.5	4.4	6.0
Italy	11.1	1.6	-0.5	-1.3	-0.5	0.7	1.9	2.8
Cyprus	15.9	1.6	1.7	-4.6	-2.7	-1.0	-0.9	0.0
Latvia	-	-3.1	-5.3	-4.8	-3.9	-2.5	0.6	0.6
Lithuania	56.9	1.0	-1.5	0.0	1.5	4.9	8.2	7.6
Luxembourg	4.4	4.9	5.6	3.9	4.2	4.8	4.0	7.7
Malta	11.1	6.1	4.4	4.3	6.8	6.5	5.0	6.5
Netherlands	7.2	0.0	-0.4	-1.7	-1.3	-0.7	-0.5	0.0
Austria	5.9	1.5	0.6	0.6	1.1	1.9	3.1	3.2
Portugal	8.2	-1.6	-4.4	-4.1	-3.5	-2.6	-1.6	0.0
Slovenia	22.7	2.6	-1.7	-2.8	-1.5	0.6	4.9	7.2
Slovakia	26.9	11.9	10.3	10.3	13.2	13.1	13.4	12.3
Finland	12.1	3.8	4.9	2.1	1.9	2.6	2.6	2.7
Euro area	7.6	1.3	0.1	-0.3	0.1	1.4	2.0	2.9
Bulgaria	-	1.5	-0.3	0.4	-1.0	-0.1	4.2	8.8
Czech Republic	-	6.5	4.7	5.2	4.7	6.9	8.3	8.4
Denmark	-	0.5	0.6	-1.6	0.2	0.8	1.0	0.5
Croatia	-	-0.3	-1.2	-1.1	-1.0	-1.8	0.6	4.8
Hungary	-	-6.3	-6.0	-5.8	-7.0	-12.0	-0.1	2.7
Poland	-	5.5	7.0	4.1	4.7	5.2	3.9	6.4
Romania	-	4.5	-0.2	0.4	2.3	1.3	7.7	14.1
Sweden	-	6.4	4.7	5.1	6.0	7.7	7.1	7.0
United Kingdom	-	1.1	0.6	0.6	2.8	3.3	4.0	3.9

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

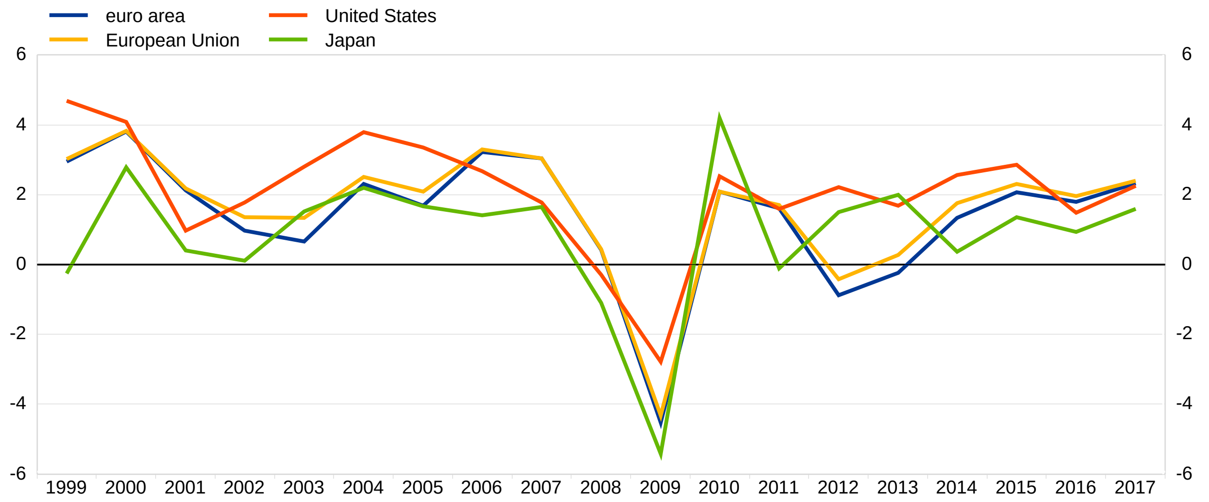
(chain-linked volumes; annual percentage changes)

	1999-2017 [1),2)]	1999-2008 [1)]	2009-2017 [2)]	2014	2015	2016	2017
Belgium	1.7	2.3	1.0	1.4	1.4	1.5	1.7
Germany	1.4	1.6	1.2	1.9	1.7	1.9	2.2
Estonia	3.5	5.7	1.2	2.9	1.7	2.1	4.9
Ireland	5.1	5.4	4.8	8.3	25.6	5.1	.
Greece	0.3	3.5	-3.2	0.7	-0.3	-0.2	1.4
Spain	2.0	3.6	0.2	1.4	3.4	3.3	3.1
France	1.4	2.0	0.8	0.9	1.1	1.2	1.8
Italy	0.4	1.2	-0.5	0.1	1.0	0.9	1.5
Cyprus	2.1	4.1	-0.2	-1.4	2.0	3.4	3.9
Latvia	3.7	6.6	0.5	1.9	3.0	2.2	4.5
Lithuania	3.7	6.1	1.1	3.5	2.0	2.3	3.8
Luxembourg	3.4	4.3	2.2	5.8	2.9	3.1	.
Malta	3.5	2.4	4.4	8.1	9.9	5.5	6.6
Netherlands	1.7	2.5	0.8	1.4	2.3	2.2	3.1
Austria	1.7	2.4	0.9	0.8	1.1	1.5	2.9
Portugal	0.8	1.6	-0.1	0.9	1.8	1.6	2.7
Slovenia	2.4	4.3	0.3	3.0	2.3	3.1	5.0
Slovakia	3.6	5.1	2.1	2.8	3.9	3.3	3.4
Finland	1.7	3.3	-0.1	-0.6	0.1	2.1	3.0
Euro area	1.4	2.1	0.6	1.3	2.1	1.8	2.3
Bulgaria	3.1	4.7	1.4	1.3	3.6	3.9	3.6
Czech Republic	2.8	4.0	1.4	2.7	5.3	2.6	4.3
Denmark	1.3	1.8	0.7	1.6	1.6	2.0	2.1
Croatia	1.7	3.7	-0.5	-0.1	2.3	3.2	2.8
Hungary	2.3	3.4	1.1	4.2	3.4	2.2	4.0
Poland	3.7	4.2	3.2	3.3	3.8	2.9	4.6
Romania	3.7	5.4	1.8	3.1	4.0	4.8	7.0
Sweden	2.5	3.0	1.9	2.6	4.5	3.2	2.4
United Kingdom	1.9	2.5	1.3	3.1	2.3	1.9	1.7
European Union	1.6	2.3	0.8	1.8	2.3	2.0	2.4
United States	2.1	2.6	1.6	2.6	2.9	1.5	2.3
Japan	0.9	1.0	0.7	0.4	1.4	0.9	1.6

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 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 2.1 GDP

(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

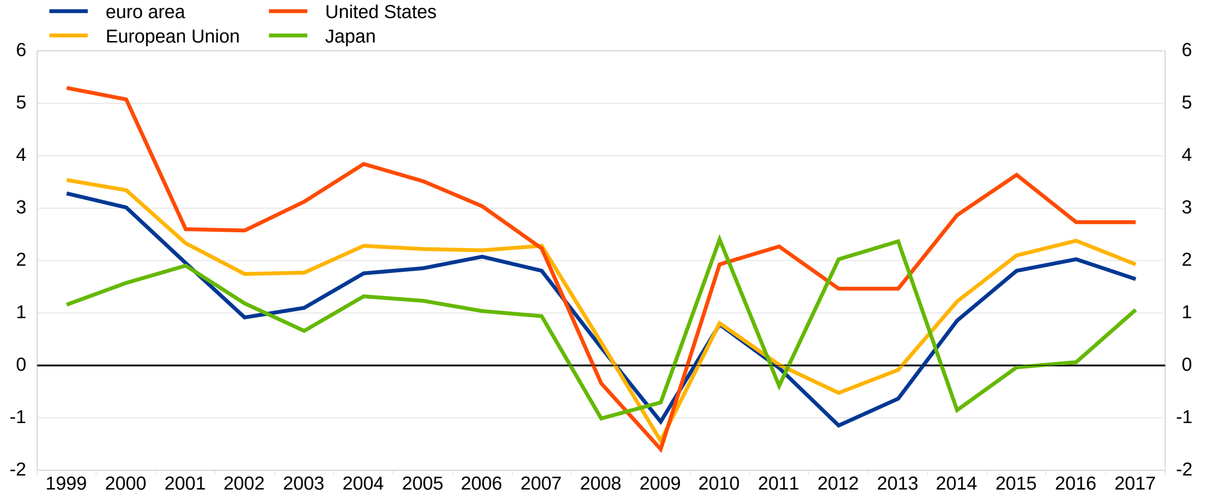
2 Economic activity

2.2 Private consumption
(chain-linked volumes; annual percentage changes)

	1999-2017 [1),2)]	1999-2008 [1)]	2009-2017 [2)]	2014	2015	2016	2017
Belgium	1.2	1.4	1.0	0.6	0.9	1.7	1.1
Germany	1.0	0.9	1.2	1.0	1.7	2.1	1.9
Estonia	3.8	6.6	0.8	3.4	4.6	4.4	2.2
Ireland	3.4	6.0	0.3	2.1	4.2	3.2	.
Greece	0.3	3.7	-3.2	0.6	-0.5	0.0	0.1
Spain	1.6	3.3	-0.3	1.5	3.0	3.0	2.4
France	1.6	2.3	0.9	0.8	1.4	2.2	1.1
Italy	0.4	1.0	-0.2	0.3	1.9	1.4	1.3
Cyprus	2.7	5.3	-0.1	0.7	2.6	3.3	4.2
Latvia	3.8	6.5	0.9	1.4	2.5	3.3	5.1
Lithuania	4.5	8.1	0.6	4.0	4.0	4.9	3.9
Luxembourg	2.5	2.8	2.1	2.3	3.3	2.4	.
Malta	2.1	1.7	2.4	2.7	5.6	3.0	4.2
Netherlands	0.9	1.6	0.2	0.3	2.0	1.6	1.8
Austria	1.3	1.8	0.8	0.3	0.5	1.5	1.4
Portugal	1.0	2.0	-0.2	2.3	2.3	2.1	2.2
Slovenia	2.0	3.1	0.7	1.9	2.1	4.2	3.2
Slovakia	2.8	4.6	0.9	1.4	2.2	2.7	3.6
Finland	2.1	3.2	1.0	0.8	1.7	1.8	1.6
Euro area	1.2	1.8	0.5	0.8	1.8	2.0	1.6
Bulgaria	4.5	7.3	1.6	2.7	4.5	3.6	4.8
Czech Republic	2.4	3.3	1.4	1.8	3.7	3.6	4.0
Denmark	1.1	1.7	0.5	0.9	1.6	2.1	1.5
Croatia	1.4	3.5	-0.8	-1.6	1.1	3.5	3.6
Hungary	2.1	3.7	0.5	2.8	3.6	4.3	4.7
Poland	3.3	3.9	2.7	2.4	3.0	3.9	4.7
Romania	5.2	7.9	2.2	4.7	5.9	7.6	10.2
Sweden	2.4	2.7	2.1	2.1	3.1	2.2	2.4
United Kingdom	2.1	3.0	1.0	2.1	2.6	2.9	1.7
European Union	1.5	2.2	0.7	1.2	2.1	2.4	1.9
United States	2.5	3.1	1.9	2.9	3.6	2.7	2.7
Japan	0.8	1.0	0.7	-0.9	0.0	0.1	1.1

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 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 2.2 Private consumption
(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

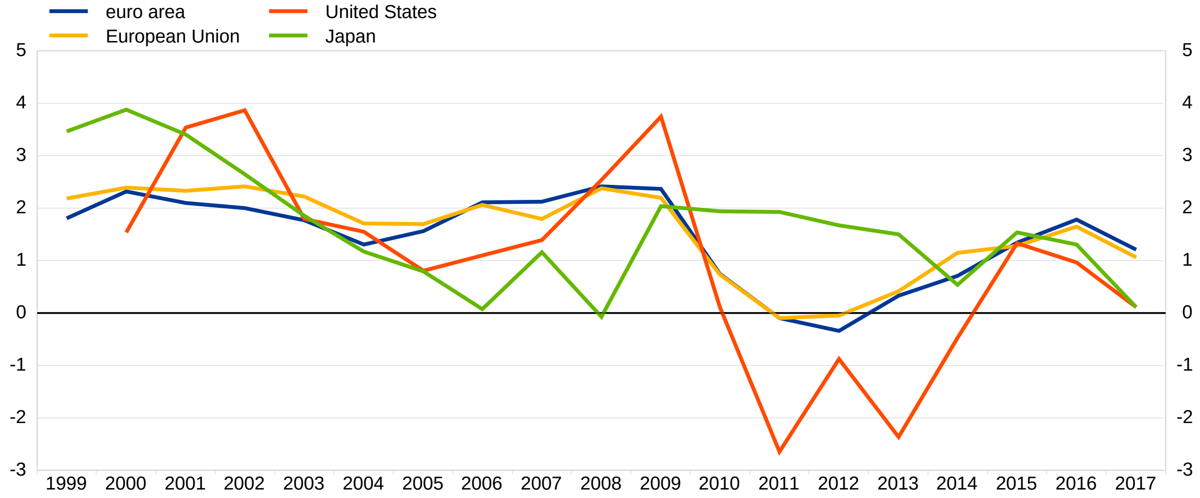
2 Economic activity

2.3 Government consumption
(chain-linked volumes; annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	1.4	1.9	0.9	0.7	0.5	0.5	1.1
Germany	1.4	1.0	1.9	1.5	2.9	3.7	1.6
Estonia	2.2	3.0	1.3	2.6	3.3	1.9	0.8
Ireland	1.9	3.8	-0.4	4.1	2.2	5.2	.
Greece	0.5	3.5	-2.7	-1.4	1.2	-1.5	-1.1
Spain	2.7	5.0	0.3	-0.3	2.1	0.8	1.6
France	1.5	1.6	1.4	1.3	1.1	1.3	1.5
Italy	0.6	1.4	-0.4	-0.7	-0.6	0.6	0.1
Cyprus	1.4	3.8	-1.1	-7.2	-2.6	-0.4	2.7
Latvia	1.2	2.8	-0.5	1.9	1.9	2.7	4.1
Lithuania	0.8	1.4	0.0	0.3	0.2	1.3	1.2
Luxembourg	3.4	4.1	2.5	2.0	2.6	2.0	.
Malta	2.1	2.8	1.5	6.6	3.7	-2.7	-0.3
Netherlands	2.1	3.4	0.7	0.3	-0.2	1.2	1.0
Austria	1.4	1.7	1.0	0.8	1.5	2.1	1.1
Portugal	0.8	2.2	-0.7	-0.5	1.3	0.6	0.1
Slovenia	1.8	3.2	0.3	-1.2	2.7	2.5	2.3
Slovakia	2.6	3.2	2.0	5.2	5.4	1.6	0.2
Finland	1.1	1.6	0.6	-0.5	0.2	1.8	1.0
Euro area	1.4	2.0	0.9	0.7	1.3	1.8	1.2
Bulgaria	2.4	4.2	0.4	0.1	1.4	2.2	3.2
Czech Republic	1.4	2.0	0.8	1.1	1.9	2.0	1.6
Denmark	1.5	2.0	1.0	1.9	1.1	0.3	1.1
Croatia	1.3	2.0	0.5	0.8	-0.9	1.9	2.0
Hungary	1.6	1.9	1.2	5.1	1.1	0.8	0.3
Poland	3.1	4.0	2.0	4.1	2.4	1.7	2.7
Romania	0.6	1.2	0.0	0.8	0.2	3.1	1.6
Sweden	1.1	0.7	1.6	1.5	2.4	3.1	0.4
United Kingdom	2.0	3.0	0.8	2.5	0.6	0.8	0.3
European Union	1.6	2.1	0.9	1.2	1.3	1.6	1.1
United States	1.0	2.0	0.0	-0.5	1.3	1.0	0.1
Japan	1.6	1.8	1.4	0.5	1.5	1.3	0.1

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 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 2.3 Government consumption
(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

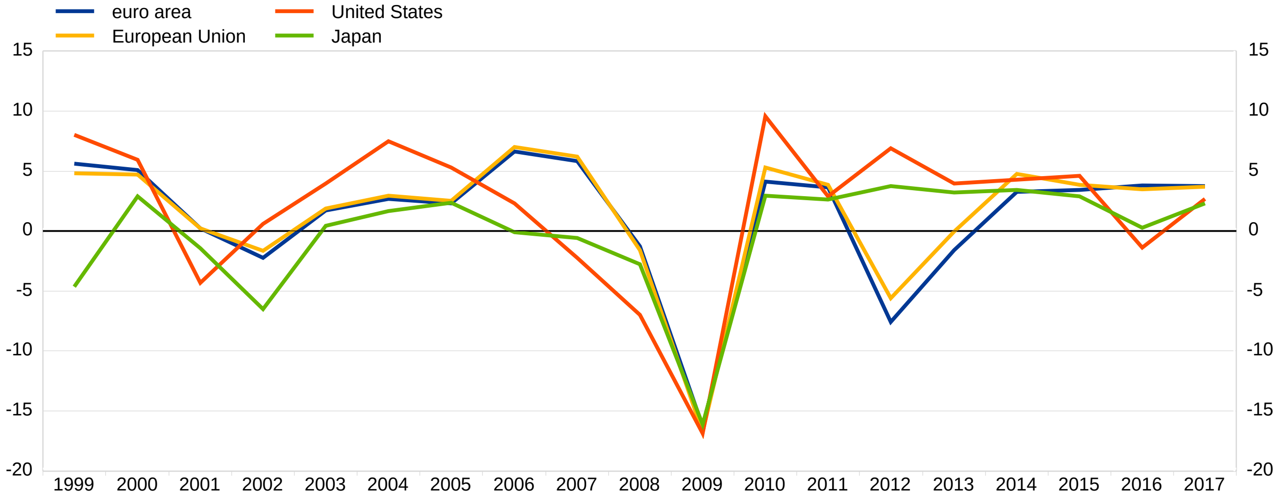
2 Economic activity

2.4 Gross capital formation
(chain-linked volumes; annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	2.4	3.6	1.1	7.3	3.4	4.8	1.7
Germany	0.6	0.8	0.3	2.1	0.2	2.1	3.8
Estonia	4.1	7.7	0.2	4.9	-7.3	1.6	11.5
Ireland	6.9	5.1	9.2	26.9	24.0	59.2	.
Greece	-2.3	4.4	-9.2	6.7	-9.0	7.4	15.7
Spain	1.6	5.3	-2.5	5.8	8.7	3.1	5.5
France	2.1	3.4	0.6	3.2	2.4	1.9	5.1
Italy	-0.2	2.4	-3.0	1.0	2.5	0.7	2.5
Cyprus	2.7	8.6	-3.5	-3.2	11.6	19.8	29.8
Latvia	4.0	11.2	-3.4	-8.9	2.7	0.2	17.8
Lithuania	3.7	8.9	-1.8	4.2	24.8	-4.4	3.7
Luxembourg	3.2	4.9	1.2	6.0	-2.8	0.0	.
Malta	2.8	0.9	4.4	-0.2	60.6	0.9	-5.0
Netherlands	1.3	2.3	0.2	3.2	11.2	3.1	5.1
Austria	1.3	1.8	0.8	0.4	2.0	3.5	6.1
Portugal	-1.4	0.4	-3.3	5.1	6.4	0.8	8.4
Slovenia	0.9	6.9	-5.4	3.8	0.2	-0.1	8.4
Slovakia	1.7	3.6	-0.4	7.9	14.2	-3.5	2.6
Finland	1.3	3.2	-0.8	-1.8	1.5	6.3	4.3
Euro area	1.1	2.6	-0.6	3.3	3.4	3.8	3.7
Bulgaria	4.6	15.8	-4.4	4.4	2.0	-4.6	9.5
Czech Republic	2.8	5.4	-0.1	8.6	13.0	-2.3	4.3
Denmark	1.3	2.5	0.0	4.3	0.9	6.0	3.0
Croatia	2.2	7.9	-3.8	-3.0	8.4	4.5	5.5
Hungary	0.6	2.2	-1.1	12.5	-3.8	-3.7	14.9
Poland	3.7	5.0	2.2	12.8	4.9	-1.9	7.5
Romania	5.5	12.1	-1.3	1.7	7.0	1.0	4.9
Sweden	3.5	4.3	2.6	6.1	8.7	5.5	6.4
United Kingdom	2.2	1.1	3.4	10.9	4.1	0.9	2.3
European Union	1.4	2.7	0.0	4.8	3.8	3.5	3.7
United States	1.7	1.9	1.6	4.3	4.6	-1.4	2.7
Japan	-0.3	-0.9	0.4	3.4	2.9	0.3	2.3

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta and Bulgaria available since 2000.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 2.4 Gross capital formation
(chain-linked volumes; annual percentage changes)



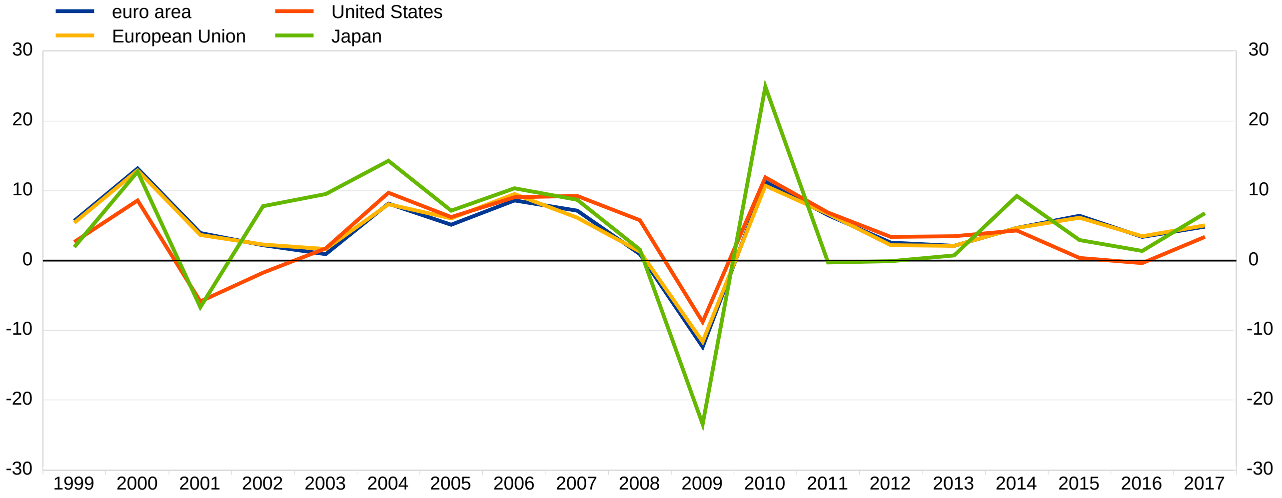
Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

2.5 Exports of goods and services
(chain-linked volumes; annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	3.9	4.6	3.1	5.2	3.3	7.5	4.5
Germany	5.2	7.2	3.1	4.6	5.2	2.6	4.7
Estonia	5.7	7.0	4.1	2.5	-0.7	4.1	2.9
Ireland	8.2	7.6	8.9	14.4	38.4	4.6	.
Greece	4.0	7.5	0.2	7.7	3.1	-1.8	6.8
Spain	3.8	4.5	3.1	4.3	4.2	4.8	5.0
France	3.1	3.8	2.3	3.3	4.3	1.8	3.1
Italy	2.3	2.9	1.6	2.7	4.4	2.4	5.4
Cyprus	2.1	1.8	2.5	4.2	5.8	4.0	3.4
Latvia	6.4	8.4	4.3	6.0	3.0	4.1	4.4
Lithuania	8.2	9.6	6.6	3.3	-0.4	3.5	13.2
Luxembourg	6.3	8.1	4.0	14.0	6.9	2.7	.
Malta	4.6	6.2	3.2	3.2	3.5	4.5	1.6
Netherlands	4.5	5.3	3.5	4.5	6.5	4.3	5.5
Austria	4.2	6.3	2.0	3.0	3.1	1.9	5.7
Portugal	4.3	4.4	4.2	4.3	6.1	4.4	7.9
Slovenia	6.1	8.8	3.2	5.7	5.0	6.4	10.6
Slovakia	8.9	12.6	4.9	3.9	6.4	6.2	4.3
Finland	3.5	7.1	-0.4	-2.7	0.9	2.3	8.3
Euro area	4.4	5.5	3.1	4.7	6.4	3.4	4.9
Bulgaria	4.2	3.7	4.7	3.1	5.7	8.1	4.0
Czech Republic	8.2	11.4	4.7	8.7	6.0	4.5	6.5
Denmark	3.9	5.8	1.7	3.1	2.3	2.8	4.6
Croatia	4.6	6.5	2.5	6.0	9.4	5.6	6.1
Hungary	8.6	12.9	3.9	9.1	8.5	3.4	7.1
Poland	7.5	8.8	6.1	6.7	7.7	8.8	6.7
Romania	9.6	11.0	7.9	8.0	4.6	8.7	9.5
Sweden	4.0	5.7	2.2	5.3	5.7	3.3	3.7
United Kingdom	3.3	4.4	2.1	2.7	5.0	2.3	5.0
European Union	4.4	5.6	3.1	4.7	6.2	3.5	5.0
United States	3.6	4.4	2.6	4.3	0.4	-0.3	3.4
Japan	4.3	6.6	1.8	9.3	2.9	1.3	6.8

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 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

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.

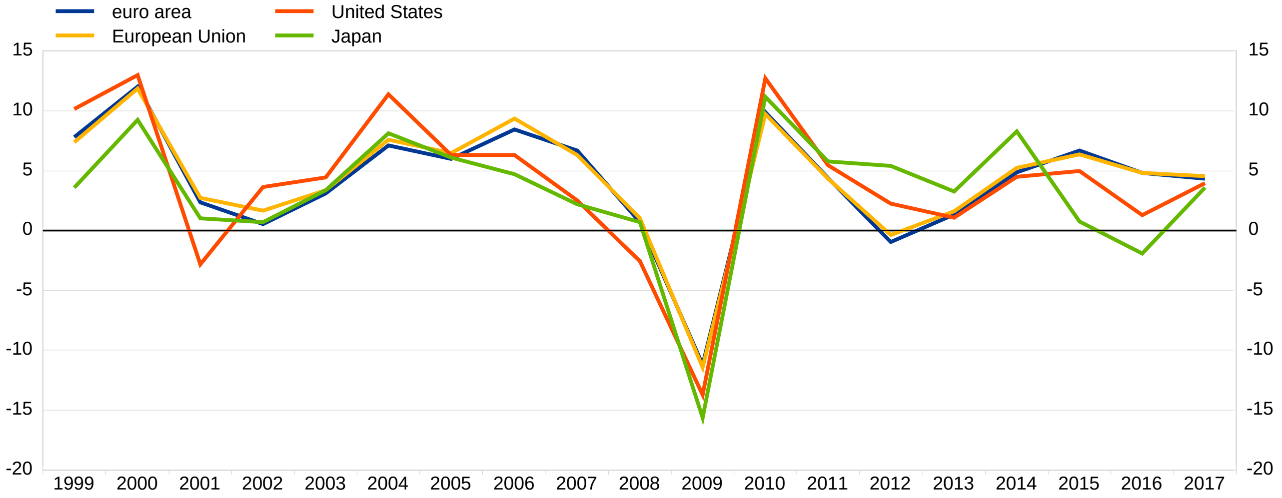
2 Economic activity

2.6 Imports of goods and services
(chain-linked volumes; annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	3.8	4.4	3.2	6.2	3.3	8.4	4.1
Germany	4.5	5.6	3.3	3.6	5.6	3.9	5.1
Estonia	5.9	8.4	3.2	3.6	-1.8	5.3	3.5
Ireland	7.6	7.8	7.4	14.9	26.0	16.4	.
Greece	2.0	7.2	-3.6	7.7	0.4	0.3	7.2
Spain	3.2	6.3	-0.2	6.6	5.9	2.7	4.7
France	4.1	5.2	2.9	4.8	5.7	4.2	3.9
Italy	2.2	3.5	0.7	3.2	6.8	3.5	5.3
Cyprus	2.8	4.6	0.8	4.6	7.4	6.8	10.1
Latvia	5.4	8.8	1.7	1.2	2.1	4.5	9.2
Lithuania	7.8	11.0	4.3	3.1	6.2	3.5	12.8
Luxembourg	6.6	8.4	4.4	14.6	7.1	2.1	.
Malta	3.6	5.6	1.9	-0.2	7.1	1.5	-3.0
Netherlands	4.3	5.3	3.3	4.2	8.4	4.1	4.9
Austria	3.6	4.9	2.3	2.9	3.1	3.1	5.4
Portugal	3.0	4.0	1.9	7.8	8.5	4.2	7.9
Slovenia	5.1	8.4	1.5	4.1	4.7	6.6	10.1
Slovakia	7.0	10.2	3.4	4.8	8.4	3.7	3.9
Finland	3.9	7.0	0.6	-1.3	3.2	5.4	2.6
Euro area	4.0	5.4	2.5	4.9	6.7	4.8	4.4
Bulgaria	7.0	12.0	1.7	5.2	5.4	4.5	7.2
Czech Republic	7.6	10.9	4.1	10.1	6.8	3.4	5.8
Denmark	4.1	6.6	1.4	3.9	1.9	3.8	4.1
Croatia	3.9	7.3	0.3	3.1	9.2	6.2	8.1
Hungary	7.7	12.0	3.1	11.0	6.4	2.9	9.7
Poland	6.2	7.9	4.3	10.0	6.6	7.9	7.7
Romania	10.5	16.1	4.6	8.7	8.0	9.8	11.1
Sweden	3.9	5.0	2.7	6.3	5.2	3.4	5.0
United Kingdom	3.8	5.0	2.5	4.5	5.1	4.8	3.5
European Union	4.2	5.7	2.6	5.3	6.4	4.8	4.6
United States	3.8	5.1	2.3	4.5	5.0	1.3	3.9
Japan	3.0	3.9	2.0	8.3	0.8	-1.9	3.6

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 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

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)

	1999-2017 [1)]	1999-2008	2009-2017 [1)]	2014	2015	2016	2017
Belgium	342.5	296.2	393.9	400.3	410.4	423.0	438.5
Germany	2,554.8	2,283.0	2,856.8	2,932.5	3,043.7	3,144.1	3,263.4
Estonia	14.2	10.2	18.5	19.8	20.3	21.1	23.0
Ireland	172.1	150.1	199.7	194.5	262.0	275.6	.
Greece	190.1	186.3	194.4	178.7	176.3	174.2	177.7
Spain	957.1	849.0	1,077.3	1,037.8	1,080.0	1,118.5	1,163.7
France	1,895.0	1,694.7	2,117.5	2,147.6	2,194.2	2,228.9	2,287.6
Italy	1,520.0	1,417.5	1,633.8	1,621.8	1,652.6	1,680.9	1,716.2
Cyprus	16.2	13.9	18.7	17.6	17.7	18.2	19.2
Latvia	17.7	13.5	22.4	23.6	24.3	24.9	26.9
Lithuania	26.4	19.3	34.3	36.6	37.4	38.7	41.9
Luxembourg	36.2	28.6	45.8	50.0	52.1	53.0	.
Malta	6.5	5.0	8.2	8.5	9.5	10.2	11.1
Netherlands	590.1	524.2	663.4	663.0	683.5	702.6	731.3
Austria	282.9	243.9	326.3	333.1	344.5	353.3	369.2
Portugal	163.5	150.4	178.0	173.1	179.8	185.5	193.1
Slovenia	32.7	27.9	38.0	37.6	38.8	40.4	43.3
Slovakia	54.4	36.4	74.5	76.1	78.9	81.2	85.0
Finland	179.3	158.3	202.6	205.5	209.6	215.8	224.3
Euro area	9,059.2	8,108.5	10,115.5	10,157.5	10,515.6	10,789.7	11,165.5
Bulgaria	32.0	22.0	43.0	42.8	45.3	48.1	50.4
Czech Republic	131.0	100.8	164.7	156.7	168.5	176.6	191.6
Denmark	229.8	202.8	259.9	265.8	271.8	277.5	288.0
Croatia	38.9	33.3	45.1	43.4	44.5	46.4	48.7
Hungary	91.1	78.2	105.5	105.6	110.7	113.7	123.5
Poland	312.8	236.7	397.3	411.0	430.1	426.0	465.7
Romania	108.7	73.7	147.6	150.4	160.3	169.8	187.4
Sweden	358.4	304.2	418.6	432.7	449.0	465.2	477.9
United Kingdom	2,018.6	1,916.6	2,131.9	2,278.9	2,602.1	2,395.8	2,325.5
European Union	12,380.5	11,076.8	13,829.0	14,044.6	14,797.9	14,908.7	15,324.3
United States	11,957.7	10,584.4	13,483.6	13,118.3	16,332.1	16,825.8	17,160.8
Japan	4,122.7	4,072.2	4,178.8	3,662.5	3,960.8	4,479.7	4,307.4

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

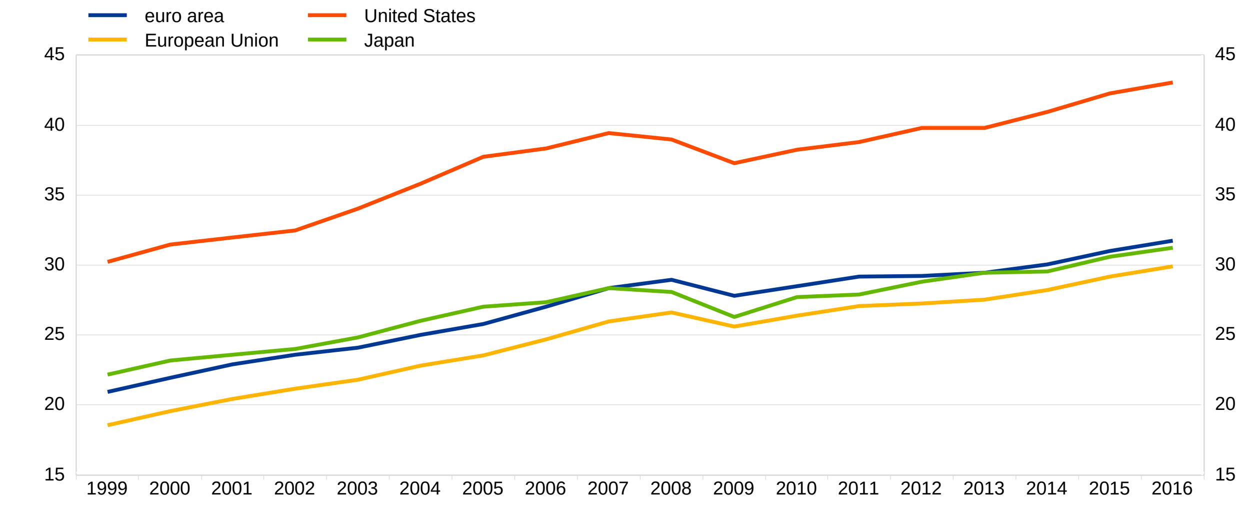
2 Economic activity

2.8 GDP per capita
(current prices; PPPs[1] in EUR thousands)

	1999-2016[2]	1999-2008[2]	2009-2016	2013	2014	2015	2016
Belgium	29.2	26.5	32.7	33.0	33.6	34.3	35.1
Germany	29.6	26.4	33.6	34.2	35.4	36.1	36.8
Estonia	15.3	11.9	19.7	20.7	21.4	21.9	22.2
Ireland	34.7	30.8	39.6	36.5	38.7	52.6	54.6
Greece	20.5	20.4	21.2	19.7	19.9	19.8	19.9
Spain	23.4	21.8	25.7	24.6	25.3	26.2	27.4
France	26.7	24.7	29.4	29.9	30.2	30.9	31.1
Italy	26.1	24.9	27.8	27.1	27.2	28.1	28.8
Cyprus	23.1	21.9	25.2	23.1	22.9	23.8	24.6
Latvia	13.3	10.9	16.4	17.2	17.9	18.6	19.4
Lithuania	14.1	10.4	18.8	20.1	21.1	21.7	22.5
Luxembourg	64.3	57.0	72.1	72.0	76.1	77.8	77.6
Malta	20.4	17.8	23.6	23.5	25.0	26.8	28.0
Netherlands	32.8	30.1	36.6	36.8	36.7	37.6	38.5
Austria	31.2	28.0	35.4	36.2	36.7	37.6	38.0
Portugal	19.5	18.1	21.5	21.1	21.6	22.3	23.1
Slovenia	21.1	19.7	23.1	22.5	23.4	24.1	25.1
Slovakia	14.7	10.2	20.6	21.1	21.8	22.5	23.0
Finland	28.1	25.8	31.4	31.2	31.1	31.7	32.6
Euro area	26.6	24.4	29.5	29.5	30.0	31.0	31.7
Bulgaria	9.7	7.5	12.5	12.6	13.0	13.7	14.6
Czech Republic	19.8	17.0	23.4	23.0	24.3	25.5	26.4
Denmark	30.7	27.4	34.9	35.3	35.9	36.8	37.4
Croatia	14.5	12.7	16.6	16.4	16.6	17.1	18.0
Hungary	15.2	12.9	18.2	18.5	19.2	20.0	20.3
Poland	14.0	11.0	17.8	18.5	19.0	19.9	20.7
Romania	10.7	7.6	14.9	15.0	15.6	16.6	17.7
Sweden	30.6	27.8	34.4	34.5	34.8	36.0	37.0
United Kingdom	27.3	25.4	29.7	29.7	30.8	31.6	32.4
European Union	24.4	22.1	27.5	27.5	28.2	29.2	29.9
United States	36.8	34.5	39.9	39.8	40.9	42.3	43.1
Japan	26.7	25.1	28.8	29.5	29.5	30.6	31.2

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) GDP in Purchasing Power Standards (PPSs) in euro, calculated on the basis of PPP rates relative to the euro area (Euro 19 = 1).
2) Data for Croatia available since 2000.

Chart 2.8 GDP per capita
(current prices; PPPs[1] in EUR thousands)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) GDP in Purchasing Power Standards (PPSs) in euro, calculated on the basis of PPP rates relative to the euro area (Euro 19 = 1).

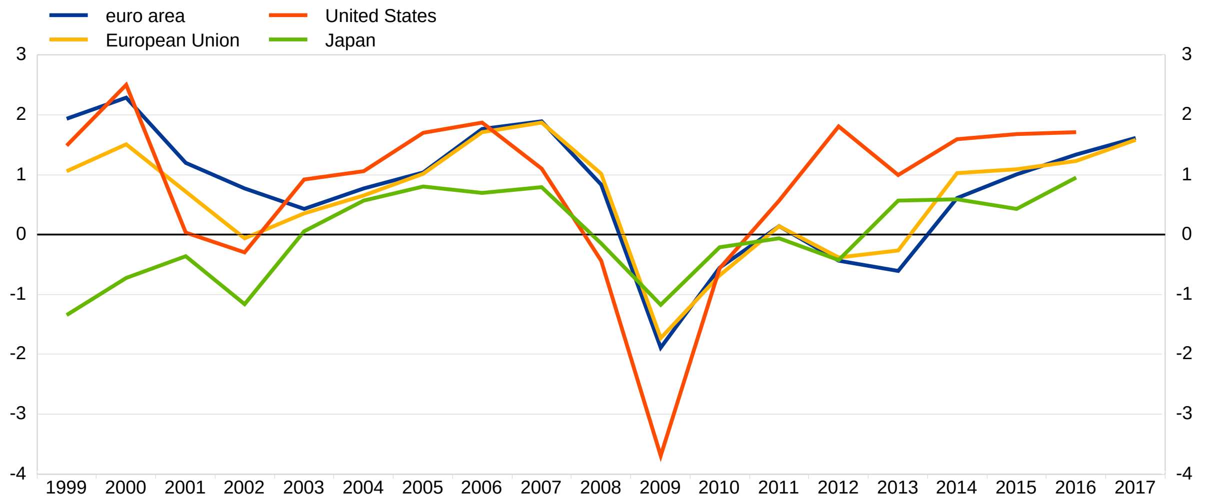
2 Economic activity

2.9 Employment
(persons employed; annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	0.9	1.1	0.7	0.4	0.9	1.3	1.4
Germany	0.8	0.6	0.9	0.8	0.9	1.3	1.5
Estonia	0.3	0.6	0.0	0.8	2.9	0.3	2.7
Ireland	1.7	3.4	-0.2	1.7	2.5	2.8	1.9
Greece	-0.2	1.2	-1.7	0.9	0.7	0.5	2.1
Spain	1.3	3.4	-1.0	1.0	2.7	2.5	2.6
France	0.7	1.1	0.3	0.4	0.2	0.6	1.0
Italy	0.6	1.3	-0.1	0.1	0.7	1.3	1.1
Cyprus	1.4	2.9	-0.3	-1.8	1.5	3.3	3.4
Latvia	-0.5	0.8	-1.9	-1.3	1.4	-0.3	0.6
Lithuania	-0.5	-0.5	-0.6	2.0	1.3	2.0	-0.5
Luxembourg	3.2	3.9	2.3	2.6	2.6	3.0	.
Malta	2.0	0.9	3.3	5.1	3.9	4.0	5.4
Netherlands	0.8	1.3	0.2	-0.1	0.9	1.1	2.1
Austria	1.0	1.1	0.8	1.0	0.6	1.2	1.7
Portugal	-0.1	0.4	-0.6	1.4	1.4	1.6	3.3
Slovenia	0.6	1.2	-0.2	0.4	1.2	1.9	2.8
Slovakia	0.6	0.6	0.6	1.4	2.0	2.4	2.2
Finland	0.8	1.6	-0.1	-0.5	-0.1	0.3	1.2
Euro area	0.7	1.3	0.1	0.6	1.0	1.3	1.6
Bulgaria	0.1	1.0	-0.9	0.4	0.4	0.5	1.8
Czech Republic	0.3	0.4	0.3	0.6	1.4	1.3	1.6
Denmark	0.4	0.8	-0.1	1.0	1.3	1.7	1.6
Croatia	0.2	1.3	-0.9	2.7	1.2	0.3	2.2
Hungary	0.5	0.1	1.0	4.8	2.4	2.6	2.0
Poland	0.7	1.0	0.4	1.7	1.5	0.6	1.4
Romania	-1.2	-1.6	-0.9	0.8	-1.3	-0.9	2.6
Sweden	1.0	1.1	1.0	1.4	1.5	1.7	2.3
United Kingdom	0.9	1.0	0.9	2.4	1.7	1.4	1.0
European Union	0.6	1.0	0.2	1.0	1.1	1.2	1.6
United States	0.8	1.0	0.5	1.6	1.7	1.7	.
Japan	0.0	-0.1	0.1	0.6	0.4	1.0	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Croatia and Poland available since 2000.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 2.9 Employment
(persons employed; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

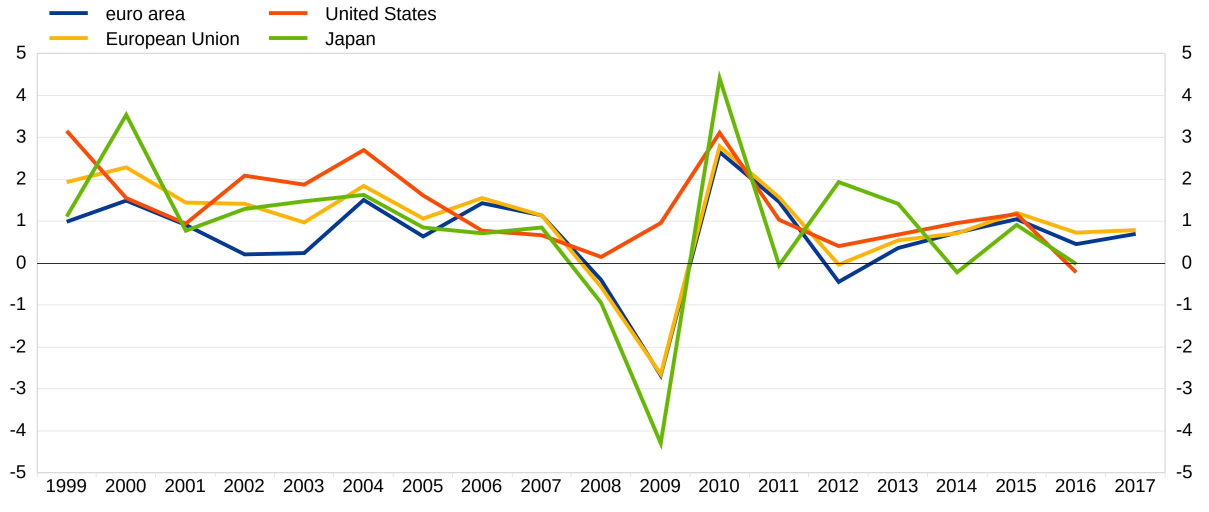
2 Economic activity

2.10 Labour productivity
(per persons employed; annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	0.7	1.1	0.3	0.9	0.5	0.2	0.3
Germany	0.6	1.0	0.3	1.1	0.8	0.6	0.7
Estonia	3.2	5.1	1.3	2.1	-1.1	1.8	2.2
Ireland	3.4	2.0	5.3	6.5	22.5	2.3	.
Greece	0.4	2.2	-1.5	-0.2	-1.0	-0.7	-0.8
Spain	0.6	0.1	1.2	0.4	0.7	0.7	0.5
France	0.7	1.0	0.5	0.5	0.8	0.5	0.8
Italy	-0.2	0.0	-0.4	0.0	0.3	-0.5	0.3
Cyprus	0.7	1.2	0.1	0.4	0.5	0.1	0.5
Latvia	4.2	5.8	2.5	3.3	1.5	2.5	4.6
Lithuania	4.3	6.6	1.7	1.5	0.7	0.4	4.4
Luxembourg	0.2	0.5	-0.1	3.1	0.3	0.0	.
Malta	1.1	1.2	1.1	2.8	5.7	1.4	1.1
Netherlands	0.9	1.2	0.5	1.5	1.3	1.1	0.9
Austria	0.7	1.3	0.0	-0.1	0.5	0.2	1.2
Portugal	0.8	1.2	0.5	-0.5	0.4	0.0	-0.6
Slovenia	1.8	3.1	0.5	2.6	1.0	1.2	2.2
Slovakia	3.0	4.5	1.4	1.3	1.8	0.9	1.2
Finland	0.9	1.7	0.0	-0.2	0.3	1.9	1.8
Euro area	0.7	0.8	0.5	0.7	1.0	0.5	0.7
Bulgaria	3.0	3.7	2.3	1.0	3.3	3.4	1.7
Czech Republic	2.4	3.6	1.1	2.2	3.8	1.3	2.7
Denmark	0.9	0.9	0.8	0.6	0.4	0.2	0.5
Croatia	1.5	2.6	0.5	-2.7	1.1	2.9	0.6
Hungary	1.7	3.3	0.0	-0.6	0.9	-0.4	2.0
Poland	2.7	2.6	2.8	1.5	2.3	2.3	3.1
Romania	5.0	7.0	2.7	2.3	5.3	5.8	4.3
Sweden	1.4	1.9	0.8	1.1	3.0	1.5	0.1
United Kingdom	1.0	1.5	0.4	0.7	0.6	0.5	0.7
European Union	1.0	1.3	0.6	0.7	1.2	0.7	0.8
United States	1.3	1.5	1.0	1.0	1.2	-0.2	.
Japan	0.8	1.1	0.5	-0.2	0.9	0.0	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Croatia and Malta available since 2000; and for Poland since 2002.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016. However, for Japan the average refers to the periods 1999-2015 and 2009-2015.

Chart 2.10 Labour productivity
(per persons employed; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

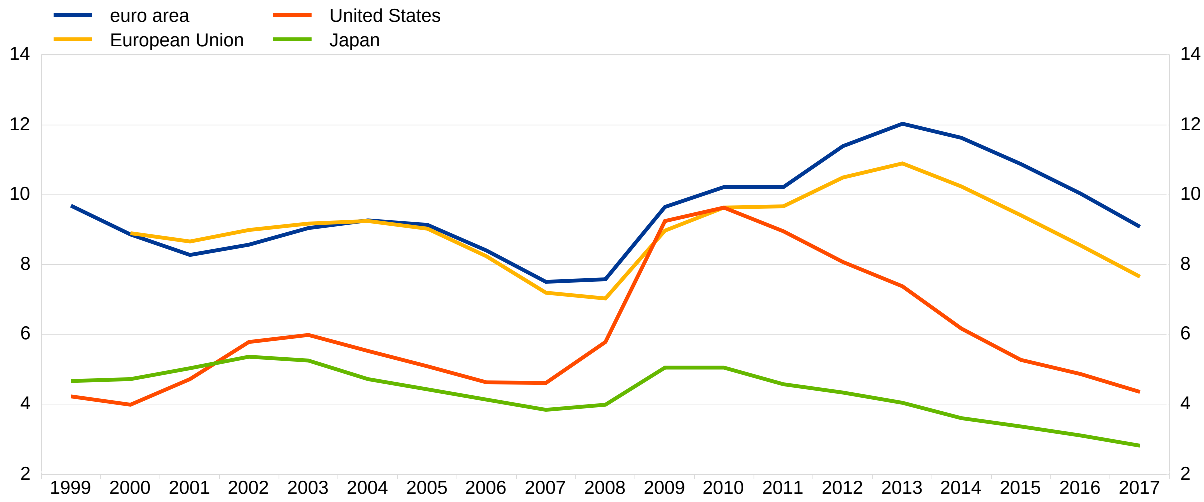
2 Economic activity

2.11 Unemployment
(percentage of the labour force)

	1999-2017 1), 2)	1999-2008 1)	2009-2017 1), 2)	2014	2015	2016	2017
Belgium	7.8	7.7	7.9	8.5	8.5	7.8	7.2
Germany	7.4	9.1	5.4	5.0	4.6	4.1	3.8
Estonia	9.5	9.3	9.7	7.4	6.2	6.8	5.8
Ireland	8.4	5.0	12.1	11.9	10.0	8.4	6.7
Greece	14.8	10.0	20.9	26.5	24.9	23.6	.
Spain	15.8	10.7	21.5	24.5	22.1	19.6	17.2
France	9.3	8.9	9.8	10.3	10.4	10.1	9.4
Italy	9.3	8.2	10.5	12.7	11.9	11.7	11.2
Cyprus	7.8	4.3	11.4	16.1	14.9	13.0	11.1
Latvia	12.0	10.9	13.2	10.8	9.9	9.6	8.7
Lithuania	11.4	11.0	11.9	10.7	9.1	7.9	7.1
Luxembourg	4.5	3.6	5.5	6.0	6.5	6.3	5.6
Malta	6.4	6.9	5.9	5.8	5.4	4.7	4.0
Netherlands	5.1	4.4	5.8	7.4	6.9	6.0	4.9
Austria	5.0	4.7	5.3	5.6	5.7	6.0	5.5
Portugal	9.9	7.3	12.7	14.1	12.6	11.2	9.0
Slovenia	7.1	6.1	8.2	9.7	9.0	8.0	6.8
Slovakia	14.3	16.0	12.3	13.2	11.5	9.7	8.1
Finland	8.5	8.5	8.4	8.7	9.4	8.8	8.6
Euro area	9.5	8.6	10.6	11.6	10.9	10.0	9.1
Bulgaria	11.1	12.4	9.8	11.4	9.2	7.6	6.3
Czech Republic	6.7	7.4	5.9	6.1	5.1	4.0	2.9
Denmark	5.6	4.5	6.7	6.5	6.2	6.2	5.7
Croatia	13.5	13.1	14.0	17.2	16.1	13.4	11.1
Hungary	7.5	6.6	8.6	7.7	6.8	5.1	4.2
Poland	12.1	15.5	8.4	9.0	7.5	6.2	4.9
Romania	6.9	7.2	6.6	6.8	6.8	5.9	4.9
Sweden	7.1	6.5	7.7	7.9	7.4	6.9	6.7
United Kingdom	6.0	5.2	6.9	6.1	5.3	4.8	.
European Union	9.0	8.5	9.5	10.2	9.4	8.6	7.6
United States	6.0	5.0	7.1	6.2	5.3	4.9	4.4
Japan	4.3	4.6	4.0	3.6	3.4	3.1	2.8

Source: Eurostat.
1) Data for Estonia, Cyprus, Malta, Bulgaria, Croatia and the European Union available since 2000.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 2.11 Unemployment
(percentage of the labour force)



Source: Eurostat.

2 Economic activity

2.12 Household debt 1)

(percentages of GDP)

	1999-2016 2)	1999-2008 2)	2009-2016	2013	2014	2015	2016
Belgium	48.5	42.5	56.1	56.4	58.5	59.2	59.5
Germany	62.4	67.3	56.2	55.4	54.1	53.3	53.1
Estonia	34.1	25.4	44.9	40.0	39.5	40.3	41.4
Ireland	80.0	72.1	89.9	93.0	81.2	56.4	52.2
Greece	43.1	28.3	61.5	65.1	63.1	62.2	60.7
Spain	68.1	61.4	76.4	77.1	72.7	67.6	64.1
France	46.4	39.4	55.1	55.7	55.8	56.2	57.2
Italy	35.6	29.7	42.9	43.5	42.7	41.9	41.5
Cyprus	100.6	82.4	123.2	127.7	130.1	127.7	121.2
Latvia	34.7	34.5	34.8	29.7	26.3	24.5	23.8
Lithuania	17.3	11.2	25.1	22.4	21.5	22.2	22.8
Luxembourg	50.2	43.8	58.1	58.1	58.4	60.1	62.4
Malta	54.2	48.3	57.9	59.2	56.7	54.5	53.2
Netherlands	106.7	100.1	114.9	114.5	112.4	110.3	108.3
Austria	50.1	48.3	52.2	51.2	51.0	50.9	51.3
Portugal	78.3	72.9	85.1	86.1	81.7	76.7	72.5
Slovenia	24.1	19.1	29.1	29.8	28.3	27.6	27.3
Slovakia	19.2	10.5	29.9	29.9	32.6	35.0	38.2
Finland	51.2	41.2	63.6	64.0	65.4	66.7	67.2
Euro area	57.2	53.8	61.4	61.3	60.2	58.8	58.2
Bulgaria	18.6	12.0	26.0	25.5	24.9	23.8	23.2
Czech Republic	21.3	14.3	30.1	31.5	30.4	30.2	31.1
Denmark	118.5	105.9	134.3	132.8	131.1	129.2	128.9
Croatia	34.4	29.0	39.8	40.3	40.1	38.5	35.3
Hungary	23.5	18.2	30.1	28.0	25.4	21.3	20.3
Poland	27.9	18.7	34.8	35.1	35.6	36.0	36.7
Romania	13.2	7.9	19.8	19.2	18.0	17.5	16.8
Sweden	67.4	56.6	80.8	82.3	83.3	83.6	85.1
United Kingdom	83.3	78.6	89.2	86.9	85.1	85.4	86.1
European Union	-	-	-	-	-	-	-
United States	82.7	82.7	82.8	80.1	78.8	77.3	77.6
Japan	61.3	63.6	59.0	58.6	58.0	57.0	57.2

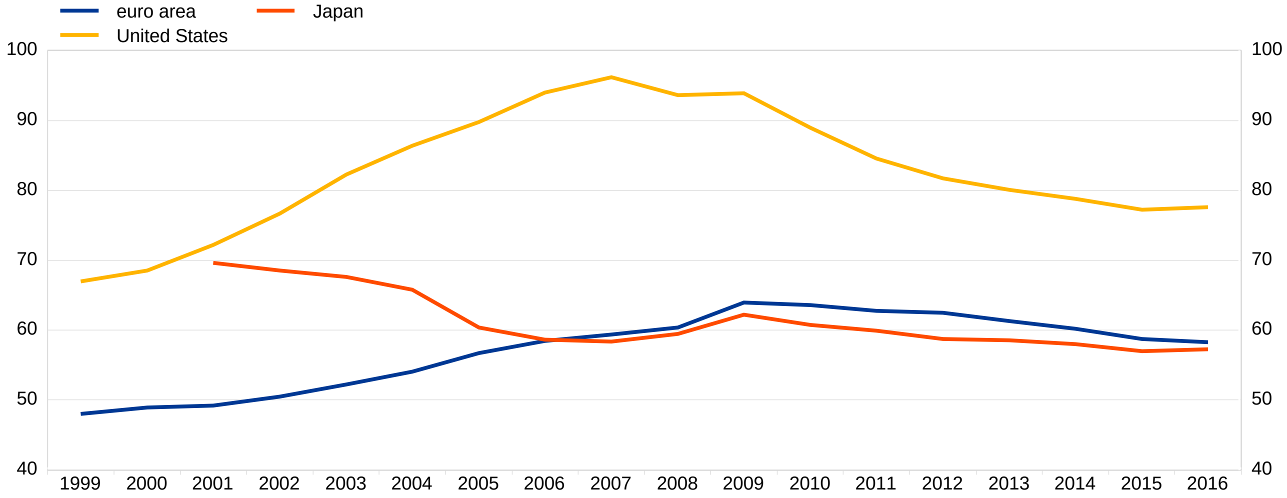
Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.

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 Bulgaria available since 2000; for Croatia and Slovenia since 2001; for Poland since 2003; for Latvia and Malta since 2004.

Chart 2.12 Household debt

(percentages of GDP)



Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.

2.13 Household savings ratio

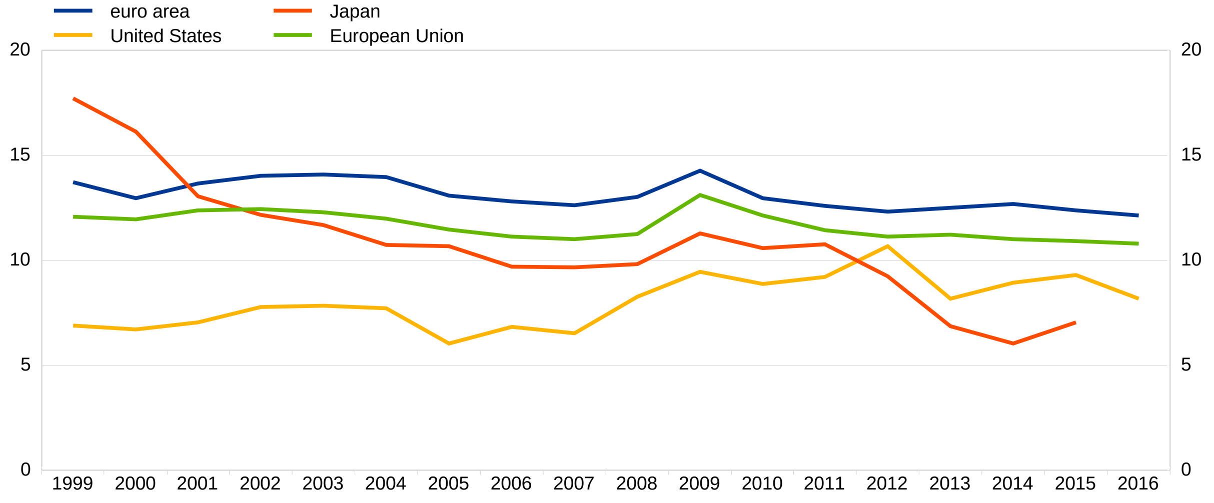
(percentages of adjusted disposable income [1]))

	1999-2016 [2])	1999-2008 [2])	2009-2016	2013	2014	2015	2016
Belgium	14.8	16.0	13.4	12.5	12.3	11.9	11.2
Germany	16.4	16.1	16.7	16.2	16.8	17.0	17.1
Estonia	5.6	1.5	10.6	9.1	10.7	11.7	11.3
Ireland	7.8	6.8	9.0	9.1	7.3	6.8	6.7
Greece	3.1	6.7	-1.4	-4.7	-3.6	-5.4	-6.8
Spain	9.6	9.5	9.8	9.6	9.3	8.6	7.7
France	14.8	14.9	14.6	14.0	14.4	13.9	13.5
Italy	12.8	14.3	11.0	11.0	11.2	10.5	10.5
Cyprus	4.7	7.2	1.2	-3.3	-7.9	-5.7	.
Latvia	1.4	1.5	1.2	-3.8	-1.9	1.8	2.7
Lithuania	2.6	2.5	2.7	2.4	0.2	0.0	-0.5
Luxembourg	-	-	-	-	-	-	-
Malta	-	-	-	-	-	-	-
Netherlands	12.5	11.6	13.6	14.1	14.5	13.1	13.1
Austria	14.9	15.8	13.7	12.7	12.4	12.5	13.4
Portugal	8.5	9.5	7.3	7.8	5.2	5.3	5.8
Slovenia	13.6	15.8	12.6	12.7	12.5	12.7	12.8
Slovakia	7.7	7.9	7.4	5.9	7.2	8.9	9.5
Finland	8.3	8.5	8.1	8.6	7.2	6.9	6.0
Euro area	13.1	13.4	12.7	12.5	12.7	12.4	12.1
Bulgaria	-6.7	-10.1	-2.5	-1.5	-4.5	-0.9	4.9
Czech Republic	11.5	11.3	11.8	10.9	11.8	12.0	11.2
Denmark	6.6	5.5	8.0	8.8	3.8	10.3	10.2
Croatia	10.3	7.8	12.5	11.3	13.2	14.2	14.0
Hungary	9.5	9.5	9.5	9.8	10.9	9.6	.
Poland	6.2	8.7	3.1	2.5	2.3	2.3	4.4
Romania	-1.5	-6.5	4.7	13.3	14.5	15.5	21.7
Sweden	12.9	9.8	16.7	17.5	18.9	17.6	18.8
United Kingdom	7.7	7.6	7.8	6.7	6.8	6.5	5.2
European Union	11.7	11.8	11.5	11.2	11.0	10.9	10.8
United States	8.0	7.2	9.1	8.2	8.9	9.3	8.2
Japan	10.8	12.1	8.8	6.9	6.0	7.0	.

Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.
1) Disposable income adjusted for the change in the net equity of households in pension fund reserves.
2) Data for Luxembourg and Malta are not available. Data for Croatia since 2002; for Lithuania since 2004; and for Slovenia since 2005.

Chart 2.13 Household savings

(percentages of adjusted disposable income)



Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.

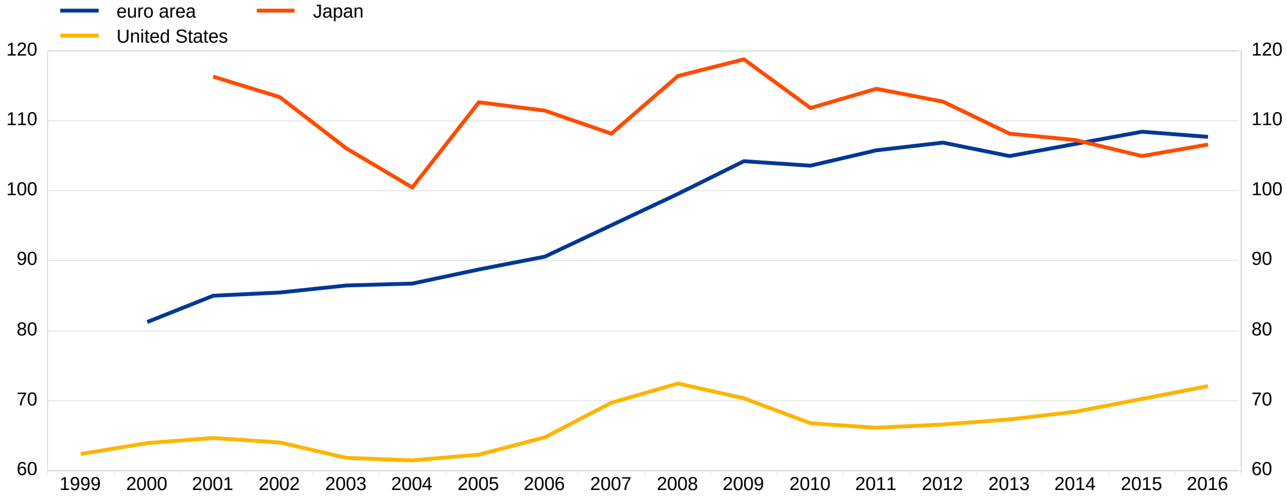
2 Economic activity

2.14 Non-financial corporations' debt 1)
(percentages of GDP)

	1999-2016 2)	1999-2008 2)	2009-2016	2013	2014	2015	2016
Belgium	130.3	114.2	150.3	149.6	149.5	154.8	166.2
Germany	64.4	65.8	62.6	63.7	61.1	60.8	61.1
Estonia	84.0	79.0	90.4	87.1	90.5	87.1	85.2
Ireland	156.9	108.1	217.9	202.7	219.6	267.7	246.4
Greece	55.4	47.5	65.2	63.7	64.8	63.9	63.9
Spain	106.0	94.4	120.6	120.1	113.9	107.3	101.8
France	109.7	101.1	120.5	118.8	124.7	127.2	131.5
Italy	77.6	70.5	86.4	87.5	85.9	82.3	80.0
Cyprus	202.4	193.9	213.0	214.4	225.0	228.2	225.6
Latvia	77.9	66.6	84.9	79.3	76.8	77.5	73.2
Lithuania	43.8	45.6	42.7	39.8	36.6	37.0	40.5
Luxembourg	237.5	170.3	321.4	317.9	327.2	359.3	348.5
Malta	143.3	124.5	155.0	155.5	154.1	143.7	141.9
Netherlands	120.6	119.0	122.6	120.9	121.8	125.7	123.0
Austria	92.7	90.5	95.4	98.5	94.9	94.5	94.0
Portugal	113.6	101.3	128.9	137.2	128.8	121.2	114.6
Slovenia	79.6	71.8	84.5	88.6	79.0	67.9	60.8
Slovakia	48.0	45.4	51.3	50.1	52.6	51.7	55.0
Finland	100.0	89.7	112.8	113.1	118.1	124.3	114.2
Euro area	96.9	88.8	106.0	105.0	106.7	108.4	107.7
Bulgaria	87.4	68.8	108.4	112.5	108.8	96.6	91.4
Czech Republic	52.5	48.0	58.2	66.1	63.0	59.2	56.5
Denmark	86.4	80.5	93.8	94.0	90.7	90.0	91.9
Croatia	81.6	63.6	99.5	102.8	100.8	99.7	95.0
Hungary	72.1	61.8	85.0	83.2	82.6	78.2	72.3
Poland	38.9	33.0	43.4	43.6	46.1	47.4	49.6
Romania	48.8	44.5	54.2	48.6	45.1	43.9	40.4
Sweden	131.2	115.0	151.4	151.8	152.5	152.4	148.1
United Kingdom	117.8	116.4	119.6	110.6	118.8	111.9	119.7
European Union	-	-	-	-	-	-	-
United States(3)	66.4	64.8	68.5	67.4	68.5	70.3	72.1
Japan(4)	110.6	110.6	110.6	108.2	107.3	105.0	106.7

Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.
1) Defined as outstanding amounts of loans taken, debt securities issued and pension scheme liabilities.
2) Data for the European Union are not available. Data for Bulgaria since 2000; for Croatia since 2001; for Poland since 2003; and for Latvia, Lithuania, Malta and Slovenia since 2004.
3) Figures for the United States do not include inter-company loans and pension scheme liabilities.

Chart 2.14 Non-financial corporations' debt
(percentages of GDP)



Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.

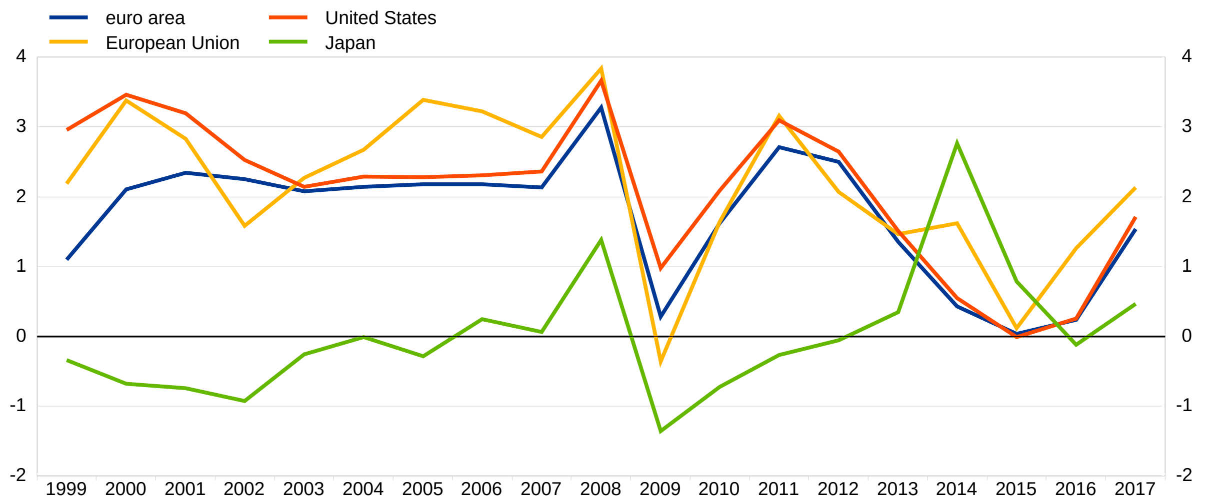
3 Prices and costs

3.1 HICP
(annual percentage changes)

	1999-2017	1999-2008	2009-2017	2014	2015	2016	2017
Belgium	1.9	2.2	1.6	0.5	0.6	1.8	2.2
Germany	1.4	1.7	1.2	0.8	0.1	0.4	1.7
Estonia	3.5	4.6	2.3	0.5	0.1	0.8	3.7
Ireland	1.8	3.4	0.1	0.3	0.0	-0.2	0.3
Greece	2.1	3.3	0.9	-1.4	-1.1	0.0	1.1
Spain	2.2	3.2	1.1	-0.2	-0.6	-0.3	2.0
France	1.5	1.9	1.1	0.6	0.1	0.3	1.2
Italy	1.9	2.4	1.3	0.2	0.1	-0.1	1.3
Cyprus	1.8	2.7	0.8	-0.3	-1.5	-1.2	0.7
Latvia	3.6	5.6	1.4	0.7	0.2	0.1	2.9
Lithuania	2.4	2.7	2.0	0.2	-0.7	0.7	3.7
Luxembourg	2.2	2.8	1.6	0.7	0.1	0.0	2.1
Malta	2.1	2.6	1.6	0.8	1.2	0.9	1.3
Netherlands	1.9	2.4	1.3	0.3	0.2	0.1	1.3
Austria	1.8	1.9	1.8	1.5	0.8	1.0	2.2
Portugal	2.0	2.9	1.1	-0.2	0.5	0.6	1.6
Slovenia	3.4	5.5	1.2	0.4	-0.8	-0.2	1.6
Slovakia	3.8	6.2	1.3	-0.1	-0.3	-0.5	1.4
Finland	1.7	1.8	1.6	1.2	-0.2	0.4	0.8
Euro area	1.7	2.2	1.2	0.4	0.0	0.2	1.5
Bulgaria	4.0	6.7	1.0	-1.6	-1.1	-1.3	1.2
Czech Republic	2.1	2.7	1.4	0.4	0.3	0.6	2.4
Denmark	1.7	2.1	1.2	0.4	0.2	0.0	1.1
Croatia	2.4	3.4	1.3	0.2	-0.3	-0.6	1.3
Hungary	4.7	6.7	2.5	0.0	0.1	0.4	2.4
Poland	2.9	3.9	1.7	0.1	-0.7	-0.2	1.6
Romania	11.3	19.5	2.8	1.4	-0.4	-1.1	1.1
Sweden	1.5	1.7	1.2	0.2	0.7	1.1	1.9
United Kingdom	2.0	1.8	2.2	1.5	0.0	0.7	2.7
European Union	2.1	2.7	1.4	0.5	0.0	0.3	1.7
United States(1)	2.2	2.8	1.5	1.6	0.1	1.3	2.1
Japan(1)	0.0	-0.2	0.2	2.8	0.8	-0.1	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 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 HICP excluding food and energy

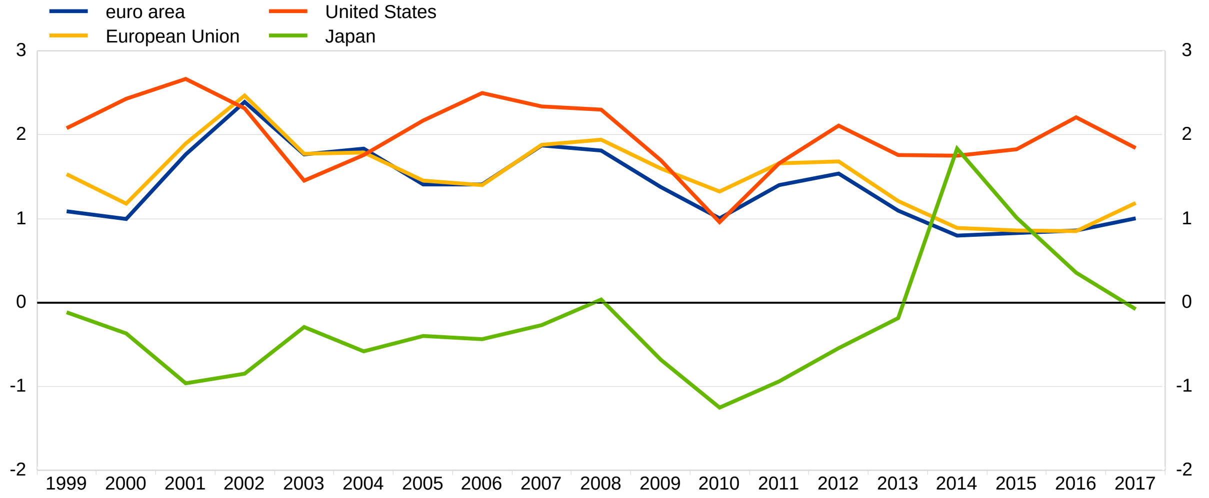
(annual percentage changes)

	1999-2017 1)	1999-2008 1)	2009-2017	2014	2015	2016	2017
Belgium	1.6	1.5	1.6	1.5	1.6	1.8	1.5
Germany	1.0	1.0	1.1	1.1	1.1	1.1	1.3
Estonia	2.8	3.8	1.6	1.3	1.2	1.2	2.0
Ireland	1.6	3.0	0.0	0.7	1.6	0.7	0.2
Greece	1.6	2.9	0.2	-1.5	-0.4	0.6	0.3
Spain	1.8	2.7	0.8	-0.1	0.3	0.7	1.2
France	1.2	1.4	0.9	1.0	0.6	0.6	0.6
Italy	1.7	2.1	1.3	0.7	0.7	0.5	0.8
Cyprus	0.9	1.3	0.5	0.1	-0.4	-0.8	0.4
Latvia	2.5	4.3	0.5	1.7	1.5	1.2	1.7
Lithuania	1.5	1.7	1.2	0.7	1.9	1.7	2.6
Luxembourg	1.8	1.9	1.7	1.3	1.7	1.0	1.4
Malta	1.6	2.1	1.1	1.5	1.5	1.0	0.9
Netherlands	1.6	1.9	1.3	0.6	0.9	0.6	0.8
Austria	1.7	1.5	1.9	1.7	1.7	1.6	2.1
Portugal	1.8	2.7	0.8	0.2	0.6	0.9	1.2
Slovenia	2.8	4.9	0.5	0.6	0.3	0.7	0.7
Slovakia	3.3	5.1	1.3	0.5	0.5	0.9	1.4
Finland	1.5	1.5	1.5	1.6	0.8	1.1	0.6
Euro area	1.4	1.6	1.1	0.8	0.8	0.9	1.0
Bulgaria	3.6	6.5	0.4	-1.6	-0.6	-1.0	-0.5
Czech Republic	1.3	1.9	0.7	0.5	0.7	1.2	1.9
Denmark	1.5	1.8	1.1	0.6	1.2	0.5	0.7
Croatia	1.4	3.2	0.8	0.5	0.8	0.2	1.0
Hungary	3.1	4.3	2.3	1.4	1.7	1.5	1.4
Poland	2.4	3.5	1.1	0.2	0.5	0.2	0.7
Romania	5.4	9.3	2.5	2.3	1.6	0.0	0.2
Sweden	1.1	1.1	1.0	0.4	0.9	1.2	1.4
United Kingdom	1.5	1.1	1.9	1.6	1.0	1.2	2.3
European Union	1.5	1.7	1.3	0.9	0.9	0.9	1.2
United States(2)	2.0	2.4	1.8	1.7	1.8	2.2	1.8
Japan(2)	-0.3	-0.2	-0.1	1.8	1.0	0.4	-0.1

Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for Slovenia and Czech Republic available since 2001; for Hungary and Romania since 2002; and for Croatia since 2006.
2) Data refer to the consumer price index.

Chart 3.2 HICP excluding food and energy 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.

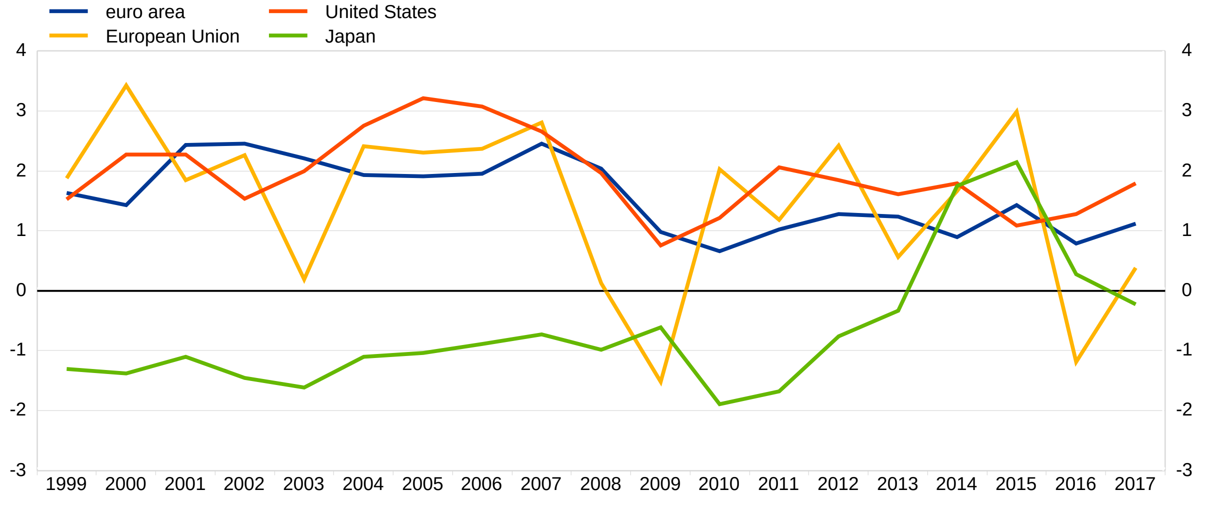
3 Prices and costs

3.3 GDP deflator
(annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	1.7	1.9	1.4	0.7	1.1	1.6	1.9
Germany	1.2	0.8	1.5	1.8	2.0	1.3	1.5
Estonia	4.6	6.5	2.5	1.5	1.2	1.6	4.0
Ireland	1.9	3.3	0.1	-0.4	7.3	0.0	.
Greece	1.6	3.2	-0.2	-1.8	-1.0	-1.0	0.7
Spain	2.0	3.6	0.3	-0.2	0.6	0.3	1.0
France	1.3	1.8	0.8	0.6	1.1	0.4	0.8
Italy	1.8	2.4	1.1	1.0	0.9	0.8	0.6
Cyprus	1.9	3.4	0.3	-1.6	-1.2	-0.7	1.5
Latvia	4.3	7.8	0.6	1.8	0.0	0.3	3.0
Lithuania	2.5	3.3	1.6	1.0	0.3	1.0	4.3
Luxembourg	2.7	3.2	1.9	1.6	1.3	-1.3	.
Malta	2.4	2.5	2.4	2.3	2.4	1.5	2.3
Netherlands	1.7	2.5	0.7	0.1	0.8	0.6	0.9
Austria	1.7	1.6	1.7	2.0	2.3	1.1	1.5
Portugal	2.1	3.2	1.0	0.8	2.0	1.5	1.4
Slovenia	3.1	4.9	1.1	0.8	1.0	0.9	2.0
Slovakia	2.6	4.6	0.4	-0.2	-0.2	-0.4	1.3
Finland	1.6	1.5	1.7	1.7	1.9	0.8	0.9
Euro area	1.6	2.0	1.0	0.9	1.4	0.8	1.1
Bulgaria	4.1	6.0	2.0	0.5	2.2	2.2	1.2
Czech Republic	1.8	2.4	1.1	2.5	1.2	1.2	1.3
Denmark	1.9	2.5	1.2	1.0	0.7	0.0	1.6
Croatia	2.6	4.1	1.0	0.1	0.0	-0.1	1.2
Hungary	4.7	6.4	2.8	3.4	1.9	1.0	3.7
Poland	2.6	3.5	1.7	0.5	0.8	0.4	2.0
Romania	13.8	24.0	3.4	1.7	2.6	2.1	5.0
Sweden	1.7	1.8	1.6	1.8	2.1	1.6	2.1
United Kingdom	1.9	2.2	1.6	1.7	0.5	2.0	2.1
European Union	1.5	2.0	0.9	1.7	3.0	-1.2	0.4
United States	1.9	2.3	1.5	1.8	1.1	1.3	1.8
Japan	-0.7	-1.2	-0.2	1.7	2.1	0.3	-0.2

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta and Croatia available since 2000; and for Poland since 2002.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 3.3 GDP deflator
(annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

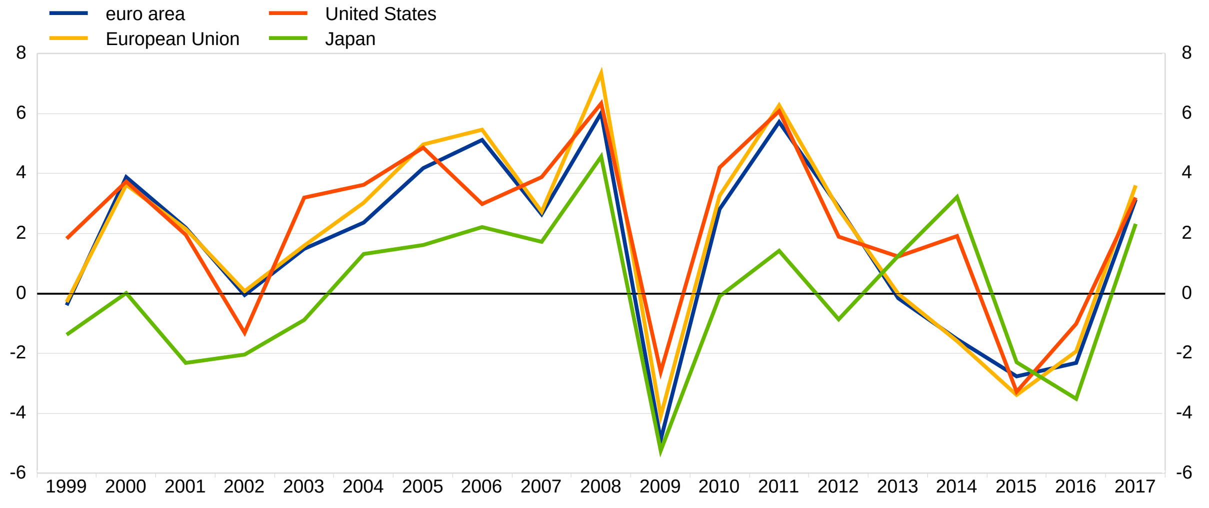
3 Prices and costs

3.4 Industrial producer prices
(annual percentage changes; domestic sales only)

	1999-2017 1)	1999-2008 1)	2009-2017	2014	2015	2016	2017
Belgium	2.0	3.1	0.8	-4.6	-4.2	-1.8	8.9
Germany	1.4	2.4	0.2	-0.9	-1.8	-1.7	2.6
Estonia	2.9	4.7	1.6	-2.3	-2.8	-2.1	3.3
Ireland	1.4	4.0	0.5	-0.3	-4.4	-2.8	3.4
Greece	2.3	4.2	0.3	-0.8	-5.8	-5.4	4.2
Spain	2.2	3.3	1.0	-1.3	-2.1	-3.1	4.4
France	1.3	2.4	0.2	-1.3	-2.2	-2.3	2.4
Italy	1.5	3.1	0.0	-1.8	-3.4	-2.2	2.6
Cyprus	2.4	4.8	0.4	-3.1	-5.7	-3.7	2.7
Latvia	4.3	8.4	1.2	0.1	-1.4	-3.3	2.2
Lithuania	2.4	4.8	-0.3	-5.1	-9.2	-3.2	3.6
Luxembourg	2.2	5.1	-1.0	-4.8	-0.5	-2.5	-1.9
Malta	3.7	5.2	2.4	-1.1	-3.2	-0.4	0.7
Netherlands	2.2	4.6	-0.5	-1.7	-4.4	-2.5	4.4
Austria	1.1	1.8	0.3	-1.4	-2.1	-2.5	1.9
Portugal	2.2	3.6	0.6	-1.5	-4.2	-1.8	3.7
Slovenia	2.5	4.3	0.6	-1.0	-0.5	-1.4	1.3
Slovakia	2.2	5.3	-1.0	-3.7	-4.3	-4.4	2.6
Finland	1.7	2.6	0.7	-0.9	-2.2	-1.5	2.7
Euro area	1.6	2.7	0.3	-1.5	-2.8	-2.3	3.1
Bulgaria	3.9	6.2	1.5	-0.9	-1.7	-2.8	4.2
Czech Republic	1.4	2.6	0.1	-0.8	-3.2	-3.3	1.8
Denmark	2.8	5.0	0.5	-2.3	-6.5	-1.5	3.3
Croatia	2.1	3.1	0.9	-2.7	-3.8	-3.9	2.1
Hungary	4.7	7.4	1.7	-2.1	-3.1	-3.1	4.6
Poland	2.6	3.5	1.8	-1.4	-2.4	0.0	4.8
Romania	9.3	18.0	2.2	0.2	-1.8	-2.6	3.1
Sweden	1.9	3.1	0.6	0.1	-1.1	0.0	4.1
United Kingdom	2.8	4.3	1.2	-2.3	-7.6	-0.3	6.3
European Union	1.8	3.0	0.5	-1.6	-3.4	-1.9	3.6
United States(2)	2.2	3.1	1.2	1.9	-3.3	-1.0	3.2
Japan(3)	0.0	0.5	-0.5	3.2	-2.3	-3.5	2.3

Sources: Eurostat, national data from the BIS databank (for the United States and Japan) and ECB calculations.
1) Data for Cyprus, Malta, Bulgaria, 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.

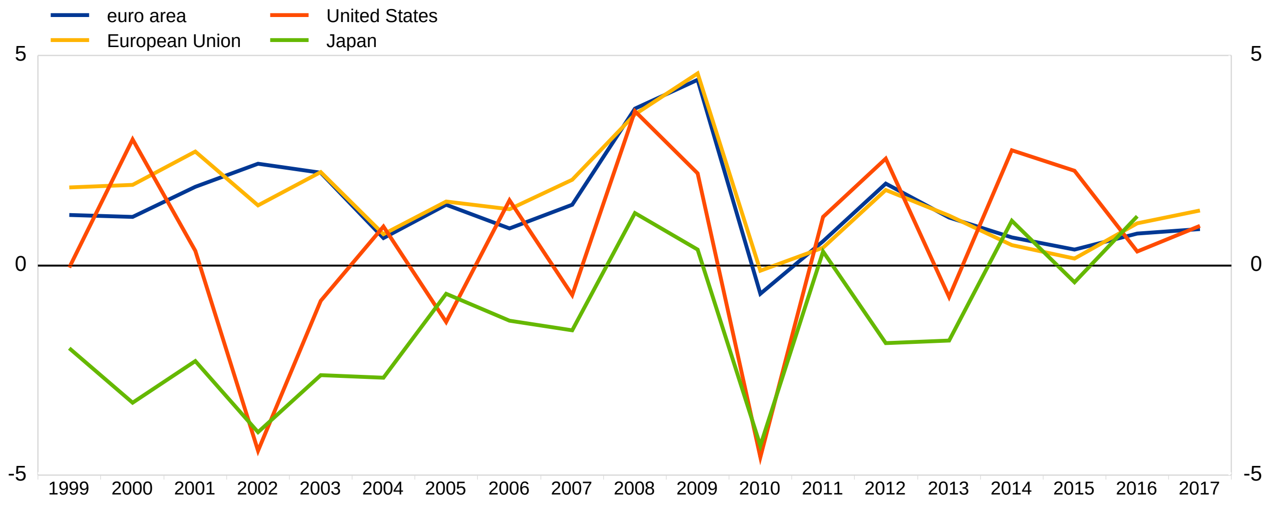
3 Prices and costs

3.5 Unit labour costs
(annual percentage changes)

	1999-2017 [1),2)]	1999-2008 [1)]	2009-2017 [2)]	2014	2015	2016	2017
Belgium	1.5	1.8	1.3	0.0	-0.5	-0.1	1.4
Germany	1.0	0.2	2.0	1.7	1.8	1.6	1.9
Estonia	4.9	7.0	2.5	4.2	4.6	4.0	3.5
Ireland	-0.2	3.7	-4.8	-4.4	-16.6	-0.2	.
Greece	1.6	3.6	-0.6	-1.8	-1.3	-0.2	0.9
Spain	1.5	3.3	-0.4	-0.3	1.4	-0.7	-0.1
France	1.6	1.9	1.3	0.9	0.0	0.4	1.1
Italy	1.9	2.7	1.0	0.1	0.7	0.9	-0.2
Cyprus	1.6	3.2	-0.1	-4.0	-1.7	-0.8	0.2
Latvia	4.8	8.8	0.5	5.2	6.1	4.2	3.2
Lithuania	2.3	2.8	1.7	3.2	5.0	5.9	4.6
Luxembourg	2.7	3.3	2.0	-0.9	2.8	0.7	.
Malta	2.1	2.6	1.6	-1.2	-0.6	1.5	0.0
Netherlands	1.6	2.0	1.0	0.1	-1.6	0.4	.
Austria	1.4	1.0	1.9	2.0	1.6	2.1	0.4
Portugal	1.4	2.6	0.1	-1.3	0.0	2.1	1.7
Slovenia	3.0	4.6	1.2	-1.2	0.4	1.6	0.6
Slovakia	2.6	3.6	1.5	0.5	1.6	1.4	2.8
Finland	1.6	1.6	1.6	1.1	1.2	-0.6	-2.7
Euro area	1.4	1.7	1.1	0.7	0.4	0.8	0.9
Bulgaria	5.0	5.2	4.9	4.6	2.3	2.3	5.7
Czech Republic	2.2	2.8	1.5	0.4	-0.8	3.3	3.6
Denmark	1.9	2.7	1.0	0.7	1.3	0.9	0.9
Croatia	0.9	2.7	-0.7	-2.6	-0.7	-3.0	-1.7
Hungary	4.1	6.1	2.0	1.4	-2.4	4.4	5.8
Poland	1.0	0.8	1.2	0.6	-0.6	2.1	.
Romania	11.8	21.0	2.4	4.3	-3.3	4.1	10.3
Sweden	1.9	2.2	1.7	1.0	-0.3	1.3	2.0
United Kingdom	2.3	2.9	1.7	-0.1	0.4	2.7	2.2
European Union	1.6	1.9	1.2	0.5	0.2	1.0	1.3
United States	0.4	0.2	0.7	2.7	2.3	0.3	0.9
Japan	-1.4	-1.9	-0.7	1.1	-0.4	1.2	.

Sources: Eurostat, national data from the BIS databank (for the United States) and ECB calculations.
1) Data for Malta and Croatia available since 2000; and for Poland since 2002.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016. However, for Japan the average refers to the periods 1999-2015 and 2009-2015.

Chart 3.5 Unit labour costs
(annual percentage changes)



Sources: Eurostat, national data from the BIS databank (for the United States) and ECB calculations.

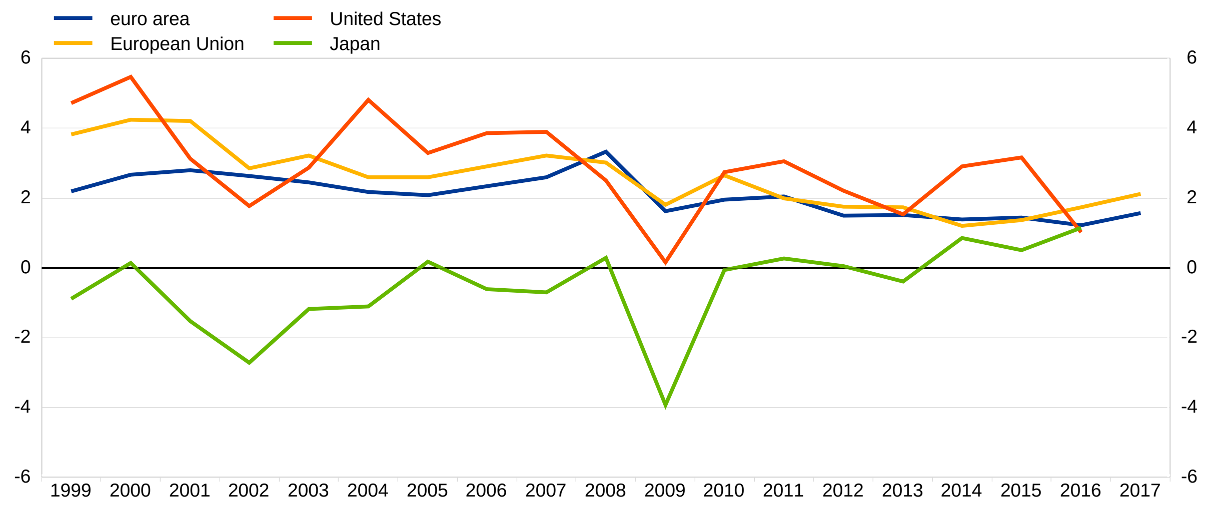
3 Prices and costs

3.6 Compensation per employee
(annual percentage changes)

	1999-2017 1),2)	1999-2008 1)	2009-2017 2)	2014	2015	2016	2017
Belgium	2.3	2.9	1.6	0.9	0.0	0.1	1.7
Germany	1.7	1.2	2.2	2.8	2.7	2.2	2.6
Estonia	8.3	12.4	3.8	6.4	3.4	5.9	5.7
Ireland	3.3	5.7	0.3	1.8	2.1	2.0	.
Greece	2.1	6.0	-2.1	-2.0	-2.3	-0.9	0.1
Spain	2.2	3.5	0.8	0.1	2.2	0.0	0.4
France	2.3	2.8	1.7	1.4	0.9	0.9	1.9
Italy	1.6	2.6	0.6	0.2	1.0	0.4	0.2
Cyprus	2.3	4.5	0.0	-3.6	-1.2	-0.7	0.7
Latvia	9.2	15.1	3.0	8.6	7.7	6.8	7.9
Lithuania	6.7	9.6	3.5	4.7	5.8	6.2	9.1
Luxembourg	2.9	3.7	1.9	2.2	3.0	0.7	.
Malta	3.3	3.9	2.7	1.6	5.1	2.9	1.1
Netherlands	2.4	3.2	1.5	1.6	-0.3	1.5	.
Austria	2.1	2.3	2.0	1.9	2.1	2.4	1.6
Portugal	2.2	3.8	0.5	-1.8	0.4	2.1	1.1
Slovenia	4.9	7.9	1.7	1.3	1.4	2.8	2.8
Slovakia	5.7	8.3	3.0	1.8	3.5	2.3	4.1
Finland	2.5	3.3	1.6	1.0	1.4	1.3	-1.0
Euro area	2.1	2.5	1.6	1.4	1.4	1.2	1.6
Bulgaria	8.2	9.1	7.3	5.6	5.6	5.8	7.5
Czech Republic	4.7	6.5	2.6	2.6	3.0	4.6	6.4
Denmark	2.8	3.6	1.8	1.4	1.6	1.2	1.4
Croatia	2.4	5.4	-0.2	-5.2	0.4	-0.2	-1.1
Hungary	5.9	9.6	2.0	0.8	-1.5	4.0	7.9
Poland	3.8	3.5	4.0	2.2	1.7	4.4	.
Romania	17.3	29.6	5.1	6.7	1.9	10.1	15.0
Sweden	3.4	4.1	2.6	2.2	2.7	2.8	2.1
United Kingdom	3.3	4.4	2.1	0.5	1.1	3.3	2.9
European Union	2.6	3.3	1.8	1.2	1.4	1.7	2.1
United States	2.9	3.6	2.1	2.9	3.2	1.0	.
Japan	-0.5	-0.8	-0.2	0.8	0.5	1.2	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta and Croatia available since 2000; and for Poland since 2002.
2) Where data are not available for 2017, the average indicated is for the periods 1999-2016 and 2009-2016. However, for Japan the average refers to the periods 1999-2015 and 2009-2015.

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)

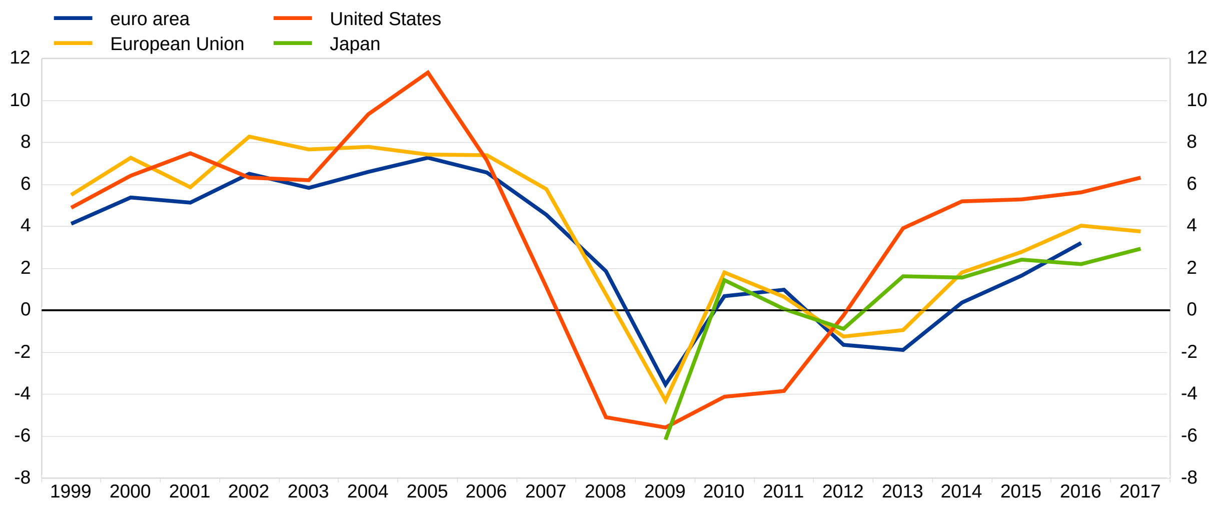
	1999-2017 [1),2)]	1999-2008 [1)]	2009-2017 [2)]	2014	2015	2016	2017
Belgium	5.3	7.8	2.2	0.7	3.8	0.9	.
Germany	2.3	1.4	2.8	3.1	4.5	6.0	.
Estonia	5.4	17.7	1.1	13.7	6.9	4.7	.
Ireland	3.9	10.6	-4.0	17.2	10.7	7.5	.
Greece	1.5	8.6	-5.9	-7.5	-5.0	-2.4	-1.0
Spain	3.7	10.5	-4.2	0.3	3.6	4.7	.
France	4.9	9.3	0.1	-1.8	-1.9	0.9	3.2
Italy	2.0	5.6	-2.2	-4.4	-2.6	-0.8	.
Cyprus	3.5	15.3	-4.5	-8.8	-4.3	-1.4	.
Latvia	0.4	17.4	-3.5	6.0	-3.4	8.5	.
Lithuania	1.1	17.3	-2.6	6.4	3.7	5.4	.
Luxembourg	4.0	3.4	4.1	4.4	5.4	5.9	.
Malta	5.5	17.2	1.4	2.6	5.8	5.4	.
Netherlands	3.5	7.4	-0.6	0.9	2.8	5.0	7.6
Austria	3.1	1.0	5.5	3.4	4.2	7.3	3.8
Portugal	0.0	-	0.0	4.2	3.1	7.1	.
Slovenia	1.6	14.4	-2.8	-6.6	0.8	3.3	.
Slovakia	3.7	20.9	-2.1	-0.8	0.9	4.3	.
Finland	2.6	4.5	1.8	-0.4	0.0	0.6	.
Euro area	2.9	5.4	0.0	0.4	1.6	3.2	.
Bulgaria	2.7	22.7	-4.0	1.4	2.8	7.0	.
Czech Republic	0.8	-	0.8	2.5	4.0	7.2	.
Denmark	4.1	10.0	0.6	3.8	7.0	4.7	.
Croatia	-2.6	-	-2.6	-1.6	-2.9	0.9	.
Hungary	1.5	2.4	1.4	4.2	13.1	13.4	.
Poland	-0.6	-	-0.6	1.0	1.5	1.9	.
Romania	-2.8	-	-2.8	-2.1	2.9	6.0	.
Sweden	7.6	8.5	6.3	9.4	13.1	8.6	.
United Kingdom	6.2	9.5	2.3	8.0	6.0	7.0	4.8
European Union	3.7	6.4	0.5	1.8	2.8	4.0	.
United States	3.3	5.4	0.7	5.2	5.3	5.6	6.3
Japan	1.2	-	1.2	1.6	2.4	2.2	.

Sources: National sources and ECB.

1) Data for Cyprus and Denmark available since 2002; for Germany since 2003; for Estonia, Ireland, Spain, Malta, Finland and Bulgaria since 2005; for Latvia since 2006; for Luxembourg and Slovenia 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 2017, the average indicated is for the periods 1999-2016 and 2009-2016.

Chart 3.7 Residential property prices
(annual percentage changes)



Sources: National sources and ECB.

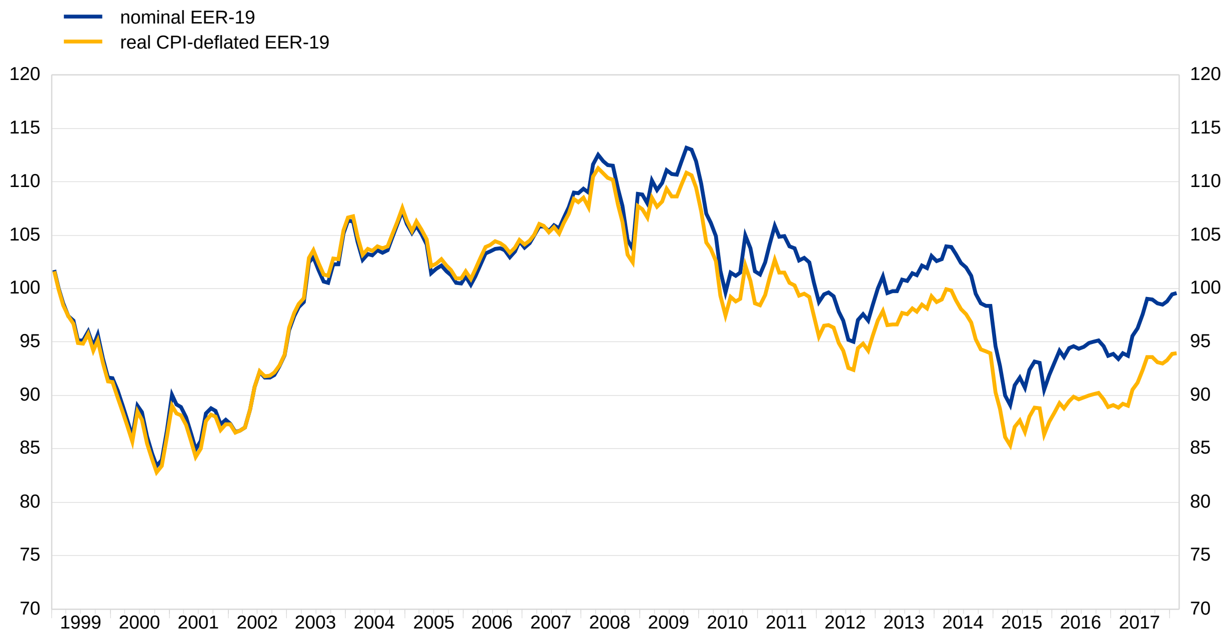
4 Exchange rates and balance of payments

4.1 Effective exchange rates
(period averages; index: 1999 Q1=100)

	1999-2017	1999-2008	2009-2017	2014	2015	2016	2017
EER-19							
Nominal	99.4	98.8	100.0	101.4	91.7	94.4	96.6
Real CPI	97.6	98.7	96.5	97.2	87.6	89.5	91.4
Real PPI	97.1	98.5	95.5	96.4	88.6	90.8	92.0
Real GDP deflator	94.4	96.8	91.4	90.9	82.8	84.9	
Real ULCM (1)	97.2	96.8	97.7	96.3	80.7	80.0	
Real ULCT	97.4	97.1	97.9	98.4	88.3	89.5	
EER-38							
Nominal	107.5	103.8	111.6	114.1	105.7	109.7	112.0
Real CPI	96.3	97.9	94.5	95.4	86.9	89.2	90.5

Source: ECB.
1) ULCM-deflated series are available only for the EER-18 trading partner group.

Chart 4.1 Effective exchange rates
(monthly averages; index: 1999 Q1=100)



Source: ECB.

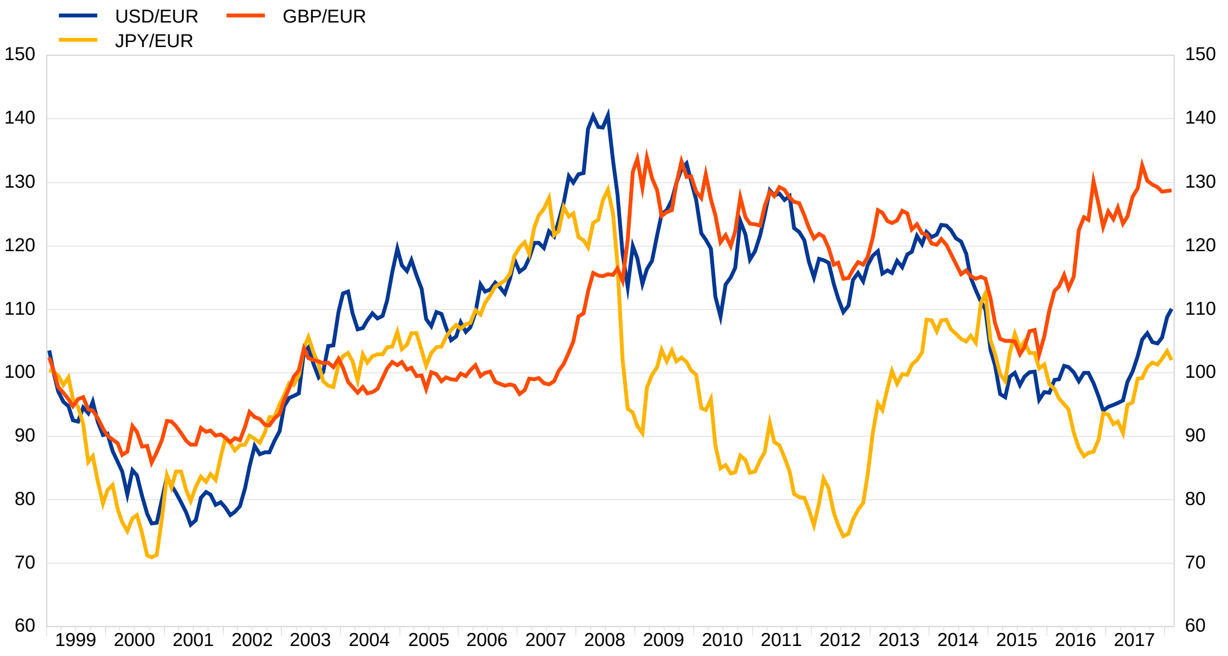
4 Exchange rates and balance of payments

4.2 Bilateral exchange rates
(units of national currency per euro; period averages)

	1999-2017 [1]	1999-2008 [1]	2009-2017	2014	2015	2016	2017
Chinese renminbi	8.803	9.468	8.212	8.186	6.973	7.352	7.629
Croatian kuna	7.451	7.406	7.490	7.634	7.614	7.533	7.464
Czech koruna	28.818	31.193	26.179	27.536	27.279	27.034	26.326
Danish krone	7.448	7.446	7.449	7.455	7.459	7.445	7.439
Hungarian forint	273.340	253.282	295.626	308.706	309.996	311.438	309.193
Japanese yen	127.407	130.952	123.468	140.306	134.314	120.197	126.711
Polish zloty	4.091	3.991	4.202	4.184	4.184	4.363	4.257
Pound sterling	0.750	0.674	0.834	0.806	0.726	0.819	0.877
Romanian leu	3.729	3.132	4.391	4.444	4.445	4.490	4.569
Swedish krona	9.232	9.132	9.344	9.099	9.353	9.469	9.635
Swiss franc	1.400	1.555	1.227	1.215	1.068	1.090	1.112
US dollar	1.208	1.155	1.267	1.329	1.110	1.107	1.130

Source: ECB.
1) Data for Chinese renminbi and Croatian kuna available since 2001.

Chart 4.2 Bilateral exchange rates
(monthly averages; index: 1999 Q1=100)



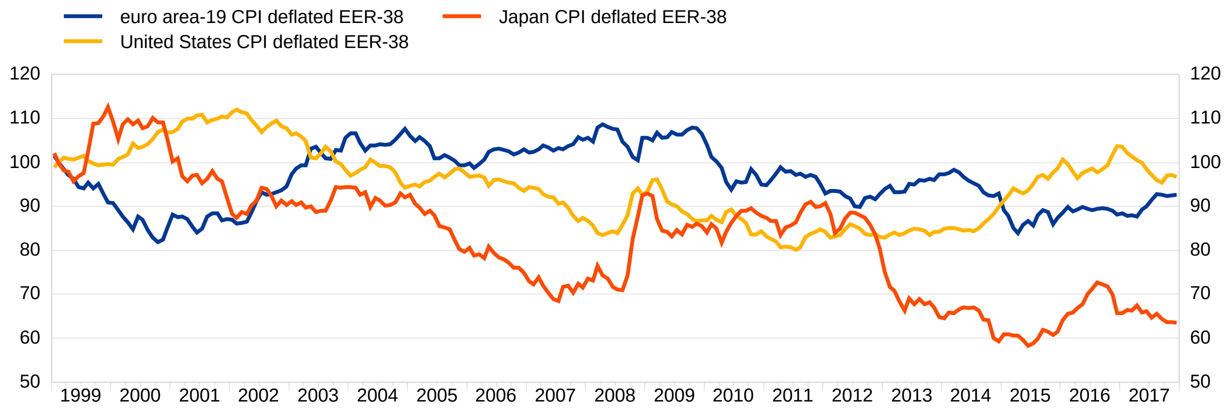
Source: ECB.

4.3 Real effective exchange rates 1)
(deflated by consumer price indices; period averages; index: 1999 Q1 = 100)

	1999-2017	1999-2008	2009-2017	2014	2015	2016	2017
Belgium	99.7	99.2	100.1	100.6	96.2	98.7	100.2
Germany	92.7	95.2	95.2	90.6	85.7	87.1	87.9
Estonia	114.8	106.5	124.0	125.8	124.1	126.1	128.2
Ireland	107.8	108.9	106.6	106.2	98.2	99.5	99.7
Greece	100.3	99.3	101.5	99.9	94.8	95.8	96.3
Spain	106.0	104.8	107.3	107.9	102.4	103.3	104.7
France	95.9	97.6	94.1	94.4	89.9	91.1	91.4
Italy	99.5	100.2	98.7	99.6	94.6	95.6	96.1
Cyprus	104.3	104.1	104.6	105.6	99.6	99.7	99.9
Latvia	109.4	104.7	114.6	113.6	112.6	113.7	114.0
Lithuania	122.3	115.7	129.6	129.8	127.0	129.4	130.9
Luxembourg	106.0	104.4	107.8	109.1	104.4	105.1	106.3
Malta	105.7	105.1	106.5	107.0	101.7	103.9	104.9
Netherlands	101.0	102.5	99.2	100.3	94.6	95.6	96.3
Austria	96.4	97.0	95.6	96.8	94.0	95.6	96.6
Portugal	102.5	103.1	101.9	101.5	98.7	100.1	100.5
Slovenia	99.9	99.4	100.3	101.3	97.3	97.8	98.1
Slovakia	163.6	139.3	190.6	192.8	186.5	186.7	186.3
Finland	95.9	96.9	94.8	96.3	93.0	94.1	93.6
Euro area	96.3	97.9	94.5	95.4	86.9	89.2	90.5
Bulgaria	133.2	120.9	146.8	146.7	140.2	139.6	140.5
Czech Republic	133.1	122.4	145.0	137.8	134.0	137.7	143.5
Denmark	98.5	99.4	97.5	97.4	93.4	94.5	95.0
Croatia	104.4	103.5	105.5	104.3	101.1	102.4	103.5
Hungary	128.9	125.4	132.7	128.9	123.6	124.6	127.2
Poland	116.8	117.4	116.2	117.8	112.7	108.8	112.2
Romania	133.0	127.5	139.2	142.7	137.5	135.7	133.5
Sweden	92.8	95.3	90.1	91.2	85.5	86.4	85.7
United Kingdom	89.3	97.9	79.8	84.4	88.1	79.0	75.0
European Union	-	-	-	-	-	-	-
United States	94.8	99.4	89.6	85.8	95.0	99.2	98.8
Japan	82.6	89.4	75.0	64.8	60.4	68.6	65.3

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, indicators are calculated vis-à-vis these same trading partners plus other euro area countries.
For the non-euro area countries, the real effective exchange rate of the national currency vis-à-vis 38 trading partners (including the euro area) is displayed.
A positive change points to a decrease in price competitiveness.

Chart 4.3 Real effective exchange rates
(deflated by consumer price indices; monthly averages; index: 1999 Q1=100)



Source: ECB.

4.4 Balance of payments: net current account

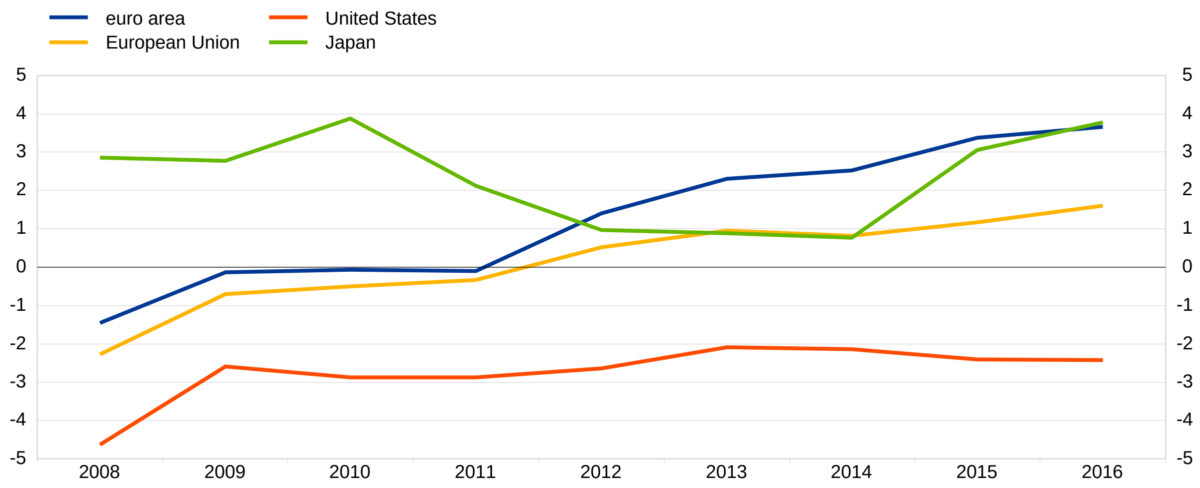
(chain-linked volumes; percentages of GDP; period averages; non-working day and non-seasonally adjusted)

	2008-2016	2008-2011	2012-2016	2013	2014	2015	2016
Belgium	-0.3	-0.3	-0.3	-0.3	-0.9	-0.2	0.1
Germany	7.0	5.7	8.1	7.0	7.9	9.3	9.1
Estonia	0.0	-0.7	0.6	0.6	0.3	2.3	2.2
Ireland	0.0	-4.4	3.5	2.2	1.7	12.0	4.3
Greece	-6.3	-12.1	-1.7	-2.0	-1.6	-0.2	-1.0
Spain	-1.7	-5.1	1.1	1.5	1.1	1.1	1.9
France	-0.9	-0.9	-1.0	-0.9	-1.3	-0.5	-0.9
Italy	-0.4	-2.8	1.4	1.0	2.0	1.6	2.9
Cyprus	-6.7	-9.5	-4.4	-5.1	-4.4	-1.5	-4.9
Latvia	-1.7	-1.8	-1.6	-3.1	-2.0	-0.5	1.6
Lithuania	-2.2	-4.6	-0.3	0.9	3.5	-3.1	-1.3
Luxembourg	6.2	6.8	5.8	6.0	5.7	5.7	5.4
Malta	1.6	-3.0	5.3	2.8	9.6	5.0	7.3
Netherlands	8.2	6.5	9.5	10.2	8.9	9.0	8.8
Austria	2.5	2.9	2.1	2.1	2.7	2.1	2.4
Portugal	-4.2	-9.6	0.2	1.6	0.1	0.1	0.8
Slovenia	1.9	-1.4	4.6	4.5	6.0	4.6	5.5
Slovakia	-2.1	-4.9	0.2	1.9	1.2	-1.8	-1.5
Finland	-0.5	0.9	-1.6	-1.7	-1.4	-1.1	-1.6
Euro area	1.3	-0.4	2.7	2.3	2.5	3.4	3.7
Bulgaria	-2.7	-7.6	1.3	1.4	0.1	0.0	6.0
Czech Republic	-1.2	-2.5	-0.1	-0.5	0.2	0.2	1.1
Denmark	6.7	4.8	8.2	8.1	9.4	9.3	7.7
Croatia	-0.7	-3.9	1.9	0.9	1.9	4.4	2.5
Hungary	1.1	-1.7	3.3	3.8	1.5	3.4	6.2
Poland	-3.2	-5.3	-1.6	-1.3	-2.1	-0.6	-0.3
Romania	-4.1	-6.6	-2.1	-1.1	-0.7	-1.3	-2.3
Sweden	5.8	6.2	5.5	6.0	5.1	5.2	4.9
United Kingdom	-4.9	-3.6	-6.0	-6.0	-6.2	-6.6	-6.6
European Union	0.1	-1.0	1.0	0.9	0.8	1.2	1.6
United States	-2.7	-3.2	-2.3	-2.1	-2.1	-2.4	-2.4
Japan	2.3	2.9	1.9	0.9	0.8	3.1	3.8

Sources: ECB, national data from BIS databank (for the United States and Japan) and Eurostat.

Chart 4.4 Balance of payments: net current account

(percentages of GDP, non-working day and non-seasonally adjusted)



Sources: ECB, national data from BIS databank (for the United States and Japan) and Eurostat.

4 Exchange rates and balance of payments

4.5 Net international investment position

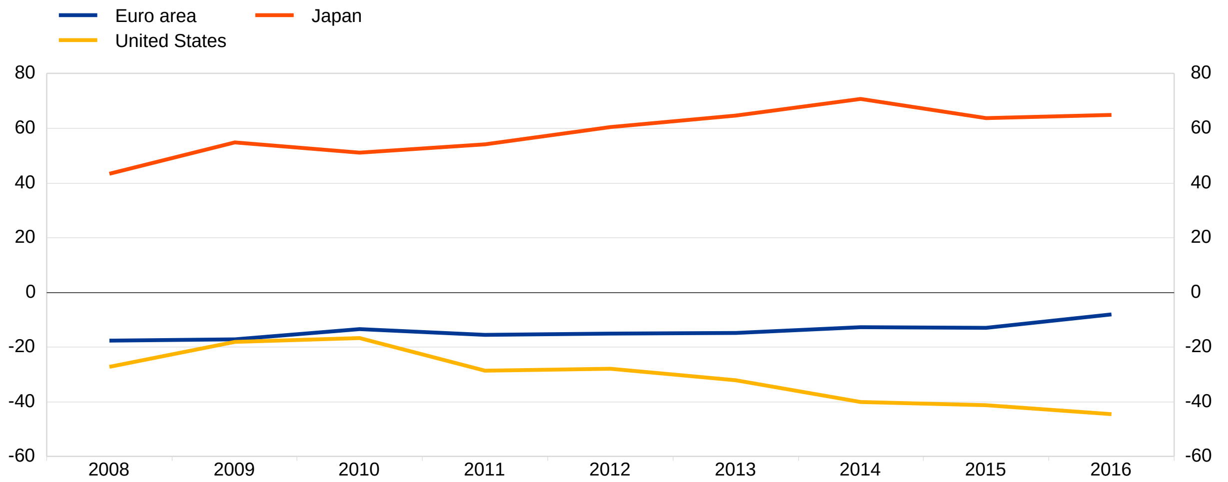
(chain-linked volumes; percentages of GDP; end-of-period averages)

	2008-2016 [1]	2008-2011 [1]	2012-2016	2013	2014	2015	2016
Belgium	55.2	58.6	52.5	54.6	47.7	50.5	55.6
Germany	34.8	22.9	44.3	36.1	43.5	52.8	59.8
Estonia	-59.6	-70.3	-51.0	-56.3	-53.5	-46.0	-43.6
Ireland	-147.2	-119.4	-169.5	-135.2	-164.8	-214.2	-193.5
Greece	-109.0	-87.2	-126.5	-127.9	-127.0	-129.7	-131.4
Spain	-90.3	-88.5	-91.8	-95.7	-98.1	-90.5	-84.9
France	-14.0	-11.6	-15.9	-17.1	-16.2	-16.4	-16.5
Italy	-20.2	-20.5	-20.0	-23.6	-22.3	-20.9	-10.5
Cyprus	-124.0	-104.9	-139.4	-142.5	-148.7	-145.0	-126.7
Latvia	-77.5	-82.4	-73.6	-75.2	-76.0	-73.4	-67.9
Lithuania	-53.1	-55.4	-51.2	-51.5	-49.9	-48.5	-48.3
Luxembourg	24.8	-0.6	45.2	56.3	35.5	42.4	38.6
Malta	26.5	8.7	40.8	28.7	47.1	56.6	51.2
Netherlands	29.2	6.3	47.5	32.0	50.2	57.3	70.7
Austria	-1.2	-5.5	2.2	1.4	3.6	2.8	6.3
Portugal	-109.7	-101.4	-116.4	-118.1	-120.3	-117.0	-110.8
Slovenia	-44.8	-43.8	-45.6	-48.7	-47.6	-41.8	-39.1
Slovakia	-63.8	-62.5	-64.8	-64.5	-65.7	-66.7	-64.1
Finland	3.8	7.7	0.7	4.2	-3.5	-6.8	-2.7
Euro area	-14.1	-16.0	-12.7	-14.8	-12.8	-12.9	-7.9
Bulgaria	-70.8	-68.6	-72.6	-78.4	-80.7	-67.1	-52.7
Czech Republic	-38.6	-42.2	-35.8	-39.3	-35.2	-32.9	-24.9
Denmark	28.0	9.2	43.1	38.7	45.5	36.2	58.0
Croatia	-83.2	-84.9	-81.8	-88.0	-84.6	-76.0	-70.2
Hungary	-89.5	-103.8	-78.1	-83.9	-78.8	-67.7	-66.9
Poland	-61.9	-57.2	-65.7	-70.2	-68.8	-62.4	-59.3
Romania	-61.1	-59.3	-62.5	-66.4	-61.7	-59.7	-55.5
Sweden	-4.5	-7.0	-2.5	-14.0	1.2	5.2	11.5
United Kingdom	-14.7	-6.7	-21.2	-20.1	-26.3	-23.2	-4.8
European Union	-	-	-	-	-	-	-
United States	-30.8	-22.7	-37.2	-32.2	-40.1	-41.4	-44.7
Japan	58.7	50.9	64.9	64.7	70.7	63.8	64.8

Sources: ECB and national data from BIS databank (for the United States and Japan).
1) Data for Bulgaria available since 2010.

Chart 4.5 Net international investment position

(percentages of GDP)



Sources: ECB and national data from BIS databank (for the United States and Japan).

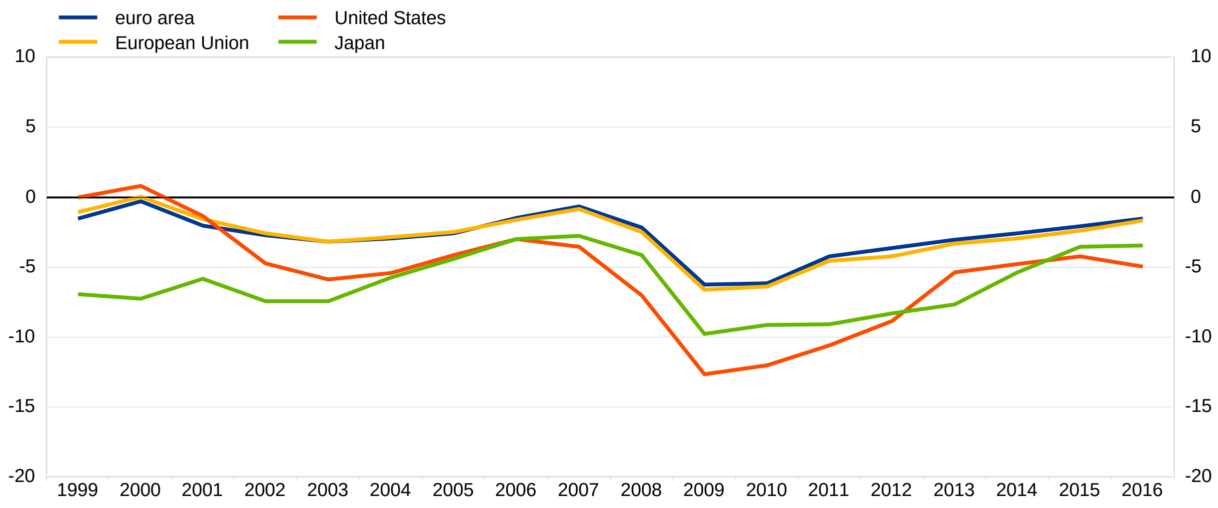
5 Fiscal developments

5.1 General government balance
(percentages of GDP)

	1999-2016 1)	1999-2008 1)	2009-2016	2013	2014	2015	2016
Belgium	-1.9	-0.6	-3.6	-3.1	-3.1	-2.5	-2.5
Germany	-1.5	-2.1	-0.9	-0.1	0.3	0.6	0.8
Estonia	0.3	0.6	-0.1	-0.2	0.7	0.1	-0.3
Ireland	-4.0	0.7	-9.9	-6.1	-3.6	-1.9	-0.7
Greece	-7.5	-6.7	-8.4	-13.2	-3.6	-5.7	0.5
Spain	-3.7	-0.3	-7.9	-7.0	-6.0	-5.3	-4.5
France	-3.6	-2.6	-4.9	-4.1	-3.9	-3.6	-3.4
Italy	-3.1	-2.9	-3.4	-2.9	-3.0	-2.6	-2.5
Cyprus	-3.2	-2.1	-4.5	-5.1	-8.8	-1.2	0.5
Latvia	-2.5	-1.9	-3.3	-1.0	-1.2	-1.2	0.0
Lithuania	-2.8	-1.9	-3.9	-2.6	-0.6	-0.2	0.3
Luxembourg	1.7	2.6	0.6	1.0	1.3	1.4	1.6
Malta	-3.6	-4.9	-2.0	-2.4	-1.8	-1.1	1.1
Netherlands	-1.6	-0.5	-3.1	-2.4	-2.3	-2.1	0.4
Austria	-2.4	-2.2	-2.7	-2.0	-2.7	-1.0	-1.6
Portugal	-5.3	-4.2	-6.6	-4.8	-7.2	-4.4	-2.0
Slovenia	-3.8	-2.2	-5.9	-14.7	-5.3	-2.9	-1.9
Slovakia	-4.7	-5.0	-4.3	-2.7	-2.7	-2.7	-2.2
Finland	1.1	3.8	-2.3	-2.6	-3.2	-2.7	-1.7
Euro area	-2.7	-2.0	-3.7	-3.0	-2.6	-2.1	-1.5
Bulgaria	-0.6	0.6	-2.1	-0.4	-5.5	-1.6	0.0
Czech Republic	-3.1	-3.6	-2.4	-1.2	-1.9	-0.6	0.7
Denmark	0.6	2.4	-1.7	-1.2	1.1	-1.8	-0.6
Croatia	-4.4	-3.7	-5.0	-5.3	-5.1	-3.3	-0.9
Hungary	-4.8	-6.0	-3.3	-2.6	-2.7	-2.0	-1.9
Poland	-4.2	-3.9	-4.5	-4.1	-3.6	-2.6	-2.5
Romania	-3.4	-2.8	-4.1	-2.1	-1.4	-0.8	-3.0
Sweden	0.5	1.2	-0.4	-1.4	-1.6	0.2	1.1
United Kingdom	-4.0	-1.9	-6.6	-5.4	-5.5	-4.3	-2.9
European Union	-2.8	-1.9	-4.0	-3.3	-3.0	-2.4	-1.7
United States	-5.4	-3.4	-7.9	-5.4	-4.8	-4.2	-4.9
Japan	-6.2	-5.5	-7.0	-7.6	-5.4	-3.6	-3.4

Sources: ESCB and OECD.
1) Data for Croatia available since 2002.

Chart 5.1 General government balance
(percentages of GDP)



Sources: ESCB and OECD.

5 Fiscal developments

5.2 Primary general government balance [1]

(percentages of GDP)

	1999-2016 [2]	1999-2008 [2]	2009-2016	2013	2014	2015	2016
Belgium	2.5	4.7	-0.2	0.2	0.2	0.6	0.4
Germany	1.0	0.8	1.2	1.8	2.1	2.2	2.1
Estonia	0.4	0.8	0.0	-0.1	0.8	0.2	-0.2
Ireland	-1.8	2.1	-6.7	-1.8	0.3	0.7	1.6
Greece	-2.3	-1.3	-3.7	-9.1	0.4	-2.1	3.7
Spain	-1.2	2.0	-5.2	-3.5	-2.5	-2.2	-1.7
France	-1.1	0.1	-2.6	-1.9	-1.8	-1.6	-1.5
Italy	1.8	2.4	1.1	1.9	1.6	1.5	1.5
Cyprus	-0.3	0.9	-1.8	-1.8	-5.9	1.7	3.0
Latvia	-1.5	-1.2	-1.8	0.5	0.2	0.1	1.1
Lithuania	-1.4	-0.8	-2.3	-0.9	1.0	1.3	1.6
Luxembourg	2.1	2.9	1.0	1.5	1.8	1.7	1.9
Malta	-0.3	-1.1	0.9	0.4	1.0	1.3	3.2
Netherlands	0.5	2.1	-1.6	-0.9	-0.8	-0.8	1.4
Austria	0.6	1.1	-0.1	0.7	-0.2	1.3	0.5
Portugal	-1.8	-1.4	-2.4	0.0	-2.3	0.2	2.2
Slovenia	-1.8	-0.4	-3.5	-12.1	-2.1	0.3	1.2
Slovakia	-2.5	-2.4	-2.6	-0.8	-0.8	-1.0	-0.5
Finland	2.7	5.8	-1.1	-1.4	-2.0	-1.6	-0.7
Euro area	0.3	1.3	-1.0	-0.2	0.1	0.3	0.6
Bulgaria	1.0	2.9	-1.3	0.4	-4.6	-0.7	0.9
Czech Republic	-1.9	-2.6	-1.2	0.1	-0.6	0.4	1.7
Denmark	2.8	5.0	0.0	0.4	2.5	-0.2	0.7
Croatia	-1.9	-1.8	-2.0	-2.1	-1.7	0.2	2.3
Hungary	-0.5	-1.6	0.8	1.9	1.2	1.5	1.3
Poland	-1.7	-1.2	-2.2	-1.6	-1.6	-0.9	-0.8
Romania	-1.5	-0.7	-2.5	-0.4	0.3	0.9	-1.5
Sweden	2.1	3.5	0.4	-0.6	-0.9	0.6	1.6
United Kingdom	-1.7	0.1	-4.0	-2.6	-2.8	-1.9	-0.5
European Union	0.0	1.1	-1.4	-0.6	-0.4	-0.1	0.4
United States	-1.8	0.1	-4.3	-1.7	-1.3	-0.9	-1.4
Japan	-4.1	-3.3	-5.1	-5.7	-3.5	-1.7	-1.7

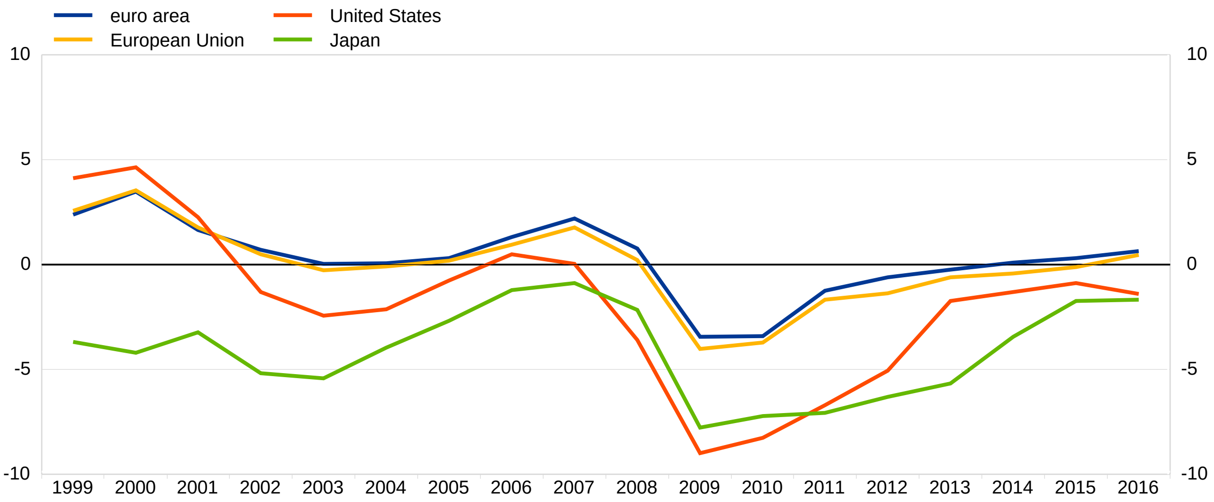
Sources: ESCB and OECD.

1) General government balance excluding the interest expenditure.

2) Data for Croatia available since 2002.

Chart 5.2 Primary general government balance

(percentages of GDP)



Sources: ESCB and OECD.

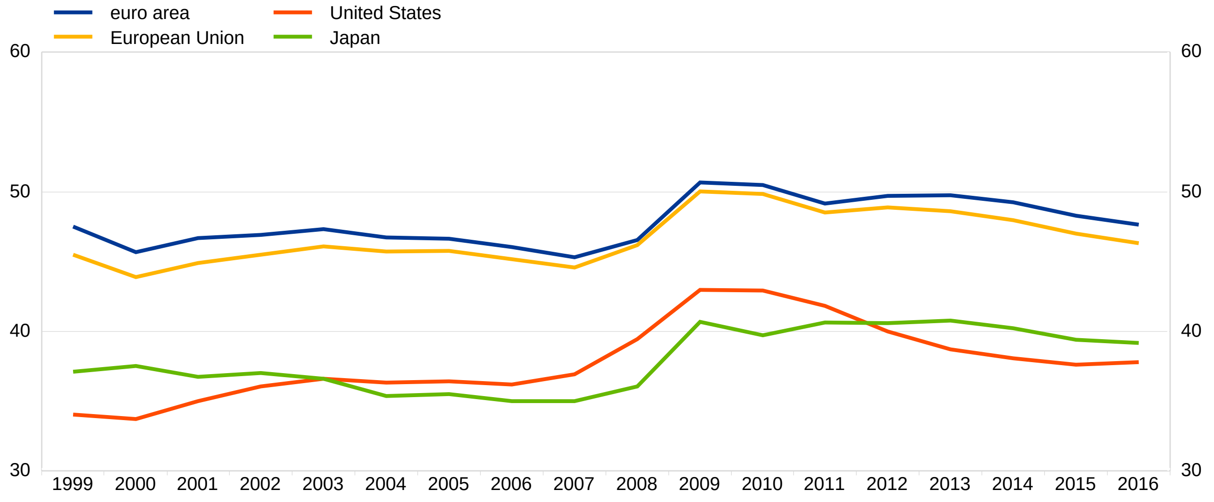
5 Fiscal developments

5.3 General government expenditure
(percentages of GDP)

	1999-2016 [1]	1999-2008 [1]	2009-2016	2013	2014	2015	2016
Belgium	51.8	49.6	54.5	55.8	55.2	53.8	53.2
Germany	45.5	45.8	45.1	44.7	44.3	43.9	44.2
Estonia	37.8	35.9	40.1	38.5	38.4	40.2	40.6
Ireland	37.5	34.2	41.8	40.2	37.5	28.8	27.1
Greece	49.9	46.7	54.0	62.2	50.2	53.8	49.7
Spain	41.8	39.0	45.2	45.6	44.8	43.8	42.2
France	54.2	52.3	56.7	57.1	57.1	56.7	56.4
Italy	48.5	47.1	50.3	51.1	50.9	50.2	49.4
Cyprus	39.3	37.2	41.9	41.6	48.2	40.2	38.3
Latvia	37.6	35.8	40.0	37.6	38.2	38.4	37.3
Lithuania	37.0	36.2	38.1	35.5	34.6	34.9	34.2
Luxembourg	41.6	40.5	43.1	43.3	41.8	41.5	42.1
Malta	41.6	42.1	40.9	42.0	41.3	40.1	37.1
Netherlands	44.6	43.2	46.4	46.3	46.2	44.9	43.4
Austria	51.4	51.1	51.8	51.6	52.3	51.0	50.7
Portugal	46.8	44.6	49.4	49.9	51.8	48.2	45.0
Slovenia	47.2	45.1	49.7	59.5	49.6	47.7	45.1
Slovakia	42.0	41.9	42.2	41.4	42.0	45.2	41.5
Finland	51.9	48.6	56.1	57.5	58.1	56.9	55.8
Euro area	47.8	46.5	49.4	49.8	49.2	48.3	47.6
Bulgaria	37.9	38.3	37.4	37.6	42.1	40.7	35.0
Czech Republic	42.7	42.7	42.6	42.6	42.2	41.7	39.4
Denmark	53.8	52.1	55.9	55.8	55.3	54.8	53.5
Croatia	46.9	46.0	47.6	47.7	48.0	47.6	47.2
Hungary	49.1	49.1	49.1	49.3	49.5	50.2	46.7
Poland	43.8	44.3	43.2	42.6	42.3	41.6	41.2
Romania	36.5	36.0	37.2	35.4	34.9	35.7	34.0
Sweden	51.8	52.6	50.9	52.0	51.1	49.6	49.5
United Kingdom	41.7	39.2	44.8	44.2	43.2	42.4	41.5
European Union	46.7	45.3	48.4	48.6	48.0	47.0	46.3
United States	37.8	36.1	40.0	38.7	38.1	37.6	37.8
Japan	38.0	36.2	40.2	40.8	40.2	39.4	39.2

Sources: ESCB and OECD.
1) Data for Croatia available since 2002.

Chart 5.3 General government expenditure
(percentages of GDP)



Sources: ESCB and OECD.

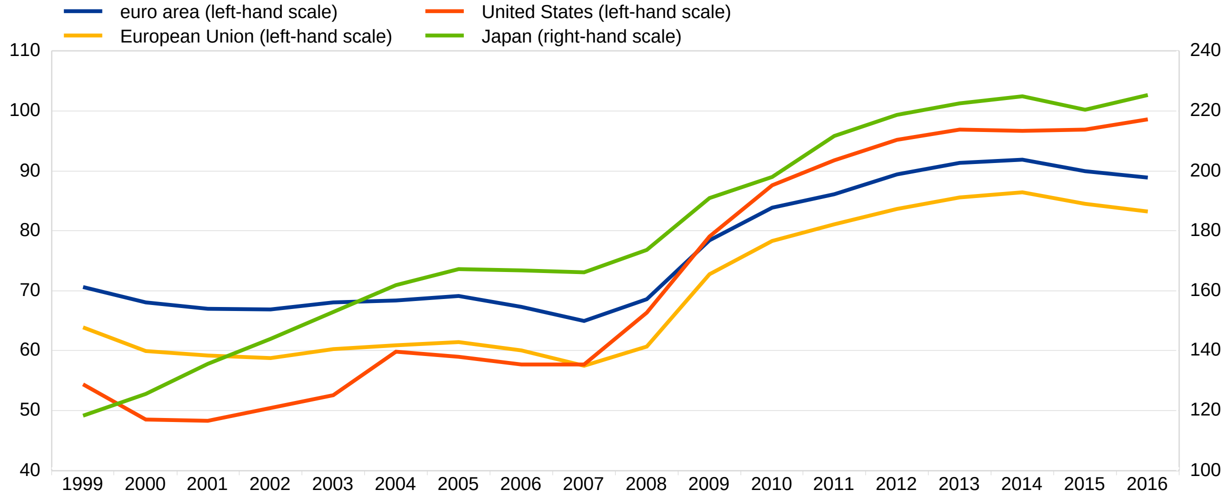
5 Fiscal developments

5.4 General government debt [1)]
(percentages of GDP)

	1999-2016 [2)]	1999-2008 [2)]	2009-2016	2013	2014	2015	2016
Belgium	101.6	99.8	103.8	105.5	106.8	106.0	105.7
Germany	68.3	62.6	75.4	77.4	74.6	70.9	68.1
Estonia	6.6	5.0	8.7	10.2	10.7	10.0	9.4
Ireland	59.6	32.2	93.9	119.4	104.5	76.9	72.8
Greece	131.4	104.7	164.8	177.4	179.0	176.8	180.8
Spain	63.1	47.3	82.8	95.5	100.4	99.4	99.0
France	74.8	63.1	89.4	92.4	95.0	95.8	96.5
Italy	112.3	102.9	124.0	129.0	131.8	131.5	132.0
Cyprus	69.6	57.3	85.0	102.6	107.5	107.5	107.1
Latvia	25.0	12.6	40.4	38.9	40.8	36.8	40.5
Lithuania	27.7	19.6	37.9	38.8	40.5	42.6	40.1
Luxembourg	13.6	7.9	20.7	23.7	22.7	22.0	20.8
Malta	65.1	65.2	65.0	68.4	63.8	58.7	56.2
Netherlands	55.8	49.8	63.3	67.8	68.0	64.6	61.8
Austria	73.4	66.4	82.3	81.0	83.8	84.3	83.6
Portugal	85.8	60.8	117.0	129.0	130.6	128.8	130.1
Slovenia	41.0	25.3	60.6	70.4	80.3	82.6	78.5
Slovakia	43.3	39.4	48.2	54.7	53.5	52.3	51.8
Finland	46.3	39.8	54.3	56.5	60.2	63.6	63.1
Euro area	76.6	67.9	87.5	91.3	91.8	89.9	88.9
Bulgaria	32.2	42.0	20.0	17.0	27.0	26.0	29.0
Czech Republic	31.6	24.9	39.9	44.9	42.2	40.0	36.8
Denmark	42.5	42.7	42.4	44.0	44.0	39.5	37.7
Croatia	56.7	38.9	72.3	81.7	85.8	85.4	82.9
Hungary	67.2	59.5	76.8	76.0	75.2	74.7	73.9
Poland	47.4	43.1	52.7	55.7	50.2	51.1	54.1
Romania	25.9	18.8	34.7	37.8	39.4	37.9	37.6
Sweden	45.1	48.4	41.1	40.8	45.5	44.2	42.2
United Kingdom	58.2	39.3	81.9	85.6	87.4	88.2	88.3
European Union	69.9	60.3	82.0	85.6	86.5	84.5	83.2
United States	72.1	55.5	92.8	96.9	96.7	96.9	98.6
Japan	179.1	151.2	214.1	222.5	225.0	220.5	225.3

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
(percentages of GDP)



Sources: ESCB and OECD.

Abbreviations

Countries

BE	Belgium	**HR**	Croatia	**PL**	Poland
BG	Bulgaria	**IT**	Italy	**PT**	Portugal
CZ	Czech Republic	**CY**	Cyprus	**RO**	Romania
DK	Denmark	**LV**	Latvia	**SI**	Slovenia
DE	Germany	**LT**	Lithuania	**SK**	Slovakia
EE	Estonia	**LU**	Luxembourg	**FI**	Finland
IE	Ireland	**HU**	Hungary	**SE**	Sweden
GR	Greece	**MT**	Malta	**UK**	United Kingdom
ES	Spain	**NL**	Netherlands	**US**	United States
FR	France	**AT**	Austria		

In accordance with EU practice, the EU Member States are listed in this report using the alphabetical order of the country names in the national languages.

Others

ABSPP	asset-backed securities purchase programme
APP	asset purchase programme
BCBS	Basel Committee on Banking Supervision
BIRD	Banks' Integrated Reporting Dictionary
BVAR	Bayesian vector autoregression (model)
CBPP3	third covered bond purchase programme
CCP	central counterparty
CDS	credit default swap
CMU	capital markets union
CPMI	Committee on Payments and Market Infrastructures
CRE	commercial real estate
CSD	central securities depository
CSDB	Centralised Securities Database
CSPP	corporate sector purchase programme
CSR	country-specific recommendation
DLT	distributed ledger technology
DSTI	debt service-to-income
EBA	European Banking Authority
ECB	European Central Bank
ECMS	Eurosystem Collateral Management System
ECON	Committee on Economic and Monetary Affairs
EDIS	European deposit insurance scheme
EDP	excessive deficit procedure
EFSF	European Financial Stability Facility
EFSM	European Financial Stabilisation Mechanism
EIOPA	European Insurance and Occupational Pensions Authority
EMIR	European Market Infrastructure Regulation
EMMI	European Money Markets Institute
EMU	Economic and Monetary Union
EONIA	euro overnight index average
ERF	European Reporting Framework
ERM II	exchange rate mechanism II
ERMS	Eurosystem Reserve Management Services
ESAs	European Supervisory Authorities
ESCB	European System of Central Banks
ESFS	European System of Financial Supervision
ESM	European Stability Mechanism
ESRB	European Systemic Risk Board
ESS	European Statistical System
ES2	second euro banknote series
EU	European Union
EUR	euro
EURIBOR	euro interbank offered rate
FMIs	financial market infrastructures
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
FVC	financial vehicle corporation
GBP	pound sterling
GDP	gross domestic product
GFSN	global financial safety net
G-SIB	global systemically important bank
G20	Group of Twenty
HFCN	Household Finance and Consumption Network
HICP	Harmonised Index of Consumer Prices
IBAN	International Bank Account Number
ICPFs	insurance corporations and pension funds
ICT	information and communications technology
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IPU	intermediate parent undertaking
ITS	implementing technical standards
JPY	Japanese yen
LCBG	large and complex banking group
LIBOR	London interbank offered rate
LTV	loan-to-value
MDA	maximum distributable amount
MEP	Member of the European Parliament
MFI	monetary financial institution
MIP	macroeconomic imbalance procedure
MIR	MFI interest rates
MoU	Memorandum of Understanding
MPDB	Macroprudential Database
MREL	minimum requirement for own funds and eligible liabilities
MTFA	medium-term financial assistance
NCA	national competent authority
NCB	national central bank
NFC	non-financial corporation
NPL	non-performing loan
OECD	Organisation for Economic Co-operation and Development
OFI	other financial institution
OPEC	Organization of the Petroleum Exporting Countries
O-SIIs	other systemically important institutions
OTC	over-the-counter
POS	point of sale

PPP	purchasing power parity
PSD	Payment Services Directive
PSP	payment service provider
PSPP	public sector purchase programme
Q&As	questions and answers
repo	repurchase agreement
RFA	regional financing arrangement
RIAD	Register of Institutions and Affiliates Database
RMP	reserve maintenance period
RRE	residential real estate
RTGS	real-time gross settlement
RTS	regulatory technical standards
SAFE	Survey on the Access to Finance of Enterprises
SCT Inst	SEPA Instant Credit Transfer scheme
SEPA	Single Euro Payments Area
SGP	Stability and Growth Pact
SHSDB	Securities Holdings Statistics Database
SIPS	systemically important payment system
SMEs	small and medium-sized enterprises
SPE	special-purpose entity
SSM	Single Supervisory Mechanism
SSS	securities settlement system
TIPS	TARGET instant payment settlement
TLAC	total loss-absorbing capacity
TLTRO	targeted longer-term refinancing operation
TRIM	targeted review of internal models
T2S	TARGET2-Securities
UCITS	undertaking for collective investment in transferable securities
USD	US dollar
WDN	Wage Dynamics Network

Conventions used in the tables
"-" data do not exist/data are not applicable
"." data are not yet available

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